CITY OF HUGHSON
CITY COUNCIL MEETING
HUGHSON SENIOR COMMUNITY CENTER
2307 4th Street, Hughson, CA

AGENDA
MONDAY, NOVEMBER 9, 2020 – 7:00 P.M.

SPECIAL NOTICE
Coronavirus COVID-19

MEMBERS OF THE PUBLIC MAY REMOTELY OBSERVE THE MEETING VIA YOUTUBE LIVE. THIS MEETING WILL NOT INCLUDE IN PERSON PUBLIC ATTENDANCE.

This meeting will be held in accordance with the Governor's Stay at Home Executive Order N-33-20 and will not include in person public attendance. Members of the public may observe the meeting and provide comments to the Council as described below.

How to observe/participate in the Meeting:

- **You can observe the meeting via YouTube live, by accessing this link:**

  https://www.youtube.com/channel/UC-PwkdIrKoMmOJDzBSodu6A?view_as=subscriber

- **In addition, recorded City Council meetings are posted on the City's website the first business day following the meeting. Recorded videos can be accessed with the following link: http://hughson.org/our-government/city-council/#council-agenda**

How to submit Public Comment:

- **Email will be available prior to 6:45 PM on November 9, 2020, to provide public comment for the Public Comment Period, or for a specific agenda item. Please email agose@hughson.org. Written comment will be distributed to the City Council and kept on file as part of official record of the Council meeting.**

- **Verbal comment will be available via telephone. If you would like to provide verbal comment, please send a request to agose@hughson.org, by 6:45 PM on November 9, 2020. Please be advised that you will need to provide a call back number, which will be used to contact you during the Council meeting.**

CALL TO ORDER: Mayor Jeramy Young

ROLL CALL: Mayor Jeramy Young
Mayor Pro Tem George Carr
Councilmember Ramon Bawanan
Councilmember Harold Hill
Councilmember Michael Buck

FLAG SALUTE: Mayor Jeramy Young

INVOCATION: Hughson Ministerial Association

1. PUBLIC BUSINESS FROM THE FLOOR (No Action Can Be Taken):

Members of the audience may address the City Council on any item of interest to the public pertaining to the City and may step to the podium, state their name and city of residence for the record (requirement of name and city of residence is optional) and make their presentation. Please limit presentations to five minutes. Since the City Council cannot take action on matters not on the agenda, unless the action is authorized by Section 54954.2 of the Government Code, items of concern, which are not urgent in nature can be resolved more expeditiously by completing and submitting to the City Clerk a "Citizen Request Form" which may be obtained from the City Clerk.

2. PRESENTATIONS:

2.1: Service Award for Jose Vasquez, Public Works Superintendent – 5 Years of Service.

2.2: Turlock Mosquito Abatement District Update - Michael Mitchell.

3. CONSENT CALENDAR:

All items listed on the Consent Calendar are to be acted upon by a single action of the City Council unless otherwise requested by an individual Councilmember for special consideration. Otherwise, the recommendation of staff will be accepted and acted upon by roll call vote.

3.1: Approve the Minutes of the Regular Meeting of October 12, 2020.

3.2: Approve the Warrants Register.

3.3: Appoint Chris Barth to the Parks, Recreation and Entertainment Commission.

3.4: Appoint Alan McFadon and Randy Crooker to the Planning Commission.

3.5: Authorize the Closure of City Hall from December 24, 2020 at Noon through January 1, 2021.

3.6: Approve the Treasurer's Report for September 2020.

3.7: Approve the Treasurer's Quarterly Investment Portfolio Report for September 2020.

3.8: Approval to Contract for Facility Upgrades with Foster Brothers at a total cost of $43,802.07 and Vortex Industries, Inc., for a Total Cost of $19,873.60.

4. UNFINISHED BUSINESS:

4.1: Adopt Resolution No. 2020-66, Amending the Professional Services Agreement with Carollo Engineers, Inc., to Analyze Data and Make Project Recommendations to be Used as the Basis for the Final Sewer Project Design.

4.2: Adopt Resolution No.2020-67, Awarding the Well No. 7 Replacement Project, Phase IV Bid to Gateway Pacific Construction in the Amount of $7,895,716 and Authorizing a 10% Construction Contingency and a 10% Set-aside for Construction Management.

4.3: **A.** Approve Option A of the Bartle Wells Associates Rate Study 2020.

B. Adopt Resolution No. 2020-68, Directing the Finance Department to Pay Off the Current Balance on the Municipal Finance Corporation Loan.

4.4: Approve the City of Hughson's Revised CARES Act Coronavirus Relief Fund Spending Plan.

5. PUBLIC HEARING TO CONSIDER THE FOLLOWING:

The public hearing for Item 5.1 was previously opened and closed on October 12, 2020 and adjourned to this meeting pursuant to Government Code Section 54955 and 54955.1.

5.1 **A.** Adopt Resolution No. 2020-55, Adopting a Mitigated Negative Declaration for the Parkwood Hughson Development Project, APNS 018-017-002, -010, - 014.

B. Adopt Resolution No. 2020-56, Adopting General Plan Amendment 20-01 to change the Land Use diagram from Low Density Residential, Medium Density Residential, and Service Commercial to Medium Density Residential for the Parkwood Subdivision Project (a 56.04-acre site).

C. Adopt Resolution No. 2020-57, Approving a Change in the Zoning District Designation from R-1 single Family Residential, R-2 Medium Density Residential, and C-2 General Commercial to R-2 Medium Density Residential for the Parkwood Subdivision Project (a 56.04-acre site).

D. Adopt Resolution No. 2020-58, Adopting a Vesting Tentative Map for the Parkwood Subdivision Project, a 56.04-acre Property, Subdividing the Site into 299 Residential Lots and 3 Parks.

E. Adopt Resolution No. 2020-59, Approving a Conditional Use Permit to Allow a Planned Development Overlay for the Proposed Parkwood Hughson Residential Subdivision, APNS 018-017-002, -010, -014.

F. Introduce and Waive the First Reading of Uncodified Ordinance No. 2020-06, Adopting the Development Agreement By and Between the City of Hughson and Parkwood Hughson, LLC.

5.2: Adopt Resolution No. 2020-69, Repealing Resolution No. 06-113 and Resolution No. 07-199, and Adopting a New Development Impact Fee Nexus Study and Proposed Fees Prepared by Bartle Wells Associates.

6. NEW BUSINESS: NONE.

7. CORRESPONDENCE: NONE.

8. COMMENTS:

8.1: Staff Reports and Comments: (Information Only – No Action)

City Manager:

Deputy City Clerk:

Community Development Director:

Police Services:

City Attorney:

8.2: Council Comments: (Information Only – No Action)

8.3: Mayor's Comments: (Information Only – No Action)

9. CLOSED SESSION TO DISCUSS THE FOLLOWING: NONE.

ADJOURNMENT:

Notice Regarding Non-English Speakers:

Pursuant to California Constitution Article III, Section IV, establishing English as the official language for the State of California, and in accordance with California Code of Civil Procedures Section 185, which requires proceedings before any State Court to be in English, notice is hereby given that all proceedings before the City of Hughson City Council shall be in English and anyone wishing to address the Council is required to have a translator present who will take an oath to make an accurate translation from any language not English into the English language.

WAIVER WARNING

If you challenge a decision/direction of the City Council in court, you may be limited to raising only those issues you or someone else raised at a public hearing(s) described in this Agenda, or in written correspondence delivered to the City of Hughson at or prior to, the public hearing(s).

AMERICANS WITH DISABILITIES ACT/CALIFORNIA BROWN ACT NOTIFICATION FOR THE CITY OF HUGHSON

This Agenda shall be made available upon request in alternative formats to persons with a disability as required by the Americans with Disabilities Act of 1990 (42 U.S.C. Section 12132) and the Ralph M. Brown Act (California Government Code Section 54954.2).

Disabled or Special needs Accommodation: In compliance with the Americans with Disabilities Act, persons requesting a disability related modification or accommodation in order to participate in the meeting and/or if you need assistance to attend or participate in a City Council meeting, please contact the City Clerk's office at (209) 883-4054. Notification at least 48-hours prior to the meeting will assist the City Clerk in assuring that reasonable accommodations are made to provide accessibility to the meeting.

UPCOMING EVENTS:

November 10	▪ Parks, Recreation and Entertainment Commission Meeting, City Hall Chambers, 6:00 PM **Cancelled**
November 11	▪ Veteran's Day – **City Hall Closed**
November 17	▪ Planning Commission Meeting, City Hall Chambers, 6:00 PM **Tentative**
November 23	▪ City Council Meeting, Senior Community Center, 7:00 PM
November 26-27	▪ Thanksgiving Day and Thanksgiving Friday – **City Hall Closed**
December 14	▪ City/School 2+2 Committee Meeting, Hughson Unified School District Office, 5:30 PM
December 14	▪ City Council Meeting, Senior Community Center, 7:00 PM

General Information: The Hughson City Council meets in the Council Chambers on the second and fourth Mondays of each month at 7:00 p.m., unless otherwise noticed.

Council Agendas: The City Council agenda is now available for public review at the City's website at www.hughson.org and City Clerk's Office, 7018 Pine Street, Hughson, California on the Friday, prior to the scheduled meeting. Copies and/or subscriptions can be purchased for a nominal fee through the City Clerk's Office.

Questions: Contact the City Clerk at (209) 883-4054.

AFFIDAVIT OF POSTING

DATE: November 5, 2020 **TIME:** 12:00 PM

NAME: Ashton Gose **TITLE:** Deputy City Clerk

CITY COUNCIL AGENDA ITEM NO. 3.1
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Approval of the City Council Minutes**
Presented By: **Ashton Gose, Deputy City Clerk**

Approved By: Merry Mayhew

Staff Recommendation:

Approve the Minutes of the Regular Meeting of October 12, 2020.

Background and Overview:

The draft minutes of the October 12, 2020 meeting are prepared for the Council's review.

CITY OF HUGHSON
CITY COUNCIL MEETING
SENIOR COMMUNITY CENTER
2307 Fourth Street, Hughson, CA

MINUTES
MONDAY, OCTOBER 12, 2020 – 7:00 P.M.

SPECIAL NOTICE
Coronavirus COVID-19

THIS MEETING WAS HELD REMOTELY WITHOUT IN PERSON PUBLIC ATTENDANCE IN ACCORDANCE WITH THE GOVERNOR'S STAY AT HOME EXECUTIVE ORDER N-33-20.

CALL TO ORDER: Mayor Jeramy Young

ROLL CALL:

Present:
Mayor Jeramy Young
Mayor Pro Tem George Carr
Councilmember Harold Hill
Councilmember Ramon Bawanan
Councilmember Michael Buck

Staff Present:
Merry Mayhew, City Manager
Daniel Schroeder, City Attorney
Fidel Landeros, Chief of Police
Ashton Gose, Deputy City Clerk
Lea Simvoulakis, Community Development Director
Lisa Whiteside, Finance Manager
Jose Vasquez, Public Works Superintendent
Jaime Velazquez, Utilities Superintendent

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1. PUBLIC BUSINESS FROM THE FLOOR (No Action Can Be Taken):

NONE.

2. PRESENTATIONS: NONE.

3. CONSENT CALENDAR:

All items listed on the Consent Calendar are to be acted upon by a single action of the City Council unless otherwise requested by an individual Councilmember for special consideration. Otherwise, the recommendation of staff will be accepted and acted upon by roll call vote.

3.1: Approve the Minutes of the Regular Meeting of September 28, 2020.

3.2: Approve the Warrants Register.

3.3: Approve the Treasurer's Report for August 2020.

3.4: Approve Contracting for Facility Upgrades with Vortex Industries, Inc., for a Total Cost of $45,200.

3.5: Adopt Resolution No. 2020-64, Supporting Proposition 20: The Reducing Crime and Keeping California Safe Act.

YOUNG/BUCK 5-0-0-0 motion passes to approve the Consent Calendar as presented with the following roll call vote:

BAWANAN	HILL	BUCK	CARR	YOUNG
AYE	AYE	AYE	AYE	AYE

4. UNFINISHED BUSINESS: NONE.

5. PUBLIC HEARING TO CONSIDER THE FOLLOWING:

5.1 **A.** Adopt Resolution No. 2020-55, Adopting a Mitigated Negative Declaration for the Parkwood Hughson Development Project, APNS 018-017-002, -010, - 014.

B. Adopt Resolution No. 2020-56, Adopting General Plan Amendment 20-01 to change the Land Use diagram from Low Density Residential, Medium Density Residential, and Service Commercial to Medium Density Residential for the Parkwood Subdivision Project (a 56.04-acre site).

C. Adopt Resolution No. 2020-57, Approving a Change in the Zoning District Designation from R-1 single Family Residential, R-2 Medium Density Residential, and C-2 General Commercial to R-2 Medium

Density Residential for the Parkwood Subdivision Project (a 56.04-acre site).

D. Adopt Resolution No. 2020-58, Adopting a Vesting Tentative Map for the Parkwood Subdivision Project, a 56.04-acre Property, Subdividing the Site into 299 Residential Lots and 3 Parks.

E. Adopt Resolution No. 2020-59, Approving a Conditional Use Permit to Allow a Planned Development Overlay for the Proposed Parkwood Hughson Residential Subdivision, APNS 018-017-002, -010, -014.

F. Introduce and Waive the First Reading of Uncodified Ordinance No. 2020-06, Adopting the Development Agreement By and Between the City of Hughson and Parkwood Hughson, LLC.

Director Simvoulakis presented the staff report on this item.

HILL/BUCK 5-0-0-0 motion passes to reopen the public hearing for agenda item number 5.1.

BAWANAN	HILL	BUCK	CARR	YOUNG
AYE	AYE	AYE	AYE	AYE

Mayor Young opened the public hearing at 7:50 PM.

Four Hughson residents provided written comment on this item. These comments are attached to be kept on file as part of the official record of this City Council meeting.

There was no verbal public comment.

Mayor Young closed the public hearing at 7:51 PM.

YOUNG/CARR 4-1-0-0 motion passes to adjourn and continue this public hearing which was noticed and held on October 12, 2020 to the regular City Council meeting on November 9, 2020 at Hughson Senior Community Center at 7:00 PM, in accordance with California Government Code 54955.

BAWANAN	HILL	BUCK	CARR	YOUNG
NO	AYE	AYE	AYE	AYE

6. NEW BUSINESS: NONE

7. CORRESPONDENCE: NONE.

8. COMMENTS:

8.1: Staff Reports and Comments: (Information Only – No Action)

City Manager:
City Manager Mayhew informed the City Council that the Stanislaus County Board of Supervisors approved a Non-Profit Support Grant Program and is planning to launch a countywide touchless gift card program (StanRAD Card) for use up to $1 million of Coronavirus Aid Relief.

Deputy City Clerk:
Deputy City Clerk Gose informed the City Council of two expiring terms on both the Planning Commission and the Parks, Recreation and Entertainment Commission, which will be advertised from October 1, 2020 to October 30, 2020

Police Services:
Chief Landeros provided the City Council with the latest Crime Statistic Report.

8.2: Council Comments: (Information Only – No Action)

Councilmember Bawanan attended a breakfast meeting with the Hughson Ministerial Association. He acknowledged the success of the Taste of Hughson online auction. He also provided information on an online auction put on by Sierra Vista Family Resource Center.

Councilmember Hill attended the High School Ag Boosters BBQ Dinner on October 3, 2020.

Councilmember Buck volunteered at the High School Ag Boosters BBQ Dinner on October 3, 2020.

Mayor Pro Tem Carr attended the High School Ag Boosters BBQ Dinner on October 3, 2020

8.3: Mayor's Comments: (Information Only – No Action)

Mayor Young thanked the Chief of Police and the Sheriff's Department for their hard work.

9. CLOSED SESSION TO DISCUSS THE FOLLOWING:

9.1 CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
(Paragraph (1) of subdivision (d) of Section 54956.9)

Name of case: CITY OF HUGHSON vs. THE DOW CHEMICAL COMPANY; DOW AGROSCIENCES, LLC; SHELL OIL COMPANY, individually and doing business as SHELL CHEMICAL COMPANY; OCCIDENTAL CHEMICAL CORPORATION; WILBUR ELLIS COMPANY; J.R. SIMPLOT COMPANY; FMC CORPORATION, Superior Court of California, County of San Francisco, Case No. CGC-14-542221.

No reportable action.

ADJOURNMENT:

YOUNG/CARR 5-0-0-0 motion passes at 8:59 PM to adjourn and continue agenda items 5.1A through 5.1F which were presented at the regular City Council meeting noticed and held on October 12, 2020, to the regular City Council meeting on November 9, 2020 at 7:00 PM pursuant to California Government Code Section 54955.

BAWANAN	HILL	BUCK	CARR	YOUNG
AYE	AYE	AYE	AYE	AYE

APPROVED:

_____

JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk

Ashton Gose

From: Allen, Lisa <[illegible]>
Sent: Monday, October 12, 2020 6:43 PM
To: Ashton Gose
Subject: Parkwood subdivision

Good evening,

Have there been surveys done to evaluate the impact on water/electrical supply, garbage, law enforcement, traffic patterns, and school building impact for the newer, medium density zoning? What is the aim of the city council in approving this? Can we meet the needs of this many new families? We still do not have a major grocery store in town and unless there is a plan for that and space to accommodate it, all those revenue dollars will go to Turlock or Ceres.

Mrs. Allen

Total Control Panel Login

To: agose@hughson.org

Message Score: 1
My Spam Blocking Level: High

High (60): Pass
Medium (75): Pass
Low (90): Pass

Block this sender
Block monet.k12.ca.us

This message was delivered because the content filter score did not exceed your filter level.

Ashton Gose

From: Samantha Travao <
Sent: Monday, October 12, 2020 6:14 PM
To: Ashton Gose
Subject: parkwood

Please read during comments section for tonight's meeting, thank you

Good Evening Council,

First and foremost thank you for hearing my comments and thank you for your service to our community. I live on Graybark and I am greatly concerned on how this subdivision will impact our traffic. Graybark is already a main road entering Walnut Haven it is very busy. Our neighborhoods will become unsafe to walk or ride bikes with the increase of traffic that this housing will bring. I think that the majority of the community is open to new housing, just not so much housing crammed into one area that has limited space and no other entry and exits to main roads. I am pleading that you vote no on this project, for the safety of our community, our children, and to preserve the charm of our small town. I believe that the city can bring housing to Hughson that will not be so crammed together that will allow for slow growth and not have such a negative impact on our community. Please please listen to your community members and vote no on this project.

Thank you
Samantha Travao

Ashton Gose

From: Gus Villarreal
Sent: Monday, October 12, 2020 4:29 PM
To: Ashton Gose
Subject: Parkwood development

I am asking the Mayor and council to table the issue of the Parkwood subdivision until we are able to hold a meeting where as the public is able to attend. It's a travesty to try and push this through without the public being able to physically attend. Let us fix the problems we have in the city with our water before we compound the problem by adding to it. There r many problems with this new development such as how narrow the streets are. As I drive through the neighborhood of Sterling Glen most houses in this subdivision have a total of four cars or more parked in their driveway and on the streets which I believe would be true to happen in Parkwood as well. With as narrow as the streets are shown on the map you would only be able to get one car through at a time. Let us learn from our mistakes as what we have in the new subdivision on Euclid . Our fire department responded to a call there and I talked with some of the firefighters that responded. They spoke of what a nightmare it was to try and maneuver a truck through it. And I would like you Mayor and Council members to look at this new development as if you live in the house on the corner of Los Alamos and Flora Vista and all those cars from Parkwood are going by your house or your son or daughter are playing basketball in front of your house on Leaflet having to dodge the cars coming out of Parkwood subdivision . Please table the Parkwood subdivision until we of Hughson can physically attend.

Hughson fire director
Gus Villarreal

Sent from my iPhone

Ashton Gose

From: Stephen Qualls
Sent: Monday, October 12, 2020 10:13 AM
To: Jeramy Young; George Carr; Harold Hill; Michael Buck; Ramon Bawanan; Lea Simvoulakis; Ashton Gose; Merry Mayhew
Subject: Parkwood Project

Dear Hughson City Council Members,
This is Stephen Qualls and I'd like to once again let you know that I feel that the Parkwood project would create increased traffic and unsafe conditions on the streets adjacent to the project. To say that out of almost 3,000 increased vehicle trips per day that only 45 will be driving down my street Walnut Haven, is unrealistic. No one coming west on Hatch is going to access the project via Santa Fe and we all know it.
I thought that staff was given direction to work on possible mitigating measures with the developer and bring them back to the council at tonight's meeting. After reading the agenda packet and speaking with staff I guess I was wrong.
Keeping the original bridge is the only logical way to alleviate the traffic. Mr. Mann told me that a bridge might cost around $1.4M. There is a comparable bridge being planned at Hatch and Gilbert road and that is the estimate.
$1.4m divided by 299 (homes) is $4,682 per home.
With the price per house probably being at least $400,000, I think the developer will still make a fair profit on the project while addressing the traffic and safety concerns of the many citizens who have contacted the city.
I also hope that the ordinance that prohibits two story houses adjacent to existing housing is retained for this project if the R-1 zoning is changed.
We wrote the ordinance to protect the privacy of those homeowners who have spent years and their hard earned money to make their backyards an extension of their homes.
Please refer to my earlier email and those from other citizens of Hughson.
And please vote as if it were your neighborhood and your child's safety that you are voting on.
Thank you for considering my concerns,\.

CITY COUNCIL AGENDA ITEM NO. 3.2
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Approval of Warrants Register**
Enclosure: **Warrants Register**
Presented By: **Lisa Whiteside, Finance Manager**

Approved By: Merry Mayhew

Staff Recommendation:

Approve the Warrants Register as presented.

Background and Overview:

The warrants register presented to the City Council is a listing of all expenditures paid from October 9, 2020 through November 4, 2020.

Fiscal Impact:

There are reductions in various funds for payment of expenses.

Hughson

Check Report

By Check Number

Date Range: 10/09/2020 - 11/04/2020

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
Bank Code: Payable Bank-Payable Bank							
00049	ALLIED ADMINISTRATORS		10/13/2020	Regular	0.00	1,850.06	53369
INV0004295	Invoice	10/01/2020	DELTA DENTAL		0.00	1,850.06	
00108	BACKFLOW MANAGEMENT INC.		10/13/2020	Regular	0.00	110.00	53370
INV0004299	Invoice	10/12/2020	Gauge Accuracy		0.00	110.00	
00109	BADGER METER, INC		10/13/2020	Regular	0.00	2,406.22	53371
1387461	Invoice	09/25/2020	Beacon AMA		0.00	1,350.00	
80058268	Invoice	09/18/2020	meters		0.00	1,056.22	
00234	CAROLLO ENGINEERS		10/13/2020	Regular	0.00	8,040.50	53372
0188758	Invoice	07/08/2020	Professional Services		0.00	8,040.50	
00284	CHARTER COMMUNICATION		10/13/2020	Regular	0.00	241.47	53373
82031300700135...	Invoice	10/01/2020	IP ADDRESS- PINE ST		0.00	241.47	
00305	CITY OF HUGHSON		10/13/2020	Regular	0.00	5,686.93	53374
INV0004297	Invoice	10/01/2020	LLDS & STARN PARK		0.00	5,686.93	
00332	CONDOR EARTH TECHNOLOGIES		10/13/2020	Regular	0.00	1,101.25	53375
83277	Invoice	10/12/2020	PROFESSIONAL SERVICES FOR MS4		0.00	1,101.25	
01340	DIVISION OF THE STATE ARCHITECT		10/13/2020	Regular	0.00	16.40	53376
INV0004292	Invoice	09/30/2020	Disability Access & Education Fee 3Qtr		0.00	16.40	
00527	GIBBS MAINTENANCE CO		10/13/2020	Regular	0.00	235.00	53377
7666	Invoice	09/30/2020	Janitor Services		0.00	235.00	
00528	GILTON SOLID WASTE MANAGE		10/13/2020	Regular	0.00	45,143.06	53378
HUGHSS-050	Invoice	10/01/2020	STREET SWEEPING- SEPT		0.00	1,848.84	
INV0004293	Invoice	09/30/2020	GARBAGE SERVICE- SEPTEMBER		0.00	43,294.22	
01322	GOSE, ASHTON		10/13/2020	Regular	0.00	84.12	53379
INV0004296	Invoice	10/07/2020	Addt. Equip. for portable audio/visual		0.00	84.12	
00570	HARRIS & ASSOCIATES		10/13/2020	Regular	0.00	6,072.81	53380
45591	Invoice	07/30/2020	20/21 Annual LLD,BAD,		0.00	3,036.41	
46268	Invoice	10/12/2020	Annual Admin LLMD 20/21		0.00	3,036.40	
00614	HUGHSON FARM SUPPLY		10/13/2020	Regular	0.00	3,072.72	53381
H102636	Invoice	09/23/2020	Trash Pump		0.00	2,420.67	
H350784	Invoice	09/02/2020	Blanket PO		0.00	48.51	
H350957	Invoice	09/03/2020	Blanket PO		0.00	6.46	
H351118	Invoice	09/04/2020	Blanket PO		0.00	30.18	
H351342	Invoice	09/08/2020	Blanket PO		0.00	46.97	
H351475	Invoice	09/09/2020	Blanket PO		0.00	47.07	
H351526	Invoice	09/09/2020	Blanket PO		0.00	4.95	
H351630	Invoice	09/10/2020	BLANKET P.O. HUGHSON FARM SUPPLY		0.00	181.14	
H352572	Invoice	09/18/2020	Blanket PO		0.00	9.91	
H352886	Invoice	09/22/2020	BLANKET P.O. HUGHSON FARM SUPPLY		0.00	36.65	
H352887	Credit Memo	09/22/2020	BLANKET P.O. HUGHSON FARM SUPPLY		0.00	-1.08	
H352889	Invoice	09/22/2020	BLANKET P.O. HUGHSON FARM SUPPLY		0.00	53.92	
H353028	Invoice	09/23/2020	Blanket PO		0.00	107.86	
H353044	Invoice	09/23/2020	BLANKET P.O. HUGHSON FARM SUPPLY		0.00	79.51	
00627	HUGHSON NAPA AUTO & TRUCK		10/13/2020	Regular	0.00	206.24	53382
292386	Invoice	09/18/2020	hardware		0.00	43.64	

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
293227	Invoice	09/17/2020	BLANKET P.O. NAPA AUTO PARTS		0.00	155.89	
293322	Credit Memo	09/18/2020	BLANKET P.O. NAPA AUTO PARTS		0.00	-1.88	
293803	Invoice	09/30/2020	parts		0.00	8.59	
01577	Jars of Delicious		10/13/2020	Regular	0.00	2,500.00	53383
INV0004302	Invoice	10/12/2020	Hughson Business Relief Program		0.00	2,500.00	
01256	JOSEPHINE'S SPECIALTIES		10/13/2020	Regular	0.00	5,000.00	53384
INV0004301	Invoice	10/12/2020	Hughson Business Relief Program		0.00	5,000.00	
01366	La Perla Tapatia		10/13/2020	Regular	0.00	1,200.00	53385
INV0004300	Invoice	10/12/2020	Hughson Business Relief Program		0.00	1,200.00	
00755	MCR ENGINEERING, INC		10/13/2020	Regular	0.00	31,243.20	53386
15355	Invoice	08/07/2020	Well 7 Phase II		0.00	7,655.95	
15412	Invoice	08/25/2020	Well 7 Phase II		0.00	7,420.00	
15442	Invoice	09/23/2020	Well 7 Phase II		0.00	16,167.25	
00775	MISSION UNIFORM SERVICE		10/13/2020	Regular	0.00	600.58	53387
513185574	Invoice	08/31/2020	MISSION LINEN UNIFORM SERVICE		0.00	160.19	
513188341	Invoice	09/07/2020	MISSION LINEN UNIFORM SERVICE		0.00	38.87	
513188342	Invoice	09/07/2020	MISSION LINEN UNIFORM SERVICE		0.00	118.59	
513226175	Invoice	09/14/2020	MISSION LINEN UNIFORM SERVICE		0.00	37.42	
513226177	Invoice	09/14/2020	MISSION LINEN UNIFORM SERVICE		0.00	56.89	
513274839	Invoice	09/21/2020	MISSION LINEN UNIFORM SERVICE		0.00	37.42	
513274840	Invoice	09/21/2020	MISSION LINEN UNIFORM SERVICE		0.00	56.89	
513322446	Invoice	09/28/2020	MISSION LINEN UNIFORM SERVICE		0.00	37.42	
513322448	Invoice	09/28/2020	MISSION LINEN UNIFORM SERVICE		0.00	56.89	
00822	NESTLE WATERS		10/13/2020	Regular	0.00	62.41	53388
10I0025664277	Invoice	10/10/2020	Blanket PO		0.00	62.41	
00855	OPERATING ENGINEERS LOCAL		10/13/2020	Regular	0.00	312.00	53389
INV0004298	Invoice	10/02/2020	LOCAL UNION DUES #3		0.00	312.00	
00901	PREFERRED ALLIANCE, INC.		10/13/2020	Regular	0.00	78.54	53390
0160101-IN	Invoice	09/30/2020	OFF-SITE PARTICIPANT		0.00	78.54	
01408	RAYA, NEIL		10/13/2020	Regular	0.00	305.00	53391
INV0004294	Invoice	10/09/2020	Back Flow Test		0.00	305.00	
00999	SEE CLICK FIX		10/13/2020	Regular	0.00	4,158.00	53392
2019-2876	Invoice	10/08/2020	Annual License Fee		0.00	4,158.00	
01090	SUTTER HEALTH PLUS		10/13/2020	Regular	0.00	12,577.84	53393
1369828	Invoice	10/12/2020	MEDICAL INSURANCE- November		0.00	12,577.84	
01149	TURLOCK IRRIGATION DIST.		10/13/2020	Regular	0.00	38.73	53394
INV0004291	Invoice	09/15/2020	ELECTRIC		0.00	38.73	
01206	WARDEN'S OFFICE		10/13/2020	Regular	0.00	141.13	53395
2038990-0	Invoice	10/01/2020	MISC OFFICE SUPPLIES		0.00	94.92	
2039386-0	Invoice	10/07/2020	MISC OFFICE SUPPLIES		0.00	46.21	
01420	CALIFORNIA STATE DISBURSEMENT UNIT		10/15/2020	Regular	0.00	40.12	53403
INV0004343	Invoice	10/16/2020	INCOME WITHHOLDING FOR CHILD SUPPORT		0.00	40.12	
00016	ABS PRESORT		10/20/2020	Regular	0.00	932.83	53404
124705	Invoice	10/08/2020	BILL PRINTING- OCTOBER		0.00	932.83	
01532	Adrian Luna		10/20/2020	Regular	0.00	140.02	53405
INV0004360	Invoice	10/19/2020	Work Boots		0.00	140.02	
00032	AFLAC		10/20/2020	Regular	0.00	632.38	53406
787328	Invoice	10/12/2020	AFLAC		0.00	632.38	

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
00116	BARTLE WELLS ASSOCIATES,I		10/20/2020	Regular	0.00	1,171.75	53407
1004O	Invoice	09/28/2020	Wastewater Rate Study		0.00	1,171.75	
00284	CHARTER COMMUNICATION		10/20/2020	Regular	0.00	92.78	53408
0054047101020	Invoice	10/10/2020	IP ADDRESS- 1ST		0.00	92.78	
00310	CLARK'S PEST CONTROL		10/20/2020	Regular	0.00	110.00	53409
26898864	Invoice	10/12/2020	PEST CONTROL		0.00	110.00	
01570	CSG Consultants		10/20/2020	Regular	0.00	4,710.00	53410
33108	Invoice	10/09/2020	Contract Services Planning/Building		0.00	4,320.00	
B201278	Invoice	10/01/2020	Walker Place Appartments		0.00	390.00	
00464	EZ NETWORK SOLUTIONS		10/20/2020	Regular	0.00	5,615.21	53411
38888	Invoice	10/15/2020	IT Services (Covid-19)		0.00	5,615.21	
01398	Jose Vasquez		10/20/2020	Regular	0.00	210.30	53412
INV0004355	Invoice	10/16/2020	Work Boots		0.00	210.30	
00738	LUNA, SAM		10/20/2020	Regular	0.00	118.65	53413
INV0004354	Invoice	10/17/2020	Work Boots		0.00	118.65	
00879	PG & E		10/20/2020	Regular	0.00	45.21	53414
INV0004357	Invoice	10/02/2020	UTILITIES		0.00	45.21	
00884	PITNEY BOWES		10/20/2020	Regular	0.00	500.00	53415
INV0004358	Invoice	10/13/2020	POSTAGE		0.00	500.00	
01408	RAYA, NEIL		10/20/2020	Regular	0.00	161.81	53416
INV0004361	Invoice	10/19/2020	Work Boots		0.00	161.81	
00966	RUIZ, EDUARDO		10/20/2020	Regular	0.00	226.53	53417
INV0004356	Invoice	10/16/2020	Work Boots		0.00	226.53	
01009	SHRED-IT USA LLC		10/20/2020	Regular	0.00	165.08	53418
8180626741	Invoice	10/07/2020	Shredding		0.00	165.08	
01055	STAPLES		10/20/2020	Regular	0.00	118.65	53419
2649813471	Invoice	09/22/2020	Code Enforcement Scanner		0.00	118.65	
01579	Tribe Pilates and Fitness, LLC		10/20/2020	Regular	0.00	3,500.00	53420
INV0004359	Invoice	10/20/2020	Hughson Business Relief Program		0.00	3,500.00	
01147	TURLOCK JOURNAL		10/20/2020	Regular	0.00	230.00	53421
274935	Invoice	09/30/2020	Bid Publication		0.00	230.00	
01162	UNITED WAY OF STANISLAUS		10/20/2020	Regular	0.00	25.00	53422
INV0004348	Invoice	10/16/2020	United Way Contribution-EE		0.00	25.00	
01171	URBAN FUTURES INCORP		10/20/2020	Regular	0.00	1,880.53	53423
CD-2020-65	Invoice	10/20/2020	Tax Allocation Refunding Bonds, Series 2015		0.00	1,880.53	
01176	USA BLUE BOOK		10/20/2020	Regular	0.00	1,259.95	53424
359860	Invoice	10/09/2020	service parts		0.00	1,259.95	
01180	V. RIVERA CONCRETE		10/20/2020	Regular	0.00	2,300.00	53425
1397	Invoice	10/09/2020	sidewalk repair		0.00	2,300.00	
01206	WARDEN'S OFFICE		10/20/2020	Regular	0.00	146.71	53426
2039584-0	Invoice	10/09/2020	MISC OFFICE SUPPLIES		0.00	146.71	
00109	BADGER METER, INC		10/30/2020	Regular	0.00	337.89	53427
80059895	Invoice	10/21/2020	water meter		0.00	337.89	
00123	BAY ALARM CO		10/30/2020	Regular	0.00	199.50	53428
2256342201015M	Invoice	10/15/2020	MONITORING OF ALARMS		0.00	199.50	

Vendor Number / Payable #	Vendor Name / Payable Type	Post Date	Payment Date / Payable Description	Payment Type	Discount Amount / Discount Amount	Payment Amount / Payable Amount	Number
00258	CENTRAL SANITARY SUPPLY		10/30/2020	Regular	0.00	48.54	53429
1107111	Invoice	09/17/2020	Blanket PO		0.00	48.54	
01538	Colonial Life		10/30/2020	Regular	0.00	446.48	53430
E5405907	Invoice	10/18/2020	Colonial Life		0.00	446.48	
00462	EWING IRRIGATION PRODUCTS		10/30/2020	Regular	0.00	197.56	53431
12716391	Invoice	10/01/2020	BLANKET P.O. EWING IRRIGATION		0.00	197.56	
00614	HUGHSON FARM SUPPLY		10/30/2020	Regular	0.00	2,420.67	53432
S108427-01	Invoice	10/21/2020	pump		0.00	2,420.67	
01459	Merry Mayhew		10/30/2020	Regular	0.00	199.75	53433
INV0004366	Invoice	10/22/2020	Staff Meeting/ Open Enrollment Lunch		0.00	199.75	
00824	NEUMILLER & BEARDSLEE		10/30/2020	Regular	0.00	8,420.79	53434
312280	Invoice	10/19/2020	LEGAL SERVICES		0.00	1,600.00	
312632	Invoice	10/19/2020	LEGAL SERVICES		0.00	6,820.79	
00837	NORTHSTAR CHEMICAL		10/30/2020	Regular	0.00	1,628.75	53435
181183	Invoice	10/29/2020	Blanket PO		0.00	1,375.63	
181186	Invoice	10/29/2020	Blanket PO		0.00	170.58	
181189	Invoice	10/29/2020	Blanket PO		0.00	82.54	
00944	RESCUE ENGINEERS, INC		10/30/2020	Regular	0.00	122,871.57	53436
INV0004391	Invoice	10/27/2020	Well 7- Phase III (1)		0.00	122,871.57	
01000	SEEGER'S		10/30/2020	Regular	0.00	212.51	53437
0135093-IN	Invoice	10/23/2020	OFFICE SUPPLIES		0.00	212.51	
01562	Tom Mayo Construction, Inc.		10/30/2020	Regular	0.00	16,341.84	53438
2020015-01b	Invoice	10/26/2020	Santa Fe Resurfacing- Retention		0.00	16,341.84	
01149	TURLOCK IRRIGATION DIST.		10/30/2020	Regular	0.00	30,757.12	53439
INV0004390	Invoice	10/29/2020	ELECTRIC		0.00	30,757.12	
01152	TYLER TECHNOLOGIES		10/30/2020	Regular	0.00	883.74	53440
02-312598	Invoice	11/01/2020	Annual Fee		0.00	883.74	
01162	UNITED WAY OF STANISLAUS		10/30/2020	Regular	0.00	25.00	53441
INV0004383	Invoice	10/30/2020	United Way Contribution-EE		0.00	25.00	
01192	VISION SERVICE PLAN		10/30/2020	Regular	0.00	460.51	53442
810699962	Invoice	10/19/2020	MEDICAL INSURANCE WITHHELD- NOVEMB...		0.00	460.51	
01216	WEST TURLOCK SUBBASIN GRO		10/30/2020	Regular	0.00	11,184.35	53443
2020-GSP	Invoice	10/28/2020	Grant Cost Sharing Contribution		0.00	1,184.35	
2021-8	Invoice	10/28/2020	2021 Memebership Fee		0.00	10,000.00	
01420	CALIFORNIA STATE DISBURSEMENT UNIT		10/30/2020	Regular	0.00	40.12	53444
INV0004378	Invoice	10/30/2020	INCOME WITHHOLDING FOR CHILD SUPPORT		0.00	40.12	
01479	BB Prints It		10/30/2020	Regular	0.00	608.42	53445

Vendor Number	Vendor Name		Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	**Payable Type**	**Post Date**	**Payable Description**		**Discount Amount**	**Payable Amount**	
20257-INV	Invoice	10/29/2020	Signs- Covid		0.00	608.42	

Bank Code Payable Bank Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	105	70	0.00	354,102.83
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	105	**70**	**0.00**	**354,102.83**

All Bank Codes Check Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	105	70	0.00	354,102.83
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	105	**70**	**0.00**	**354,102.83**

Fund Summary

Fund	Name	Period	Amount
999	POOLED CASH/CONSOLIDATED CASH	10/2020	354,102.83
			354,102.83

CITY COUNCIL AGENDA ITEM NO. 3.3
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Consideration to Re-appoint Chris Barth to the Parks, Recreation and Entertainment Commission**
Enclosure: **Application for the Parks, Recreation and Entertainment Commission: Chris Barth**
Presented By: **Ashton Gose, Deputy City Clerk**
Approved By: Merry Mayhew

Staff Recommendation:

Re-appoint Chris Barth to the Parks, Recreation and Entertainment Commission.

Background and Overview:

The Hughson Parks, Recreation and Entertainment Commission provides recommendations to the City Council regarding policies for acquisition, development, maintenance, and improvement of park facilities. The Commission is also responsible for formulating and recommending appropriate fee schedules, policies, rules and regulations for park sites and other recreation facilities.

The Commission consists of five members appointed by the Mayor, with a majority of the City Council, to alternating two-year terms. Currently, there are two (2) vacancies on the Commission, for a term set to expire on December 31, 2020. The application period for this vacancy was advertised starting October 1, 2020, with a deadline of 5:00 PM on October 30, 2020.

Staff received an application from incumbent Chris Barth for the Commission vacancy, no other application has been received to date. If appointed, his term will begin on January 1, 2021 and expire on December 31, 2022. City staff conferred with Mayor Jeramy Young regarding the recommendation to re-appoint this applicant. Mayor Young agreed with the recommendation and asked staff to present the item to the City Council for a majority vote.

At this time, the City Council has the opportunity to discuss this application, ask the applicant questions if necessary, and ultimately appoint the applicant with a majority

vote. To do so, the item would need to be pulled from the Consent Calendar by a member of the City Council.

Since there is still one Commission term set to expire on December 31, 2020, staff will reopen the application period on November 16, 2020, and advertise the vacancy until filled.

Fiscal Impact:

There is no fiscal impact associated with this item.

RECEIVED
SEP 29 2020
City Clerk's Office
City of Hughson

CITY OF HUGHSON
APPLICATION FOR PARKS, RECREATION AND ENTERTAINMENT COMMISSION

NAME: Chris Barth

HOME ADDRESS: [redacted] Hughson. CA 95326

DO YOU LIVE WITHIN CITY LIMITS? YES _____ NO X

EMAIL: [redacted]

HOME PHONE: — CELL PHONE: [redacted]

ARE YOU RELATED TO CURRENT CITY EMPLOYEES? YES _____ NO X

IF YES, PLEASE LIST EMPLOYEE'S NAME AND RELATIONSHIP:

OCCUPATION: Farmer / Realtor

BUSINESS ADDRESS:

EDUCATION (HIGHEST SCHOOL YEAR, DEGREES, ETC.):
Grad - Hughson 1971 some college BYU

*EMPLOYMENT HIGHLIGHTS (Please submit resume)

PRIOR PUBLIC SERVICE (IF ANY): See attachment

PRESENT AND PAST COMMUNITY ACTIVITIES (PLEASE DO NOT LIST PARTISAN POLITICAL ACTIVITIES): See attachment

WHAT DO YOU BELIEVE ARE THE MOST IMPORTANT ISSUES FACING HUGHSON TODAY (Relative to the position being sought)? New development, Parks and recreation for all the community.

SIGNATURE: Chris Barth DATE: 9-27-2020

Deliver or mail to: **City Clerk, City Hall**
7018 Pine Street/ P.O. Box 9
Hughson, CA. 95326

DEADLINE FOR FILING – MUST BE RECEIVED AT CITY HALL BY: FRIDAY, OCTOBER 30, 2020 BY 5:00 P.M.

CANDIDATE'S STATEMENT

As a candidate for the PARKS, RECREATION AND ENTERTAINMENT COMMISSION of the City of Hughson, I submit the following statement on why I am interested in serving as a City Commissioner:

My name is _____

DATE _____ _____
SIGNATURE

RE: City of Hughson Parks, Recreation and Entertainment Commission

Dear Mayor and City Council

I am pleased to submit my application for Parks, recreation and Entertainment Commission for the City of Hughson. My wife Sarah and I are the parent of five children and 14 grand children and have enjoyed living in the community of Hughson for many years.

I am a devoted family man, who believes in family values, common sense, integrity, involvement, commitment and leadership. I have not only spent much of my life as a successful businessman but I have also been busy providing leadership and service at many other levels: Past involvement School Board Member, County Planning Commission, Rotary Club and from Farm Bureau Board to the State Water Quality Control Board. Currently I'm serving on the City of Hughson Parks, Recreation and Entertainment Commission, Central Valley Association of Realtors Board and the Pinecrest Permittees Association Board.

An ability to deal with people in our widely diverse community and to quickly assess problems and apply appropriate solutions warrants trust and confidence. My established record of dedication and contribution to my work is exemplary. I am committed to foster team spirit, provide support and represent to City of Hughson in a professional manner at all times.

I love Hughson and I toughly enjoy serving on the City of Hughson Park, Recreation and Entertainment Commission and will continue to be dedicated and work diligently with fellow commissioners, staff and to the City of Hughson.

If you need any more information please don't hesitate to call me.

Sincerely,

Chris Barth
[redacted]n
[redacted]

CITY COUNCIL AGENDA ITEM NO. 3.4
SECTION 3: CONSENT CALENDAR

Meeting Date:	**November 9, 2020**
Subject:	**Consideration to Appoint Alan McFadon to the Planning Commission**
Enclosure:	**Application for the Planning Commission: Alan McFadon**
Presented By:	**Ashton Gose, Deputy City Clerk**
Approved By:	Merry Mayhew

Staff Recommendation:

Appoint Alan McFadon and Randy Crooker to the Planning Commission.

Background and Overview:

The Hughson Planning Commission consists of five members appointed by the Mayor, with a majority of the City Council, to alternating two-year terms. Currently, there are two (2) scheduled vacancies for the Planning Commission, for terms set to expire on December 31, 2020. On October 1, 2020, City staff advertised these vacancies and allowed for applications with a filing deadline of October 30, 2020. Two (2) applications were received by the filing deadline.

Incumbent Alan McFadon, and new applicant Randy Crooker, have expressed interest to serve on the Planning Commission by means of the application process. If each are appointed, their term will begin on January 1, 2021 and expire on December 31, 2022.

City staff conferred with Mayor Jeramy Young after the application deadline regarding the recommendation to re-appoint the incumbent and appoint the new applicant. Mayor Young agreed with the recommendation and asked staff to present the item to the City Council for a majority vote.

At this time, the City Council has the opportunity to discuss these applications, ask the applicants questions if necessary, and ultimately appoint the applicants with a majority vote. To do so, the item would need to be pulled from the Consent Calendar by a member of the City Council.

Fiscal Impact:

Per the Hughson Municipal Code, Hughson Planning Commissioners are compensated $50 per meeting attended and reimbursement of necessary travel and other expenses incurred by the performance of their official duties. The City's annual budget includes funding for this commitment.

RECEIVED
OCT 05 2020
City Clerk's Office
City of Hughson

CITY OF HUGHSON
APPLICATION FOR PLANNING COMMISSION

NAME: ALAN F. MCFADON

HOME ADDRESS: [redacted]

DO YOU LIVE WITHIN CITY LIMITS? YES X NO ____

EMAIL: [redacted]

HOME PHONE: N/A CELL PHONE: [redacted]

ARE YOU RELATED TO CURRENT CITY EMPLOYEES? YES ____ NO X

IF YES, PLEASE LIST EMPLOYEE'S NAME AND RELATIONSHIP:

OCCUPATION: Retired ! (911 DISPATCH MANAGER)

BUSINESS ADDRESS: SR911 = 3705 OAKDALE RD, MODESTO

EDUCATION (HIGHEST SCHOOL YEAR, DEGREES, ETC.): BA

*EMPLOYMENT HIGHLIGHTS (Please submit resume)

PRIOR PUBLIC SERVICE (IF ANY): Hughson Planning Commission

PRESENT AND PAST COMMUNITY ACTIVITIES
(PLEASE DO NOT LIST PARTISAN POLITICAL ACTIVITIES):

WHAT DO YOU BELIEVE ARE THE MOST IMPORTANT ISSUES FACING HUGHSON TODAY (Relative to the position being sought)? SMART growth to include business and residential

SIGNATURE: [signature] DATE: 10-2-2020

Deliver or mail to: **City Clerk, City Hall**
7018 Pine Street/ P.O. Box 9
Hughson, CA. 95326

DEADLINE FOR FILING – MUST BE RECEIVED AT CITY HALL BY: WEDNESDAY, OCTOBER 30, 2020 BY 5:00 P.M.

CANDIDATE'S STATEMENT

As a candidate for the PLANNING COMMISSION of the City of Hughson, I submit the following statement on why I am interested in serving as a City Commissioner:

My name is ALAN MCFADOW AND I LOOK forward TO serving AS I have for many years.

thank you!

DATE 10-2-2020

SIGNATURE

RECEIVED
OCT 30 2020
City Clerk's Office
City of Hughson

CITY OF HUGHSON
APPLICATION FOR PLANNING COMMISSION

NAME: Randy Crooker

HOME ADDRESS: 7[redacted]son, CA 95326

DO YOU LIVE WITHIN CITY LIMITS? YES X NO

EMAIL: [redacted]m

HOME PHONE: CELL PHONE: ([redacted]

ARE YOU RELATED TO CURRENT CITY EMPLOYEES? YES NO X

IF YES, PLEASE LIST EMPLOYEE'S NAME AND RELATIONSHIP:

OCCUPATION: Project Manager, Applied Process Cooling Corporation

BUSINESS ADDRESS: 4812 Enterprise Way Modesto, CA 95356

EDUCATION (HIGHEST SCHOOL YEAR, DEGREES, ETC.): Bachelors of Science, Business Administration, CSU Stanislaus

*EMPLOYMENT HIGHLIGHTS (Please submit resume)

PRIOR PUBLIC SERVICE (IF ANY):

PRESENT AND PAST COMMUNITY ACTIVITIES (PLEASE DO NOT LIST PARTISAN POLITICAL ACTIVITIES): T-Ball Coach, Hughson Youth Baseball

WHAT DO YOU BELIEVE ARE THE MOST IMPORTANT ISSUES FACING HUGHSON TODAY (Relative to the position being sought)? Parkwood Subdivision. Making sure that the project is executed in such a way that is beneficial to the community. Helping to ensure that it is a project that all of Hughson can be proud of. Supporting the growth and development of our downtown community and businesses..

SIGNATURE: Randy Crooker DATE: 10-28-20

Deliver or mail to: **City Clerk, City Hall**
7018 Pine Street/ P.O. Box 9
Hughson, CA. 95326

DEADLINE FOR FILING – MUST BE RECEIVED AT CITY HALL BY: FRIDAY, OCTOBER 30, 2020 BY 5:00 P.M.

CANDIDATE'S STATEMENT

As a candidate for the PLANNING COMMISSION of the City of Hughson, I submit the following statement on why I am interested in serving as a City Commissioner:

My name is Randy Crooker and I have been a resident of Hughson for 20 plus years. I am proud to call Hughson my Hometown. I have many special memories of my time in Hughson. They include playing sports, attending Friday night football games and even meeting my future wife while attending Hughson High School. My wife and I both graduated from Hughson Highs School. We now have 2 kids attending Hughson schools. One in 3rd grade and one in kindergarten. We look forward to raising our family here just as we were raised here.

The recent news and proposed Parkwood Subdivision has peaked my interest in city government, and how issues such as this are determined with the General Plan. In 2006 when the last General Plan was written I was a recent high school graduate and not concerned about or aware of city operations. Now that I am older and raising a family of my own I look forward to the opportunity to serve our community and set its course for future success. I understand the Parkwood Subdivision is currently a hot button issue. If chosen for the planning commission I will work diligently to educate myself of all the pros and cons and make sure that we develop a plan that is a positive for the whole community. I also look forward to continuing the growth of our downtown community and it's businesses.

I have what I consider to be a unique combination of education and work history. I look to leverage my business degree with my 11 plus years in the construction industry into a position on the planning commission. I am a hard worker and I have a drive to continuously learn and grow myself not only in my career but also as an individual. I will apply that same passion and drive in my role as a commissioner to continue Hughson on a positive path forward that is adapting and improving well into the future.

Thank you for your consideration.

DATE 10-28-20

Randy Crooker
SIGNATURE

Randy Crooker

[redacted]t

Hughson CA, 95326

[redacted]

r[redacted]t

Resume Objective:

Experienced and driven Project Manager with 11 years' experience in the construction industry looking to leverage that experience along with my Bachelor's degree in Business Administration into a position on the Planning Commission for the City of Hughson.

Skills:

- Ability to positively contribute to a team environment
- Able to learn and use new tools and technologies
- Ability to find solutions to project related problems through research and collaboration
- Ability to effectively communicate both verbally and written
- Ability to make appropriate decisions based on costs and benefits of potential actions
- Understand written work related documents (Plans, specs, shop drawings, contracts, etc.)
- Self-Motivated and critical thinker, with the ability to work alone or as part of team

Work History:

Applied Process Cooling Corporation **March 2017 –Present**

Purchasing Agent – March 2017-January 2020

Project Manager – January 2020-Present

- Purchased major equipment and construction materials for the Modesto Construction team
- Coordinated the on time delivery and arrival of major equipment and materials of construction
- Coordinated with other departments/employees in order to effectively complete tasks and projects
- Continually worked to improve the purchasing and inventory processes and procedures
- Directed Project development from beginning to end by collaborating with the construction team
- Developed full scale project plans and schedules
- Balanced the competing demands for quality, scope, time, job cost and safety
- Maintained and provided all necessary project info to clients, engineers and construction teams

Sheet Metal Workers Local Union No. 104 **May 2009 – Present**

-Bay City Mechanical, Frank M. Booth, DDK Mechanical, Champion Industrial Contractors

- Successful installation of complete HVAC Duct systems on many large scale construction projects
- Field measurement and lay out of duct fittings and hanger systems
- Coordinated with other trades in order to find acceptable solutions to conflicts
- Developed solutions to construction related problems using a given set of parameters
- Communicated to the guys working for me the necessary information for them to complete their jobs
- Communicated to my foreman any needs, issues, or solutions we may have
- **Notable Projects:** War Memorial Veterans Building in San Francisco, Science Building at UC Merced, Science Building at MJC west campus, Stanislaus Public Safety Center in Stanislaus County, 801 Brannan St Apartments in San Francisco, and Oak Valley Hospital in Oakdale

Education:

Bachelors of Science – Business Administration **2008**

California State University Stanislaus

References:

Jim Helsel, Applied Process Cooling Corp.

[redacted]Vay
06
[redacted]

Andy Bradbury, Frank M. Booth

[redacted]eet
[redacted]m

Steve Mazza, Personal

[redacted]

CITY COUNCIL AGENDA ITEM NO. 3.5
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Approval of City Hall Closure during the Holiday Period of December 24, 2020 at Noon through January 1, 2021**
Presented By: **Ashton Gose, Management Analyst**

Approved By: Merry Mayhew

Staff Recommendation:

Authorize the closure of City Hall from December 24, 2020 at Noon through January 1, 2021.

Background:

In the past, the City Council has approved the closing of City Hall during the period of December 24 through January 1. The City annually observes December 25 and January 1 as regular holidays. The month of December is the slowest time of the year for City services and government offices in general. Historically, office traffic is typically very slow during this week and building permit activity is nearly non-existent. Additionally, the closure during the holiday season allows City employees the opportunity to spend time with their families with minimal effects or consequences to the community.

Discussion:

City Hall is already scheduled to be closed on December 25th for Christmas Day and on January 1st for New Year's Day. With this proposal, City Hall would be closed four and one-half additional days including Thursday, December 24 at noon (Christmas Eve), and Monday, December 28, 2020 through Thursday, December 31, 2020. City Hall would reopen for business on Monday, January 4, 2021.

As practiced with past closures during the holiday season, City employees would use their accrued leave time for the additional four days between Christmas and New Years Day. The City Manager is granting all staff four hours of additional holiday time for Christmas Eve. Vacation time used by employees during this period helps to lower future vacation accrual liability.

Select Public Works, Utilities, and office staff would still be working and performing critical tasks. Additionally, normal on call procedures would be followed in order to handle any emergencies that may occur during this time. The City Manager will also be available during this time by phone or as needed to address any issues that warrant an immediate response.

Following approval of the closure for the upcoming holiday season, the City would have six weeks to inform the community that City Hall will be closed. City staff would post an announcement of the closure in the December newsletter that is mailed to every utility customer at the beginning of December, as well as post signs at City Hall and provide notifications on the City website and social media. With adequate notice and outreach, community members will be made aware that the City will be closed and can plan to take care of City business either before or after the closure.

City utility bills are currently due on the last business day of the month. With the office closure, the deadline for utility bills would be extended to Monday, January 4, 2021.

Fiscal Impact:

The holiday closure as recommended is expected to result in lower accrual liability associated with City staff using their accrued leave and nominal savings in fuel costs due to maintaining minimal staffing in Public Works and Utilities.

CITY COUNCIL AGENDA ITEM NO. 3.6
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Approval of the Treasurer's Report for September 2020**
Presented By: **Crystal Aguilar, Treasurer**

Approved By: Merry Mayhew

Staff Recommendation:

Review and approve the City of Hughson Treasurer's Report for September 2020.

Background and Discussion:

The City Treasurer reviews the City's cash and investment practices and approves the monthly Treasury Reports and a quarterly Investment Portfolio Report. As of September 2020, the City of Hughson has a cash and investment balance total of $20,628,485 with $2,869,689 invested. All investment actions executed since the last report have been made in full compliance of the City of Hughson's Investment Policy. The City of Hughson will meet its expenditure obligations for the next six months as required by California Government Code Section 53646 (b) (2) and (3) respectively.

The Treasurer report for September 2020 reflects the most current representation of the City's funds and investments and provides a necessary outlook for both past, and present investment and spending habits. While investments and funds differ from time to time, it is the goal of the City to maintain safety and stability with its funds, while additionally promoting prudence and growth.

Attached is the City of Hughson Treasurer's Report for September 2020, along with supplementary graphs depicting the percentage of the City's total funds, a breakdown of the Developer Impact Fees, and an additional line plot graph further demonstrating the Developer Impact Fees. This graph depicts the Developer Impact Fees' actual balance for the past five years. After review and evaluation of the report, City staff has researched funds with a significant deficit balance and submit the following detailed explanation for September 2020:

Transportation Capital and CDBG Street Project Fund:

The Transportation Capital Project Fund currently reflects a negative balance of

($235,605), which is a negative difference of $12,616 from the previous year. The CDBG Street Project Fund currently reflects a negative balance of ($29,435) reflecting a negative difference of $16,513 from the previous year. As the City continues to produce transportation projects, the transportation fund will likely continue to show a negative balance. City staff will continue to monitor and report the status of these reimbursements as the funds become available.

Water Fixed Asset Replacement Fund:

The Water Fixed Asset Replacement Fund currently reflects a negative balance of ($760,193), which is a negative difference of $1,320,799 from the previous year. This deficit is attributable to Well 7 Replacement Project reimbursements not yet received from the State of California.

WWTP Expansion 2008 Fund:

The WWTP Expansion 2008 Fund currently reflects a negative balance of ($43,444), which is a negative difference of 375,142 from the previous year. This fund is used as a clearing account for a debt service payment and will be made whole.

Fiscal Impact:

As of September 2020, the City's cash, and investments total $20,628,485. This compares to an September 2019 balance of $19,911,326 and represents an increase of $717,159.

City of Hughson
Treasurer's Report
September 2020

	MONEY MARKET	GENERAL	REDEVELOPMENT**	TOTAL
Bank Statement Totals	$ 16,434,477.03	$ 1,472,938.44	$ -	$ 17,907,415.47
Adjustment	$ 15,057.00	$ 3,246.57		
Outstanding Deposits +	$ 134,828.06	$ -	$ -	$ 134,828.06
Outstanding Checks/transfers -	$ (19,241.98)	$ (264,204.75)	$ -	$ (283,446.73)
ADJUSTED TOTAL	$ 16,565,120.11	$ 1,211,980.26	$ -	$ 17,758,796.80
Investments: Various				$ 1,153,298.45
Multi-Bank WWTP				$ 1,631,867.17
Investments: L.A.I.F.		$ 42,328.79	$ 42,194.15	$ 84,522.94

General Ledger Adjustments
Wages Payable

TOTAL CASH & INVESTMENTS **$ 20,628,485.36**

Books - All Funds	September 2019	September 2020	Difference	% of Variance
100 GENERAL FUND	2,560,143.47	2,519,493.56	-40,649.91	-1.59%
105 GENERAL FUND CONTINGENCY RESERVE	946,583.14	976,604.59	30,021.45	3.17%
110 FIXED ASSESTS	-	-	0.00	n/a
210 SEWER	2,936,578.18	3,212,104.39	275,526.21	9.38%
215 SEWER FIXED ASSET REPLACEMENT	4,515,778.59	4,695,449.18	179,670.59	3.98%
220 SEWER DEV IMPACT FEE	1,633,311.63	1,864,292.59	230,980.96	14.14%
225 WWTP Expansion 2008	331,697.90	(43,443.97)	-375,141.87	-113.10%
240 WATER	1,574,069.36	2,429,293.64	855,224.28	54.33%
245 Water TCP123	(5,355.30)	(5,464.47)	-109.17	-2.04%
250 WATER DEV IMPACT FEE	(79,876.46)	8,289.03	88,165.49	110.38%
255 Water Fixed Asset Replacement	560,606.75	(760,192.53)	-1,320,799.28	-235.60%
270 COMMUNITY/SENIOR CENTER	9,617.35	6,125.76	-3,491.59	-36.31%
280 U.S.F. Resource Com. Center	(1,458.28)	(381.89)	1,076.39	73.81%
310 Garbage/Refuse	86,035.98	107,887.01	21,851.03	25.40%
320 GAS TAX 2103	125,637.11	152,069.79	26,432.68	21.04%
321 GAS TAX 2105	41,281.96	66,073.89	24,791.93	60.06%
322 GAS TAX 2106	7,437.36	7,990.16	552.80	7.43%
323 GAS TAX 2107	29,434.79	46,533.68	17,098.89	58.09%
324 GAS TAX 2107.5	2,422.14	3,672.14	1,250.00	51.61%
325 Measure L SALES TAX-ROADS	152,251.29	407,057.19	254,805.90	167.36%
326 SB-1 ROADS MAINTENANCE REHABILITATION	197,444.62	223,089.06	25,644.44	12.99%
340 LANDSCAPE LIGHTING DISTRICT	125,682.39	(8.49)	-125,690.88	-100.01%
350 BENEFIT ASSESMENT DISTRICT	220,214.61	(2.67)	-220,217.28	-100.00%
360 COMMUNITY FACILITIES DISTRICT	7,190.01	-	-7,190.01	-100.00%
370 COMMUNITY ENHANCEMENT DEV IMPACT FEE	133,991.89	154,337.89	20,346.00	15.18%
371 TRENCH CUT FUND	77,516.70	2,976.80	-74,539.90	-96.16%
372 IT RESERVE	111,802.54	98,346.75	-13,455.79	-12.04%
373 SELF-INSURANCE	73,303.49	73,303.49	0.00	0.00%
374 DIABILITY ACCESS AND EDUCATION	1,298.54	1,493.94	195.40	15.05%
381 AB109 PUBLIC SAFETY	35,722.29	35,722.29	0.00	0.00%
382 ASSET FORFEITURE	1,660.43	1,660.43	0.00	0.00%
383 VEHICLE ABATEMENT	22,660.86	33,770.20	11,109.34	49.02%
384 SUPPLEMENTAL LAW ENFORCEMENT SERVICE	214,010.19	275,819.65	61,809.46	28.88%
385 FEDERAL FUNDED OFFICER FUND	6,620.00	6,620.00	0.00	0.00%
390 98-EDBG-605 BUSINESS ASSISTANCE	93,595.60	93,595.60	0.00	0.00%
391 96-EDBG-438 Grant	403.43	403.43	0.00	0.00%
392 94-STBG-799 HOUSING REHAB	225,025.22	227,268.08	2,242.86	1.00%
393 HOME Program Grant (FTHB)	35,043.29	35,043.29	0.00	0.00%
394 96-STBG-1013 Grant	210,426.82	211,068.85	642.03	0.31%
395 CALHOME REHAB	40,000.00	40,000.00	0.00	0.00%
410 LOCAL TRANSPORTATION	71,671.34	51,671.34	-20,000.00	-27.91%
415 LOCAL TRANSPORTATION NON MOTORIZED	13,219.00	13,219.00	0.00	0.00%
420 TRANSPORTATION STREET PROJECTS	(222,989.00)	(235,605.14)	-12,616.14	-5.66%
425 PUBLIC WORKS STREET PROJECTS-CDBG	(12,921.48)	(29,434.66)	-16,513.18	-127.80%

450	STORM DRAIN DEV IMPACT FEE	438,626.94	501,763.78	63,136.84	14.39%
451	PUBLIC FACILITY DEV IMPACT FEE	1,315,559.09	1,393,754.91	78,195.82	5.94%
452	PUBLIC FACILITY STREET DEV IMPACT FEE	(38,872.36)	63,752.76	102,625.12	264.01%
453	PARK DEV IMPACT FEE	486,176.63	535,352.10	49,175.47	10.11%
454	PARKLAND IN LIEU	378,215.15	418,417.90	40,202.75	10.63%
510	WATER/SEWER DEPOSIT	65,611.81	75,158.17	9,546.36	14.55%
520	RDA SUCCESSOR AGENCY	157,219.14	244,878.78	87,659.64	55.76%
521	RDA FIXED ASSETS	-	-	0.00	n/a
530	LANDSCAPE LIGHTING DISTRICT	-	8,283.04	8,283.04	n/a
531	LANDSCAPE LIGHTING DISTRICT	-	48,352.63	48,352.63	n/a
532	LANDSCAPE LIGHTING DISTRICT	-	25,581.35	25,581.35	n/a
533	LANDSCAPE LIGHTING DISTRICT	-	33,918.03	33,918.03	n/a
534	LANDSCAPE LIGHTING DISTRICT	-	(36,397.57)	-36,397.57	n/a
535	LANDSCAPE LIGHTING DISTRICT	-	8,727.67	8,727.67	n/a
536	LANDSCAPE LIGHTING DISTRICT	-	17,883.18	17,883.18	n/a
537	LANDSCAPE LIGHTING DISTRICT	-	(48,825.12)	-48,825.12	n/a
538	LANDSCAPE LIGHTING DISTRICT	-	(26,517.07)	-26,517.07	n/a
539	LANDSCAPE LIGHTING DISTRICT	-	25,953.07	25,953.07	n/a
540	LANDSCAPE LIGHTING DISTRICT	-	43,625.84	43,625.84	n/a
541	LANDSCAPE LIGHTING DISTRICT	-	29,497.26	29,497.26	n/a
542	LANDSCAPE LIGHTING DISTRICT	-	4,087.21	4,087.21	n/a
550	BENEFIT ASSESMENT DISTRICT	-	66,115.54	66,115.54	n/a
551	BENEFIT ASSESMENT DISTRICT	-	10,879.46	10,879.46	n/a
552	BENEFIT ASSESMENT DISTRICT	-	114,279.11	114,279.11	n/a
553	BENEFIT ASSESMENT DISTRICT	-	868.60	868.60	n/a
554	BENEFIT ASSESMENT DISTRICT	-	45,532.46	45,532.46	n/a
560	BENEFIT ASSESMENT DISTRICT	-	15,749.40	15,749.40	n/a
	Developer Impact Fees ***	3,888,917.36	4,521,543.06	632,625.70	
	TOTAL ALL FUNDS:	**19,911,326.14**	**20,628,485.36**	717,159.22	

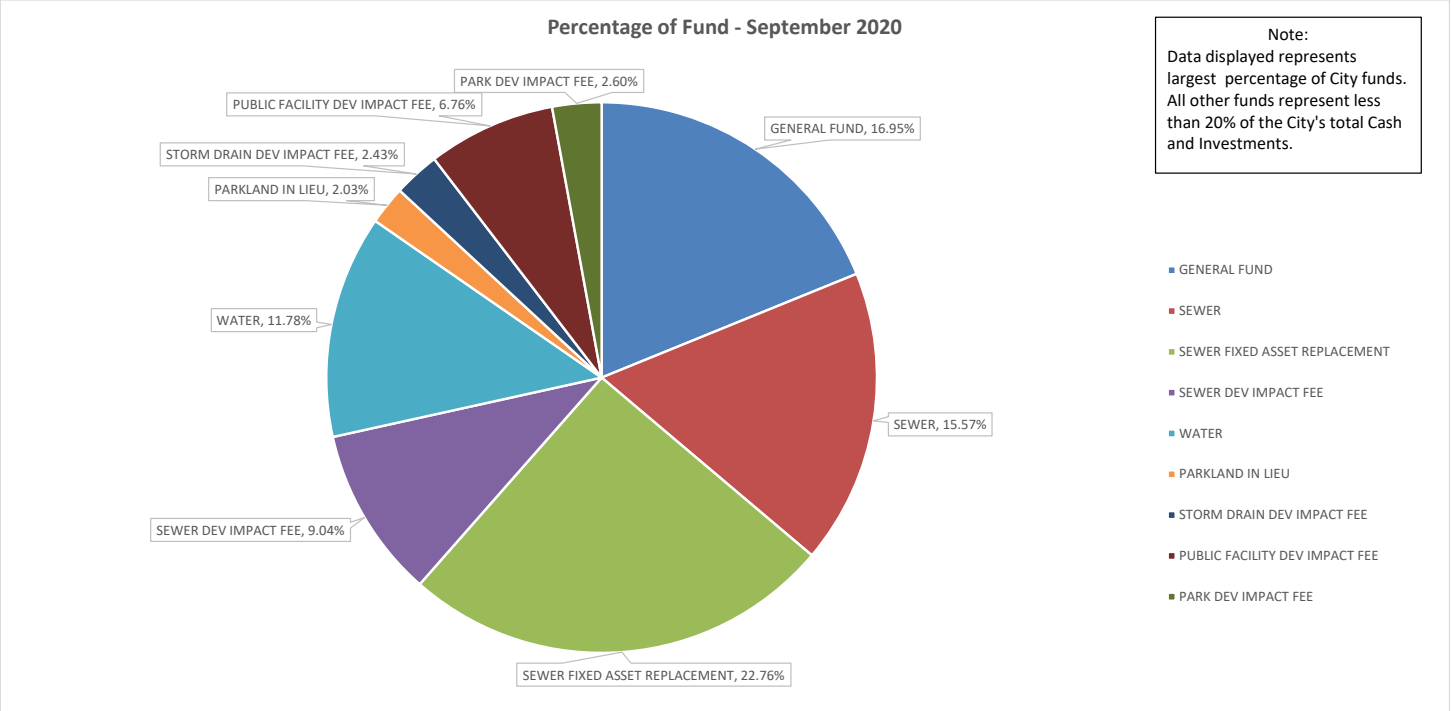
I hereby certify that the investment activity for this reporting period conforms with the Investment Policy adopted by the Hughson City Council, and the California Government Code Section 53601. I also certify that there are adequate funds available to meet the City of Hughson's budgeted and actual expenditures for the next six months.

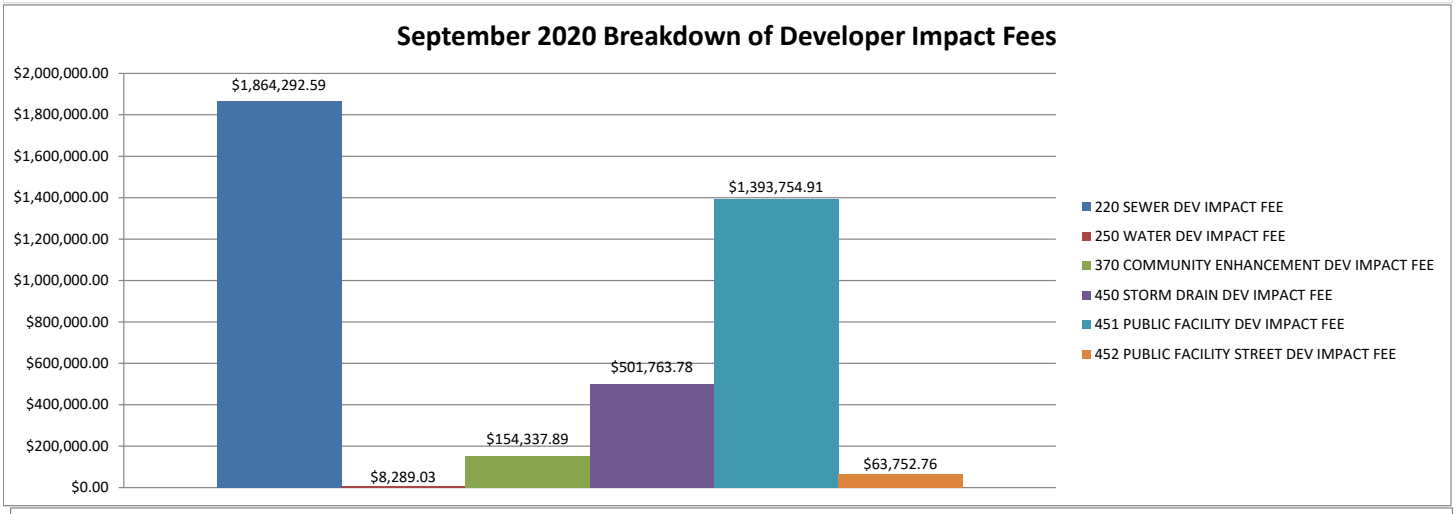
	Break Down of Impact Fees ***				
220	SEWER DEV IMPACT FEE	1,633,311.63	$1,864,292.59	230,980.96	14.14%
250	WATER DEV IMPACT FEE	-79,876.46	$8,289.03	88,165.49	110.38%
370	COMMUNITY ENHANCEMENT DEV IMPACT FEE	133,991.89	$154,337.89	20,346.00	15.18%
450	STORM DRAIN DEV IMPACT FEE	438,626.94	$501,763.78	63,136.84	14.39%
451	PUBLIC FACILITY DEV IMPACT FEE	1,315,559.09	$1,393,754.91	78,195.82	5.94%
452	PUBLIC FACILITY STREET DEV IMPACT FEE	-38,872.36	$63,752.76	102,625.12	264.01%
453	PARK DEV IMPACT FEE	486,176.63	$535,352.10	49,175.47	10.11%
	Break Down of Impact Fees * **	**3,888,917.36**	**4,521,543.06**	632,625.70	16.27%

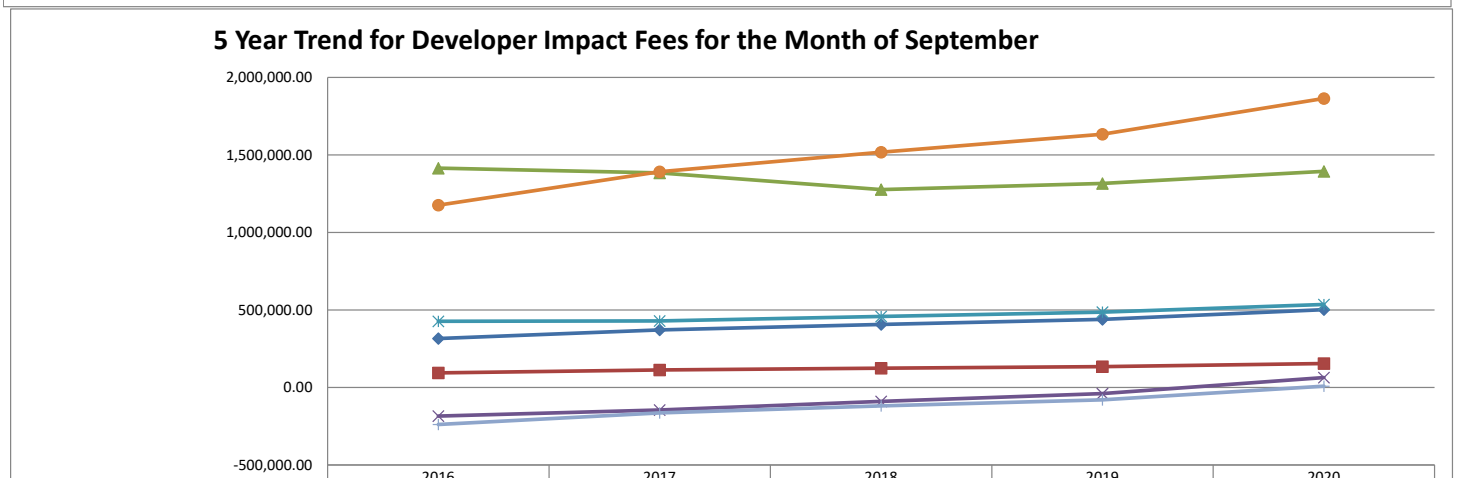
Crystal Aguilar, Treasurer

Date

Treasurer's Report - Charts and Graphs
September 2020







	2016	2017	2018	2019	2020
Storm Drain	315,611.35	371,809.30	406,042.01	438,626.94	501,763.78
Community Enhancement	93,978.51	113,282.03	124,552.12	133,991.89	154,337.89
Public Facilities Development	1,414,862.76	1,383,620.10	1,276,405.92	1,315,559.09	1,393,754.91
Public Facilities Development-Streets	-184,618.63	-145,287.49	-89,440.36	(38,872.36)	63,752.76
Parks Development Impact Fees	426,914.39	428,698.94	458,711.88	486,176.63	535,352.10
Sewer Developer Impact Fees	1,175,877.60	1,391,729.52	1,517,819.28	1,633,311.63	1,864,292.59
Water Developer Impact Fees	-238,870.44	-163,929.41	-119,412.37	(79,876.46)	8,289.03

CITY COUNCIL AGENDA ITEM NO. 3.7
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Approval of the Treasurer's Investment Portfolio Report**
Presented By: **Crystal Aguilar, Treasurer**

Approved By: Merry Mayhew

Staff Recommendation:

Review and approve the City of Hughson Treasurer's Quarterly Investment Portfolio Report for September 2020.

Summary:

The City Treasurer reviews the City's investment practices and approves the quarterly Portfolio of Investments Report. As of September 2020, the City of Hughson's investment total is $2,869,689 and has a total cash and investment balance of $20,628,485. All investment actions executed since the last report have been made in full compliance of the City of Hughson's Investment Policy. The City of Hughson will meet its expenditure obligations for the next six months as required by California Government Code Section 53646 (b) (2) and (3) respectively.

Discussion:

The Investment Portfolio Report is intended to provide supplementary documentation of the City of Hughson's investment practices. According to the City of Hughson's Investment Policy, the City Treasurer shall submit to the City Council a quarterly investment report containing a complete description of the portfolio, the type of investments, the issuers, maturity dates, par and dollar values, and the current market values of each component of the portfolio. As per the City's Investment Policy, when dealing with investment activities, the City of Hughson's primary objectives, in order of priority, are safety, liquidity, and return on investments.

The City of Hughson has utilized MBS Account Executive, Michael DeGeeter, as a third- party investor. According to Mr. DeGeeter, a 5-year Certificate of Deposit (CD) laddering approach is utilized for the City's investment practices. This approach layers various CDs depending on interest rates and timing, which allows for reduced portfolio rates and a continuous stream of maturity dates. Mr. DeGeeter states that

this CD approach has always spread positively for the City of Hughson and has had the highest yield of any spread thus far.

Attached is the City of Hughson Treasurer's Investment Portfolio Report for September 2020 along with supplementary graphs depicting the percentage of the City's portfolio of investments. City staff submits the following summary of investments:

Certificates of Deposits

The reported investments in CDs reflect the City's most current balance statement as of September 2020. The two accounts share a combined balance of $2,785,166, comprising 97.05% of the City's total portfolio of investments. This compares with the balance in June 2020, three months prior, of $2,778,332.

L.A.I.F. Investments

The reported Local Agency Investment Fund (L.A.I.F.) investments reflect the City's most current balance statement as of September 2020. The two L.A.I.F. accounts share a combined balance of $84,523, comprising of 2.95% of the City's total portfolio of investments. This compares with the L.A.I.F. accounts balance in June 2020, three months prior, of $84,216.

Fiscal Impact:

As of September 2020, the total investments balance for the City of Hughson is $2,869,689 accounting for 13.91% of the City's total cash and investments. The total cash and investment amount is $20,628,485. Of the amounts invested, 2.95% is invested in L.A.I.F. investments, and 97.05% is invested in Certificates of Deposit. City staff will continue to monitor and report on the City of Hughson's investment practices.

City of Hughson
Portfolio of Investments
September 2020

	MONEY MARKET	GENERAL	REDEVELOPMENT**	TOTAL
Bank Statement Totals	$ 16,434,477.03	$ 1,472,938.44	$ -	$ 17,907,415.47
Adjustment-Direct Deposit Payroll	$ 15,057.00	$ 3,246.57		$ -
Outstanding Deposits +	$ 134,828.06	-	$ -	$ 134,828.06
Outstanding Checks/transfers -	$ (19,241.98)	$ (264,204.75)	$ -	$ (283,446.73)
ADJUSTED TOTAL	$ 16,565,120.11	$ 1,211,980.26	$ -	$ 17,758,796.80
Investments: Various				$ 1,153,298.45
Multi-Bank WWTP				$ 1,631,867.17
Investments: L.A.I.F.		$ 42,328.79	$ 42,194.15	$ 84,522.94
General Ledger Adjustments				
Wages Payable				
Total Investments				**$ 2,869,688.56**
Total Cash & Investments				$ 20,628,485.36

All investment actions executed since the last report have been made in full compliance with the Investment Policy. The City of Hughson will meet its expenditure obligations for the next six months as required by California Governmnet Code Section 53646 (b)(2) and (3) respectively.

Breakdown of Investments

Investments: Various - ***850

Description	Maturity Dates	Quantity	Opening Balance	Closing Balance	Interest Accrued	% of Portfolio
Cash, Money, Funds. And Bank Deposits:			$ 3,581.46	$ 3,557.42	$ -	0.31%
Total:			$ 1,152,502.00	$ 1,153,298.45	$ -	

Fixed Income (Certificate of Deposits)	Maturity Dates	Quantity	Market Price	Market Value	Interest Accrued	Rate of Return	% of Portfolio
*SALLIE MAE BK SALT LAKE CITY UT	04/15/20-10/20/2020	120,000.00	$103.1220	$ 123,746.40	$ 773.26	1.350%	10.73%
*American Express	04/26/17-04/26/2022	100,000.00	$103.4440	$ 103,444.00	$ 1,032.33	2.320%	8.97%
BMO HARRIS	9/28/20-3/28/25	175,000.00	$100.1120	$ 175,196.00	$ 4.79	0.490%	15.19%
*Discover BK Greenwood Del CTF	11/21/18-11/22/21	37,000.00	$103.6170	$ 38,338.29	$ 434.88	3.130%	3.32%
*Morgan Stanley BK	10/30/19-10/30/24	130,000.00	$100.1770	$ 130,230.10	$ -	2.190%	11.29%
*Capital One NATL ASSN MCLEAN VA CTF	11/04/15 - 11/04/20	91,000.00	$100.2140	$ 91,194.74	$ 798.68	2.140%	7.91%
*Captial One BK USA NATL ASSN Glen Allen	11/04/15 - 11/04/20	100,000.00	$100.2140	$ 100,214.00	$ 877.67	2.140%	8.69%
*Dicover BK Greenwood Del CTF	11/04/15 - 11/04/20	110,000.00	$100.2090	$ 110,229.90	$ 987.89	2.190%	9.56%
*SALLIE MAE BK SALT LAKE CITY	06/12/18 - 06/14/21	27,000.00	$102.0690	$ 27,558.63	$ 241.89	2.930%	2.39%
*Capital One NATL ASSN MCLEAN VA CTF	09/28/16 - 09/28/21	126,000.00	$101.3570	$ 127,709.82	$ 11.74	1.670%	11.07%
*JP Morgan Chase BK NA Columbus Ohio	05/15/20-11/15/2023	65,000.00	$100.1080	$ 65,070.20	$ 245.75	0.990%	5.64%
SALLIE MAE BK SALT LAKE CITY	6/3/2020-12/03/20	55,000.00	$103.2890	$ 56,808.95	$ 152.42	0.820%	4.93%
Total CDs				$ 1,149,741.03	$ 5,561.30		99.69%
Total Investments: Various Holdings				$ 1,153,298.45	$ 5,408.88		100.00%
Total Portfolio Investment							**40.19%**

*Multi-Bank WWTP - ***934*

Description	Maturity Dates	Quantity	Opening Balance	Closing Balance	Interest Accrued		% of Portfolio
Cash, Money, Funds, and Bank Deposits:			$52,927.33	$ 54,847.27	$ -		3.36%
Total:			$1,631,115.16	$ 1,631,867.17	$ -		
Fixed Income (Certificate of Deposits)	**Maturity Dates**	**Quantity**	**Market Price**	**Market Value**	**Interest Accrued**	**Rate of Return**	**% of Portfolio**
MORGAN STANLEY PRIVATE BK	04/25/19-04/25/24	100,000.00	$108.8450	$ 108,845.00	$ 1,190.41	2.520%	6.67%
STATE BK INDIA NEW YORK	7/10/20-7/10/25	98,000.00	$103.1100	$ 101,047.80	$ 220.16	96.000%	6.19%
STATE BK INDIA NEW YORK	06/10/20-12/10/20	125,000.00	$103.3050	$ 129,131.25	$ 402.74	1.010%	7.91%
USALLIANCE NEW YORK	09/27/18-09/27/21	106,000.00	$102.9880	$ 109,167.28	$ 27.01	3.010%	6.69%
JPMORGAN CHASE BK	05/15/20-11/15/2023	120,000.00	$100.1080	$ 120,129.60	$ 453.70	0.990%	7.36%
Captial One BK USA NATL ASSN Glen Allen	11/04/15 - 11/04/20	211,000.00	$100.2140	$ 211,451.54	$ 1,851.89	2.140%	12.96%
Morgan Stanley BK N A SALT LAKE CITY	05/03/18-05/03/21	65,000.00	$101.6500	$ 66,072.50	$ 761.30	2.800%	4.05%
Capital One NATL ASSN MCLEAN VA CTF	09/28/16 - 09/28/21	51,000.00	$101.3570	$ 51,692.07	$ 4.75	1.670%	3.17%
FIRST TECHNOLOGY FED MTN VIEW	05/10/18-02/10/22	250,000.00	$103.9340	$ 259,835.00	$ 410.96	2.880%	15.92%
American Express Centurion Bk CTF DEP	04/26/17 - 04/26/22	67,000.00	$103.4440	$ 69,307.48	$ 691.66	2.320%	4.25%
TEXAS EXCHANGE	9/11/20-12/11/24	250,000.00	$100.0910	$ 250,227.50	$ 65.07	49.000%	15.33%
SALLIE MAE	7/1/20-7/1/25	98,000.00	$102.1560	$ 100,112.88	$ 195.46	78.000%	6.13%
Total CDs				$ 1,577,019.90	$ 6,275.11		96.64%
Total Multi-Bank WWTP Holdings				$ 1,631,867.17	$ 6,275.11		100.00%
Total Portfolio Investment							**56.87%**

L.A.I.F. Investments

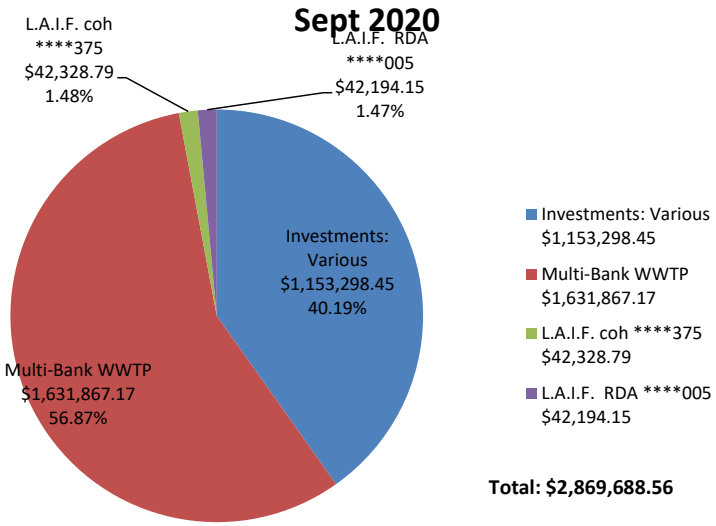
Account #	*Quarter Begin Principal as of July 2020*	*Quarterly Interest Earned as of Sept 2020*	*Interest Rate*	*Total*	*% of Investment*
****375	$ 42,174.90	$ 153.89	0.122%	$ 42,328.79	50.08%
****005	$ 42,040.75	$ 153.40	0.122%	$ 42,194.15	49.92%
Total L.A.I.F Investments Holdings				$ 84,522.94	100.00%
Total Portfolio Investment					**2.95%**

Crystal Aguilar, Treasurer

Date

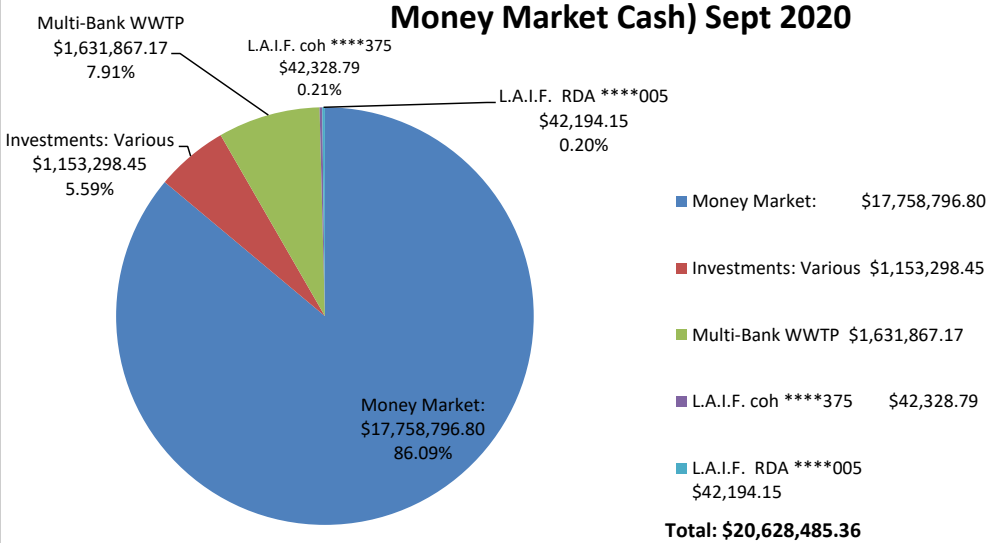
Charts and Graphs

Total Portfolio of Investments by Account Sept 2020



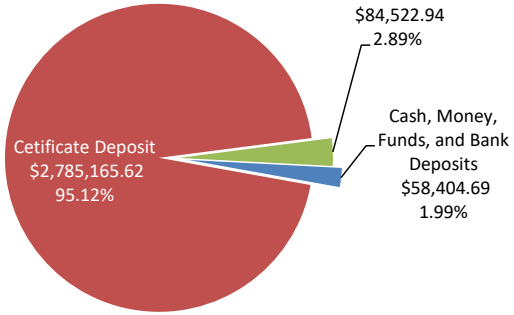
Total: $2,869,688.56

Total Portfolio of Investment (Including Money Market Cash) Sept 2020



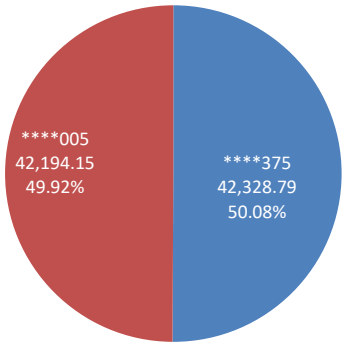
Total: $20,628,485.36

Total Portfolio of Investments by Type Sept 2020

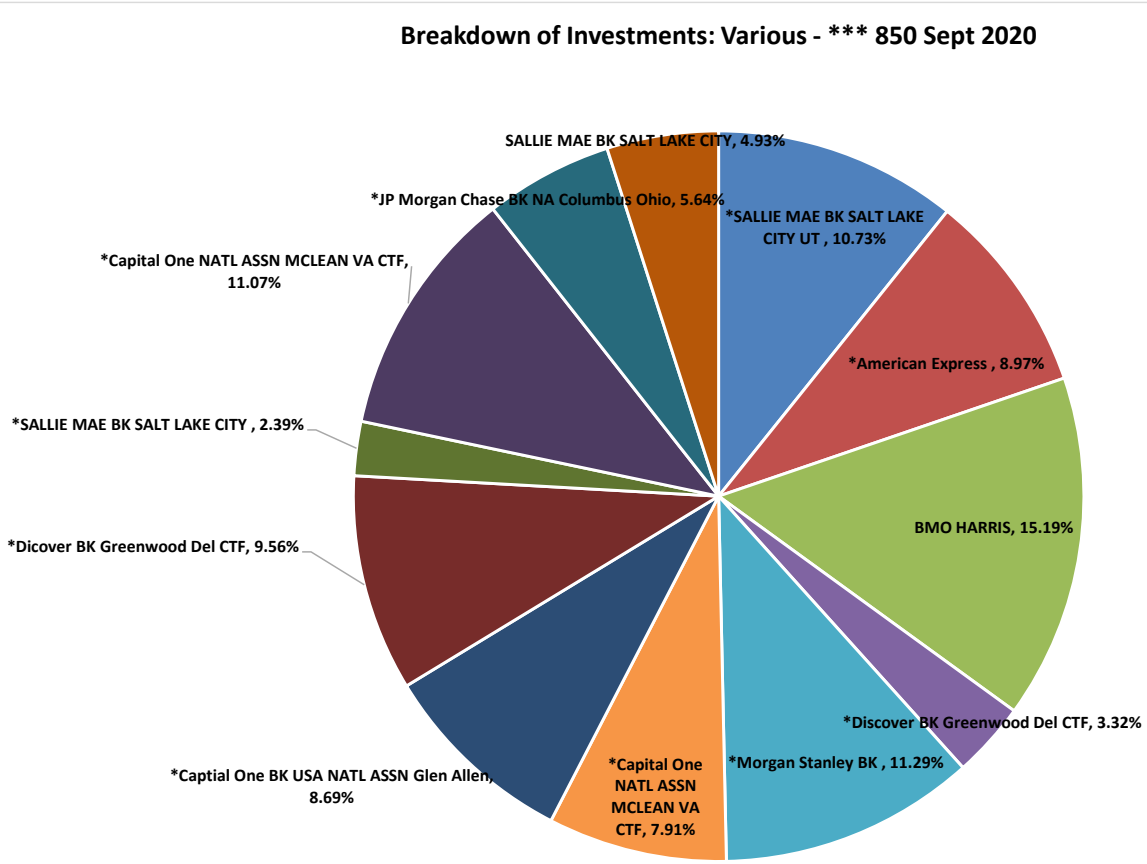


Total: $2,928,093.25

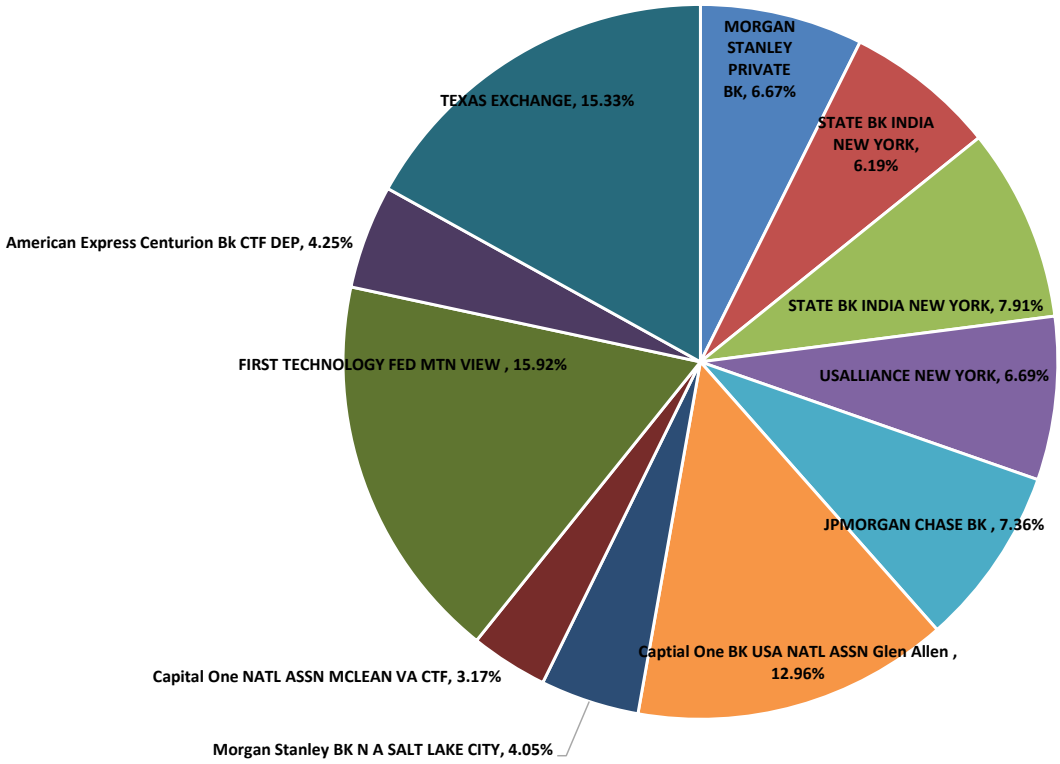
Breakdown of L.A.I.F. Investments Sept 2020



Total: $84,215.65


Breakdown of Investments: Various - *** 850 Sept 2020
SALLIE MAE BK SALT LAKE CITY, 4.93%
*JP Morgan Chase BK NA Columbus Ohio, 5.64%
*SALLIE MAE BK SALT LAKE CITY UT , 10.73%
*Capital One NATL ASSN MCLEAN VA CTF, 11.07%
*American Express , 8.97%
*SALLIE MAE BK SALT LAKE CITY , 2.39%
BMO HARRIS, 15.19%
*Dicover BK Greenwood Del CTF, 9.56%
*Discover BK Greenwood Del CTF, 3.32%
*Capital One NATL ASSN MCLEAN VA CTF, 7.91%
*Morgan Stanley BK , 11.29%
*Captial One BK USA NATL ASSN Glen Allen, 8.69%

Breakdown of Multi-Bank WWTP - *** 934 Sept 2020



CITY COUNCIL AGENDA ITEM NO. 3.8
SECTION 3: CONSENT CALENDAR

Meeting Date: **November 9, 2020**
Subject: **Approval to Contract for Facility Upgrades with Foster Brothers at a total cost of $43,802.07 and Vortex Industries, Inc., for a Total Cost of $19,873.60**
Enclosures: **Foster Brothers Security Systems, Inc. Cost Estimates**
Vortex Industries, Inc., Cost Estimate
Presented By: **Merry Mayhew, City Manager**

Approved By: Merry Mayhew

Staff Recommendations:

1. Approve contracting for facility upgrades at City Hall, Corporation Yard, and the Wastewater Treatment Plant facilities, for a total cost of $43,802.07.

2. Approve contracting for facility upgrades at the Sr. Center with Vortex Industries, Inc., for a total cost of $19,873.60.

Background and Overview:

Due to the current COVID-19 pandemic, the following City facilities have been closed to the public: City Hall, Senior Community Center, Wastewater Treatment Plant, and the Corporation Yard. During this time, City employees have continued to work, provide services, and have held appointments with the public as needed. The requested facility upgrades will provide an additional safety measure to protect City employees and the public from Covid-19, using automatic door openers with touchless sensors. The Senior Community Center doors would be changed to automatic bi-parting sliding “storefront” doors with automatic opening sensors.

Over the past two months, the Public Works Superintendent worked with three firms to get estimates for this work and on October 7, 2020, the City Council approved contracting with Vortex Industries, Inc., (Vortex) for facility upgrades in the amount of $45,200. At the time that City staff brought the recommendation to City Council, Vortex was considered to have submitted the lowest estimate for the upgrades.

Since that time, City staff have reviewed the estimate with Vortex and found that instead of submitting a total cost bid, Vortex had submitted an estimate per door. Based on this information, City staff again reviewed the three estimates received and found that the estimate submitted by Foster Brothers Security Systems, Inc., (Foster) was the lowest estimate for the upgrades at City Hall, the Corporation Yard, and the Wastewater Treatment Plant.

Vortex Industries was the only company that provided an estimate on changing the Sr. Center double doors to automatic bi-parting sliding “storefront” doors with automatic opening sensors.

Both the Vortex and Foster estimates include the necessary components, installation, and prevailing wage.

The Hughson Municipal Code (HMC) clearly defines procedures for informal bidding, including purchasing between $15,000 and $50,000 as referenced in HMC section 3.24.080. The purchasing officer shall solicit bids by written request to prospective vendors and award the bid to the bidder who best meets the City’s needs. However, the purchasing officer must first obtain the consent of the City Council before awarding any contract or purchase.

Fiscal Impact:

This purchase was referenced on Resolution No. 2020-48, “Attachment C, CARES Act Spending Plan”, which was approved by the City Council on July 27, 2020. The cost of the facility upgrades is funded through the Coronavirus Relief Funds (CRF) that the City received as a sub-recipient from Stanislaus County.

Sales Quote: Q20621

Customer ID CIT016

CA Contractor's License # 315373

Foster Brothers
555 South Murphy Ave.
Sunnyvale, CA 94086
Phone: (408) 736-4500
Fax: (408) 736-0468
www.fosterbrothers.com

Customer Original Page: 1

Bill To: CITY OF HUGHSON
ACCOUNTS PAYABLE
PO BOX 9
HUGHSON, CA 95326

Job Site: CITY OF HUGHSON
2301 1st St
7018 Pine St
6700 Leedom Rd

Date	Purchase Order No.	Salesperson	Terms	Our Order No.
09/01/20		Jeff Sanchez	NET 30 DAYS	Q20621

Quantity	Description	Unit Price	Discount %	Discount Unit Price	Amount
	CORPORATION YARD				
	DOOR 1				
1	DOOR/FRAME	1,207.72	20.00	966.18	966.18
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	STRIKE W/FACEPLATE 801	277.64	20.00	222.11	222.11
	DOOR 2				
1	DOOR/FRAME	1,207.72	20.00	966.18	966.18
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	STRIKE W/FACEPLATE 801	277.64	20.00	222.11	222.11
	CITY HALL				
	LOBBY DOOR				
1	ADAMS RITE MOTOR KIT	544.38	20.00	435.50	435.50
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	DR LOOP ALUM	41.84	20.00	33.47	33.47
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80
	COUNCIL CHAMBERS				
1	ADAMS RITE MOTOR KIT	544.38	20.00	435.50	435.50
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	DR LOOP ALUM	41.84	20.00	33.47	33.47
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	DOOR OPERATOR PAIR	5,738.00	20.00	4,590.40	4,590.40
	SHERIFF EXTERIOR				
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80
	SHERIFF INTERIOR				
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80
	DOOR 1				
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80

Quantity	Description	Unit Price	Discount %	Discount Unit Price	Amount
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	STRIKE W/FACEPLATE 801	277.64	20.00	222.11	222.11
	DOOR 2				
1	DOOR OPERATOR	2,906.00	20.00	2,324.80	2,324.80
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	STRIKE W/FACEPLATE 801	277.64	20.00	222.11	222.11
	DOOR 3				
1	DOOR OPERATOR	3,420.00	20.00	2,736.00	2,736.00
1	LASERPOINTE RECEIVER	115.00	20.00	92.00	92.00
1	TOUCHLESS WTO PACKAGE	472.00	20.00	377.60	377.60
1	STRIKE W/FACEPLATE 801	277.64	20.00	222.11	222.11
1	LABOR TO INSTALL ABOVE HDWE.	9,490.00		9,490.00	9,490.00

WILL REQUIRE 120VAC ABOVE
DOORS BY OTHERS.
SENOIR CENTER DOOR HARDWARE
UNKNOWN AT THIS TIME AND
IS NOT ON QUOTE

All material is garanteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become ar extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Worker's Disability Insurance.

NOTE: This proposal may be withdrawn by us if not accepted within _____ days

ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to complete this contract as specified and under above payment terms.

Signature or Company _____ Date of Acceptance _____

Authorized Signature _____

Foster Brothers Sales Consultant _____

Subtotal:	41,297.25
Sales Tax:	2,504.82
Total:	43,802.07

VORTEX

PROPOSAL

1-800-698-6783

To	Site	Date 8/13/2020
CITY OF HUGHSON 7018 PINE ST HUGHSON, CA 95326	SENIOR CENTER 2307 4TH STREET HUGHSON, CA 95326	
Attn. JOSE VASQUEZ		
Ref. # sq-441681	Phone Fax	Job Phone (209) 505-3049

In accordance with the terms and conditions stated hereinafter, and on the following pages, we propose to provide the following doors and / or repair work (hereinafter referred to as the "Product") on the following terms.

Senior Center Main Entrance

We propose to furnish, deliver, and install the following subject to the terms noted below:

One (1) new Surface Mount **Bi-parting Glass and Aluminum Automatic Sliding Storefront Door** for your existing opening with the following benefits:

- **Dark bronze anodized standard finishes**
- **Narrow stile with standard 10" bottom rails available to meet ADA requirements**
- **Clear tempered glass secured by new glass stops.**
- **All activation and safety sensors required for ANSI 156.10 compliance**
- **Full breakout or sliding panel breakout for emergency exit**
- **All door packages provided will comply with ANSI 156.10**

We will secure the new doors into place, align for proper clearance, lubricate all moving parts, adjust the operating speeds, test the locking system, clean the glass and surrounding area, and perform our Quality Assurance & Safety Check to insure safe and proper operation of the complete door system. A complete AAADM Safety Inspection and compliance report will be performed with the final installation.

FOR THE TOTAL NET SUM OF.....$19,873.60

"Note power will be provided by contact"

Please note this bid INCLUDES the following:

1. Vortex Exclusive **three (3) year Limited Warranty**.
2. Work to be scheduled during regular business hours (M-F 7:30a-4:30p) unless otherwise stated.
3. Removal and disposal of damaged material.
4. Prevailing Wage Rates

Please note this bid DOES NOT INCLUDE the following:

1. Re-keying to match existing keys.
2. Any hidden conditions, damage or finish paint.
3. Power supply to the area where the new operator will be installed.

☒ Customer to list days or hours Vortex cannot do the work: _____

Payment Terms: 25 % on deposit. Balance due upon Completion.

This offer is good for 30 days. **SIGNED COPY MUST BE RETURNED TO OUR OFFICE WITH DEPOSIT.** Offer may be revoked by Vortex at any time prior to acceptance. Hidden or unanticipated damages and/or services not included in proposal. Proposal also does not include costs of prevailing wages, if required, unless specifically identified herein.

NOTICE TO PROPERTY OWNER: If bills are not paid in full for the labor, services, equipment, or materials furnished or to be furnished, a mechanic's lien leading to the loss, through court foreclosure proceedings, of all or part of your property being so improved may be placed against the property even though you have paid your contractor in full. You may wish to protect yourself against this consequence by (1) requiring your contractor to furnish a signed release by the person or firm giving you this notice before making payment to your contractor or (2) any other method or device which is appropriate under the circumstances.

Any questions concerning a contractor may be referred to the Registrar, Contractors' License Board, 3132 Bradshaw Road, Sacramento, California. Mailing address: P.O. Box 26000, Sacramento, California 95862.

IMPORTANT: See following pages for additional terms, including limitations of warranty and limitations of liability which are part of this proposal, and will constitute terms of your contract with Vortex. Customer is added to our General Liability policy as Additional Insured only when required by written contract with Customer.

Accepted: ("Customer")	VORTEX INDUSTRIES, INC. ("VORTEX")
By	By Nghia Vo (SAC)
Date	Date 8/13/2020

VORTEX®

PROPOSAL

1-800-698-6783

To	Site	Date 8/13/2020
CITY OF HUGHSON 7018 PINE ST HUGHSON, CA 95326	SENIOR CENTER 2307 4TH STREET HUGHSON, CA 95326	
Attn. JOSE VASQUEZ		
Ref. # sq-441681	Phone Fax	Job Phone (209) 505-3049

In accordance with the terms and conditions stated hereinafter, and on the following pages, we propose to provide the following doors and / or repair work (hereinafter referred to as the "Product") on the following terms.

Please fax or email signed proposal to: SACSC@VortexDoors.com
(916) 920-3667
(916) 648-9077 (Fax)

☒ Customer to list days or hours Vortex cannot do the work: _____

Payment Terms: 25 % on deposit. Balance due upon Completion.

This offer is good for 30 days. **SIGNED COPY MUST BE RETURNED TO OUR OFFICE WITH DEPOSIT.** Offer may be revoked by Vortex at any time prior to acceptance. Hidden or unanticipated damages and/or services not included in proposal. Proposal also does not include costs of prevailing wages, if required, unless specifically identified herein.

NOTICE TO PROPERTY OWNER: If bills are not paid in full for the labor, services, equipment, or materials furnished or to be furnished, a mechanic's lien leading to the loss, through court foreclosure proceedings, of all or part of your property being so improved may be placed against the property even though you have paid your contractor in full. You may wish to protect yourself against this consequence by (1) requiring your contractor to furnish a signed release by the person or firm giving you this notice before making payment to your contractor or (2) any other method or device which is appropriate under the circumstances.

Any questions concerning a contractor may be referred to the Registrar, Contractors' License Board, 3132 Bradshaw Road, Sacramento, California. Mailing address: P.O. Box 26000, Sacramento, California 95862.

IMPORTANT: See following pages for additional terms, including limitations of warranty and limitations of liability which are part of this proposal, and will constitute terms of your contract with Vortex. Customer is added to our General Liability policy as Additional Insured only when required by written contract with Customer.

Accepted: ("Customer")	**VORTEX INDUSTRIES, INC. ("VORTEX")**
By	By Nghia Vo (SAC)
Date	Date 8/13/2020

LIMITED WARRANTY

1. **APPLICABLE PERIOD.** The VORTEX warranty for materials or labor (as appropriate) is applicable to cover problems promptly reported in writing within the following periods specified:

   1.1 **NEW PRODUCT INSTALLATIONS.**
   - A. Heavy Duty Rolling Steel Doors and Hollow Metal Doors - Five Year Limited Warranty, as follows: 1st year - 100% Material and Labor, 2nd year - 100% Material, No Labor, 3rd year - 20% Material, No Labor, 4th and 5th Year - 10% Material, No Labor.
   - B. Overhead, Glass Entrance and Light Weight Rolling Steel Doors, Motors and Other New Product Installation - Three Year Limited Warranty, as follows: 1st year - 100% Material and Labor, 2nd year - 20% Material, No Labor, 3rd year - 10% Material, No Labor.

   1.2 **REPAIRS.**
   - A. Repairs Performed as Recommended by VORTEX: 100% Materials for 1 year, and 90 days Labor. B. Limited Scope Repairs - No Warranty.

2. **LIMITED WARRANTY.** OUR WARRANTY IS FURTHER LIMITED AS FOLLOWS:

   2.1 Our warranty shall not extend to or cover deterioration due to rust resulting from (i) damage to the door section finish caused by fire, other accident or casualty, vandalism, radiation, harmful fumes or foreign substances in the atmosphere, (ii) occurring as a result of any physical damage after the door left our control, or (iii) failure to provide reasonable, necessary and proper maintenance (see paragraph 3 below).

   2.2 Our warranty shall not extend to or cover any damages or claims with respect to any products that in any way or degree have been altered, processed, misused or improperly handled or installed.

   2.3 VORTEX does not warrant conformity with any building or fire codes. Customer is responsible for obtaining any required permits and giving any required notices.

   2.4 WE MAKE NO OTHER WARRANTIES, REPRESENTATIONS OR COVENANTS, EXPRESS OR IMPLIED, AS TO ANY MANNER WHATSOEVER WITH RESPECT TO THIS PRODUCT EXCEPT FOR ANY IMPLIED WARRANTY REQUIRED BY APPLICABLE LAW, AND ANY SUCH IMPLIED WARRANTIES SHALL BE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE.

   2.5 IN THE EVENT OF THE BREACH OF THE WARRANTY DESCRIBED ABOVE, VORTEX'S SOLE RESPONSIBILITY SHALL BE TO REPAIR OR REPLACE ANY PRODUCT WHICH PROVED TO HAVE BEEN DEFECTIVE DURING THE WARRANTY PERIOD. In the event VORTEX fails to or elects not to repair or replace the defective products, VORTEX'S responsibility shall be limited to the damages specified in Section 5 below.

   2.6 This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

   2.7 Only an authorized corporate officer of VORTEX may modify or add to the warranties set forth above, and any such modification or addition must be in writing and separately executed by such corporate officer.

3. **OWNER'S RESPONSIBILITY.**

   The proper operation and maintenance of your doors is critical. If your door is equipped with a hand chain or pull rope, control its speed and do not let it slam up or slam down. If you operate your door slowly and carefully, it should last many years. However, the useful life of the doors and their component parts is not unlimited, and to assure the safe and proper operation, it is imperative that doors be serviced and inspected every six months for long life and easy operation. Failure to do so will void the warranty. You are encouraged to contact VORTEX for details on available **Preventive Maintenance** programs.

   On such iron or steel surfaces painted by VORTEX with prime coat as are exposed to the weather, Customer agrees to complete painting with a finish coat or coats of a color of Customer's choice.

4. **FURTHER CONDITIONS OF WARRANTY.** The foregoing warranty shall be voided and products and services shall be deemed sold "as is" with all faults:

   4.1 if the related invoice is not paid within thirty (30) days;
   4.2 if repairs or alterations are made by anyone other than VORTEX;
   4.3 until any "Recommendation for Additional Work Needed" is authorized in writing by Customer and completed by VORTEX.

   You must give us the job number when first calling for warranty service or you will be billed for the work.

5. **LIMITATIONS OF LIABILITY.**

   5.1 THE LIABILITY OF VORTEX FOR DAMAGES OR INDEMNITY, IF ANY, SHALL BE LIMITED TO THE AMOUNT OF THE CHARGES PAID BY CUSTOMER TO VORTEX WITH RESPECT TO THE SPECIFIC PRODUCTS OR SERVICES.

   5.2 IN NO EVENT, REGARDLESS OF THE FORM OF THE ACTION, WHETHER IN CONTRACT OR IN TORT, INCLUDING NEGLIGENCE, SHALL VORTEX BE LIABLE FOR INCIDENTAL DAMAGES, CONSEQUENTIAL DAMAGES, LOST PROFITS, OR LOST SALES, NOTWITHSTANDING THE FACT THAT VORTEX MAY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

FURTHER TERMS AND CONDITIONS

PAYMENT TERMS. The Company that called us is responsible for paying the bill. VORTEX provides emergency repair services, and time is of the essence to the performance by the parties of their obligations. Service bills are due and payable upon completion of work. Hours are calculated from the time the man leaves our shop until he returns. Minimum service charge is one hour at the current hourly rate. Customer further grants to VORTEX a security interest in all products furnished to customer. In event of default, VORTEX shall have, in addition to all rights provided by law, the right to repossess all products and to remove doors supplied. Overdue accounts shall accrue interest from the date payment on the account is overdue, at 10% per annum, or the maximum legal rate, whichever is greater.

WORK HOURS. VORTEX standard work hours are Mon. – Fri. 8:00 a.m. – 4:30 p.m. VORTEX's standard rates shall be increased for work performed during other hours. VORTEX must be notified of any days or times during which scheduled work cannot be done. A refused field trip will be charged for.

SITE PREPARATION. Customer, at its expense, shall assure that the wall construction around the opening is suitable for supporting all doors, door seals, accessories, and other items, and that there is proper clearances for their reception. When VORTEX is to provide erection, Customer at its expense shall assure that the openings into which the items or around which the items are to be installed are complete, unobstructed, and available to VORTEX mechanics or subcontractors without delay or interruption to their work. Customer warrants safety and suitability of the structure for reception of VORTEX'S materials and agrees to hold VORTEX and its subcontractors harmless from liability attributed thereto. Unless otherwise expressly stated, this work order does not include the preparation or furnishings by VORTEX of openings, sills, jambs, lintels, structural members to which doors or accessories are to be attached, or glass or glazing, or when motor operators are furnished, any wire, fuses, or conduits, or any auxiliary steel work for carrying supporting or attaching power units. Electrical hookup and hauling away of old materials is not included in the work order. Customer acknowledges that unloading, hoisting, storage and protection of materials is the sole responsibility of the Customer.

PERFORMANCE EXCUSED. VORTEX shall not be liable to Customer in any manner for failure or delay to fill an order placed herein, or other failures to perform as a result of strike or other labor trouble, fire, flood, material or labor shortage, embargo, stoppage in transit, direct or indirect acts, regulations or orders of any governmental body, war, sabotage, act of God or public enemy, or other cause beyond the control of VORTEX including nonperformance of conditions precedent by Customer such as the furnishing of specifications of wall openings or other information, approval of or other action upon drawing.

ENFORCEMENT OF CONTRACT. This contract (subject only to modification by any subsequent, and fully executed, written repair work order) constitutes the entire agreement of the parties with respect to the proposed work. There are no oral agreements made or allowed between the parties. All parties agree that interpretations and enforcement of the contract shall be subject to the laws of the state of California and any action brought to enforce any provision of the agreement shall be in the jurisdiction and venue of the courts of Orange County, California. In the event of any action or proceeding to enforce this agreement or arising out of any breach of this agreement, the prevailing party herein shall be entitled to recover reasonable attorney's fees and costs therein incurred.

ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' LICENSE BOARD, 9821 BUSINESS PARK DRIVE, SACRAMENTO, CALIFORNIA, 95827. MAILING ADDRESS: P. O. BOX 26000, SACRAMENTO, CALIFORNIA, 95826. WEBSITE: WWW.CSLB.CA.GOV.

CITY COUNCIL AGENDA ITEM NO. 4.1
SECTION 4: UNFINISHED BUSINESS

Meeting Date:	**November 9, 2020**
Subject:	**Adopt Resolution No. 2020-66, Amending the Professional Services Agreement with Carollo Engineers, Inc., to Analyze Data and Make Project Recommendations to be Used as the Basis for the Final Sewer Project Design**
Enclosures:	**Attachment 1 - Carollo Professional Services Agreement, with Exhibits A and B.** **Attachment 2 - First Amendment to Carollo Professional Services Agreement with Exhibit C.** **Attachment 3 - Carollo Report**
Presented By:	**Lea Simvoulakis, Community Development Director** **Jaime Velazquez, Utilities Superintendent**
Approved By:	Merry Mayhew

Staff Recommendation:

1. Adopt Resolution No. 2020-66, amending the Professional Services Agreement with Carollo Engineers, Inc., to analyze data and make project recommendations to be used as the basis for the final sewer project design.

2. Authorize the City Manager to execute the Amendment to the Agreement with Carollo Engineers, Inc., inclusive of any final edits by the City Attorney.

Background:

On Tuesday, July 30, 2019, Public Works/Utilities crews discovered water leaking into the road at Tully Road and Walker Lane. City staff determined that the water was not sewage; rather the water was fresh well water believed to be coming from the Well 7 Replacement Project site at California TrusFrame at 2800 Tully Road.

Once the water leak was discovered, City staff began investigating where the blockage was occurring in the sewer system causing the water backup/leak. While continuing down Tully Road, checking sewer lids to locate possible line blockages, a sink hole appeared at 1713 Tully Road. The sewer line that collapsed was part of

the line known as the Dairy Farmers of America (DFA) industrial sewer line, which is believed to be over 100 years old. This sewer line runs north and south along Tully Road from Santa Fe Road to Hatch Road and provides the sewer connection for the DFA site and all of the industrial businesses south of Santa Fe Avenue. It was also discovered that the older residential subdivision west of Tully at Narcisco Way is connected to the DFA line.

The Public Works/Utilities staff set up a temporary sewer bypass on Tully Road and Graybark Lane using a 4" mobile pump using a second existing sewer main. This second sewer line was installed during the development of the residential neighborhoods in this area of the City and was installed in the late1990s/early 2000s. This line runs from Graybark Lane to Hatch Road and serves the residential communities on either side of Tully.

The City contracted with D.A. Wood Construction to excavate the site for repairs and the section between Graybark Lane and Narcisco Way was plugged and back filled. D.A. Wood then installed a permanent 18" bypass on Tully Road and Graybark Lane to the second existing sewer main. During the installation of the bypass, the rest of the existing DFA industrial sewer line south toward Santa Fe Road showed signs of broken pipe. D.A. Wood determined that the overall condition of the pipe was poor, and another collapse was inevitable. In order to limit heavy loads on Tully Road, City staff worked with Hughson Police Services and the Hughson Fire Protection District to reach out to local industrial and agricultural businesses to have them remind delivery trucks not to utilize Tully road as a short cut from Hatch Road to Santa Fe Avenue. Hughson Cold Storage also closed its entrance at Tully Road to deter this activity.

The excavation work completed by D.A. Wood Construction indicated that a full collapse of the DFA industrial line is inevitable, and that these types of repairs will continue to occur until the line is replaced.

On September 23, 2019, the City Council authorized a contract (Attachment 1) with Carollo Engineers, Inc. to perform professional services associated with an evaluation of current wastewater flows and the sewer infrastructure for the purpose of determining if the DFA line could be abandoned and if the City could move all sewer and wastewater use to the residential sewer line. To make that determination, Carollo needed to determine if the residential line had the capacity to handle all of the connections that are currently using the old industrial line. Without an active use at the DFA site, the 18" residential line was presumed to have the capacity to handle the current waste from the industrial business connected to the DFA line. However, if a new tenant were to occupy the DFA site, there may not be enough capacity in the 18" line and the residential users could be impacted.

Carollo Engineers completed the analysis and submitted a final report (Attachment C) which included the below information:

- A summary of the collection system facilities and all updates made to the system since the original 2007 Master Plan was completed.

- A summary of the hydraulic model review and the validation process of that model.
- A review of the existing system deficiencies and recommended improvements, including options for abandoning the Tully Road industrial sewer line (DFA line).

The review of the two lines indicated that the existing residential line would be able to handle the capacity of the industrial businesses and future residential growth in that area of the City. An analysis of the future system needs was also performed, indicating several deficiencies in the City's sewer system. These deficiencies are shown on Figure 1.3 of the attached report.

Since September 2019, when the work with Carollo began, two more areas on Tully Road have caused concern, further strengthening the notion that the DFA line needs to be abandoned as soon as possible. First, a dip in the road appeared in early October at Santa Fe and Tully. This indicates that a potential sewer line collapse is imminent. Staff placed a drive plate over the area to stave off a collapse as long as possible. Second, in a location north of Narcisco Way along Tully, the flow has slowed considerably, which could be an indication of buildup of sedimentation or another small collapse. With the ongoing issues on Tully Road, the Utilities Superintendent felt that it was important to have a company come out and camera both the old industrial line and the newer residential line immediately to ensure that the residential line is in an acceptable condition to handle the additional flow and to ensure that the laterals coming into the old industrial line can be moved to the residential line.

The City must continue to protect public health and safety by adequately containing sewage and maintaining the sewer infrastructure. The camera project was initially estimated to cost between $12,000 and $24,000 and was expected to take three to four days to complete for both lines. With this estimate, there was adequate funds budgeted in the Sewer Fund to pay for the camera project. Because of the difficulty in getting the camera through the lines, and because the company had to pull out more than four tons of sediment and other materials that was clogging the residential line, the company worked instead for 14 days to complete the project. Staff anticipated some additional cost; however, they did not expect the bill would be $74,675. Stopping the camera project after the original three to four days of work would have resulted in an incomplete review of the residential main and DFA line, and the sediment build up would be sitting in the line continuing to accumulate and block flow.

Should the work not be completed on the sewer lines, the City will continue to have to pay emergency repair fees each time the line fails. Therefore, moving forward, staff feel it is imperative to get a project design completed and a scope out to bid to properly abandon the old industrial line and move the laterals to the newer residential line. Carollo has submitted an estimate to complete the analysis of the sewer system and to provide a report to the City Engineer so he can prepare construction drawings to get a project put out to bid. The remaining work to be done by Carollo on the sewer analysis will be a not to exceed amount of $7,000 to analyze

the data collected and to prepare figures illustrating the system modifications and the project recommendations to be used as the basis for the final project design.

Fiscal Impact:

The Amendment to the Professional Services Agreement (Attachment 2) has a not to exceed amount of $7,000. With the information provided by Carollo, a construction design set can be prepared by Willdan who will then facilitate the preparation of the project to go out to bid. The Sewer Fixed Asset Replacement Fund has a balance of $4,704,625 as of June 2020 and is a potential funding source for any necessary improvements associated with this item.

The $74,675 cost for the camera project that included removing tons of buildup of sediment will be paid for through the Sewer Enterprise Fund. If necessary, the City will bring a recommended budget adjustment for this unanticipated expenditure during the mid-year budget process early in 2021.

CITY COUNCIL
CITY OF HUGHSON
RESOLUTION NO. 2020-66

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON APPROVING AMENDMENT #1 TO THE PROFESSIONAL SERVICES AGREEMENT WITH CAROLLO ENGINEERING, INC., FOR SERVICES RELATED TO WASTEWATER FLOWS AND SEWER INFRASTRUCTURE

WHEREAS, on September 23, 2019, the Hughson City Council approved the Professional Service Agreement with Carollo Engineering, Inc., for services related to wastewater flows and sewer infrastructure, which commenced on September 24, 2019, was executed; and

WHEREAS, the agreement identified the Scope of Services and the Approved Fee Schedule identified as Exhibit A; and

WHEREAS, the Agreement identifies that the City shall have the right to request changes in the Scope of Services and that any such changes mutually agreed upon by the parties, and any corresponding increase or decrease in compensation, shall be incorporated by written amendment to the Agreement; and

WHEREAS, City and Consultant now desire to amend the Scope of Services and the Approved Fee Schedule to include Exhibit C, which contains two additional tasks and a not to exceed fee of $7,000.

WHEREAS, all provisions of the agreement, except for the addition of Exhibit C, are to remain per the original Professional Services Agreement.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson does hereby approve the First Amendment to the Professional Service Agreement with Carollo Engineering, Inc., attached hereto as Attachment “2”.

PASSED AND ADOPTED by the City Council of the City of Hughson at its regularly scheduled meeting on this 9th day of November 2020, by the following roll call vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

»
»
»
»

APPROVED:

_____

JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk

PROFESSIONAL SERVICE AGREEMENT

(City of Hughson/Carollo Engineers, Inc.)

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is entered into by and between the City of Hughson, a California municipal corporation ("City") and Carollo Engineers, Inc., a corporation ("Consultant").

RECITALS

WHEREAS, the City has determined that it requires the professional services of a consultant to conduct an evaluation of wastewater flows and sewer infrastructure ("Project").

WHEREAS, the Consultant represents that it is fully qualified to perform such professional services for the Project by virtue of its experience and the training, education and expertise of its principals and employees.

WHEREAS, the Consultant further represents that it is willing to accept responsibility for performing such services in accordance with the terms and conditions set forth in this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions herein contained, City and Consultant agree as follows:

1. DEFINITIONS

1.1. "Scope of Services" means the professional services as are generally set forth in Consultant's August 26, 2019 proposal to City attached hereto as Exhibit A.

1.2. "Approved Fee Schedule" means the compensation rates as are set forth in "Fee Estimate" of Consultant's August 2019 Wastewater Flow Evaluation attached within Exhibit A.

1.3. "Commencement Date" means September 24, 2019.

1.4. "Task Order" means written direction by the City to Consultant to perform a specific scope of work of the Project.

1.5. "Project" means an evaluation of the City's wastewater flows and sewer infrastructure.

1.6. "Expiration Date" means the date the Project evaluation is completed.

days of receipt of each invoice, City shall pay all undisputed amounts included on the invoice. City shall not withhold applicable taxes or other authorized deductions from payments made to Consultant.

4.3. Payments for any services requested by City and not included in the Scope of Services shall be made to Consultant by City on a time-and-materials basis using Consultant's standard fee schedule.

5. OWNERSHIP OF WRITTEN PRODUCTS

All reports, documents or other written material ("written products") developed by Consultant in the performance of this Agreement shall be and remain the property of City without restriction or limitation upon its use or dissemination by City. Consultant may take and retain copies of such written products as desired, but no such written products shall be the subject of a copyright application by Consultant.

6. RELATIONSHIP OF PARTIES

Consultant is, and shall at all times remain as to City, a wholly independent contractor. Consultant shall have no power to incur any debt, obligation, or liability on behalf of City or otherwise to act on behalf of City as an agent. Neither City nor any of its agents shall have control over the conduct of Consultant or any of Consultant's employees, except as set forth in this Agreement. Consultant shall not represent that it is, or that any of its agents or employees are, in any manner employees of City.

7. CONFIDENTIALITY

All data, documents, discussion, or other information developed or received by Consultant or provided for performance of this Agreement are deemed confidential and shall not be disclosed by Consultant without prior written consent by City. City shall grant such consent if disclosure is legally required. Upon request, all City data shall be returned to City upon the termination or expiration of this Agreement.

8. INDEMNIFICATION

8.1. To the fullest extent permitted by law, Consultant shall indemnify, hold harmless and defend City, its officers, agents, employees and volunteers from and against any and all claims and losses, costs or expenses for any damage due to death or injury to any person and injury to any property resulting from any alleged intentional, reckless, negligent, or otherwise wrongful acts, errors or omissions of Consultant or any of its officers, employees, servants, agents, or subcontractors in the performance of this Agreement. Such costs and expenses shall include reasonable attorneys' fees incurred by counsel of City's choice.

8.2. City shall have the right to offset against the amount of any compensation due Consultant under this Agreement any amount due City from Consultant as a result of Consultant's failure to pay City promptly any indemnification arising

Million Dollars ($1,000,000) per claimant and One Million dollars ($1,000,000) per incident.

9.1.3. Worker's Compensation insurance as required by the laws of the State of California.

9.1.4. Professional Errors and Omissions Insurance with coverage limits of not less than One Million Dollars ($1,000,000).

9.2. Consultant shall require each of its subcontractors to maintain insurance coverage that meets all of the requirements of this Agreement.

9.3. The policy or policies required by this Agreement shall be issued by an insurer admitted in the State of California and with a rating of at least A:VII in the latest edition of Best's Insurance Guide.

9.4. Consultant agrees that if it does not keep the aforesaid insurance in full force and effect, City may either (i) immediately terminate this Agreement; or (ii) take out the necessary insurance and pay, at Consultant's expense, the premium thereon.

9.5. At all times during the term of this Agreement, Consultant shall maintain on file with City a certificate or certificates of insurance showing that the aforesaid policies are in effect in the required amounts and naming the City and its officers, employees, agents and volunteers as additional insureds. Consultant shall, prior to commencement of work under this Agreement, file with City such certificate(s).

9.6. Consultant shall provide proof that policies of insurance required herein expiring during the term of this Agreement have been renewed or replaced with other policies providing at least the same coverage. Such proof will be furnished at least two weeks prior to the expiration of the coverages.

9.7. The general liability and automobile policies of insurance required by this Agreement shall contain an endorsement naming City and its officers, employees, agents and volunteers as additional insureds. All of the policies required under this Agreement shall contain an endorsement providing that the policies cannot be canceled or reduced except on thirty days' prior written notice to City. Consultant agrees to require its insurer to modify the certificates of insurance to delete any exculpatory wording stating that failure of the insurer to mail written notice of cancellation imposes no obligation, and to delete the word "endeavor" with regard to any notice provisions.

9.8. The insurance provided by Consultant shall be primary to any coverage available to City. Any insurance or self-insurance maintained by City and/or its officers, employees, agents or volunteers, shall be in excess of Consultant's insurance and shall not contribute with it.

If to City:

City of Hughson
P.O. Box 9
Hughson, CA 95326
Telephone: (209) 883-4054
Facsimile: (209) 883-2638

With courtesy copy to:

Daniel J. Schroeder, City Attorney
Neumiller & Beardslee
P.O. Box 20
3121 W. March Lane, Suite 100
Stockton, CA 95219
Telephone: (209) 948-8200
Facsimile: (209-) 948-4910

If to Consultant:

Mr. Tim Loper
Senior Project Manager | Vice President
100 West Liberty, Suite 740
Reno, NV 89501
Telephone: (775) 324-4427

14. SURVIVING COVENANTS

The parties agree that the covenants contained in Section **7**, Section **8**, Paragraph **10.2** and Section **11** of this Agreement shall survive the expiration or termination of this Agreement.

15. TERMINATION

15.1. City shall have the right to terminate this Agreement for any reason on five calendar days' written notice to Consultant. Consultant shall have the right to terminate this Agreement for any reason on thirty calendar days' written notice to City. Consultant agrees to cease all work under this Agreement on or before the effective date of any notice of termination. All City data, documents, objects, materials or other tangible things shall be returned to City upon the termination or expiration of this Agreement.

15.2. If City terminates this Agreement due to no fault or failure of performance by Consultant, then Consultant shall be paid based on the work satisfactorily performed at the time of termination. In no event shall Consultant be entitled to receive more than the amount that would be paid to Consultant for the full performance of the services required by this Agreement.

16.7. Consultant shall not be liable for any failure to perform if Consultant presents acceptable evidence, in City's sole judgment, that such failure was due to causes beyond the control and without the fault or negligence of Consultant.

16.8. Each right, power and remedy provided for herein or now or hereafter existing at law, in equity, by statute, or otherwise shall be cumulative and shall be in addition to every other right, power, or remedy provided for herein or now or hereafter existing at law, in equity, by statute, or otherwise. The exercise, the commencement of the exercise, or the forbearance of the exercise by any party of any one or more of such rights, powers or remedies shall not preclude the simultaneous or later exercise by such party of any of all of such other rights, powers or remedies. In the event legal action shall be necessary to enforce any term, covenant or condition herein contained, the party prevailing in such action, whether reduced to judgment or not, shall be entitled to its reasonable court costs, including accountants' fees, if any, and attorneys' fees expended in such action. The venue for any litigation shall be Stanislaus County, California.

16.9. If any term or provision of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, then such term or provision shall be amended to, and solely to, the extent necessary to cure such invalidity or unenforceability, and in its amended form shall be enforceable. In such event, the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

16.10. This Agreement shall be governed and construed in accordance with the laws of the State of California.

16.11. If either party initiates an action to enforce the terms hereof or declare rights hereunder, the parties agree that the venue thereof shall be the County of Stanislaus, State of California. Consultant hereby waives any rights it might have to remove any such action pursuant to California Code of Civil Procedure Section 394.

16.12. All documents referenced as exhibits in this Agreement are hereby incorporated into this Agreement. In the event of any material discrepancy between the express provisions of this Agreement and the provisions of any document incorporated herein by reference, the provisions of this Agreement shall prevail. This instrument contains the entire Agreement between City and Consultant with respect to the transactions contemplated herein. No other prior oral or written agreements are binding upon the parties. Amendments hereto or deviations herefrom shall be effective and binding only if made in writing and executed by City and Consultant.

EXHIBIT A

City of Hughson
Wastewater Flow Evaluation
Fee Estimate

carollo
Engineers...Working Wonders With Water™

Task Description	Project Professional	Assistant Professional	Technician	Word Processing	Total Hours	Labor	Subs and Other Direct Expenses[1]	Estimated Fee
	$263	$181	$137	$120				
Task 1 - Project Management	6	8	2	10	26	$ 4,500	$ 300	$ 4,800
Task 1.1 - Project Administration	4	6	0	8	18	$ 3,100	$ 200	$ 3,300
Task 1.2 - Kickoff Meeting	2	2	2	2	8	$ 1,400	$ 100	$ 1,500
Task 2 - Data Collection and Review	1	4	2	2	9	$ 1,500	$ 100	$ 1,600
Task 3 - Wastewater Flow Evaluation	2	24	4	2	32	$ 5,700	$ 400	$ 6,100
Task 4 - Model Review and Validation	2	50	4	2	58	$ 10,400	$ 700	$ 11,100
Task 5 - Wastewater Collection System Evaluation	2	22	4	2	30	$ 5,300	$ 400	$ 5,700
Task 6 - Project Reporting	8	48	10	12	78	$ 13,600	$ 900	$ 14,500
Task 6.1 - Develop Draft TM	6	32	8	8	54	$ 9,400	$ 600	$ 10,000
Task 6.2 - Final TM	2	16	2	4	24	$ 4,200	$ 300	$ 4,500
Total Hours and Fee	21	156	26	30	233	$ 41,000	$ 2,800	$ 43,800

Notes:
(1) Other direct expenses include mileage travelling to/from meetings at IRS Federal Rate, and Project Equipment and Communication Expense billed at $12.000 per hour.
(2) Subconsultant costs include 10% markup

EXHIBIT B

August 26th, 2019

WASTEWATER FLOW EVALUATION

City of Hughson

Background

The City of Hughson (City) sits in the central valley of California, just south of the City of Modesto. The City has a population of approximately 6,000 people and provides water, and wastewater services for its residential, commercial, and industrial customers. Carollo Engineers, Inc. (Carollo), developed a Sewer System Master Plan in July of 2007 (2007 Master Plan) that included the development of a hydraulic model, evaluation of wastewater flow rates, and developed recommendations on collection system improvements.

In August of 2019 the City experienced a failure of the Tully Road Industrial sewer, and is in the process of performing an assessment of the condition of the remaining portions of the sewer to determine the risk of additional collapse. In order to determine the sizing of future wastewater facilities the City has asked Carollo to conduct an evaluation of the current wastewater flows. The evaluation will include multiple tasks, including a review of wastewater flows influent to the wastewater treatment plant (WWTP), hydraulic modeling, temporary flow monitoring, and projections of future flows under existing growth assumptions. The scope of work to complete these tasks is provided below:

Scope of Services

Carollo Engineers, Inc. (Carollo) will provide the following services:

Task 1 – Project Management

Project management will be conducted under this task. This includes managing the project team, coordinating with subconsultants, managing the scope of work, and project meetings.

Task 1.1 – Project Administration

Carollo will administer the project to maintain project schedule and budget. The project progress and budget status will be included in monthly progress reports that will be attached to billing invoices. Additionally, the monthly progress reports will include a list of work completed for the time period, meeting minutes for all meetings held during the time period, and an updated decision log.

Task 1.2 – Kickoff Meeting

Carollo will conduct a kickoff meeting with City staff to discuss the project objectives, communication protocols, and summarize anticipated deliverables. The kickoff meeting will be held via conference call, and will include Carollo's key project staff. A data collection matrix will be developed prior to the kickoff meeting and will be discussed and individual items will be assigned to City or Carollo staff for collection.

Task 1 - Deliverable:

- Monthly status reports, invoices
- Meeting agenda and meeting minutes/summaries

Task 2 – Data Collection and Review

Carollo will perform a thorough reconnaissance and review effort to secure data, input, studies, and other background materials that will be needed to facilitate the successful completion of the project. The City shall collect and furnish to Carollo all available data, reports, and other data pertinent to our services, and Carollo anticipates being entitled to use and rely upon all such information provided by the City or others authorized by the City in performing our services under this Scope of Work.

Task 2 - Deliverables:

- Data collection Matrix

Task 3 – Wastewater Flow Evaluation

Carollo will review the existing wastewater flow rates based on a number of sources. Carollo will review the influent WWTP flows, the existing water meter billing data, commercial water metering, or other sources of data that could provide valuable information related to wastewater generation. Carollo will correlate the water and wastewater usage data to current population and residential dwelling units to develop current per capita wastewater generation factors. The developed flow rates will be allocated into the hydraulic model and will provide the basis for projections of future flow conditions.

Carollo will develop an estimate of the future wastewater flow rates based on existing assumptions on growth and proposed developments. Carollo will work with the City's planning department to develop an understanding of future development, developable vacant lands and other potential industrial development.

Task 3 - Deliverables:

- Wastewater flow rate summary
- Future wastewater flow projections

Task 4 – Model Review and Validation

Carollo will review the City's existing model developed as part of the 2007 Master Plan. Carollo will work with City staff to review and modify the wastewater system configuration in the hydraulic model to match the existing collection system. Carollo will review pump station operational controls, wet well level set points, and other operational parameters that would affect system simulations.

Carollo will review influent flow data, and historical wet well levels at the WWTP and compare model simulations to field conditions. Carollo will revise the model base flows, diurnal patters or other parameters should model simulations vary from existing field conditions.

Task 4 - Deliverables:

- Model validation results

Task 5 – Wastewater Collection System Evaluation

Carollo will use the updated model to evaluate the capacity of the existing wastewater collection system, and specifically the Tully Road Industrial sewer. Carollo will develop recommendations on sizing of the Tully Road sewer for existing and future flow conditions. Carollo will base the hydraulic evaluation on the evaluation criteria documented in the 2007 Master Plan.

Task 5 - Deliverables:

- Capacity evaluation results

Task 6 – Project Reporting

Carollo will develop a Technical Memorandum that summarizes the wastewater flow evaluation, hydraulic modeling and any recommendations. Carollo will submit the Draft TM to the City for review and comment. City comments on the Draft TM will be incorporated into the Final TM.

Task 6 - Deliverables:

- Draft Technical Memorandum
- Final Technical Memorandum

FIRST AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT

This First Amendment to the Professional Services Agreement ("First Amendment") is made effective November 9, 2020. The parties are identified in the Recitals below.

RECITALS

A. Effective September 24, 2019, the City of Hughson, a California municipal corporation ("City") and Carollo Engineering, Inc., a corporation ("Consultant") entered into a Professional Services Agreement ("Agreement"), a true and correct copy is attached hereto as Attachment 1.

B. Section 1.1 identifies that "Scope of Services" means the professional services are generally set forth in Consultant's August 26, 2019 proposal attached hereto as Exhibits A.

C. Section 1.2 identifies that "Approved Fee Schedule" means the compensation rates are set forth in "Fees Estimate" of Consultant's August 2019 Wastewater Flow Evaluation attached within Exhibit A.

D. Section 3.1 identifies that the City shall have the right to request, in writing, changes in the Scope of Services and that any such changes mutually agreed upon by the parties, and any corresponding increase or decrease in compensation, shall be incorporated by written amendment to this Agreement.

E. City and Consultant now desire to amend the Scope of Services and the Approved Fee Schedule to include Exhibit C which contains two additional tasks and a not to exceed fee of $7,000.

NOW, THEREORE, the parties agree as follows:

FIRST: Section 1.1 of the Agreement is amended to read as follows effective November 9, 2020:

"1.1 "Scope of Services" means the professional services as are generally set forth in Consultant's August 26, 2019 proposal to City attached hereto as Exhibits A and Consultant's October 19, 2020 proposal to City attached hereto as Exhibit C."

SECOND: Section 1.2 is amended to read as follows effective November 9, 2020:

"1.2 "Approved Fee Schedule" means the compensation rates as are set forth in "Fee Estimate" of Consultant's August 2019 Wastewater Flow Evaluation attached within Exhibit A and Consultant's October 19, 2020 proposal to City attached within Exhibit C."

THIRD: Except as modified herein, all of the other terms and provisions of the Professional Services Agreement remain in full force and effect.

TO EFFECTUATE THIS AGREEMENT, the parties have caused their duly authorized representatives to execute this Agreement on the dates set forth below.

"City"

City of Hughson

By:_____

Merry Mayhew, City Manager

Date:_____

"Consultant"

Carollo Engineers, Inc.

By:_____

Tim Loper, Senior Project Manager | Vice President

Date: 10/26/2020

Attest:

By:_____

Ashton Gose, Deputy City Clerk

Approved as to form:

By:_____

Daniel J. Schroeder, City Attorney

Date: 10/26/2020

Engineers...Working Wonders With Water®

2795 Mitchell Drive, Walnut Creek, California 94598
P. 925.932.1710 F. 925.930.0208

October 19, 2020

EXHIBIT C

Mrs. Merry Mayhew
City of Hughson
P.O. Box 9
Hughson, CA 95326

Subject: Wastewater Flow Evaluation – Contract Amendment for Additional Services

Dear Mrs. Mayhew

As you are aware, Carollo Engineers, Inc (Carollo), completed a wastewater flow evaluation for the City of Hughson (City) to determine if the flows currently tributary to the Industrial sewer trunk in Tully road can be conveyed in the parallel residential trunk. Carollo completed that analysis and submitted a Final Report detailing the findings and develop recommended projects. The City is actively moving forward with the project recommendations. Carollo has been asked to assist the development of the project basis of design by assisting with the following tasks. The Contract executed on the 18th of October, 2019 shall be amended to include the following scope items and the associated fee estimate.

Review CCTV Inspection Data

Carollo will review the CCTV inspection data provide by the City and make recommendations on condition mitigation projects related to the industrial and domestic sewers in Tully road. Carollo will summarize the findings of the CCTV inspections relative to the sewers in the City's system.

Conceptual Project Development

Carollo will work with the City's contracted City Engineer to develop a sewer system survey plan to capture pipeline sizes, flow line elevations, spatial locations, and other pertinent information required for the conceptual project definition. Carollo will use the data collected as part of the survey to further develop the project recommendations defined in the Wastewater Flow Evaluation. Carollo will develop figures illustrating the system modifications and the project recommendations to be used as the basis for the final project design.

Estimated Fee

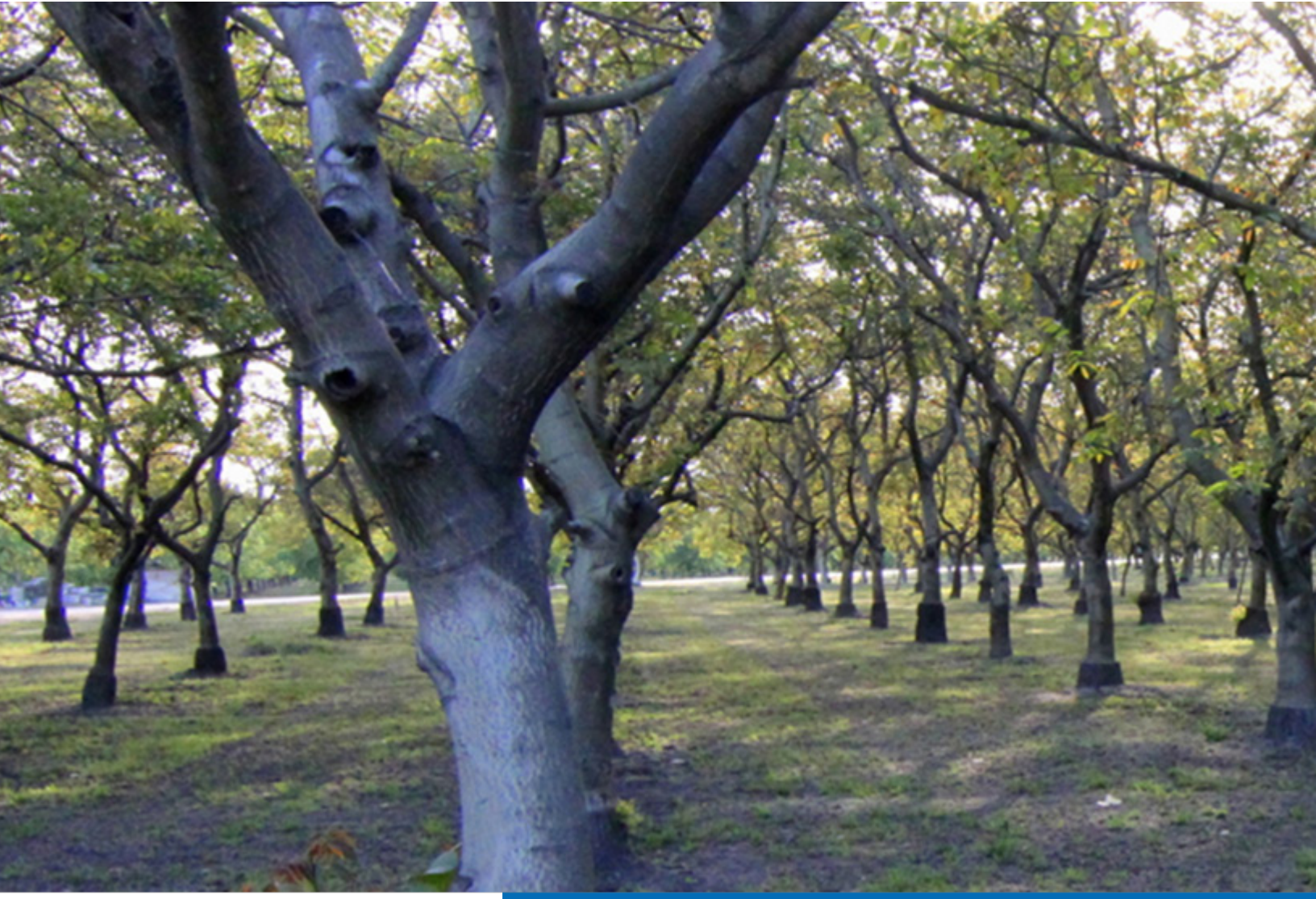
Carollo will complete the tasks above for a not to exceed fee of seven thousand dollars ($7,000). This will increase the total contract value to fifty thousand, eight hundred dollars ($50,800).

Sincerely,

CAROLLO ENGINEERS, INC.

Danielle Orgill

Danielle Orgill, P.E.
Project Manager



City of Hughson
Wastewater Flow Evaluation

Technical Memorandum 1

FINAL | September 2020

Attachment 3

City of Hughson
Wastewater Flow Evaluation

Technical Memorandum 1

FINAL | September 2020

Contents

Tables

Figures

Abbreviations

ADF	average daily flow
Carollo	Carollo Engineers, Inc.
City	City of Hughson
d/D	depth to diameter
DFA	Dairy Farmers of America
du	dwelling unit
fps	feet per second
GIS	geographic information systems
gpd	gallons per day
HDPE	high-density polyethylene
HGL	hydraulic grade line
I/I	infiltration/inflow
LDR	Low Density Residential
MDR	Medium Density Residential
mgd	million gallons per day
SOI	Sphere of Influence
TM	technical memorandum
WWTP	wastewater treatment plant

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Technical Memorandum 1

WASTEWATER FLOW EVALUATION

1.1 Background

The City of Hughson (City) lies in the Central Valley of California, just south of the City of Modesto. The City has a population of approximately 6,000 people and provides water and wastewater services for its residential, commercial, and industrial customers. Carollo Engineers, Inc. (Carollo), developed a Sewer System Master Plan in July of 2007 (2007 Master Plan) that included the development of a hydraulic model, evaluation of wastewater flows, and recommendations for collection system improvements.

In August 2019, the City experienced a failure of the Tully Road industrial sewer which caused a sink hole in Tully Road. The City is in the process of performing an assessment of the condition of the remaining portions of the industrial sewer to determine the risk of additional collapse. One alternative the City is considering is abandoning the entire Tully Road industrial sewer and rerouting industrial flows to the parallel domestic sanitary sewer. The City has asked Carollo to conduct an evaluation of the current wastewater flows and to update the hydraulic model to determine if the domestic sanitary sewer on Tully Road had sufficient capacity to convey the additional industrial flows and/or what improvements may be needed to take the industrial pipe offline. The hydraulic model was reviewed, updated, and re-validated to match the current wastewater flows and the entire collection system was evaluated to determine capacity deficiencies under existing and future flow conditions.

The purpose of this technical memorandum (TM) is to:

- Summarize the collection system facilities and updates made from the original 2007 Master Plan.
- Summarize the hydraulic model review and validation process.
- Review the existing system deficiencies and recommended improvements, including options for abandoning the Tully Road industrial sewer.

1.2 Collection System Facilities

The City's existing collection system is shown on Figure 1.1 and consists of approximately 23 miles of gravity sewers (ranging in size from 4 inches to 36 inches), two lift stations and associated force mains. The Hatch Road Lift Station collects wastewater flow from the entire City and conveys it to the wastewater treatment plant (WWTP), which is located at 6700 Leedom Road. A majority of wastewater flow is conveyed to the Hatch Road Lift Station by one of two major trunks along Tully Road (a 24-inch sanitary sewer and a 24-inch industrial sewer). In August 2019, a portion of the Tully Road industrial sewer collapsed between Graybark Lane and Walnut Haven Drive and caused a major sinkhole. Currently, the City is bypass pumping the industrial flows upstream of the collapse to the 24-inch sanitary sewer at Tully Road near Graybark Lane. The extent of the Tully Road industrial sewer collapse is shown on Figure 1.1.

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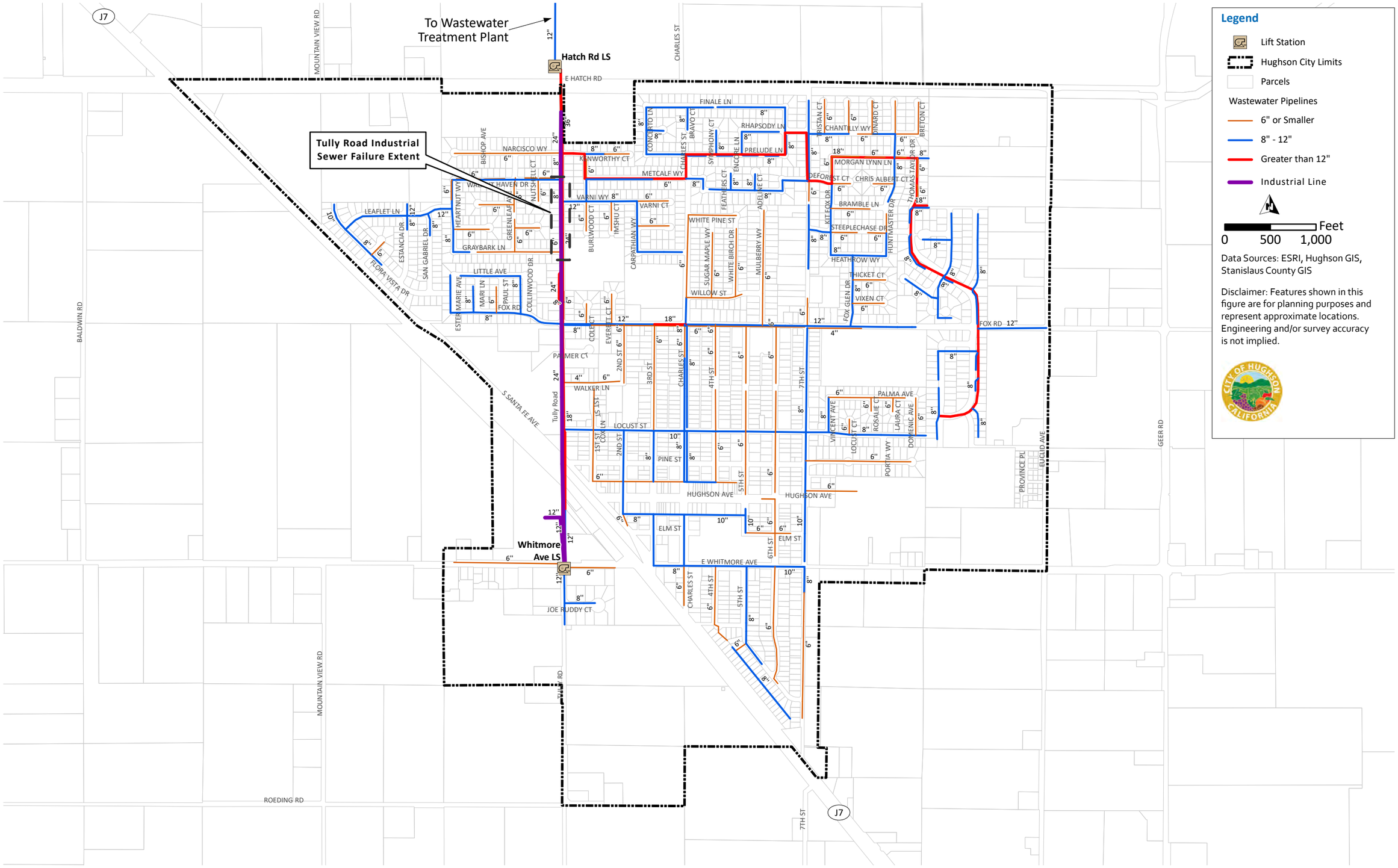

Figure 1.1 Existing Collection System

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It was assumed that there were no other major pipeline abandonment/construction projects implemented since the 2007 Master Plan, with the exception of a few residential areas that had developed.

1.3 Design Flows

This section summarizes the historic flows measured at the City's WWTP and presents the design flows used to model the existing and future sewer collection system.

1.3.1 Historical WWTP Flows

Historical flows at the WWTP from January 2016 to November 2019 were reviewed and analyzed to determine minimum, maximum, and average daily flows experienced by the collection system, and is summarized in Table 1.1. Similar to the historical wastewater flow analysis conducted in the 2007 Master Plan, there is minimal difference in WWTP flow between dry and wet periods. In 2018, the average wet weather flow was actually lower than the average dry weather flow. For modeling purposes, the existing design flow was based on the 2018 average daily flow (ADF) of 0.607 million gallons per day (mgd).

Table 1.1 Historical WWTP Flow Summary

Year	Average Day Flow (mgd)	Average Dry Weather Flow(1) (mgd)	Average Wet Weather Flow(2) (mgd)	Minimum Day Flow (mgd)	Maximum Day Flow (mgd)
2016	0.600	0.556	0.605	0.36	0.82
2017	0.629	0.617	0.630	0.42	0.88
2018	0.607	0.554	0.513	0.42	0.84
2019(3)	0.508	0.503	0.488	0.25	0.86

Notes:
(1) Based on average daily flow during the months of September and October.
(2) Based on average daily flow during the months of November and December.
(3) Includes data up through November 30, 2019. Excludes several data anomalies where daily flows neared or exceeded 1.0 mgd.

1.3.2 Wastewater Flow Factors

In order to develop wastewater flow projections and allocate future flows to the collection system, relationships between land use and wastewater generation need to be developed. These relationships, called wastewater flow factors are established based on the average wastewater flow generated for each existing land use type., The wastewater flow factors from the 2007 Master Plan were used to allocate existing wastewater loads in the model as well as projecting the future flow of vacant infill. The flow factors were validated with a review of the City's water meter billing data. The flow factors for each land use type are summarized in Table 1.2.

Table 1.2 Wastewater Flow Factors

Land Use Type	Flow Factor (gpd/acre)(1)(2)
Low Density Residential	1,200
Medium Density Residential	1,400
High Density Residential	1,800
Downtown Commercial	500
Neighborhood Commercial	500
General Commercial	500
Service Commercial	500
Industrial	500
Park/ Open Space	0
Public Facility	500
Urban Reserve	1,178
Roads/ Right-of-Way	0

Notes:
(1) gpd = gallons per day
(2) From 2007 Master Plan

1.3.3 Projected Average Daily Flow

The total projected ADF for the City consists of several components:

- *Existing ADF:* Contributed by developed parcels currently connected to the collection system (determined based on proximity to the collection system). It was assumed that developed homes not currently connected to the collection system (representing minimal flows) would not connect in the near future and were not included in the future evaluation.
- *Planned Developments:* Future flows for planned developments were based on the number of planned residential dwelling units (du) and a wastewater generation rate of 342.9 gpd/du (for low density residential) and 147.4 gpd/du (for medium density residential). Wastewater generation rates were calculated based on the wastewater flow factors presented in Table 1.2 and the average density of allowable du's/acre as outlined in the City's 2005 General Plan (3.5 du/acre for Low Density Residential [LDR] and 9.5 du/acre for Medium Density Residential [MDR]).
- *Vacant Infill:* It was assumed that all undeveloped (vacant) land within the Sphere of Influence (SOI), unless otherwise noted by City staff, would develop based on the General Plan land use. Vacant areas associated with a planned development were not included in the vacant infill analysis. Projected wastewater flows for vacant infill were based on the parcel land use type, area, and the wastewater flow factors presented in Table 1.2.

The planned developments and the vacant infill are shown on Figure 1.2. Table 1.3 summarizes the number and type of residential dwelling units, land use type, and projected wastewater flows for the planned developments. As shown on Table 1.3, the planned developments contribute an estimated 0.13 mgd ADF in the future.

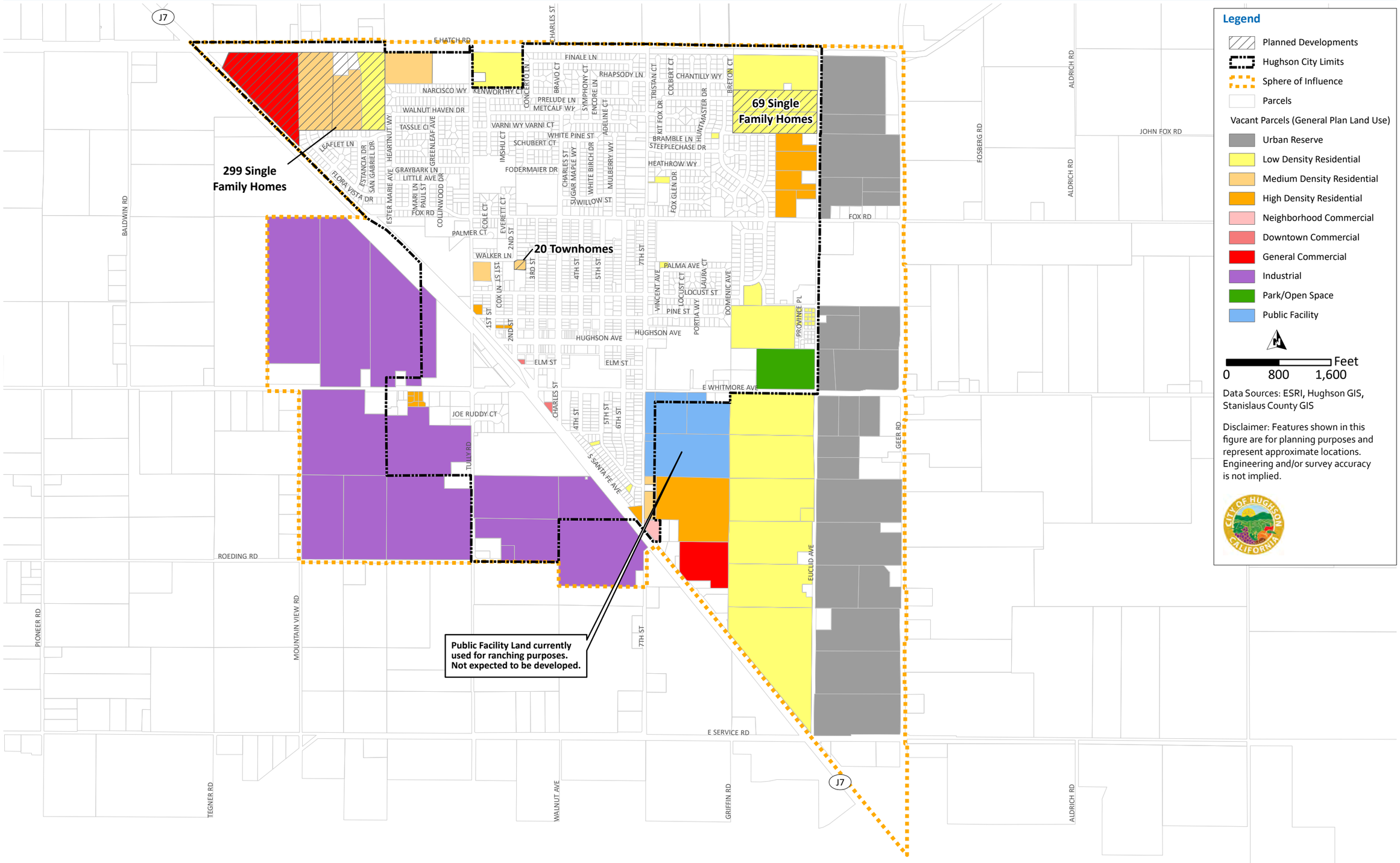

Figure 1.2 Planned Development and Vacant Land Use

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Table 1.3 Planned Development Summary

Development Location	Residential Type	Number of Units	Wastewater Generation Rate(1) (gpd/du)	Projected Wastewater Flow (gpd)
Hatch Rd. & Santa Fe Ave.	Single Family (LDR)	299	342.9	102,527
Morgan Lynn Ln. & Thomas Taylor Dr.	Single Family (LDR)	69	342.9	23,660
Walker Ln. & 2nd St.	Town houses (MDR)	20	147.4	2,948
Total	-	-	-	**129,135**

Notes:
(1) Based on the wastewater flow factors presented in Table 1.2 and the average density of allowable du's/acre as outlined in the City's 2005 General Plan (3.5 du/acre for LDR and 9.5 du/acre for MDR).

The projected wastewater flow for the undeveloped (vacant) parcels is summarized in Table 1.4. The vacant area included in Table 1.4 does not include the planned developments or the vacant Public Facility land southeast of Whitmore Avenue and 7th Street. Assuming the remaining 832.4 vacant acres develop according to the City's General Plan, this will account for approximately 0.76 mgd in additional future flows.

Table 1.4 Vacant Infill Summary

Land Use Type	Vacant Area(1) (acres)	Wastewater Flow Factor (gpd/acre)	Projected Wastewater Flow (gpd)
Low Density Residential	174.9	1,200	209,885
Medium Density Residential	21.6	1,400	30,234
High Density Residential	40.2	1,800	72,364
Downtown Commercial	0.5	500	235
Neighborhood Commercial	1.4	500	710
General Commercial	10.8	500	5,419
Service Commercial	0	500	0
Industrial	335.9	500	167,932
Parks/ Open Space	12.7	0	0
Public Facility	0	500	0
Urban Reserve	234.4	1,178	276,080
Roads/ Right-of-Way	0	0	0
Agriculture	0	0	0
Total	**832.4**	-	**762,859**

Notes:
(1) Does not include vacant area associated with a planned development or the vacant Public Facility land near Whitmore Avenue and 7th Street (currently used for ranching).

The projected wastewater flows for the existing customers, planned developments, and vacant infill is summarized in Table 1.5. As shown in Table 1.5, the City's existing design flow is 0.607 mgd and by buildout the total design flow increases to 1.50 mgd.

Table 1.5 Existing and Projected Wastewater Flow Summary

Component	Design Flow (mgd)
Existing	**0.607**
Buildout	
Planned Developments	0.129
Vacant Infill	0.763
Total Design Flow	**1.499**

1.4 Hydraulic Model Review and Validation

A wastewater collection system model is a simplified representation of the real sewer system. Sewer system models can assess the conveyance capacity for a collection system and can also be used to perform "what if" scenarios to assess the impacts of future developments and land use changes. The City's previous 2007 hydraulic model was developed in the H20MAP Sewer, by Innovyze (formerly MWH Soft). This software is no longer in use; therefore the City's previous model was imported to InfoSewer, also by Innovyze.

1.4.1 Hydraulic Model Review

After the model was imported to InfoSewer, Carollo reviewed the hydraulic model against industry standards to identify discrepancies or data gaps. The model review process included the following:

- Running queries to identify missing attributes, pipes or junctions not connected to the network, and duplicate pipes.
- Verifying that the model data (i.e., inverts, diameters, etc.) was input correctly and that the flow direction, size, and layout of the modeled pipelines were logical.
- Reviewing pipeline connectivity to determine, in a general sense, how flows are routed through the collection system.
- Reviewing other miscellaneous model parameters (including calculation options).

1.4.2 Hydraulic Model Update

The following updates and changes were made to the previous hydraulic model:

- Pump flow rates and controls were updated based on information received from the City.
- The portion of the Tully Road industrial sewer that collapsed was inactivated in the model and the upstream industrial flows were routed to the parallel 24-inch sanitary sewer pipe.
- Previously future pipes serving several proposed residential areas (near Fox Road and Little Avenue , Metcalf Way and Adeline Court, and Fox Road and Thomas Taylor Drive) were assumed to have been constructed (aerial background shows these areas to be developed).
- Average daily wastewater flows (loads) were re-allocated to the appropriate model junctions (discussed further in Section 1.4.3). A representative diurnal pattern from the 2007 flow monitoring program was applied to the updated wastewater loads.
- Dairy Farmers of America (DFA) has come offline since 2007; this industrial wastewater load was removed from the hydraulic model.

- The hydraulic model contains calculation options that need to be set by the user at the beginning of the project. These include run dates, time steps, reporting parameters, and flow routing method. Once the run parameters were established, the model was debugged to ensure that it ran without errors or warnings.

1.4.3 Wastewater Flow Allocation

Determining the quantity of wastewater flow generated by a municipality and how they are distributed throughout the collection system is a critical component of the hydraulic modeling process. Various techniques can be used to assign wastewater flows to individual model junctions, depending on the type of data that is available. Adequate estimates of the volume of wastewater are important in maintaining and sizing sewer system facilities, both for present and future conditions. The following steps outline the wastewater load allocation process:

- Step 1: The service area was broken up into individual loading polygons. Each loading polygon represents the geographic area that contributes flows into a single model node (i.e., manhole). Loading polygons were developed using GIS, based on the City's parcel, sewer pipeline, and lateral shapefiles. In an "all pipe" model, such as the City's model, a loading polygon will usually encompass an area the size of a few lots.
- Step 2: The existing ADF associated with each loading polygon was based on land use designations, parcel area, and wastewater flow factors (Table 1.2).
- Step 3: Once the existing wastewater loads were allocated into the model, they were adjusted as needed during model validation to closely match the average daily flows measured at the WWTP.

1.5 Hydraulic Model Validation

Hydraulic model validation is a crucial component of the hydraulic modeling effort to ensure confidence in the flows that are being simulated. The validated model serves as an established benchmark for further analysis and evaluation. As discussed in Section 1.3.1, evaluation of historical WWTP flow data shows that there is very little impact on the collection system from wet weather inflow and infiltration (I/I). Therefore, the model was validated to ADF only. The 2018 ADF recorded at the WWTP was approximately 0.61 mgd. The model generated flow (0.61 mgd) matched the measured data from the WWTP.

1.6 Evaluation Criteria

This section presents the planning criteria and methodologies for the analysis used to evaluate the City's existing wastewater collection system and associated facilities, which are utilized to identify existing system deficiencies, and to size proposed improvements. The planning criteria, based on the 2007 Master Plan, is summarized in the sections below.

1.6.1 Peak Flow Depth Criteria

The primary criterion used to identify existing pipeline capacity deficiencies or to size new sewer improvements is the peak flow depth criteria. This criterion is expressed as a maximum depth of flow to pipe diameter ratio (d/D). Design d/D ratios typically range from 0.5 to 1.0 (full pipe), with lower values typically used for smaller pipes, which may experience flow peaks greater than planned or may experience blockages from debris, paper, or rags.

The 2007 Master Plan recommended a maximum d/D ratio of 0.92 to evaluate the existing collection system and a maximum d/D of 0.75 be used for sizing future improvements.

1.6.2 Changes in Pipe Size

When a smaller sewer joins a large one, the invert of the larger sewer will be lowered sufficiently to maintain the same energy gradient. An approximate method for securing these results is to place the 0.8 depth point (80 percent of the pipe diameter) of both sewers at the same elevation. For master planning purposes, and in the absence of field data, sewer crowns were matched at the manholes.

1.6.3 Design Velocities

To minimize the settlement of sewage solids, it is standard practice in the design of gravity sewers to specify that a minimum velocity of 2 feet per second (fps) be maintained when the pipeline is half full. At this velocity, the sewer will typically provide self-cleaning.

1.6.4 Pump Stations and Force Mains

Pump stations were evaluated and sized for peak flow with the largest pump out of service. Additionally, the 2007 Master Plan recommended maintaining a force main velocity between 2.0 and 6.5 fps. A Hazen-Williams roughness coefficient 'C' of 120 was used.

1.7 Capacity Evaluation

Following the existing ADF validation, which is summarized in Section 1.5, a capacity analysis of the existing and future collection system was performed. The capacity analysis entailed identifying areas in the collection system where flow restrictions occur or where pipe capacity is insufficient to convey ADF. Sewers that lack sufficient capacity to convey ADF create bottlenecks in the collection system that can potentially cause sanitary sewer overflows (SSOs).

1.7.1 Existing System

For the existing wastewater collection system, the ADF was routed through the hydraulic model. Manholes where the maximum hydraulic grade line (HGL) exceeded the maximum flow depth criteria outlined in Section 1.6.1 were identified. Additionally, pump stations in which the peak hour flow exceeded the firm capacity were identified as deficient. The existing deficiencies are shown on Figure 1.3 in red. In general, the City's collection system has sufficient capacity to convey existing ADF without exceeding the established flow depth criteria. Several segments of the Tully Road industrial pipeline were shown to surcharge under existing ADF conditions, where the Whitmore Avenue Lift Station force main discharges to a manhole followed by a gravity pipe with an adverse slope.

1.7.2 Future System

The analysis of the future system was performed in a manner similar to the existing system analysis. The future system includes the complete buildout of the City limits and SOI, including all known developments and vacant infill. The purpose of the future system evaluation is to verify that the existing system improvements were appropriately sized to convey future flows, and to identify the locations of sewers that are adequately sized to convey existing flows, but cannot convey future flows. The future deficiencies are shown on Figure 1.3 in blue. As shown on Figure 1.3 there were only a few capacity deficiencies triggered under future flow conditions. Evaluation of the future system shows that the existing 24-inch sanitary sewer on Tully Road has sufficient capacity to convey flows from the Tully Road industrial line.

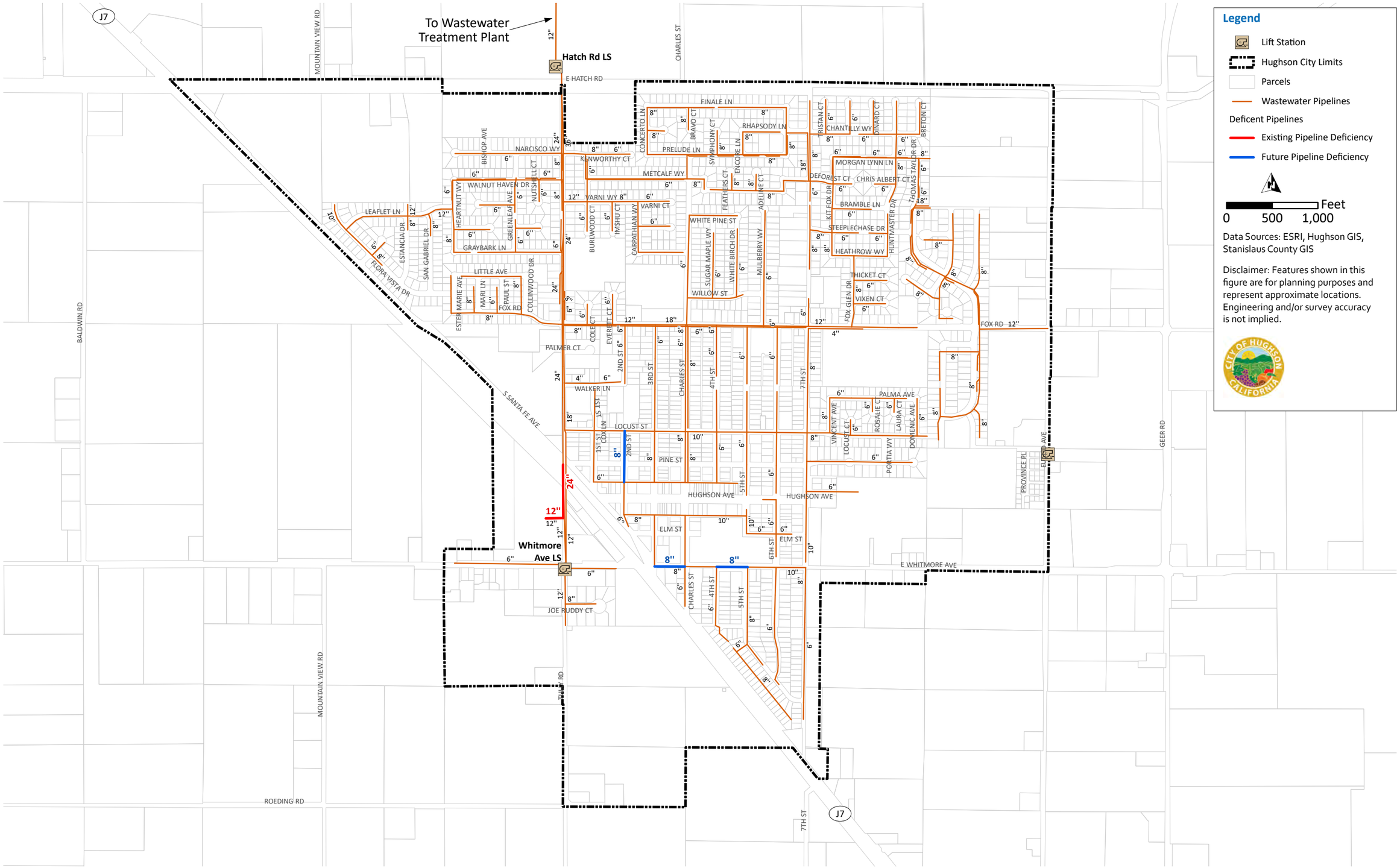

Figure 1.3 Collection System Deficiencies

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1.7.3 Tully Road Industrial Sewer Alternatives

In August 2019, a portion of the Tully Road industrial sewer collapsed causing a sinkhole. The City has been bypass pumping upstream flows from the industrial sewer to the 24-inch sanitary sewer on Tully Road. Due to the unknown condition of the remaining industrial sewer, the City is interested in abandoning the industrial sewer and routing all industrial flows to the 24-inch sanitary sewer trunk on Tully Road. An alternative scenario was set up in the model where all industrial wastewater loads (existing and future) along Tully Road were re-allocated to the sanitary trunk. For this alternative, Whitmore Avenue Lift Station was kept online and the associated force main discharged into the manhole along the sanitary 24-inch line at the intersection of Tully Road and Locust Street. Based on the updated hydraulic model, the 24-inch sanitary sewer does have sufficient capacity to convey the additional industrial loads, under existing and future ADF conditions.

1.8 Collection System Improvements

This section summarizes the improvements recommended for the wastewater collection system. The recommended improvements discussed in this section are needed to mitigate the deficiencies shown on Figure 1.3 and to serve future customers. The proposed existing improvements are sized for future conditions. As the City continues to grow, it is recommended that the proposed pipeline diameters be constructed so that the facilities have sufficient capacity for future conditions. Building a smaller interim project with the plans of upsizing in the future to account for further growth is not recommended due to the extended useful life of the improvements proposed herein. The proposed pipeline diameter represents the ultimate diameter for anticipated future conditions.

1.8.1 Existing System Improvements

Following the completion of the existing system analysis, improvement projects were identified to mitigate pipeline capacity deficiencies while maintaining the maximum flow depth criteria outlined in Section 1.6.1. The proposed improvements to address existing deficiencies are shown on Figure 1.4 and are summarized below:

- Pipeline near Tully Road and Whitmore Avenue Court (P-1): This project includes the addition of approximately 530 feet of 12-inch diameter pipeline along Tully Road, discharging just upstream of the Whitmore Avenue Lift Station. The original pipeline discharges upstream of a gravity pipeline with an adverse pipe slope. Therefore, it is recommended that the 12-inch gravity line be rerouted upstream of the Whitmore Avenue Lift Station.
- Force main near Tully Road and Whitmore Avenue Court (FM-1): This project includes extending the 12-inch diameter force main along Tully Road another 590 feet to the downstream manhole (at Tully Road and Pine Street). The original force main flows into a gravity pipeline that has an adverse slope. Therefore, it is recommended that the force main be extended to the next manhole downstream to bypass the adverse slope pipe. The original 12-inch diameter gravity main with the adverse pipe slope should be abandoned.

1.8.2 Future System Improvements

This section summarizes the proposed improvements that will serve future users. The locations of the new trunk sewers are conceptual and may change during the design phase. The proposed improvements to address future deficiencies are shown on Figure 1.4 and are summarized below:

- Pipeline along 2nd Street (P-2): This project includes the replacement of approximately 560 feet of 8-inch diameter pipeline along 2nd Street, between Hughson Avenue and Locust Street. Under future ADF conditions, the maximum d/D ratio exceeds 0.92. To mitigate this capacity deficiency, it is recommended the existing pipeline be replaced with a 10-inch diameter pipeline.
- Pipeline along Whitmore Avenue (P-3): This project includes the replacement of approximately 1,020 feet of 8-inch diameter pipeline along Whitmore Avenue, between 5th Street and 3rd Street. Under future ADF conditions, the maximum d/D ratio exceeds 0.92. To mitigate this capacity deficiency, it is recommended the existing pipeline be replaced with a 10-inch diameter pipeline.
- Euclid Project: This project consists of multiple gravity pipelines, a pump station, and a force main. These projects are recommended to serve future growth along Euclid Avenue. The project consists of the following:
  - Pipeline along Euclid Avenue (P-4): This project includes the addition of approximately 5,220 feet of 10-inch diameter pipeline along Euclid Avenue, between Dennis Wallace Lane and E Service Road.
  - Lift Station near the intersection of Euclid Avenue and Dennis Wallace Lane (LS-1): This project includes the addition of a 0.9 mgd firm capacity lift station near the intersection of Euclid Avenue and Dennis Wallace Lane.
  - Force Main along Euclid Avenue (FM-2): This project includes the addition of approximately 50 feet of 12-inch diameter force main along Euclid Avenue, north of the lift station.
  - Pipeline along Euclid Avenue (P-5): This project includes the addition of approximately 1,520 feet of 15-inch diameter pipeline from project FM2, west to Mariposa Drive, and north along Mariposa Drive.

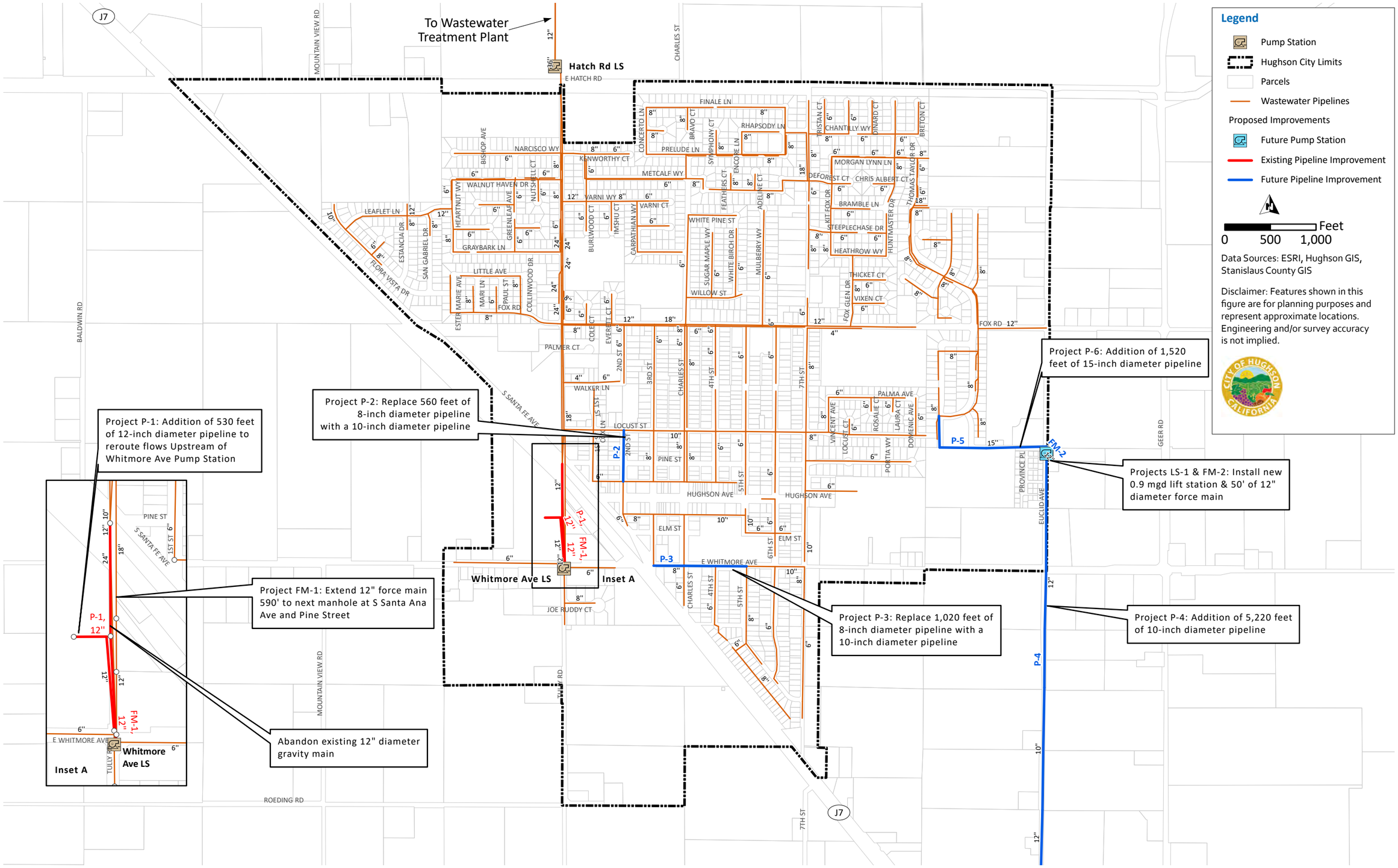

Figure 1.4 Proposed Collection System Improvements

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1.9 Project Costs and Contingency

The cost estimates presented in this study are opinions developed from bid tabulations, cost curves, information obtained from previous studies, and Carollo's experience on other projects. The costs are based on an Engineering News Record Construction Cost Index (ENR CCI) 20-City Average of 11,455 (August 2020).

Project cost estimates are calculated based on the project location, size, length, and other factors. Allowances for project contingencies consistent with an "Order of Magnitude" estimate are also included in the project costs prepared as part of this study, as outlined in this section.

1.9.1 Cost Estimating Accuracy

The cost estimates for the proposed improvements have been prepared for general master planning purposes and for guidance in project evaluation and implementation. Final costs of a project will depend on actual labor and materials costs, competitive market conditions, final project scope, implementation schedule, and other variable factors such as preliminary alignment generation, investigation of alternative routings, and detailed utility and topography surveys.

The Association for the Advancement of Cost Engineering (AACE) defines an Order of Magnitude Estimate, deemed appropriate for master plan studies as an approximate estimate made without detailed engineering data. It is normally expected that an estimate of this type would be accurate within plus 50 percent to minus 30 percent. The following sections present the assumptions used in developing order of magnitude cost estimates for recommended facilities.

1.9.2 Baseline Construction Costs

Baseline Construction Cost is the total estimated construction cost, in dollars, of the proposed improvements for pipelines and lift stations. Baseline Construction Costs for pipelines were calculated by multiplying the estimated length by the unit construction cost listed in Table 1.6. These costs include the construction of pipelines and appurtenances (e.g., manholes). The unit costs are for "typical" field conditions with construction in stable soil at a depth ranging between 10 feet to 15 feet.

Table 1.6 Pipeline Unit Costs

Pipe Size (inches)	Replacement Unit Construction Cost[1] ($/linear foot)	
	Gravity Pipe	Force Main
10	240	235
12	255	245
15	275	320

Notes:
(1) ENR 20 City Average Construction Cost Index for August 2020 is 11,455.

The Baseline Construction Cost for the proposed lift station was estimated based on nine lift station projects completed both by Carollo and other engineering companies. The Baseline Construction Costs and total pump capacities for these nine projects were used to develop a lift station cost curve, which was then used to estimate the Baseline Construction Cost for the proposed lift station. The Baseline Construction Cost for the proposed 0.9-mgd lift station is $652,000.

1.9.3 Estimated Contingency Costs

Contingency costs must be reviewed on a case-by-case basis because they will vary considerably with each project. Consequently, it is appropriate to allow for uncertainties associated with the preliminary layout of a project. Factors such as unexpected construction conditions, the need for unforeseen mechanical items, and variations in final quantities are a few of the items that can increase project costs for which it is wise to make allowances in preliminary estimates. To assist the City in making financial decisions for these future construction projects, the estimated construction cost will include a construction contingency as a percentage of the total construction cost.

Project construction contingency costs include costs associated with project engineering, construction phase professional services, and project administration. The Construction Cost contingency is assumed to be 30 percent of the Baseline Construction Costs for the purposes of this study. Engineering services associated with new facilities include preliminary investigation and reports, Right of Way (ROW) acquisition, foundation explorations, preparation of drawings and specifications during construction, surveying and staking, sampling of testing material, and start-up services. Construction phase professional services cover items such as construction management, engineering services, materials testing, and inspection during construction. Finally, there are project administration costs, which cover items such as legal fees, environmental compliance requirements, financing expenses, administrative costs, and interest during construction.

The cost of these items can vary, but for the purpose of this study, it is assumed that the other project contingency costs will equal approximately 27.5 percent of the Estimated Construction Cost.

As shown in the following sample calculation of the Capital Improvement Cost, the total cost of all project construction contingencies (construction, engineering services, construction management, and project administration) is 166 percent of the Baseline Construction Cost. Note that contingencies were not applied to land acquisition costs. Calculation of the 166 percent is the overall mark-up on the Baseline Construction Cost to arrive at the Capital Improvement Cost. It is not an additional contingency.

Example:

Baseline Construction Cost	**$1,000,000**
Construction Contingency (30 percent)	$300,000
Estimated Construction Cost	**$1,300,000**
Engineering Cost (10 percent)	$130,000
Construction Management (10 percent)	$130,000
Project Administration (7.5 percent)	$98,000
Capital Improvement Cost	**$1,658,000**

1.9.4 Estimated Capital Improvement Costs

A detailed cost estimate for each project is provided in Table 1.7. Based on the Baseline Construction Costs and estimated contingencies, the total estimated capital costs for the proposed improvements is $5.1 million (M). The proposed improvements to address existing system capacity deficiencies accounts for approximately 9 percent of the total estimated capital costs ($473,000). The estimated capital costs to address future capacity deficiencies and provide service for future users accounts for approximately 91 percent ($4.6M).

1.10 Conclusions

The City contracted with Carollo to update and validate their existing wastewater hydraulic model and re-evaluate the existing collection system under existing and future flow conditions. In general, the City's existing collection system has sufficient capacity to convey existing and future average daily flows. Several improvements were recommended to mitigate existing or future capacity deficiencies as well as to serve future growth along Euclid Avenue. In total, 0.3 miles of pipeline were recommended to be upsized and 1.5 miles of new pipeline are recommended to be installed to serve future growth. The recommendations presented in this TM were sized for future conditions. The total estimated capital improvement costs for the recommended improvements is $5.1M, including $473,000 to address existing deficiencies.

The Tully Road sanitary sewer was evaluated to determine if there was sufficient capacity to convey all flows from the Industrial sewer, which has had some recent failures. An alternative scenario was set up in the model where all industrial wastewater loads (existing and future) along Tully Road were re-allocated to the sanitary trunk. Based on the updated hydraulic model, the Tully Road sanitary sewer does have sufficient capacity to convey all existing and future industrial flows along Tully Road.

It is recommended that the City move forward with inspecting the remaining portions of the Tully Road industrial sewer to determine the condition and remaining useful life. The 24-inch sanitary sewer trunk on Tully Road has sufficient capacity to also serve existing and future industrial users on Tully Road (based on data and assumptions presented in this TM), should the City decide to abandon the industrial sewer. Carollo recommends the City inspect the 24-inch sanitary sewer on Tully Road prior to abandoning the industrial line to determine the condition and remaining useful life of that sewer, as it would then be a critical pipeline serving a majority of the City. If the industrial sewer is kept online, two proposed improvements (P-1 and FM-1) were included to mitigate existing deficiencies associated with an adverse pipe just downstream of the Whitmore Avenue Lift Station force main. These projects would not be needed if the industrial sewer is abandoned.

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Table 1.7 Capital Improvement Cost Estimate

Project No.	Type of Improvement	Location Description	Ex. Size/ Diameter (in.)	New Size/ Diameter (in.)	Replace / New	Length (ft)	Firm Capacity (mgd)	Baseline Construction Cost ($)(1)	Estimated Construction Cost ($)(2)	Total Capital Cost(2)(3)(4) ($)
Existing System Improvements										
P-1	Pipe	Tully Road and Whitmore Avenue Court	-	12	New	530	-	$135,000	$175,500	$224,000
FM-1	Pipe	Tully Road and Whitmore Avenue Court	-	12	New	590	-	$150,000	$195,000	$249,000
Subtotal Existing								**$285,000**	**$371,000**	**$473,000**
Future System Improvements										
P-2	Pipe	2nd Street (from Hughson Avenue to Locust Street)	8	10	Replace	560	-	$143,000	$186,000	$237,000
P-3	Pipe	Whitmore Avenue (5th Street to 3rd Street)	8	10	Replace	1,020	-	$260,000	$338,000	$431,000
P-4	Pipe	Euclid Avenue (Dennis Wallace Lane to E Service Road)	-	10	New	5,220	-	$1,331,000	$1,730,000	$2,206,000
LS-1	Lift Station	Euclid Avenue and Dennis Wallace Lane	-	-	New	-	0.9	$652,000	$848,000	$1,081,000
FM-2	Pipe	Euclid Avenue and Orchard Lane	-	12	New	50	-	$13,000	$17,000	$22,000
P-5	Pipe	Orchard Lane and Mariposa Drive	-	15	New	1,520	-	$388,000	$504,000	$643,000
Subtotal Future								**$2,787,000**	**$3,623,000**	**$4,620,000**
Total (Existing and Future)								**$3,072,000**	**$3,994,000**	**$5,093,000**

Notes:
(1) Based on unit costs presented in Section 1.9.2.
(2) Baseline Construction Cost plus 30% to account for unforeseen events and unknown conditions.
(3) Estimated Construction Cost plus 27.5% to cover other costs including Engineering, Construction Management, and Project Administration.
(4) Costs are based on the Engineering News Record Construction Cost Index 20-city average of 11,455 (August 2020).

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CITY COUNCIL AGENDA ITEM NO. 4.2
SECTION 4: UNFINISHED BUSINESS

Meeting Date: **November 9, 2020**
Subject: **Adopt Resolution No.2020-67, Awarding the Well No. 7 Replacement Project, Phase IV Bid to Gateway Pacific Construction in the Amount of $7,895,716 and Authorizing a 10% Construction Contingency and a 10% Set-aside for Construction Management**
Presented By: **Lea Simvoulakis, Community Development Director**

Approved By: Merry Mayhew

Staff Recommendations:

1. Adopt Resolution No. 2020-67, awarding the Well No. 7 Replacement Project, Phase IV to Gateway Pacific Construction in the amount of $7,895,716 and authorizing a 10% construction contingency and a 10% set-aside for construction management.

2. Authorize the City Manager to execute the final construction contract with the lowest responsible bidder, inclusive of any final edits by the City Attorney.

Background:

On June 8, 2020, the Hughson City Council authorized staff to release bid documents for the Well No. 7 Replacement Project, Phase IV. The Well 7 Replacement Project is a four-phase project that includes the construction of a new water well site (Hughson Well No. 9), which will contain a water treatment system, a 1 million gallon concrete storage/blending tank, as well as the re-drilling of Well No. 5 in a new location on the same parcel (to be called Hughson Well No. 10) and a new water distribution pipeline to connect the well sites.

The City Council awarded the bid for Phase I to Anthony J. Prieto Water Well Drilling in the amount of $891,319 on October 8, 2018. The Notice of Completion was approved by City Council for Phase I on November 12, 2019. On July 8, 2019, the City Council awarded Phase II to Gateway Pacific Construction. The Notice of Completion for this phase was approved on July 27, 2020. Phase III is a sole source contract with Rescue Engineers, Inc., for the purchase of a water treatment system

to be installed in the new replacement Well No. 9 and re-drilled Well No. 5 sites. This proprietary system will be installed by the Phase IV bid winner. The Phase III purchase agreement was approved by City Council on June 22, 2020.

Phase IV includes the installation of the water treatment equipment from Phase III, the construction of the control building and chemical systems, all mechanical and electrical work, off-site transmission piping, and the restoration of the Well 5 site. The restoration work includes demolishing the well, paving and striping the site per California TrusFrame specifications, and providing curb and gutter work to install a larger driveway for California TrusFrame.

After the initial release of the Phase IV Bid on June 8, 2020, the bid closure date was extended twice. The first bid closure date was extended at the request of several contractors who were not able to attend the mandatory bid meeting on July 7, 2020. It was determined that if more bidders were interested in bidding on the project, the result would be better for the City. As such, the bid date was moved from July 20, 2020 to September 3, 2020. Despite this extended bid date, the contractors indicated that they were still having a hard time getting responses from vendors critical to the final design. Additionally, subcontractors that remained open during the COVID pandemic were overwhelmed with work and were not responding to bids as expected. In order to make sure at least three bids were received by the City, the bid date was extended from September 3, 2020 to September 17, 2020.

On September 17, 2020, the City held a bid opening and received three sealed bids. The bids received are listed below:

1. Gateway Pacific Construction $ 7,895,716.00
2. CWI Conco West, Inc. $ 7,974,770.00
3. GSE Construction Co., Inc. $ 8,750,400.00

The City Engineer's estimate for Phase II was $5,200,000. The bids that came in for this phase were much higher than anticipated for several reasons:

- American Iron and Steel Act (AIS): The contractors indicated that the cost of steel products was at a market high due to a combination of AIS provisions and U.S. steel tariffs. Steel costs pushed an increase in project costs up 10%. Due to the state being the funding source for the project, it is a requirement that American Iron and Steel be used, so there was no way around this issue.

- Local Market Forces: Due to a low supply and high demand of electrical subcontractors, the electrical subcontractors were bidding out work at a rate that was more than $1 million dollars higher than expected.

- Time Lapse between original estimate and project phasing: The original phase estimate was developed in 2013. Although adjustments to the project

cost occurred, they were predominantly limited to estimates of construction cost inflation. Due to significant delays in the project, even inflation multiplier estimates cannot account for things like a pandemic or the 25% tariff on steel in 2018. In addition, the final design was not completed until 2020, as new well production data was needed to size pipes, filters, motors, electrical demands, etc. During this time there were numerous changed in building, power, and other codes, as well as changes in state and federal safety measures. All of these items amounted to increased costs for this phase.

- COVID-19: The current pandemic has disrupted various sectors of the economy, including materials, equipment parts and supplies, product demands, and labor. These disruptions have created some inefficiencies in the construction trades and reportedly increased overall construction costs. It is difficult to attribute a number to the increases in pricing caused by the pandemic, but the pandemic's impact on these bid results is undeniable.

The Fiscal Impact section below further discusses the resulting fiscal impacts of the increased costs on the project. This section also identifies the City's path forward related to funding this final phase of the project.

After reviewing the bids, the apparent lowest bid was analyzed to ensure that it met the City of Hughson's request for the project. After reviewing the apparent lowest bid, it was determined that the bidder was a responsible bidder and could be awarded the contract. Therefore, it is appropriate for the Council to award the bid for the Well No. 7 Replacement Project, Phase IV to Gateway Pacific Construction.

The contract specifies that the contractor will commence work within 10 days after the Notice to Proceed (NTP) is issued. Ideally, this work will begin as soon as possible, and the City will work with the contractor to establish a start date for the project. The contract requires that the contractor complete the work within 330 calendar days from the date established in the Notice to Proceed.

Fiscal Impact:

After the Well 7 Replacement Project was approved by the State Water Resources Control Board (SWRCB), the City received funding through the California Safe Drinking Water State Revolving Fund (SDWSRF) in the amount of $8,327,753. The City Council approved a funding agreement with the State of California, which provided up to $5 million in grant funding with the remainder available in the form of a loan at 0% interest over 30 years. In July 2015, the City of Hughson adopted a water rate increase to be able to finance the debt service associated the project. The City was eligible for a 0% loan because a survey was conducted in 2015 which identified Hughson as a Disadvantaged Community (DAC).

On January 9, 2019, the City of Hughson received correspondence from the SWRCB Division of Financial Assistance that due to changes in its accounting program, and issues encountered, it would be unable to reimburse claims in a timely manner with no indication as to when the problem would be resolved. As a result, on February 11, 2019, the City Council authorized an internal bridge loan from the

Sewer Fixed Asset Replacement Fund to continue with Phase I of the project. Since that time, City staff has received additional correspondence from the Rural County Representatives of California (RCRC), on behalf of the State, that interim financing would be available for Hughson and other similar jurisdictions already in construction. This system glitch has been resolved, but the State has been very slow at reimbursing the City. At this point over $1.5 million dollars are owed to the City in reimbursements.

On July 13, 2020 the City Manager received Amendment No. 2 for the Well 7 Replacement Agreement No. D16-02057 indicating that the entire $8,327,753 cost of the Well 7 project would be a grant and that the loan principal would be forgiven by the state. This agreement amendment was approved by the City Council at the July 27, 2020 City Council meeting. There was discussion at this time that the state would also increase the grant amount to cover inflation costs that accrued over the course of the project lifetime. At this point, staff and the City's contracted water engineer anticipated that the entire project would fall within the grant amount plus an additional million dollars for inflation. The State agreed that the entirety of the project would be covered by the grant.

When the bids were returned for the final phase of the project, the bid amounts were shockingly high. The reasons for the high bid have been discussed above. With the bid amount for Phase IV ($ 7,895,716) plus the costs of Phase I ($1,004,536), Phase II ($1,896,104), Phase III ($614,405), and all contingencies, the total project will cost about $12,800,000. This is about $4,472,247 over the original budget.

When presented with this information, the State agreed to extend the grant portion of the funding agreement to $9,624,572 and the remaining portion would be a loan at a 1.4% interest rate. The State also indicated that once the Consolidation Project is complete, they would offer the City an incentive of $430,000 and readjust the loan term to a 0% loan for the remaining costs of the project.

The State determined that the City of Hughson is no longer eligible for a 100% grant project or a 0% loan because the City has fallen out of the Disadvantaged Community (DAC) status. In 2014 City staff worked with Rural Community Assistance Corporation (RCAC) on a citywide income survey that concluded in January 2015. Based on the results, the City of Hughson's median household income (MHI) was $48,000 based on a 29 percent response rate. Although not adequate based on the 2014 California Disadvantaged MHI, the City's median household income did meet the 2015 threshold of $48,875. As such, Hughson was given DAC status, making the City eligible for a 100% grant project or a 0% loan. Up until July 2020, the funding package included a $5 million grant with the remaining $3,327,753 funded as a 0% loan.

The City's DAC status expired in March 2020. In an early October 2020 discussion with the SWRCB project manager, it was implied that the City, while out of DAC status, would have the opportunity to conduct a new third-party survey to identify that Hughson is in fact still a DAC. Once DAC status was reestablished, the State would then be able to offer a 0% loan. While there was also a potential that the City could receive a full grant for the remainder of the project, the project manager was not able to commit to a full grant as it is dependent on the State's funding at the time.

However, the option to conduct a new survey to identify that Hughson is still a DAC, was rescinded in an October 22, 2020 email. The SWRCB staff indicated that they were asked to look into the MHI using the American Community Survey (U.S. Census), and the 2018 data showed that Hughson's MHI is $74,659. Even with a margin of error deduction, Hughson's listed income is $67,159 which is higher than the eligible MHI ($56,982) for DAC status. Because of this number, the State will not authorize the City to conduct a 3rd party income survey. City staff feel strongly that this listed MHI is not reflective of the City's population as a whole and as a result, staff is still working with the State to negotiate better loan terms for the City. At this time, City staff are recommending accepting the State's current funding terms which include a 75% grant (approximately $9 million) and 25% loan ($3.8 million) in order to move forward with the Well 7 Replacement Project, Phase IV. The City has written confirmation of these terms, which also includes a commitment from the State that once the Consolidation Project is completed, the State will reduce the loan by $430,000 and change the 1.4% interest rate to a 0% interest rate loan, as an incentive for the City to participate in the Consolidation Project. Staff anticipate receiving an Amendment to the current Funding Agreement from the State and will be bringing the Amendment to Council for approval.

The Consolidation Project is anticipated to be completed in 2023 and each new connection from the consolidation project (43 connections) will be charged a connection fee. If the new development impact fees are adopted, each connection will be charged $5,277 for a total of $226,911, which can be used toward the principle of this loan.

CITY COUNCIL
CITY OF HUGHSON
RESOLUTION NO. 2020-67

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON AWARDING THE WELL NO. 7 REPLACEMENT PROJECT, PHASE IV BID TO GATEWAY PACIFIC CONSTRUCTION IN THE AMOUNT OF $7,895,716, AUTHORIZING A 10% CONSTRUCTION CONTNIGENCY AS WELL AS A 10% SET-ASIDE FOR CONSTRUCTION MANAGEMENT AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE FINAL CONSTRUCTION CONTRACT WITH THE RESPONSIBLE LOW BIDDER

WHEREAS, the Well No. 7 replacement Project, Phase IV was competitively bid pursuant to Public Contract Code §22032(c); and

WHEREAS, bids were opened on September 17, 2020 and the responsible low bidder was Gateway Pacific Construction with a bid of $7,895,716; and

WHEREAS, a 10% construction contingency as well as a 10% construction management set-aside is needed for the project budget; and

WHEREAS, funding for the project is available through the California Safe Drinking Water Sate Revolving Fund in the form of a $8.3 million grant for Phase I, II, III and a portion of Phase IV, and a new agreement for a new grant of $9.62 million dollars and a 1.4% interest loan for $3.2 million dollars. The funding will be included in the City of Hughson's Fiscal Year 2020-2021 Budget.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson does hereby award the Well 7 Replacement Project, Phase IV to lowest responsible bidder, Gateway Pacific Construction in the amount of $7,895,716, authorizes a 10% construction contingency as well as a 10% set-aside for construction management, and authorizes the City Manager to execute the final construction contract for the project with the lowest responsible bidder inclusive of any final edits by the City Attorney.

PASSED AND ADOPTED by the City Council of the City of Hughson at its regularly scheduled meeting on this 9th day of November 2020 by the following roll call vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

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<
<
<

APPROVED:

_____

JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk

CITY OF HUGHSON

DEPARTMENT OF PUBLIC WORKS

TECHNICAL SPECIFICATIONS

FOR

CITY OF HUGHSON
WELL #7 REPLACMENTMENT PROJECT
PHASE IV STORAGE TANK

(Project No. 5010008-011C)

BID SET

PREPARED BY:

SHORELINE ENVIRONMENTAL ENGINEERING
4120 CAMERON PARK DRIVE, SUITE 100A
CAMERON PARK, CA 95682
(916) 806-3970

April, 2020

SECTION 0020 - NOTICE INVITING BIDS

SEALED BIDS will be received at the **Hughson City Hall 7018 Pine Street, Hughson, CA, 95326**, until **2:00 p.m., on Monday, July 20, 2020 at** which time they will be publicly opened and read, for performing work as follows:

Project: **CITY OF HUGHSON**
COMMUNITY DEVELOPMENT DEPARTMENT

WELL 7 REPLACEMENT PROJECT PHASE IV IMPROVEMENTS
PROJECT NO. 5010008-011C

Bids received after this time will not be accepted, and will be returned unopened. At said place and time, and promptly thereafter, all Bids that have been duly received will be publicly opened and read aloud. All interested parties are invited to attend.

Copies of the Plans and Specifications are on file and may be examined and purchased at Hughson City Hall, 7018 Pine Street, Hughson, CA 95326, (209) 883-4054, or on our website for viewing only at http://hughson.org. **Copies of the Plans and Specifications required for the Bid must be purchased from the Owner (City of Hughson) for a non-refundable fee of $30.00.**

The work to be performed is described in the Contract Documents.

No bid will be received unless it is made on a Bid Form furnished by the City per the Contract Documents. The proposal shall be submitted in a sealed envelope and it shall be addressed to **the City Clerk, City of Hughson, P.O. Box 9, Hughson, California 95326**, and shall be clearly marked as follows:

Bid Document : ***WELL 7 REPLACEMENT PROJECT PHASE IV IMPROVMENTS***
CITY PROJECT NO. 5010008-011C

This project is subject to state contract nondiscrimination and compliance requirements pursuant to Government Code, Section 12990.

Bids are required for the entire work described herein.

Prebid Meeting: A mandatory pre-bid meeting will be held on July 6, 2020 Bidders shall meet at City Hall, 7018 Pine Street, Hughson, CA, 95326.

All proposals or bids shall be accompanied by a cashier's or certified check, or Bid Bond payable to the order of the **City of Hughson** amounting to not less than ten (10%) percent of the bid, as a guarantee that the bidder, if awarded the Contract, will fulfill the terms of the bid.

All bids are to be compared on the basis of the estimated quantities of work to be done. No bidder may withdraw his bid for a period of ninety (90) days after the date of opening the bids. The City reserves the right to reject any and all bids or to waive any irregularities or informalities in any bid or in the bidding, including unbalanced or incomplete bids, or taking exception to bid items.

The State Director of the Department of Industrial Relations has established the general prevailing rates of per diem wages and rates for overtime and legal holidays in the locality in which the work is to be performed. No less than said prevailing wages shall be paid for work on this project.

Pursuant to California Public Contract Code Section 22300, and at the request and expense of the Contractor to whom the Contract is awarded, approved securities shall be permitted in substitution for money withheld by the City to ensure performance under the Contract.

In accordance with the provisions of California Public Contract Code Section 3300, the City has determined that the Contractor shall possess valid **Class 57 Contractor's License** at the time that the contact is awarded. Failure to possess the specified license shall render the bid as non-responsive and shall act as a bar to award of the contract to any bidder not possessing said license at the time of award.

_____ Dated: _____

Ashton Gose
Deputy City Clerk
City of Hughson

Published: **June 16, 2017**

SECTION 0030 - INSTRUCTIONS TO BIDDERS

1.1 BIDDING PROCEDURES

1.1.1 Each bidder, by submitting its bid, represents that it understands the scope of work and its obligation with respect to performance. All bidders must submit their proposals on the forms provided. To be valid, a bid must be received at the place and before the time designated, or prior to any extension granted by an addendum. No bidder may withdraw, adjust, or modify its bid for a period of 90 calendar days after the acceptance of bids. Addenda will be provided to each bidder of record and will be placed on file at the location for bidding documents. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the City and the bidder.

1.2 EXAMINATION OF BIDDING DOCUMENTS

1.2.1 All interpretations and/or corrections of the bidding documents shall be in writing by the ENGINEER, Shoreline Environmental Engineering, in the form of addenda. No other interpretations or corrections shall be considered valid for bidding purposes. Any bidder planning to submit a proposal is responsible for examining with appropriate care the complete specifications and all addenda, and is also responsible for informing itself with respect to all conditions which might in any way affect the performance of any work.

1.2.2 The Contract Documents contain the provisions and performance required for the construction of the project. Information obtained from an officer, agent, or employee of the City or any other person shall not affect the risks or obligations assumed by the Contractor or relieve the Contractor from fulfilling any of the conditions of the contract.

1.2.3 No oral interpretations will be made to any bidder as to the meaning of the Contract Documents. Requests for interpretation of the Contract Documents shall be in writing delivered to the ENGINEER at least 5 days before the time announced for the bid opening, at:

Email: cort@h2oengr.com

1.3 QUALIFICATION OF BIDDERS

1.3.1 Each Bidder by submitting its bid represents that it is qualified to perform the scope of the work for which it submits its proposal. It further represents that it can do so in the time specified. Each bidder shall submit with its proposal an experience statement substantially in the form included in the Bid Forms of the Contract Documents. In determining the Bidder's qualifications, the following factors will be considered: work previously completed by the Bidder and whether the Bidder (a) maintains a permanent place of business, (b) has adequate plant and equipment to do the Work properly and expeditiously, (c) has the financial resources to meet all obligations incident to the Work, and (d) has appropriate technical experience. Each Bidder may be required to show that he has handled former work so that no just claims are pending against

such work. No bid will be accepted from a Bidder who is engaged on any work, which would impair his ability to perform or finance this work.

The City may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the City all such information and data for this purpose as the City may request. The City reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder, fails to satisfy the City that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional or qualified bids will not be accepted.

1.4 PREPARATION AND SUBMISSION OF PROPOSALS

1.4.1 Proposals shall be submitted on the Bid Forms provided with the Contract Documents. The copy shall be properly executed as described above, and any interlineations, alterations, or erasures shall be formally explained and initialed by the Bidder. Failure to comply with this requirement may be cause for rejection of the proposal. Each proposal shall show the full legal name and business address of the bidder, including its street address, and shall be signed with the usual signature of the person or persons authorized to bind the bidder and shall be dated. Proposals by a partnership or joint venture shall list the full names and addresses of all partners or joint venturers. The State of Incorporation shall be stated when a corporation is a party as a bidder. The name of each signatory shall be typed or otherwise clearly imprinted below each signature. When requested by the City, satisfactory evidence of the authority of any signatory on behalf of the bidder shall be furnished. The proposal shall be enclosed in a sealed envelope, distinctly marked "proposal" and bearing the project title as given and the name and address of the bidder.

1.4.2 All bids must be made on the required bid form. All blank spaces for bid prices must be filled in, in ink or typewritten, and the bid form must be completed and executed when submitted. Only one copy of the bid form is required. Bidders shall follow instructions as defined in the Bid Forms of the Contract Documents.

1.5 SITE INSPECTION AND CONDITIONS

1.5.1 In addition to examination of the drawings and specifications, each prospective bidder shall make whatever other arrangements are necessary to become fully informed regarding all existing and expected conditions and matters which could affect any work or the performance of any work in any way, and especially the cost of performing any work. Any failure to fully investigate the site or the foregoing conditions shall not relieve the bidder from the responsibility of estimating properly the difficulty or cost of successfully performing any work. Neither the City nor any of its representatives or agents assumes the responsibility for any understanding or representation made by the City or any of its representatives or agents prior to execution of the contract pursuant to the specification.

1.5.2 Bidders must satisfy themselves of the accuracy of the contract documents by examination of the site and a review of the drawings and specifications, including addenda. After bids have been submitted, the bidder shall not assert that there was a misunderstanding concerning the work or of the nature of the work to be done. The submission of a Bid will constitute an

incontrovertible representation by Bidder that Bidder has complied with every requirement of this part, that without exception the Bid is premised upon performing and furnishing the work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the work.

1.6 PROPOSAL OPENINGS AND AWARD OF CONTRACT

1.6.1 Proposals will be kept unopened until the time stated for opening of proposals. At such time, the City will announce the bidder, the total bid price, and listed subcontractors. No responsibility shall be attached to the City or any of its officers, employees, or representatives for the premature opening of proposals. All bidders or their authorized representatives are invited to be present at the proposal opening. The successful bidder will be notified in writing by the City of the award of contract within **90 calendar days** after opening of proposals. Accompanying the City's Notice of Award will be the contract which the successful bidder will be required to sign and return, together with the performance bond, payment bond, and insurance coverage certifications. All the above documents shall be returned to the City within **7 calendar days** following receipt of the Notice of Award. The City will promptly determine whether such contract, bonds, certificates of insurance, and other required documents are as required by the specifications, and upon such determination, will forward a fully signed copy of the contract and a Notice to Proceed to the successful bidder, provided that the City reserves the right to issue a Notice to Proceed at any time prior to forwarding such contract. The failure of any bidder to whom the City may award the contract as aforesaid to properly sign and return to the City the contract, together with the required performance bond, payment bond, certificates of insurance, and other documents within the specified time period, shall entitle the City to declare a breach of contract by such bidder, to award the contract to another bidder in accordance with the provisions of the Contract Documents, and to declare a forfeiture of the bidder's proposal security accompanying its proposal. In the event of such failure, the City will suffer damage, the amount of which is difficult, if not impossible, to ascertain, and the City shall therefore be entitled to retain the amount of such cashier's or certified check, or to enforce the provisions of said bid bond in the amount thereof, as liquidated damages for such breach of contract.

1.6.2 If, within **24 hours** after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw his bid, and his Security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the work. Failure to provide notice within the time designated may cause the bidder to forfeit its bid bond, as determined by the City.

1.6.3 The City will return the bonds of all except the lowest three responsible bidders. When the agreement is executed, the bonds of the two remaining unsuccessful bidders will be returned. The bid bond of the successful bidder will be retained until the performance bond and payment bond have been executed and approved, after which it will be returned. A cashier's check may be used in lieu of a bid bond.

1.7 ACCEPTANCE OR REJECTION OF BIDS

1.7.1 The Contract will be awarded to the lowest responsive, responsible bidder, provided that all bidders acknowledge the right of the City to accept or reject any and all bids and to waive any informality or irregularity in any bid received. The low bidder will be determined by adding the bid amounts for the Base Bid Items.

1.8 PROPOSAL SECURITY

1.8.1 No proposal will be considered unless it is accompanied by a proposal security in the form of a certified check or a cashier's check, payable to the order of the **City of Hughson** for a sum not less than 10% of the total bid as set forth in the bidder's proposal, or a bidder's bond in the same amount executed as surety by a corporation acceptable to the City and authorized to issue such surety bond in the State of California. Such bond shall be in substantial conformity with the form included in these Contract Documents.

1.9 BONDS AND INSURANCE POLICIES

1.10 The Bidder to whom the contract award is made shall furnish to the City a performance bond and a payment bond, executed as surety by a corporation acceptable to the City and authorized to issue surety bonds in the State of California. Such bonds shall be substantially in the form included in these Contract Documents. Such performance bond and payment bond shall each before 100% of the total bid as set forth in the Bidder's proposal. The entire cost of these bonds shall be borne by the successful Bidder. The successful Bidder shall, at the time of execution of the contract, deliver to the City two copies of the certificates, on the carrier's forms, attesting to the fact that the required policies of insurance have been obtained.

1.11 SUBMISSION OF BIDS AND AGREEMENT TO ASSIGN

1.11.1 In submitting a bid, the Contractor agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700)) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

1.12 BID PROTEST

1.12.1 Any bid protest must be in writing and received by City at 7018 Pine Street, Hughson California, before 5:00 p.m. no later than two working days following bid opening (the “Bid Protest Deadline”) and must strictly comply with the requirements set forth in this Section 1.12.

1.12.2 General. Only a bidder who has actually submitted a proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.

1.12.3 Protest Contents. The bid protest must contain a complete statement of the basis for the protest and all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion or portions of the Bid Form, Contract Documents, or bidding documents upon which the protest is based. The protest must include the name, address, email address, and telephone number of the person representing the protesting bidder if different from the protesting bidder.

1.12.4 Copy to Protested Bidder. A copy of the protest and all supporting documents must be concurrently transmitted by fax or by email, by or before the Bid Protest Deadline, to the protested bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.

1.12.5 Response to Protest. The protested bidder may submit a written response to the protest, provided the response is received by City before 5:00 p.m., within two working days after the Bid Protest Deadline or after actual receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must include all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address, email address, and telephone number of the person representing the protested bidder if different from the protested bidder.

1.12.6 Copy to Protesting Bidder. A copy of the response and all supporting documents must be concurrently transmitted by fax or by email, by or before the Bid Protest Deadline, to the protesting bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.

1.12.7 City's Decision. The scope of the bid protest considered by the City shall be limited to the issues set forth in the bid protest timely filed pursuant to this Policy. The City may take any action on the bid protest that is authorized by law, including adoption of City staff's recommended determination of the bid protest, adoption of a determination different from that recommended by City staff, or the rejection of all bids without deciding the bid protest. The decision of the City on a bid protest shall be the final administrative action on the protest and shall exhaust the protesting bidder's administrative remedies.

1.12.8 Exclusive Remedy. The procedure and time limits set forth in this section are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. A bidder's failure to comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

1.12.9 Right to Award. The City Council reserves the right to award the Contract to the bidder it has determined to be the responsible bidder submitting the lowest responsive bid, and to issue a

notice to proceed with the Work notwithstanding any pending or continuing challenge to its determination.

1.12.10 Rejection of All Bids. The filing of a bid protest shall not preclude the City from rejecting all bids. Rejecting all bids shall render a protest moot and terminate all protest proceedings.

- END OF SECTION -

SECTION 0040 – PROPOSAL AND BID FORMS

1 – Proposal

_____

NAME OF BIDDER

The undersigned herby proposes to the **City of Hughson** ("City") to furnish all labor, technical and professional services, supervision, materials, and equipment and to perform all operations necessary and required to complete the

CITY OF HUGHSON
COMMUNITY DEVELOPMENT DEPARTMENT

WELL 7 REPLACEMENT PROJECT PHASE IV IMPROVEMENTS
CITY PROJECT NO. 5010008-011C

The work shall be completed in accordance with the provisions of this document and the associated drawings, and at the prices stated opposite the respective items set forth in the Schedule of Items and Prices attached hereto.

The undersigned agrees that this Proposal constitutes a firm offer to the City which cannot be withdrawn for **90 calendar days** from and after the date set for opening of proposals, or until a contract is fully executed by the City, whichever is earlier.

The undersigned certifies that it has examined and is fully familiar with all of the provisions of this document, the drawings, and any addenda thereto; that it has carefully checked all the words and figures shown in its Schedule of Items and Prices; that it has carefully reviewed the accuracy of all statements in this proposal and attachments hereto; and it understands and agrees that the City will not be responsible for any errors or omissions on the part of the undersigned in preparing this proposal. The undersigned hereby acknowledges the receipt of Addenda (s) _____.

The undersigned represents that it has made careful examination of this document and the drawings and by examination of the actual site conditions has satisfied itself as to the nature and location of all work, the general and local conditions to be encountered in the performance of any work, and all other manners which can in any way affect the work or the cost thereof.

If awarded a contract, the undersigned agrees to execute and deliver to the City within **7 calendar days** a signed contract, performance, and payment bonds, the necessary insurance certificates, and all other required documents upon receipt of a *Notice of Award*. Upon receipt of a Notice to Proceed, the undersigned shall complete all work within **330 calendar days**. Liquidated damages in the amount of **five hundred dollars ($500) per calendar day** shall be assessed after the designated **330 calendar days** have expired, unless otherwise permitted based on the Contract Documents.

The undersigned certifies that it is a **Class A** Contractor now licensed in accordance with the provisions of the Contractor's License Law of the State of California, and the number of said license is _____ _____ and that said license expires _____, 20 _____.

Contractor:_____

By:_____
Printed Name

_____
Signature

_____
Dated

_____
Title

Bidder's Business Address

_____

_____

Telephone Number:_____

Fax Number:_____

NOTES: (i) All Proposal and Bid Forms must be completed and submitted with bid. Forms must be completed in ink.

(ii) Bid by corporations must be executed in the corporate name by the president or a vice president (or other corporate officer accompanied by evidence of the authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

(iii) Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

(iv) Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant.

(v) The names of all persons signing must also be legibly printed or typed below the signature. A Bid by a person who affixes to his signature the work "president", "secretary", "agent", or other designation without disclosing his principal may be held to be the Bid of the individual signing. When requested by Owner, evidence of the authority of the person signing shall be furnished.

2 – Schedule of Items and Prices

CONTRACTOR

In accordance with the CONTRACT DOCUMENTS, the undersigned Bidder herby proposes to furnish all materials, equipment, tools, labor, and incidentals new and free from defect required for the above stated project as set forth in the Contract Documents and any addenda thereto, and to perform all work in the manner and time prescribed therein.

Bidder declares that this proposal is based upon careful examination of the work site, Plans, Specifications, INSTRUCTIONS TO BIDDERS, and all other contract documents, including but not limited to:

Contract General and Technical Specifications
Project Plans
Geotechnical Report
City Construction Standards
Addenda

If this proposal is accepted for award, Bidder agrees to enter into a contract with the City at the total bid set forth in the following Unit Price Table. Bidder understands that failure to enter into a contract in the manner and time prescribed will result in forfeiture to the City of the Bidder's Bond accompanying this proposal.

The Bidder agrees to furnish all labor, material, equipment, transportation, and services for the construction of the Work complete in is entirety as defined in the Contract Documents. The equipment and material supplied shall be new and free from defects. Incomplete or partial proposals will not be considered. The bid price(s) quoted shall include all taxes, royalties, insurance, transportation, permits, bonds, freight, and fees imposed upon the Bidder. The City reserves the right, after opening bids, to reject all bids or to make an award to the lowest responsive, responsible Bidder.

The Bidder shall submit a single base bid price as required by the Proposal, said base bid being the total of the prices for the various items listed in the Bid Form. The Base Bid shall be stated in words and numerals, in case of a conflict, words will take precedence.

The quantities shown on the Unit Price Table above are for bidding purposes only. The actual quantities of each item may vary. Payment will be the product of the unit price and actual quantity of material or labor provided.

The unit prices provided by Bidder represents the total cost to provide all labor, materials, and equipment necessary to construct each item of work. Unbalanced bids shall be rejected.

UNIT PRICE TABLE OF BID FORM

WELL 7 REPLACEMENT PROJECT PHASE IV IMPROVEMENTS
CITY PROJECT NO. 5010008-011C

Scope of Work: Furnish all labor, materials, tools, equipment, transportation and incidentals necessary for completion of said Work as defined in said project contract documents.

Submitted By (Contractor Name): _____

ITEM No.	ITEM	Unit of Measure	Estimated Quantity	Unit Price	Amount
1	MOBILIZATION	LS	1		
2	YARD PIPING	LS	1		
3	MECHANICAL	L.S.	1		
4	INSTRUMENTATION	L.S.	1		
5	SITE ELECTRICAL	L.S.	1		
6	SWITCHGEAR, MCC, PLC	L.S.	1		
7	SCADA AND TELEMETRY	L.S.	1		
8	CONTROL BUILDING	SQ. FT.	1,344		
9	CHEMICAL DISINFECTION SYSTEM	L.S.	1		
10	SITE WORK	L.S.	1		
11	GENERATOR	L.F.	1		
12	BACKWASH TANK	L.S.	1		
13	16" TRANSMISSION PIPING	L.F.	3,150		
14	12" TRANSMISSION PIPING	L.F.	1,900		
15	INSTALLATION OF OWNER'S FILTERS	L.S.	1		
				TOTAL:	

TOTAL BID PRICE FOR SCHEDULE (Base Bid) **$** _____

TOTAL BID AMOUNT IN WORDS _____

Bidder's Initials _____

TOTAL BID AMOUNT IN WORDS _____

Bidder's Initials _____

Bidder acknowledges receipt and understanding of all addenda associated with the project. Bidder shall list the addenda received by indicating addendum number and date in the spaces below:

Addendum Number _____ Date Received _____

Addendum Number _____ Date Received _____

Addendum Number _____ Date Received _____

3 – Equipment, Materials and Systems

The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the "effective date of the Agreement". The procedure for submittal of any such application by Contractor and consideration by Engineer is set forth in the General Conditions which are supplemented in the General Requirements.

Whenever a material or article is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, the specified item mentioned shall be understood as establishing the type, function, and quality desired. Other manufacturer's products will be accepted provided sufficient information is submitted to allow Engineer to determine that the products submitted are equivalent to those names. Applications for such review will not be considered by Engineer until after the "effective date of the Agreement". The procedure for submittal of any such application by Contractor and consideration by Engineer is set forth in the General Conditions which are supplemented in the General Requirements.

The Bidder shall designate the manufacturer or supplier of the equipment, materials and systems listed below. Bidder guarantees the listed manufacturers and suppliers have products which comply with the requirements of the specifications.

1. **Fabricated Steel Pipe and Coatings** _____

2. **Generator** _____

3. **Steel Backwash Tank** _____

4. **Booster and Well Pumps/Motors** _____

5.

4 – Bidder's Bond

KNOW ALL MEN BY THESE PRESENTS, that we _____

_____

as Principal,_____and as Surety, are firmly held and bound unto the City of Hughson ("City"), organized and existing under the laws of the State of California, sometimes referred to as the City, in the sum of $_____ (which is a sum not less than ten percent of the amount of the total bid) for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that, whereas the Principal has submitted to the City the accompanying Proposal dated _____ for the construction of:

WELL 7 REPLACEMENT PROJECT PHASE IV
STORAGE TANK
CITY PROJECT NO. 5010008-011C

NOW, THEREFORE, if the Principal withdraws said proposal within the period specified in said Proposal, or if the Principal shall not, within ten calendar days after the receipt from the City of Notice of Award of the Contract for any reason whatsoever except the fault of the City, enter into the Contract with the City in accordance with the Principal's Proposal, give bonds with good and sufficient surety and furnish the certificates of insurance as stated in said Proposal, then the above obligation shall be and remain in full force and effect, otherwise, it shall be null and void.

In the event suit is brought upon this Bond by the City and judgment is recovered, the Surety shall pay all costs incurred by the City in such suit, including attorney's fees to be fixed by the court.

_____
Dated

_____
Principal

_____
Business Address

_____

In presence of:_____

_____

_____
Business Address

Seal

_____
Surety

_____

_____
Business Address

_____

In presence of:_____

_____

_____
Business Address

_____

5 – List of Proposed Subcontractors

If awarded the Contract, the Bidder proposes to employ the following subcontractors which will perform work or labor or render service to the Bidder in or about the construction of the work in an amount in excess of one-half of 1.0 percent (0.5%) of the total amount bid, or greater than ten thousand dollars ($10,000). The Bidder shall not be allowed to substitute another subcontractor for the subcontractor listed below without the written approval of the City. If no subcontract work is proposed, except within the 0.5% limit set forth above, the Bidder shall so state. If additional pages are needed, attach copies of this page.

1. _____
Subcontractor's Name/License No.

_____
Subcontractor's Address

_____

_____
Description of Work to be subcontracted

2. _____
Subcontractor's Name/License No.

_____
Subcontractor's Address

_____

_____
Description of Work to be subcontracted

3. _____
Subcontractor's Name/License No.

_____
Subcontractor's Address

_____

_____
Description of Work to be subcontracted

6 – Experience Statement

The Bidder shall submit, as part of its proposal, the following statements as to its experience qualifications. The Bidder certifies that all statements and information set forth are true and accurate.

1. The Bidder has been engaged in the contracting business under its present business name for _____ years.

2. Experience in work of nature similar in type and magnitude to that set forth in the specification extends over a period of _____ years.

3. The Bidder, as Contractor, has satisfactorily completed all contracts awarded to it, except as follows: (Name any and all exceptions and reasons therefore. Bidders should attach additional pages if necessary.)

   1. _____

   2. _____

REFERENCES

	Name of Owner	Telephone Number	Year Completed	Type of Work	Contract Amount (Round to the Nearest Thousand Dollars)
1	_____	_____	_____	_____	$_____
2	_____	_____	_____	_____	$_____
3	_____	_____	_____	_____	$_____
4	_____	_____	_____	_____	$_____

7 – Contractor's Certification of Prevailing Wages Requirements

I herby certify that I have reviewed the construction contract requirements imposed on the Contractor and fully understand all my obligations if the project is awarded to me, including the necessity to pay prevailing wage rates and provide certified payroll forms.

_____
Name of Contractor

_____
Signature

_____
Address

_____

_____
Dated

8 – Noncollusion Affidavit

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

NONCOLLUSION AFFIDAVIT
(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

In conformance with Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Noncollusion Affidavit is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Noncollusion Affidavit. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

By:_____

Title: _____

Date: _____

9 – Nondiscrimination Clause

During the performance of this contract, Contractor and its Subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age (over 40) or sex. Contractors and Subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. Contractors and Subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 et seq.) and the applicable regulations promulgated there under (California Administrative Code, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12900, set forth in Chapter 5 of Division 4 of Title 2 or the California Administrative Code are incorporated into this contract by reference and made a part hereof as if set forth in full. Contractor and its Subcontractor shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

This Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the contract.

THE UNDERSIGNED CERTIFIES THAT THE BIDDER WILL COMPLY WITH THE ABOVE REQUIREMENTS.

CONTRACTOR OR
SUBCONTRACTOR NAME:_____

CERTIFIED BY:

NAME:_____TITLE:_____

SIGNATURE:_____DATE:_____

10 – Drug-free Workplace Certification

CONTRACTOR/APPLICANT

The Contractor or applicant named above hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The above named Contractor or applicant will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).

2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:

   a. The dangers of drug abuse in the workplace;

   b. The person's or organization's policy of maintaining a drug-free workplace;

   c. Any available counseling, rehabilitation and employee assistance programs, and

   d. Penalties that may be imposed upon employees for drug abuse violations.

3. Provide as required by Government Code Section 8355(c), that every employee who works on the proposed contract or loan:

   a. Will receive a copy of the company's drug-free policy statement,

   b. Will agree to abide by the terms of the company's statement as a condition of employment on the contract or loan.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the Contractor or loan recipient to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME:_____

DATE EXECUTED:_____EXECUTED IN COUNTY OF:_____

CONTRACTOR/APPLICANT SIGNATURE:_____

TITLE:_____

- END OF SECTION -

SECTION 0060 – CONSTRUCTION AGREEMENT

OWNER: **CITY OF HUGHSON**
COMMUNITY DEVELOPMENT DEPARTMENT

PROJECT: **WELL 7 REPLACEMENT PROJECT PHASE IV**
CITY PROJECT NO. 5010008-011C

THIS AGREEMENT, made this _____ day of _____ , 20___by and between the City of Hughson, hereinafter called the City, and _____ doing business as a _____ hereinafter called Contractor.

Witnesseth that for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete the construction of said project in accordance with Contract Documents.

2. The Contractor will furnish all materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the project described in the Contract Documents and herein.

3. The Contractor will commence the work required by the Contract Documents within **7 calendar** days after the date of the Notice-to-Proceed and will complete the same within **330 calendar days** unless the period for completion is extended otherwise by the Contract Documents.

4. In case of failure on the part of the Contractor to complete the work within the time stipulated, plus any duly authorized extension of time, the parties hereby agree and recite that Owner's actual damages in the sum of **$500.00** for each calendar day's delay. Time is of the essence in the completion of this contract.

5. The Contractor agrees to perform all of the work described in the Contract Documents and comply with the terms therein for the sum of $_____, or based on actual quantities installed and said unit prices provided by Contractor.

6. The terms "Contract Documents" means and includes the following:

    a. Proposal/Unit Price Table

b. Bid Bond

c. Notice of Award

d. Construction Agreement

e. Performance Bond

f. Payment Bond

g. Notice-to-Proceed

h. General Specifications and Provisions

i. Technical Specifications

j. Plans/Drawings

k. Geotechnical Report

l. Insurance Requirements

m. Addenda

7. The City will pay to the Contractor such amounts and as required by the Contract Documents.

8. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement which shall be deemed an original on the date first above written.

Contractor

By:_____
[official name]/[official title]

Date:_____

Approved as to Form:

By_____

Daniel J. Schroeder
City Attorney

City

City of Hughson
Post Office Box 9
Hughson, CA 95326

By:_____
Merry Mayhew
City Manager

SECTION 700 - GENERAL CONDITIONS

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ARTICLE 1 -- DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated in this Article 1 which meanings are applicable to both the singular and plural thereof. If a word which is entirely in upper case in these definitions is found in lower case in the Contract Documents, then the lower case word will have its ordinary meaning.

Addenda - Written or graphic instruments issued prior to the opening of Bids which make additions, deletions, or revisions to the Contract Documents.

Agreement - The written contract between the OWNER and the CONTRACTOR covering the WORK to be performed; other documents are attached to the Agreement and made a part thereof as provided therein.

Application for Payment - The form accepted by the ENGINEER which is to be used by the CONTRACTOR to request progress payments or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

Asbestos - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the price or prices for the WORK.

Bonds - Bid, Performance, and Payment Bonds and other instruments of security.

Change Order - A document recommended by the ENGINEER, which is signed by the CONTRACTOR and the OWNER, and authorizes an addition, deletion, or revision in the WORK, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

Clarification - A document issued by the ENGINEER to the CONTRACTOR that interprets the requirement(s) and/or design intent of the Contract Documents, which may not represent an addition, deletion, or revision in the WORK or an adjustment in the Contract Price or the Contract Times.

Contract Documents - The Notice Inviting Bids, Instructions to Bidders, Bid Forms (including the Bid, Bid Schedule(s), Information Required of Bidder, Bid Bond, and all required certificates, affidavits and other documentation), Agreement, Performance Bond, Payment Bond, General Conditions, Supplementary General Conditions, Technical Specifications, Drawings, all Addenda,

and Change Orders executed pursuant to the provisions of the Contract Documents. Shop Drawings are not Contract Documents.

Contract Price - The total monies payable by the OWNER to the CONTRACTOR under the terms and conditions of the Contract Documents.

Contract Times - The number or numbers of successive calendar days or dates stated in the Contract Documents for the completion of the WORK.

CONTRACTOR - The individual, partnership, corporation, joint-venture, or other legal entity with whom the OWNER has executed the Agreement.

Day - A calendar day of 24 hours measured from midnight to the next midnight.

Defective Work - Work that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract Documents; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; or work that has been damaged prior to the ENGINEER's recommendation of final payment.

Drawings - The drawings, plans, maps, profiles, diagrams, and other graphic representations which indicate the character, location, nature, extent, and scope of the WORK and which have been prepared by the ENGINEER and are included and/or referred to in the Contract Documents. Shop Drawings are not Drawings as so defined.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER - The individual, partnership, corporation, joint-venture, or other legal entity named as such by the OWNER as set forth in the Supplementary General Conditions.

Field Order - A written order issued by the ENGINEER which may or may not involve a change in the WORK.

General Requirements - Division 1 of the Technical Specifications.

Hazardous Waste - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6906) as amended from time to time.

Laws and Regulations; Laws or Regulations - Any and all applicable laws, rules, regulations, ordinances, codes, and/or orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

Lien or Mechanic's Lien - A form of security, an interest in real property, which is held to secure the payment of an obligation. When related to public works construction, Lien or Mechanic's Lien may be called Stop Notice.

Milestone - A principal event specified in the Contract Documents relating to an intermediate completion date of a separately identifiable part of the WORK or a period of time within which the separately identifiable part of the WORK should be performed prior to Substantial Completion of all the WORK.

Notice of Award - The written notice by the OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein within the time specified, the OWNER will enter into an Agreement.

Notice of Completion - A form signed by the ENGINEER and the CONTRACTOR recommending to the OWNER that the WORK is Substantially Complete and fixing the date of Substantial Completion. After acceptance of the WORK by the OWNER's governing body, the form is signed by the OWNER and filed with the County Recorder. This filing starts the 30 day lien filing period on the WORK.

Notice to Proceed - The written notice issued by the OWNER to the CONTRACTOR authorizing the CONTRACTOR to proceed with the WORK and establishing the date of commencement of the Contract Times.

OWNER - The public body or authority, corporation, association, firm, or person with whom the CONTRACTOR has entered into the Agreement and for whom the WORK is to be provided.

Partial Utilization - Use by the OWNER of a substantially completed part of the WORK for the purpose for which it is intended prior to Substantial Completion of all the WORK.

PCBs - Polychlorinated biphenyls.

Petroleum - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

Project - The total construction project of which the WORK to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Radioactive Material - Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

Resident Project Representative - The authorized representative of the ENGINEER who is assigned to the Site or any part thereof.

Samples - Physical examples of materials, equipment, or workmanship that are representative of some portion of the WORK and which establish the standards by which such portion of the WORK will be judged.

Shop Drawings - All drawings, diagrams, illustrations, schedules, and other data which are specifically prepared by or for the CONTRACTOR and submitted by the CONTRACTOR to illustrate some portion of WORK.

Site - Lands or other areas designated in the Contract Documents as being furnished by the OWNER for the performance of the construction, storage, or access.

Specifications - (Same definition as for Technical Specifications hereinafter).

Stop Notice - A legal remedy for subcontractors and suppliers who contribute to public works, but

who are not paid for their work, which secures payment from construction funds possessed by the OWNER. In some states, for public property, the Stop Notice remedy is designed to substitute for a mechanic's lien.

Subcontractor - An individual, partnership, corporation, joint-venture, or other legal entity having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the WORK at the Site.

Substantial Completion - The time at which the WORK (or specified part) has progressed to the point where it is sufficiently complete, in accordance with the Contract Documents, as evidenced by Notice of Completion (or Notice of Partial Utilization) so that the WORK (or specified part) can be utilized for the purposes for which it is intended; or, if no such notice is issued, when final payment is due in accordance with Paragraph 14.8. The terms "substantially complete" and "substantially completed" as applied to any work refer to substantial completion thereof.

Supplementary General Conditions - The part of the Contract Documents which make additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, distributor, materialman, or vendor having a direct contract with the CONTRACTOR or with any Subcontractor to furnish materials, equipment, or product to be incorporated in the WORK by the CONTRACTOR or any Subcontractor.

Technical Specifications - Divisions 1 through 17 of the Contract Documents consisting of the General Requirements and written technical descriptions of products and execution of the WORK.

Utilities - All pipelines, conduits, ducts, cables, wires, tracks, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground or above the ground to furnish any of the following services or materials: water, sewage, sludge, drainage, fluids, electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, traffic control, or other control systems.

WORK - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. WORK is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

ARTICLE 2 -- PRELIMINARY MATTERS

2.1 DELIVERY OF BONDS AND INSURANCE CERTIFICATES

A. When the CONTRACTOR delivers the signed Agreement to the OWNER, the CONTRACTOR shall also deliver to the OWNER such Bonds and insurance policies and certificates as the CONTRACTOR may be required to furnish in accordance with the Contract Documents.

2.2 COPIES OF DOCUMENTS

A. The OWNER will furnish to the CONTRACTOR the required number of copies of the Contract Documents specified in the Supplementary General Conditions.

2.3 COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED

A. The Contract Times will start to run on the commencement date stated in the Notice to Proceed.

2.4 STARTING THE WORK

A. The CONTRACTOR shall begin to perform the WORK on the commencement date stated in the Notice to Proceed, but no work shall be done at the Site prior to said commencement date.

B. Before undertaking each part of the WORK, the CONTRACTOR shall review the Contract Documents in accordance with Paragraph 3.3.

2.5 PRECONSTRUCTION CONFERENCE

A. The CONTRACTOR is required to attend a preconstruction conference. This conference will be attended by the OWNER, ENGINEER, and others as appropriate in order to discuss the WORK in accordance with the applicable procedures specified in Section 01010 - Summary of Work.

B. The CONTRACTOR's initial schedule submittals for shop drawings, obtaining permits, and Plan of Operation and CPM Schedule will be reviewed and finalized. As a minimum, the CONTRACTOR's representatives should include its project manager and schedule expert. The CONTRACTOR should plan on this meeting taking no less than 8 hours. If the submittals are not finalized at the end of the meeting, additional meetings will be held so that the submittals can be finalized prior to the submittal of the first Application for Payment. No Application for Payment will be processed prior to receiving acceptable initial submittals from the CONTRACTOR.

ARTICLE 3 -- INTENT AND USE OF CONTRACT DOCUMENTS

3.1 INTENT

A. The Contract Documents comprise the entire agreement between the OWNER and the CONTRACTOR concerning the WORK. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the State in which the Project is located.

B. It is the intent of the Contract Documents to describe the WORK, functionally complete, to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not called for specifically.

C. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe work, materials, or equipment such words or phrases shall be interpreted in accordance with that meaning unless a definition has been provided in Article 1 of the General Conditions.

3.2 REFERENCE TO STANDARDS

A. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code shall be effective to change the duties and responsibilities of the OWNER, the CONTRACTOR, the ENGINEER, or any of their consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER, or any of ENGINEER's consultants, agents, or employees any duty or authority to direct the performance of the WORK or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.3 REVIEW OF CONTRACT DOCUMENTS

A. If, during the performance of the WORK, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the WORK or of any such standard, specification, manual, or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once, and CONTRACTOR shall not proceed with the work affected thereby (except in an emergency as authorized by Paragraph 6.12) until a Clarification, Field Order, or Change Order to the Contract Documents has been issued.

3.4 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

A. In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:

1. Permits from other agencies as may be required by law
2. Change Orders
3. Agreement
4. Addenda
5. Contractor's Bid (Bid Form)
6. Supplementary General Conditions
7. Notice Inviting Bids
8. Instructions to Bidders
9. General Conditions
10. Technical Specifications
11. Referenced Standard Specifications
12. Drawings

B. With reference to the Drawings the order of precedence is as follows:

1. Figures govern over scaled dimensions
2. Detail drawings govern over general drawings
3. Addenda/Change Order drawings govern over any other drawings
4. Drawings govern over standard drawings

3.5 AMENDING CONTRACT DOCUMENTS

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the WORK or to modify the terms and conditions thereof by a Change Order (pursuant to Article 10).

3.6 REUSE OF DOCUMENTS

A. Neither the CONTRACTOR, nor any Subcontractor or Supplier, nor any other person or organization performing any of the WORK under a contract with the OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Technical Specifications, or other documents used on the WORK, and they shall not reuse any of them on the extensions of the Project or any other project without written consent of OWNER.

ARTICLE 4 -- SITE OF THE WORK

4.1 AVAILABILITY OF LANDS

A. The OWNER will furnish, as indicated in the Contract Documents, the lands upon which the WORK is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment; provided, that the CONTRACTOR shall not enter upon nor use any property not under the control of the OWNER until a written temporary construction easement agreement has been executed by the CONTRACTOR and the property owner, and a copy of said easement furnished to the ENGINEER prior to said use; and, neither the OWNER nor the ENGINEER will be liable for any claims or damages resulting from the CONTRACTOR's trespass on or use of any such properties. The CONTRACTOR shall provide the OWNER with a signed release from the property owner confirming that the lands have been satisfactorily restored upon completion of the WORK.

4.2 REPORTS OF PHYSICAL CONDITIONS

A. **Subsurface Explorations:** Reference is made to the Supplementary General Conditions for identification of those reports of explorations and tests of subsurface conditions at the Site that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. **Existing Structures:** Reference is made to the Supplementary General Conditions for

identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except underground Utilities referred to in Paragraph 4.3 herein) which are at or contiguous to the Site that have been utilized in the preparation of the Contract Documents.

C. Neither the OWNER nor ENGINEER makes any representation as to the completeness of the reports or drawings referred to in Paragraph 4.2 A or B above or the accuracy of any data or information contained therein. The CONTRACTOR may rely upon the accuracy of the technical data contained in such reports and drawings. However, the CONTRACTOR may not rely upon any interpretation of such technical data, including any interpolation or extrapolation thereof, or any non-technical data, interpretations, and opinions contained therein.

4.3 PHYSICAL CONDITIONS - UNDERGROUND UTILITIES

A. **Indicated:** The information and data indicated in the Contract Documents with respect to existing underground Utilities at or contiguous to the Site are based on information and data furnished to the OWNER or the ENGINEER by the owners of such underground Utilities or by others. Unless it is expressly provided in the Supplementary General Conditions and/or Section 01530 - Protection and Restoration of Existing Facilities, the OWNER and the ENGINEER will not be responsible for the accuracy or completeness of any such information or data, and the CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all underground Utilities indicated in the Contract Documents, for coordination of the WORK with the owners of such underground Utilities during construction, for the safety and protection thereof and repairing any damage thereto resulting from the WORK, the cost of all of which are deemed to have been included in the Contract Price.

B. **Not Indicated:** If an underground Utility is uncovered or revealed at or contiguous to the Site which was not indicated in the Contract Documents and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall identify the owner of such underground Utility and give written notice thereof to that owner and shall notify the ENGINEER in accordance with the requirements of the Supplementary General Conditions and Section 01530 - Protection of Existing Facilities.

4.4 DIFFERING SITE CONDITIONS

A. The CONTRACTOR shall notify the ENGINEER, in writing, of the following unforeseen conditions, hereinafter called differing Site conditions, promptly upon their discovery (but in no event later than 14 days after their discovery) and before they are disturbed:

1. Subsurface or latent physical conditions at the Site of the WORK differing materially from those indicated, described, or delineated in the Contract Documents, including those reports discussed in Paragraph 4.2, 4.3, and 4.5; and

2. Unknown physical conditions at the Site of the WORK of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents, including those reports and documents discussed in Paragraph 4.2, 4.3, and 4.5.

B. The ENGINEER will review the pertinent conditions, determine the necessity of obtaining

additional explorations or tests with respect thereto, and advise the OWNER, in writing, of the ENGINEER's findings and conclusions.

C. If the OWNER concludes that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the difference.

D. In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Times, or any combination thereof, will be allowable to the extent that they are attributable to any such difference. If the OWNER and the CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefor as provided in Articles 11 and 12.

E. The CONTRACTOR's failure to give notice of differing Site conditions within 14 days of their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith, whether direct or consequential in nature.

4.5 HAZARDOUS MATERIALS

A. Reference is made to the Supplementary General Conditions for identification of those reports and drawings relating to Asbestos, Hazardous Waste, PCBs, Petroleum and/or Radioactive Material identified at the Site that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. OWNER shall be responsible for any Asbestos, Hazardous Waste, PCBs, Petroleum, or Radioactive Material uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the WORK and which may present a substantial danger to persons or property exposed thereto in connection with the WORK at the Site. OWNER will not be responsible for any such material brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

1. Upon discovery of any Asbestos, Hazardous Waste, PCBs, Petroleum, or Radioactive Material, the CONTRACTOR shall immediately stop all work in any area affected thereby (except in an emergency as required by Paragraph 6.12) and notify OWNER and ENGINEER (and thereafter confirm such notice in writing). CONTRACTOR shall not be required to resume any work in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice. Such written notice will specify that such condition and any affected area is or has been rendered safe for the resumption of the work or specify any special conditions under which the work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of adjustment, if any, in Contract Price or Contract Times as a result of such work stoppage or such special conditions under which work is agreed by CONTRACTOR to be resumed, either party may make a claim therefor as provided in Articles 11 and 12.

2. If, after receipt of such special written notice, CONTRACTOR does not agree to resume such WORK based on a reasonable belief it is unsafe, or does not agree to resume such WORK under special conditions, then OWNER may order such portion of the WORK that is in connection with such hazardous condition or in such affected

area to be deleted from the WORK. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the WORK then either party may make a claim therefor as provided in Articles 11 and 12. OWNER may have such deleted portion of the WORK performed by OWNER's own forces or others in accordance with Article 7.

3. To the fullest extent permitted by Laws and Regulations, OWNER will indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's consultants, and the officers, directors, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages arising out of or resulting from such hazardous condition; provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the WORK itself), including the loss of use resulting therefrom. Nothing in this Paragraph shall obligate OWNER to indemnify a person or entity from and against the consequences of that person's or entity's own negligence.

C. The provisions of Paragraphs 4.2, 4.3, and 4.4 are not intended to apply to Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material uncovered or revealed at the Site.

4.6 REFERENCE POINTS

A. The OWNER will provide one bench mark, near or on the Site of the WORK, and will provide two points near or on the Site to establish a base line for use by the CONTRACTOR for alignment control. Unless otherwise specified in the Supplementary General Conditions, the CONTRACTOR shall furnish all other lines, grades, and bench marks required for proper execution of the WORK.

B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks, and in case of their removal or destruction by any party, the CONTRACTOR shall be responsible for the accurate replacement of such reference points by personnel qualified under the applicable state codes governing land surveyors.

ARTICLE 5 -- BONDS AND INSURANCE

5.1 BONDS

A. The CONTRACTOR shall furnish Performance and Payment Bonds, each in the amount set forth in the Supplementary General Conditions, as security for the faithful performance and payment of all the CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date of Substantial Completion, except as otherwise provided by Law or Regulation or by the Contract Documents. The CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary General Conditions.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties

on Federal bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by the CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located, the CONTRACTOR shall within 7 days thereafter substitute another Bond and surety, which must be acceptable to the OWNER.

D. All Bonds required by the Contract Documents to be purchased and maintained by CONTRACTOR shall be obtained from surety companies that are duly licensed or authorized in the State in which the Project is located to issue Bonds for the limits so required. Such surety companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.

5.2 INSURANCE

A. The CONTRACTOR shall purchase and maintain the insurance required under this Paragraph. Such insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Supplementary General Conditions, or required by Laws or Regulations, whichever are greater. All insurance shall be maintained continuously during the life of the Agreement up to the date of Substantial Completion and at all times thereafter when the CONTRACTOR may be correcting, removing, or replacing Defective Work in accordance with Paragraph 13.5. The CONTRACTOR's liabilities under this Agreement shall not be deemed limited in any way to the insurance coverage required.

B. All insurance required by the Contract Documents to be purchased and maintained by the CONTRACTOR shall be obtained from insurance companies that are duly licensed or authorized to issue insurance policies for the limits and coverages so required in the State in which the Project is located. Such insurance companies shall have a current Best's Rating of at least an "A" (Excellent) general policy holder's rating and a Class VII financial size category and shall also meet such additional requirements and qualifications as may be provided in the Supplementary General Conditions.

C. The CONTRACTOR shall furnish the OWNER, with copies to each additional insured who is indicated in the Supplementary General Conditions, with certificates and original endorsements showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be canceled, reduced in coverage, or renewal refused until at least 30 days' prior written notice has been given to the OWNER and additional insureds by certified mail. All such insurance required herein (except for worker's compensation and employer's liability) shall name the OWNER, the ENGINEER, and their consultants and subconsultants and their officers, directors, agents, and employees as "additional insureds" under the policies. The CONTRACTOR shall purchase and maintain the following insurance:

1. Workers' Compensation and Employer's Liability: This insurance shall protect the CONTRACTOR against all claims under applicable workers' compensation laws or

federal acts, including claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workers' compensation law. This insurance shall include an "all states" endorsement. In the event of a "monopolistic" state, CONTRACTOR shall certify all employees are covered by the state fund or shall provide a separate policy providing "all states" benefits. Employer's liability "stop gap" coverage for monopolistic states shall be provided under either a worker's compensation policy or general liability policy. The CONTRACTOR shall require each subcontractor similarly to provide workers' compensation insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the CONTRACTOR's workers' compensation insurance. In case any class of employees is not protected under the workers' compensation laws, the CONTRACTOR shall provide and shall cause each Subcontractor to provide adequate employer's liability insurance for the protection of such of its employees as are not otherwise protected. The CONTRACTOR and each Subcontractor shall provide a waiver of subrogation in favor of the OWNER and ENGINEER.

2. Comprehensive or Commercial General Liability: This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims arising from injuries to persons other than its employees or damage to property of the OWNER or others arising out of any act or omission of the CONTRACTOR or its agents, employees, or subcontractors. The policy shall also include protection against claims insured by personal injury liability coverage and contractual coverage to insure the contractual liability assumed by the CONTRACTOR under the indemnification provisions in the General Conditions. To the extent that the CONTRACTOR's work, or work under its direction, may require blasting, explosive conditions, or underground operations, the comprehensive or commercial general liability coverage shall include coverage relative to blasting, explosion, collapse, and/or underground hazards.

3. Commercial Automobile Liability: This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, and shall cover operation on or off the Site of all motor vehicles licensed for highway use, whether they are owned, nonowned, or hired.

4. Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The CONTRACTOR shall either require each of the Subcontractors to procure and to maintain subcontractor's public liability and property damage insurance and vehicle liability insurance of the type and in the same amounts specified in the Supplementary General Conditions for the CONTRACTOR or insure the activities of the Subcontractors under the CONTRACTOR's own policies.

5. Builder's Risk:

   a. This insurance shall be of the "all risks" type, shall be written in completed value form, and shall protect the CONTRACTOR, Subcontractors, the OWNER, and the ENGINEER, against risks of damage to buildings, structures, and materials and equipment (including any stored off-site and while in transit), CONTRACTORS' equipment, debris removal and including demolition and contingent loss occasioned by enforcement of any applicable legal

requirements, and shall cover reasonable compensation for ENGINEER'S services and expenses required as a result of such insured loss. The amount of such insurance shall be not less than the insurable value of the WORK at completion plus equipment. Builder's risk insurance shall provide for losses to be payable to the CONTRACTOR and the OWNER, as their interests may appear. This insurance shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the OWNER, and the ENGINEER. This insurance shall insure against all risks of loss (including earthquake, flood and collapse) and, at the option of the OWNER, shall include comprehensive boiler and machinery coverage including coverage for installation and testing.

b. If the OWNER finds it necessary to occupy or use a portion or portions of the Project prior to Substantial Completion thereof, such occupancy shall not commence prior to the time mutually agreed to by the OWNER and CONTRACTOR and to which the insurance company or companies providing the Builder's Risk Insurance have consented by endorsement to the policy or policies.

ARTICLE 6 -- CONTRACTORS RESPONSIBILITIES

6.1 COMMUNICATIONS

A. Written communications with the OWNER shall be only through or as directed by the ENGINEER.

6.2 SUPERVISION AND SUPERINTENDENCE

A. The CONTRACTOR shall supervise, inspect, and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the WORK in accordance with the Contract Documents. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction and all safety precautions and programs incidental thereto. The CONTRACTOR shall be responsible to see that the completed WORK complies accurately with the Contract Documents.

B. The CONTRACTOR shall designate in writing and keep on the Site at all times during the performance of the WORK a technically qualified, English-speaking superintendent, who is an employee of the CONTRACTOR and who shall not be replaced without written notice to the OWNER and the ENGINEER. The superintendent will be the CONTRACTOR's representative at the Site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR.

C. The CONTRACTOR's superintendent shall be present at the Site at all times while work is in progress and shall be available by phone for emergencies 24 hours per day, 7 days per week. Failure to observe this requirement shall be considered suspension of the WORK by the CONTRACTOR until such time as such superintendent is again present at the Site.

6.3 LABOR, MATERIALS, AND EQUIPMENT

A. The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the WORK and perform construction as required by the Contract Documents. The CONTRACTOR shall furnish, erect, maintain, and remove the construction plant and any required temporary works. The CONTRACTOR shall at all times maintain good discipline and order at the Site. Except in connection with the safety or protection of persons or the WORK or property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all work at the Site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday, or any federally observed holiday without the OWNER's written consent. The CONTRACTOR shall apply for this consent through the ENGINEER in writing a minimum of 24 hours in advance.

B. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the ENGINEER in writing. Additional compensation will be paid to the CONTRACTOR for overtime work only in the event extra work is ordered by the ENGINEER and the Change Order specifically authorizes the use of overtime work and then only to such extent as overtime wages are regularly being paid by the CONTRACTOR for overtime work of a similar nature in the same locality.

C. All increased costs of inspection and testing performed during overtime work by the CONTRACTOR which is allowed solely for the convenience of the CONTRACTOR shall be borne by the CONTRACTOR. The OWNER has the authority to deduct the cost of all such inspection and testing from any partial payments otherwise due to the CONTRACTOR.

D. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, lubricants, power, light, heat, telephone, water, sanitary facilities, and all other facilities, consumables, and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the WORK.

E. All materials and equipment incorporated into the WORK shall be of specified quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of the OWNER. If required by the ENGINEER, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provisions of any such instructions will be effective to assign to the OWNER, ENGINEER, or any of their consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9 C.

6.4 SCHEDULE

A. The CONTRACTOR shall comply with the Schedule requirements of Section 01300.

6.5 SUBSTITUTES OR "OR EQUAL" ITEMS

A. The CONTRACTOR shall submit proposed substitutes or "or equal" items in accordance with the Bidding Requirements. No request for substitution of an or equal item will be considered by the ENGINEER after award of the Contract.

6.6 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS

A. The CONTRACTOR shall be responsible to the OWNER and the ENGINEER for the acts and omissions of its Subcontractors, Suppliers, and their employees to the same extent as CONTRACTOR is responsible for the acts and omissions of its own employees. Nothing contained in this Paragraph shall create any contractual relationship between any Subcontractor and the OWNER or the ENGINEER nor relieve the CONTRACTOR of any liability or obligation under the Contract Documents. The CONTRACTOR shall include these General Conditions and the Supplementary General Conditions as a part of all its subcontract and supply agreements.

6.7 PERMITS

A. Unless otherwise provided in the Supplementary General Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including the furnishing of insurance and bonds if required by such agencies. The enforcement of such requirements shall not be made the basis for claims for additional compensation by CONTRACTOR. When necessary, the OWNER will assist the CONTRACTOR, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids. The CONTRACTOR shall pay all charges of utility owners for inspection or connections to the WORK.

6.8 PATENT FEES AND ROYALTIES

A. The CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the WORK and if to the actual knowledge of the OWNER or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed by the OWNER in the Contract Documents. The CONTRACTOR's indemnification obligation under this Paragraph 6.7 A. for all claims and liabilities arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents shall be in accordance with Paragraph 6.16 of these General Conditions.

6.9 LAWS AND REGULATIONS

A. The CONTRACTOR shall observe and comply with all Laws and Regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK. If any discrepancy or inconsistency should be discovered between the Contract Documents and any such Laws or Regulations, the CONTRACTOR shall report the same in writing to the ENGINEER. Any particular Law or Regulation specified or referred to elsewhere in the Contract Documents shall not in any way limit the obligation of the CONTRACTOR to comply with all other provisions of federal, state, and local laws and regulations. The CONTRACTOR's indemnification obligations for all claims or liability arising from violation of any such law, ordinance, code, order, or regulation, whether by CONTRACTOR or by its employees, Subcontractors or Suppliers shall be in accordance with Paragraph 6.16 of these General Conditions.

6.10 TAXES

A. The CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by the CONTRACTOR in accordance with the laws and regulations of the place of the Project which are applicable during the performance of the WORK.

6.11 USE OF PREMISES

A. The CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site, the land and areas identified in and permitted by the Contract Documents, and the other land and areas permitted by Laws and Regulations, rights-of-way, permits, and easements. The CONTRACTOR shall assume full liability and responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the WORK. Should any claim be made against the OWNER or the ENGINEER by any such owner or occupant because of the performance of the WORK, the CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim through litigation at the CONTRACTOR's sole liability expense. The CONTRACTOR's indemnification obligations for all claims and liability, arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any such owner or occupant against the OWNER, the ENGINEER, their consultants, subconsultants, and the officers, directors, employees and agents of each and any of them to the extent caused by or based upon the CONTRACTOR's performance of the WORK shall be in accordance with Paragraph 6.16 of these General Conditions.

6.12 SAFETY AND PROTECTION

A. The CONTRACTOR shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. All persons at the Site and other persons and organizations who may be affected thereby;

2. All the WORK and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of the performance of the WORK.

B. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property or to the protection of persons or property from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. CONTRACTOR'S duties and responsibilities for safety and for protection of the WORK shall continue until such time as all the WORK is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with Paragraph 14.7 B. that the WORK is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

C. The CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

D. Materials that contain hazardous substances or mixtures may be required on the WORK. A Material Safety Data Sheet shall be made available at the Site by the CONTRACTOR for every hazardous product used.

E. Material usage shall strictly conform to OSHA safety requirements and all manufacturer's warnings and application instructions listed on the Material Safety Data Sheet and on the product container label.

F. The CONTRACTOR shall be responsible for the exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

G. The CONTRACTOR shall notify the ENGINEER if it considers a specified product or its intended use to be unsafe. This notification must be given to the ENGINEER prior to the product being ordered, or if provided by some other party, prior to the product being incorporated in the WORK.

6.13 EMERGENCIES

A. In emergencies affecting the safety or protection of persons or the WORK or property at the Site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to immediately act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the WORK or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Change Order will be issued to document the consequences of such action.

6.14 SUBMITTALS

A. After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, the CONTRACTOR shall submit to the ENGINEER for review all Shop Drawings in accordance with the accepted schedule of Shop Drawing submittals specified in Section 01300 - Contractor Submittals.

B. The ENGINEER'S review will be only to determine if the items covered by the submittals will, after installation or incorporation in the WORK, generally conform to the Contract Documents and with the design concept of the completed Project.

C. The CONTRACTOR shall also submit to the ENGINEER for review all Samples in accordance with the accepted schedule of Sample submittals specified in Section 01300 - Contractor Submittals.

D. Before submittal of each Shop Drawing or Sample, the CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the WORK and the Contract Documents. The CONTRACTOR shall provide submittals in accordance with the requirements of Section 01300 - Contractor Submittals.

6.15 CONTINUING THE WORK

A. The CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the OWNER. No WORK shall be delayed or postponed pending resolution of any disputes or disagreements, except as the CONTRACTOR and the OWNER may otherwise agree in writing.

6.16 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE

A. CONTRACTOR warrants and guarantees that all WORK will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. Abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, or Suppliers, or any other individual or entity for whom CONTRACTOR is responsible;

2. Normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of WORK that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents:

1. Observations by ENGINEER;

2. Recommendation by ENGINEER or payment by OWNER of any progress or final

payment;

3. The issuance of a Certificate of Completion by the OWNER;

4. Use or occupancy of the WORK or any part thereof by the OWNER;

5. Any acceptance by OWNER or any failure to do so;

6. Any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice or acceptability by ENGINEER pursuant to Paragraph 14.7 B.;

7. Any inspection, test, or approval by others; or

8. Any correction of Defective Work by OWNER.

6.17 INDEMNIFICATION

A. To the fullest extent permitted by Laws and Regulations, the CONTRACTOR shall indemnify, defend, and hold harmless the OWNER, the ENGINEER, their consultants, subconsultants, and the officers, directors, employees, and agents of each and any of them, against and from all claims and liability arising under, by reason of, related, or incidental to the Contract Documents or any performance of the WORK, but not from the sole negligence or willful misconduct of the OWNER and/or the ENGINEER. Such indemnification by the CONTRACTOR shall include, but not be limited to, the following:

1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR, its employees, or agents in the performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR, its employees, or agents;

2. Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the CONTRACTOR's, Subcontractor's, or Supplier's own employees, or agents engaged in the WORK resulting in actions brought by or on behalf of such employees against the OWNER and/or the ENGINEER;

3. Liability or claims arising directly or indirectly from or based on the violation of any Laws or Regulations, whether by the CONTRACTOR, its employees, or agents;

4. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, its employees, or agents in the performance of this Agreement of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article, or appliance, unless otherwise specifically stipulated in this Agreement;

5. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the OWNER and/or ENGINEER or any other parties by the CONTRACTOR, its employees, or agents;

6. Liability or claims arising directly or indirectly from the willful misconduct of the CONTRACTOR, its employees, or agents;

7. Liability or claims arising directly or indirectly from any breach of the obligations assumed in this Agreement by the CONTRACTOR;

8. Liability or claims arising directly or indirectly from, relating to, or resulting from a hazardous condition created by the CONTRACTOR, Subcontractors, Suppliers, or any of their employees or agents, and;

9. Liability or claims arising directly, or indirectly, or consequentially out of any action, legal or equitable, brought against the OWNER, the ENGINEER, their consultants, subconsultants, and the officers, directors, employees and agents of each or any of them, to the extent caused by the CONTRACTOR's use of any premises acquired by permits, rights of way, or easements, the Site, or any land or areas contiguous thereto or its performance of the WORK thereon.

B. The CONTRACTOR shall reimburse the OWNER and the ENGINEER for all costs and expenses, (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals and court costs including all costs of appeals) incurred by said OWNER and ENGINEER in enforcing the provisions of this Paragraph 6.16.

C. Pursuant to Public Contract Code section 9201, the OWNER shall provide the CONTRACTOR with timely notification of the receipt of any claim, relating to, arising under, by reason of, related, or incidental to the Contract Documents or any performance of the Work. The OWNER is entitled to recover its reasonable costs incurred in providing such information.

D. The indemnification obligation under this Paragraph 6.16 shall not be limited in any way by any limitation on the amount or type of insurance carried by CONTRACTOR or by the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any Subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.18 CONTRACTOR'S DAILY REPORTS

A. The CONTRACTOR shall complete a daily report indicating location worked, total manpower for each construction trade, major equipment on Site, each Subcontractor's manpower and equipment, weather conditions, and other related information involved in the performance of the WORK. The daily report shall be completed on forms furnished by the ENGINEER, and shall be submitted to the ENGINEER at the conclusion of each work day. The daily report shall comment on the daily progress and status of each major component of the WORK. These components will be decided by the ENGINEER.

ARTICLE 7 -- OTHER WORK

7.1 RELATED WORK AT SITE

A. The OWNER may perform other work related to the Project at the Site by the OWNER's own forces, have other work performed by utility owners, or let other direct contracts for such other work. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work.

B. The CONTRACTOR shall afford each person who is performing the other work (including the OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the WORK with theirs. The CONTRACTOR shall do all cutting, fitting, and patching of the WORK that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of the ENGINEER and the others whose work will be affected.

C. If the proper execution or results of any part of the CONTRACTOR's work depends upon such other work by another, the CONTRACTOR shall inspect and report to the ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for such proper execution and results. The CONTRACTOR's failure to report such delays, defects, or deficiencies will constitute an acceptance of the other work as fit and proper for integration with the CONTRACTOR's work except for latent or nonapparent defects and deficiencies in the other work.

7.2 COORDINATION

A. If the OWNER contracts with others for the performance of other work at the Site, OWNER will have sole authority and responsibility in respect of such coordination. unless otherwise provided in the Supplementary General Conditions.

ARTICLE 8 -- OWNER'S RESPONSIBILITIES

8.1 COMMUNICATIONS

A. Except as may be otherwise provided in these General Conditions or the Supplementary General Conditions, the OWNER will issue all its communications to the CONTRACTOR through the ENGINEER.

8.2 PAYMENTS

A. The OWNER will make payments to the CONTRACTOR as provided in Article 14.

8.3 LANDS, EASEMENTS, AND SURVEYS

A. The OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.1 and 4.6.

8.4 REPORTS AND DRAWINGS

A. The OWNER will identify and make available to the CONTRACTOR copies of reports of physical conditions at the Site and drawings of existing structures which have been utilized in preparing the Contract Documents as set forth in Paragraph 4.2.

8.5 CHANGE ORDERS

A. The OWNER will execute Change Orders as indicated in Article 10.

8.6 INSPECTIONS AND TESTS

A. The OWNER's responsibility for inspections and tests is set forth in Paragraph 13.3.

8.7 SUSPENSION OF WORK

A. The OWNER's right to stop work or suspend work is set forth in Paragraphs 13.4 and 15.1.

8.8 TERMINATION OF AGREEMENT

A. The OWNER's right to terminate services of the CONTRACTOR is set forth in Paragraphs 15.2 and 15.3.

8.9 LIMITATION ON OWNER'S RESPONSIBILITIES

A. The OWNER shall not supervise, direct or have control or authority over, nor be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the WORK. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the WORK in accordance with the Contract Documents.

8.10 UNDISCLOSED HAZARDOUS ENVIRONMENTAL CONDITIONS

A. OWNER's responsibility in respect to an undisclosed hazardous environmental condition is set forth in Paragraph 4.5.

ARTICLE 9 -- ENGINEER'S STATUS DURING CONSTRUCTION

9.1 OWNER'S REPRESENTATIVE

A. The ENGINEER will be the OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER's representative during construction are set forth in the Contract Documents.

9.2 OBSERVATIONS ON THE SITE

A. The ENGINEER will make observations on the Site during construction to monitor the progress and quality of the WORK and to determine, in general, if the WORK is proceeding in accordance with the Contract Documents. The ENGINEER will not be required to make exhaustive or continuous inspections to check the quality or quantity of the WORK.

9.3 PROJECT REPRESENTATION

A. The ENGINEER may furnish a Resident Project Representative to assist in observing the performance of the WORK. The duties, responsibilities, and limitations of authority of any such Resident Project Representative will be as provided in the Supplementary General Conditions.

9.4 CLARIFICATIONS

A. The ENGINEER will issue with reasonable promptness such written Clarifications of the requirements of the Contract Documents as the ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

9.5 AUTHORIZED VARIATIONS IN WORK

A. The ENGINEER may authorize variations in the WORK from the requirements of the Contract Documents. These may be accomplished by a Field Order and will require the CONTRACTOR to perform the WORK involved in a manner that minimizes the impact to the WORK and the Contract Times. If the CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Times, the CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

9.6 REJECTING DEFECTIVE WORK

A. The ENGINEER will have authority to reject Defective Work and will also have authority to require special inspection or testing of the WORK as provided in Article 13.

9.7 CONTRACTOR SUBMITTALS, CHANGE ORDERS, AND PAYMENTS

A. In accordance with the procedures set forth in the General Requirements, the ENGINEER will review all CONTRACTOR submittals.

B. The ENGINEER's responsibilities for Change Orders are set forth in Articles 10, 11, and 12.

C. The ENGINEER's responsibilities for Applications for Payment are set forth in Article 14.

9.8 DECISIONS ON DISPUTES

A. The ENGINEER will be the initial interpreter of the requirements of the Contract Documents and of the acceptability of the WORK thereunder. Claims, disputes, and other matters relating to the acceptability of the WORK and interpretation of the requirements of the Contract Documents pertaining to the performance of the WORK shall be determined by the ENGINEER. Any claims in respect to changes in the Contract Price or Contract Times shall be resolved in accordance with the requirements set forth in Articles 10, 11, and 12.

9.9 LIMITATION ON ENGINEER'S RESPONSIBILITIES

A. Neither the ENGINEER's authority to act under this Article 9 or other provisions of the Contract Documents nor any decision made by the ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any Supplier, any surety for any of them, or any other person or organization performing any of the WORK.

B. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory," or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the ENGINEER as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the requirements of the Contract Documents, and conformance with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents, unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be effective to assign to the ENGINEER any duty or authority to supervise or direct the performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9 C.

C. The ENGINEER will not supervise, direct, control, or have authority over or be responsible for the CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations applicable to the performance of the WORK. The ENGINEER will not be responsible for the CONTRACTOR's failure to perform the WORK in accordance with the Contract Documents. The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR nor of any Subcontractor, Supplier, or any other person or organization performing any of the WORK.

ARTICLE 10 -- CHANGES IN THE WORK

10.1 GENERAL

A. Without invalidating the Agreement and without notice to any surety, the OWNER may at any time or from time to time, order additions, deletions, or revisions in the WORK. Such additions, deletions or revisions will be authorized by a Change Order or Field Order. Upon receipt of any such document, CONTRACTOR shall promptly proceed to implement the additions, deletions, or revisions in the WORK in accordance with the applicable conditions of the Contract Documents.

B. The CONTRACTOR shall not be entitled to an increase in the Contract Price nor an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented by Change Order, except in the case of an emergency and except in the case of uncovering work as provided in Paragraph 13.3.F and G.

C. The OWNER and the CONTRACTOR shall execute appropriate Change Orders covering:

1. Changes in the WORK which are ordered by the OWNER pursuant to Paragraph 10.1 A.;

2. Changes required because of acceptance of Defective Work under Paragraph 13.6; and

3. Changes in the Contract Price or Contract Times which are agreed to by the parties under Articles 11 and/or 12, respectively.

D. If notice of any change in the WORK is required to be given to a surety, the giving of any such notice shall be the CONTRACTOR's responsibility. If the change in the WORK affects the Contract Price, the OWNER may require an adjustment to the amount of any applicable Bond and the amount of each applicable Bond shall be adjusted accordingly.

E. If the OWNER and CONTRACTOR agree as to the extent, if any, of an increase in the Contract Price or an extension or shortening of the Contract Times that should be allowed as a result of a Field Order, the CONTRACTOR shall proceed so as to minimize the impact on and delays to the WORK pending the issuance of a Change Order.

F. If the OWNER and the CONTRACTOR are unable to agree as to the extent, if any, of an increase in the Contract Price or an extension or shortening of the Contract Times that should be allowed as a result of a Field Order, the ENGINEER can direct the CONTRACTOR to proceed on the basis of time and materials so as to minimize the impact on and delays to the WORK, and the CONTRACTOR may make a claim as provided in Articles 11 and 12.

10.2 ALLOWABLE QUANTITY VARIATIONS

A. In the event of an increase or decrease in the quantity of any bid item under a unit price contract, the total amount of work actually done or materials or equipment furnished will be paid for according to the unit price established for such work under the Contract Documents, wherever such unit price has been established; provided, that an adjustment in the Contract Price may be made for changes which result in an increase or decrease in excess of 25 percent of the estimated quantity of any unit price bid item of the WORK.

B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Contract Documents to cover such eliminated work, the price of the eliminated work shall be agreed upon by the OWNER and the CONTRACTOR by Change Order.

ARTICLE 11 -- CHANGE OF CONTRACT PRICE

11.1 GENERAL

A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. All duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR to complete the WORK shall be at its expense without change in the Contract Price.

B. The Contract Price may only be changed by a Change Order. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

1. Where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.

2. By mutual acceptance of a lump sum, which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.4; or

3. On the basis of the cost of work (determined as provided in Paragraph 11.3) plus the CONTRACTOR's overhead and profit (determined as provided in Paragraph 11.4).

C. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than10 days) after the start of the event giving rise to the claim and shall state the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within 60 days after the start of such event (unless the ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of such event. All claims for adjustment in the Contract Price will be determined by the ENGINEER. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.1 C.

11.2 COSTS RELATING TO WEATHER

A. The CONTRACTOR shall have no claims against the OWNER for damages for any injury to work, materials, or equipment, resulting from the action of the elements. If, however, in the opinion of the ENGINEER, the CONTRACTOR has made all reasonable efforts to protect the materials, equipment, and work, the CONTRACTOR may be granted a reasonable extension of Contract Times to make proper repairs, renewals, and replacements of the work, materials, or equipment.

11.3 COST OF WORK (BASED ON TIME AND MATERIALS)

A. **General:** The term "cost of work" means the sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of extra work. Except as otherwise may be agreed to in writing by the OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in Paragraph 11.5.

B. **Labor:** The costs of labor will be the actual cost for wages prevailing for each craft or type of workers performing the extra work at the time the extra work is done, plus employer payments of payroll taxes, workers compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from federal, state or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. Labor costs for equipment operators and helpers will be paid only when such costs are not included in the invoice for equipment rental. The labor costs for foremen shall be proportioned to all of their assigned work and only that applicable to extra work shall be paid. Nondirect labor costs including superintendence shall be considered part of the markup set out in Paragraph 11.4.

C. **Materials**: The cost of materials reported shall be at invoice or lowest current price at which materials are locally available and delivered to the Site in the quantities involved, plus the cost of freight, delivery and storage, subject to the following:

1. All trade discounts and rebates shall accrue to the OWNER, and the CONTRACTOR shall make provisions so that they may be obtained;

2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the ENGINEER. Except for actual costs incurred in the handling of such materials, markup will not be allowed;

3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on extra work items or the current wholesale price for such materials delivered to the

Site, whichever price is lower; and

4. If in the opinion of the ENGINEER the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of such material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned delivered to the Site less trade discount. The OWNER reserves the right to furnish materials for the extra work and no claim will be allowed by the CONTRACTOR for costs and profit on such materials.

D. **Equipment:** The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the Supplementary General Conditions. Such rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment will be the rate resulting in the least total cost to the OWNER for the total period of use. If it is deemed necessary by the CONTRACTOR to use equipment not listed in the publication specified in the Supplementary General Conditions, an equitable rental rate for the equipment will be established by the ENGINEER. The CONTRACTOR may furnish cost data which might assist the ENGINEER in the establishment of the rental rate. Payment for equipment shall be subject to the following:

1. All equipment shall, in the opinion of the ENGINEER, be in good working condition and suitable for the purpose for which the equipment is to be used;

2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the ENGINEER, in duplicate, a description of the equipment and its identifying number;

3. Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer;

4. Individual pieces of equipment or tools having a replacement value of $500 or less, whether or not consumed by use, will be considered to be small tools and no payment will be made therefore.

E. **Equipment Rental Time:** The rental time to be paid for equipment on the Site will be the time the equipment is in productive operation on the extra work being performed and, in addition, will include the time required to move the equipment to the location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location; except, that moving time will not be paid if the equipment is used on other than the extra work, even though located at the Site of the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made for loading and transporting costs when the equipment is used at the Site of the extra work on other than the extra work. Rental time will not be allowed while equipment is inoperative due to breakdowns. The rental time of equipment on the work Site will be computed subject to the following:

1. When hourly rates are listed, any part of an hour less than 30 minutes of operation will be considered to be half-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation;

2. When daily rates are listed, any part of a day less than 4 hours operation will be considered to be half-day of operation. When owner-operated equipment is used to perform extra work to be paid for on a time and materials basis, the CONTRACTOR will be paid for the equipment and operator, as set forth in Paragraphs 3, 4, and 5, following;

3. Payment for the equipment will be made in accordance with the provisions in Paragraph 11.3 D., herein;

4. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the CONTRACTOR to other workers operating similar equipment already on the Site, or in the absence of such labor, established by collective bargaining agreements for the type of workmen and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of Paragraph 11.3 B., herein, which surcharge shall constitute full compensation for payments imposed by state and federal laws and all other payments made to or on behalf of workers other than actual wages; and

5. To the direct cost of equipment rental and labor, computed as provided herein, will be added the allowances for equipment rental and labor as provided in Paragraph 11.4, herein.

F. **Special Services:** Special work or services are defined as that work characterized by extraordinary complexity, sophistication, innovation, or a combination of the foregoing attributes which are unique to the construction industry. The ENGINEER will make estimates for payment for special services and may consider the following:

1. When the ENGINEER and the CONTRACTOR, determine that a special service or work is required which cannot be performed by the forces of the CONTRACTOR or those of any of its Subcontractors, the special service or work may be performed by an entity especially skilled in the work to be performed. After validation of invoices and determination of market values by the ENGINEER, invoices for special services or work based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental costs;

2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the Site, the charges for that portion of the work performed at the off-site facility may, by agreement, be accepted as a special service and accordingly, the invoices for the work may be accepted without detailed itemization; and

3. All invoices for special services will be adjusted by deducting all trade discounts. In lieu of the allowances for overhead and profit specified in Paragraph 11.4, herein, an allowance of 15 percent will be added to invoices for special services.

G. **Sureties:** All work performed hereunder shall be subject to all of the provisions of the

Contract Documents and the CONTRACTOR's sureties shall be bound with reference thereto as under the original Agreement. Copies of all amendments to Bonds or supplemental Bonds shall be submitted to the OWNER for review prior to the performance of any work hereunder.

11.4 CONTRACTOR'S OVERHEAD AND PROFIT

A. Extra work ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by the ENGINEER, plus allowances for overhead and profit. The allowance for overhead and profit will include full compensation for superintendence, taxes, field office expense, extended overhead, home office overhead, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Paragraph 11.3. The allowance for overhead and profit will be made in accordance with the following schedule:

Overhead and Profit Allowance

Labor	20 percent
Materials	15 percent
Equipment	15 percent

To the sum of the costs and markups provided for in this Article, an additional 2 percent of the sum will be added as compensation for Bonds and insurance.

B. It is understood that labor, materials, and equipment for extra work may be furnished by the CONTRACTOR or by the Subcontractor on behalf of the CONTRACTOR. When all or any part of the extra work is performed by a Subcontractor, the allowance specified herein will be applied to the labor, materials, and equipment costs of the Subcontractor, to which the CONTRACTOR may add 5 percent of the Subcontractor's total cost for the extra work. Regardless of the number of hierarchical tiers of Subcontractors, the 5 percent increase above the Subcontractor's total cost which includes the allowances for overhead and profit specified herein may be applied one time only.

11.5 EXCLUDED COSTS

A. The term "cost of the work" shall not include any of the following:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, proprietors, partners, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by CONTRACTOR whether at the Site or in CONTRACTOR's principal or a branch office for general administration of the WORK all of which are to be considered administrative costs covered by the CONTRACTOR's allowance for overhead and profit;

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site;

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the WORK and charges against CONTRACTOR for delinquent payments;

4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except as provided by Paragraph 11.4 above);

5. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of Defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property; and

6. Other overhead or general expense costs of any kind and the cost of any item not specifically and expressly included in Paragraph 11.4.

11.6 CONTRACTOR'S EXTRA WORK REPORT

A. In order to be paid for extra work, the CONTRACTOR must submit a daily extra work report on the form furnished by the ENGINEER. The form must be completely filled out based on the provisions of Paragraphs 11.3 through 11.5 and signed by the CONTRACTOR and ENGINEER at the end of each work day. Failure to complete the form and obtain appropriate signatures by the next working day after the extra work of the previous day was completed will result in CONTRACTOR's costs for extra work being disallowed.

ARTICLE 12 -- CHANGE OF CONTRACT TIMES

12.1 GENERAL

A. The Contract Times may only be changed by a Change Order. Any claim for an extension of the Contract Times shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than 10 days) after the start of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 30 days after the start of such event (unless the ENGINEER allows an additional period of time for the submission of additional or more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR's written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR is entitled as a result of said event. All claims for adjustment in the Contract Times will be determined by the ENGINEER. No claim for an adjustment in the Contract Times will be valid if not submitted in accordance with the requirements of this Paragraph 12.1 A. An increase in Contract Times does not mean that the CONTRACTOR is due an increase in Contract Price. Only compensable time extensions will result in an increase in Contract Price.

B. All time limits stated in the Contract Documents are of the essence of the Agreement.

C. When CONTRACTOR is prevented from completing any part of the WORK within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost on the critical path of the WORK due to such delay, if a claim is made therefor as provided in Paragraph 12.1.A. Delays beyond the control of CONTRACTOR shall include, but not be

limited to, acts or neglect by OWNER; acts or neglect of those performing other work as contemplated by Article 7; and fires, floods, epidemics, abnormal weather conditions, or acts of God. Delays attributable to and within the control of any Subcontractor or Supplier shall be deemed to be delays within the control of the CONTRACTOR.

D. In no event will OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them, for any increase in the Contract Price or other damages arising out or resulting from the following:

1. Delays caused by or within the control of CONTRACTOR; or

2. Delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by those performing other work as contemplated by Article 7.

12.2 EXTENSIONS OF CONTRACT TIMES FOR DELAY DUE TO WEATHER

A. The CONTRACTOR's construction schedule shall anticipate delay due to unusually severe weather. The number of days of anticipated delay is set forth in the Supplementary General Conditions.

B. Contract Times may be extended by the ENGINEER because of delays in excess of the anticipated delay. The CONTRACTOR shall, within 10 days of the beginning of any such delay, notify the ENGINEER in writing and request an extension of Contract Times. The ENGINEER will ascertain the facts and the extent of the delay and extend the Contract Times when, in its judgement, the findings of the fact justify such an extension.

ARTICLE 13 -- INSPECTIONS AND TESTS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

13.1 NOTICE OF DEFECTIVE WORK

A. Prompt notice of Defective Work known to the OWNER or ENGINEER will be given to the CONTRACTOR. All Defective Work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13. Defective Work may be rejected even if approved by prior inspection.

13.2 ACCESS TO WORK

A. OWNER, ENGINEER, their consultants, subconsultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests shall have access to the WORK at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.3 INSPECTIONS AND TESTS

A. The CONTRACTOR shall give the ENGINEER not less than 24 hours notice of readiness of the WORK for all required inspections, tests, or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. The OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. For inspection, tests, or approvals covered by Paragraphs 13.3C. and 13.3D. below;

2. That costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.3G. shall be paid as provided in said Paragraph 13.3G.; and

3. As otherwise provided in the Contract Documents.

C. If Laws and Regulations of any public body having jurisdiction require any WORK (or any part thereof) to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals; pay all costs in connection therewith; and furnish the ENGINEER the required certificates of inspection or approval.

D. The CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for the ENGINEER's acceptance of materials or equipment to be incorporated in the WORK or acceptance of materials, mix designs, or equipment submitted for approval prior to the CONTRACTOR's purchase thereof for incorporation in the WORK. Such inspections, tests, or approvals shall be performed by organizations acceptable to the ENGINEER.

E. The ENGINEER will make, or have made, such inspections and tests as the ENGINEER deems necessary to see that the WORK is being accomplished in accordance with the requirements of the Contract Documents. Unless otherwise specified in the Supplementary General Conditions, the cost of such inspection and testing will be borne by the OWNER. In the event such inspections or tests reveal non-compliance with the requirements of the Contract Documents, the CONTRACTOR shall bear the cost of corrective measures deemed necessary by the ENGINEER, as well as the cost of subsequent reinspection and retesting. Neither observations by the ENGINEER nor inspections, tests, or approvals by others shall relieve the CONTRACTOR from the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

F. If any WORK (including the work of others) that is to be inspected, tested, or approved is covered without written concurrence of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for observation. Such uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR has given the ENGINEER not less than 24 hours notice of the CONTRACTOR's intention to perform such test or to cover the same and the ENGINEER has not acted with reasonable promptness in response to such notice.

G. If any WORK is covered contrary to the written request of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for the ENGINEER's observation and

recovered at the CONTRACTOR's expense.

H. If the ENGINEER considers it necessary or advisable that covered WORK be observed by the ENGINEER or inspected or tested by others, the CONTRACTOR, at the ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, material, and equipment. If it is found that such work is Defective Work, the CONTRACTOR shall bear all direct, indirect, and consequential costs and damages of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, including but not limited to, fees and charges of engineers, architects, attorneys, and other professionals. However, if such work is not found to be Defective Work, the CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

13.4 OWNER MAY STOP THE WORK

A. If Defective Work is identified, the OWNER may order the CONTRACTOR to stop performance of the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the OWNER to stop the WORK shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.

13.5 CORRECTION OR REMOVAL OF DEFECTIVE WORK

A. If required by the ENGINEER, the CONTRACTOR shall promptly either correct all Defective Work, whether or not fabricated, installed, or completed, or, if the work has been rejected by the ENGINEER, remove it from the Site and replace it with non-defective WORK. The CONTRACTOR shall bear all direct, indirect, and consequential costs and damages of such correction or removal, including but not limited to fees and charges of engineers, architects, attorneys, and other professionals made necessary thereby.

13.6 ACCEPTANCE OF DEFECTIVE WORK

A. If, instead of requiring correction or removal and replacement of Defective Work, the OWNER prefers to accept the Defective Work, the OWNER may do so. The CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the OWNER's evaluation of and determination to accept such Defective Work. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK, and the OWNER shall be entitled to an appropriate decrease in the Contract Price.

13.7 OWNER MAY CORRECT DEFECTIVE WORK

A. If the CONTRACTOR fails within a reasonable time after written notice from the ENGINEER to correct Defective Work, or to remove and replace Defective Work as required by the ENGINEER in accordance with Paragraph 13.5A., or if the CONTRACTOR fails to perform the WORK in accordance with the Contract Documents, or if the CONTRACTOR fails to comply with any other provision of the Contract Documents, the OWNER may, after seven days written notice to the CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, the OWNER shall proceed with corrective and remedial action. In connection with such corrective and remedial action, the OWNER may exclude the CONTRACTOR from all or part of the Site, take possession of all or part of the WORK, and suspend the CONTRACTOR's services related thereto and incorporate in the WORK all materials and equipment for which the OWNER has paid the CONTRACTOR whether stored at the Site or elsewhere. The CONTRACTOR shall provide the OWNER, OWNER's representatives, ENGINEER, and ENGINEER's consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All direct, indirect, and consequential costs and damages incurred by the OWNER in exercising the rights and remedies under this paragraph will be charged against the CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK; and the OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, the OWNER may make a claim therefor as provided in Article 11. Such claim will include, but not be limited to, all costs of repair or replacement of work of others, destroyed or damaged by correction, removal, or replacement of CONTRACTOR's Defective Work and all direct, indirect, and consequential damages associated therewith.

D. The CONTRACTOR shall not be allowed an extension of Contract Times (or Milestones) because of any delay in the performance of the WORK attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph.

13.8 CORRECTION PERIOD

A. The correction period for Defective Work shall be the longer of:

1. One year after the date of final acceptance;

2. Such time as may be prescribed by Laws and Regulations;

3. Such time as specified by the terms of any applicable special guarantee required by the Contract Documents; or

4. Such time as specified by any specific provision of the Contract Documents.

B. If, during the correction period as defined in Paragraph 13.8A above, any work is found to be Defective Work, the OWNER shall have the same remedies as set forth in Paragraphs 13.5, 13.6, and 13.7 above.

C. Where Defective Work (and damage to other work resulting therefrom) has been corrected, removed, or replaced under this paragraph, the correction period hereunder with respect to such work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

ARTICLE 14 -- PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 SCHEDULE OF VALUES (LUMP SUM PRICE BREAKDOWN)

A. The schedule of values or lump sum price breakdown established as provided in the General Requirements shall serve as the basis for progress payments and shall be incorporated into a form of Application for Payment acceptable to the ENGINEER.

14.2 UNIT PRICE BID SCHEDULE

A. Progress payments on account of unit price work will be based on the number of units completed.

14.3 APPLICATION FOR PROGRESS PAYMENT

A. Unless otherwise prescribed by law, on the 25th of each month, the CONTRACTOR shall submit to the ENGINEER for review, the Application for Payment filled out and signed by the CONTRACTOR covering the WORK completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents.

B. The Application for Payment shall identify, as a subtotal, the amount of the CONTRACTOR total earnings to date; plus the value of materials stored at the Site which have not yet been incorporated in the WORK; and less a deductive adjustment for materials installed which were not previously incorporated in the WORK, but for which payment was allowed under the provisions for payment for materials stored at the Site, but not yet incorporated in the WORK.

C. The net payment due the CONTRACTOR shall be the above-mentioned subtotal from which shall be deducted the amount of retainage specified in the Supplementary General Conditions and the total amount of all previous payments made to the CONTRACTOR.

D. The value of materials stored at the Site shall be an amount equal to the specified percent of the value of such materials as set forth in the Supplementary General Conditions. Said amount shall be based upon the value of all acceptable materials and equipment not incorporated in the WORK but delivered and suitably stored at the Site or at another location agreed to in writing; provided, each such individual item has a value of more than $5,000 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CONTRACTOR has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the OWNER's interest therein, all of which will be satisfactory to the OWNER.

14.4 CONTRACTOR'S WARRANTY OF TITLE

A. The CONTRACTOR warrants and guarantees that title to all WORK, materials, and equipment covered by an Application for Payment, whether incorporated in the WORK or not, will pass to the OWNER no later than the time of payment, free and clear of all Liens.

14.5 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

A. The ENGINEER will, within 7 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the application to the OWNER, or return the application to the CONTRACTOR indicating in writing the ENGINEER's reasons for refusing to recommend payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the application. If the ENGINEER still disagrees with a portion of the application, it will submit the application recommending the undisputed portion of the application to the OWNER for payment and provide reasons for recommending non-payment of the disputed amount. Thirty days after presentation of the Application for Payment with the ENGINEER's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.5B.) become due and when due will be paid by the OWNER to the CONTRACTOR.

B. The ENGINEER, in its discretion, may refuse to recommend the whole or any part of any payment. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

1. The work is Defective Work or the completed WORK has been damaged requiring correction or replacement.

2. The Contract Price has been reduced by written amendment or Change Order.

3. The OWNER has been required to correct Defective Work or complete WORK in accordance with Paragraph 13.7.

4. ENGINEER has actual knowledge of the occurrence of any of the events

enumerated in Paragraph 15.1 through 15.4 inclusive.

C. The OWNER may refuse to make payment of the full amount recommended by the ENGINEER because:

1. Claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the WORK.

2. Liens have been filed in connection with the WORK, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens.

3. There are other items entitling OWNER to a set-off against the amount recommended, or

4. OWNER has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.5B. through 14.5C and 15.1 through 15.4 inclusive.

The OWNER must give the CONTRACTOR immediate written notice (with a copy to the ENGINEER) stating the reasons for such action and promptly pay the CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

14.6 SUBSTANTIAL COMPLETION

A. When the CONTRACTOR considers the WORK ready for its intended use, the CONTRACTOR shall notify the OWNER and the ENGINEER in writing that the WORK is substantially complete. The CONTRACTOR shall attach to this request a list of all work items that remain to be completed and a request that the ENGINEER prepare a Notice of Completion. Within a reasonable time thereafter, the OWNER, the CONTRACTOR, and the ENGINEER shall make an inspection of the WORK to determine the status of completion. If the ENGINEER does not consider the WORK substantially complete, or the list of remaining work items to be comprehensive, the ENGINEER will notify the CONTRACTOR in writing giving the reasons therefor. If the ENGINEER considers the WORK substantially complete, the ENGINEER will prepare and deliver to the OWNER for its execution and recordation the Notice of Completion signed by the ENGINEER and CONTRACTOR, which shall fix the date of Substantial Completion.

14.7 PARTIAL UTILIZATION

A. The OWNER shall have the right to utilize or place into service any item of equipment or other usable portion of the WORK prior to completion of the WORK. Whenever the OWNER plans to exercise said right, the CONTRACTOR will be notified in writing by the OWNER, identifying the specific portion or portions of the WORK to be so utilized or otherwise placed into service.

B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all of the WORK shall be borne by the CONTRACTOR. Upon issuance of said written notice of Partial Utilization, the OWNER will accept responsibility for the protection and maintenance of all such items or portions of

the WORK described in the written notice.

C. The CONTRACTOR shall retain full responsibility for satisfactory completion of the WORK, regardless of whether a portion thereof has been partially utilized by the OWNER, and the CONTRACTOR's one year correction period shall commence only after the date of Substantial Completion for the WORK.

14.8 FINAL APPLICATION FOR PAYMENT

A. After the CONTRACTOR has completed all of the remaining work items referred to in Paragraph 14.6 and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in the General Requirements), and other documents, all as required by the Contract Documents, and after the ENGINEER has indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the OWNER) of all Liens arising out of or filed in connection with the WORK.

14.9 FINAL PAYMENT AND ACCEPTANCE

A. If, on the basis of the ENGINEER's observation of the WORK during construction and final inspection, and the ENGINEER's review of the final Application for Payment and accompanying documentation, all as required by the Contract Documents, the ENGINEER is satisfied that the WORK has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the ENGINEER will, within 14 days after receipt of the final Application for Payment, indicate in writing the ENGINEER's recommendation of payment and present the application to the OWNER for payment.

B. After acceptance of the WORK by the OWNER's governing body, the OWNER will make final payment to the CONTRACTOR of the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract Documents, including the following items:

1. Liquidated damages, as applicable;

2. Amounts withheld by OWNER under Paragraph 14.5B. and C. which have not been released; and

3. Two times the value of outstanding items of correction work or punch list items yet uncompleted or uncorrected, as applicable. All such work shall be completed or corrected to the satisfaction of the OWNER within the time stated on the Notice of Completion, otherwise the CONTRACTOR does hereby waive any and all claims to all monies withheld by the OWNER to cover the value of all such uncompleted or uncorrected items.

C. As a condition of final payment, the CONTRACTOR shall be required to execute a release on the form provided by OWNER, releasing the OWNER from any and all claims of liability for payment on the Project except for such amounts as may be specifically described and

excluded from the release.

14.10 RELEASE OF RETAINAGE AND OTHER DEDUCTIONS

A. After executing the necessary documents to initiate the Lien period, and not more than 45 days thereafter (based on a 30-day Lien filing period and 15-day processing time), the OWNER will release to the CONTRACTOR the retainage funds withheld pursuant to the Agreement, less any deductions to cover pending claims against the OWNER pursuant to Paragraph 14.5C.

B. After filing of the necessary documents to initiate the Lien period, the CONTRACTOR shall have 30 days to complete any outstanding items of correction work remaining to be completed or corrected as listed on a final punch list made a part of the Notice of Completion. Upon expiration of the 45 days, referred to in Paragraph 14.10A., the amounts withheld pursuant to the provisions of Paragraph 14.9B. herein, for all remaining work items will be returned to the CONTRACTOR; provided, that said work has been completed or corrected to the satisfaction of the OWNER within said 30 days. Otherwise, the CONTRACTOR does hereby waive any and all claims for all monies withheld by the OWNER under this Agreement to cover two times the value of such remaining uncompleted or uncorrected items.

ARTICLE 15 -- SUSPENSION OF WORK AND TERMINATION

15.1 SUSPENSION OF WORK BY OWNER

A. The OWNER may, at any time and without cause, suspend the WORK or any portion thereof for a period of not more than 90 days by notice in writing to the CONTRACTOR. The CONTRACTOR shall resume the WORK on receipt of a notice of resumption of work. The CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if the CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

15.2 TERMINATION OF AGREEMENT BY OWNER FOR DEFAULT

A. In the event of default by the CONTRACTOR, the OWNER may give seven days written notice to the CONTRACTOR of OWNER's intent to terminate the Agreement and provide the CONTRACTOR an opportunity to remedy the conditions constituting the default within a specified period of time. It will be considered a default by the CONTRACTOR whenever CONTRACTOR shall:

1. Declare bankruptcy, become insolvent, or assign its assets for the benefit of its creditors;

2. Disregard or violate the Laws or Regulations of any public body having jurisdiction;

3. Fail to provide materials or workmanship meeting the requirements of the Contract Documents;

4. Disregard or violate provisions of the Contract Documents or ENGINEER's instructions;

5. Fail to prosecute the WORK according to the approved progress schedule;

6. Fail to provide a qualified superintendent, competent workmen, or materials or equipment meeting the requirements of the Contract Documents; or

7. Disregard the authority of the ENGINEER.

B. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the OWNER may then issue the notice of termination.

C. In the event the Agreement is terminated in accordance with Paragraph 15.2A., herein, the OWNER may take possession of the WORK and may complete the WORK by whatever method or means the OWNER may select. The cost of completing the WORK will be deducted from the balance which would have been due the CONTRACTOR had the Agreement not been terminated and the WORK completed in accordance with the Contract Documents. If such cost exceeds the balance which would have been due, the CONTRACTOR shall pay the excess amount to the OWNER. If such cost is less than the balance which would have been due, the CONTRACTOR shall not have claim to the difference.

15.3 TERMINATION OF AGREEMENT BY OWNER FOR CONVENIENCE

A. Upon seven days' written notice to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy of the OWNER, elect to terminate the Agreement. In such case, the CONTRACTOR shall be paid (without duplication of any items):

1. For completed and acceptable WORK executed in accordance with the Contract Documents, prior to the effective date of termination, including fair and reasonable sums for overhead and profit of such WORK;

2. For expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted WORK, plus fair and reasonable sums for overhead and profit on such expenses;

3. For all reasonable claims, costs, losses, and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. For reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.4 TERMINATION OF AGREEMENT BY CONTRACTOR

A. The CONTRACTOR may terminate the Agreement upon 14 days written notice to the OWNER, whenever:

1. The WORK has been suspended under the provisions of Paragraph 15.1, herein, for more than 90 consecutive days through no fault or negligence of the CONTRACTOR, and notice to resume work or to terminate the Agreement has not been received from the OWNER within this time period; or

2. The OWNER should fail to pay the CONTRACTOR any monies due him in accordance with the terms of the Contract Documents and within 60 days after presentation to the OWNER by the CONTRACTOR of a request therefor, unless within said 14-day period the OWNER shall have remedied the condition upon which the payment delay was based.

B. In the event of such termination, the CONTRACTOR shall have no claims against the OWNER except for those claims specifically enumerated in Paragraph 15.3, herein, and as determined in accordance with the requirements of said paragraph.

ARTICLE 16 -- MISCELLANEOUS Error! Bookmark not defined.

16.1 GIVING NOTICE

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

16.2 TITLE TO MATERIALS FOUND ON THE WORK

A. The OWNER reserves the right to retain title to all soils, stone, sand, gravel, and other materials developed and obtained from excavations and other operations connected with the WORK. Unless otherwise specified in the Contract Documents, neither the CONTRACTOR nor any Subcontractor shall have any right, title, or interest in or to any such materials. The CONTRACTOR will be permitted to use in the WORK, without charge, any such materials which meet the requirements of the Contract Documents.

16.3 RIGHT TO AUDIT

A. If the CONTRACTOR submits a claim to the OWNER for additional compensation, the OWNER shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR's plant, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon Subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such representatives as the OWNER deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the OWNER for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the OWNER.

16.4 SURVIVAL OF OBLIGATIONS

A. All representations, indemnifications, warranties, and guaranties made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the WORK or termination or completion of the Agreement.

16.5 CONTROLLING LAW

A. This Agreement is to be governed by the law of the state in which the Project is located.

16.6 SEVERABILITY

A. If any term or provision of this Agreement is declared invalid or unenforceable by any court of lawful jurisdiction, the remaining terms and provisions of the Agreement shall not be affected thereby and shall remain in full force and effect.

16.7 WAIVER

A. The waiver by the OWNER of any breach or violation of any term, covenant or condition of this Agreement or of any provision, ordinance, or law shall not be deemed to be a waiver of any other term, covenant, condition, ordinance, or law or of any subsequent breach or violation of the same or of any other term, covenant, condition, ordinance, or law. The subsequent payment of any monies or fee by the OWNER which may become due hereunder shall not be deemed to be a waiver of any preceding breach or violation by CONTRACTOR or any term, covenant, condition of this Agreement or of any applicable law or ordinance.

ARTICLE 17 -- CALIFORNIA STATE REQUIREMENTS

17.1 STATE WAGE DETERMINATIONS

A. As required by Section 1770 and following, of the California Labor Code, the CONTRACTOR shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per diem wages are on file at the office of the OWNER, which copies shall be made available to any interested party on request. The CONTRACTOR shall post a copy of such determination at each job site.

B. In accordance with Section 1775 of the California Labor Code, the CONTRACTOR shall, as a penalty to the OWNER, forfeit not more than $50.00 for each calendar day or portion thereof, for each worker paid less than the prevailing rates as determined by the Director for the work or craft in which the worker is employed for any public work done under the contract by him or her or by any subcontractor under him or her.

17.2 WORKERS' COMPENSATION

A. In accordance with the provisions of Section 3700 of the California Labor Code, the CONTRACTOR shall secure the payment of compensation to its employees.

B. Prior to beginning work under the Contract, the CONTRACTOR shall sign and file with the OWNER the following certification:

> "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the WORK of this Contract."

C. Notwithstanding the foregoing provisions, before the Contract is executed on behalf of the OWNER, a bidder to whom a contract has been awarded shall furnish satisfactory evidence that it has secured in the manner required and provided by law the payment of workers' compensation.

17.3 APPRENTICES ON PUBLIC WORKS

A. The CONTRACTOR shall comply with all applicable provisions of Section 1777.5 of the California Labor Code relating to employment of apprentices on public works.

17.4 WORKING HOURS

A. The CONTRACTOR shall comply with all applicable provisions of Section 1810 to 1815, inclusive, of the California Labor Code relating to working hours. The CONTRACTOR shall, as a penalty to the OWNER, forfeit $25.00 for each worker employed in the execution of the Contract by the CONTRACTOR or by any subcontractor for each calendar day during which such worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of 8 hours at not less than 1-1/2 times the basic rate of pay.

17.5 CONTRACTOR NOT RESPONSIBLE FOR DAMAGE RESULTING FROM CERTAIN ACTS OF GOD

A. As provided in Section 7105 of the California Public Contract Code, the CONTRACTOR shall not be responsible for the cost of repairing or restoring damage to the WORK which damage is determined to have been proximately caused by an act of God, in excess of 5 percent of the contracted amount, provided, that the WORK damaged was built in accordance with accepted and applicable building standards and the plans and specifications of the OWNER. The CONTRACTOR shall obtain insurance to indemnify the OWNER for any damage to the WORK caused by an act of God if the insurance premium is a separate bid item in the bidding schedule for the WORK. For purposes of this Section, the term "acts of God" shall include only the following occurrences or conditions and effects: earthquakes in excess of a magnitude of 3.5 on the Richter Scale and tidal waves.

17.6 NOTICE OF COMPLETION

A. In accordance with the Sections 3086 and 3093 of the California Civil Code, within 10 days after date of acceptance of the WORK by the OWNER's governing body, the OWNER will file, in the County Recorder's office, a Notice of Completion of the WORK.

17.7 UNPAID CLAIMS

A. If, at any time prior to the expiration of the period for service of a stop notice, there is served upon the OWNER a stop notice as provided in Sections 3179 and 3210 of the California Civil Code, the OWNER shall, until the discharge thereof, withhold from the monies under its control so much of said monies due or to become due to the CONTRACTOR under this Contract as shall be sufficient to answer the claim stated in such stop notice and to provide for the reasonable cost of any litigation thereunder; provided, that if the ENGINEER shall, in its discretion, permit CONTRACTOR to file with the OWNER the bond referred to in Section 3196 of the Civil Code of the State of California, said monies shall not thereafter be withheld on account of such stop notice.

17.8 CONCRETE FORMS, FALSEWORK, AND SHORING

A. The CONTRACTOR shall comply fully with the requirements of Section 1717 of the Construction Safety Orders, State of California, Department of Industrial Relations, regarding the design of concrete forms, falsework and shoring, and the inspection of same prior to placement of concrete. Where the said Section 1717 requires the services of a civil engineer registered in the State of California to approve design calculations and working drawings of the falsework or shoring system, or to inspect such system prior to placement of concrete, the CONTRACTOR shall employ a registered civil engineer for these purposes, and all costs therefore shall be included in the price named in the Contract for completion of the WORK as set forth in the Contract Documents.

17.9 RETAINAGE FROM MONTHLY PAYMENTS

A. Pursuant to Section 22300 of the California Public Contract Code, the CONTRACTOR may substitute securities for any money withheld by the OWNER to insure performance under the Contract. At the request and expense of the CONTRACTOR, securities equivalent to the amount withheld shall be deposited with the OWNER or with a state or federally chartered bank in California as the escrow agent, who shall return such securities to the CONTRACTOR upon satisfactory completion of the Contract.

B. Alternatively, the CONTRACTOR may request and the OWNER shall make payment of retentions earned directly to the escrow agent at the expense of the CONTRACTOR. At the expense of the CONTRACTOR, the CONTRACTOR may direct the investment of the payments into securities and the CONTRACTOR shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the CONTRACTOR. Upon satisfactory completion of the Contract, the CONTRACTOR shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the OWNER, pursuant to the terms of this section. The CONTRACTOR shall pay to each subcontractor, not later than 20 days of receipt of the payment, the respective amount of interest earned, net of costs attributed to retention withheld from each subcontractor, on the amount of retention withheld to insure the performance of the CONTRACTOR.

C. Securities eligible for investment under Section 22300 shall be limited to those listed in Section 16430 of the Government Code and to bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the CONTRACTOR and the OWNER.

17.10 PUBLIC WORKS CONTRACTS; ASSIGNMENT TO AWARDING BODY

A. In accordance with Section 7103.5 of the California Public Contract Code, the CONTRACTOR and Subcontractors shall conform to the following requirements. In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the CONTRACTOR or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the CONTRACTOR, without further acknowledgement by the parties.

17.11 PAYROLL RECORDS; RETENTION; INSPECTION; NONCOMPLIANCE PENALTIES; RULES AND REGULATIONS

A. In accordance with Section 1776 of the California Labor Code the CONTRACTOR and each Subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

1. The information contained in the payroll record is true and correct.

2. The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project.

B. The payroll records enumerated under Paragraph 17.11A shall be certified and shall be available for inspection at all reasonable hours at the principal office of the CONTRACTOR on the following basis:

1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

2. A certified copy of all payroll records enumerated in Paragraph 17.11A shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

3. A certified copy of all payroll records enumerated in Paragraph 17.11A shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the body awarding the contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to Paragraph 17.11B2 the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the CONTRACTOR, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the CONTRACTOR.

C. The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.

D. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the CONTRACTOR awarded the contract or performing the contract shall not be marked or obliterated.

E. The CONTRACTOR shall inform the body awarding the contract of the location of the

records enumerated under Paragraph 17.11A including the street address, city and county, and shall, within 5 working days, provide a notice of change of location and address.

F. The CONTRACTOR shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects the CONTRACTOR must comply with this Section. In the event that the CONTRACTOR fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five dollars ($25.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. A contractor is not subject to a penaly assessment pursuant to this section due to the failure of a subcontractor to comply with this section.

17.12 CULTURAL RESOURCES

A. The CONTRACTOR's attention is directed to the provisions of the Clean Water Grant Program Bulletin 76A which augments the National Historic Preservation Act of 1966 (16 U.S.C. 470) as specified under Section 01560 - Temporary Environmental Controls, of the General Requirements.

17.13 PROTECTION OF WORKERS IN TRENCH EXCAVATIONS

A. As required by Section 6705 of the California Labor Code and in addition thereto, whenever work under the Contract involves the excavation of any trench or trenches 5 feet or more in depth, the CONTRACTOR shall submit for acceptance by the OWNER or by a registered civil or structural engineer, employed by the OWNER, to whom authority to accept has been delegated, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation, of such trench or trenches. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Occupational Safety and Health, the plan shall be prepared by a registered civil or structural engineer employed by the CONTRACTOR, and all costs therefore shall be included in the price named in the Contract for completion of the WORK as set forth in the Contract Documents. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this Section shall be construed to impose tort liability on the OWNER, the ENGINEER, or any of their officers, agents, representatives, or employees.

B. Excavation shall not start until the CONTRACTOR has obtained a permit from the California Division of Industrial Safety and has posted it at the site.

17.14 TRAVEL AND SUBSISTENCE PAY

A. As required by Section 1773.8 of the California Labor Code, the CONTRACTOR shall pay travel and subsistence payments to each workman needed to execute the WORK, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with this Section.

B. To establish such travel and subsistence payments, the representative of any craft, classification or type of workman needed to execute the contracts shall file with the Department of Industrial Relations fully executed copies of collective bargaining agreements for the particular craft, classification or type of work involved. Such agreements shall be filed within 10 days after their execution and thereafter shall establish such travel and subsistence payments whenever filed 30 days prior to the call for bids.

17.15 REMOVAL, RELOCATION, OR PROTECTION OF EXISTING UTILITIES

A. In accordance with the provisions of Section 4215 of the California Government Code, any contract to which a public agency as defined in Section 4401 is a party, the public agency shall assume the responsibility, between the parties to the contract, for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the site of any construction project that is a subject of the contract, if such utilities are not identified by the public agency in the plans and specifications made a part of the invitation for bids. The agency will compensate CONTRACTOR for the costs of locating, repairing damage not due to the failure of the CONTRACTOR to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work.

B. The CONTRACTOR shall not be assessed liquidated damages for delay in completion of the project, when such delay was caused by the failure of the public agency or the owner of the utility to provide for removal or relocation of such utility facilities.

C. Nothing herein shall be deemed to require the public agency to indicate the presence of existing service laterals or appurtenances when the presence of such utilities on the site of the construction project can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of construction; provided, however, nothing herein shall relieve the public agency from identifying main or trunklines in the plans and specifications.

D. If the CONTRACTOR while performing the Contract discovers utility facilities not identified by the public agency in the Contract Documents it shall immediately notify the public agency and utility in writing.

E. The public utility, where they are the owner, shall have the sole discretion to perform such repairs or relocation work or permit the CONTRACTOR to do such repairs or relocation work at a reasonable price.

17.16 CONTRACTOR LICENSE REQUIREMENTS

A. In accordance with Section 7028.15 of the California Business and Professions Code:

B. It is a misdemeanor for any person to submit a bid to a public agency in order to engage in the business or act in the capacity of a contractor within this state without having a license therefor, except in any of the following cases:

1. The person is particularly exempted from this chapter.

2. The bid is submitted on a state project governed by Section 10164 of the Public Contract Code or any local agency project governed by Section 20103.5 of the Public

Contract Code.

C. If a person has previously been convicted of the offense described in this section, the court shall impose a fine of 20 percent of the price of the contract under whiuch the unlicensed person performed contract work, or four thousand five hundred dollars ($4,500), whichever is greater, or imprisonment in the county jail for not less than 10 days nor more than six months, or both.

D. In the event the person performing the contracting work has agreed to furnish materials and labor on an hourly basis, "the price of the contract" for the purpose of this subdivision means the aggregate sum of the cost of materials and labor furnished and the cost of completing the work to be performed.

E. This section shall not apply to a joint venture license, as required by Section 7029.1. However, at the time of making a bid as a joint venture, each person submitting the bid shall be subject to this section with respect to his or her individual licensure.

F. This section shall not affect the right or ability of a licensed architect, land surveyor, or registered professional engineer to form joint ventures with licensed contractors to render services within the scope of their respective practices.

G. Unless one of the foregoing exceptions applies, a bid submitted to a public agency by a contractor who is not licensed in accordance with this chapter shall be considered nonresponsive and shall be rejected by the public agency. Unless one of the foregoing exceptions applies, a local public agency shall, before awarding a contract or issuing a purchase order, verify that the contractor was properly licensed when the contractor submitted the bid. Notwithstanding any other provision of law, unless one of the foregoing exceptions applies, the registrar may issue a citation to any public officer or employee of a public entity who knowingly awards a contract or issues a purchase order to a contractor who is not licensed pursuant to this chapter. The amount of civil penalties, appeal, and finality of such citations shall be subject to Sections 7028.7 and 7028.13 inclusive. Any contract awarded to, or any purchase order issued to, a contractor who is not licensed pursuant to this chapter is void.

H. Any compliance or noncompliance with subdivision (F) of this section, as added by Chapter 863 of the Statutes of 1989, shall not invalidate any contract or bid awarded by a public agency during which time that subdivision was in effect.

I. A public employee or officer shall not be subject to a citation pursuant to this section if the public employee, officer, or employing agency made an unquiry to the board for the purposes of verifying the license status of any person or contractor and the board failed to respond to the inquiry within three business days. For the purposes of this section, a telephone response by the board shall be deemed sufficient.

J. In accordance with California Public contract Code section 6109, contractors and subcontractors who are ineligible to perform work on public works projects pursuant to California Labor Code sections 1777.1 or 1777.7 may neither bid on, be awarded, or perform work as a subcontractor on the Project.

17.17 DIGGING TRENCHES OR EXCAVATIONS; NOTICE ON DISCOVERY OF HAZARDOUS WASTE OR OTHER UNUSUAL CONDITIONS; INVESTIGATIONS; CHANGE ORDERS; EFFECT ON CONTRACT

A. If this Contract involves digging trenches or other excavations that extend deeper than four feet below the surface, the following shall apply:

1. The CONTRACTOR shall promptly, and before the following conditions are disturbed, notify the OWNER in writing, of any:

a. Material that the CONTRACTOR believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

b. Subsurface or latent physical conditions at the site differing from those indicated.

c. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

d. The OWNER shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR'S cost of,or the time required for, performance of any part of the work shall issue a change order the procedures described in the Contract.

e. In the event that a dispute arises between the OWNER and the CONTRACTOR whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the CONTRACTOR'S cost of, or time required for, performance of any part of the work, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The CONTRACTOR shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

17.18 RETENTION PROCEEDS; WITHHOLDING; DISBURSEMENT

A. In accordance with Section 7107 of the Public Contract Code with respects to all contracts entered into on or after January 1, 1993 relating to the construction of any public work of improvement the following shall apply:

1. The retention proceeds withheld from any payment by the OWNER from the original CONTRACTOR, or by the original CONTRACTOR from any subcontractor, shall be subject to this paragraph 17.18.

2. Within 60 days after the date of completion of the WORK, the retention withheld by the OWNER shall be released. In the event of a dispute between the OWNER and

the original CONTRACTOR, the OWNER may withhold from the final payment an amount not to exceed 150 percent of the disputed amount. For the purposes of this paragraph, "completion" means any of the following:

a. The occupation, beneficial use, and enjoyment of a work of improvement, excluding any operation only for testing, startup, or commissioning, by the OWNER, accompanied by cessation of labor on the work of improvement.

b. The acceptance by the OWNER of the work of improvement.

c. After the commencement of a work of improvement, a cessation of labor on the work of improvement for a continuous period of 100 days or more, due to factors beyond the control of the CONTRACTOR.

d. After the commencement of a work of improvement, a cessation of labor on the work of improvement for a continuous period of 30 days or more, if the OWNER files for record a notice of cessation or a notice of completion.

3. Subject to subparagraph 17.18 A.4, within 10 days from the time that all or any portion of the retention proceeds are received by the original CONTRACTOR, the original CONTRACTOR shall pay each of its subcontractors from whom retention has been withheld, each subcontractor's share of the retention received. However, if a retention payment received by the original CONTRACTOR is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor, if the payment is consistent with the terms of the subcontract.

4. The original CONTRACTOR may withhold from a subcontractor its portion of the retention proceeds if a bona fide dispute exists between the subcontractor and the original CONTRACTOR. The amount withheld from the retention payment shall not exceed 150 percent of the estimated value of the disputed amount.

5. In the event that retention payments are not made within the time periods required by this paragraph 17.18, the OWNER or original CONTRACTOR shall be subject to a charge of 2 percent per month on the improperly withheld amount, in lieu of any interest otherwise due. Additionally, in any action for the collection of funds wrongfully withheld, the prevailing party shall be entitled to attorney's fees and costs.

6. Any attempted waiver of the provisions of this section shall be void as against the public policy of this state.

17.19 TIMELY PROGRESS PAYMENTS; INTEREST; PAYMENT REQUESTS

A. If the OWNER fails to make any progress payment within 30 days after receipt of an undisputed and properly submitted payment request from the CONTRACTOR, the OWNER shall pay interest to the CONTRACTOR equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

B. Upon receipt of a payment request, the OWNER shall act in accordance with both of the following:

1. Each payment request shall be reviewed by the OWNER as soon as practicable after receipt for the purpose of determining that the payment request is a proper payment request.

2. Any payment request determined not to be a proper payment request suitable for payment shall be returned to the CONTRACTOR as soon as practicable, but not later than seven days, after receipt. A request returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the payment request is not proper.

C. The number of days available to the OWNER to make a payment without incurring interest pursuant to this paragraph shall be reduced by the number of days by which the OWNER exceeds the seven-day requirement set forth above.

D. For purposes of this paragraph:

1. A "progress payment" includes all payments due the CONTRACTOR, except that portion of the final payment designated by the contract as retention earnings.

2. A payment request shall be considered properly executed if funds are available for payment of the payment request, and payment is not delayed due to an audit inquiry by the financial officer of the OWNER.

17.20 PREFERENCE FOR MATERIAL

A. In accordance with Section 3400 of the California Public Contract Code, the CONTRACTOR will be provided a period prior to award of the contract for submission of data substantiating a request for a substitution of "as equal" item.

17.21 RESOLUTION OF CONSTRUCTION CLAIMS

A. In accordance with Section 20104 et. Seq. of the California Public Contract Code. This paragraph 17.21 applies to all claims of $375,000 or less which arise between the CONTRACTOR and the OWNER under this Contract for:

1. A time extension;

2. Payment of money or damages arising from work done by or on behalf of the CONTRACTOR pursuant to this CONTRACT and payment of which is not otherwise expressly provided for as the CONTRACTOR is not otherwise entitled; or

3. An amount the payment of which is disputed by the OWNER

B. For any claim set out in Paragraphs 17.21 A.1, 2, or 3 above, the following requirements apply:

1. The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing herein is intended to extend the time limit or supersede notice requirements otherwise provided by Contract for the filing of claims.

2. For claims of less than fifty thousand dollars ($50,000), the OWNER shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the OWNER may have against the CONTRACTOR.

   If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the OWNER and the CONTRACTOR.

   The OWNER'S written response to the claim, as further documented, shall be submitted to the CONTRACTOR within 15 days after receipt of further documentation or within a period of time no greater than that taken by the CONTRACTOR in producing the additional information, whichever is greater.

3. For claims of over fifty thousand dollars ($50,000) and less than or equal to three hundred seventy-five thousand dollars ($375,000), the OWNER shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the OWNER may have against the CONTRACTOR.

   If additional information is therefore required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the OWNER and the CONTRACTOR.

   The OWNER'S written response to the claim, as further documented, shall be submitted to CONTRACTOR within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the CONTRACTOR in producing the additional information or requested documentation, whichever is greater.

4. If the CONTRACTOR disputes the OWNER'S written response, or the OWNER fails to respond within the time prescribed, the CONTRACTOR may notify the OWNER, in writing, either within 15 days of receipt of the OWNER response or within 15 days of the OWNER failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the OWNER shall schedule a meet and confer conference within 30 days for settlement of the dispute.

5. If, following the meet and confer conference the claim or any portion remains in dispute, the CONTRACTOR may file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time CONTRACTOR submits its written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference.

C. The following procedures are established for all civil actions filed to resolve claims subject to this article:

1. Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

2. If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

   In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

3. The OWNER shall not fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in this Contract.

4. In any suit filed under Section 20104.4 of the California Public Contract Code, the OWNER shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

- END OF SECTION -

SECTION 800 - SUPPLEMENTARY GENERAL CONDITIONS

PART 1 -- GENERAL

These Supplementary General Conditions make additions, deletions, or revisions to the General Conditions as indicated herein. All provisions which are not so added, deleted, or revised remain in full force and effect. Terms used in these Supplementary General Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

SGC-1 DEFINITIONS

Add the following definitions to Article 1:

OWNER – Party issuing Contract and to take ownership of Work is defined as:

City of Hughson
7018 Pine Street
Hughson, CA 95326

ENGINEER's Consultant(s): ENGINEER's Consultants are the individuals, partnerships, corporations, joint-ventures, or other legal entities named as such below:

Shoreline Environmental Engineering
4120 Cameron Park Drive, Suite 100A
Cameron Park, CA 95682

SGC-2.2 COPIES OF DOCUMENTS

The OWNER shall furnish to the CONTRACTOR 3 copies of the final Contract Documents ("Construction Set") which may include bound reduced drawings, if any, together with 3 sets of full-scale Drawings, and one (1) electronic version (pdf). Additional quantities of the Contract Documents will be furnished at reproduction cost plus mailing cost if copies are mailed.

SGC-2.4 STARTING THE WORKS

Add the following as Paragraphs 2.4C and 2.4D of the General Conditions:

C. The CONTRACTOR shall notify the USA North Underground Service Alert (USA) System, Phone No. 1-800-227-2600, or 811, at least 48 hours in advance of the commencement of work at any site to allow the member utilities to examine the construction site and mark the location of the utilities' respective facilities.

The CONTRACTOR shall also contact the **Turlock Irrigation District (TID)** to coordinate working under and around overhead powerlines.

D. The CONTRACTOR acknowledges that some (or all) of the utility companies with facilities shown on the drawings may not be members of the USA System and, therefore, not automatically contacted by the above referenced telephone number. The CONTRACTOR shall be responsible for making itself aware of utility company facilities not reported by the USA System, and shall be liable for any and all damages stemming from repair or delay costs or any other expenses resulting from the unanticipated discovery of underground utilities. The CONTRACTOR shall be responsible for notifying all of the utilities at least 48 hours in advance of the commencement of work at any site to allow the utilities to examine the construction site and mark the location of the utilities' respective facilities. The CONTRACTOR shall also be responsible for verifying that each utility has responsibly responded to such notification.

SGC - 1.1 REPORTS OF PHYSICAL CONDITIONS

Subsurface Explorations and Recommendations – A report regarding the findings of said exploration and associated recommendations for earthwork was completed for the project. The geotechnical report, titled "Geotechnical Services Report Proposed Well #9 Site Improvements City of Hughson, California" dated January 19, 2018 and the supplemental geotechnical letter the Geotech Engineer provided for this project titled "Supplemental Recommendations Letter Purposed Well #9 Site Improvements Hughson, California" dated March 7, 2019, are incorporated into the contract documents. CONTRACTOR shall follow the recommendations of the report for design and construction, unless (1) the tank designer determines soil report data and/or conclusions are insufficient for design (designer sends request for additional information or clarification), or (2) existing site conditions are not accurately reflected in the soils report (contractor to ask Engineer for soil engineer opinion).

SGC-4.5 HAZARDOUS MATERIALS

In the preparation of the Contract Documents, the ENGINEER has relied upon:

No known documentation is available related to hazardous wastes at the project site.

SGC-5.1 BONDS

Delete the first sentence of Paragraph 5.1A and add the following:

The CONTRACTOR shall furnish a satisfactory Performance Bond in the amount of 100 percent of the Contract Price and a satisfactory Payment Bond in the amount of 100 percent of the Contract Price as security for the faithful performance and payment of all the CONTRACTOR's obligations under the Contract Documents.

SGC-5.2 INSURANCE

Policies shall include premises/operations, products, completed operations, independent contractors, explosion, collapse, theft, vandalism, underground hazards, broad form contractual, personal injury with employment contractual exclusions deleted, and broad form property damage.

All policies shall provide that the CONTRACTOR agrees to waive all rights of subrogation against the OWNER, the ENGINEER, and their subconsultants, employees, officers and directors, for WORK performed under the Agreement. Endorsements shall be provided with certificates of insurance.

Contractor shall submit proof of insurance to City showing City, its officers, agents, and employees named as Additional Insured and insurance policy shall contain provisions that such policy may not be cancelled except after thirty (30) days written notice to City, ten (10) day's notice if cancellation is due to nonpayment of premium.

Contractor agrees that Contractor is responsible to ensure that the requirements set forth in this section/paragraph are also met by Contractor's subcontractors/consultants who provide services pursuant to this Agreement. Copies of insurance certificates shall be filed with the City.

General Liability Limits

BI & PD combined/per occurrence	**$1,000,000**
/Aggregate	**$1,000,000**
Personal Injury/Aggregate	**$1,000,000**
Workers' Compensation and Employer's Liability	**Statutory requirement**

SGC-5.2C INSURANCE

Add the following to Paragraph 5.2C of the General Conditions:

The CONTRACTOR shall also name **Shoreline Environmental Engineering and MCR Engineering**, and its officers, directors, agents, and employees as "Additional Insureds" under the insurance policies.

SGC-6.5 SUBCONTRACT LIMITATIONS

Add the following as Paragraph 6.5B of the General Conditions:

B. The CONTRACTOR shall perform not less than 30 percent of the WORK with its own forces (i.e., without subcontracting). The 30 percent requirement shall apply to the Contract Price less the values of OWNER-assigned contracts and allowances in the Bid

for prenegotiated WORK.

SGC-6.6 PERMITS

A. The OWNER will acquire the following permits:

None

B. The CONTRACTOR shall be responsible for complying with the requirements of all permits acquired by the OWNER.

C. Except for the permits specifically set forth in A above, the CONTRACTOR shall acquire all permits required by Laws or Regulations, including, without limitation, the following specific permits (if applicable):

1. State permits to construct and/or operate sources of air pollution.

2. Certificates and permits are required for sources such as, but not limited to:

   a. Fuel burning equipment
   b. Gasoline and petroleum distillate storage containers
   c. Land disturbing activities
   d. Processing equipment (sand, gravel, concrete batch plant, etc.)
   e. Odors

3. Permit-Required Confined Space

   The workplace in which the WORK is to be performed may contain permit-required confined spaces (permit spaces) as defined in 29 CFR 1910.146 and, if so, permit space entry is allowed only through compliance with a confined space entry program meeting the requirements of 29 CFR 1910.146.

4. City of Hughson Water Permit.

SGC-6.16 INDEMNIFICATION

Add the following to Paragraph 6.16A of the General Conditions:

The CONTRACTOR shall also indemnify, defend, and hold harmless Shoreline Environmental Engineering and MCR Engineering, and its officers, directors, agents, and employees, against and from all claims and liability arising under or by reason of the Agreement or any performance of the WORK, but not from the sole negligence or willful misconduct of said parties.

Add the following as Paragraph 6.18 of the General Conditions:

SGC-9.3 PROJECT REPRESENTATION

A. The Resident Project Representative, who is the ENGINEER's agent, will act as directed by and under the supervision of the ENGINEER and will confer with the ENGINEER regarding its actions. The Resident Project Representative's dealings in matters pertaining to the WORK shall, in general, be only with the ENGINEER and the CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of the CONTRACTOR. Written communication with the OWNER will be only through or as directed by the ENGINEER.

B. The Resident Project Representative shall have the duties and responsibilities set forth in this paragraph.

1. Review the progress schedule of Shop Drawing submittals and schedule of values prepared by the CONTRACTOR and consult with the ENGINEER concerning their acceptability.

2. Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with the ENGINEER and notify in advance those expected to attend. Attend meetings and maintain and circulate copies of minutes thereof.

3. Serve as the ENGINEER's liaison with the CONTRACTOR, working principally through the CONTRACTOR's superintendent and assist said superintendent in understanding the intent of the Contract Documents. Assist the ENGINEER in serving as the OWNER's liaison with the CONTRACTOR.

4. Receive Shop Drawings and samples furnished by the CONTRACTOR.

5. Conduct on-site observations of the WORK in progress to assist the ENGINEER in determining if the WORK is proceeding in accordance with the Contract Documents.

6. Verify that the tests, equipment, and systems startups and operating and maintenance instruction are conducted as required by the Contract Documents and in presence of the required personnel, and that the CONTRACTOR maintains adequate records thereof.

7. Transmit to the CONTRACTOR the ENGINEER's clarifications and interpretations of the Contract Documents.

8. Consider and evaluate the CONTRACTOR's suggestions for modifications in the Contract Documents and report them with recommendations to the ENGINEER.

9. Review applications for payment with the CONTRACTOR for compliance with the

established procedure for their submittal and forward them with recommendations to the ENGINEER, noting particularly their relation to the schedule of values, work completed, and materials and equipment delivered at the Site but not incorporated in the WORK.

10. During the course of the WORK, verify that certificates, maintenance and operation manuals, and other data required to be assembled and furnished by the CONTRACTOR are applicable to the items actually installed.

11. Before the ENGINEER prepares a Notice of Completion, as applicable, submit to the CONTRACTOR a list of observed items requiring completion or correction.

12. Conduct final inspection in the company of the ENGINEER, the OWNER, and the CONTRACTOR, and prepare a punch list of items to be completed or corrected.

13. Verify that all items on the punch list have been completed or corrected and make recommendations to the ENGINEER concerning acceptance.

SGC-11.3D EQUIPMENT

The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the current edition of the following reference publication:

A. Caltrans' "Labor Surcharge And Equipment Rental Rates" available at all Caltrans District Offices.

SGC-12.2 WEATHER DELAYS

The CONTRACTOR's construction schedule shall anticipate no days of delay due to unusually severe weather. Said delays will be determined and approved upon request by CONTRACTOR, per Section 700.

SGC-14.3C AMOUNT OF RETENTION

Add the following to Paragraph 14.3C of the General Conditions:

Unless otherwise prescribed by law, the OWNER may retain a portion of the amount otherwise due to the CONTRACTOR, as follows:

1. Retention of 5 percent of each approved progress payment until the work is 50 percent complete; then the OWNER may, at its option, refund that portion of retainage held by the OWNER that is in excess of 2 percent of the total of the WORK done to date and thereafter continue to retain 2 percent of the

value of all approved progress payment requests subsequently submitted.

2. The OWNER may reinstate retention of the total of the WORK done if the OWNER determines, at its discretion, that the CONTRACTOR is not performing the WORK satisfactorily or there is other specific cause for such withholding.

SGC-14.3D VALUE OF MATERIALS STORED AT THE SITE

Unless otherwise prescribed by law, the value of materials stored at the Site shall be determined by the OWNER, but not less than 25% of the value of such materials.

PART 2 – OTHER REQUIREMENTS SPECIFIC TO THE CONTRACT

2.1 Buy American Iron and Steel Requirement

The Consolidated Appropriations Act of 2014 (Public Law 113-76) includes an American Iron and Steel (AIS) requirement. Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) assistance recipients are required to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works and if the project is funded through an assistance agreement.

The Contractor acknowledges to and for the benefit of the City of Hughson ("Purchaser") and the State of California (the "State") that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other

provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

2.2 DAVIS BACON REQUIREMENTS

Contractor shall comply with Davis-Bacon wage requirements as provided in Section 850.

2.3 DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

Contractor shall comply with the Disadvantaged Business Enterprise Requirements as provided in Section 860.

- END OF SECTION-

California State Water Resources Control Board
Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700 FAX (916) 341-5707
Mailing Address: P. O. Box 944212 • Sacramento, California • 94244-2120
Internet Address: http://www.waterboards.ca.gov

Guidelines for Meeting the California State Revolving Fund (CASRF) Programs (Clean Water and Drinking Water SRF) Disadvantaged Business Enterprise Requirements

The Disadvantaged Business Enterprise (DBE) Program is an outreach, education, and objectives program designed to increase the participation of DBEs in the Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) Programs.

How to Achieve the Purpose of the Program

Recipients of CWSRF/DWSRF financing that are subject to the DBE requirements (recipients) are required to seek, and are encouraged to use, DBEs for their procurement needs. Recipients should award a "fair share" of sub-agreements to DBEs. This applies to all sub-agreements for equipment, supplies, construction, and services.

The key functional components of the DBE Program are as follows:

- Fair Share Objectives
- DBE Certification
- Six Good Faith Efforts
- Contract Administration Requirements
- DBE Reporting

Disadvantaged Business Enterprises are:

- Entities owned and/or controlled by socially and economically disadvantaged individuals as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note) (10% statute), and Public Law 102-389 (42 U.S.C. 4370d) (8% statute), respectively;
- Minority Business Enterprise (MBE) - entities that are at least 51% owned and/or controlled by a socially and economically disadvantaged individual as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note), and Public Law 102-389 (42 U.S.C. 4370d), respectively;
- Women Business Enterprise (WBE) - entities that are at least 51% owned and/or controlled by women;
- Small Business Enterprise (SBE);
- Small Business in a Rural Area (SBRA);
- Labor Surplus Area Firm (LSAF); or
- Historically Underutilized Business (HUB) Zone Small Business Concern or a concern under a successor program.

Certifying DBE Firms:

Under the DBE Program, entities can no longer self-certify and contractors and sub-contractors must be certified at bid opening. Contractors and sub-contractors must provide to the CASRF recipient proof of DBE certification. Certifications will be accepted from the following:

- The U.S. Environmental Protection Agency (USEPA)
- The Small Business Administration(SBA)
- The Department of Transportation's State implemented DBE Certification Program (with U.S. citizenship)
- Tribal, State and Local governments
- Independent private organization certifications

If an entity holds one of these certifications, it is considered acceptable for establishing status under the DBE Program.

Six Good Faith Efforts (GFE)

All CWSRF/DWSRF financing recipients are required to complete and ensure that the prime contractor complies with the GFE below to ensure that DBEs have the opportunity to compete for financial assistance dollars.

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practical through outreach and recruitment activities. For Tribal, State and Local Government Recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs. Posting solicitations for bids or proposals for a minimum of 30 calendar days in a local newspaper, before the bid opening date.
3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs.
4. Encourage contracting with a group of DBEs when a contract is too large for one firm to handle individually.
5. Use the services of the SBA **and/or** Minority Business Development Agency (MBDA) of the US Department of Commerce.
6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.

The forms listed in the table below and attached to these guidelines; must be completed and submitted with the GFE:

FORM NUMBER	FORM NAME	REQUIREMENT	PROVIDED BY	COMPLETED BY	SUBMITTED TO
SWRCB Form 4500-2 or EPA Form	DBE Sub-Contractor Participation Form	As Needed to Report Issues	Recipient	Sub-contractor	EPA DBE Coordinator
SWRCB Form 4500-3 or EPA Form	DBE Sub-Contractor Performance Form	Include with Bid or Proposal Package	Prime Contractor	Sub-Contractor	SWRCB by Recipient
SWRCB Form 4500-4 or EPA Form	DBE Sub-Contractor Utilization Form	Include with Bid or Proposal Package	Recipient	Prime Contractor	SWRCB by Recipient

The completed forms must be submitted with each Bid or Proposal. The recipient shall review the bidder's documents closely to determine that the GFE was performed **prior** to bid or proposal opening date. Failure to complete the GFE and to substantiate completion of the GFE before the bid opening date could jeopardize CWSRF/DWSRF financing for the project. The following situations and circumstances require action as indicated:

1. If the apparent successful low bidder was rejected, a complete explanation must be provided.
2. Failure of the apparent low bidder to **perform** the GFE **prior** to bid opening constitutes a non-responsive bid. The construction contract may then be awarded to the next low, responsive, and responsible bidder that meets the requirements or the Recipient may re-advertise the project.
3. If there is a bid dispute, all disputes shall be settled **prior** to submission of the Final Budget Approval Form.

Administration Requirements

- A recipient of CWSRF/DWSRF financing must require entities receiving funds to create and maintain a Bidders List if the recipient of the financing agreement is subject to, or chooses to follow, competitive bidding requirements.
- The Bidders list must include all firms that bid or quote on prime contracts, or bid or quote on subcontracts, including both DBEs and non-DBEs.

- Information retained on the Bidder's List must include the following:
    1. Entity's name with point of contact;
    2. Entity's mailing address and telephone number;
    3. The project description on which the entity bid or quoted and when;
    4. Amount of bid/quote; and
    5. Entity's status as a DBE or non-DBE.
- The Bidders List must be kept until the recipient is no longer receiving funding under the agreement.
- The recipient shall include Bidders List as part of the Final Budget Approval Form.
- A recipient must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the Recipient.
- A recipient must be notified in writing by its prime contractor prior to any termination of a DBE subcontractor by the prime contractor.
- If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the six GFEs if soliciting a replacement subcontractor.
- A recipient must require its prime contractor to employ the six GFEs even if the prime contractor has achieved its fair share objectives.

Reporting Requirements

For the duration of the construction contract(s), the recipient is required to submit to the State Water Resources Control Board DBE reports annually by October 10 of each fiscal year on the attached Utilization Report form (UR-334). Failure to provide this information as stipulated in the financial agreement language may be cause for withholding disbursements.

CONTACT FOR MORE INFORMATION

SWRCB, CASRF – Barbara August (916) 341-6952 barbara.august@waterboards.ca.gov

US EPA, Region 9 – Joe Ochab (415) 972-3761 ochab.joe@epa.gov

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Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Participation Form

A Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE[1] subcontractor[2] the opportunity to describe work received and/or report any concerns regarding the funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the DBE Coordinator at any time during the project period of performance.

Subcontractor Name		Project Name
Bid / Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.		Email Address
Prime Contractor Name		Issuing/Funding Entity

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services, Equipment or Supplies	Amount Received by Prime Contractor

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.2015 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.
[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an award of financial assistance.

FORM 4500-2 (DBE Subcontractor Participation Form)

Please use the space below to report any concerns regarding the above funded project:

Subcontractor Signature	Print Name
Title	Date

The public reporting and record keeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Do not send the completed form to this address.

Send completed Form 4500-2 to:
Mr. Joe Ochab, DBE Coordinator
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

FORM 4500-2 (DBE Subcontractor Participation Form)

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form

This form is intended to capture the DBE[1] subcontractor's[2] description of work to be performed and the price of the work submitted to the prime contractor. A Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractor's bid or proposal package.

Subcontractor Name	Project Name	
Bid / Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.	Email Address	
Prime Contractor Name	Issuing/Funding Entity	

Contract Item Number	Description of Work Submitted from the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: DOT SBA ___ Other: _____	Meets/exceeds EPA certification standards? ___ YES ___NO ___Unknown	

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.2015 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.
[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an award of financial assistance.

FORM 4500-3 (DBE Subcontractor Performance Form)

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

The public reporting and record keeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Do not send the completed form to this address.

FORM 4500-3 (DBE Subcontractor Performance Form)

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE[1] subcontractor's[2] and the estimated dollar amount of each subcontract. A Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name
Bid / Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.		Email Address
Issuing/Funding Entity		

I have identified potential DBE certified subcontractors._____YES ___NO

If *yes*, please complete the table below. If *no*, please explain:

Subcontractor Name/ Company Name	**Company Address / Phone / Email**	**Estimated Dollar Amount**	**Currently DBE Certified?**

--Continue on back if needed--

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.2015 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an award of financial assistance.

FORM 4500-4 (DBE Subcontractor Utilization Form)

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

The public reporting and record keeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Do not send the completed form to this address.

FORM 4500-4 (DBE Subcontractor Utilization Form)

STATE WATER RESOURCES CONTROL BOARD – DIVISION OF FINANCIAL ASSISTANCE
DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION
CALIFORNIA STATE REVOLVING FUNDS (CASRF)
FORM UR-334

1. Grant/Finance Agreement Number:	**2. Annual Reporting Period** **10/1/___through 09/30/**	**3. Purchase Period of Financing Agreement:**
4. Total Payments Paid to Prime Contractor or Sub-Contractors During Current Reporting Period: $		
5. Recipient's Name and Address:	**6. Recipient's Contact Person and Phone Number:**	

7. List All DBE Payments Paid by Recipient or Prime Contractor During Current Reporting Period:

Payment or Purchase Paid by Recipient or Prime Contractor	Amount Paid to Any DBE Contractor or Sub-Contractor For Service Provided to Recipient		Date of Payment (MM/DD/YY)	Procurement Type Code** (see below)	Name and Address of DBE Contractor of Sub-Contractor or Vendor
	MBE	**WBE**			

8. Initial here if no DBE contractors or sub-contractors paid during current reporting period:	
9. Initial here if all procurements for this contract are completed:	
10. Comments:	
11. Signature and Title of Recipient's Authorized Representative	**12. Date**

Email Form UR-334 to:

DrinkingWaterSRF@waterboards.ca.gov OR CleanWaterSRF@waterboards.ca.gov

Questions may be directed to:

Barbara August, SWRCB
Barbara.August@waterboards.ca.gov
Phone: (916) 341-6952
Fax: (916) 327-7469

****Procurement Type:**
1. Construction
2. Supplies
3. Services (includes business services; professional services; repair services and personnel services)
4. Equipment

STATE WATER RESOURCES CONTROL BOARD - DIVISION OF FINANCIAL ASSISTANCE
DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION
CALIFORNIA STATE REVOLVING FUNDS

INSTRUCTIONS FOR COMPLETING FORM UR-334

Box 1 Grant or Financing Agreement Number.

Box 2 Annual reporting period.

Box 3 Enter the dates between which you made procurements under this financing agreement or grant.

Box 4 Enter the total amount of payments paid to the contractor or sub-contractors during this reporting period.

Box 5 Enter Recipient's Name and Address.

Box 6 Enter Recipient's Contact Name and Phone Number.

Box 7 Enter details for the **DBE purchases only** and be sure to limit them to the current period. 1) Use either an "R" or a "C" to represent "Recipient" or "Contractor." 2) Enter a dollar total for DBE and total the two columns at the bottom of the section. 3) Provide the payment date. 4) Enter a product type choice from those at the bottom of the page. 5) List the vendor name and address in the right-hand column

Box 8 Initial here if no DBE contractors or sub-contractors were paid during this reporting period.

Box 9 Initial this box only if all purchases under this financing agreement or grant have been completed during this reporting period or a previous period. If you initial this box, we will no longer send you a survey.

Box 10 This box is for explanatory information or questions.

Box 11 Provide an authorized representative signature.

Box 12 Enter the date form completed.

SECTION 0850 – DAVIS BACON REQUIREMENTS

The Recipient shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section 5.

Requirements under the Consolidated Appropriations Act, 2014 (P.L. 113-76)

For Recipients That Are Governmental Entities:

If a Recipient has questions regarding when Davis Bacon (DB) applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State Water Board.

The Recipient may also obtain additional guidance from DOL's web site at http://www.dol.gov/whd/

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the FY 2014 Consolidated Appropriation Act, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If the Recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the Recipient must discuss the situation with the State Water Board State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Recipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the Recipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The Recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Recipients may request a finding from the State Water Board that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State Water Board will provide a report of its findings to the Recipient.

(ii) If the Recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State Water Board, at the request of the Recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The Recipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the Recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the Recipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a Recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the Recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the Recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The Recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the Recipient(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal Agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2014 Consolidated Appropriations Act, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b) (2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a) (1) (iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. Recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii)(A) The Recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the Recipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of

Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The Recipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b) (2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the Recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the Recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the

Recipient(s) for transmission to the State or EPA

if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the Recipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a) (3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice

in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work
on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be
paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the
Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen

under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Recipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000.

(a) Contract Work Hours and Safety Standards Act. The Recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such

laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The Recipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Recipient shall insert in any such contract a clause providing hat the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the USEPA, the Department of Labor, and the State Water Board, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The Recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Recipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The Recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Recipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Recipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The Recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The Recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the Recipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract . Recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the Recipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The Recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at http://www.dol.gov/contacts/whd/america2.htm.

SECTION 01010 - SUMMARY OF WORK

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The WORK to be performed under this Contract shall consist of furnishing plant, tools, equipment, materials, supplies, and manufactured articles, and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The WORK of this Contract comprises the final construction phase of a water treatment facility and associated components, including but not limited to, equipping existing well mechanical components, booster pumps and motors, yard piping, electrical power and controls, chemical disinfection systems, instrumentation, control building, emergency power system, testing, start-up, training, and other items as defined in the contract documents. Previous construction phases included well construction and erection of a concrete water storage tank. Work will incorporate these existing improvements to provide a complete and functioning water treatment, storage, and pumping facility.

B. The WORK sites are located approximately ½ mile south of the intersection of Whitmore Road and Tully Road in the City of Hughson, California.

C. CONTRACTOR will take responsibility of the sites where other phases of work have been performed. CONTRACTOR shall have inspected the site conditions as part of the bid, and understands his responsibility to maintain and modify existing temporary facilities (i.e. erosion control, security, etc.) as part of the contract. CONTRACTOR is responsible for integrating all project phases, including but not limited to, disinfecting and equipping wells, receiving and installing OWNER supplied equipment and materials, disposing of water in the concrete storage tank, connecting to pipes from the street and concrete storage tank (providing a disinfection and testing program for pipe installed with new work prior to connecting), and other work as necessary to provide a complete and functioning water treatment, storage, and pumping facility for the OWNER.

1.3 CONTRACT METHOD

A. The WORK hereunder will be constructed under a single unit-price contract.

1.4 WORK BY OTHERS

A. Where 2 or more contracts are being performed at one time on the same Site or adjacent land in such manner that work under one contract may interfere with work under another, the OWNER will determine the sequence and order of the Work in either or both contracts. When the Site of one contract is the necessary or convenient means of access for

performance of work under another, the OWNER may grant privilege of access or other reasonable privilege to the contractor so desiring, to the extent, amount , and in manner and at time that the OWNER may determine. No OWNER determination of method or time or sequence or order of the work or access privilege shall be the basis for a claim for delay or damage except under provisions of the General Conditions for temporary suspensions of the work. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.

B. **Interference With Work On Utilities:** The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.5 WORK SEQUENCE

A. Not Used

1.6 CONTRACTOR USE OF SITE

A. The CONTRACTOR's use of the Sites shall be limited to its construction operations, including on-Site storage of materials, on-Site fabrication facilities, and field offices.

1.7 OUTAGE PLAN AND REQUESTS

A. Unless the Contract Documents indicate otherwise, the CONTRACTOR shall not remove from service, de-energize, or modify settings for any existing operating tank, pipeline, valve, channel, equipment, structure, road, or any other facility without written permission from the ENGINEER.

B. Where the WORK requires modifications to existing facilities or construction of new facilities and connection of new facilities to existing facilities, the CONTRACTOR shall submit a detailed outage plan and schedule for the ENGINEER'S approval a minimum of 2 weeks in advance of the time that such outage is planned. The outage plan shall be coordinated with the construction schedule and shall meet the restrictions and conditions of the Contract Documents. The outage plan shall describe the CONTRACTOR's method for preventing bypassing of other treatment units; the length of time required to complete said operation; any necessary temporary power, controls, instrumentation or alarms required to maintain control, monitoring, and alarms for the treatment plant processes; and the manpower, plant, and equipment which the CONTRACTOR will furnish for proper operation of associated treatment units. All costs for preparing and implementing the outage plans shall be at no increase in cost to the OWNER.

C. The ENGINEER shall be notified in writing at least one week in advance of the required outage if the schedule for performing the work has changed or if revisions to the outage plan are required.

D. The CONTRACTOR shall provide written confirmation of the shutdown date and time two working days prior to the actual shutdown.

1.8 OWNER USE OF THE SITE

A. The OWNER may utilize all or part of the existing site and/or existing facilities during the entire period of construction. The CONTRACTOR shall cooperate and coordinate with the ENGINEER to facilitate the OWNER's operations and to minimize interference with the CONTRACTOR's operations at the same time. In any event, the OWNER shall be allowed access to the Site during the period of construction.

1.9 PARTIAL UTILIZATION OF THE WORK BY OWNER

A. The OWNER will take partial utilization of the WORK upon completion of the start–up testing and commissioning. Partial utilization will involve the placing into service of the booster facility during the period when CONTRACTOR finishes minor work, such as punch-list items, painting, clean-up, training, etc.

1.10 PROJECT MEETINGS

A. **Preconstruction Conference:**

1. Prior to the commencement of WORK at the Site, a preconstruction conference will be held at a mutually agreed time and place. The conference shall be attended by the CONTRACTOR'S Project Manager, its superintendent, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendees will be:

   a. ENGINEER and the Resident Project Representative.

   b. Representatives of OWNER.

   c. Others as requested by CONTRACTOR, OWNER, or ENGINEER.

2. The CONTRACTOR shall bring the preconstruction conference submittals in accordance with Section 01300 - Contractor Submittals.

3. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date. However, the CONTRACTOR should be prepared to discuss all of the items listed below.

   a. Status of CONTRACTOR's insurance and bonds.

   b. CONTRACTOR's tentative schedules.

   c. Transmittal, review, and distribution of CONTRACTOR's submittals.

   d. Processing applications for payment.

   e. Maintaining record documents.

   f. Critical work sequencing.

   g. Field decisions and Change Orders.

h. Use of Site, office and storage areas, security, housekeeping, and OWNER's needs.

i. Major equipment deliveries and priorities.

j. CONTRACTOR's assignments for safety and first aid.

k. Daily Report Form which the ENGINEER will furnish.

l. Submittal Transmittal Form which the ENGINEER will furnish.

4. The ENGINEER will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.

5. The CONTRACTOR and its Subcontractors should plan on the conference taking no less than **4 hours**.

B. **Progress Meetings:**

1. The CONTRACTOR shall schedule and hold regular on-Site progress meetings at least weekly and at other times as requested by ENGINEER or as required by progress of the WORK. The CONTRACTOR, ENGINEER, and all Subcontractors active on the Site shall attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors.

2. The ENGINEER will preside at the progress meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings is to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR shall present any issues which may impact its progress with a view to resolve these issues expeditiously.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 -- GENERAL

1.1 SCOPE

A. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of work.

Some of the products and materials for the Work do not have performance specifications, as they are specifically identified on the plans or in the List of Vendors, as provided by the Owner as part of the contract documents. CONTRACTOR shall contact the vendors on the list to obtain the price and products to be supplied, and incorporate the cost into the bid price. Said price shall include purchase and installation of the items. CONTRACTOR shall provide ancillary items as needed to complete installation of said equipment as part of the Work.

1.2 SHEETING, SHORING, AND BRACING

A. No measurement or specific cost shall be provided for this item.

B. Payment for temporary sheeting, shoring, and bracing or equivalent method will be included in the price for underground and/or excavation work, and shall constitute full compensation for completion of all planning, design, engineering fees, furnishing and constructing, and removal and disposal of such temporary sheeting, shoring, and bracing, complete, as required under the provisions of any permits, and in accordance with the requirements of OSHA and the Construction Safety Orders of the State of California, pursuant to the provisions of Section 6707 of the California Labor Code.

1.3 MOBILIZATION (Bid Item No. 1)

Measurement and payment for mobilization shall be based on a Lump Sum (L.S.) price and shall include all work incidental to mobilization and demobilization that is required for said work including but not limited to mobilization, bonds, insurances, scheduling, submittals, coordination, permits, progress meetings, submittals, surveys, potholing, testing and disinfection, record drawings, traffic control, erosion control, clean-up, temporary facilities, start up and commissioning, training, etc. OWNER shall pay up to 50% of mobilization costs with first payment, but shall pay no more than 75% before project completion. Unbalanced mobilization prices may result in the rejection of bid.

1.4 YARD PIPE (Bid Item No. 2)

Measurement and payment for Yard Pipe shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with fabrication and installation of above and below grade steel, ductile iron, and PVC water pipe and appurtenances, including but not limited to, pipe, fittings, isolation valves, restraints, supports, control valves, concrete vaults and lids, valve risers, connections to existing pipe, vault pipe penetrations, isolation joints, pipe linings and coatings, trenching, backfill, etc., for pipe located on the water treatment plant site, as identified in the contract documents.

1.5 MECHANICAL (Bid Item No. 3)

Measurement and payment for Mechanical work shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with water pumps and appurtenances, including but not limited to, pumps, pump motors, discharge heads, steel booster pump barrels, pump barrel linings/coatings, concrete pump pedestals, concrete pipe supports, backwash setting pumps and motors, check valves, control valves, couplings, air and vacuum valves, flow meters, testing and balancing pumps, mechanical seals and lubrication systems, bearing isolation systems, all in accordance with the contract documents.

1.6 INSTRUMENTATION (Bid Item No. 4)

Measurement and payment for Instrumentation shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with instrumentation, including but not limited to, pressure transducers/transmitters, level indicators, flow meter, chemical detection/monitoring instruments and appurtenances, leak detection, gauges, connections, testing, programming, calibration, training, etc.

1.7 SITE ELECTRICAL (Bid Item No. 5)

Measurement and payment for Site Electrical shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with providing and installing electrical systems, including but not limited to, high and low voltage conduit and conductors, power and control systems for mechanical devices, instrument signal and power conductors/conduits, motor disconnects, interior and exterior lighting and supports, switches, outlets, grounding systems, ground fault protection devices, conduit/pull lines for future work, etc.

1.8 SWITCHGEAR, MCC, PLC (Bid Item No. 6)

Measurement and payment for Switchgear, MCC, and PLC shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with fabrication, installation, programming, and testing of said electrical supply and control equipment, including but not limited to, cabinets, internal wiring and components, PLC, PLC programming and testing, panel switches, breakers, fuses, surge protection, overload

devices, secondary transformer and subpanel, power meter, fans, grounding, phase failure devices, relays, running lights, testing, training, and other as defined in the contract documents.

1.9 SCADA and TELEMETRY (Bid Item No. 7)

Measurement and payment for SCADA and Telemetry shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with integration of the facility controls with Owner's existing SCADA system, including but not limited to, programming, screen development, operating report development, alarm report development, radio/receiver, antenna, mast, connections to facility PLC, PC and monitor with SCADA connection, testing, training, etc.

1.10 CONTROL BUILDING (Bid Item No. 8)

Measurement and payment for Control Building shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with the facility masonry building, including but not limited to, foundation, floor, CMU walls, vents, roof, equipment hatches, blowers and fans, interior and exterior doors and jambs, windows, insulation, ceilings, floor drains and trenches, drain grates, air condition unit, wall pipe penetrations, roof penetrations, copper water pipe, backflow device, water closet, sinks, counters, floor finishes, wall finishes, etc.

1.11 CHEMICAL DISINFECTION SYSTEMS (Bid Item No. 9)

Measurement and payment for Chemical Disinfection Systems shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with the facility chemical systems, including but not limited to, chemical dosing pumps, chemical storage containers, storage fill/drain/vent connections and piping, storage seismic restraints, injection conduits and tubing, pressure relief valves, shut off valves, camlock connectors, injection quill assemblies, eyewash/shower assemblies, handrails, connecting and testing of chemical systems and components, training, etc.

1.12 SITE WORK (Bid Item No. 10)

Measurement and payment for Site Work shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with general site work, including but not limited to, finish grading and compaction, A.C. and gravel surfaces, concrete pad and curbs, minor underground work (i.e. sewer, drains, storm drains, water services, etc.), manholes, traps, valves, valve risers or boxes, sample lines, domestic water supply pipe and connections, fencing and gates, etc.

1.13 STANDBY GENERATOR (Bid Item No. 11)

Measurement and payment for Standby Generator shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with the facility on-site emergency power system, including but not limited to, generator, generator controls,

fuel storage, structural concrete support, seismic mitigation and supports, exterior housing, exhaust mufflers, installation, start up, testing, training, etc.

1.14 BACKWASH TANK (Bid Item No. 12)

Measurement and payment for Backwash Tank shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with the filter backwash settling tank and appurtenances, including but not limited to, steel fabricated tank and appurtenances, tank foundation and pump supports, interior solids processing system, tank outlet/overflow pipes, control valves, linings/coatings, electrical connections, all in accordance with the tank fabricator's design recommendations, shop drawings, and contract documents.

1.15 16" TRANSMISSION PIPING (Bid Item No. 13)

Measurement and payment for 16" Transmission Piping shall be based on a lineal foot (L.F.) price and shall include all labor, materials, and equipment associated with purchase and installation of 16" piping located outside of the treatment site, including but not limited to, trenching, backfill, pipe, pipe installation, restraints, fittings, valves, testing, disinfection, etc. Cutting and replacing of a.c. under a separate bid item.

1.16 12" TRANSMISSION PIPING (Bid Item No. 14)

Measurement and payment for 12" Transmission Piping shall be based on a lineal foot (L.F.) price and shall include all labor, materials, and equipment associated with purchase and installation of 16" piping located outside of the treatment site, including but not limited to, trenching, backfill, pipe, pipe installation, restraints, fittings, valves, testing, disinfection, etc. Cutting and replacing of a.c. under a separate bid item.

1.17 INSTALLATION OF OWNER'S FILTERS (Bid Item 15)

Measurement and payment for Installation of Owner's Filters shall be based on a Lump Sum (L.S.) price and shall include all labor, materials, and equipment associated with assembling and installing Owner supplied water treatment equipment and appurtenances, including but not limited to, Owner supplied filter vessels, filter media, contact chambers, piping, control valves, isolation valves, air valves, instruments, etc., and providing concrete pad, coatings, pipe supports, connecting piping, connecting electrical, testing, start up, and any related services to allow full operation of the filters, all in accordance with the filter manufacturer and contract documents.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01300 - CONTRACTOR SUBMITTALS

PART 1 -- GENERAL

1.1 GENERAL

A. Wherever submittals are required in the Contract Documents, submit them to the ENGINEER.

B. Within 14 days after the date of commencement as stated in the Notice to Proceed, the CONTRACTOR shall submit the following items to the ENGINEER for review:

1. A preliminary schedule of Shop Drawings, Samples, and equipment submittals.

2. Full submittals that require an immediate review to meet project completion timelines.

3. A list of all agency permits and licenses the CONTRACTOR required to perform WORK, and dates the permit(s) will be obtained.

1.2 PRECONSTRUCTION CONFERENCE SUBMITTALS

A. At the preconstruction conference referred to in Section 01010 - Summary of Work, the CONTRACTOR shall submit the following items to the ENGINEER for review:

1. A preliminary schedule of Shop Drawings, Samples, and submittals.

2. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit.

3. A preliminary schedule of values in accordance with Section 01301 - Schedule of Values.

4. A 60-day plan of operation in accordance with Section 01311 – CMP Construction Schedule.

5. A project overview bar chart in accordance with Section 01311.

6. Not Used

1.3 SHOP DRAWINGS

A. Wherever called for in the Contract Documents, or where required by the ENGINEER, the CONTRACTOR shall furnish to the ENGINEER for review, one (1) PDF electronic copy of each Shop Drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop-prepared drawings, fabrication, and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state wherein the project is to be built, unless otherwise indicated.

B. Shop Drawing submittals shall be accompanied by the ENGINEER's/OWNER's standard submittal transmittal form (a reproducible copy of which is available from the ENGINEER), or the CONTRACTOR's submittal form if approved by ENGINEER. Any submittal not accompanied by such a form, or where all applicable items on the form are not completed, with be returned for resubmittal.

C. Organization

1. A single submittal transmittal form shall be used for each technical specification section or item or class of material or equipment for which a submittal is required. A single submittal covering multiple sections will not be acceptable, unless the primary specification references other sections for components. Example: if a pump section references other section for the motor, protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be accepted; a single submittal covering vertical turbine pumps and horizontal split case pumps would not be acceptable.

2. On the transmittal form, index the components of the submittal and insert tabs in the submittal to match the components. Relate the submittal components to Specification paragraph and subparagraph, Drawing number, detail number, schedule title, or room number, or building name, as applicable.

3. Unless indicated otherwise, terminology and equipment names and numbers used in submittals shall match the Contract Documents.

D. Format

1. Minimum sheet size shall be 8.5 inches by 11 inches. Maximum sheet size shall be 24 inches by 36 inches. Every page in a submittal shall be numbered in sequence.

2. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with all pertinent data capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports. Sufficient level of detail shall be presented for assessment of compliance with the Contract Documents.

3. Each submittal shall be assigned a unique number. Submittals shall be numbered sequentially. The submittal numbers shall be clearly noted on the transmittal. Original submittals shall be assigned a numeric submittal number. Resubmittals shall bear an alpha-numeric system which consists of the number assigned to the original submittal for that item followed by a letter of the alphabet to represent that it is a subsequent submittal of the original. For example, if submittal 25 requires a resubmittal, the first resubmittal will bear the designation 25-A and the second resubmittal will bear the designation 25-B and so on.

E. Disorganized submittals which do not meet the requirements above will be returned without review.

F. Except as may otherwise be indicated herein, the ENGINEER will return prints of each submittal to the CONTRACTOR with its comments noted thereon, within 30 calendar days following receipt by the ENGINEER. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER by the second submission of a submittal item. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the ENGINEER's review beyond the

second submittal. The ENGINEER'S maximum review period for each submittal, including all resubmittals, will be 30 days per submittal. Thus, for a submittal that requires two resubmittals before it is complete, the maximum review period for that submittal could be 90 days.

G. If a submittal is returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.

H. If a submittal is returned marked "MAKE CORRECTIONS NOTED," CONTRACTOR shall make the corrections on the submittal, but formal revision and resubmission of said submittal will not be required.

I. If a submittal is returned marked "AMEND-RESUBMIT," the CONTRACTOR shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the ENGINEER for review.

J. If a submittal is returned marked "REJECTED-RESUBMIT," it shall mean that the submitted material or product does not satisfy the specification, the submittal is so incomplete that it cannot be reviewed, or is a substitution request which will not be reviewed because it is submitted after award of the Contract. The CONTRACTOR shall prepare a new submittal and shall resubmit said revised submittal to the ENGINEER for review.

K. Fabrication of an item shall be commenced only after the ENGINEER has reviewed the pertinent submittals and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or MAKE CORRECTIONS NOTED." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as changes to the contract requirements.

L. All submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submission to the ENGINEER. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Contract Documents. In the case of Shop Drawings, each sheet shall be so dated, signed, and certified. The ENGINEER will only review submittals which have been so certified by the CONTRACTOR. All non-certified submittals will be returned to the CONTRACTOR without action taken by the ENGINEER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

M. The ENGINEER's review of submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.

1.4 CONTRACTOR'S SCHEDULE

A. The CONTRACTOR's construction schedules and reports shall be prepared and submitted to the ENGINEER in accordance with of Section 01311.

1.5 SAMPLES

A. Whenever in the Specifications samples are required, the CONTRACTOR shall submit not less than 3 samples of each item or material to the ENGINEER for acceptance.

B. Unless otherwise indicated, samples, shall be submitted a minimum of 21 days prior to ordering such material.

C. Samples shall be individually and indelibly labeled or tagged, indicating thereon all specified physical characteristics and Manufacturer's name. Upon receiving acceptance of the ENGINEER, one set of the samples will be stamped and dated by the ENGINEER and returned to the CONTRACTOR, and one set of samples will be retained by the ENGINEER, and one set of samples shall remain at the Site until completion of the WORK.

D. Unless indicated otherwise, all colors and textures of items presented in sample submittals shall be from the manufacturer's standard colors and standard materials, products, or equipment lines. If the samples represent non-standard colors, materials, products, or equipment lines and their selection will require an increase in Contract Times or Price, the CONTRACTOR shall clearly indicate same on the transmittal page of the submittal.

E. The CONTRACTOR shall schedule sample submittals such that:

1. Samples are submitted in an orderly sequence which allows the ENGINEER 45 Days to assemble color panels and select color and texture dependent products and materials without delay to the construction schedule.

2. The CONTRACTOR has sufficient time after approval or selection of color or texture to provide the products or materials without delay to the construction schedule. The Contract Times will not be extended for the CONTRACTOR's failure to allow enough review and approval or selection time, failure to submit all samples requiring color or texture selection, or failure to submit complete or approvable samples.

1.6 TECHNICAL MANUALS

A. The CONTRACTOR shall submit technical operation and maintenance information for each item of mechanical, electrical and instrumentation equipment in an organized manner in the Technical Manual. It shall be written so that it can be used and understood by the OWNER'S operation and maintenance staff.

B. The Technical Manual shall be subdivided first by specification section number; second, by equipment item; and last, by "Category." "Categories" shall conform to the following (as applicable):

1. Category 1 - Equipment Summary:

a. Summary: A summary table shall indicate the equipment name, equipment number, and process area in which the equipment is installed.

b. Form: The ENGINEER will supply an Equipment Summary Form for each item of mechanical, electrical and instrumentation equipment in the WORK. The CONTRACTOR shall fill in the relevant information on the form and include it in Part 1.

2. Category 2 - Operational Procedures:

a. Procedures: Manufacturer-recommended procedures on the following shall be

included in Part 2:

Installation
Adjustment
Startup
Location of controls, special tools, equipment required, or related instrumentation needed for operation
Operation procedures
Load changes
Calibration
Shutdown
Troubleshooting
Disassembly
Reassembly
Realignment
Testing to determine performance efficiency
Tabulation of proper settings for all pressure relief valves, low and high pressure switches, and other protection devices
List of all electrical relay settings including alarm and contact settings

Note: Manufacturer's installation manuals shall be submitted to ENGINEER at least 1 week prior to installation of said equipment.

3. Category 3 - Preventive Maintenance Procedures:

   a. Procedures: Preventive maintenance procedures shall include all manufacturer-recommended procedures to be performed on a periodic basis, both by removing and replacing the equipment or component, and by leaving the equipment in place.

   b. Schedules: Recommended frequency of preventive maintenance procedures shall be included. Lubrication schedules, including lubricant SAE grade, type, and temperature ranges, shall be covered.

4. Category 4 - Parts List:

   a. Parts List: A complete parts list shall be furnished, including a generic description and manufacturer's identification number for each part. Addresses and telephone numbers of the nearest supplier and parts warehouse shall be included.

   b. Drawings: Cross-sectional or exploded view drawings shall accompany the parts list.

5. Category 5 - Wiring Diagrams:

   a. Diagrams: Part 5 shall include complete internal and connection wiring diagrams for electrical equipment items.

6. Category 6 - Shop Drawings:

   a. Drawings: This part shall include approved shop or fabrication drawings, complete with dimensions.

7. Category 7 - Safety:

   a. Procedures: This part describes the safety precautions to be taken when operating and maintaining the equipment or working near it.

8. Category 8 - Documentation:

   a. All equipment warranties, affidavits, and certifications required by the Technical Specifications shall be placed in this part.

9. Category 9 – Equipment Representative and Service

   a. Provide the names and contact information for the manufacturer and distributor of each item.

C. Technical Manuals shall be submitted electronically in PDF format for use and review by the ENGINEER.

D. Following review of the Technical Manuals and prior to start-up, the CONTRACTOR shall furnish to the ENGINEER Two (2) identical hard copies of the Technical Manuals for use by OWNER's operations and engineering staff. Each set shall consist of one or more volumes, each of which shall be bound in a standard size, 3-ring, looseleaf, vinyl plastic hard cover binder suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches. A table of contents indicating all equipment in the manuals shall be prepared.

D. Manuals shall be submitted in final form to the ENGINEER not later than two (2) weeks prior training of said equipment. Any discrepancies found by the ENGINEER or OWENR's staff shall be corrected within 30 days from the date of written notification by the ENGINEER and prior to final payment.

E. Incomplete or unacceptable manuals at the substantial completion point shall constitute sufficient justification to retain the amount in paragraph "Technical Manual Submittals" of Section 01700 - Project Closeout, from any monies due the CONTRACTOR.

1.7 SPARE PARTS LIST

A. The CONTRACTOR shall furnish to the ENGINEER 5 identical sets of spare parts information for all mechanical, electrical, and instrumentation equipment. The spare parts list shall include the current list price of each spare part. The spare parts list shall include those spare parts which each manufacturer recommends be maintained by the OWNER in inventory at the plant site. Each manufacturer or supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts to assist the OWNER in ordering. The CONTRACTOR shall cross-reference all spare parts lists to the equipment numbers designated in the Contract Documents. The spare parts lists shall be bound in standard size, 3-ring, looseleaf, vinyl plastic hard cover binders suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches.

1.8 RECORD DRAWINGS

A. The CONTRACTOR shall maintain one record set of Drawings at the Site. On these, it shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the information represented on the original Contract

Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Drawings. Said record drawings shall be supplemented by any detailed sketches as necessary or directed to fully indicate the WORK as actually constructed. These master record drawings of the CONTRACTOR's representation of as-built conditions, including all revisions made necessary by addenda and change orders shall be maintained up-to-date during the progress of the WORK. Red ink shall be used for alterations and notes. Notes shall identify relevant Change Orders by number and date.

B. Record drawings shall be reviewed on a regular basis by CONTRACTOR and ENGINEER. If requested by ENGINEER, copies of the record drawings shall be submitted on the 20th working day of every month. Failure to submit complete record drawings on or before the 20th working day will enact the liquidated damages clause for interim record drawings submittals described in Article 3 of the Agreement.

C. In the case of those drawings which depict the detail requirement for equipment to be assembled and wired in the factory, such as motor control centers and the like, the record drawings shall be updated by indicating those portions which are superseded by change order drawings or final Shop Drawings, and by including appropriate reference information describing the change orders by number and the Shop Drawings by manufacturer, drawing, and revision numbers.

D. Record drawings shall be accessible to the ENGINEER at all times during the construction period.

E. Within seven (7) days of Substantial Completion of the WORK, the CONTRACTOR shall finalize and deliver a complete set of record drawings to the ENGINEER for transmittal to the OWNER, conforming to the construction records of the CONTRACTOR. This set of drawings shall consist of corrected Drawings showing the reported location of the WORK. The information submitted by the CONTRACTOR and incorporated by the ENGINEER into the record drawings will be assumed to be correct, and the CONTRACTOR shall be responsible for the accuracy of such information, and for any errors or omissions which may appear on the record drawings as a result. Final payment will not be acted upon until a complete and accurate set of record drawings have been delivered to the ENGINEER.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01301 - SCHEDULE OF VALUES

PART 1 -- GENERAL

1.1 GENERAL

A. This Section defines the process whereby the Schedule of Values shall be developed and incorporated into the cost loading function of the CPM Schedule as specified in Section 01311 - Scheduling and Reporting. Monthly progress payment amounts shall be determined from the monthly progress updates of the CPM Schedule activities.

B. The Schedule of Values shall be developed independent but simultaneous with the development of the CPM Schedule activities and logic.

1.2 PRELIMINARY SCHEDULE OF VALUES

A. Not Used.

B. Not Used.

1.3 DETAILED SCHEDULE OF VALUES

A. The CONTRACTOR shall prepare and submit a detailed Schedule of Values to the ENGINEER within 30 days from the date of Notice to Proceed. The detailed Schedule of Values shall be based on the accepted preliminary Schedule of Values for major WORK components. Because the ultimate requirement is to develop a detailed Schedule of Values sufficient to determine appropriate monthly progress payment amounts through cost loading of the CPM Schedule activities, sufficient detailed breakdown shall be provided to meet this requirement. The ENGINEER shall be the sole judge of acceptable numbers, details and description of values established. If, in the opinion of the ENGINEER, a greater number of Schedule of Values items than proposed by the CONTRACTOR is necessary, the CONTRACTOR shall add the additional items so identified by the ENGINEER.

1. The minimum detail of breakdown of the major WORK components (Bid Items per Section 1025) is as follows. Each sub-item price includes materials, labor, installation, programming, calibration, testing, and other incidentals. Greater detail shall be provided as directed by the ENGINEER.

a. Mobilization – Mobilization, permits, submittals, meetings, training, testing/start-up/commissioning, record drawings, insurances, and temporary utilities.

b. Yard and Control Building Water Pipe – Ductile iron pipe of various diameters, steel pipe of various diameters, valves, control valves, valve vaults, connections, restraint devices, cathodic bonding and test stations.

c. Pumps, Motors, and Drives – Pumps, motors, drives, installation and balancing, pump barrels.

c. Instrumentation – transducers, transmitters, level indicators, flow meters, chemical detection/monitoring, intrusion systems.

d. Site Electrical – Conduits and conductors, lights, power connections.

e. Switchgear/MCC/PLC – Electrical cabinets and components (testing, programming, etc.).

f. SCADA and Telemetry – Integration with City existing SCADA system, radio telemetry system.

g. Control Building – Foundation, CMU walls, roof and hatches, blowers/venting/ HVAC, doors/windows, sinks, grating.

h. Chemical Disinfection Systems – Dosing pumps, storage containers, piping and appurtenances, eyewash/shower assemblies.

i. Site WORK – Drainage piping, drainage structures, site concrete, A.C. paving, finish grading, fencing, sewer piping, sewer structures, transformer pad.

k. Generator – Concrete pad, genset unit/housing/controls/fuel storage.

l. All other WORK not specifically included in the above items shall be broken down as necessary for establishment of pay and Schedule activity items.

2. The CONTRACTOR and ENGINEER shall meet and jointly review the detailed Schedule of Values within 35 days from the date of Notice to Proceed. The value allocations and extent of detail shall be reviewed to determine any necessary adjustments to the values and to determine if sufficient detail has been proposed to allow acceptable cost loading of the CPM Schedule activities. Any adjustments deemed necessary to the value allocation or level of detail shall be made by the CONTRACTOR and a revised detailed Schedule of Values shall be submitted within 40 days from the date of Notice to Proceed.

3. Following acceptance of the detailed Schedule of Values, the CONTRACTOR shall incorporate the values into the cost loading portion of the CPM Schedule. The CPM activities and logic shall have been developed concurrent with development of the detailed Schedule of Values; however, it shall be necessary to adjust the detailed Schedule of Values to correlate to individual Schedule activities. It is anticipated that instances will occur, due to the independent but simultaneous development of the Schedule of Values and the CPM Schedule activities, where interfacing these two documents will require changes to each document. Schedule activities may need to be added to accommodate the detail of the Schedule of Values. Schedule of Value items may need to be added to accommodate the detail of the CPM Schedule activities. Where such instances arise, the CONTRACTOR shall propose changes to the Schedule of Values and to the CPM Schedule activities to satisfy the CPM Schedule cost loading requirements.

1.4 CROSS REFERENCE LISTING

A. To assist in the correlation of the Schedule of Values and the CPM Schedule, the CONTRACTOR shall provide a Cross Reference Listing which shall be furnished in two parts. The first part shall list each Scheduled Activity with the breakdown of the respective valued items making up the total cost of the activity. The second part shall list the valued item with the respective Scheduled Activity or Activities that make up the total cost

indicated. In the case where a number of schedule items make up the total cost for a valued item (shown in the Schedule of Values) the total cost for each scheduled item should be indicated.

B. These listings shall be updated and submitted in conjunction with the CPM monthly submittals as stated in Specification Section 01311.

C. Approved change orders reflected in the CPM Schedule shall be incorporated into the Schedule of Values as a single unit identified by the change order number.

1.5 CHANGES TO SCHEDULE OF VALUES

A. Changes to the CPM Schedule which add activities not included in the original schedule but included in the original WORK (schedule omissions) shall have values assigned as approved by the ENGINEER. Other activity values shall be reduced to provide equal value adjustment increases for added activities as approved by the ENGINEER.

B. In the event that the CONTRACTOR and ENGINEER agree to make adjustments to the original Schedule of Values because of inequities discovered in the original accepted detailed Schedule of Values, increases and equal decreases to values for activities may be made.

1.6 LIQUIDATED DAMAGES

A. The Schedule of Values information is an integral part of the scheduling and reporting under Section 01311 and the progress payment information. As such, it is critical information to evaluating the project's progress and the proper planning of the OWNER's and ENGINEER's work effort as well as their financial obligations associated with this project. Accordingly, if any submittal required by this Section is found to be incomplete or is submitted later than required, the OWNER will suffer financial loss and, accordingly, liquidated damages will be assessed against the CONTRACTOR in accordance with the contract documents.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01400 - QUALITY CONTROL

\PART 1 -- GENERAL

1.1 DEFINITION

A. Specific quality control requirements for the WORK are indicated throughout the Contract Documents. The requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.2 INSPECTION AT PLACE OF MANUFACTURE

A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the ENGINEER at the place of manufacture.

B. The presence of the ENGINEER at the place of manufacturer, however, shall not relieve the CONTRACTOR of the responsibility for providing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR, and said duty shall not be avoided by any act or omission on the part of the ENGINEER.

1.3 SAMPLING AND TESTING

A. Unless otherwise indicated, all sampling and testing will be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the ENGINEER will assure the OWNER that the quality of the workmanship is in full accord with the Contract Documents.

B. Any waiver by the OWNER of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the testing or other quality assurance requirements originally indicated, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial WORK, shall not be construed as a waiver of any requirements of the Contract Documents.

C. Notwithstanding the existence of such waiver, the ENGINEER reserves the right to make independent investigations and tests, and failure of any portion of the WORK to meet any of the requirements of the Contract Documents, shall be reasonable cause for the ENGINEER to require the removal or correction and reconstruction of any such WORK in accordance with the General Conditions.

1.4 INSPECTION AND TESTING SERVICE

A. Inspection and testing laboratory service shall comply with the following:

1. Unless indicated otherwise by the Contract Documents, the OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself.

2. The OWNER or independent firm will perform inspections, testings, and other

services as required by the ENGINEER under Paragraph 1.3C above.

3. Reports of testing performed by CONTRACTOR shall be submitted to the ENGINEER, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

4. The CONTRACTOR shall cooperate with the OWNER or independent firm and furnish samples of materials, design mix, equipment, tools, storage, and assistance as requested.

5. The CONTRACTOR shall notify ENGINEER 72 hours prior to the expected time for operations requiring inspection and laboratory testing services.

6. Retesting required because of non-conformance to requirements shall be performed by the same independent firm on instructions by the ENGINEER. The CONTRACTOR shall bear all costs from such retesting.

7. For samples and tests required for CONTRACTOR'S use, the CONTRACTOR shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the CONTRACTOR'S use shall be the CONTRACTOR'S responsibility.

1.5 CONTROL AND LAYOUT

Initial layout of the work will be the responsibility of the Owner and the Contractor. Owner shall set vertical control at a location acceptable to Contractor, and locate the center of the tank. Contractor shall use these control points and property lines/corners for further layout. Any additional staking or staking due to lost or destroyed stakes will be paid for by the Contractor and the associated costs will be deducted from the Contractor's payments. Contractor shall notify Owner or Owner's representative a minimum of 5 working days prior to requiring staking.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION

3.1 INSTALLATION

A. **Inspection**: The CONTRACTOR shall inspect materials or equipment upon the arrival on the job site and immediately prior to installation, and reject damaged and defective items.

B. **Measurements**: The CONTRACTOR shall verify measurements and dimensions of the WORK, as an integral step of starting each installation.

C. **Manufacturer's Instructions**: Where installations include manufactured products, the CONTRACTOR shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

- END OF SECTION -

SECTION 01510 - TEMPORARY UTILITIES

PART 1 -- GENERAL

1.1 GENERAL REQUIREMENTS

A. **Types**: The types of utility services required for general temporary use at the Site include the following:

Water service (potable for certain uses)
Storm sewer
Sanitary sewer
Electric power service

1.2 JOB CONDITIONS

A. **Scheduled Uses**: The CONTRACTOR shall, in conjunction with establishment of job progress schedule, establish a schedule for implementation and termination of service for each temporary utility at the earliest feasible time, and when acceptable to OWNER and ENGINEER, change over from use of temporary utility service to permanent service.

PART 2 -- PRODUCTS

2.1 MATERIALS

A. The CONTRACTOR shall provide either new or used materials and equipment, which are in substantially undamaged condition and without significant deterioration and which are recognized in the construction industry, by compliance with appropriate standards, as being suitable for intended use in each case. Where a portion of temporary utility is provided by utility company, the CONTRACTOR shall provide the remaining portion with matching and compatible materials and equipment and shall comply with recommendations of utility company.

PART 3 -- EXECUTION

3.1 INSTALLATION OF TEMPORARY UTILITY SERVICES

A. **General**: Wherever feasible, the CONTRACTOR shall engage the utility company to install temporary service to project, or as a minimum, to make connection to existing utility service; locate services where they will not interfere with total project construction WORK, including installation of permanent utility services; and maintain temporary services as installed for required period of use; and relocate, modify or extend as necessary from time to time during that period as required to accommodate total project construction WORK.

B. **Approval of Electrical Connections:** Temporary connections for electricity shall be subject to approval of the ENGINEER and the power company representative, and shall be removed in like manner at the CONTRACTOR's expense prior to final acceptance of the WORK.

C. **Separation of Circuits:** Unless otherwise permitted by the ENGINEER, circuits used for power purposes shall be separate from lighting circuits.

D. **Construction Wiring:** Wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place. Electrical facilities shall conform to the requirements of Title 8, Industrial Relations, Subchapter 5, Electrical Safety Orders, California Administrative Code; and Subpart K of the OSHA Safety and Health Standards for Construction.

3.2 INSTALLATION OF POWER DISTRIBUTION SYSTEM

A. **Power:** The CONTRACTOR shall provide power required for its operations under the Contract, and shall provide and maintain all temporary power lines required to perform the WORK in a safe and satisfactory manner.

B. **Temporary Power Distribution**: The CONTRACTOR shall provide a weatherproof, grounded, temporary power distribution system sufficient for performance of entire WORK of project, including temporary electrical heating where indicated, operation of test equipment and test operation of building equipment and systems which cannot be delayed until permanent power connections are operable, temporary operation of other temporary facilities, including permanent equipment and systems which must be placed in operation prior to use of permanent power connections (pumps, HVAC equipment, and similar equipment), and power for temporary operation of existing facilities (if any) at the Site during change-over to new permanent power system. Provide circuits of adequate size and proper power characteristics for each use; run circuit wiring generally overhead, and rise vertically in locations where it will be least exposed to possible damage from construction operations and will result in minimal interference with performance of the WORK; provide rigid steel conduit or equivalent raceways for wiring which must be exposed on grade, floors, decks, or other exposures to damage or abuse.

3.3 INSTALLATION OF LIGHTING

A. **Construction Lighting:** WORK conducted at night or under conditions of deficient daylight shall be suitably lighted to insure proper WORK and to afford adequate facilities for inspection and safe working conditions.

B. **Temporary Lighting**: The CONTRACTOR shall provide a general, weatherproof, grounded temporary lighting system in every area of construction work, as soon as overhead floor/roof deck structure has been installed to provide sufficient illumination for safe work and traffic conditions. Run circuit wiring generally overhead, and rise vertically in locations where it will be least exposed to possible damage from construction operations on grade, floors, decks, or other areas of possible damage or abuse.

3.4 WATER SUPPLY

A. **General:** The CONTRACTOR shall coordinate with the **City of Hughson** for obtaining construction water. The CONTRACTOR shall provide all facilities necessary to convey the water from the source to the points of use in accordance with the requirements of the Contract Documents. The CONTRACTOR shall pay the fee for water meter and all other charges for water use.

3.5 INSTALLATION OF SANITARY FACILITIES

A. **Toilet Facilities:** Fixed or portable chemical toilets shall be provided wherever needed for the use of CONTRACTOR's employees. Toilets at construction job sites shall conform to

the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.

3.6 INSTALLATION OF FIRE PROTECTION

A. **Not Used.**

3.7 INSTALLATION OF GAS SERVICE

A. **Not Used.**

3.8 INSTALLATION OF COMMUNICATIONS

A. **Not Used.**

3.9 OPERATIONS AND TERMINATIONS

A. **Inspections**: Prior to placing temporary utility services into use, the CONTRACTOR shall inspect and test each service and arrange for governing authorities' required inspection and tests, and obtain required certifications and permits for use thereof.

B. **Protection**: The CONTRACTOR shall maintain distinct markers for underground lines, and protect from damage during excavating operations.

C. **Termination and Removal**: When need for a temporary utility service or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than time of substantial completion, the CONTRACTOR shall promptly remove installation unless requested by ENGINEER to retain it for a longer period. The CONTRACTOR shall complete and restore WORK which may have been delayed or affected by installation and use of temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces.

D. **Removal of Temporary Connections:** Before final acceptance of the WORK on the project, all temporary connections and piping installed by the CONTRACTOR shall be entirely removed, and all affected improvements shall be restored to original condition or better, to the satisfaction of the ENGINEER and to the agency owning the affected utility.

- END OF SECTION -

SECTION 01520 - SECURITY

PART 1 -- GENERAL

1.1 SECURITY PROGRAM

A. The CONTRACTOR shall:

1. Protect WORK, existing premises, and OWNER'S operations from theft, vandalism, and unauthorized entry.

2. Maintain program throughout construction period until work is finalized.

1.2 ENTRY CONTROL

A. The CONTRACTOR shall:

1. Restrict entry of persons and vehicles into Site.

2. Allow entry only to authorized persons with proper identification.

1.3 Not Used

1.4 PERIMETER FENCING

A. CONTRACTOR shall provide temporary fencing for the site and work areas. Fencing shall be maintained throughout the work. Fencing shall have signs indicating no unauthorized entry, and be locked whenever no work is being conducted at the site. Coordinate with Owner for access by others. Fencing shall be maintained in such a condition as to prevent access by unauthorized personnel.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01530 - PROTECTION OF EXISTING FACILITIES

PART 1 -- GENERAL

1.1 GENERAL

A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than prior to such damage or temporary relocation, all in accordance with the Contract Documents.

B. The WORK represents a continuation of improvements at the site. Completion of previous improvements at the site require CONTRACTOR to connect to, complete further improvements on, and incorporate said improvements into the WORK. CONTRACTOR shall also take full responsibility for the protection and security of existing improvements as part of the WORK. *CONTRACTOR shall provide adequate barriers, fencing, safety devices, or other means to ensure existing improvements are not damaged or blighted*. Any damage or blight to existing improvements shall the sole responsibility of CONTRACTOR. In the event existing improvements are damaged or blighted, OWNER shall determine how and what party shall correct the damage, including retention of a third party for inspection and repair or replacement. All such costs shall be the sole responsibility of CONTRACTOR.

1.2 RIGHTS-OF-WAY

A. The CONTRACTOR shall not do any WORK that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the CONTRACTOR enter upon the rights-of-way involved until notified that the OWNER has secured authority therefor from the proper party.

B. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support, or otherwise protect such pipeline, transmission line, ditch, fence, or structure, or replace the same.

1.3 PROTECTION OF STREET OR ROADWAY MARKERS

A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. Survey markers or points disturbed by the CONTRACTOR shall be accurately restored after street or roadway resurfacing has been completed.

1.4 RESTORATION OF PAVEMENT

A. **General:** All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. The pavement restoration requirement to match existing sections shall apply to all components of existing sections, including sub-base, base, and pavement. Temporary and permanent pavement shall conform to the requirements of the affected pavement owner. Pavements which are subject to partial removal shall be neatly saw cut in straight lines.

B. **Temporary Resurfacing:** Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.

C. **Permanent Resurfacing:** In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

D. **Restoration of Sidewalks or Private Driveways:** Wherever sidewalks or private roads have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions. If no such period of time is so fixed, the CONTRACTOR shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

A. **General:** The CONTRACTOR shall protect underground Utilities and other improvements which may be impaired during construction operations, regardless of whether or not the Utilities are indicated on the Drawings. The CONTRACTOR shall take all possible precautions for the protection of unforeseen Utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

B. Except where the Drawings indicate Utilities have been field located during design or certain Utility locations shall be exposed as part of the WORK, the CONTRACTOR shall be responsible for exploratory excavations as it deems necessary to determine the exact locations and depths of Utilities which may interfere with its work. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR's progress. When such exploratory excavations show the Utility location as shown on the Drawings to be in error, the CONTRACTOR shall so notify the ENGINEER.

C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the Utility.

D. **Utilities to be Moved:** In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the OWNER to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the ENGINEER a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

E. **Utilities to be Removed:** Where the proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing Utility or other improvement which is indicated, the CONTRACTOR shall remove and, without unnecessary delay, temporarily replace or relocate such Utility or improvement in a manner satisfactory to the ENGINEER and the owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the Utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.

F. **OWNER's Right of Access:** The right is reserved to the OWNER and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this Contract.

G. **Underground Utilities Indicated:** Existing Utility lines that are indicated or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all Utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the CONTRACTOR, unless otherwise repaired by the owner of the damaged Utility. If the owner of the damaged facility performs its own repairs, the CONTRACTOR shall reimburse said owner for the costs of repair.

H. **Underground Utilities Not Indicated:** In the event that the CONTRACTOR damages existing Utility lines that are not indicated or the locations of which are not made known to the CONTRACTOR prior to excavation, a verbal report of such damage shall be made immediately to the ENGINEER and a written report thereof shall be made promptly thereafter. The ENGINEER will immediately notify the owner of the damaged Utility. If the ENGINEER is not immediately available, the CONTRACTOR shall notify the Utility owner of the damage. If directed by the ENGINEER, repairs shall be made by the CONTRACTOR under the provisions for changes and extra work contained in Articles 10, 11, and 12 of the General Conditions.

I. Costs of locating and repairing damage not due to failure of the CONTRACTOR to exercise reasonable care, and removing or relocating such Utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the WORK which was interrupted or idled by removal or relocation of such Utility facilities, and which was necessarily idled during such work will be paid for as extra work in accordance with the provisions of Articles 10, 11, and 12 of the General Conditions.

J. **Approval of Repairs:** All repairs to a damaged Utility or improvement are subject to inspection and approval by an authorized representative of the Utility or improvement owner before being concealed by backfill or other work.

K. **Maintaining in Service:** Unless indicated otherwise, oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the ENGINEER are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.6 TREES OR SHRUBS WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

A. **General:** Except where trees or shrubs are indicated to be removed, the CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or OWNER. Existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the CONTRACTOR or a certified tree company under permit from the jurisdictional agency and/or the OWNER. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.

B. **Trimming:** Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. Cuts over 1-1/2 inches in diameter shall be coated with a tree paint product that is waterproof, adhesive, and elastic, and free from kerosenes, coal tar, creosote, or other material injurious to the life of the tree.

C. **Replacement:** The CONTRACTOR shall immediately notify the jurisdictional agency and/or the OWNER if any tree or shrub is damaged by the CONTRACTOR's operations. If, in the opinion of said agency or the OWNER, the damage is such that replacement is necessary, the CONTRACTOR shall replace the tree or shrub at its own expense. The tree or shrub shall be of a like size and variety as the one damaged, or, if of a smaller size, the CONTRACTOR shall pay to the owner of said tree a compensatory payment acceptable to the tree or shrub owner, subject to the approval of the jurisdictional agency or OWNER. The size of the tree or shrub shall be not less than 1-inch diameter nor less than 6 feet in height. Planting of replacement trees and shrubs shall be in accordance with City Standard Specifications. Unless otherwise indicated, the CONTRACTOR shall water and maintain the replacement trees and shrubs for 4 months after planting.

1.7 LANDSCAPING AREAS

A. Landscaped areas damaged during construction shall be repaired to match the pre-construction condition to the satisfaction of the land owner and the OWNER.

1.8 NOTIFICATION BY THE CONTRACTOR

A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, the CONTRACTOR shall notify the respective authorities representing the owners or agencies responsible for such facilities

not less than 3 days nor more than 7 days prior to excavation so that a representative of said owners or agencies can be present during such work if they so desire.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01550 - SITE ACCESS AND STORAGE

PART 1 -- GENERAL

1.1 HIGHWAY LIMITATIONS

A. The CONTRACTOR shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the WORK. It shall be the CONTRACTOR's responsibility to construct and maintain any haul roads required for its construction operations.

1.2 TEMPORARY CROSSINGS

A. **General**: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided to fire hydrants, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Safe and adequate public transportation stops and pedestrian crossings at intervals not exceeding 300 feet shall be provided. The CONTRACTOR shall cooperate with parties involved in the delivery of mail and removal of trash and garbage so as to maintain existing schedules for such services. Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time.

B. **Temporary Bridges**: Wherever necessary, the CONTRACTOR shall provide suitable temporary bridges or steel plates over unfilled excavations, except in such cases as the CONTRACTOR shall secure the written consent of the responsible individuals or authorities to omit such temporary bridges or steel plates, which written consent shall be delivered to the ENGINEER prior to excavation. All such bridges or steel plates shall be maintained in service until access is provided across the backfilled excavation. Temporary bridges or steel plates for street and highway crossing shall conform to the requirements of the authority having jurisdiction in each case, and the CONTRACTOR shall adopt designs furnished by said authority for such bridges or steel plates, or shall submit designs to said authority for approval, as may be required.

C. **Street Use:** Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of the WORK hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed to the public without first obtaining permission of the ENGINEER and proper governmental authority. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the ENGINEER or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the WORK shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the CONTRACTOR to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.

D. **Traffic Control:** For the protection of vehicular and pedestrian traffic in public or private streets, alleys, and ways, the CONTRACTOR shall provide, place, and maintain all

necessary barricades, traffic cones, warning signs, lights, and other safety devices as necessary.

1. Provide traffic plates during pavement cutting, The CONTRACTOR shall remove traffic control devices when no longer needed, repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.

1.3 CONTRACTOR'S WORK AND STORAGE AREA

A. The OWNER will designate and arrange for the CONTRACTOR's use, an area for its exclusive use during the term of the Contract as a storage and shop area for its construction operations relative to this Contract. At completion of WORK, the CONTRACTOR shall return this area to its original condition or better, including grading, re-surfacing, and landscaping.

B. The CONTRACTOR shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the WORK.

C. The CONTRACTOR shall provide and use a separate storage area for hazardous materials used in constructing the WORK.

1. For the purpose of this paragraph, hazardous materials to be stored in the separate area are all products labeled with any of the following terms: Warning, Caution, Poisonous, Toxic, Flammable, Corrosive, Reactive, or Explosive. In addition, whether or not so labeled, the following materials shall be stored in the separate area: diesel fuel, gasoline, new and used motor oil, hydraulic fluid, cement, paints and paint thinners, two-part epoxy coatings, sealants, asphaltic products, glues, solvents, wood preservatives, sand blast materials, and spill absorbent.

2. Hazardous materials shall be stored in groupings according to the Material Safety Data Sheets.

3. The CONTRACTOR shall develop and submit to the ENGINEER a plan for storing and disposing of the materials above.

4. The CONTRACTOR shall obtain and submit to the ENGINEER a single EPA number for wastes generated at the Site.

5. The separate storage area shall meet all the requirements of all authorities having jurisdiction over the storage of hazardous materials. Such authorities are: Cal-OSHA, **Stanislaus County Environmental Health, Regional Water Quality Control Board, and City of Hughson**.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 -- GENERAL

1.1 EXPLOSIVES AND BLASTING

A. The use of explosives on the WORK will not be permitted.

1.2 DUST ABATEMENT

A. The CONTRACTOR shall prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The CONTRACTOR shall be responsible for any damage resulting from dust originating from its operations. The dust abatement measures shall be continued until the CONTRACTOR is relieved of further responsibility by the ENGINEER.

1.3 RUBBISH CONTROL

A. During the progress of the WORK, the CONTRACTOR shall keep the Site and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The CONTRACTOR shall dispose of all rubbish and waste materials of any nature occurring at the Site, and shall establish regular intervals of collection and disposal of such materials and waste. The CONTRACTOR shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the Site in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

1.4 NOISE

A. CONTRACTOR shall adhere to City noise restrictions. All work shall be conducted between the hours of 8 a.m. and 6 p.m., unless authorized by City personnel for special circumstances. All equipment shall have noise attenuation devices, including trucks, heavy equipment, and generators.

1.4 SANITATION

A. **Toilet Facilities:** Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

B. **Sanitary and Other Organic Wastes:** The CONTRACTOR shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR's operations shall be disposed of away from the Site in a manner satisfactory to the ENGINEER and in accordance with all laws and regulations pertaining thereto.

1.5 CHEMICALS

A. All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer. In addition, see the requirements set forth in paragraph 6.11 of the General Conditions.

1.6 CULTURAL RESOURCES

A. The CONTRACTOR's attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800 which provides for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called "cultural resources").

B. The CONTRACTOR shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.

C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, the following procedures shall be instituted:

1. The ENGINEER will issue a Field Order directing the CONTRACTOR to cease all construction operations at the location of such potential cultural resources find.

2. Such Field Order shall be effective until such time as a qualified archaeologist can be called to assess the value of these potential cultural resources and make recommendations to the State Historic Preservation Office.

D. If the archaeologist determines that the potential find is a bona fide cultural resource, at the direction of the State Historic Preservation Office, the CONTRACTOR shall suspend work at the location of the find under the provisions for changes contained in Articles 10, 11, and 12 of the General Conditions.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 01700 - PROJECT CLOSEOUT

PART 1 -- GENERAL

1.1 FINAL CLEANUP

A. The CONTRACTOR shall promptly remove from the vicinity of the completed WORK, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily performed the final cleanup of the Site.

1.2 CLOSEOUT TIMETABLE

A. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

1.3 CONDITION OF SITE

CONTRACTOR shall leave site in a satisfactory condition, as approve by the ENGINEER. Return all work areas to its original condition. Grade areas that have been disturbed, replace gravel surfaces as necessary. Remove all debris, waste concrete, etc. Remove earth that has oil or grease that leaked from equipment.

1.4 FINAL SUBMITTALS

A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the ENGINEER for transmittal to the OWNER:

1. Written guarantees, where required.

2. Technical Manuals and instructions.

3. Maintenance stock items; spare parts; special tools.

4. Completed record drawings.

5. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

1.5 MAINTENANCE AND GUARANTEE

A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in the Contract Documents.

B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless

the CONTRACTOR shall have obtained a statement in writing from the affected private owner or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.

C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the WORK and the CONTRACTOR and its surety shall be liable to the OWNER for the cost thereof.

1.6 BOND

A. The CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Paragraph "Maintenance and Guarantee" above, and the General Conditions.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

SECTION 02200 - EARTHWORK

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall perform all earthwork indicated and required for construction of the WORK, complete and in place, in accordance with the Contract Documents.

NOTE: Geotechnical investigations and recommendations were completed for the site, and are incorporated into the contract documents. The project Geotechnical Services Report and Supplemental Recommendations Letter, dated January 19, 2019, and March 7, 2019, respectively, provide information regarding site soil conditions. The CONTRACTOR shall refer to recommendations of the geotechnical report for earthwork requirements. In the case of conflict, requirements of the geotechnical report shall supersede the requirements herein.

1.2 CONTRACTOR SUBMITTALS

A. The CONTRACTOR's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. The CONTRACTOR, prior to beginning any trench or structure excavation 5 feet deep or over shall submit to the OWNER and shall be in receipt of the OWNER's written acceptance of the CONTRACTOR's detailed plan showing design of all shoring, bracing, sloping of the sides of excavation, or other provisions for worker protection against the hazard of caving ground during the excavation of such trenches or structure excavation. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative systems plans shall be prepared by a civil or structural engineer licensed in the State of California.

B. The CONTRACTOR shall submit samples of all materials proposed to be used in the work in accordance with the requirements in Section 01300 - Contractor Submittals. Sample sizes shall be as determined by the testing laboratory.

PART 2 -- PRODUCTS

2.1 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

A. **General:** Fill, backfill, and embankment materials shall be suitable selected or processed clean, fine earth, rock, or sand, free from grass, roots, brush, or other vegetation.

B. Fill and backfill materials to be placed within 12 inches of any structure or pipe shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 3 inches.

C. **Suitable Materials:** Materials not defined as unsuitable below are defined as suitable materials and may be used in fills, backfilling, and embankment construction subject to the indicated limitations. In addition, when acceptable to the ENGINEER, some of the material listed as unsuitable may be used when thoroughly mixed with suitable material to form a stable composite.

D. Suitable materials may be obtained from on-site excavations, may be processed on-site

materials, or may be imported. If imported materials are required by this Section or to meet the quantity requirements of the project the CONTRACTOR shall provide the imported materials at no additional expense to the OWNER, unless a unit price item is included for imported materials in the bidding schedule.

E. The following types of suitable materials are defined:

1. Type A (three-quarters inch minus granular backfill): Crushed rock or gravel, and sand with the gradation requirements below. The material shall have a minimum sand equivalent value of 28 and a minimum R-value of 78. If the sand equivalent value exceeds 35 the R-value requirement is waived.

Sieve Size	Percentage Passing
3/4-inch	100
No. 4	30 - 50
No. 200	0 - 12

2. Type B (Class I crushed stone): Manufactured angular, crushed stone, crushed rock, or crushed slag with the following gradation requirements. The material shall have a minimum sand equivalent value of 75.

Sieve Size	Percentage Passing
3/4-inch	100
No. 4	30 - 50
No. 200	0 - 5

3. Type C (sand backfill): Sand with 100 percent passing a 3/8-inch sieve, at least 90 percent passing a Number 4 sieve, and a sand equivalent value not less than 30.

4. Type D: Not used

5. Type E (pea gravel backfill): Crushed rock or gravel the size gradation for Size Number 8 in ASTM C 33 – Concrete Aggregates.

6. Type F (coarse drainrock): Crushed rock or gravel with the size gradation for Size Number 4 in ASTM C 33

7. Type G (aggregate base): Crushed rock aggregate base material of such nature that it can be compacted readily by watering and rolling to form a firm, stable base for pavements. At the option of the CONTRACTOR, the grading for either the 1-1/2-inch maximum size or 3/4-inch maximum size gradation shall be used. The sand equivalent value shall be not less than 22, and the material shall meet the following gradation requirements:

	Percentage Passing	
Sieve Size	1-1/2-inch Max. Gradation	3/4-inch Max. Gradation
2-inch	100	-
1-1/2-inch	90 - 100	-

1-inch	-	100
3/4-inch	50 - 85	90 - 100
No. 4	25 - 45	35 - 55
No. 30	10 - 25	10 - 30
No. 200	2 - 9	2 - 9

8. Type H (graded drainrock): Drainrock shall be crushed rock or gravel, durable and free from slaking or decomposition under the action of alternate wetting or drying. The material shall be uniformly graded and shall meet the gradation requirements for Size Number 57 in ASTM C 33:

   The drainrock shall have a sand equivalent value not less than 75. The finish graded surface of the drainrock immediately beneath hydraulic structures shall be stabilized to provide a firm, smooth surface upon which to construct reinforced concrete floor slabs. The CONTRACTOR shall use, at its option, one of the asphalt types listed below:

	Type 1	Type 2	Type 3
Designation	SC-800	SC-250	RS-1
Spray Temperature (°F)	175-255	165-200	70-120
Coverage (gal/sq yd)	0.50	0.50	0.50

   If the surface remains tacky, sufficient sand shall be applied to absorb the excess asphalt.

9. Type I: Any other suitable material as defined herein.

10. Type J (cement-treated backfill): Material which consists of Type H material, or any mixture of Types B, C, G, and H materials which has been cement-treated so that the cement content of the material is not less than 5 percent by weight when tested in accordance with ASTM D 2901 - Standard Test Method for Cement Content of Freshly Mixed Soil Cement. The ultimate compressive strength at 28 days shall be not less than 400 psi when tested in accordance with ASTM D 1633 - Standard Test Method for Compressive Strength of Molded Soil - Cement Cylinders.

11. Type K (topsoil): Stockpiled topsoil material which has been obtained at the site by removing soil to a depth not exceeding 2 feet. Removal of the topsoil shall be done after the area has been stripped of vegetation and debris.

12. Not Used.

13. Type M (No. 2 aggregate subbase): Crushed rock aggregate subbase material that can be compacted readily by watering and rolling to form a firm stable base. The sand equivalent value shall be not less than 18 and the material shall meet the following gradation requirements:

Sieve Size	Percentage Passing
3-inch	100
2-1/2 inch	87 - 100
No. 4	35 - 95
No. 200	0 - 29

14. Type N (trench plug): Low permeable fill material, a non-dispersible clay material having a minimum plasticity index of 10.

2.2 UNSUITABLE MATERIAL

A. Unsuitable materials include the materials listed below.

1. Soils which, when classified under ASTM D 2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), fall in the classifications of Pt, OH, CH, MH, or OL.

2. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use.

3. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.

4. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.

5. Topsoil, except as allowed below.

2.3 USE OF FILL, BACKFILL, AND EMBANKMENT MATERIAL TYPES

A. The CONTRACTOR shall use the types of materials as designated herein for all required fill, backfill, and embankment construction hereunder.

B. Where these Specifications conflict with the requirements of any local agency having jurisdiction or with the requirements of a pipe material manufacturer, the ENGINEER shall be immediately notified. In case of conflict between types of pipe embedment backfills, the CONTRACTOR shall use the agency-specified backfill material if that material provides a greater degree of structural support to the pipe, as determined by the ENGINEER. In case of conflict between types of trench or final backfill types, the CONTRACTOR shall use the agency-specified backfill material if that material provides the greater in-place density after compaction.

C. Fill and backfill types shall be used in accordance with the following provisions:

1. Embankment fills shall be constructed of Type I material, as defined herein, or any mixture of Type I and Type A through Type H materials.

2. Pipe zone backfill, as defined under "Pipe and Utility Trench Backfill" below, shall consist of the following materials for each pipe material listed below.

a. Mortar coated pipe, concrete pipe, and un-coated ductile iron pipe shall be provided Type A or B pipe bedding and embedment backfill material.

b. Coal tar enamel coated pipe, polyethylene encased pipe, tape wrapped pipe, epoxy coated pipe, and other non-mortar coated pipe shall be backfilled with Type C bedding and embedment zone backfill material.

c. Plastic pipe and vitrified clay pipe shall be backfilled with Type B bedding and

embedment zone backfill material. Vitrified clay pipe shall be backfilled with Type B material to the top of the pipe zone.

d. Where pipelines are installed on grades exceeding 4 percent, and where backfill materials are graded such that there is less than 10 percent passing a Number 4 sieve, trench plugs of Type J, L, or N material shall be provided at maximum intervals of 200 feet unless indicated otherwise.

3. Trench zone backfill for pipelines as defined under "Pipe and Utility Trench Backfill" shall be Type I backfill material or any of Types A through H backfill materials or any mixture thereof, except:

   a. Type K material may be used for trench zone backfill in agricultural areas unless otherwise shown or specified.

4. Final backfill material for pipelines under paved areas, as defined under "Pipe and Utility Trench Backfill" shall be Type G backfill material. Final backfill under areas not paved shall be the same material as that used for trench backfill, except that Type K material shall be used for final backfill in agricultural areas unless otherwise indicated.

5. Trench backfill and final backfill for pipelines under structures shall be the same material as used in the pipe zone, except where concrete encasement is required by the Contract Documents.

6. Aggregate base materials under pavements shall be Type G material constructed to the thicknesses indicated. Aggregate subbase shall be Type M material.

7. Backfill around structures shall be Type I material, or Types A through Type H materials, or any mixture thereof, except as shown.

8. Backfill materials beneath structures shall be as follows:

   a. Drainrock materials under hydraulic structures or other water retaining structures with underdrain systems shall be Type H material.

   b. Under concrete hydraulic structures or other water retaining structures without underdrain systems, Types G or H materials shall be used.

   c. Under structures where groundwater must be removed to allow placement of concrete, Type F material shall be used. Before the Type F material is placed, filter fabric shall be placed over the exposed foundation.

   d. Under all other structures, Type G or H material shall be used.

9. Backfill used to replace pipeline trench over-excavation shall be a layer of Type F material with a 6-inch top filter layer of Type E material or filter fabric to prevent migration of fines for wet trench conditions or the same material as used for the pipe zone backfill if the trench conditions are not wet.

10. The top 6 inches of fill on reservoir roofs, embankment fills around hydraulic structures, and all other embankment fills shall consist of Type K material, topsoil.

11. Filter fabric shall be **Mirafi 140 N, Mirafi 700X,** or equal.

2.4 MATERIALS TESTING

A. All soils testing of samples submitted by the CONTRACTOR will be done by a testing laboratory of the OWNER'S choice and at the OWNER'S expense. At its discretion, the ENGINEER may request that the CONTRACTOR supply samples for testing of any material used in the work.

B. Particle size analysis of soils and aggregates will be performed using ASTM D 422 - Standard Test Method for Particle-Size Analysis of Soils.

C. Determination of sand equivalent value will be performed using ASTM D 2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.

D. **Unified Soil Classification System:** References in this Section to soil classification types and standards shall have the meanings and definitions indicated in ASTM D 2487. The CONTRACTOR shall be bound by all applicable provisions of said ASTM D 2487 in the interpretation of soil classifications.

PART 3 -- EXECUTION

3.1 EXCAVATION - GENERAL

A. **General:** Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the WORK. The removal of said materials shall conform to the lines and grades indicated or ordered. Unless otherwise indicated, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. The CONTRACTOR shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

B. Removal and Exclusion of Water: The CONTRACTOR shall remove and exclude water, including stormwater, groundwater, irrigation water, and wastewater, from all excavations. Dewatering wells, wellpoints, sump pumps, or other means shall be used to remove water and continuously maintain groundwater at a level at least two feet below the bottom of excavations before the excavation work begins at each location. Water shall be removed and excluded until backfilling is complete and all field soils testing has been completed.

3.2 STRUCTURE, ROADWAY, AND EMBANKMENT EXCAVATION

A. **Excavation Beneath Structures and Embankments:** Except where otherwise indicated for a particular structure or ordered by the ENGINEER, excavation shall be carried to the grade of the bottom of the footing or slab. Where indicated or ordered, areas beneath structures or fills shall be over-excavated. The subgrade areas beneath embankments shall be excavated to remove not less than the top 6 inches of native material and where such subgrade is sloped, the native material shall be benched. When such over-excavation is indicated, both over-excavation and subsequent backfill to the required

grade shall be performed by the CONTRACTOR. When such over-excavation is not indicated but is ordered by the ENGINEER, such over-excavation and any resulting backfill will be paid for under a separate unit price bid item if such bid item has been established; otherwise payment will be made in accordance with a negotiated price. After the required excavation or over-excavation has been completed, the exposed surface shall be scarified to a depth of 6 inches, brought to optimum moisture content, and rolled with heavy compaction equipment to obtain 95 percent of maximum density.

B. **Excavation Beneath Concrete Reservoirs:** Excavation under reservoirs shall extend to the bottom of the drainrock layer. After such excavation has been completed, the exposed surface shall be rolled with heavy compaction equipment to 95 percent of maximum density and then graded to provide a reasonably smooth surface for placement of the drainrock. Areas under the reservoir upon which fill is to be placed shall be scarified to a depth of 6 inches, brought to optimum moisture content, and compacted to obtain 95 percent of maximum density.

C. **Excavation Beneath Paved Areas:** Excavation under areas to be paved shall extend to the bottom of the aggregate base or subbase, if such base is called for; otherwise it shall extend to the paving thickness. After the required excavation has been completed, the top 12 inches of exposed surface shall be scarified, brought to optimum moisture content, and rolled with heavy compaction equipment to obtain 95 percent of maximum density. The finished subgrade shall be even, self-draining, and in conformance with the slope of the finished pavement. Areas that could accumulate standing water shall be regraded to provide a self-draining subgrade.

D. **Notification of ENGINEER:** The CONTRACTOR shall notify the ENGINEER at least 3 days in advance of completion of any structure excavation and shall allow the ENGINEER a review period of at least one day before the exposed foundation is scarified and compacted or is covered with backfill or with any construction materials.

3.3 PIPELINE AND UTILITY TRENCH EXCAVATION

A. Exploratory Excavation

1. The CONTRACTOR shall excavate and expose buried points of connection to existing utilities and all known potential conflicts. Excavation shall be performed prior to any work and preparation of Shop Drawings for connections and before fabrication of pipe, and the data obtained shall be used in preparing Shop Drawings. No payments for mobilization will be made to CONTRACTOR without completion of potholing activities.

2. Data, including dates, locations excavated, and sketches, shall be submitted to the ENGINEER within one week of excavation.

3. Damage to utilities from excavation activities shall be repaired by the CONTRACTOR.

B. **General:** Unless otherwise indicated or ordered, excavation for pipelines and utilities shall be open-cut trenches with widths as indicated in the Owner's standard construction specifications.

C. **Trench Bottom:** Except when pipe bedding is required, the bottom of the trench shall be excavated uniformly to the grade of the bottom of the pipe bedding. Excavations for pipe

bells and welding shall be made as required.

D. **Open Trench:** The maximum amount of open trench permitted in any one location shall be 300 feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater. All trenches shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic in those locations where it is impractical to backfill at the end of each day. The above requirements for backfilling or use of steel plate will be waived in cases where the trench is located further than 100 feet from any traveled roadway or occupied structure. In such cases, however, barricades and warning lights meeting safety requirements shall be provided and maintained.

E. **Trench Over-Excavation:** Where trenches are indicated to be over-excavated, excavation shall be to the depth indicated, and backfill shall be installed to the grade of the bottom of the pipe bedding.

F. **Over-Excavation:** When ordered by the ENGINEER, whether indicated on the Drawings or not, trenches shall be over-excavated beyond the depth and/or width shown. Such over-excavation shall be to the dimensions ordered. The trench shall then be backfilled to the grade of the bottom of the pipe bedding. Over-excavation less than 6 inches below the limits on the Drawings shall be done at no increase in cost to the OWNER. When the over-excavation ordered by the ENGINEER is 6 inches or greater below the limits shown, or wider, additional payment will be made to the CONTRACTOR. Said additional payment will be made under separate unit price bid items for over-excavation if such bid items have been established; otherwise payment will be made in accordance with a negotiated price.

G. Where pipelines are to be installed in embankments, fills, or structure backfills, the fill shall be constructed to a level at least one foot above the top of the pipe before the trench is excavated.

H. If a moveable trench shield is used during excavation operations, the trench width shall be wider than the shield so that the shield is free to be lifted and then moved horizontally without binding against the trench sidewalls. If the trench walls cave in or slough, the trench shall be excavated as an open excavation with sloped sidewalls or with trench shoring, as indicated and as required by the pipe structural design.

3.4 OVER-EXCAVATION NOT ORDERED OR INDICATED

A. Any over-excavation carried below the grade ordered or indicated, shall be backfilled and compacted to the required grade with the indicated material.

3.5 EXCAVATION IN LAWN AREAS

A. Where excavation occurs in lawn areas, the sod shall be carefully removed, dampened, and stockpiled to preserve it for replacement. Excavated material may be placed on the lawn; provided, that a drop cloth or other suitable method is employed to protect the lawn from damage. The lawn shall not remain covered for more than 72 hours. Immediately after completion of backfilling [and testing of the pipeline], the sod shall be replaced and lightly rolled in a manner so as to restore the lawn as near as possible to its original condition. CONTRACTOR shall provide new sod if stockpiled sod has not been replaced within 72 hours.

3.6 EXCAVATION IN VICINITY OF TREES

A. Except where trees are indicated to be removed, trees shall be protected from injury during construction operations. No tree roots over 2 inches in diameter shall be cut without express permission of the ENGINEER. Trees shall be supported during excavation by any means previously reviewed by the ENGINEER.

3.7 Not Used

3.8 DISPOSAL OF EXCESS EXCAVATED MATERIAL

A. The CONTRACTOR shall remove and dispose of all excess excavated material at a site selected by the CONTRACTOR and reviewed by the ENGINEER.

3.9 BACKFILL – GENERAL

A. All backfill shall be installed in accordance with the requirements herein, or as defined in the geotechnical report for the project site, as referenced elsewhere in the contract documents. The site geotechnical report recommendations shall be used if and when conflicts occur between this section and the report regarding material, compaction, or placement requirements.

B. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed. Backfill around water retaining structures shall not be placed until the structures have been tested, and the structures shall be full of water while backfill is being placed.

C. Except for drainrock materials being placed in over-excavated areas or trenches, backfill shall be placed after all water is removed from the excavation, and the trench sidewalls and bottom have been dried to a moisture content suitable for compaction.

D. If a moveable trench shield is used during excavation, pipe installation, and backfill operations, the shield shall be moved by lifting the shield free of the trench bottom or backfill and then moving the shield horizontally, The CONTRACTOR shall not drag trench shields along the trench causing damage or displacement to the trench sidewalls, the pipe, or the bedding and backfill.

E. Immediately prior to placement of backfill materials, the bottoms and sidewalls of trenches and structure excavations shall have all loose sloughing, or caving soil and rock materials removed. Trench sidewalls shall consist of excavated surfaces that are in a relatively undisturbed condition before placement of backfill materials.

3.10 PLACING AND SPREADING OF BACKFILL MATERIALS

A. Backfill materials shall be placed and spread evenly in layers. When compaction is achieved using mechanical equipment, the layers shall be evenly spread so that when compacted each layer shall not exceed 6 inches in thickness.

B. No flooding or jetting is allowed.

C. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread

around the pipe so that when compacted the pipe zone backfill will provide uniform bearing and side support.

D. Where the backfill material moisture content is below the optimum moisture content, water shall be added before or during spreading until the proper moisture content is achieved.

E. Where the backfill material moisture content is too high to permit the specified degree of compaction the material shall be dried until the moisture content is satisfactory.

3.11 COMPACTION OF FILL, BACKFILL, AND EMBANKMENT MATERIALS

A. Each layer of Types A, B, C, G, H, I, and K backfill materials as defined herein, where the material is graded such that 10 percent or more passes a No. 4 sieve, shall be mechanically compacted to the indicated percentage of density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content.

B. Each layer of Type E, F, and J backfill materials shall be compacted by means of at least 2 passes from a flat plate vibratory compactor. When such materials are used for pipe zone backfill, vibratory compaction shall be used at the top of the pipe zone or at vertical intervals of 24 inches, whichever is the least distance from the subgrade.

C. Fill on reservoir and structure roofs shall be deposited at least 30 days after the concrete roof slab has been placed. Equipment weighing more than 10,000 pounds when loaded shall not be used on a roof. A roller weighing not more than 8,000 pounds shall be used to compact fill on a roof.

D. Flooding, ponding, or jetting shall not be used.

E. Pipe zone backfill materials that are granular, may be compacted by a combination of manual compaction, vibration, rolling, and pressure plates.

F. Equipment weighing more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to the depth of the fill at that time. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.

G. Backfill around and over pipelines that is mechanically compacted shall be compacted using light, hand operated, vibratory compactors and rollers. After completion of at least two feet of compacted backfill over the top of pipeline, compaction equipment weighing no more than 8,000 pounds may be used to complete the trench backfill.

G. **Compaction Requirements:** The following compaction test requirements shall be in accordance with ASTM D 1557 - Test Method for Laboratory Compaction Characteristics of Soils Using Modified Effort (56,000 ft - lbf/ft^3) (2,700 kN-m/m^3) for Type A, B, C, G, H, I, K, M, and N materials and in accordance with ASTM D 4253 - Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table, and D 4254 - Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density, for Type B, E, F, and J materials. Where agency or utility company requirements govern, the highest compaction standards shall apply.

Percentage of

Location or Use of Fill	Percentage of Maximum Density	Relative Density
Pipe embedment backfill for flexible pipe.	95	70
Pipe bedding and over-excavated zones under bedding for flexible pipe, including trench plugs.	90	70
Pipe embedment backfill for Steel Yard Piping	90	70
Pipe embedment backfill for rigid pipe	90	55
Pipe zone backfill portion above embedment for rigid pipe.	95	70
Pipe bedding and over-excavated zones under bedding for rigid pipe.	90	70
Final backfill, beneath paved areas or structures.	95	70
Final backfill, not beneath paved areas or structures.	90	55
Trench zone backfill, beneath paved areas and structures, including trench plugs.	95	70
Trench zone backfill, not beneath paved areas or structures, including trench plugs.	95	70
Embankments and fills.	90	55
Embankments and fills beneath paved areas or structures.	95	70
Backfill beneath structures and hydraulic structures.	95	70
Backfill and fill around structures on reservoir or structure roof.	90	55
Topsoil (Type K material)	80	N.A.
Aggregate base or subbase (Type G or M material)	95	N.A.

3.12 PIPE AND UTILITY TRENCH BACKFILL

A. Pipe Zone Backfill

1. The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane below the bottom surface of the pipe and a plane at a point above the top surface of the pipe as indicated. The bedding is defined as that portion of pipe zone backfill material between the trench subgrade and the bottom of the pipe. The embedment is defined as that portion of the pipe zone backfill material between the bedding and a level line as indicated.

2. After compacting the bedding the CONTRACTOR shall perform a final trim using a stringline for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe. Excavation for pipe bells and welding shall be made as required.

3. The pipe zone shall be backfilled with the indicated backfill material. The CONTRACTOR shall exercise care to prevent damage to the pipeline coating, cathodic bonds, and the pipe itself during the installation and backfill operations.

4. If a moveable trench shield is used during backfill operations the shield shall be lifted to a location above each layer of backfill material prior to compaction of the layer. The CONTRACTOR shall not displace the pipe or backfill while the shield is being moved.

B. **Trench Zone Backfill:** After the pipe zone backfills have been placed, backfilling of the trench zone may proceed. The trench zone is defined as that portion of the vertical trench cross-section lying as indicated between a plane above the top surface of the pipe and a plane at a point 18 inches below the finished surface grade, or if the trench is under pavement, 18 inches below the roadway subgrade.

C. **Final Backfill:** Final backfill is all backfill in the trench cross-sectional area within 18 inches of finished grade, or if the trench is under pavement, all backfill within 18 inches of the roadway subgrade.

3.13 FILL AND EMBANKMENT CONSTRUCTION

A. The area where a fill or embankment is to be constructed shall be cleared of all vegetation, roots and foreign material. Following this, the surface shall be moistened, scarified to a depth of 6 inches, and rolled or otherwise mechanically compacted. Embankment and fill material shall be placed and spread evenly in approximately horizontal layers. Each layer shall be moistened or aerated, as necessary. Unless otherwise approved by the ENGINEER, each layer shall not exceed 6 inches of compacted thickness. The embankment, fill, and the scarified layer of underlying ground shall be compacted to 95 percent of maximum density under structures and paved areas, and 90 percent of maximum density elsewhere.

B. When an embankment or fill is to be made and compacted against hillsides or fill slopes steeper than 4:1, the slopes of hillsides or fills shall be horizontally benched to key the embankment or fill to the underlying ground. A minimum of 12 inches normal to the slope of the hillside or fill shall be removed and re-compacted as the embankment or fill is brought up in layers. Material thus cut shall be re-compacted along with the new material. Hillside or fill slopes 4:1 or flatter shall be prepared in accordance with Paragraph A, above.

C. Where embankment or structure fills are constructed over pipelines, the first 4 feet of fill

over the pipe shall be constructed using light placement and compaction equipment that does not damage the pipe. Heavy construction equipment shall maintain a minimum distance from the edge of the trench equal to the depth of the trench until at least 4 feet of fill over the pipe has been completed.

3.14 FIELD TESTING

A. **General:** All field soils testing will be done by a testing laboratory of the OWNER's choice at the OWNER's expense except as indicated below.

B. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with Method C of ASTM D 1557. Where cohesionless, free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. Field density in-place tests will be performed in accordance with ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method, ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place By Nuclear Methods (Shallow Depth), or by such other means acceptable to the ENGINEER.

C. In case the test of the fill or backfill show non-compliance with the required density, the CONTRACTOR shall accomplish such remedy as may be required to insure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the OWNER and paid by the CONTRACTOR.

D. The CONTRACTOR shall provide test trenches and excavations including excavation, trench support, and groundwater removal for the OWNER'S field soils testing operations. The trenches and excavations shall be provided at the locations and to the depths required by the OWNER.

- END OF SECTION -

SECTION 2550

CHAIN LINK FENCE
PVC COLOR COATED CHAIN LINK FABRIC ON GALVANIZED FRAMEWORK

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Poly Vinyl Chloride (PVC) coated chain link fabric with galvanized steel framework and accessories for commercial or industrial applications.

1.02 RELATED SECTIONS

01300 Contractor Submittals
01301 Schedule of Values
03300 Cast-in-Place Concrete

1.03 REFERENCES

A. ASTM A36 Standard Specification for Carbon Structural Steel

B. ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Bars, Rods, Wire Profiles and Tubes

C. ASTM F552 Standard Terminology Relating to Chain Link Fencing

D. ASTM F567 Standard Practice for Installation of Chain Link Fence

E. ASTM F626 Standard Specification for Fence Fittings

F. ASTM F668 Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain Link Fence Fabric

G. ASTM F900 Standard Specification for Industrial and Commercial Swing Gates

H. ASTM F934 Standard Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials

I. ASTM F1043 Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework

J. ASTM F1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

K. ASTM F1664 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Tension Wire Used With Chain Link Fence

L. ASTM F1665 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Barbed Wire Used With Chain Link Fence

M. WLG2445 Chain Link Fence Manufacturers Institute, Chain Link Fence Wind Load Guide for the Selection of Line Posts and Line Post Spacing

1.04 SUBMITTALS

A. Shop drawings: Layout of fences and gates with dimensions, details, and finishes of components, accessories, and post foundations.

B. Product data: Manufacturer's catalog cuts indicating material compliance and specified options.

C. Samples: If requested, samples of materials (e.g., fabric, wires, color, and accessories).

D. Windload Calculations: 120 mph for post and fabric calculations.

1.05 QUALITY ASSURANCE

A. Manufacturer: Company having manufacturing facilities in the United States with 5 years experience specializing in manufacturing of chain link fence products.

B. Fence contractor: Contractor having 5 years experience installing similar projects in accordance with ASTM F567.

C. Tolerances: ASTM current specification and tolerances apply and supersede any conflicting tolerance.

D. Single source: To ensure system integrity obtain the chain link system, framework, fabric, fittings, gates and accessories from a single source.

PART 2 - PRODUCTS

2.01 CHAIN LINK FENCE FABRIC

A. Poly Vinyl Chloride (PVC) color coated steel chain link fabric per ASTM F668 Class 2a

B. Size and Gauge: Chain link fabric 1 ¼ mesh, 11 gauge.

C. Color of chain link fabric per ASTM F934 Black

2.03 STEEL FENCE FRAMEWORK

A. Steel pipe Type I: ASTM F1043 Group IA, ASTM F1083 standard weight schedule 40 hot-dip galvanized pipe having a zinc coating of 1.8 oz/ft² (550 g/m²) on the outside and 1.8 oz/ft² (550 g/m²) on the inside surface. Intermediate Strength Grade: Minimum steel yield strength of 50,000 psi.

2.04 FITTINGS

A. Post caps: ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. "C" shaped line post without top rail do not require post caps. When top rail is specified provide line post loop tops to secure top rail.

B. Rail ends: Galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.

C. Top rail sleeves: 7" (178 mm) galvanized steel sleeve per ASTM F626.

D. Wire ties: 9 gauge (0.148") (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148") (3.76 mm) galvanized steel or aluminum for attachment of fabric to

tension wire. Tie wire and hog rings PVC coated and in compliance with ASTM F626. Color to match fabric color.

E. Brace and tension (stretcher bar) bands: ASTM F626 galvanized 12 gauge (0.105") (2.67mm) pressed steel by 3/4" (19mm) formed to a minimum 300 degree profile curvature for post attachment. Secure bands using minimum 5/16" (7.94 mm) galvanized carriage bolt and nut.

F. Tension (stretcher) galvanized steel bars: One piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16" x 3/4" (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.

G. Truss rod assembly: Galvanized steel minimum 5/16" (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626

H. Barbed wire supporting arms: Galvanized pressed steel barb arm per ASTM F626 with provisions for attaching barbed wire. Provide arms with loop hole for applications using top rail. Arms shall withstand 250 lb. (113.5 kg) downward pull at outermost end of arm without failure. Arms add an additional of 13 in (330 mm) in height. Provide Type I, 45° 3 strand single arm.

I. Carriage bolts and nuts: Galvanized of commercial quality

2.05 TENSION WIRE

A. Tension wire: Poly Vinyl Chloride (PVC) coated metallic coated steel tension wire per ASTM F 9 gauge steel core wire, 0.148" (3.76 mm). PVC coating class and color to match chain link fabric

2.06 BARBED WIRE AND BARBED TAPE

A. Barbed wire: PVC coated barbed wire in compliance with ASTM F1665, coating class and color to match chain link fabric. Double strand twisted 14 gauge 0.80" (2.03 mm) PVC coated strand wire, 14 gauge 0.80" (2.03 mm) zinc coated or aluminum alloy 4 point barbs spaced. Provide Type I standard 5" (127 mm) on center.

B. Barbed tape: Stainless steel barbed tape shall comply with ASTM F1910.

2.07 CHAIN LINK SWING GATES

A. Swing gates. Fabricate chain link swing gates in accordance with ASTM F900. Gate frame to be of welded construction. Weld areas to be protected with zinc-rich paint per ASTM A780. The gate frame members are to be spaced no greater than 8' 0" (2.44 m) apart horizontally or vertically. Exterior members to be 1.900" (48.3 mm) OD pipe, interior members when required shall be 1.660" (42.2 mm) OD pipe. Pipe to be Grade 1 ASTM F1083 per section 2.03. Chain link fabric to match specification of fence system. Fabric to be stretched tightly and secured to vertical outer frame members using tension bar and tension bands spaced 12" (304.8 mm) on center and tied to the horizontal and interior members 12" (304.8 mm) on center using 9 gauge galvanized steel ties per section 2.04.

B. Hinges, hot dip galvanized pressed steel or malleable iron, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° (3.14 rad)

C. Latch: Galvanized forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.

D. Double gates: Provide galvanized drop rod with center gate stop pipe or receiver to secure inactive leaf in the closed position. Provide galvanized pressed steel locking latch, requiring one padlock for locking both gate leaves, accessible from either side.

E. Keeper to secure open leafs: Provide galvanized gate hold back keeper for each gate leaf over 5' (1524 mm) wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.

F. Gate posts: Grade 1 pipe ASTM F1083 per section 2.03, 6.625 OD.

2.08 Not Used.

2.09 POST SETTING MATERIALS

A. Concrete: Minimum 28 day compressive strength of 3,000 psi (20 MPa).

PART 3 EXECUTION

3.01 SITE EXAMINATION

A. Ensure property lines and legal boundaries of work are clearly established.

B. Survey of fence location to be provided by Owner.

C. Verify areas to receive fencing are completed to final grade.

3.02 CHAIN LINK FRAMEWORK INSTALLATION

A. Install chain link fence system in accordance with ASTM F567 and manufacturer's instructions.

B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.

C. Space line posts uniformly maximum 10' ft. on center, as determined by wind load post selection calculations. Assume 120 mph windload.

D. Concrete set posts: Dig holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post and slope to direct water away from posts.
Drive Anchor set line posts: With protective cap, drive post 36" (914 mm) into ground. Excavate a 6" (152.4 mm) diameter by 6" (152.4 mm) deep section around post to accommodate the drive anchor shoe clamp. Drive the 2 diagonal drive anchor angle blades into the soil and securely tighten the angle blades to post using the shoe clamp, bury shoe clamp.

E. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.

F. Bracing: Install horizontal brace and truss assembly at mid-height or above for fences 6' (1829 mm) and over at each fabric connection to the terminal post. The diagonal truss rod is installed at the point where the brace rail is attached to the terminal post and diagonally down to the bottom of the adjacent line post. Place the truss rod in tension by adjusting the turnbuckle.

G. Tension wire: Install tension wires so that it will be located 4” (101.6 m) up from bottom the fabric. If top rail is not specified, install the tension wire so that it will be located 4” (101.6 mm) down from the top of the fabric. Stretch and Install tension wire before installing the chain link fabric and attach it to each post using wire ties.

H. Top rail: Install in lengths of 21’ (6.4 m). Connect ends with sleeves forming a rigid connection, allow for expansion and contraction.

I. Bottom Rails: Install bottom rails between posts and attach to post using rail end or line rail clamps.

3.03 BARBED WIRE AND BARBED TAPE INSTALLATION

A. Uniformly space and stretch barbed wire between terminal posts. Attach barbed wire to the terminal posts using brace bands and snap and secure barbed wire into each line post barb arm slot.

B. Install barbed tape in accordance with ASTM F1911.

3.04 CHAIN LINK FABRIC INSTALLATION

A. Fabric: Install fabric on security side, pull fabric taut; thread the tension bar through fabric and attach to terminal posts with tension bands spaced maximum of 15” (381 mm) on center and attach so that fabric remains in tension after pulling force is released. Install fabric so that it is 2” (50 mm) +/- 1” (25 mm) above finish grade.

B. Secure fabric using wire ties to line posts at 15” (381 mm) on center and to rails and braces 24” (610 mm) on center, and to the tension wire using hog rings 24” (610 mm) on center. Tie wire shall be secured to the fabric by wrapping it two 360 degree turns around the chain link wire pickets. Cut off any excess wire and bend back so as not to protrude so as to avoid injury if a pedestrian may come in contact with the fence.

3.05 **CHAIN LINK GATE INSTALLATION**

A. Swing gates: Installation of swing gates and gate posts shall be per ASTM F567. Gates shall be hung plumb in the closed position with minimal space from grade to bottom of gate leaf. Double gate drop bar receiver shall be set in a minimum concrete footing 6” (152 mm) diameter by 24” (610 mm) deep. Gate leaf holdbacks shall be installed on all double gates and all gate leafs greater than 5’ (1524 mm) in width.

END OF SECTION

SECTION 02565 - DUCTILE IRON PIPE (AWWA C151, MODIFIED)

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide ductile iron pipe and all appurtenant work, complete in place, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Commercial Standards:**

ANSI/AWWA C104/A21.4	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
ANSI/AWWA C105/A21.5	Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids
ANSI/AWWA C110/A21.10	Ductile-Iron and Gray-Iron Fittings, 3 in Through 48 in for Water and Other Liquids
ANSI/AWWA C111/A21.11	Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings
ANSI/AWWA C115/A21.15	Flanged Ductile-Iron and Gray-Iron Pipe with Threaded Flanges
ANSI/AWWA C150/A21.50	Thickness Design of Ductile-Iron Pipe
ANSI/AWWA C151/A21.51	Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids
ANSI/AWWA C153/A21.53	Ductile-Iron Compact Fittings, 3 in. Through 12 in. for Water and Other Liquids
AWWA C209	Cold-Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines
AWWA C214	Tape Coating Systems for the Exterior of Steel Water Pipelines
AWWA C600	Installation of Ductile Iron Water Mains and Their Appurtenances
ASTM C 150	Specification for Portland Cement

1.3 CONTRACTOR SUBMITTALS

A. **Shop Drawings:** The CONTRACTOR shall submit shop drawings of pipe and fittings in

accordance with the requirements in Section 01300 - Contractor Submittals, the requirements of the referenced standards and the following supplemental requirements as applicable:

1. Certified dimensional drawings of all valves, fittings, and appurtenances.

2. For pipe 24 inches in diameter and larger, line layout and marking diagrams which indicate the specific number of each fitting and the location and the direction of each fitting in the completed line. In addition, the line layouts shall include: the pipe station and invert elevation at all changes in grade or horizontal alignment; all elements of curves and bends, both in horizontal and vertical alignment; and the limits of each reach of restrained joints, or of concrete encasement.

B. **Certifications:** The CONTRACTOR shall furnish a certified affidavit of compliance for all pipe and other products or materials furnished under this Section of the Specifications, as specified in the referenced standards and the following supplemental requirements:

1. Physical and chemical properties.

2. Hydrostatic test reports.

C. The CONTRACTOR shall be responsible for performing and paying for sampling and testing as necessary for the certifications.

1.4 QUALITY ASSURANCE

A. **Inspection:** All pipe shall be subject to inspection at the place of manufacture in accordance with the provisions of the referenced standards, as supplemented by the requirements herein. The CONTRACTOR shall notify the ENGINEER in writing of the manufacturing starting date not less than 14 calendar days prior to the start of any phase of the pipe manufacture.

B. During the manufacture of the pipe, the ENGINEER shall be given access to all areas where manufacturing is in process and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.

C. **Tests:** Except as modified herein, all materials used in the manufacture of the pipe shall be tested in accordance with the requirements of the referenced standards as applicable.

D. The CONTRACTOR shall perform said material tests at no additional cost to the OWNER. The ENGINEER shall have the right to witness all testing conducted by the CONTRACTOR; provided, that the CONTRACTOR's schedule is not delayed for the convenience of the ENGINEER.

E. In addition to those tests specifically required, the ENGINEER may request additional samples of any material including lining and coating samples for testing by the OWNER. The additional samples shall be furnished as a part of the WORK.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Mortar-lined and polyethylene-wrapped or tape-coated ductile iron pipe shall conform to ANSI/AWWA C151, C104, and C105, or C151 and C214, subject to the following supplemental requirements. The pipe shall be of the diameter and class shown, shall be furnished complete with rubber gaskets as indicated in the Contract Documents, and all specials and fittings shall be provided as required under the Contract Documents.

B. **Markings:** The CONTRACTOR shall legibly mark specials 24 inches in diameter and larger in accordance with the laying schedule and marking diagram. All fittings shall be marked at each end with top field centerline.

C. **Handling and Storage:** The pipe shall be handled by devices acceptable to the ENGINEER, designed and constructed to prevent damage to the pipe coating/exterior. The use of equipment which might injure the pipe coating/exterior will not be permitted. Stockpiled pipe shall be suitably supported and shall be secured to prevent accidental rolling. All other pipe handling equipment and methods shall be acceptable to the ENGINEER.

D. Tape-coated pipe shall have the following additional requirements:

1. It shall be the responsibility of the manufacturer of tape-coated ductile iron pipe to prevent damage of the coating which might be caused by handling and/or storage of the completed pipe at low temperature.

E. **Laying Lengths:** Maximum pipe laying lengths shall be 20 ft with shorter lengths provided as required by the Drawings.

F. **Finish:** The pipe shall have smooth dense interior surfaces and shall be free from fractures, excessive interior surface crazing and roughness.

G. **Bonding and Electrical Conductivity:** All pipe joints shall be prepared for bonding for electrical conductivity in accordance with the details shown. The CONTRACTOR shall furnish all materials required for joint bonding and electrolysis test station installations.

H. **Closures and Correction Pieces:** Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so that correction may be made to adjust the pipe laying to conform to pipe stationing shown on the Drawings. The locations of correction pieces and closure assemblies are shown on the Drawings. Any change in location or number of said items shall be acceptable to the ENGINEER.

2.2 PIPE DESIGN CRITERIA

A. **General:** Ductile iron pipe shall be designed in accordance with the requirements of ANSI/AWWA C150 as applicable and as modified in this Section.

B. **Pipe Wall Thickness for Internal Pressure:** The pipe shall be designed with a net thickness to withstand the design pressure in accordance with the hoop stress formula.

C. **Pipe Wall Thickness for External Load:** The pipe shall also be designed with a net thickness to withstand external loads using ANSI/AWWA C150 Design Equation (2) with the appropriate bending moment and deflection coefficients for Laying Condition Types 4

and 5 as applicable.

D. The pipe deflection shall be checked using ANSI/AWWA C150 Design Equation (3) and the coefficients stated above. The allowable deflection shall not exceed 0.0225 times the nominal diameter.

E. In lieu of ANSI/AWWA C150 Design Equation (4), the earth loads will be computed using the following 2 equations for trench or embankment loading as applicable:

1. Trench Condition:

$$W_d = C_d w B_d^2$$

Where:

W_d	=	Earth Load in pounds per linear foot
C_d	=	Calculation Coefficient
Ku'	=	[0.13]
w	=	[120] lb/ft^3
B_d	=	Trench width at top of pipe, feet

2. Positive Projecting Embankment Condition:

$$W_c = C_c w B_c^2$$

Where:

W_c	=	Earth Load in pounds per linear foot
C_c	=	Calculation Coefficient (based on $r_{sd}P$ of 0.25)
Ku	=	[0.19]
w	=	[120] lb/ft^3
B_c	=	Outside diameter of pipe, feet

F. The above 2 formulas are based on a depth of cover of 10 feet or greater. For depths of cover of less than 10 feet, HS-20 live load shall be included. For depths of cover of 3 feet or less, HS-20 live load plus impact shall be included. The determination of live load and impact factors shall be as recommended by AASHTO in "Standard Specifications for Highway Bridges."

G. If the calculated deflection, $Defl_x$, exceeds 0.0225 times the nominal diameter, the pipe class shall be increased.

H. **Minimum Pipe Wall Thickness:** In addition to the requirements of this Section, the minimum wall thickness shall be in accordance with Table 50.5 of ANSI/AWWA C150.

2.3 MATERIALS

A. **Ductile Iron Pipe:** Pipe materials shall conform to the requirements of ANSI/AWWA C151.

B. **Cement:** Cement for mortar lining shall conform to the requirements of ANSI/AWWA C104; provided, that cement for mortar lining shall be Type II or V. Cement shall not originate from kilns which burn metal-rich hazardous waste fuel, nor shall a fly ash or pozzolan be used as a cement replacement.

C. **Polyethylene Sleeve:** Material for the polyethylene sleeve shall conform to the

requirements of ANSI/AWWA C105.

D. **Prefabricated Multi-layer Cold-Applied Tape Coating:** Except as described below, the coating system for straight line pipe shall be in accordance with AWWA C214. The system shall consist of at least four layers consisting of the following:

1. primer layer

2. inner layer tape - corrosion protective tape (20 mils)

3. outer layer tape - mechanical protective tape (30 mils) with white exterior

4. outer layer tape - mechanical protective tape (30 mils) with white exterior

The total thickness of the tape coating shall be at least 80 mils.

2.4 SPECIALS AND FITTINGS

A. Fittings for ductile iron pipe shall conform to the requirements of ANSI/AWWA C153/A21.53 or ANSI/AWWA C110/A21.10 for diameters 3-inch through 48-inch and shall have a minimum pressure rating of 250 psi. Ductile iron fittings larger than 48-inch shall conform to the above referenced standard with the necessary modifications for the larger size.

2.5 DESIGN OF PIPE

A. **General:** The pipe furnished shall be ductile iron pipe, mortar-lined and polyethylene-wrapped with rubber-gasketed joints as shown, unless otherwise stated.

B. The pipe shall be designed, manufactured, tested, inspected, and marked according to applicable requirements previously stated and except as hereinafter modified, shall conform to ANSI/AWWA C151.

C. **Pipe Dimensions:** The pipe shall be of the diameter and class shown. The minimum wall thickness for each pipe size shall be as specified or shown.

D. **Fitting Dimensions:** The fittings shall be of the diameter and class shown.

E. **Joint Design:** Ductile iron pipe and fittings shall be furnished with mechanical joints, push-on joints, flanged joints, and restrained joints as required.

1. Mechanical and push-on joints shall conform to ANSI/AWWA C111/A21.11.

2. Flanged joints shall conform to ANSI/AWWA C115/A21.15.

3. Restrained joints shall be mechanically restrained. Thrust blocks are not allowed.

F. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed. The CONTRACTOR shall require the pipe manufacturer to submit details complete with significant dimensions and tolerances and also to submit performance data indicating that

the proposed joint has performed satisfactorily under similar conditions. In the absence of a history of field performance, the results of a test program shall be submitted.

G. Shop-applied interior linings and exterior coatings shall be held back from the ends of the pipe as shown or as otherwise acceptable to the ENGINEER.

2.6 CEMENT-MORTAR LINING

A. **Cement-Mortar Lining for Shop Application:** Except as otherwise provided herein, interior surfaces of all ductile iron pipe, fittings, and specials shall be cleaned and lined in the shop with cement-mortar lining applied centrifugally in conformity with ANSI/AWWA C104. During the lining operation and thereafter, the pipe shall be maintained in a round condition by suitable bracing or strutting. The lining machines shall be of a type that has been used successfully for similar work. Every precaution shall be taken to prevent damage to the lining. If lining is damaged or found faulty at delivery site, the damaged or unsatisfactory portions shall be replaced with lining conforming to these Specifications.

B. The minimum lining thickness shall be as follows:

Nominal Pipe Diameter (in)	Minimum Lining Thickness (in)
3-12	1/8
14-24	3/16
30-54	1/4

C. **Protection of Pipe Lining/Interior:** All shop-applied cement mortar lining shall be given a seal coat of asphaltic material in conformance with ANSI/AWWA C104.

2.7 EXTERIOR COATING OF PIPE

A. **Exterior Coating of Exposed Piping:** The exterior surfaces of pipe which will be exposed to the atmosphere inside structures or above ground shall conform to the requirements of Section 09800, "Protective Coating."

B. **Exterior Coating of Buried Piping:** The exterior coating shall be an asphaltic coating approximately 1 mil thick. All buried pipe shall be polywrap encased, per section 3.3.

C. **Exterior/Interior Transition:** Pipe sections transitioning from buried to exposed (i.e. at concrete wall penetrations) shall be cold-applied tape coated, per section 3.4, within 3 feet of wall on buried side, and extend 6” past penetration on interior side.

PART 3 -- EXECUTION

3.1 INSTALLATION OF PIPE

A. **Handling and Storage:** All pipe, fittings, etc., shall be carefully handled and protected against damage, impact shocks, and free fall. All pipe handling equipment shall be acceptable to the ENGINEER. Pipe shall not be placed directly on rough ground but shall be supported in a manner which will protect the pipe against injury whenever stored at the trench site or elsewhere. No pipe shall be installed where the lining or coating show

defects that may be harmful as determined by the ENGINEER. Such damaged lining or coating shall be repaired, or a new undamaged pipe shall be furnished and installed.

B. All pipe damaged prior to Substantial Completion shall be repaired or replaced by the CONTRACTOR.

C. The CONTRACTOR shall inspect each pipe and fitting prior to installation to insure that there are no damaged portions of the pipe.

D. Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon and shall be kept clean at all times thereafter. For this purpose, the openings of all pipes and fittings in the trench shall be closed during any interruption to the WORK.

E. **Pipe Laying:** The pipe shall be installed in accordance with ANSI/AWWA C600.

F. Pipe shall be laid directly on the [imported] bedding material. No blocking will be permitted, and the bedding shall be such that it forms a continuous, solid bearing for the full length of the pipe. Excavations shall be made as needed to facilitate removal of handling devices after the pipe is laid. Bell holes shall be formed at the ends of the pipe to prevent point loading at the bells or couplings. Excavation shall be made as needed outside the normal trench section at field joints to permit adequate access to the joints for field connection operations and for application of coating on field joints.

G. Each section of pipe 24 inches in diameter and larger shall be laid in the order and position shown on the laying schedule. In laying pipe, it shall be laid to the set line and grade, within approximately one inch plus or minus. On grades of zero slope, the intent is to lay to grade.

H. Where necessary to raise or lower the pipe due to unforeseen obstructions or other causes, the ENGINEER may change the alignment and/or the grades. Such change shall be made by the deflection of joints, by the use of bevel adapters, or by the use of additional fittings. However, in no case shall the deflection in the joint exceed the maximum deflection recommended by the pipe manufacturer. No joint shall be misfit any amount which will be detrimental to the strength and water tightness of the finished joint.

I. Except for short runs which may be permitted by the ENGINEER, pipes shall be laid uphill on grades exceeding 10 percent. Pipe which is laid on a downhill grade shall be blocked and held in place until sufficient support is furnished by the following pipe to prevent movement. All bends shall be properly installed as shown.

J. **Cold Weather Protection:** No pipe shall be installed upon a foundation into which frost has penetrated or at any time that there is a danger of the formation of ice or penetration of frost at the bottom of the excavation. No pipe shall be laid unless it can be established that the trench will be backfilled before the formation of ice and frost occurs.

K. **Pipe and Specials Protection:** The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water or any undesirable substance. At all times, means shall be provided to prevent the pipe from floating.

L. **Pipe Cleanup:** As pipe laying progresses, the CONTRACTOR shall keep the pipe interior

free of all debris. The CONTRACTOR shall completely clean the interior of the pipe of all sand, dirt, mortar splatter and any other debris following completion of pipe laying, pointing of joints and any necessary interior repairs prior to testing and disinfecting the completed pipeline.

3.2 RUBBER GASKETED JOINTS

A. **Rubber Gasketed Joints:** Immediately before jointing pipe, the bell end of the pipe shall be thoroughly cleaned, and a clean rubber gasket lubricated with an approved vegetable-based lubricant shall be placed in the bell groove. The spigot end of the pipe shall be carefully cleaned and lubricated with a vegetable-based lubricant. The spigot end of the pipe section shall then be inserted into the bell of the previously laid joint and telescoped into its proper position. Tilting of the pipe to insert the spigot into the bell will not be permitted.

3.3 POLYETHYLENE SLEEVE UNBONDED COATING

A. Buried ductile iron pipe shall be polyethylene encased in accordance with the requirements of ANSI/AWWA C105/A21.5.

3.4 BONDED TAPE COATING

A. **General:** The exterior joint recesses shall be thoroughly wiped clean and all water, loose scale, dirt, and other foreign material shall be removed from the surface of the pipe.

B. **Joint Coating of Tape-Coated Pipe:** Joints for tape-coated pipe shall be primed and wrapped with 2 thicknesses of 6-inch wide elastomeric joint tape, Type II per ANSI/AWWA C209. The total thickness of the tape wrap shall be at least 70 mils and shall be installed free of wrinkles with all laps bonded. All primer and joint tape shall be compatible with the line pipe coating.

C. All tape-coated joints will be tested by the ENGINEER with an electrical flaw detector capable of at least a 12,000 volt output, furnished by the CONTRACTOR. The tests shall be made using a voltage of 6,000 to 7,000 volts. Any holidays found shall be repaired by the CONTRACTOR at no expense to the OWNER.

D. **Coating Repair:** Coating repair shall be made using tape and primer conforming to ANSI/AWWA C209. When visual inspection shows a portion of the tape-wrap system has sustained physical damage, the damaged area shall be subjected to an electrical holiday test of 6,000 to 7,000 volts.

E. Following repair of the damaged area if the holiday test indicates a holiday still exists, the inner wrap shall be exposed and the exposed area shall be wiped clean with xylol solvent, or equal, and the area coated with tape primer. A patch of 35-mil thick cold-applied tape of sufficient size to cover the damaged area, plus a minimum lap of 2 inches in all directions, shall then be applied. The patched area shall again be tested for holidays. If none are detected, a second layer of 35-mil thick tape shall then be applied over the first patch. The second layer of tape shall overlap the first layer a minimum of 2 inches in all directions.

F. When the area tests showing no holiday, a notation shall be applied to the area indicating the test is satisfactory.

G. **Coating of Fittings and Specials:** Fittings and specials shall be coated in accordance with ANSI/AWWA C209. Prefabricated tape shall be Type II and shall be completely compatible with the tape system used for straight line pipe. The system shall consist of three layers consisting of the following:

1. primer layer

2. inner layer tape - corrosion protective tape (35 mils)

3. outer layer tape - corrosion protective tape (35 mils)

The total thickness of the tape coating shall be at least 70 mils.

3.5 INSTALLATION OF PIPE APPURTENANCES

A. **Protection of Appurtenances:** Where the joining pipe is tape-coated, buried appurtenances shall be coated with cold-applied tape in accordance with ANSI/AWWA C209, Type II. Where pipe is encased in polyethylene sleeves, buried appurtenances shall also be encased in polyethylene.

B. **Installation of Valves:** All valves shall be handled in a manner to prevent any injury or damage to any part of the valve. All joints shall be thoroughly cleaned and prepared prior to installation. The CONTRACTOR shall adjust all stem packing and operate each valve prior to installation to insure proper operation.

C. All valves shall be installed so that the valve stems are plumb and in the location shown.

3.6 CORROSION CONTROL

A. **Joint Bonding/Electrolysis Test Stations:** Except where otherwise specified, all joints shall be bonded in accordance with the details shown. The pipe shall be cleaned to bare bright metal at the point where the bond is installed. In addition, electrolysis test stations shall be installed where shown.

- END OF SECTION -

SECTION 02589 - ABS AND PVC COMPOSITE PIPE
(ASTM D 2680, MODIFIED)

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide all acrylonitrile-butadiene-styrene (ABS) and polyvinyl chloride (PVC) composite pipe gravity sewers, and all appurtenant work, complete, all in accordance with the Contract Documents.

B. The pipe shall consist of two concentric extruded thermoplastic tubes integrally braced across the annulus. The resultant annular space shall be filled with inert material such as light-weight Portland cement concrete to provide continuous support between the inner and outer tubes.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Commercial Standards:**

ASTM D 2564	Solvent Cement for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
ASTM D 2680	Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping

1.3 CONTRACTOR SUBMITTALS

A. **Shop Drawings:** The CONTRACTOR shall submit shop drawings of pipe, fittings, and appurtenances in accordance with the requirements of Section 01300, "Contractor Submittals."

B. **Certificates:** The CONTRACTOR shall provide manufacturer's certification that pipe has been tested for stiffness and deflection in accordance with ASTM D 2680, and that the test results comply with the Specification requirements.

1.4 QUALITY ASSURANCE

A. **Mandrel Test:** All ABS and PVC composite gravity sewer pipe shall be tested for deflection and obstructions. The mandrel test shall be performed after backfilling and compacting but prior to final paving and prior to leakage testing.

B. A rigid mandrel, with a circular cross section having a diameter at least 95 percent of the specified average inside diameter, shall be pulled through the pipe by hand. The minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe. If the mandrel sticks in the pipe at any point the pipe shall be repaired and retested.

PART 2 -- PRODUCTS

2.1 GENERAL

A. All ABS and PVC composite pipe shall be continuously and permanently marked with the manufacturer's name, pipe size, ASTM Specification Number, type of plastic, and extrusion code, including date and location of manufacture.

2.2 PIPE AND FITTINGS

A. All ABS and PVC composite pipe and fittings shall conform to the requirements of ASTM Designation D 2680, and shall have either solvent cement joints or elastomeric gasket joints.

2.3 SOLVENT CEMENT JOINTS

A. Primer for ABS and PVC solvent cement joints shall be MEK (methyl ethyl ketone).

B. Cement for ABS joints shall be MEK containing a minimum of 20 percent by weight of dissolved ABS and shall comply with ASTM D 2680.

C. Cement for PVC joints shall comply with ASTM D 2564 except that the minimum resin content shall be 16 percent and minimum viscosity shall be 3500 cP.

2.4 ELASTOMERIC GASKET JOINTS

A. Pipe with gasketed joints shall be manufactured with a socket configuration which will prevent improper installation of the gasket and will ensure that the gasket remains in place during the joining operation. The gasket shall be manufactured from a synthetic elastomer containing not less than 50 percent by volume of first-grade synthetic rubber.

PART 3 -- EXECUTION

3.1 GENERAL

A. All laying, jointing, testing for defects and for leakage shall be performed in the presence of the ENGINEER, and shall be subject to its approval before acceptance. All material found during the progress to have defects will be rejected and the CONTRACTOR shall promptly remove such defective material from the site of the WORK.

3.2 BEDDING

A. Pipe bedding shall conform to the requirements of Section 02200, "Earthwork;" except, that where the depth of trench is such that the cover over the top of the pipe is 2 feet or less, "Concrete Encasement" Bedding shall be used.

3.3 LAYING PIPE

A. ABS and PVC composite pipe shall be installed in conformance with the requirements of the pipe manufacturer's written recommendations and the provisions of this Section.

B. Handling of the pipe shall be done with care to insure that the pipe is not damaged in any manner during storage, loading, transit, unloading, and installation.

C. The pipe shall be laid to the lines and grades shown on the drawings and the sections shall be closely jointed to form a smooth flow line. Immediately before placing each section of pipe in final position for jointing, the bedding for the pipe shall be checked for firmness and uniformity of surface.

D. The radius of curvature of the trench shall determine the maximum length of pipe section that can be used without exceeding the allowable deflection at a coupling. The deflection at any joint shall not exceed that prescribed by the manufacturer of the pipe. The manufacturer's printed installation guide showing the radii of curvature that can be attained with pipe sections of various lengths shall be followed.

E. Proper implements, tools, and facilities as recommended by the pipe manufacturer's standard printed installation instructions shall be provided and used by the CONTRACTOR for safe and efficient execution of the WORK. All pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, or other suitable equipment in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench.

F. Cutting and machining of the pipe shall be accomplished in accordance with the pipe manufacturer's standard procedures for this operation. Pipe shall not be cut with a cold chisel, standard iron pipe cutter, nor any other method that may fracture the pipe or will produce ragged, uneven edges.

G. The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defective, damaged or unsound pipe shall be repaired or replaced. All foreign matter or dirt shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean during and after laying. All openings in the pipe line shall be closed with water tight expandable type sewer plugs or test plugs at the end of each day's operation or whenever the pipe openings are left unattended. The use of burlap, wood, or other similar plugs will not be permitted.

H. Adequate protection and maintenance of all underground and surface utility structures, drains, sewers, and other obstructions encountered in the progress of the WORK shall be furnished by the CONTRACTOR at its own expense.

I. Where the grade or alignment of the pipe is obstructed by existing utility stuctures such as conduits, ducts, pipes, branch connections to main sewers, or main drains, the obstruction shall be permanently supported, relocated, removed, or reconstructed by the CONTRACTOR in cooperation with owners of such utility structures. Unless otherwise

indicated, such work shall be performed at the CONTRACTOR's expense.

3.4 FIELD JOINTING

A. **General:** The pipe shall not be deflected either vertically or horizontally in excess of the printed recommendations of the manufacturer of the coupling.

B. When pipe laying is not in progress, the open ends of the pipe shall be closed by approved means to prevent trench water from entering pipe. Adequate backfill shall be deposited on pipe to prevent floating of pipe. Any pipe which has floated shall be removed from the trench, cleaned, and relaid in an acceptable manner. No pipe shall be laid when, in the opinion of the ENGINEER, the trench conditions or weather are unsuitable for such work.

C. **Solvent-Weld Joints:** Each solvent-weld pipe joint shall be sealed with solvent cement in conformance with the requirements of ASTM D 2680 and the manufacturer's printed recommendations. The spigot and socket shall be wiped clean before the solvent cement is applied.

D. **Gasketed Joints:** Each gasketed pipe joint shall be joined with a lock-in elastomeric gasket. The gasket and the gasket seal inside the bell shall be wiped clean before the gasket is inserted. At this time a liberal amount of lubricant shall be applied to the gasket and to the outside of the clean pipe end. Lubricant other than that furnished with the pipe shall not be used. The end of the pipe shall then be forced into the bell to complete the joint. On field cut spigot ends, the outer pipe wall shall be chamfered with a file to remove all burrs and rough spots.

- END OF SECTION -

SECTION 03100 - CONCRETE FORMWORK

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall furnish concrete formwork, bracing, shoring, and supports and shall design and construct falsework in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Government Standards:**

PS 1	Construction and Industrial Plywood
PS 20	American Softwood Lumber Standard

B. **Commercial Standards:**

ACI 117	Standard Tolerances for Concrete Construction and Materials

1.3 CONTRACTOR SUBMITTALS

A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.

B. Manufacturer's information demonstrating compliance with requirements.

1. Form ties and related accessories, including taper tie plugs, if taper ties are used.

2. Form gaskets.

3. Form release agent, including NSF certification.

4. List of form materials and locations for use.

C. **Shop Drawings:** Detailed plans of the falsework proposed to be used. Such plans shall be in sufficient detail to indicate the general layout, sizes of members, anticipated stresses, grade of materials to be used in the falsework, means of protecting existing construction which supports falsework, and typical soil conditions. Include a list of form materials and locations for use.

1.4 QUALITY ASSURANCE

A. **Tolerances:** The variation from required lines or grade shall not exceed 1/4-inch in 10 feet and there shall be no offsets or visible waviness in the finished surface. All other tolerances shall be within the tolerances of ACI 117.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Except as otherwise expressly accepted by the ENGINEER, lumber brought on the Site for use as forms, shoring, or bracing shall be new material. Forms shall be smooth surface forms and shall be of the following materials:

B. Form materials which may remain or leave residues on or in the concrete shall be certified as compliant with NSF Standard 61.

2.2 FORM AND FALSEWORK MATERIALS

A. Materials for concrete forms, formwork, and falsework shall conform to the following requirements:

1. Lumber shall be Douglas Fir or Southern Yellow Pine, construction grade or better, in conformance with U.S. Product Standard PS 20.

2. Plywood for concrete formwork shall be new, waterproof, synthetic resin bonded, exterior type Douglas Fir or Southern Yellow Pine plywood manufactured especially for concrete formwork, shall conform to the requirements of PS 1 for Concrete Forms, Class I, and shall be edge sealed.

3. Form materials shall be metal, wood, plywood, or other material that will not adversely affect the concrete and will facilitate placement of concrete to the shape, form, line, and grade indicated. Metal forms shall accomplish such results. Wood forms for surfaces to be painted shall be Medium Density Overlaid plywood, MDO Ext. Grade.

B. Unless otherwise indicated, exterior corners in concrete members shall be provided with 3/4-inch chamfers or be tooled to 1/2-inch radius. Re-entrant corners in concrete members shall not have fillets unless otherwise indicated.

C. Forms and falsework to support the roof and floor slabs shall be designed for the total dead load, plus a live load of 50 psf minimum. The minimum design load for combined dead and live loads shall be 100 psf.

2.3 FORM TIES

A. Form ties shall be provided with a plastic cone or other suitable means for forming a conical hole to insure that the form tie may be broken off back of the face of the concrete. The maximum diameter of removable cones for rod ties, or of other removable form-tie fasteners having a circular cross-section, shall not exceed 1-1/2 inches; and all such fasteners shall be such as to leave holes of regular shape for reaming. Form ties for water-retaining structures shall have integral waterstops that tightly fit the form tie so that they cannot be moved from mid-point of the tie.

B. Removable taper ties may be used when approved by the ENGINEER. A preformed neoprene or polyurethane tapered plug sized to seat at the center of the wall shall be inserted in the hole left by the removal of the taper tie.

PART 3 -- EXECUTION

3.1 GENERAL

A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The CONTRACTOR shall assume full responsibility for the adequate design of all forms, and any forms which are unsafe or inadequate in any respect shall promptly be removed from the WORK and replaced. Provide worker protection from protruding reinforcement bars in accordance with applicable safety codes. A sufficient number of forms of each kind shall be available to permit the required rate of progress to be maintained. The design and inspection of concrete forms, falsework, and shoring shall comply with applicable local, state and Federal regulations. Plumb and string lines shall be installed before concrete placement and shall be maintained during placement. Such lines shall be used by CONTRACTOR's personnel and by the ENGINEER and shall be in sufficient number and properly installed. During concrete placement, the CONTRACTOR shall continually monitor plumb and string line form positions and immediately correct deficiencies.

B. Concrete forms shall conform to the shape, lines, and dimensions of members required, and shall be substantial, free from surface defects, and sufficiently tight to prevent leakage. Forms shall be properly braced or tied together to maintain their position and shape under a load of freshly-placed concrete. If adequate foundation for shores cannot be secured, trussed supports shall be provided.

3.2 FORM DESIGN

A. Forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete. Suitable and effective means shall be provided on all forms for holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation of ridges, fins, offsets, or similar surface defects in the finished concrete. Plywood, 5/8-inch and greater in thickness, may be fastened directly to studding if the studs are spaced close enough to prevent visible deflection marks in the concrete. The forms shall be tight so as to prevent the loss of water, cement and fines during placing and vibrating of the concrete. Specifically, the bottom of wall forms that rest on concrete footings or slabs shall be provided with a gasket to prevent loss of fines and paste during placement and vibration of concrete. Such gasket may be a 1- to 1-1/2-inch diameter polyethylene rod held in position to the underside of the wall form. Adequate clean-out holes shall be provided at the bottom of each lift of forms. The size, number, and location of such clean-outs shall be as acceptable to the ENGINEER. Whenever concrete cannot be placed from the top of a wall form in a manner that meets the requirements of the Contract Documents, form windows shall be provided in the size and spacing needed to allow placement of concrete to the requirements of Section 03300 - Cast-in-Place Concrete. The size, number, and location of such form windows shall be as acceptable to the ENGINEER.

3.3 CONSTRUCTION

A. **Vertical Surfaces:** All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is indicated. Not less than 1-inch of concrete shall be added to the indicated thickness of a concrete member where concrete is permitted to be placed against trimmed ground in lieu of forms. Permission to do this on other concrete members will be granted only for members of comparatively limited height and where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing until the concrete has been placed.

B. **Construction Joints:** Concrete construction joints will not be permitted at locations other than those indicated, except as may be acceptable to the ENGINEER. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete. Pipe stubs and anchor bolts shall be set in the forms where required.

C. **Form Ties:**

1. Embedded Ties: Holes left by the removal of form tie cones shall be reamed with suitable toothed reamers so as to leave the surface of the holes clean and rough before being filled with mortar. Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties which cause spalling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1-inch back from the formed face or faces of the concrete.

2. Removable Ties: Where taper ties are approved for use, the larger end of the taper tie shall be on the wet side of walls in water retaining structures. After the taper tie is removed, the hole shall be thoroughly cleaned and roughened for bond. A precast neoprene or polyurethane tapered plug shall be located at the wall centerline. The hole shall be completely filled with non-shrink grout for water bearing and below-grade walls. The hole shall be completely filled with non-shrink or regular cement grout for above-grade walls which are dry on both sides. Exposed faces of walls shall have the outer 2 inches of the exposed face filled with a cement grout which shall match the color and texture of the surrounding wall surface.

3.4 REUSE OF FORMS

A. Forms may be reused only if in good condition and only if acceptable to the ENGINEER. Light sanding between uses will be required wherever necessary to obtain uniform surface texture on all exposed concrete surfaces. Exposed

concrete surfaces are defined as surfaces which are permanently exposed to view. In the case of forms for the inside wall surfaces of hydraulic/water retaining structures, unused tie rod holes in forms shall be covered with metal caps or shall be filled by other methods acceptable to the ENGINEER.

3.5 REMOVAL OF FORMS

A. Careful procedures for the removal of forms shall be strictly followed, and this work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. In the case of roof slabs and above-ground floor slabs, forms shall remain in place until test cylinders for the roof concrete attain a minimum compressive strength of 75 percent of the 28-day strength in Section 03300 - Cast-in-Place Concrete. No forms shall be disturbed or removed under an individual panel or unit before the concrete in the adjacent panel or unit has attained 75 percent of the 28-day strength and has been in place for a minimum of 7 days. The time required to establish said strength shall be as determined by the ENGINEER who will make several test cylinders for this purpose from concrete used in the first group of roof panels placed. If the time so determined is more than the 7-day minimum, then that time shall be used as the minimum length of time. Forms for vertical walls of waterholding structures shall remain in place at least 36 hours after the concrete has been placed. Forms for parts of the WORK not specifically mentioned herein shall remain in place for periods of time as recommended in ACI 347.

3.6 MAINTENANCE OF FORMS

A. Forms shall be maintained at all times in good condition, particularly as to size, shape, strength, rigidity, tightness, and smoothness of surface. Before concrete is placed, the forms shall be thoroughly cleaned. The form surfaces shall be treated with a nonstaining mineral oil or other lubricant acceptable to the ENGINEER. Any excess lubricant shall be satisfactorily removed before placing the concrete. Where field oiling of forms is required, the CONTRACTOR shall perform the oiling at least two weeks in advance of their use. Care shall be exercised to keep oil off the surfaces of steel reinforcement and other metal items to be embedded in concrete.

3.7 FALSEWORK

A. The CONTRACTOR shall be responsible for the design, engineering, construction, maintenance, and safety of all falsework, including staging, walkways, forms, ladders, and similar appurtenances, which shall equal or exceed the applicable requirements of the provisions of the OSHA Safety and Health Standards for Construction, the requirements of the Construction Safety Orders of the California Division of Industrial Safety, and the requirements herein.

B. Falsework shall be designed and constructed to provide the necessary rigidity and to support the loads. Falsework for the support of a superstructure shall be designed to support the loads that would be imposed if the entire superstructure were placed at one time.

C. Falsework shall be placed upon a solid footing, safe against undermining, and protected from softening. When the falsework is supported on timber piles, the

maximum calculated pile loading shall not exceed 20 tons. When falsework is supported on any portion of the structure which is already constructed, the load imposed by the falsework shall be spread, distributed, and braced in such a way as to avoid any possibility of damage to the structure.

END OF SECTION

SECTION 03200 - REINFORCEMENT STEEL

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall furnish, fabricate, and place all concrete reinforcement steel, welded wire fabric, couplers, and concrete inserts for use in reinforced concrete and masonry construction and shall perform all appurtenant work, including all the wires, clips, supports, chairs, spacers, and other accessories, all in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Commercial Standards

ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements for Reinforced Concrete
CRSI MSP-1	Concrete Reinforcing Steel Institute Manual of Standard Practice
WRI	Manual of Standard Practice for Welded Wire Fabric
AWS D1.4	Structural Welding Code - Reinforcing Steel
ASTM A 82	Specification for Steel Wire, Plain, for Concrete Reinforcement
ASTM A 185	Specification for Welded Steel Wire Fabric, Plain, for Concrete Reinforcement
ASTM A 615	Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 775	Specification for Epoxy-Coated Reinforcing Steel Bars

1.3 CONTRACTOR SUBMITTALS

A. The CONTRACTOR shall furnish shop bending diagrams, placing lists, and drawings of all reinforcement steel prior to fabrication in accordance with the requirements of Section 01300, "Contractor Submittals."

B. Details of the concrete reinforcement steel and concrete inserts shall be submitted by the CONTRACTOR at the earliest possible date after receipt by the CONTRACTOR of the Notice to Proceed. Said details of reinforcement steel for

fabrication and erection shall conform to ACI 315 and the requirements specified and shown. The shop bending diagrams shall show the actual lengths of bars, to the nearest inch measured to the intersection of the extensions (tangents for bars of circular cross section) of the outside surface. The shop drawings shall include bar placement diagrams which clearly indicate the dimensions of each bar splice.

C. Where mechanical couplers are required or permitted to be used to splice reinforcement steel, the CONTRACTOR shall submit manufacturer's literature which contains instructions and recommendations for installation for each type of coupler used; certified test reports which verify the load capacity of each type and size of coupler used; and shop drawings which show the location of each coupler with details of how they are to be installed in the formwork.

D. If reinforcement steel is spliced by welding at any location, the CONTRACTOR shall submit mill test reports which shall contain the information necessary for the determination of the carbon equivalent as specified in AWS D1.4. The CONTRACTOR shall submit a written welding procedure for each type of weld for each size of bar which is to be spliced by welding; merely a statement that AWS procedures will be followed is not acceptable.

1.4 QUALITY ASSURANCE

A. If requested by the ENGINEER, the CONTRACTOR shall provide samples from each heat of reinforcement steel delivered in a quantity adequate for testing. Costs of initial tests will be paid by the OWNER. Costs of additional tests due to material failing initial tests shall be paid by the CONTRACTOR.

B. If reinforcement steel is spliced by welding at any location, the CONTRACTOR shall submit certifications of procedure qualifications for each welding procedure used and certification of welder qualifications, for each welding procedure, and for each welder performing the work. Such qualifications shall be as specified in AWS D1.4.

C. If requested by the ENGINEER, the CONTRACTOR shall provide samples of each type of welded splice used in the work in a quantity and of dimensions adequate for testing. At the discretion of the ENGINEER, radiographic testing of direct butt welded splices will be performed. The CONTRACTOR shall provide assistance necessary to facilitate testing. The CONTRACTOR shall repair any weld which fails to meet the requirements of AWS D1.4. The costs of testing will be paid by the OWNER; except, the costs of all tests which fail to meet specified requirements shall be paid by the CONTRACTOR.

PART 2 -- PRODUCTS

2.1 MATERIAL REQUIREMENTS

A. Materials specified in this Section which may remain or leave residues on or within the concrete shall be classified as acceptable for potable water use by the Environmental Protection Agency within 30 days of application or use.

2.2 REINFORCEMENT STEEL

A. Reinforcement Steel for all cast-in-place reinforced concrete construction shall conform to the following requirements:

1. Bar reinforcement shall conform to the requirements of ASTM A 615 for Grade 60 Billet Steel Reinforcement or as otherwise shown.

2. Welded wire fabric reinforcement shall conform to the requirements of ASTM A 185 and the details shown; provided, that welded wire fabric with longitudinal wire of W4 size wire and smaller shall be either furnished in flat sheets or in rolls with a core diameter of not less than 10 inches; and provided further, that welded wire fabric with longitudinal wires larger than W4 size shall be furnished in flat sheets only.

3. Spiral reinforcement shall be cold-drawn steel wire conforming to the requirements of ASTM A 82.

B. Accessories

1. Accessories shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcement during concrete placement. All bar supports shall meet the requirements of the CRSI Manual of Standard Practice including special requirements for supporting epoxy coated reinforcing bars. Wire bar supports shall be CRSI Class 1 for maximum protection with a 1/8-inch minimum thickness of plastic coating which extends at least 1/2-inch from the concrete surface. Plastic shall be gray in color.

2. Concrete blocks (dobies), used to support and position reinforcement steel, shall have the same or higher compressive strength as specified for the concrete in which it is located. Wire ties shall be embedded in concrete block bar supports.

C. Epoxy coating for reinforcing and accessories, where specified or shown, shall conform to ASTM A 775.

2.3 MECHANICAL COUPLERS

A. Mechanical couplers shall be provided where shown and where approved by the ENGINEER. The couplers shall develop a tensile strength which exceeds 125 percent of the yield strength of the reinforcement bars being spliced at each splice.

B. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be supplied. This shall apply to all mechanical splices, including those splices intended for future connections.

C. The reinforcement steel and coupler used shall be compatible for obtaining the required strength of the connection. Straight threaded type couplers shall require the use of the next larger size reinforcing bar or shall be used with reinforcing bars with specially forged ends which provide upset threads which do not decrease the basic cross section of the bar.

2.4 WELDED SPLICES

A. Welded splices shall be provided where shown and where approved by the ENGINEER. All welded splices of reinforcement steel shall develop a tensile strength which exceeds 125 percent of the yield strength of the reinforcement bars which are connected.

B. All materials required to conform the welded splices to the requirements of AWS D1.4 shall be provided.

2.5 EPOXY GROUT

A. Epoxy for grouting reinforcing bars shall be specifically formulated for such application, for the moisture condition, application temperature, and orientation of the hole to be filled. Epoxy grout shall meet the requirements found in Section 03315, "Grout."

PART 3 -- EXECUTION

3.1 GENERAL

A. All reinforcement steel, welded wire fabric, couplers, and other appurtenances shall be fabricated, and placed in accordance with the requirements of the Building Code and the supplementary requirements specified herein.

3.2 FABRICATION

A. General

1. Reinforcement steel shall be accurately formed to the dimensions and shapes shown, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings. Stirrups and tie bars shall be bent around a pin having a diameter not less than 1-1/2-inch for No. 3 bars, 2-inch for No. 4 bars, and 2-1/2-inch for No. 5 bars. Bends for other bars shall be made around a pin having a diameter not less than 6 times the bar diameter, except for bars larger than 1 inch, in which case the bends shall be made around a pin of 8 bar diameters. Bars shall be bent cold.

2. The CONTRACTOR shall fabricate reinforcement bars for structures in accordance with bending diagrams, placing lists, and placing drawings. Said drawings, diagrams, and lists shall be prepared by the CONTRACTOR as specified under Section 01300, "Contractor Submittals."

B. **Fabricating Tolerances:** Bars used for concrete reinforcement shall meet the following requirements for fabricating tolerances:

1. Sheared length: $\pm$ 1 inch

2. Depth of truss bars: + 0, - 1/2 inch

3. Stirrups, ties, and spirals: ± 1/2 inch

4. All other bends: ± 1 inch

3.3 PLACING

A. Reinforcement steel shall be accurately positioned as shown, and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcement steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcement steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used, in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. All concrete blocks used to support reinforcement steel shall be tied to the steel with wire ties which are embedded in the blocks. For concrete over formwork, the CONTRACTOR shall furnish concrete, metal, plastic, or other acceptable bar chairs and spacers.

B. Limitations on the use of bar support materials shall be as follows.

1. Concrete Dobies: permitted at all locations except where architectural finish is required.

2. Wire Bar Supports: permitted only at slabs over dry areas, interior dry wall surfaces, and exterior wall surfaces.

3. Plastic Bar Supports: permitted at all locations except on grade.

C. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.

D. Bars additional to those shown which may be found necessary or desirable by the CONTRACTOR for the purpose of securing reinforcement in position shall be provided by the CONTRACTOR at its own expense.

E. Unless otherwise specified, reinforcement placing tolerances shall be within the limits specified in Section 7.5 of ACI 318 except where in conflict with the requirements of the Building Code.

F. Bars may be moved as necessary to avoid interference with other reinforcement steel, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be as acceptable to the ENGINEER.

G. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters. Slab bolsters shall be spaced not more than 30 inches on centers, shall extend continuously across the entire width of the reinforcement mat, and shall support the reinforcement mat in the plane shown.

H. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than 3 feet on centers in any direction. The construction practice of placing welded wire fabric on the ground and hooking into

place in the freshly placed concrete shall not be used.

I. Epoxy coated reinforcing bars shall be stored, transported, and placed in such a manner as to avoid chipping of the epoxy coating. Non-abrasive slings made of nylon and similar materials shall be used. Specially coated bar supports shall be used. All chips or cracks in the epoxy coating shall be repaired with a compatible epoxy repair material prior to placing concrete.

J. Accessories supporting reinforcing bars shall be spaced such that there is no deflection of the accessory from the weight of the supported bars. When used to space the reinforcing bars from wall forms, the forms and bars shall be located so that there is no deflection of the accessory when the forms are tightened into position.

3.4 SPACING OF BARS

A. The clear distance between parallel bars (except in columns and between multiple layers of bars in beams) shall be not less than the nominal diameter of the bars nor less than 1-1/3 times the maximum size of the coarse aggregate, nor less than one inch.

B. Where reinforcement in beams or girders is placed in 2 or more layers, the clear distance between layers shall be not less than one inch.

C. In columns, the clear distance between longitudinal bars shall be not less than 1-1/2 times the bar diameter, nor less than 1-1/2 times the maximum size of the coarse aggregate, nor less than 1-1/2 inches.

D. The clear distance between bars shall also apply to the distance between a contact splice and adjacent splices or bars.

3.5 SPLICING

A. General

1. Reinforcement bar splices shall only be used at locations shown. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the ENGINEER.

2. Unless otherwise indicated, dowels shall match the size and spacing of the spliced bar.

B. Splices of Reinforcement

1. The length of lap for reinforcement bars, unless otherwise shown shall be in accordance with ACI 318-89, Section 12.15.1 for a Class B splice.

2. Laps of welded wire fabric shall be in accordance with the ACI 318. Adjoining sheets shall be securely tied together with No. 14 tie wire, one tie for each 2 running feet. Wires shall be staggered and tied in such a manner that they cannot slip.

3. Splices in column spiral reinforcement, when necessary, shall be made by welding or by a lap of 1-1/2 turns.

C. Bending or Straightening

1. Reinforcement shall not be straightened or rebent in a manner which will injure the material. Bars with kinks or bends not shown shall not be used. All bars shall be bent cold, unless otherwise permitted by the ENGINEER. No bars partially embedded in concrete shall be field-bent except as shown or specifically permitted by the ENGINEER.

D. Couplers which are located at a joint face shall be a type which can be set either flush or recessed from the face as shown. The couplers shall be sealed during concrete placement to completely eliminate concrete or cement paste from entering. Couplers intended for future connections shall be recessed a minimum of 1/2 inch from the concrete surface. After the concrete is placed, the coupler shall be plugged with plastic plugs which have an O-ring seal and the recess filled with sealant to prevent any contact with water or other corrosive materials. Threaded couplers shall be plugged .

E. Unless noted otherwise, mechanical coupler spacing and capacity shall match the spacing and capacity of the reinforcing shown for the adjacent section.

3.6 CLEANING AND PROTECTION

A. Reinforcement steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.

B. The surfaces of all reinforcement steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar and other foreign substances immediately before the concrete is placed. Where there is delay in depositing concrete, reinforcement shall be reinspected and, if necessary recleaned.

3.7 EMBEDMENT OF DRILLED REINFORCING STEEL DOWELS

A. Hole Preparation

1. The hole diameter shall be as recommended by the epoxy manufacturer but shall be no larger than 0.25 inch greater than the diameter of the outer surface of the reinforcing bar deformations.

2. The depth of the hole shall be as recommended by the epoxy manufacturer to fully develop the bar but shall not be less than 12 bar diameters, unless noted otherwise.

3. The hole shall be drilled by methods which do not interfere with the proper bonding of epoxy.

4. Existing reinforcing steel in the vicinity of proposed holes shall be located prior to drilling. The location of holes to be drilled shall be adjusted to avoid drilling through or nicking any existing reinforcing bars.

5. The hole shall be blown clean with clean, dry compressed air to remove all dust and loose particles.

6. Epoxy shall be injected into the hole through a tube placed to the bottom of the hole. The tube shall be withdrawn as epoxy is placed but kept immersed to prevent formation of air pockets. The hole shall be filled to a depth that insures that excess material will be expelled from the hole during dowel placement.

7. Dowels shall be twisted during insertion into the partially filled hole so as to guarantee full wetting of the bar surface with epoxy. The bar shall be inserted slowly enough to avoid developing air pockets.

- END OF SECTION -

SECTION 03290 - JOINTS IN CONCRETE

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide joints in concrete, complete and in place, in accordance with the Contract Documents.

B. Joints in concrete structures shall be the types defined below and will be permitted only where indicated, unless specifically accepted by the ENGINEER.

1.2 TYPES OF JOINTS

A. **Construction Joints:** When fresh concrete is placed against a hardened concrete surface, the joint between the two pours is called a construction joint. Unless otherwise indicated, joints in water bearing members shall be provided with a waterstop and/or sealant groove of the shape indicated. The surface of the first pour may also be required to receive a coating of bond breaker as indicated.

B. **Contraction Joints:** Contraction joints are similar to construction joints except that the fresh concrete shall not bond to the hardened surface of the earlier pour, which shall be coated with a bond breaker. The slab reinforcement shall be stopped 4-1/2 inches from the joint; which is provided with a sleeve-type dowel, to allow shrinkage of the concrete of the later pour. Waterstop and/or sealant groove shall also be provided when indicated.

C. **Expansion Joints:** To allow the concrete to expand freely, a space is provided between the two pours, and the joint shall be formed as indicated. The space is obtained by placing a filler joint material against the earlier pour, to act as a form for the later pour. Unless otherwise indicated, expansion joints in water bearing members shall be provided with a center-bulb type waterstop as indicated.

1. Premolded expansion joint material shall be installed with the edge at the indicated distance below or back from finished concrete surface, and shall have a slightly tapered, dressed, and oiled wood strip secured to or placed at the edge thereof during concrete placement, which shall later be removed to form space for sealing material.

2. The space so formed shall be filled with a joint sealant material as indicated below. In order to keep the two wall or slab elements in line the joint shall also be provided with a sleeve-type dowel as indicated.

D. **Control Joints:** The function of the control joint is to provide a weaker plane in the concrete, where shrinkage cracks will probably occur. A groove, of the shape and dimensions indicated, is formed or saw-cut in the concrete. This groove is afterward filled with a joint sealant material.

1.3 CONTRACTOR SUBMITTALS

A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.

B. Shop Drawings

1. Placement drawings showing the location and type of all joints for each structure.

2. Certified test reports from the sealant manufacturer on the actual batch of material being supplied indicating compliance with requirements shall be furnished before the sealant is used on the job.

3. Copies of Waterstop Welding Certification to be provided by manufacturer or authorized agent of manufacturer. Every person who is to be involved with waterstop installation is required to have individual Certification on file with ENGINEER, which states said individuals are certified and trained to install waterstop per manufacturer's recommendations and specifications.

4. Manufacturer's information demonstrating compliance of the following with indicated requirements:

   a. Bearing Pad
   b. Neoprene Sponge
   c. Preformed Joint Filler
   d. Backing Rod
   e. Bond Breaker
   f. Waterstop
   g. Slip Dowels
   h. PVC Tubing

C. Samples

1. Prior to production of the material required under this contract, qualification samples of waterstops shall be submitted which represent in all respects the material proposed. Such samples shall consist of extruded or molded sections of each size or shape to be used. The balance of the material to be used under this contract shall not be produced until after the ENGINEER has reviewed the qualification samples.

D. **Certificates:** Written certification from the manufacturer as an integral part of the shipping form, to show that all of the material shipped to this project meets or exceeds the physical property requirements of the Contract Documents. Supplier certificates are not acceptable.

1.4 QUALITY ASSURANCE

A. **Waterstop Inspection:** It is required that all waterstop field joints shall be subject to rigid inspection, and no such WORK shall be scheduled or started without having made prior arrangements with the ENGINEER for the required inspections. Not less than 24 hours notice shall be given for scheduling such

inspections.

B. Field joints in waterstops shall be subject to rigid inspection for misalignment, bubbles, inadequate bond, porosity, cracks, offsets, and other defects which would reduce the potential resistance of the material to water pressure at any point. Defective joints shall be replaced with material which passes inspection; faulty material shall be removed from the Site and disposed of at no increase in cost to the OWNER.

C. The following waterstop defects represent a partial list of defects which shall be grounds for rejection:

1. Offsets at joints greater than 1/16-inch or 15 percent of material thickness, at any point, whichever is less.

2. Exterior crack at joint, due to incomplete bond, which is deeper than 1/16-inch or 15 percent of material thickness, at any point, whichever is less.

3. Any combination of offset or exterior crack which will result in a net reduction in the cross section of the waterstop in excess of 1/16-inch or 15 percent of material thickness at any point, whichever is less.

4. Misalignment of joint which results in misalignment of the waterstop in excess of 1/2-inch in 10 feet.

5. Porosity in the welded joint as evidenced by visual inspection.

6. Bubbles or inadequate bonding which can be detected with a penknife test. (If, while prodding the entire joint with the point of a pen knife, the knife breaks through the outer portion of the weld into a bubble, the joint shall be considered defective.)

7. Visible signs of separation when the cooled splice is bent by hand at any sharp angle.

8. Any evidence of burned material.

D. **PVC Waterstop Samples:** Prior to use of the waterstop material in the field, a sample of a prefabricated (shop made fitting) mitered cross and a tee constructed of each size or shape of material to be used shall be submitted. These samples shall be prefabricated (shop made fitting) so that the material and workmanship represent in all respects the fittings to be provided. Field samples of prefabricated (shop made fitting) fittings (crosses, tees, etc.) will also be selected at random by the ENGINEER for testing by a laboratory at the OWNER's expense. When tested, tensile strength across the joints shall be at least 1120 psi.

E. **Construction Joint Sealant:** The CONTRACTOR shall prepare adhesion and cohesion test specimens as required herein, at intervals of 5 working days while sealants are being installed.

F. The sealant material shall show no signs of adhesive or cohesive failure when tested in accordance with the following procedure in laboratory and field tests:

1. Sealant specimen shall be prepared between 2 concrete blocks (1-inch by 2-inch by 3-inch). Spacing between the blocks shall be 1-inch. Coated spacers (2-inch by 1-1/2-inch by 1/2-inch) shall be used to insure sealant cross-sections of 1/2-inch by 2 inches with a width of 1-inch.

2. Sealant shall be cast and cured according to manufacturer's recommendations except that curing period shall be not less than 24 hours.

3. Following curing period, the gap between blocks shall be widened to 1-1/2-inch. Spacers shall be used to maintain this gap for 24 hours prior to inspection for failure.

1.5 SPECIAL WARRANTY REQUIREMENTS

A. The CONTRACTOR shall furnish a 5-year written warranty of the entire sealant installation against faulty and/or incompatible materials and workmanship, together with a statement that it agrees to repair or replace, to the satisfaction of the OWNER, any such defective areas which become evident within said 5-year guarantee period.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Joint materials shall be listed as compliant with NSF Standard 61.

2.2 WATERSTOPS

A. **PVC Waterstops:** Waterstops shall be extruded from an elastomeric polyvinyl chloride compound containing the plasticizers, resins, stabilizers, and other materials necessary to meet the requirements of this Section. No reclaimed or scrap material shall be used. The CONTRACTOR shall obtain from the waterstop manufacturer and shall furnish to the ENGINEER for review, current test reports and a written certification of the manufacturer that the material to be shipped to the job meets the physical requirements as outlined in the U.S. Army Corps of Engineers Specification CRD-C572-PVC. At no place shall the thickness of flat strip waterstops, including the center bulb type, be less than 3/8-inch. Waterstop shall be provided with factory installed hog rings at 12 inches on centers along the waterstop.

B. **Waterstop Testing Requirements:** When tested in accordance with the test standards, the waterstop material shall meet or exceed the following requirements:

Physical Property, Sheet Material	Value	ASTM Std.
Tensile Strength-min (psi)	2000	D638, Type IV
Ultimate Elongation-min (percent)	350	D638, Type IV
Low Temp Brittleness-max (degrees F)	-35	D746
Stiffness in Flexure-min (psi)	600	D747
Accelerated Extraction (CRD-C572)		
Tensile Strength-min (psi)	1500	D638, Type IV
Ultimate Elongation-min (percent)	300	D638, Type IV
Effect of Alkalies (CRD-C572)		
Change in Weight (percent)	plus 0.25/minus 0.10	------
Change in Durometer, Shore A	plus and minus 5	D2240
Finish Waterstop		
Tensile Strength-min (psi)	1400	D638, Type IV
Ultimate Elongation-min (percent)	280	D638, Type IV

2.3 JOINT SEALANT FOR WATER BEARING JOINTS

A. Joint sealant shall be polyurethane polymer designed for bonding to concrete which is continuously submerged in water. No material will be acceptable which has an unsatisfactory history as to bond or durability when used in the joints of water retaining structures.

B. Joint sealant material shall meet the following requirements (73 degrees F and 5percent R.H.):

Work Life	45 - 180 minutes
Time to Reach 20 Shore "A" Hardness (at 77 degrees F, 200 gr quantity)	24 hours, maximum
Ultimate Hardness (ASTM D 2240)	20 - 45 Shore "A"
Tensile Strength (ASTM D 412)	175 psi, minimum
Ultimate Elongation (ASTM D 412)	400 percent, minimum
Tear Resistance (Die C, ASTM D 624)	75 pounds per inch of thickness, minimum
Color	Light Gray

C. Polyurethane sealants for waterstop joints in concrete shall conform to the following requirements:

1. Sealant shall be 2-part polyurethane with the physical properties of the cured sealant conforming to or exceeding the requirements of ANSI/ASTM C 920 or Federal Specification TT-S-0227 E(3) - Sealing Compound, Elastomeric Type, Multicomponent, for Caulking, Sealing, and Glazing Buildings and Other Structures, for 2-part material, as applicable.

2. For vertical joints and overhead horizontal joints, only "non-sag" compounds shall be used; all such compounds shall conform to the requirements of ANSI/ASTM C 920 Class 25, Grade NS, or Federal Specification TT-S-0227 E(3), Type II, Class A.

3. For plane horizontal joints, the self-leveling compounds which meet the requirements of ANSI/ASTM C 920 Class 25, Grade P, or Federal Specification TT-S-0227 E(3), Type I shall be used. For joints subject to either pedestrian or vehicular traffic, a compound providing non-tracking characteristics, and having a Shore "A" hardness range of 35 to 45, shall be used.

4. Primer materials, if recommended by the sealant manufacturer, shall conform to the printed recommendations of the manufacturer.

D. Sealants for non-waterstop joints in concrete shall conform to Section 07920 - Sealants and Caulking.

2.4 JOINT MATERIALS

A. **Bearing Pad:** Bearing pad shall be neoprene conforming to ASTM D 2000 - Standard Classification System for Rubber Products in Automotive Applications, BC 420, 40 durometer hardness unless otherwise indicated.

B. **Neoprene Sponge:** Sponge shall be neoprene, closed-cell, expanded, conforming to ASTM D 1056 - Flexible Cellular Materials - Sponge or Expanded Rubber, type 2C5-E1.

C. Joint Filler

1. Joint filler for expansion joints in waterholding structures shall be neoprene conforming to ASTM D1056, type 2C5-E1.

2. Joint filler material in other locations shall be of the preformed non-extruding type joint filler constructed of cellular neoprene sponge rubber or polyurethane of firm texture. Bituminous fiber type will not be permitted. All non-extruding and resilient-type preformed expansion joint fillers shall conform to the requirements and tests set forth in ASTM D 1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction, for Type I, except as otherwise indicated.

2.5 BACKING ROD

A. Backing rod shall be an extruded closed-cell, polyethylene foam rod. The material shall be compatible with the joint sealant material and shall have a tensile strength of not less than 40 psi and a compression deflection of approximately 25 percent at 8 psi. The rod shall be 1/8-inch larger in diameter than the joint width except that a one-inch diameter rod shall be used for a 3/4-inch wide joint.

2.6 Not Used.

2.7 HYDROPHILIC WATERSTOP

A. Hydrophilic waterstop shall be the type which expands in the presence of water to form a watertight joint seal without damaging the concrete in which it is cast.

B. Waterstop shall be manufactured from chloroprene rubber and modified chloroprene rubber with hydrophilic properties. Waterstop shall have a delay coating to inhibit initial expansion due to moisture present in fresh concrete. The minimum expansion ratio of modified chloroprene shall be not less than 2 to 1 volumetric change in distilled water at 70 degrees F (21 degrees C).

Physical Property, Chloroprene	Value	ASTM Std.
Tensile Strength-min (psi)	1275	D 412
Ultimate Elongation-min (percent)	350	D 412
Hardness, Shore A	55 plus and minus 5	D 2240

Physical Property, Modified Chloroprene	Value	ASTM Std.
Tensile Strength-min (psi)	300	D 412
Ultimate Elongation-min (percent)	600	D 412
Hardness, Shore A	55 plus and minus 5	D 2240

C. Bonding agent for hydrophilic waterstop shall be the manufacturer's recommended adhesive for wet, rough concrete.

2.8 SLIP DOWELS

A. Slip dowels in joints shall be smooth epoxy-coated bars, conforming to ASTM A 775 - Epoxy Coated Reinforcing Steel Bars.

2.9 PVC TUBING

A. PVC tubing in joints shall be Sch. SDR 13.5, conforming to ASTM D 2241 - Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).

PART 3 -- EXECUTION

3.1 GENERAL

A. Waterstops shall be embedded in the concrete across joints as indicated. Waterstops shall be fully continuous for the extent of the joint. Splices necessary to provide such continuity shall be accomplished in conformance to printed instructions of manufacturer of the waterstops. The CONTRACTOR shall take suitable precautions and means to support and protect the waterstops during the progress of the work and shall repair or replace at its own expense any waterstops damaged during the progress of the work. All waterstops shall be stored so as to permit free circulation of air around the waterstop material.

B. When any waterstop is installed in the concrete on one side of a joint, while the other half or portion of the waterstop remains exposed to the atmosphere for more than 2 days, suitable precautions shall be taken to shade and protect the exposed waterstop from direct rays of the sun during the entire exposure and until the exposed portion of the waterstop is embedded in concrete.

3.2 SPLICES IN PVC WATERSTOPS

A. Splices in PVC waterstops shall be performed by heat sealing the adjacent waterstop sections in accordance with the manufacturer's printed recommendations. It is essential that:

1. The material not be damaged by heat sealing.

2. The splices have a tensile strength of not less than 80 percent of the unspliced material tensile strength.

3. The continuity of the waterstop ribs and of its tubular center axis be maintained. No edge welding is allowed.

B. Butt joints of the ends of 2 identical waterstop sections may be made while the material is in the forms.

C. All joints with waterstops involving more than 2 ends to be jointed together, and all joints which involve an angle cut, alignment change, or the joining of 2 dissimilar waterstop sections shall be prefabricated (shop made fitting) prior to placement in the forms, allowing not less than 24-inch long strips of waterstop material beyond the joint. Upon being inspected and approved, such prefabricated (shop made fitting) waterstop joint assemblies shall be installed in the forms and the ends of the 24-inch strips shall be butt welded to the straight run portions of waterstop in place in the forms.

D. Where a centerbulb waterstop intersects and is jointed with a non-centerbulb waterstop, care shall be taken to seal the end of the centerbulb, using additional PVC material if needed.

3.3 JOINT CONSTRUCTION

A. **Setting Waterstops:** In order to eliminate faulty installation that may result in joint leakage, particular care shall be taken of the correct positioning of the waterstops during installation. Adequate provisions must be made to support and anchor the waterstops during the progress of the WORK and to insure the proper embedment in the concrete. The symmetrical halves of the waterstops shall be equally divided between the concrete pours at the joints. The center axis of the waterstops shall be coincident with the joint openings. Maximum density and imperviousness of the concrete shall be insured by thoroughly working it in the vicinity of all joints.

B. In placing PVC waterstops in the forms, means shall be provided to prevent them from being folded over by the concrete as it is placed. Waterstops shall be held in place with light wire ties on 12-inch centers which shall be passed through hog rings at the edge of the waterstop and tied to the curtain of reinforcing steel. Horizontal waterstops, with their flat face in a vertical plane, shall be held in place with continuous supports to which the top edge of the waterstop shall be tacked. In placing concrete around horizontal waterstops, with their flat face in a horizontal plane, concrete shall be worked under the waterstops by hand so as to avoid the formation of air and rock pockets.

C. In placing centerbulb waterstops in expansion joints, the centerbulb shall be centered on the joint filler material.

D. Waterstop in vertical wall joints shall stop 6 inches from the top of the wall where such waterstop does not connect with any other waterstop and is not to be connected to a future concrete placement.

E. **Joint Location:** Construction joints and other types of joints shall be provided where indicated. When not indicated, construction joints shall be provided at 25-foot maximum spacing for all concrete construction. Where joints are indicated spaced greater than 40 feet apart, additional joints shall be provided to maintain the 25-foot maximum spacing. The location of all joints, of any type, shall be submitted for acceptance by the ENGINEER.

F. **Joint Preparation:** Special care shall be used in preparing concrete surfaces at joints where bonding between 2 sections of concrete is required. Unless otherwise indicated, such bonding will be required at all horizontal joints in walls. Surfaces shall be prepared in accordance with the requirements of Section 03300 - Cast-in-Place Concrete. Except on horizontal wall construction joints, wall to slab joints, or where otherwise indicated, at all joints where waterstops are required, the joint face of the first pour shall be coated with a bond breaker as indicated herein.

G. **Retrofit Joint Preparation:** Existing surfaces to receive a retrofit waterstop shall be clean and free from any loose or foreign material. Surface shall be given a light sandblast or hydroblast finish to 1/8-inch amplitude prior to application of epoxy and waterstop.

H. **Construction Joint Sealant:** Construction joints in water-bearing floor slabs, and elsewhere as indicated, shall be provided with tapered grooves which shall be filled with a construction joint sealant. The material used for forming the tapered grooves shall be left in the grooves until just before the grooves are cleaned and filled with joint sealant. After removing the forms from the grooves, all laitance and fins shall be removed, and the grooves shall be sand-blasted. The grooves shall be allowed to become thoroughly dry, after which they shall be blown out; immediately thereafter, they shall be primed, bond breaker tape placed in the bottom of the groove, and filled with the construction joint sealant. The primer shall be furnished by the sealant manufacturer. No sealant will be permitted to be used without a primer. Care shall be used to completely fill the sealant grooves. Areas designated to receive a sealant fillet shall be thoroughly cleaned, as outlined for the tapered grooves, prior to application of the sealant.

I. The primer and sealant shall be placed strictly in accordance with the printed recommendations of the manufacturer, taking special care to properly mix the sealant prior to application. The sides of the sealant groove shall not be coated with bond breaker, curing compound, or any other substance which would interfere with proper bonding of the sealant. Sealant shall achieve final cure at least 7 days before the structure is filled with water.

J. Sealant shall be installed by a competent waterproofing specialty contractor who has a successful record of performance in similar installations. Before work is commenced, the crew doing the WORK shall be instructed on the proper method of application by a representative of the sealant manufacturer.

K. Thorough, uniform mixing of 2-part, catalyst-cured materials is essential; special care shall be taken to properly mix the sealer before its application. Before any sealer is placed, the CONTRACTOR shall arrange to have the crew doing the WORK carefully instructed on the proper method of mixing and application by a representative of the sealant manufacturer.

L. Any joint sealant which fails to fully and properly cure after the manufacturer's recommended curing time for the conditions of the WORK hereunder, shall be completely removed; the groove shall be thoroughly sandblasted to remove all traces of the uncured or partially cured sealant and primer, and shall be re-sealed with the indicated joint sealant. Costs of such removal, joint treatment, re-sealing, and appurtenant work shall be paid by the CONTRACTOR.

M. Hydrophilic Waterstop

1. Where a hydrophilic waterstop is called for in the Contract Documents, it shall be installed with the manufacturer's instructions and recommendations except as modified herein.

2. When requested by the ENGINEER, the CONTRACTOR shall arrange for the manufacturer to furnish technical assistance in the field.

3. Hydrophilic waterstop shall only be used where complete confinement by

concrete is provided. Hydrophilic waterstop shall not be used in expansion or contraction joints nor in the first 6 inches of any non-intersecting joint.

4. The hydrophilic waterstop shall be located as near as possible to the center of the joint and it shall be continuous around the entire joint. The minimum distance from the edge of the waterstop to the face of the member shall be 5 inches.

5. Where the thickness of the concrete member to be placed on the hydrophilic waterstop is less than 12 inches, the waterstop shall be placed in grooves formed or ground into the concrete. The groove shall be at least 3/4 inch deep and 1-1/4 inches wide. When placed in the groove, the minimum distance from the edge of the waterstop to the face of the member shall be 2.5 inches.

6. Where a hydrophilic waterstop is used in combination with PVC waterstop, the hydrophilic waterstop shall overlap the PVC waterstop for a minimum of 6 inches and shall be adhered to PVC waterstop with single component water-swelling sealant as recommended by manufacturer.

7. The hydrophilic waterstop shall not be installed where the air temperature falls outside the manufacturer's recommended range.

8. The concrete surface under the hydrophilic waterstop shall be smooth and uniform. The concrete shall be ground smooth if needed. Alternately, the hydrophilic waterstop shall be bonded to the surface using an epoxy grout which completely fills all voids and irregularities beneath the waterstop material. Prior to installation, the concrete surface shall be wire brushed to remove any laitance or other materials that may interfere with the bonding of epoxy.

9. The hydrophilic waterstop shall be secured in place with concrete nails and washers at 12-inch maximum spacing. This shall be in addition to the adhesive recommended by the manufacturer.

N. **Retrofit Waterstop**: Retrofit waterstops shall be set in a bed of epoxy over a sandblasted surface with stainless steel batten bars and 1/4-inch diameter stainless steel anchors at 6 inches on center, staggered, and in accordance with the manufacturer's written recommendations.

- END OF SECTION -

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall furnish all materials for concrete in accordance with the provisions of this Section and shall form, mix, place, cure, repair, finish, and do all other work as required to produce finished concrete, in accordance with the requirements of the Contract Documents.

B. The following types of concrete are covered in this Section:

1. Structural Concrete: Concrete to be used in all cases except where indicated otherwise in the Contract Documents.

2. Sitework Concrete: Concrete to be used for curbs, gutters, catch basins, sidewalks, pavements, fence and guard post embedment, underground duct bank encasement and all other concrete appurtenant to electrical facilities unless otherwise indicated.

3. Lean Concrete: Concrete to be used for thrust blocks, pipe trench cut-off blocks and cradles that are detailed on the Drawings as unreinforced. Lean concrete shall be used as protective cover for dowels intended for future connection.

C. The term "hydraulic structure" used in these specifications means environmental engineering concrete structures for the containment, treatment, or transmission of water, wastewater, or other fluids.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Federal Specifications:

UU-B-790A (1) (2) Building Paper, Vegetable Fiber (Kraft, Waterproofed, Water Repellant and Fire Resistant)

B. Commercial Standards:

ACI 117	Standard Tolerances for Concrete Construction and Materials
ACI 214	Recommended Practice for Evaluation of Strength Test Results of Concrete
ACI 301	Structural Concrete for Buildings
ACI 306.1	Cold Weather Concreting
ACI 309	Consolidation of Concrete
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements for Reinforced Concrete
ASTM C 31	Practices for Making and Curing Concrete Test
ASTM C 33	Concrete Aggregates
ASTM C 39	Test Method for Compressive Strength of Cylindrical

	Concrete Specimens
ASTM C 94	Ready-Mixed Concrete
ASTM C 136	Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 143	Test Method for Slump of Hydraulic Cement Concrete
ASTM C 150	Portland Cement
ASTM C 156	Test Methods for Water Retention by Concrete Curing Materials
ASTM C 157	Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete
ASTM C 192	Practice for Making and Curing Concrete Test Specimens in the Laboratory
ASTM C 260	Air-Entraining Admixtures for Concrete
ASTM C 309	Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494	Chemical Admixtures for Concrete
ASTM C 1077	Practice for Laboratories Testing Concrete and Concrete Aggregates for use in Construction & Criteria for Laboratory Evaluation
ASTM D 448	Classification for Sizes of Aggregate for Road and Bridge Construction
ASTM D 2419	Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM E 119	Method for Fire Tests of Building Construction and Materials
ASTM E 1643	Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
ASTM E 1745	Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

1.3 CONTRACTOR SUBMITTALS

A. Mix Designs: Prior to beginning the WORK and within 14 days of the notice to proceed, the CONTRACTOR shall submit to the ENGINEER, for review, preliminary concrete mix designs which shall show the proportions and gradations of all materials proposed for each class and type of concrete specified herein in accordance with Section 01300 - Contractor Submittals. The mix designs shall be checked by an independent testing laboratory acceptable to the ENGINEER. All costs related to such checking shall be borne by the CONTRACTOR. Since laboratory trial batches require 35 calendar days to complete, the CONTRACTOR may consider testing more than one mix design for each class of concrete.

B. Delivery Tickets: Where ready-mix concrete is used, the CONTRACTOR shall furnish delivery tickets at the time of delivery of each load of concrete. Each ticket shall show the state certified equipment used for measuring and the total quantities, by weight, of cement, sand, each class of aggregate, admixtures, and the amounts of water in the aggregate added at the batching plant, and the amount allowed to be added at the site for the specific design mix. In addition, each ticket shall state the mix number, total yield in cubic yards, and the time of day, to the nearest minute, corresponding to the times when the batch was dispatched, when it left the plant, when it arrived at the site, when unloading began, and when unloading was finished.

C. Furnish the following submittals in accordance with ACI 301:

1. Mill tests for cement.

2. Admixture certification. Chloride ion content must be included.

3. Aggregate gradation test results and certification.

4. Materials and methods for curing.

1.4 CONCRETE CONFERENCE

A. A meeting to review the detailed requirements of the CONTRACTOR's proposed concrete design mixes and to determine the procedures for producing proper concrete construction shall be held no later than 14 days after the notice to proceed.

B. All parties involved in the concrete work shall attend the conference, including the following at a minimum:

CONTRACTOR's representative
Testing laboratory representative
Concrete subcontractor
Reinforcing steel subcontractor and detailer
Concrete supplier
Admixture manufacturer's representative

C. The conference shall be held at a mutually agreed upon time and place. The ENGINEER shall be notified no less than 5 days prior to the date of the conference.

1.5 QUALITY ASSURANCE

A. General

1. Tests on component materials and for compressive strength and shrinkage of concrete shall be performed as indicated herein. Test for determining slump will be in accordance with the requirements of ASTM C 143.

2. Testing for aggregate shall include sand equivalence, reactivity, organic impurities, abrasion resistance, and soundness, according to ASTM C 33.

3. The cost of all laboratory tests on cement, aggregates, and concrete, will be borne by the OWNER. However, the CONTRACTOR shall pay the cost of any additional tests and investigation on WORK performed which does not meet the specifications. The laboratory will meet or exceed the requirements of ASTM C 1077.

4. Concrete for testing shall be supplied by the CONTRACTOR, and the CONTRACTOR shall assist the ENGINEER in obtaining samples, and

disposal and cleanup of excess material.

B. Field Compression Tests:

1. Compression test specimens will be taken during construction from the first placement of each class of concrete specified herein and at intervals thereafter as selected by the ENGINEER to insure continued compliance with these specifications. Each set of test specimens will be a minimum of 5 cylinders.

2. Compression test specimens for concrete shall be made in accordance with section 9.2 of ASTM C 31. Specimens shall be 6-inch diameter by 12-inch high cylinders.

3. Compression tests shall be performed in accordance with ASTM C 39. One test cylinder will be tested at 7 days and 2 at 28 days. The remaining cylinders will be held to verify test results, if needed.

C. Evaluation and Acceptance of Concrete:

1. Evaluation and acceptance of the compressive strength of concrete will be according to the requirements of ACI 318, Chapter 5 "Concrete Quality," and as indicated herein.

2. A statistical analysis of compression test results will be performed according to the requirements of ACI 214. The standard deviation of the test results shall not exceed 640 psi, when ordered at equivalent water content as estimated by slump.

3. If any concrete fails to meet these requirements, immediate corrective action shall be taken to increase the compressive strength for all subsequent batches of the type of concrete affected.

4. When the standard deviation of the test results exceeds 640 psi, the average strength for which the mix is designed shall be increased by an amount necessary to satisfy the statistical requirement that the probability of any test being more than 500 psi below or the average of any 3 consecutive tests being below the required compressive strength is 1 in 100. The required average strength shall be calculated by Criterion No. 3 of ACI 214 using the actual standard of deviation.

5. All concrete which fails to meet the ACI requirements and these specifications, is subject to removal and replacement.

D. Shrinkage Tests:

1. Drying shrinkage tests shall be performed for the trial batch indicated in the Paragraph in Part 2 entitled "Trial Batch and Laboratory Tests," the first placement of each class of concrete, and during construction to insure continued compliance with these Specifications.

2. Drying shrinkage specimens shall be 4-inch by 4-inch by 11-inch prisms with an effective gage length of 10 inches; fabricated, cured, dried, and measured in accordance with ASTM C 157 modified as follows: specimens shall be removed from molds at an age of 23 plus or minus 1 hours after trial batching, shall be placed immediately in water at 70 degrees F plus or minus 3 degrees F for at least 30 minutes, and shall be measured within 30 minutes thereafter to determine original length and then submerged in saturated lime water at 73 degrees F plus or minus 3 degrees F. Measurement to determine expansion expressed as a percentage of original length shall be made at age 7 days. This length at age 7 days shall be the base length for drying shrinkage calculations ("0" days drying age). Specimens then shall be stored immediately in a humidity control room maintained at 73 degrees F plus or minus 3 degrees F and 50 percent plus or minus 4 percent relative humidity for the remainder of the test. Measurements to determine shrinkage expressed as percentage of base length shall be made and reported separately for 7, 14, 21, and 28 days of drying after 7 days of moist curing.

3. The drying shrinkage deformation of each specimen shall be computed as the difference between the base length (at "0" days drying age) and the length after drying at each test age. The average drying shrinkage deformation of the specimens shall be computed to the nearest 0.0001 inch at each test age. If the drying shrinkage of any specimen departs from the average of that test age by more than 0.0004-inch, the results obtained from that specimen shall be disregarded. Results of the shrinkage test shall be reported to the nearest 0.001 percent of shrinkage. Compression test specimens shall be taken in each case from the same concrete used for preparing drying shrinkage specimens. These tests shall be considered a part of the normal compression tests for the project. Allowable shrinkage limitations shall be as indicated in Part 2 below.

E. Construction Tolerances: The CONTRACTOR shall set and maintain concrete forms and perform finishing operations to ensure that the completed WORK is within tolerances. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the permissible variation from lines, grades, or dimensions indicated on the Drawings. Where tolerances are not stated in the specifications, permissible deviations will be in accordance with ACI 117.

1. The following construction tolerances apply to finished walls and slab unless otherwise indicated:

Item	Tolerance
Variation of the constructed linear outline from the established position in plan.	In 10 feet: 1/4-inch; In 20 feet or more: ½ inch
Variation from the level or from the grades shown.	In 10 feet: 1/4-inch; In 20 feet or more: ½ inch

Variation from the plumb	In 10 feet: 1/4-inch; In 20 feet or more: ½ inch
Variation in the thickness of slabs and walls.	Minus 1/2-inch; Plus ½ - inch
Variation in the locations and sizes of slabs and wall openings	Plus or minus 1/4-inch

PART 2 – PRODUCTS

2.1 CONCRETE MATERIALS

A. General:
   1. All materials shall be classified as acceptable for potable water use according to ASTM C 1602.

   2. Cement for concrete which will contact potable water shall not be obtained from kilns which burn metal rich hazardous waste fuel.

   3. Materials shall be delivered, stored, and handled so as to prevent damage by water or breakage. Cement reclaimed from cleaning bags or leaking containers shall not be used. All cement shall be used in the sequence of receipt of shipments.

B. All materials shall comply with the requirements of Sections 201, 203, and 204 of ACI 301, as applicable.

C. Storage of materials shall conform to the requirements of Section 205 of ACI 301.

D. Materials for concrete shall conform to the following requirements:

   1. Cement shall be standard brand Portland cement conforming to ASTM C 150 for Type II or Type V, including Table 2 optional requirements. A minimum of 85 percent of cement by weight shall pass a 325 screen. A single brand of cement shall be used throughout the work, and prior to its use, the brand shall be acceptable to the ENGINEER. The cement shall be suitably protected from exposure to moisture until used. Cement that has become lumpy shall not be used. Sacked cement shall be stored in such a manner so as to permit access for inspection and sampling. Certified mill test reports, including fineness, for each shipment of cement to be used shall be submitted to the ENGINEER, if requested, regarding compliance with these Specifications.

   2. Water for mixing and curing shall be potable, clean, and free from objectionable quantities of silty organic matter, alkali, salts, and other impurities. The water shall be considered potable, for the purposes of this Section only, if it meets the requirements of the local governmental agencies. Agricultural water with high total dissolved solids (over 1000 mg/l TDS) shall

not be used.

3. Aggregates shall be obtained from pits acceptable to the ENGINEER, shall be non-reactive, and shall conform to ASTM C 33. Maximum size of coarse aggregate shall be as indicated herein. Lightweight sand for fine aggregate will not be permitted.

    a. Coarse aggregates shall consist of clean, hard, durable gravel, crushed gravel, crushed rock, or a combination thereof. The coarse aggregates shall be prepared and handled in two or more size groups for combined aggregates with a maximum size greater than 3/4-inch. When the aggregates are proportioned for each batch of concrete, the two size groups shall be combined. See the Paragraph in Part 2 entitled "Trial Batch and Laboratory Tests" for the use of the size groups.

    b. Fine aggregates shall be natural sand or a combination of natural and manufactured sand that are hard and durable. When tested in accordance with ASTM D 2419, the sand equivalency shall not be less than 75 percent for an average of three samples, nor less than 70 percent for an individual test. Gradation of fine aggregate shall conform to ASTM C 33. The fineness modulus of sand used shall not be over 3.00.

    c. Combined aggregates shall be well graded from coarse to fine sizes and shall be uniformly graded between screen sizes to produce a concrete that has optimum workability and consolidation characteristics. Where a trial batch is required for a mix design, the final combined aggregate gradations will be established during the trial batch process.

    d. When tested in accordance with ASTM C 33, the ratio of silica released to reduction in alkalinity shall not exceed 1.0.

    e. When tested in accordance with ASTM C 33, the fine aggregate shall produce a color in the supernatant liquid no darker than the reference standard color solution.

    f. When tested in accordance with ASTM C 33, the coarse aggregate shall show a loss not exceeding 42 percent after 500 revolutions, or 10.5 percent after 100 revolutions.

    g. When tested in accordance with ASTM C 33, the loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using sodium sulfate.

4. Ready-mix concrete shall conform to the requirements of ASTM C 94.

5. Admixtures: All admixtures shall be compatible and be furnished by a single manufacturer capable of providing qualified field service representation. Admixtures shall be used in accordance with manufacturer's recommendations. If the use of an admixture is producing an inferior end

result, the CONTRACTOR shall discontinue use of the admixture. Admixtures shall not contain thiocyanates nor more than 0.05 percent chloride ion, and shall be non-toxic after 30 days. Liquid admixtures requiring dosages greater than one-half gallon per cubic yard shall be considered to be water when determining the total amount of free water as specified in Section 2.6, "Consistency."

a. Air-entraining agent meeting the requirements of ASTM C 260 shall be used. Sufficient air-entraining agent shall be used to provide a total air content of 3 to 5 percent. The OWNER reserves the right, at any time, to sample and test the air-entraining agent. The air-entraining agent shall be added to the batch in a portion of the mixing water. The solution shall be batched by means of a mechanical batcher capable of accurate measurement. Air content shall be tested at the point of placement. Air entraining agent shall be on the approved list of chemical admixtures by the California Department of Transportation. Other admixtures will be considered when accompanied by a certificate of compliance that verifies the product complies with the appropriate ASTM designations and local environmental requirements..

b. Set controlling and water reducing admixtures: Admixtures may be added at the CONTRACTOR's option, subject to the ENGINEER's approval, to control the set, effect water reduction, and increase workability. The addition of an admixture shall be at the CONTRACTOR's expense. Concrete containing an admixture shall be first placed at a location determined by the ENGINEER. Admixtures shall conform to the requirements of ASTM C 494. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used.

(1) Concrete shall not contain more than one water reducing admixture.

(2) Set controlling admixture may be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently greater than 80 degrees F, shall be used. Where the air temperature at the time of placement is expected to be consistently less than 40 degrees F, a non-corrosive set accelerating admixture such as products listed on the California Department of Transportation’s approved list of chemical admixtures or products that are accompanied by a certificate of compliance that verifies product compliance with ASTM designations.; or equal shall be used.

(3) Normal range water reducer shall conform to ASTM C 494, Type A. Products listed on the California Department of Transportation’s approved list of chemical admixtures or products that are accompanied by a certificate of compliance that verifies product compliance with ASTM designations shall be used. . The quantity of admixture used and the method of mixing shall be in accordance with the

Manufacturer's instructions and recommendations.

(4) High range water reducer shall conform to ASTM C 494, Type F or G. Products listed on the California Department of Transportation's approved list of chemical admixtures or products that are accompanied by a certificate of compliance that verifies product compliance with ASTM designations shall be used. . High range water reducer shall be measured and dispensed as recommended by the manufacturer. Water reducer shall be considered as part of the mixing water when calculating water cement ratio.

(5) If the high range water reducer is added to the concrete at the job site, it may be used in conjunction with the same water reducer added at the batch plant. Concrete shall have a slump of 3 inches plus or minus 1/2-inch prior to adding the high range water reducing admixture at the job site. The high range water reducing admixture shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day's operation of the job site system.

(6) Concrete shall be mixed at mixing speed for a minimum of 30 mixer revolutions after the addition of the high range water reducer.

(7) Flyash: Flyash shall not be used.

2.2 CURING MATERIALS

A. Materials for curing concrete as indicated herein shall conform to the following requirements and ASTM C 309:

1. All curing compounds shall be white pigmented and resin based. Sodium silicate compounds shall not be allowed. Water based resin curing compounds shall be used only where local air quality regulations prohibit the use of a solvent based compound.

2. Polyethylene sheet for use as concrete curing blanket shall be white and shall have a nominal thickness of 6 mils. The loss of moisture when determined in accordance with the requirements of ASTM C 156 shall not exceed 0.055 grams per square centimeter of surface.

3. Polyethylene-coated waterproof paper sheeting for use as concrete curing blanket shall consist of white polyethylene sheeting free of visible defects, uniform in appearance, have a nominal thickness of 2 mils, and be permanently bonded to waterproof paper conforming to the requirements of Federal Specification UU-B-790A (1) (2). The loss of moisture, when determined in accordance with the requirements of ASTM C 156, shall not exceed 0.055 gram per square centimeter of surface.

4. Polyethylene-coated burlap for use as concrete curing blanket shall be 4-mil thick, white opaque polyethylene film impregnated or extruded into one side

of the burlap. Burlap shall weigh not less than 9 ounces per square yard. The loss of moisture, when determined in accordance with the requirements of ASTM C 156, shall not exceed 0.055 grams per square centimeter of surface.

5. Curing mats for use in Curing Method 6 as indicated below, shall be heavy shag rugs or carpets or cotton mats quilted at 4 inches on center. Curing mats shall weigh a minimum of 12 ounces per square yard when dry.

6. Evaporation retardant shall be a material such as Confilm as manufactured by Master Builders; Eucobar as manufactured by Euclid Chemical Company; E-CON as manufactured by L & M Construction Chemicals, Inc. or equal.

2.3 NON-WATERSTOP JOINT MATERIALS

A. Materials for non-waterstop joints in concrete shall conform to the following requirements:

1. Preformed joint filler shall be a non-extruding, neoprene sponge or polyurethane type conforming to Section 03290 - Joints in Concrete.

2. Elastomeric joint sealer shall conform to the requirements of Section 07920 - Sealants and Caulking.

3. Mastic joint sealer shall be a material that does not contain evaporating solvents; that will tenaciously adhere to concrete surfaces; that will remain permanently resilient and pliable; that will not be affected by continuous presence of water and will not in any way contaminate potable water; and that will effectively seal the joints against moisture infiltration even when the joints are subject to movement due to expansion and contraction. The sealer shall be composed of special asphalts or similar materials blended with lubricating and plasticizing agents to form a tough, durable mastic substance containing no volatile oils or lubricants and shall be capable of meeting the test requirements set forth below, if testing is required by the ENGINEER.

2.4 MISCELLANEOUS MATERIALS

A. Dampproofing agent shall be an asphalt emulsion.

B. Bonding agents shall be epoxy adhesives conforming to the following:

1. For bonding freshly-mixed, plastic concrete to hardened concrete.

2. For bonding hardened concrete or masonry to steel.

C. Vapor Retarder: Vapor retarder shall be 30 mil thick, Class A, 3 ply, nylon or polyester cord reinforced high density polyethylene sheet laminated to a non-woven geotextile fabric, in accordance with ASTM E 1745.

D. Granular Material Above Vapor Retarder: Crushed stone, gravel, or sand with the

following size distribution and meeting the deleterious substance limits of ASTM C 33 for fine aggegrates.

Sieve Size	Percentage Passing
3/8-inch	100
4.75 mm	85-100
No. 100	10 – 30

E. Seams in vapor retarder sheet shall be sealed with tape, adhesive, or other material as recommended by sheet manufacturer for the areas to be sealed and sheet material.

2.5 CONCRETE DESIGN REQUIREMENTS

A. General: Concrete shall be composed of cement, admixtures, aggregates, and water of the qualities indicated. The exact proportions in which these materials are to be used for different parts of the work will be determined during the trial batch. In general, the mix shall be designed to produce a concrete capable of being deposited so as to obtain maximum density and minimum shrinkage, and, where deposited in forms, to have good consolidation properties and maximum smoothness of surface. The aggregate gradations shall be formulated to provide fresh concrete that will not promote rock pockets around reinforcing steel or embedded items. The proportions shall be changed whenever necessary or desirable to meet the required results. All changes shall be subject to review by the ENGINEER.

B. Fine Aggregate Composition: In mix designs for structural concrete, the percentage of fine aggregate in total aggregate by weight, shall be as indicated in the following table.

Fine Aggregate	
Fineness Modulus	Maximum Percent
2.7 or less	41
2.7 to 2.8	42
2.8 to 2.9	43
2.9 to 3.0	44

For other concrete, the maximum percentage of fine aggregate of total aggregate, by weight, shall not exceed 50.

C. Water-Cement Ratio and Compressive Strength: Concrete shall have the following minimum properties:

Type of Work	Min 28-Day Compr. Strength (psi)	Max Size Aggregate (in)	Minimum Cement per cu yd (lbs)	Max W/C Ratio (by weight)
Structural Concrete:				
Roof, floor slabs, columns, walls and all other concrete items not specified elsewhere.	4,000	1	564	0.45
12-inch and thicker walls, slabs on grade and footings. (optional)	4,000	1-1/2	564	0.45
Pea Gravel Mix.	4,000	3/8	752	0.40
Other Concretes:				
Sitework concrete	3,000	1	470	0.50
Lean concrete	2,000	1	376	0.60

D. Adjustments to Mix Design: The mixes shall be changed whenever such change is necessary or desirable to secure the required strength, density, workability, and surface finish, and the CONTRACTOR shall be entitled to no additional compensation because of such changes.

2.6 CONSISTENCY

A. The quantity of water in a batch of concrete shall be just sufficient, with a normal mixing period, to produce a concrete which can be worked properly into place without segregation and which can be compacted by vibratory methods to give the desired density, impermeability, and smoothness of surface. The quantity of water shall be changed as necessary, with variations in the nature or moisture content of the aggregates, to maintain uniform production of a desired consistency. The consistency of the concrete in successive batches shall be determined by slump tests in accordance with ASTM C 143. The slumps shall be as follows:

Part of Work	Slump (in)
All concrete, unless indicated otherwise	3 inches plus or minus 1 inch
With high range water reducer added	7 inches plus or minus 2 inches
Pea gravel mix	7 inches plus or minus 2 inches
Ductbanks	5 inches plus or minus 1 inch

2.7 TRIAL BATCH AND LABORATORY TESTS

A. Before placing any concrete, a testing laboratory selected by the ENGINEER shall prepare a trial batch of each class of structural concrete, based on the preliminary concrete mixes submitted by the CONTRACTOR. During the trial batch the aggregate proportions may be adjusted by the testing laboratory using the two coarse aggregate size ranges to obtain the required properties. If one size range produces an acceptable mix, a second size range need not be used. Such adjustments will be considered refinements to the mix design and will not be the basis for extra compensation to the CONTRACTOR. All concrete shall conform to the requirements of this Section, whether the aggregate proportions are from the CONTRACTOR's preliminary mix design, or whether the proportions have been adjusted during the trial batch process. The trial batch shall be prepared using the aggregates, cement and admixture proposed for the project. The trial batch materials shall be of a quantity such that the testing laboratory can obtain 3 drying shrinkage, and 6 compression test specimens from each batch.

B. The determination of compressive strength will be made by testing 6-inch diameter by 12-inch high cylinders; made, cured and tested in accordance with ASTM C 192 and ASTM C 39. Three compression test cylinders will be tested at 7 days and 3 at 28 days. The average compressive strength for the 3 cylinders tested at 28 days for any given trial batch shall not be less than 125 percent of the specified compressive strength.

C. A sieve analysis of the combined aggregate for each trial batch shall be performed according to the requirements of ASTM C 136. Values shall be given for percent passing each sieve.

2.8 SHRINKAGE LIMITATION

A. The maximum concrete shrinkage for specimens cast in the laboratory from the trial batch, as measured at 21-day drying age or at 28-day drying age shall be 0.036 percent or 0.042 percent, respectively. Standard deviation will not be considered. The CONTRACTOR shall only use a mix design for construction that has first met the trial batch shrinkage requirements. Shrinkage limitations apply only to structural concrete.

B. The maximum concrete shrinkage for specimens cast in the field shall not exceed the trial batch maximum shrinkage requirement by more than 25 percent.

C. If the required shrinkage limitation is not met during construction, the CONTRACTOR shall take any or all of the following actions for securing the specified shrinkage requirements. These actions may include changing the source or aggregates, cement and/or admixtures; reducing water content; washing of aggregate to reduce fines; increasing the number of construction joints; modifying the curing requirements; or other actions designed to minimize shrinkage or the effects of shrinkage.

2.9 MEASUREMENT OF CEMENT AND AGGREGATE

A. The amount of cement and of each separate size of aggregate entering into each batch of concrete shall be determined by direct weighing equipment furnished by the CONTRACTOR and acceptable to the ENGINEER.

B. Weighing tolerances:

Material	**Percent of Total Weight**
Cement	1
Aggregates	3
Admixtures	3

2.10 MEASUREMENT OF WATER

A. The quantity of water entering the mixer shall be measured by a suitable water meter or other measuring device of a type acceptable to the ENGINEER and capable of measuring the water in variable amounts within a tolerance of one percent. The water feed control mechanism shall be capable of being locked in position so as to deliver constantly any specified amount of water to each batch of concrete. A positive quick-acting valve shall be used for a cut-off in the water line to the mixer. The operating mechanism shall prevent leakage when the valves are closed.

2.11 READY-MIXED CONCRETE

A. At the CONTRACTOR'S option, ready-mixed concrete may be used if it meets the requirements as to materials, batching, mixing, transporting, and placing as indicated herein and is in accordance with ASTM C 94, including the following supplementary requirements.

B. Ready-mixed concrete shall be delivered to the site of the work, and discharge shall be completed within one hour after the addition of the cement to the aggregates or before the drum has been revolved 250 revolutions, whichever is first.

C. Truck mixers shall be equipped with electrically-actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resetable, recording type, and shall be mounted in the driver's cab. The counters shall be actuated at the time of starting mixers at mixing speeds.

D. Each batch of concrete shall be mixed in a truck mixer for not less than 70

revolutions of the drum or blades at the rate of rotation designated by the manufacturer of equipment. Additional mixing, if any, shall be at the speed designated by the manufacturer of the equipment as agitating speed. All materials including mixing water shall be in the mixer drum before actuating the revolution counter for determining the number of revolution of mixing.

E. Truck mixers and their operation shall be such that the concrete throughout the mixed batch as discharged is within acceptable limits of uniformity with respect to consistency, mix, and grading. If slump tests taken at approximately the 1/4 and 3/4 points of the load during discharge give slumps differing by more than one inch when the required slump is 3 inches or less, or if they differ by more than 2 inches when the required slump is more than 3 inches, the mixer shall not be used on the work unless the causing condition is corrected and satisfactory performance is verified by additional slump tests. All mechanical details of the mixer, such as water measuring and discharge apparatus, condition of the blades, speed of rotation, general mechanical condition of the unit, and clearance of the drum, shall be checked before a further attempt to use the unit will be permitted.

F. Each batch of ready-mixed concrete delivered at the job site shall be accompanied by a delivery ticket furnished to the ENGINEER in accordance with the Paragraph in Part 1 entitled "Delivery Tickets."

G. The use of non-agitating equipment for transporting ready-mixed concrete will not be permitted. Combination truck and trailer equipment for transporting ready-mixed concrete will not be permitted. The quality and quantity of materials used in ready-mixed concrete and in batch aggregates shall be subject to continuous inspection at the batching plant by the ENGINEER.

PART 3 – EXECUTION

3.1 PROPORTIONING AND MIXING

A. Proportioning: Proportioning of the mix shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301.

B. Mixing: Mixing shall conform to the requirements of Chapter 7 of said ACI 301 Specifications.

C. Slump: Slumps shall be as indicated herein.

D. Retempering: Retempering of concrete or mortar which has partially hardened shall not be permitted.

3.2 PREPARATION OF SURFACES FOR CONCRETING

A. General: Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

B. Vapor Retarder Sheet

1. Sheet shall be installed under all on-grade building floor slabs of occupiable (non-hydraulic) structures and at other locations indicated.

2. Sand base shall be at least 2 inches thick within the foundation line after moistening and compaction by mechanical means. Sand surface shall be flat and level within a tolerance of plus 0 inches to minus 3/4-inch.

3. Place, protect, and repair defects in sheet according to ASTM E 1643 and the manufacturer's written instructions. Seams shall be lapped and sealed in accordance with ASTM E 1643.

4. Granular material above the sheet shall be moistened and compacted to 2 inches thickness within the same flatness criteria as the sand base.

C. Joints in Concrete: Concrete surfaces upon or against which concrete is to be placed, where the placement of the concrete has been stopped or interrupted so that, as determined by the ENGINEER, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bonding. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, foreign material, and be roughened to a minimum 1/4-inch amplitude. Such cleaning and roughening shall be accomplished by hydroblasting or sandblasting (exposing aggregate) followed by thorough washing. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

D. After the surfaces have been prepared, all approximately horizontal construction joints shall be covered with a 6-inch lift of a pea gravel mix. The mix shall be placed and spread uniformly. Wall concrete shall follow immediately and shall be placed upon the fresh pea gravel mix.

E. Placing Interruptions: When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means, that will secure proper union with subsequent work; provided that construction joints shall be made only where acceptable to the ENGINEER.

F. Embedded Items: No concrete shall be placed until all formwork, installation of parts to be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the ENGINEER at least 4 hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from previous work shall be cleaned before the surrounding or adjacent concrete is placed.

G. All inserts or other embedded items shall conform to the requirements herein.

H. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms at locations indicated on the Drawings or shown by shop

drawings and shall be acceptable to the ENGINEER before any concrete is placed. Accuracy of placement is the responsibility of the CONTRACTOR.

I. Casting New Concrete Against Old: Where concrete is to be cast against old concrete (any concrete which is greater than 60 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydro-blasting or sandblasting (exposing aggregate). The joint surface shall be coated with an epoxy bonding agent unless indicated otherwise by the ENGINEER.

J. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the WORK. No concrete shall be deposited underwater nor shall the CONTRACTOR allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, shall be subject to the review of the ENGINEER.

K. Corrosion Protection: Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2 inches clearance between said items and any part of the concrete reinforcement. Securing such items in position by wiring or welding them to the reinforcement will not be permitted.

L. Openings for pipes, inserts for pipe hangers and brackets, and anchors shall, where practicable, be provided during the placing of concrete.

M. Anchor bolts shall be accurately set and shall be maintained in position by templates while being embedded in concrete.

N. Cleaning: The surfaces of all metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.3 HANDLING, TRANSPORTING, AND PLACING

A. General: Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this Section. No aluminum materials shall be used in conveying any concrete.

B. Non-Conforming Work or Materials: Concrete which during or before placing is found not to conform to the requirements indicated herein shall be rejected and immediately removed from the work. Concrete which is not placed in accordance with these Specifications or which is of inferior quality shall be removed and replaced.

C. Unauthorized Placement: No concrete shall be placed except in the presence of a duly authorized representative of the ENGINEER. The CONTRACTOR shall notify the ENGINEER in writing at least 24 hours in advance of placement of any

concrete.

D. Placement in Wall and Column Forms: Concrete shall not be dropped through reinforcement steel or into any deep form, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, means such as hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4 feet in walls and 8 feet in columns below the ends of ducts, chutes, or buggies. Concrete shall be uniformly distributed during the process of depositing and in no case after depositing shall any portion be displaced in the forms more than 6 feet in horizontal direction. Concrete in wall forms shall be deposited in uniform horizontal layers not deeper than 2 feet; and care shall be taken to avoid inclined layers or inclined construction joints except where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in wall forms shall not exceed 5 feet of vertical rise per hour. Sufficient illumination shall be provided in the interior of all forms so that the concrete at the places of deposit is visible from the deck or runway.

E. Casting New Concrete Against Old: Epoxy adhesive bonding agent shall be applied to the old surfaces according to the manufacturer's written recommendations. This provision shall not apply to joints where waterstop is provided. See Section 03290 - Joints in Concrete.

F. Conveyor Belts and Chutes: All ends of chutes, hopper gates, and all other points of concrete discharge throughout the CONTRACTOR'S conveying, hoisting, and placing system shall be designed and arranged so that concrete passing from them will not fall separated into whatever receptacle immediately receives it. Conveyor belts, if used, shall be of a type acceptable to the ENGINEER. Chutes longer than 50 feet will not be permitted. Minimum slopes of chutes shall be such that concrete of the indicated consistency will readily flow in them. If a conveyor belt is used, it shall be wiped clean by a device operated in such a manner that none of the mortar adhering to the belt will be wasted. All conveyor belts and chutes shall be covered.

G. Placement in Slabs: Concrete placed in sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement. As the work progresses, the concrete shall be vibrated and carefully worked around the slab reinforcement, and the surface of the slab shall be screeded in an up-slope direction.

H. Temperature of Concrete: The temperature of concrete when it is being placed shall be not more than 90 degrees F nor less than 55 degrees F for sections less than 12 inches thick nor less than 50 degrees for all other sections. Concrete ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, from falling below the minimum temperature. When the temperature of the concrete is 85 degrees F or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes. If concrete is placed when the weather is

such that the temperature of the concrete would exceed 90 degrees F, the CONTRACTOR shall employ effective means, such as precooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete, as it is placed, below 90 degrees F. The CONTRACTOR shall be entitled to no additional compensation on account of the foregoing requirements.

I. Cold Weather Placement:

1. Placement of concrete shall conform to ACI 306.1 - Cold Weather Concreting, and the following.

2. Remove all snow, ice, and frost from the surfaces, including reinforcement, against which concrete is to be placed. Before beginning concrete placement, thaw the subgrade to a minimum depth of 6 inches. All reinforcement and embedded items shall be warmed to above 32 degrees F prior to concrete placement.

3. Maintain the concrete temperature above 50 degrees F for at least 3 days after placement.

3.4 PUMPING OF CONCRETE

A. General: If the pumped concrete does not produce satisfactory end results, the CONTRACTOR shall discontinue the pumping operation and proceed with the placing of concrete using conventional methods.

B. Pumping Equipment: The pumping equipment shall have 2 cylinders and be designed to operate with one cylinder in case the other one is not functioning. In lieu of this requirement, the CONTRACTOR may have a standby pump on the site during pumping.

C. The minimum diameter of the hose conduits shall be in accordance with ACI 304.2R.

D. Pumping equipment and hose conduits that are not functioning properly shall be replaced.

E. Aluminum conduits for conveying the concrete shall not be permitted.

F. Field Control: Concrete samples for slump, air content, and test cylinders will be taken at the placement end of the hose.

3.5 ORDER OF PLACING CONCRETE

A. The order of placing concrete in all parts of the WORK shall be acceptable to the ENGINEER. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints at the indicated locations. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least 5 days for hydraulic structures and 2 days for

all other structures before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the 2 adjacent wall panels have cured at least 10 days for hydraulic structures and 4 days for all other structures.

B. The surface of the concrete shall be level whenever a run of concrete is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least 3/4-inch thick shall be tacked to the forms on these surfaces. The concrete shall be carried about 1/2-inch above the underside of the strip. About one hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be leveled with a trowel and all laitance shall be removed.

3.6 TAMPING AND VIBRATING

A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete. Vibrators shall be Group 3 per ACI 309, high speed power vibrators (8000 to 12,000 rpm) of an immersion type in sufficient number and with at least one standby unit as required. Group 2 vibrators may be used only at specific locations when accepted by the ENGINEER.

B. Care shall be used in placing concrete around waterstops. The concrete shall be carefully worked by rodding and vibrating to make sure that all air and rock pockets have been eliminated. Where flat-strip type waterstops are placed horizontally, the concrete shall be worked under the waterstops by hand, making sure that all air and rock pockets have been eliminated. Concrete surrounding the waterstops shall be given additional vibration over and above that used for adjacent concrete placement to assure complete embedment of the waterstops in the concrete.

C. Concrete in walls shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the required results within 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall not contact the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.7 FINISHING CONCRETE SURFACES

A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions shown are defined as tolerances and are indicated in Part 1,

above. These tolerances are to be distinguished from irregularities in finish as described herein. Aluminum finishing tools shall not be used.

B. Formed Surfaces: No treatment is required after form removal except for curing, repair of defective concrete, and treatment of surface defects. Where architectural finish is required, it shall be as indicated. Surface holes larger than 1/2-inch in diameter or deeper than 1/4-inch are defined as surface defects in basins and exposed walls.

C. Unformed Surfaces: After proper and adequate vibration and tamping, all unformed top surfaces of slabs, floors, walls, and curbs shall be brought to a uniform surface with suitable tools. Immediately after the concrete has been screeded, it shall be treated with a liquid evaporation retardant. The retardant shall be used again after each work operation as necessary to prevent drying shrinkage cracks. The classes of finish specified for unformed concrete surfaces are designated and defined as follows:

1. Finish U1 - Sufficient leveling and screeding to produce an even, uniform surface with surface irregularities not to exceed 3/8-inch. No further special finish is required.

2. Finish U2 - After sufficient stiffening of the screeded concrete, surfaces shall be float finished with wood or metal floats or with a finishing machine using float blades. Excessive floating of surfaces while the concrete is plastic and dusting of dry cement and sand on the concrete surface to absorb excess moisture will not be permitted. Floating shall be the minimum necessary to produce a surface that is free from screed marks and is uniform in texture. Surface irregularities shall not exceed 1/4-inch. Joints and edges shall be tooled where indicated or as determined by the ENGINEER.

3. Finish U3 - After the finish U2 surface has hardened sufficiently to prevent excess of fine material from being drawn to the surface, steel troweling shall be performed with firm pressure such as will flatten the sandy texture of the floated surface and produce a dense, uniform surface free from blemishes, ripples, and trowel marks. The finish shall be smooth and free of all irregularities.

4. Finish U4 - Trowel the Finish U3 surface to remove local depressions or high points. In addition, the surface shall be given a light hairbroom finish with brooming perpendicular to drainage unless otherwise indicated. The resulting surface shall be rough enough to provide a nonskid finish.

D. Unformed surfaces shall be finished according to the following schedule:

UNFORMED SURFACE FINISH SCHEDULE

Area	Finish
Grade slabs and foundations to be covered with concrete or fill material	U1

Floors to be covered with grouted tile or topping grout	U2
Water bearing slabs with slopes 10 percent and less	U3
Water bearing slabs with slopes greater than 10 percent	U4
Slabs not water bearing	U4
Slabs to be covered with built-up roofing	U2
Interior slabs and floors to receive architectural finish	U3
Top surface of walls	U3

3.8 ARCHITECTURAL FINISH

A. General: Architectural finishes shall be provided only where specifically indicated on the Drawings. In all other locations, the paragraph entitled Finishing Concrete Surfaces, shall apply.

1. Immediately after the forms have been stripped, the concrete surface shall be inspected and any poor joints, voids, rock pockets, or other defective areas shall be repaired and all form-tie holes filled as indicated herein.

2. Architectural finishes shall not be applied until the concrete surface has been repaired as required and the concrete has cured at least 14 days.

3. All architecturally treated concrete surfaces shall conform to the accepted sample in texture, color, and quality. It shall be the CONTRACTOR's responsibility to maintain and protect the concrete finish.

B. Smooth Concrete Finish

1. The concrete surface shall be wetted, and a grout shall be applied with a brush. The grout shall be made by mixing one part portland cement and one part of fine sand that will pass a No. 16 sieve with sufficient water to give it the consistency of thick paint. The cement used in said grout shall be 1/2 gray and 1/2 white portland cement, or other proportion as determined by the ENGINEER. White portland cement shall be Atlas white, or equal. Calcium chloride at 5 percent by volume of the cement shall be used in the brush coat. The freshly applied grout shall be vigorously rubbed into the concrete surface with a wood float filling all small air holes. After all the surface grout had been removed with a steel trowel, the surface shall be allowed to dry and, when dry, shall be vigorously rubbed with burlap to remove completely all surface grout so that there is no visible paint-like film of grout on the concrete. The entire cleaning operation for any area shall be completed the day it is started, and no grout shall be left on the surface overnight.

2. Cleaning operations for any given day shall be terminated at panel joints. It is required that the various operations be carefully timed to secure the desired effect which is a light-colored concrete surface of uniform color and texture without any appearance of a paint or grout film.

3. In the event that improper manipulation results in an inferior finish, the CONTRACTOR shall rub such inferior areas with carborundum bricks.

4. Before beginning any of the final treatment on exposed surfaces, the CONTRACTOR shall treat in a satisfactory manner a trial area of at least 200 square feet in some inconspicuous place selected by the ENGINEER and shall preserve said trial area undisturbed until the completion of the job.

3.9 CURING AND DAMPPROOFING

A. General: All concrete shall be cured for not less than 7 days after placing, in accordance with the methods indicated below for the different parts of the WORK.

Surface to be Cured or Dampproofed	Method
Unstripped forms	1
Wall sections with forms removed	6
Construction joints between footings and walls, and between floor slab and columns	2
Encasement concrete and thrust blocks	3
All concrete surfaces not specifically indicated in this Paragraph	4
Floor slabs on grade in hydraulic structures	5
Slabs not on grade	6

B. Method 1: Wooden forms shall be wetted immediately after concrete has been placed and shall be kept wet with water until removal. If steel forms are used the exposed concrete surfaces shall be kept continuously wet until the forms are removed. If forms are removed within 7 days of placing the concrete, curing shall be continued in accordance with Method 6 below.

C. Method 2: The surface shall be covered with burlap mats which shall be kept wet with water for the duration of the curing period, until the concrete in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.

D. Method 3: The surface shall be covered with moist earth not less than 4 hours nor

more than 24 hours after the concrete is placed. Earthwork operations that may damage the concrete shall not begin until at least 7 days after placement of concrete.

E. Method 4: The surface shall be sprayed with a liquid curing compound.

1. It shall be applied in accordance with the manufacturer's printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film which will seal thoroughly.

2. Where the curing compound method is used, care shall be exercised to avoid damage to the seal during the 7-day curing period. If the seal is damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.

3. Wherever curing compound has been applied by mistake to surfaces against which concrete subsequently is to be placed and to which it is to adhere, compound shall be entirely removed by wet sandblasting just prior to the placing of new concrete.

4. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on unformed surfaces and within 2 hours after removal of forms. Repairs to formed surfaces shall be made within the 2-hour period; provided, however, that any such repairs which cannot be made within the said 2-hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sandblasted to remove the curing compound.

5. At all locations where concrete is placed adjacent to a panel which has been coated with curing compound, the panel shall have curing compound reapplied to an area within 6 feet of the joint and to any other location where the curing membrane has been disturbed.

6. Prior to final acceptance of the WORK, all visible traces of curing compound shall be removed from all surfaces in such a manner that does not damage the surface finish.

F. Method 5:

1. Until the concrete surface is covered with curing compound, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed. The concrete shall be given a coat of curing compound in accordance with Method 4 above. Not less than one hour nor more than 4 hours after the curing compound has been applied, the surface shall be wetted with water delivered through a fog nozzle, and concrete-curing blankets shall be placed on the slabs. The curing blankets shall be polyethylene sheet, polyethylene-coated waterproof paper sheeting, or polyethylene-coated burlap. The blankets shall be laid with the

edges butted together and with the joints between strips sealed with 2-inch wide strips of sealing tape or with edges lapped not less than 3 inches and fastened together with a waterproof cement to form a continuous watertight joint.

2. The curing blankets shall be left in place during the 7-day curing period and shall not be removed until after concrete for adjacent work has been placed. If the curing blankets become torn or otherwise ineffective, the CONTRACTOR shall replace damaged sections. During the first 3 days of the curing period, no traffic of any nature and no depositing, temporary or otherwise, of any materials shall be permitted on the curing blankets. During the remainder of the curing period, foot traffic and temporary depositing of materials that impose light pressure will be permitted only on top of plywood sheets 5/8-inch minimum thickness, laid over the curing blanket. The CONTRACTOR shall add water under the curing blanket as often as necessary to maintain damp concrete surfaces at all times.

G. Method 6: This method applies to both walls and slabs.

1. The concrete shall be kept continuously wet by the application of water for a minimum period of at least 7 consecutive days beginning immediately after the concrete has reached final set or forms have been removed.

2. Until the concrete surface is covered with the curing medium, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed.

3. Heavy curing mats shall be used as a curing medium to retain the moisture during the curing period. The curing medium shall be weighted or otherwise held substantially in contact with the concrete surface to prevent being dislodged by wind or any other causes. All edges shall be continuously held in place.

4. The curing blankets and concrete shall be kept continuously wet by the use of sprinklers or other means both during and after normal working hours.

5. Immediately after the application of water has terminated at the end of the curing period, the curing medium shall be removed, any dry spots shall be rewetted, and curing compound shall be immediately applied in accordance with Method 4 above.

6. The CONTRACTOR shall dispose of excess water from the curing operation to avoid damage to the work.

H. Dampproofing

1. The exterior surface of all buried roof slabs shall be dampproofed as follows.

2. Immediately after completion of curing the surface shall be sprayed with a dampproofing agent consisting of an asphalt emulsion. Application shall be in

2 coats. The first coat shall be diluted to strength by the addition of water and shall be sprayed on so as to provide a maximum coverage rate of 100 square feet per gallon of dilute solution. The second coat shall consist of an application of the undiluted material, and shall be sprayed on so as to provide a maximum coverage rate of 100 square feet per gallon. Dampproofing material shall be as indicated above.

3. As soon as the material has taken an initial set, the entire area thus coated shall be coated with whitewash. Any formula for mixing the whitewash may be used if it produces a uniformly coated white surface and remains until placing of the backfill. If the whitewash fails to remain on the surface until the backfill is placed, the CONTRACTOR shall apply additional whitewash.

3.10 PROTECTION

A. The CONTRACTOR shall protect all concrete against injury until final acceptance.

B. Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The CONTRACTOR shall provide such protection while the concrete is still plastic and whenever precipitation is imminent or occurring.

3.11 CURING IN COLD WEATHER

A. Water curing of concrete may be reduced to 6 days during periods when the mean daily temperature in the vicinity of the Site is less than 40 degrees F; provided that, during the prescribed period of water curing, when temperatures are such that concrete surfaces may freeze, water curing shall be temporarily discontinued.

B. Concrete cured by an application of curing compound will require no additional protection from freezing if the protection at 50 degrees F for 72 hours is obtained by means of approved insulation in contact with the forms or concrete surfaces; otherwise the concrete shall be protected against freezing temperatures for 72 hours immediately following 72 hours protection at 50 degrees F. Concrete cured by water shall be protected against freezing temperatures for 3 days immediately following the 72 hours of protection at 50 degrees F.

C. Discontinuance of protection against freezing temperatures shall be such that the drop in temperature of any portion of the concrete will be gradual and will not exceed 40 degrees F in 24 hours. In the spring, when the mean daily temperature rises above 40 degrees F for more than 3 successive days, the specified 72-hour protection at a temperature not lower than 50 degrees F may be discontinued for as long as the mean daily temperature remains above 40 degrees F; provided, that the concrete shall be protected against freezing temperatures for not less than 48 hours after placement.

D. Where artificial heat is employed, special care shall be taken to prevent the concrete from drying. Use of unvented heaters will be permitted only when unformed surfaces of concrete adjacent to the heaters are protected for the first 24 hours from an excessive carbon dioxide atmosphere by application of curing compound; provided, that the use of curing compound for such surfaces is

otherwise permitted by these Specifications.

3.12 TREATMENT OF SURFACE DEFECTS

A. As soon as forms are removed, all exposed surfaces shall be carefully examined and any irregularities shall be immediately rubbed or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until after inspection by the ENGINEER. In no case will extensive patching of honeycombed concrete be permitted. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall be repaired as indicated below. Concrete containing extensive voids, holes, honeycombing, or similar depression defects shall be completely removed and replaced. Repairs and replacements shall be performed promptly.

B. Defective surfaces to be repaired shall be cut back from trueline a minimum depth of 1/2-inch over the entire area. Feathered edges will not be permitted. Where chipping or cutting tools are not required in order to deepen the area properly, the surface shall be prepared for bonding by the removal of all laitance or soft material, plus not less than 1/32-inch depth of the surface film from all hard portions by means of an efficient sandblast. After cutting and sandblasting, the surface shall be wetted sufficiently in advance of shooting with shotcrete or with cement mortar so that while the repair material is being applied, the surfaces underneath will remain moist but not so wet as to overcome the suction upon which a good bond depends. The material used for repair proposed shall consist of a mixture of one sack of cement to 3 cubic feet of sand. For exposed walls, the cement shall contain such a proportion of Atlas white portland cement as is required to make the color of the patch match the color of the surrounding concrete.

C. Holes left by tie-rod cones shall be reamed with suitable toothed reamers so as to leave the surfaces of the holes clean and rough. Holes then shall be repaired in an approved manner with dry-packed cement grout. Holes left by form-tying devices having a rectangular cross-section and other imperfections having a depth greater than their least surface dimension shall not be reamed but shall be repaired in an approved manner with dry-packed cement grout.

D. All repairs shall be built up and shaped in such a manner that the completed work will conform to the requirements of this Section, as applicable, using approved methods which will not disturb the bond, cause sagging, or cause horizontal fractures. Surfaces of repairs shall receive the same kind and amount of curing treatment as required for the concrete in the repaired section.

3.13 PATCHING HOLES IN CONCRETE

A. Patching Small Holes:

1. Holes which are less than 12 inches in the least dimension and extend completely through concrete members shall be filled.

2. Small holes in members which are water-bearing or in contact with soil or

other fill material shall be filled with non-shrink grout. Where a face of the member is exposed to view, the non-shrink grout shall be held back 2 inches from the finished surface. The remaining 2 inches shall then be patched according to the Paragraph entitled "Treatment of Surface Defects."

3. Small holes through all other concrete members shall be filled with non-shrink grout, with exposed faces treated as above.

B. Patching Large Holes:

1. Holes which are larger than 12 inches in the least dimension shall have a keyway chipped into the edge of the opening all around, unless a formed keyway exists. The holes shall then be filled with concrete as indicated herein.

2. Holes which are larger than 24 inches in the least dimension and which do not have reinforcing steel extending from the existing concrete, shall have reinforcing steel set in grout in drilled holes. The reinforcing added shall match the reinforcing in the existing wall unless indicated otherwise.

3. Large holes in members which are water bearing or in contact with soil or other fill shall have a bentonite type waterstop material placed around the perimeter of the hole in accordance with Section 03290 - Joints in Concrete, unless there is an existing waterstop in place.

3.14 CARE AND REPAIR OF CONCRETE

A. The CONTRACTOR shall protect all concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface. Any concrete found to be damaged, or which may have been originally defective, or which becomes defective at any time prior to the final acceptance of the completed WORK, or which departs from the established line or grade, or which, for any other reason, does not conform to the requirements of the Contract Documents, shall be satisfactorily repaired or removed and replaced with acceptable concrete.

3.15 Not Used.

- END OF SECTION -

SECTION 03315 - GROUT

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide grout, complete and in place, in accordance with the Contract Documents.

B. The following types of grout are covered in this Section:

1. Non-Shrink Grout: This type of grout shall be used wherever grout is indicated, unless another type is specifically referenced.

2. Cement Grout

3. Epoxy Grout

4. Topping Grout and Concrete Fill

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Specifications, codes, and standards shall be as listed in Section 03300 Cast-in-Place Concrete, and as indicated herein.

1.3 CONTRACTOR SUBMITTALS

A. Furnish submittals in accordance with Section 01300 - Contractor Submittals

B. **Shop Drawings:** Include certified test results verifying compliance with the compressive strength, shrinkage, and expansion requirements; and manufacturer's literature containing instructions and recommendations on the mixing, handling, placement, and appropriate uses for each proposed type of non-shrink and epoxy grout.

C. Provide manufacturer’s independent certification of ASTM C 1107 - Packaged Dry, Hydraulic-Cement Grout (Nonshrink), compliance without modification of the standard methods certifying that the Class B or C grout post hardening non-shrink properties are not based on gas expansion, grouts have strengths of 3500 psi at 1 day, 6500 psi at 3 days and 7500 psi at 28 days when cured at 72 degrees F as well as meeting the 3,7, and 28 day strengths when tested and cured at the 45 degree and 95 degree limits and all other requirements of ASTM C 1107.

D. The CONTRACTOR shall engage an independent testing laboratory to run a 24 hour grout evaluation in accordance with ASTM C 1107 of each grout submitted for approval showing compliance to all aspects of the evaluation and submit results to the ENGINEER for review.

1.4 QUALITY ASSURANCE

A. Field Tests:

1. Compression test specimens will be taken during construction from the first

placement of each type of grout and at intervals thereafter selected by the ENGINEER to insure continued compliance with these specifications. The specimens will be made by the ENGINEER or its representative.

2. Compression tests and fabrication of specimens for cement grout and non-shrink grout will be performed in accordance with ASTM C 109 - Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or 50-mm Cube Specimens) at intervals during construction selected by the ENGINEER. A set of three specimens will be made for testing at 7 days, 28 days, and each additional time period as appropriate.

3. Compression tests and fabrication of specimens for epoxy grout will be performed in accordance with ASTM C 579 - Test Methods for Compressive Strength of Chemical-Resistant Mortars and Monolithic Surfacings, Method B, at intervals during construction selected by the ENGINEER. A set of three specimens will be made for testing at 7 days, and each earlier time period as appropriate.

4. All grout which fails to meet requirements is subject to removal and replacement.

5. The cost of laboratory tests on grout will be paid by the OWNER except where test results show the grout to be defective. In such case, the CONTRACTOR shall pay for the tests, removal and replacement of Defective Work, and retesting, all at no increased cost to the OWNER.

6. The CONTRACTOR shall assist the ENGINEER in obtaining specimens for testing and shall furnish all materials necessary for fabricating the test specimens.

B. **Construction Tolerances:** Construction tolerances shall be in accordance with Section 03300, unless indicated otherwise.

PART 2 -- PRODUCTS

2.1 CEMENT GROUT

A. **Cement Grout:** Cement grout shall be composed of one part cement, three parts sand, and the minimum amount of water necessary to obtain the desired consistency. Where needed to match the color of adjacent concrete, white portland cement shall be blended with regular cement as needed. The minimum compressive strength at 28 days shall be 4000 psi.

B. Cement grout materials shall be as indicated in Section 03300 except that no cement from kilns burning metal-rich hazardous waste fuel shall be used.

2.2 PREPACKAGED GROUTS

A. **Non-Shrink Grout:**

1. Non-shrink grout shall be a prepackaged, inorganic, non-gas-liberating, non-metallic, cement-based grout requiring only the addition of water. Cement from kilns burning metal-rich hazardous waste fuel shall not be used. Manufacturer's instructions shall be printed on each bag or other container in which the materials are packaged. The specific formulation for each class of non-shrink grout herein shall be that recommended by the manufacturer for the particular application. All grouts (Grade A,

B, C) shall be tested for height change of the hardened grout at 1, 3, 14, and 28 days in accordance with ASTM C 1090 - Test Method for Measuring Change in Height of Cylindrical Specimens for Hydraulic-Cement Grout, and shall be tested for compression at 1, 3, 7, and 28 days in accordance with the modified ASTM C 109 testing procedure.

2. Class A non-shrink grouts shall have a minimum 28 day compressive strength of 5000 psi and shall meet the requirements of ASTM C 1107 when mixed to a flowable, plastic, or stiff consistency. When tested in accordance with ASTM C 1090, grout shall have a maximum of 4.0 percent expansion in the pre-hardened state.

3. Class B or C high precision, fluid, extended working time, non-shrink grouts shall have a minimum 28 day compressive strength of 7500 psi; shall have no shrinkage (0.0 percent) and a maximum 4.0 percent expansion in the plastic state when tested in accordance with ASTM C 827 - Test Method for Early Volume Change of Cementitious Mixtures; and shall have no shrinkage (0.0 percent) and a maximum of 0.2 percent expansion in the hardened state; and when mixed to a fluid consistency of 20 to 30 seconds per ASTM C 939 at temperature extremes of 45 to 90 degrees F shall have an extended working time of 30 minutes when tested in accordance with ASTM C 1107. Class B or C non-shrink grout shall be **Master Builders Masterflow 555** by **Master Builders**; **Sika Grout 212** by **Sika Corporation**.

4. Application:

   a. Class A non-shrink grout shall be used for the repair of holes and defects in concrete members which are not water-bearing and not in contact with soil or other fill material, and grouting railing posts in place.

   b. Class B or C non-shrink grout shall be used for the repair of holes and defects in concrete members which are water bearing or in contact with soil or other fill material, grouting under all base plates for structural steel members, grouting under all equipment base plates, and at all locations where grout is required by the Contract Documents except where epoxy grout is specifically required. Class B or C non-shrink grout may be used in place of Class A non-shrink grout for all applications. Class B or C non-shrink grout shall not be used for dry packing applications.

B. **Epoxy Grout:**

1. Epoxy grout shall be a pourable, non-shrink, 100 percent solids system. The epoxy grout system shall have three components: resin, hardener, and specially blended aggregate, all premeasured and prepackaged. The resin component shall not contain any non-reactive diluents. Variation of component ratios is not permitted unless specifically recommended by the manufacturer. Manufacturer's instructions shall be printed on each container in which the materials are packaged. Epoxy grout shall be **Master Builders Ceilcote 648 CP+** by **Master Builders; Sikadur 42, Grout-Pak** by **Sika Corporation.**

2. The chemical formulation of the epoxy grout shall be that recommended by the manufacturer for the particular application.

3. The mixed epoxy grout system shall have a minimum working life of 90 to 120 minutes at 70 degrees F.

4. The epoxy grout shall develop a compressive strength of 9000 psi in 24 hours and 13,000 psi in seven days when tested in accordance with ASTM C 579, Method B. There shall be no shrinkage (0.0 percent) and a maximum 4.0 percent expansion when tested in accordance with ASTM C 827.

5. The epoxy grout shall exhibit a minimum effective bearing area of 90 percent. This shall be determined by testing in accordance with ASTM C 1339 - Standard Test Method for Flowability and Bearing Area of Chemical-Resistant Polymer Machinery Grouts, for bearing area and flow.

6. Application: Epoxy grout shall be used to embed all anchor bolts and reinforcing steel required to be set in grout, and for other applications specifically required in the Contract Documents. Epoxy grout shall not be used in place of high-strength epoxy adhesives.

2.3 TOPPING GROUT AND CONCRETE FILL

A. Grout for topping of slabs and concrete fill for built-up surfaces of tank, channel, and basin bottoms shall be composed of cement, fine aggregate, coarse aggregate, water, and admixtures. All materials and procedures for concrete in Section 03300 shall apply except as noted otherwise herein.

B. Topping grout and concrete fill shall contain a minimum of 564 pound of cement per cubic yard with a maximum water cement ratio of 0.45. Where concrete fill is thicker than 3 inches, sitework concrete in accordance with Section 03300 - Cast-in-Place-Concrete may be used if accepted by the ENGINEER.

C. Coarse aggregate shall be graded as follows:

U.S. STANDARD SIEVE SIZE	PERCENT BY WEIGHT PASSING
1/2"	100
3/8"	90-100
No. 4	20-55
No. 8	5-30
No. 16	0-10
No. 30	0

D. Final mix design shall be determined by trial mix design under supervision of the approved testing laboratory.

E. **Strength:** Minimum compressive strength of topping grout and concrete fill at the end of 28 days shall be 3000 psi.

2.4 CURING MATERIALS

A. Curing materials shall be in accordance with Section 03300 for cement grout and be as recommended by the manufacturer of prepackaged grouts.

2.5 CONSISTENCY

A. The consistency of grout shall be as necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is such that the grout is plastic and moldable but will not flow. Where "dry pack" is required by the Contract Documents, it shall mean a grout of that consistency; the type of grout to be used shall be as indicated herein for the particular application.

B. The slump for topping grout and concrete fill shall be adjusted to match placement and finishing conditions but shall not exceed 4 inches.

2.6 MEASUREMENT OF INGREDIENTS

A. Measurements for cement grout shall be made accurately by volume using containers. Shovel measurement shall not be allowed.

B. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.

PART 3 -- EXECUTION

3.1 GENERAL

A. Surface preparation, curing, and protection of cement grout shall be in accordance with Section 03300. The finish of the grout surface shall match that of the adjacent concrete unless otherwise indicated.

B. The manufacturer of Class B or C non-shrink grout and epoxy grout shall provide on-Site technical assistance upon request at no cost to the OWNER.

C. Base concrete or masonry shall have attained its design strength before grout is placed, unless authorized by the ENGINEER.

3.2 GROUTING PROCEDURES

A. **Prepackage Grouts:** Mixing, surface preparation, handling, placing, consolidation, curing, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the manufacturer.

B. **Base Plate Grouting:**

1. For base plates, the original concrete shall be blocked out or finished off a sufficient distance below the plate to provide for a one-inch thickness of grout or a thickness as indicated on the Drawings.

2. After the base plate has been set in position at the proper elevation by steel wedges or double nuts on the anchor bolts, the space between the bottom of the plate and the original pour of concrete shall be filled with non-shrink-type grout. The mixture shall be of a trowelable consistency and be tamped or rodded solidly into the space between the plate and the base concrete. A backing board or stop shall be provided at the back side of the space to be filled with grout. Where this method of placement is not practical or where required by the ENGINEER, alternate grouting methods shall be submitted for acceptance.

C. Topping Grout

1. All mechanical, electrical, and finish work shall be completed prior to placement of topping or concrete fill. The base slab shall be given a roughened textured surface by sandblasting or hydroblasting, exposing the aggregates to ensure bonding to the base slab.

2. The minimum thickness of grout topping and concrete fill shall be one inch. Where the finished surface of concrete fill is to form an intersecting angle of less than 45 degrees with the concrete surface it is to be placed against, a key shall be formed in the concrete surface at the intersection point. The key shall be a minimum of 3-1/2-inches wide by 1-1/2-inches deep.

3. The base slab shall be thoroughly cleaned, at saturated surface dry (SSD) condition per ICRI standards for surface preparation, and free from standing pools or ponds of water prior to placing topping and fill. A thin coat of neat cement grout shall be broomed into the surface of the slab just before topping of fill placement. The topping and fill shall be compacted by rolling or tamping, brought to established grade, and floated. Grouted fill for tank and basin bottoms where scraping mechanisms are to be installed shall be screened by blades attached to the revolving mechanism of the equipment in accordance with the procedures outlined by the equipment manufacturer after the grout is brought to the established grade.

4. Topping grout placed on sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement.

5. The surface shall be tested with a straight edge to detect high and low spots which shall be immediately eliminated. When the topping and fill has hardened sufficiently, it shall be steel troweled to a smooth surface free from pinholes and other imperfections. An approved type of mechanical trowel may be used as an assist in this operation, but the last pass over the surface shall be by hand-troweling. During finishing, no water, dry cement, or mixture of dry cement and sand shall be applied to the surface.

3.3 CONSOLIDATION

A. Grout shall be placed in such a manner, for the consistency necessary for each application, so as to assure that the space to be grouted is completely filled.

- END OF SECTION -

SECTION 03410 -- PRECAST CONCRETE VAULTS

PART 1 - GENERAL

1.1. THE REQUIREMENT

A. The CONTRACTOR shall provide the precast concrete work in accordance with the Contract Documents.

B. This Section covers the design, fabrication, delivery and installation of all precast concrete units, including connections.

1.2. CODES AND STANDARDS

A. Commercial Standards

ANSI/ACI 315	Concrete Reinforcement
ANSI/ACI 318	Concrete Construction
ANSI/AWS A5.4	Welding Rods and Electrodes
AWS B2.1	
ANSI/AWS D1.1	Welding and Cutting
ANSI/AWS D1.4	Welding and Cutting
ASTM A 184	Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A 185	Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement
ASTM A 193	Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
ASTM A 194	Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service
ASTM A 351	Steel Castings, Austenitic, for High- Temperature Service
ASTM A 497	Welded Deformed Steel Wire Fabric for Concrete Reinforcement
ASTM A 580	Stainless and Heat-Resisting Steel Wire
ASTM A 615	Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 666	Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar for Structural Applications
ASTM A 775	Epoxy-Coated Reinforcing Steel Bars
ASTM C 33	Concrete Aggregates

ASTM C 67	Method for Sampling and Testing Brick and Structural Clay Tile
ASTM C 127	Test Method for Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	Test Method for Specific Gravity and Absorption of Fine Aggregate
ASTM C 150	Portland Cement
ASTM C 173	Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C 204	Test Method for Fineness of Portland Cement by Air Permeability Apparatus
ASTM C 231	Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260	Air-Entraining Admixtures for Concrete
ASTM C 311	Method for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland Cement Concrete
ASTM C 494	Test Method for Shear Fatigue of Sandwich Core Materials
ASTM D 2240	Test Method for Rubber Property --Durometer Hardness
AWS D12.1	
PCI MNL-116	
PCI MNL-117	
PCI MNL-121	

1.3. CONTRACTOR SUBMITTALS

A. The CONTRACTOR shall submit Shop Drawings for all precast concrete items in accordance with Section 01300 - Contractor Submittals. Drawings shall show all dimensions, location and type of lifting inserts, and details of reinforcement and joints.

B. For all precast items that are manufactured, the CONTRACTOR shall also submit a list of the design criteria used by the manufacturer.

B. The CONTRACTOR shall submit approved ICBO reports for all lifting inserts, showing allowable design loads on the inserts.

C. **Mix Design:** Prior to beginning the WORK, the CONTRACTOR shall submit to the ENGINEER, for review, preliminary concrete mix designs which shall show the proportions and gradations of all materials proposed for each class and type of concrete specified herein in accordance with Division 1. The mix designs shall be designed by an

independent testing laboratory acceptable to the ENGINEER. All costs related to such mix design shall be the CONTRACTOR's responsibility.

E Verification of compressive strength shall be submitted in accordance with Division 1. Such verification may be laboratory trial batch test results with a minimum of three test cylinders or a series of production compression tests with a minimum of 20 sets of test data which fall within the evaluation and acceptance criteria specified herein. Such tests must have been made within the previous two years on the identical concrete mix submitted.

1.4 QUALITY ASSURANCE

A. Tests on component materials and for compressive strength of concrete will be performed as specified herein. Test for determining slump will be in accordance with the requirements of ASTM C 143. The cost of all laboratory tests on cement, aggregates, and concrete, will be borne by the OWNER. However, the CONTRACTOR shall be charged for the cost of any additional tests and investigation on work performed which does not meet the specifications.

B. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 318, Chapter 4 "Concrete Quality," and as specified herein.

2. A statistical analysis of compression test results will be performed according to the requirements ACI 214. The standard deviation of the test results shall not exceed 640 psi.

3. When the standard deviation of the test results exceed 640 psi, the average strength for which the mix is designed shall be increased by an amount necessary to satisfy the statistical requirement that the probability of any test being more than 500 psi below or the average of any 3 consecutive tests being below the specified compressive strength is 1 in 100. The required average strength shall be calculated by Criterion No.3 of ACI 214 using the actual standard of deviation.

4. All concrete that fails to meet the ACI requirements and these specifications shall not be used and removal and replacement shall be at the cost of the CONTRACTOR.

C. **Compression Tests:** Compression tests shall be made in accordance with Section 03300 - Cast-In-Place Concrete.

1.5. DEFINITIONS

A. In these Specifications, where the terms "Precast Concrete" and "Precast Concrete Specialties" are used, they shall have equivalent meaning.

PART 2 - PRODUCTS

2.1 MANUFACTURED ITEMS

A. Miscellaneous precast vaults (including electrical manholes, pull boxes, and meter boxes)

1. Size: Vault dimensions shall be as required by Drawings.

2. Material: Concrete used for manufactured vaults shall have a minimum 3000 psi compressive strength.

3. Covers: Unless indicated otherwise, vaults shall have concrete covers with minimum 30-inch diameter galvanized steel lids, which are bolted to galvanized steel frames with stainless steel bolts. The frames and lids shall be provided by the vault manufacturer. Covers shall have lifting handles. When leveling bolts are used to set the vault top sections, the CONTRACTOR shall ensure that the load on the vault will be transferred through the mortar to the vault, and will not be carried by the leveling bolts.

4. Loading: Where vaults are in areas that may be subjected to vehicular traffic; they shall be designed for H-20 traffic loading. In other areas, they shall be designed for a vertical live load of 300 psf. Lateral loads on all vault walls shall be as follows;

   h = depth of fill:

   Lateral surcharge soil pressures (triangular): 90 x h (psf)

   Lateral surcharge soil pressure: 200 psf

   Increase in soil pressure due to seismic: 25 psf (uniform)

   Seismic acceleration applied to vault dead loads: 0.27 x gravity

   The worst load case of static plus seismic or static plus surcharge shall be used for design.

5. Mechanical Details: Piping, electrical, and other details shall be as required by the Contract Documents.

2.2. PREFORMED JOINT SEALANT

A. The joint sealing compound shall be in accordance with Section 7920.

2.3. MORTAR

A. Mortar used between the sections of precast concrete manholes and vaults shall be as recommended by the precast manufacturer.

B. Non-shrink grout shall be as specified in the Section 03315 - Grout.

PART 3 - EXECUTION

3.1 MANUFACTURED ITEMS

A. **Pull Boxes, Electrical Manholes, Vaults, and Meter Boxes:** The above mentioned precast items shall be installed in accordance with the manufacturer's recommendations, unless otherwise required by the Drawings.

B. **Connections:** Connections to manufactured precast items shall be made by casting sections of pipe into the items, using non-shrink grout as shown on the Drawings, and/or using an approved resilient connector.

-END OF SECTION-

SECTION 04232 - REINFORCED CONCRETE BLOCK MASONRY

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide concrete masonry and other appurtenant work, complete and in place, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Commercial Standards

ANSI/ASTM C 5	Quicklime for Structural Purposes
ASTM A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM C 90	Load-Bearing Concrete Masonry Units
ASTM C 129	Non load bearing Concrete Masonry Units
ASTM C 140	Test Methods of Sampling and Testing Concrete Masonry Units
ASTM C 144	Aggregate for Masonry Mortar
ASTM C 150	Portland Cement
ASTM C 207	Hydrated Lime for Masonry Purposes
ASTM C 270	Mortar for Masonry Purposes
ASTM C 404	Aggregates for Masonry Grout
ASTM E 447	Test Methods for Compressive Strength of Masonry Prisms
ASTM C 476	Grout for Masonry Structures
CT 551	Field Test Specimens for Mortar

1.3 CONTRACTOR SUBMITTALS

A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.

B. Samples

1. Samples of concrete masonry unit colors with texture ranges indicated for

selection of color. Full size samples of the blocks selected shall be submitted for final approval by the ENGINEER after color selection, if requested. If the specified product is a colored and textured unit, the samples shall be colored and textured units.

2. Samples of mortar colors for color selection.

3. A 4-ft minimum square free-standing sample panel shall be prepared for approval before starting masonry work. The panel shall remain at the Site for reference until all masonry work is completed.

C. Documentation

1. Reports from testing masonry units

2. Reports from mortar and grout testing.

3. Reports from prism testing.

D. Grout and mortar mix design

1. Proportions for all components

2. Mill tests for cement

3. Admixture certification. Include chloride ion content.

4. Aggregate graduation and certification

5. Lime certification

1.4 QUALITY ASSURANCE

A. **Applicable Standards:** Concrete masonry shall conform to the Building Code, the Masonry Design Manual published by the Masonry Industry Advancement Committee, and other applicable codes and standards of governing authorities.

B. All work shall conform to the standard of quality established by the approved free-standing sample panel.

C. Concrete block masonry units shall be sampled and tested in accordance with ASTM C 140.

D. **Testing of Mortar and Grout:** The CONTRACTOR shall have the mortar and grout tested to assure compliance with the Specifications and the governing codes by a recognized testing laboratory approved by the ENGINEER. Test reports shall be submitted to the ENGINEER.

1. Tests shall be taken at the following times:

a. At commencement of masonry work, at least 2 test samples each of mortar and grout shall be taken on 3 successive working days.

b. At any change in materials or job conditions, at least 2 samples of each modified material, grout, and mortar shall be tested.

c. Four random tests each of mortar and grout shall be made. The random test samples shall be taken when requested by the ENGINEER.

d. Additional samples and tests may be required whenever, in the judgment of the ENGINEER, additional tests (beyond the random tests) are necessary to determine the quality of the materials.

e. The costs of tests and test reports, except for any additional tests requested by the ENGINEER, shall be paid by the CONTRACTOR. The costs of the additional tests and reports, when reports verify compliance with the Contract Documents, will be paid by the OWNER. When tests or reports do not verify compliance, the cost of all additional tests and reports shall be paid by the CONTRACTOR.

2. Test samples shall be stored in a moist environment until tested, unless directed otherwise by the ENGINEER or the testing laboratory. Tests shall be in accordance with ASTM C 476.

E. Test of Masonry Prisms: the OWNER will test masonry prisms to assure compliance with the Specifications and the governing codes by a recognized testing laboratory.

1. Tests will be made of the following items:

a. At the time of the construction of the sample panel above, at least 5 masonry prisms shall be made for each type of block herein, except separate prisms are not required for block which only varies by texture.

b. At any change in materials during construction, at least 5 masonry prisms will be made for each type of block affected.

c. One set of at least 5 masonry prisms will be made for each masonry structure, besides the structure that the sample is part of, or for each week in which block is laid, for each type of block involved; whichever occurs first.

d. Additional sets of at least 5 masonry prisms may be required whenever, in the judgement of the ENGINEER, additional tests are necessary to determine the quality of the materials.

2. The prisms shall be constructed by the CONTRACTOR in the presence of the ENGINEER. The same personnel who are laying the block in the structure shall construct the masonry prism.

3. The masonry prism shall be constructed and will be tested in accordance with ASTM E 447, method B, except as modified herein. The prisms shall be composed of one complete cell using full-size blocks which are saw-cut. The minimum ratio of height to smaller width dimension shall be 1.5. The prism shall be at least 15 inches high. A minimum of two horizontal bed joints shall be used to form the prism. The prism shall be grouted, after the required 24-hour minimum cure period, using the same grout used in the walls.

4. Compression tests made on sets of specimens made during construction shall include 2 prisms tested at 7 days after grouting and 3 prisms tested at 28 days after grouting.

5. The average compressive strength of prisms tested at 28 days after grouting, multiplied by the appropriate correction factor as given in the UBC, shall not be less than the indicated masonry compressive strength.

6. If the compressive strength of the prisms fails to meet or exceed that required, adjustments shall be made to the mix designs for the mortar, or grout, or both, as needed to produce the required strength. The masonry units shall also be retested to verify compliance to the requirements of ASTM C 90, Grade N-1.

7. If the compressive strength of the prism fails to meet or exceed that required, prisms or cores shall be cut from the walls in sufficient numbers and in sufficient locations to adequately determine the strength of the walls. Those portions of the walls represented by specimens failing to meet the required compressive strength are subject to being removed and replaced.

F. **Inspection:** Whenever required under the provisions of the Building Code, work hereunder will be subject to continuous inspection by a Special Inspector selected by the ENGINEER and approved by the local Building Official having jurisdiction. Costs of such inspection will be paid by the OWNER. The Special Inspector will work under the supervision of the ENGINEER.

G. **Weather Conditions:** Concrete masonry units shall not be placed when air temperature is below 40 degrees F (4 degrees C) and shall be protected against direct exposure to the wind and sun when erected when the ambient air temperature exceeds 99 degrees F (37 degrees C) in the shade with relative humidity less than 50 percent. Cold weather installation shall be per code and Reference Standards and as approved by the ENGINEER.

H. **Product Storage:** Cement, lime, and other cementitious materials shall be delivered and stored in dry, weather-tight sheds or enclosures, in unbroken bags, barrels, or other approved containers, plainly marked and labeled with the manufacturers' names and brands. Mortar and grout shall be stored and handled in a manner which will prevent the inclusion of foreign materials and damage by water or dampness. Masonry units shall be handled with care to avoid chipping and breakage, and shall be stored as directed in the Masonry Design Manual. Materials stored on newly constructed floors shall be stacked in such manner that

the uniformly-distributed loading does not exceed 30 psf. Masonry materials shall be protected from contact with the earth and exposure to the weather and shall be kept dry and clean until used.

PART 2 -- PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. Concrete masonry units shall conform to ASTM C 90, Type I, with maximum linear shrinkage of 0.6 percent from standard to oven-dried condition. Units shall be light weight units unless indicated otherwise.

B. Concrete masonry units shall be 8-inch by 8-inch by 16-inch modular size, with smooth faces.

C. **Color, texture, and layout of the block shall be by as directed by Owner.**

D. All bond beam, corner, lintel, sill, and other specially shaped blocks shall be provided where required or necessary. Specially shaped non-structural blocks may be constructed by saw cutting. Color and texture shall match that of adjacent units.

E. Concrete masonry units hidden from view entirely may be natural color units the same size as other adjacent masonry units.

2.2 MATERIALS

A. Portland cement shall be Type I or II, low alkali, conforming to ASTM C 150.

B. Lime paste shall be made with pulverized quicklime or with hydrated lime which shall be allowed to soak not less than 72 hrs before use except that hydrated lime processed by the steam method shall be allowed to soak not less than 24 hrs and shall be made by adding the lime to the water. In lieu of hydrated lime paste for use in mortar, the hydrated lime may be added in the dry form. Hydrated lime shall be Type S, conforming to ASTM C 207. Pulverized quicklime shall conform to ANSI/ASTM C 5, shall pass a No. 20 sieve, and 90 percent shall pass a No. 50 sieve.

C. Sand shall conform to ASTM C 144. Coarse aggregate shall conform to ASTM C 404.

D. Water for mixing shall be clear potable water.

E. Reinforcing steel shall be deformed bars conforming to ASTM A 615, Grade 60.

F. The admixture shall not be detrimental to the bonding or help the process of efflorescence.

2.3 MORTAR

A. Mortar for concrete block masonry shall be Type S, with a minimum 28-day compressive strength of 1800 psi. Proportions shall be one part portland cement, 1/4- to 1/2-part lime paste or hydrated lime, and damp, loose sand in an amount (by volume) of not less than 2-1/4 nor more than 3 times the sum of the volumes of cement and lime used, with the precise amount of water required to produce the required workability and strength.

B. Mortar color shall match block color.

2.4 GROUT

A. Grout shall have a minimum 28-day compressive strength of 2000 psi. Proportions shall be one part portland cement, not more than 1/10-part lime paste or hydrated lime, 2-1/4 to 3 parts damp, loose sand, not more than 2 parts pea gravel, and water in the amount necessary to produce a consistency for pouring without segregation of components. Where the grout space is less than 4 inches, pea gravel shall be omitted.

B. Admixtures may only be used when approved by the ENGINEER. When it has been approved for use, it shall be used in accordance with the manufacturer's published recommendations for the grout.

2.5 BRICK VENTS

A. Brick vents shall be installed as shown on plans, and integral to the masonry work. Brick vents shall be constructed of 0.125 extruded aluminum with color anodized finish per Owner. Brick vents shall be nominal 8” x 16”, with free open area of no less than 0.279 sq. ft., and 1,500 fpm @ 0.2” w.g. Brick vents shall be Nystorm, model EX.

PART 3 -- EXECUTION

3.1 GENERAL

A. Measurements for mortar and grout shall be accurately made. Shovel measurements are not acceptable. Mortar proportions shall be accurately controlled and maintained.

B. Work shall be performed in accordance with the provisions of the applicable code for reinforced concrete hollow-unit masonry.

C. The CONTRACTOR shall set or embed all anchors, bolts, reglets, sleeves, conduits, and other items as required.

D. All block cutting shall be by machine.

E. Masonry units shall be supported off the ground and shall be covered to protect them from rain. Only clean, dry, uncracked units shall be incorporated.

F. Reinforcing steel shall be cleaned of all loose rust and scale, and all oil, dirt, paint, laitance, or other substances which may be detrimental to or reduce bonding of the steel and concrete.

G. Immediately before starting work, the concrete upon which the masonry will be laid shall be cleaned with water under pressure.

H. Full mortar joint for first course shall be provided.

I. Units shall be shoved tightly against adjacent units to assure good mortar bond.

J. All equipment for mixing and transporting the mortar and grout shall be clean and free from set mortar, dirt, or other foreign matter.

3.2 MIXING

A. Mortar shall be mixed by placing 1/2 of the water and sand in the operating mixer, following which the cement, lime, and remainder of the sand and water shall be added. After all ingredients are in the mixer, they shall be mechanically mixed for not less than 5 minutes. Retempering shall be done on the mortar board by adding water within a basin formed within the mortar, and the mortar reworked into the water. Mortar which is not used within one hour shall be discarded.

3.3 ERECTION OF CONCRETE BLOCK MASONRY

A. Masonry work shall be erected in-plane, plumb, level, straight, and true to dimensions and executed in accordance with acceptable practices of the trade

B. Unless indicated otherwise, masonry shall be laid up in straight uniform courses with running bond.

C. All masonry shall be erected to preserve the unobstructed vertical continuity of the cells measuring not less than 3-inch by 3-inch in cross-section. Walls and cross webs shall be full bedded in mortar. All head (or end) joints shall be solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shells.

D. When fresh masonry joins masonry that is partially or totally set, the contract surface shall be cleaned, roughened, and lightly wetted.

E. Surfaces of concrete on which the masonry walls are to be constructed shall be roughened and cleaned, exposing aggregate, and shall be flushed with water and allowed to dry to a surface dry condition immediately before laying the masonry units.

F. Where cutting of masonry units is necessary, all cuts shall be made with a masonry saw to neat and true lines. Masonry units with cracking or chipping of the

finished exposed surfaces will not be acceptable.

G. During erection, all cells shall be kept dry in inclement weather by covering partially completed walls. The covering shall be waterproof fabric, plastic or paper sheeting, or other approved material. Wooden boards and plans shall not be used as covering materials. The covering shall extend down each side of masonry walls approximately 2 feet.

H. Walls shall be constructed in 4-foot maximum height lifts. Grouting of each lift shall be completed before beginning masonry unit construction for the next lift. The top course of each lift shall consist of a bond beam.

3.4 JOINTS

A. Vertical and horizontal joints shall be uniform and approximately 3/8-inch wide. Exterior joints and interior exposed block joints shall be concave-tooled to a dense surface. Special care shall be used in tooling joints so as to match existing construction. Interior or exterior non-exposed masonry and masonry behind plaster shall have flush joints.

3.5 CLEANOUTS

A. Cleanout openings shall be provided at the bottoms of all cells to be filled at each lift or pour of grout, where such lift or pour is over 4 ft in height. Any overhanging mortar or other obstructions or debris shall be removed from the insides of such cell walls. The cleanouts shall be sealed before grouting and after inspection. Cleanout openings shall match the finished wall in exposed masonry.

3.6 REINFORCEMENT

A. Deep cut bond beam blocks shall be used where horizontal reinforcing steel is embedded. H-block bond beams may be used at locations other than openings.

B. Knock-out openings shall have no steel or joint reinforcing running through the opening. Head, jambs, and sill blocks shall be used to provide an even finish surface to install window when blocks are removed. Joints at head, jambs, and sills shall be stacked and continuous.

C. Vertical reinforcement shall be held in position at top and bottom and at intervals not exceeding 192 diameters of the reinforcement.

3.7 GROUTING

A. All cells shall be filled solidly with grout unless indicated otherwise. Grouting shall not be started until the wall has cured for 24 hours.

B. All grout shall be consolidated at time of pouring by vibrating and reconsolidated after excess moisture has been absorbed butt before plasticity is lost. Grout shall not be sliced with a trowel. Where the grouting operation has been stopped for one hour or longer, horizontal construction joints shall be formed by stopping the

grout pour 1-1/2 inches below the top of the uppermost unit.

3.8 PROTECTION

A. Wall surfaces shall be protected from droppings of mortar or grout during construction.

3.9 FINISHING AND CLEANING

A. Masonry shall not be wet-finished unless exposed to extreme hot weather or hot wind and then only by using a nozzle-regulated fog spray sufficient only to dampen the face but not of such quantity to cause water to flow down over the masonry.

B. Finish masonry shall be cleaned and pointed in a manner satisfactory to the ENGINEER, based upon the standards established by the approved sample panel.

C. All interior and exterior colored masonry work exposed to view shall be cleaned by whip light sandblasting to remove all stains and other imperfections.

D. All exposed masonry surfaces of openings and window and door openings such as sills, heads, and jambs shall be finish block surfaces, not formed surfaces, unless indicated otherwise. Closed bottom bond beam blocks shall be used at heads and sills. Pour holes may be used at the sill under window frame and where approved by the ENGINEER.

END OF SECTION

SECTION 05500- MISCELLANEOUS METALWORK

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide miscellaneous metalwork and appurtenances, complete and in place, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Federal Specifications

B. Commercial Standards

AISC	Manual of Steel Construction
ASTM A 36	Carbon Structural Steel
ASTM A 123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 307	Carbon Steel Bolts and Studs, 636000 psi Tensile Strength
ASTM A 325	Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ANSI/AWS D1.1	Structural Welding Code - Steel
ANSI/AWS D1.2	Structural Welding Code - Aluminum
ANSI/AWS QC1	Qualification and Certification of Welding Inspectors

1.3 CONTRACTOR SUBMITTALS

A. **Shop Drawings:** Shop Drawings of all miscellaneous metalwork shall be submitted in accordance with Section 01300 - Contractor Submittals.

B. Layout drawings for grating shall be submitted showing the direction of span, type and depth of grating, size and shape of grating panels, seat angle details, and details of grating hold down fasteners. Load and deflection tables shall be submitted for each style and depth of grating used.

C. An ICBO report listing the ultimate load capacity in tension and shear for each size and type of concrete anchor shall be submitted. CONTRACTOR shall submit manufacturer's recommended installation instructions and procedures for adhesive anchors. Upon

review, by ENGINEER, these instructions shall be followed specifically.

D. No substitution for the indicated adhesive anchors will be considered unless accompanied with ICBO report verifying strength and material equivalency, including temperature at which load capacity is reduced to 90 percent of that determined at 75 degrees F.

1.4 QUALITY ASSURANCE

A. All weld procedures and welder qualifications shall be available in the CONTRACTOR"s field office for review.

B. All welding shall be inspected by the Owners representative.

PART 2 -- PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Steel

1.	Shapes, Plates, Bars	ASTM A 36
2.	Pipe, Pipe Columns, Bollards	ASTM A 53, Type E or S, Grade B standard weight unless noted otherwise
3.	Tubes	ASTM A 500 Grade B

B. **Corrosion Protection:** Unless otherwise indicated, fabricated steel metalwork which will be used in a corrosive environment and/or will be submerged in water/wastewater shall be coated in accordance with Section 09800 -Protective Coating and shall not be galvanized prior to coating. All other miscellaneous steel metalwork shall be hot-dip galvanized after fabrication.

C. **Stainless Steel:** Unless otherwise indicated, stainless steel metalwork and bolts shall be of Type 316 stainless steel.

D. **Aluminum:** Unless otherwise indicated, aluminum metalwork shall be of Alloy 6061-T6. Aluminum in contact with concrete, masonry, wood, porous materials, or dissimilar metals shall have contact surfaces coated in accordance with Section 09800.

E. **Cast Iron:** Unless otherwise indicated, iron castings shall conform to the requirements of ASTM A 48, Class 50B or better.

2.2 BOLTS AND ANCHORS

A. **Standard Service (Non-Corrosive Application):** Unless otherwise indicated, bolts, anchor bolts, washers, and nuts shall be steel as indicated herein. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing. Except as otherwise indicated, steel for bolt material, anchor bolts and cap screws shall be in accordance with the following:

1. Structural connections: ASTM A 307, Grade A or B, hot-dip galvanized.

2. Anchor Bolts: ASTM A 307, Grade A or B, or ASTM A 36, hot-dip galvanized.

3. High strength bolts where indicated: ASTM A 325

4. Pipe and equipment flange bolts: ASTM A 193, Grade B-7

B. **Corrosive Service:** All bolts, nuts, and washers in the locations listed below shall be stainless steel as indicated below.

1. All buried locations.

2. All submerged locations.

3. All locations subject to seasonal or occasional flooding.

4. Inside hydraulic structures below the top of the structure.

5. Inside buried vaults, manholes, and structures which do not drain through a gravity sewer or to a sump with a pump.

6. All chemical handling areas.

7. Inside trenches, containment walls, and curbed areas.

8. Locations indicated by the Contract Documents or designated by the ENGINEER to be provided with stainless steel bolts.

C. Unless otherwise indicated, stainless steel bolts, anchor bolts, nuts, and washers shall be Type 316 stainless steel, class 2, conforming to ASTM A 193 for bolts and to ASTM A 194 for nuts. All threads on buried stainless steel bolts shall be protected with an antiseize lubricant suitable for submerged stainless steel bolts, to meet government specification MIL-A-907E. Buried bolts in poorly drained soil shall be coated the same as the buried pipe.

1. Antiseize lubricant shall be classified as acceptable for potable water use by the NSF.

2. Provide Teflon washers between all steel washers and coatings on fittings, mechanical devices and supports, etc.

3. Do not coat above grade pipe bolts, nuts, or washers.

D. Bolt Requirements

1. The bolt and nut material shall be free-cutting steel.

2. The nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads. All bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.

3. Bolts and nuts shall be installed with washers fabricated of material matching the

base material of bolts, except that hardened washers for high strength bolts shall conform to the requirements of the AISC Specification. Lock washers fabricated of material matching the bolts shall be installed where indicated.

4. The length of each bolt shall be such that after the joint is made up, the bolt extends through the entire nut, but in no case more than 1/2-inch beyond the nut.

E. **Adhesive Anchors:** Unless otherwise indicated, all drilled, concrete or masonry anchors shall be adhesive anchors. No substitutions will be considered unless accompanied with ICBO report verifying strength and material equivalency.

1. Epoxy adhesive anchors are required for drilled anchors where exposed to weather, in submerged, wet, splash, overhead, and corrosive conditions, and for anchoring handrails, pumps, mechanical equipment, and reinforcing bars. Epoxy anchor grout shall comply with Section 03315 - Grout. Threaded rod shall be stainless steel Type 316.

2. Threaded rod shall be galvanized steel.

F. **Expanding-Type Anchors:** Expansion type anchors which are to be embedded in grout may be steel. Non-embedded buried or submerged anchors shall be stainless steel.

2.3 POWDER-DRIVEN PINS

A. **Materials:** Powder-driven pins for installation in concrete or steel shall be heat-treated steel alloy. If the pins are not inherently sufficiently corrosion-resistant for the conditions to which they are to be exposed, they shall be protected in an acceptable manner. Pins shall have capped or threaded heads capable of transmitting the loads the shanks are required to support. Pins that are connected to steel shall have longitudinal serrations around the circumference of the shank.

2.4 IMPACT ANCHOR

A. Impact anchors shall be an expansion type anchor in which a nail type pin is driven to produce the expansive force. The pin shall have a zinc sleeve with a mushroom style head and stainless steel nail pin.

PART 3 – EXECUTION

3.1 FABRICATION AND INSTALLATION REQUIREMENTS

A. **Fabrication and Erection:** Except as otherwise indicated, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."

B. **Powder-Driven Pins:** Powder-driven pins shall be installed by a craftsperson certified by the manufacturer as being qualified to install the manufacturer's pins. Pins shall be driven in one initial movement by an instantaneous force that has been carefully selected to attain the required penetration. Driven pins shall conform to the following requirements where "D" = pin's shank diameter:

Pin Shank	Minimum Space

Material Penetrated by Pin	Material Minimum Thickness	Penetration in Supporting Material	From Pin's CL to Edge of Pene-trated Material	Minimum Pin Spacing
Concrete	16D	6D minimum	14D	20D
Steel	1/4-inch	Steel thickness	4D	7D

3.2 WELDING

A. **Method:** Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards governing same.

B. **Quality:** In assembly and during welding, the component parts shall be adequately clamped, supported and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as indicated by the AWS Code. Upon completion of welding, weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. All sharp corners of material which is to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.

3.3 GALVANIZING

A. Structural steel plates shapes, bars, and fabricated assemblies required to be galvanized shall, after the steel has been thoroughly cleaned of rust and scale, be galvanized in accordance with the requirements of ASTM A 123. Any galvanized part that becomes warped during the galvanizing operation shall be straightened. Bolts, anchor bolts, nuts and similar threaded fasteners, after being properly cleaned, shall be galvanized in accordance with the requirements of ASTM A 153.

3.4 DRILLED ANCHORS

A. Drilled anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions. Holes shall be roughened with a brush on a power drill, cleaned and dry. Drilled anchors shall not be installed until the concrete has reached the required 28-day compressive strength. Adhesive anchors shall not be loaded until the adhesive has reached its indicated strength in accordance with the manufacturer's instructions.

- END OF SECTION -

SECTION 06172 - WOOD TRUSSES

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide wood trusses, 2X joists, bridging, bracing, and appurtances, complete in place, in accordance with the Contract Documents.

B. Single-Source Engineering Responsibility: Provide trusses engineered by the truss fabricator to support superimposed dead and live loads indicated. Design shall be approved and certified by a qualified professional engineer.

C. Single-Source Responsibility for Connector Plates: Provide metal connector plates from one manufacturer.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Commercial Standards**:

AFPA NDS	National Design Specification for Wood Construction and Supplement
AITC	Timber Construction Manual
ANSI A58.1	Minimum Design Loads for Buildings and Other Structures
ANSI/TPI 1	National Design Standard for Metal-Plate-Connected Wood Truss Construction.
ASME B18.6.1	Wood Screws (Inch Series)
ASME B18.2.1	Square and Hex Bolts and Screws (Inch Series)
ASTM A 307	Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
ASTM A 563	Carbon and Alloy Steel Nuts
ASTM A 653	Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process
AWPA C1	Manual of Recommended Practice, Standard for PreservativeTreatment by Pressure Process - All Timber Products
CABO NER-272	Power Driven Staples and Nails for Use in all Types of Building Construction
FF-N-107	Federal Specification for Nails, Brads, and Spikes: Wire Cut

FPL Bulletin 1069	Effect of Pretreatment of Wood on the Lignin Determination: Distribution of Methoxyls in Wood
SPIB	Grading Rules for Southern Pine Lumber
TPI DSB	Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses
TPI DST	Design Specification for Light Metal Plate Connected Wood Trusses
TPI HIB	Commentary and Recommendations for Handling Installing & Bracing Metal Plate Connected Wood Trusses
WCLIB Standard 17	Grading Rules for West Coast Lumber
WWPA	Standard Grading Rules for Western Lumber

1.3 CONTRACTOR SUBMITTALS

A. **General:** Submittals shall be in accordance with Section 01300-Contractor Submittals. Also submit design drawings and calculations of the proposed roof system to the Building Department.

B. Calculations and drawings shall be stamped by a Professional Engineer licensed in the State of California.

C. Submit

1. Shop Drawings detailing location, pitch, span, camber, configuration, dimensions, and spacing for each type of truss required; species, sizes, and stress grades of lumber to be used; splice details; type, size, material, finish, design values, and orientation and location of metal connector plates; bearing details; camber; permanent lateral bracing as required by design to reduce the buckling length of individual truss members; and handling and erection recommendations.

2. Approved ICBO reports for all truss connector plates to be used, which show allowable design loads on the plates.

3. Product certificates signed by officer of truss fabricating firm, certifying that metal-plate-connected wood trusses comply with indicated requirements and Shop Drawings.

4. Qualification data for firms and persons to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information indicated.

5. Not Used.

6. Material certificates for dimension lumber required to comply with minimum allowable unit

stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee (ALSC) Board of Review

1.4 QUALITY ASSURANCE

A. **Materials:** Materials and assembly shall be inspected to determine compliance with the Building Code. Every material shall be graded, marked, or labeled.

B. **Certificate:** A certificate of approval from an agency approved in accordance with the Building Code shall be furnished with every prefabricated assembly. The certificate shall certify that the assembly in question has been inspected and meets all the requirements of the Building Code.

C. Not Used.

D. Qualifications

1. General: The items in this Section shall be furnished by firms having at least five years experience with similar products and having a record of successful installations

2. Metal-Plate Connector Manufacturer: A manufacturer that is a member of Truss Plate Institute (TPI) and that complies with TPI quality-control procedures for manufacture of connector plates published in ANSI/TPI 1.

3. Fabricator: Engage a firm that:

a. Complies with the following requirements for quality control and is experienced in fabricating metal-plate-connected wood trusses similar to those indicated and with a record of successful in-service performance:

b. Participates in a recognized quality-assurance program that involves inspection by SPIB; Timber Products Inspection, Inc.; TPI; or other independent inspecting and testing agency acceptable to ENGINEER and authorities having jurisdiction.

4. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated that have resulted in installing metal-plate-connected wood trusses similar to those indicated for this Project and with a record of successful in-service performance.

5. Installer: An experienced Installer who has completed wood truss installation similar in material, design, and extent to that indicated and with a record of successful in-service performance.

PART 2 -- PRODUCTS

2.1 GENERAL

A. **Design and Fabrication:** The design and fabrication of metal plate connected wood trusses shall be in accordance with ANSI/TPI 1, applicable portions of TPI DSB and the AFPA NDS.

B. Not Used.

C. Not Used.

D. Not Used.

E. As a minimum, the following load conditions with appropriate building code prescribed load duration factors shall be considered in the roof design:

1. Dead Load + Live Load

2. Dead Load + Seismic

3. Dead Load + Wind Load (Up or Down)

F. Not Used.

G. Joist hangers, anchors, and other connectors to connect the wood trusses to the walls or other structural systems shall be designed by the connection manufacturer.

H. The truss manufacturer shall coordinate the design with the HVAC Drawings and Shop Drawings to provide space and support for HVAC equipment to be supported on or from the bottom or top truss chords.

2.2 TRUSSES

A. Lumber shall conform to the species and fully recognized nominal sizes according to the manufacturer's design. Members shall be cut from lumber bearing the proper grade mark stamps of a recognized grading association or licensed lumber inspection agency. No lumber shall be used which does not appear to conform to the proper dimensions and/or grades.

B. **Grading:** Lumber shall be graded in accordance with the rules of one of the following associations: "Grading Rules for Southern Pine Lumber" of the SPIB; "Standard No.17" of the WCLIB; or "Grading Rules for Western Lumber" published by WWPA.

C. **Grade Marking:** Each piece of lumber shall bear the official grade mark of one of the above-mentioned grading rules.

D. **Size Dressing:** Lumber, except as otherwise indicated, shall be dressed to size in accordance with the standards of the association under which the lumber is graded. Lumber shall be S4S unless otherwise indicated.

E. **Marking:** Each truss shall be legibly branded, marked, or otherwise have permanently affixed thereto the following information located within 2 feet of the center of the span on the face of the bottom chord:

1. Identity of the company manufacturing the trusses and the address

2. The design load
3. The spacing of the trusses

F. **Moisture Content:** At the time of fabrication, the moisture content of lumber shall be within the proper limits as stated in the referenced specifications and the appropriate load duration factors shall account for any variations in this moisture content.

G. Not Used.

H. Connector Plates

1. Connector plates shall be designed by the manufacturer.

2. Connector plates shall be structural-quality steel sheet, zinc coated by hot-dip process complying with ASTM A 653, G60 coating designation; Grade 33, and not less than 0.0359 inch thick.

3. Connector plates shall be clearly marked with the manufacturer's name.

4. Connector plates shall be provided on both sides of the truss (2 plates per joint), and all connector plated truss joints shall be designed in accordance with the methods in the TPI Standards.

I. **Bracing:** All permanent lateral bracing shall be 2x4 lumber minimum and be as shown on the truss manufacturer’s drawings.

J. **Painting and Tagging:** Prior to shipment, similar ends of trusses shall be painted to show erection orientation. Florescent red and green Truss Joist Institute safety and specialty tags cautioning against cutting trusses or altering trusses and indicating bearing locations, orientation, permanent lateral bracing, and field splices shall be affixed to trusses.

2.3 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with the manufacturer’s requirements

B. Nails, Wire, Brads, and Staples: FS FF-N-105

C. Power-Driven Fasteners: CABO NER-272.

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts and Screws: ASME B18.2.1.

F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

2.4 METAL FRAMING ANCHORS

A. **General:** Provide metal framing anchors of structural capacity, type, size, metal, and finish that comply with requirements, including the following:

1. Research or Evaluation Reports: Provide products for which model code research or evaluation reports exist that are acceptable to authorities having jurisdiction and that demonstrate compliance with IBC.

2. Allowable Design Loads: Provide products with published allowable design loads that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis, and be demonstrated by comprehensive testing performed by a qualified independent testing agency.

B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653, G60 coating designation; structural, commercial, or lock-forming quality, as standard with manufacturer for type of anchor indicated.

2.5 OTHER FRAMING MEMBERS

A. Simple framing members shall be designed in accordance with Section 06100 - Rough Carpentry.

B. Joist hangers, anchors, and other connection hardware shall be of standard manufacture, approved by a recognized agency for the intended applications. Specially fabricated hardware shall be provided in accordance with Section 05500-Miscellaneous Metalwork, hot-dip galvanized after fabrication.

PART 3 -- EXECUTION

3.1 TRUSS FABRICATION

A. The top and bottom chords shall have a minimum size of 2 x 6 with a top chord extension as indicated.

B. Trusses and other roof structural components shall be fabricated in a properly equipped manufacturing facility of a permanent nature. They shall be manufactured by experienced workmen, using precision cutting and truss fabricating equipment and meeting the requirements of ANSI/TPI 1, under the direct supervision of a qualified foreman. Trusses shall be fabricated under strict rules of inspection and quality control as required by the IBC and be open to the ENGINEER or its representative at all times.

C. Truss members shall be accurately cut to length and angle, and shall be true to line to assure tight joints for the finished truss. Tolerances shall be per ANSI/TPI 1.

D. Truss members and connector plates shall be properly placed in special jigs, and the members tightly clamped in place, remaining in that position until the connector plates have been installed.

E. Camber shall be built into the trusses as noted on manufacturer's designs.

3.2 HANDLING, ERECTION, AND BRACING

A. Handle and store trusses with care and comply with manufacturer's written instructions and TPI recommendations to avoid damage and lateral bending.

B. Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

C. The CONTRACTOR shall be responsible for field erection of the trusses and other roof framing components, including items such as proper handling, safety precautions, temporary bracing to prevent toppling like dominoes of the trusses during erection, and any other safeguards or procedures which are consistent with good workmanship and building erection practices.

D. The CONTRACTOR shall comply with applicable requirements and recommendations of TPI HIB.

E. The CONTRACTOR shall comply with all engineered drawings, truss layout plans, and TPI HIB when erecting the truss. Fabricated trusses and sub-components shall be handled and stored so that they are not subject to damage. If the trusses are to be stockpiled prior to erection, sufficient bearing points and/or bracing shall be provided to prevent excessive lateral bending or tipping over or other damage.

F. Framing anchors and/or truss hangers shall be provided by the CONTRACTOR in accordance with the manufacturer’s recommendations and the Contract Documents.

G. During the construction period, the CONTRACTOR shall provide means for adequate distribution of any concentrated loads, so the carrying capacity of any one truss and/or other component is not exceeded.

H. The CONTRACTOR shall install proper erection bracing to hold the trusses true and plumb and in safe condition until the permanent truss bracing and bridging is solidly nailed in place, forming a structurally sound roof framing system. Erection and permanent bracing shall be installed and all components firmly fastened before any loads are applied to the roof.

   1. The CONTRACTOR shall install erection bracing in accordance with TPI HIB. Brace trusses as they are erected by forming 2x4 triangles within each of the three planes in a truss system. Attach bracing with 2-16D double-headed nails at each crossing truss minimum. Short cleats or spacer pieces of lumber between adjacent trusses shall not be used.

I. The plywood sheathing shall be installed in accordance with the Drawings. Full bundles of plywood sheathing shall not be stacked on trusses.

J. The CONTRACTOR shall not attempt to field repair, cut, or otherwise alter trusses without consulting the truss manufacturer.

- END OF SECTION -

SECTION 07720 - ROOF ACCESSORIES

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide all roof accessories and appurtenant work as needed to construct a built-up roof, complete and in place, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Trade Standards:** National Roofing Contractors Association (NRCA).

B. **Manufacturer's Standards:** In addition to the standards listed above, roof accessories and installation shall be in accordance with the manufacturer's published recommendations and specifications.

1.3 CONTRACTOR SUBMITTALS

A. Furnish submittals shall be in accordance with Section 01300 - Contractor Submittals.

B. **Shop Drawings:** Submit for all roof hatches prior to fabrication. Include fabricated flashing and dissimilar metal systems. Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected Work.

a. Hatch Units: Show types, elevations, thickness of metals, and full size profiles.
b. Hardware: Show materials, finishes, locations of fasteners, types of fasteners, locations and types of operating hardware, and details of installation.
c. General: Show connections of units and hardware to other Work. Include schedules showing location of each type and size of unit.

C. **Product Data:** Manufacturer’s technical data for each type of hatch assembly, including setting drawings, templates, finish requirements, and details of anchorage devices. Include complete schedule, types, locations, construction details, finishes, latching or locking provisions, and other pertinent data.

D. **Manufacturer's Installation Instructions:** Indicate installation requirements and rough-in dimensions.

E. **Quality Control Submittals:** Statement of Qualifications.

F. **Contract Closeout Submittals:** Comply with Section 01700 including operating and maintenance manuals.

1.4 QUALITY ASSURANCE

A. **Qualifications:** Manufacturer/Installer: Company specializing in manufacturing and installation of components specified in this Section with minimum of 15 years documented experience.

B. **Single Source Responsibility:** Obtain roof hatch units and frames for entire project from 1 source and 1 single manufacturer.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. **Delivery of Materials:** Manufactured materials shall be delivered in original, unbroken, packages, containers, or bundles bearing the name of the manufacturer.

B. **Storage:** All materials shall be carefully stored on wood blocking in an area that is protected from the elements. Storage shall be in a manner that will prevent damage or marring of finish.

PART 2 -- PRODUCTS

2.1 ROOF PENETRATIONS

A. Roof penetrations shall be fabricated for locations as shown on the plans. Provide curbs and flashing as necessary to match roof type and prevent leakage. Roof penetration materials shall isolated from dissimilar roofing materials to prevent corrosion. Provide steel curbs to correct for roof pitch.

2.2 ROOF HATCHES

A. **Design:** Roof hatches (scuttles, equipment hatches) shall be constructed of aluminum, unless otherwise indicated, and shall be provided with stainless steel hardware, including padlocking hardware inside and neoprene gaskets and seals. Roof hatches shall be provided with stainless steel hardware. Roof hatches shall be of the type and size indicated.

1. Roof hatch, double leaf: 5-ft by 5-ft, equipment hatch, complete with heavy duty compression spring hinges in telescoping tubes, integral double-curb and flange, insulated and weatherstripped metal cover, inside-outside handles, lockable from inside with removable cross bracing which will hold doors open and act as railing when hatch is open. Hinges: Type 316 stainless steel, tamper-proof hinge contained within hatch as part of spring assembly. Latch: Type 316 stainless steel slam latch with turn handle and inside/outside padlock hasps and heavy duty interior dead-bolt lock. Hatch shall be Nystrom, Model RHE. Provide factory installed safety netting, Nystrom SNA60x60-N, in accordance with OSHA standards.

PART 3 -- EXECUTION

3.1 GENERAL

A. The installation shall conform to applicable codes and the manufacturer's published or written recommendations, specifications, and published installation instructions for the

type of work being performed. The construction shall be coordinated with the work of other trades.

B. Unless otherwise indicated, roof openings, roof-mounted equipment, duct openings, and skylights shall be provided with a prefabricated curb unless the equipment above the roof opening is supplied with its own curb which extends to 8 inches or higher beyond the top of the roof insulation. The prefabricated curb may be part of the equipment item.

3.2 INSTALLATION

A. Roof hatches, openable fire and smoke hatches and roof ventilators shall be installed over prepared openings with their own curbs or prefabricated curbs, and shall be fastened to roof deck in accordance with the manufacturer's printed directions. Lifting mechanisms and accessories shall be adjusted to insure proper operation. Abraded prime and finish coat surfaces shall be touched-up after completion of installation with the same type finish and the same dry-film thickness. CONTRACTOR to coordinate with roof hatch and roofing manufacturers to ensure proper flashing and water-tight seals around roof hatch, and proper drainage.

B. **Protective Coating:** All plastic roof accessories shall be coated in accordance with Section 09800 - Protective Coating.

- END OF SECTION -

SECTION 07920 - SEALANTS AND CAULKING

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide caulking, sealing, and appurtenant work, complete and in place, in accordance with the Contract Documents.

1.2 REFERENCE STANDARDS

A. **General:** Portions of the following standards are incorporated into this Section by references below. The standards are listed here for convenience.

B. **Federal Specifications:**

TT-S-001543A	Sealing Compound, Silicone Rubber Base, (For Caulking, Sealing and Glazing in Buildings and Other Structures)
SS-S-200D	Sealants, Joint, Two Compound, Jet Blast Resistant, Cold Applied for Portland Cement Concrete Pavement.
TT-S-00227E	Sealing Compound, Elastomeric Type, Multi-Component, (For Caulking, Sealing and Glazing in Buildings and Other Structures).
TT-S-00230C	Sealing Compound, Elastomeric Type, Single Component, (For Caulking, Sealing, and Glazing in Buildings and Other Structures)

C. **Commercial Standards:**

ASTM C 557	Adhesives for Fastening Cypsum Wallboard to Wood Framing.
ASTM C 834	Latex Sealing Compounds.
ASTM C 919	Practice for Use of Sealants in Acoustical Applications.
ASTM C 920	Elastomeric Joint Sealants.
ASTM C 1056	Flexible Cellular Material-Sponge or Expanded Rubber.
ASTM D 1752	Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
ASTM E 84	Surface Burning Characteristics of Building Materials.
ASTM E 814	Methods for Fire Tests of Through Penetrations:

Firestops.

UL 1479	Underwriter's Laboratory Standard for Safety Fire Tests of Through Penetrations Firestops.

1.3 CONTRACTOR SUBMITTALS

A. **General:** Submittals shall be in accordance with Section 01300 - Contractor Submittals.

B. **Technical Data:** A complete materials list along with the manufacturer's technical data and literature, specifications, joint width and depth tables, and installation instructions.

C. **Samples:** Samples (including color samples) of all the caulking and sealant materials and other materials proposed for use on the WORK. The samples shall be clearly marked with the manufacturer's name and product identification.

D. **Certificates:** If requested by the ENGINEER, certificates from an independent testing laboratory approved by the ENGINEER, certifying that the submitted materials meet all the requirements of the ASTM and Federal Specifications cited.

E. **Warranty:** A copy of the manufacturer's warranty covering all sealants, caulking materials, and other materials against defects in materials.

PART 2 -- PRODUCTS

2.1 SEALANTS AND CAULKING MATERIALS

A. **General:**

1. Manufacturer's Standards: In addition to the standards listed below, the sealants and caulking products and application shall be in accordance with the manufacturer's published recommendations and specifications.

2. Wherever manufacturer's names and products are listed in this Section, "or equal" products will be considered in accordance with Section 01300 - Contractor Submittals.

B. Materials shall conform to the following requirements:

1. Significant Movement Sealants (plus or minus 25% movement capability)

a. For expansion wall joints; masonry and metal curtainwall joints; precast concrete joints and concrete panels; perimeter sealing (windows, doors, and panels); control joints; interior and non-traffic horizontal joints.

(1) Two component, non-sag, polyurethane or polysulfide sealant conforming to Federal Specification TT-S-227E, Class A, Type II, and ASTM C 920, Type M, Class 25, Grade NS.

(2) One component, non-sag, low modulus, polyurethane or polysulfide sealant conforming to Federal Specification TT-S230C, Class A, Type II, and ASTM C 920, Type S, Class 25, Grade NS.

(3) One component, non-sag, medium modulus, neutral cure, silicone sealant conforming to Federal Specification TT-S-1543A, Class A, and ASTM C 920, Type S, Class 25, Grade NS.

b. For horizontal joints exposed to fuel spillage.

(4) Two component, self-leveling, fuel resistant, polyurethane or polysulfide sealant conforming to Federal Specification SS-S-200D, Type H, and ASTM C 920, Type M, Class 25, Grade P.

c. For horizontal joints not exposed to fuel spillage.

(5) Two component, self-leveling, polyurethane or polysulfide sealant conforming to Federal Specification TT-S-227E, Class A, Type I, and ASTM C 920, Type M, Class 25, Grade P.

(6) One component, self-leveling, polyurethane or polysulfide sealant conforming to Federal Specification TT-S-230C, Class A, Type I, and ASTM C 920, Type S, Class 25, Grade P.

2. Glazing Sealants

a. For non-structural applications

(1) One component non-sag, medium modulus, neutral cure, silicone sealant conforming to Federal Specification TT-S-1543A, Class A, and ASTM C 920, Type S, Class 25, Grade NS.

(2) One component, non-sag, high modulus, acetoxy cure, silicone sealant conforming to Federal Specification TT-S-1543A, Class A, and ASTM C 920, Type S, Class 25, Grade NS.

3. Interior Sealant and Caulking

a. For general applications

(1) One component, acrylic latex caulking conforming to ASTM C 834

b. For non-exposed acoustical applications

(1) One component, non-drying, non-hardening, non-shrinking, acoustical caulking conforming to ASTM C 557 and ASTM C 919.

4. Acoustic Sheet Caulking: For use on all outlet boxes including intercoms, telephone or other services that require penetrations in the walls, acoustic sheet caulking shall be resilient synthetic polymer, self-adhesive, 1/8-inch thick, 6-inch x 8-inch, sheet acoustic sealer.

5. Firestop Sealant: Where piping, conduit, wire, or other materials pass through fire rated walls, floors, ceilings or roofs, provide a 3-hour fire rated sealant in accordance with ASTM E 814 and UL 1479. Fire-resistant penetration sealant shall be a medium density fire-resistant foam that retains form and stability at high temperature.

6. Preformed Sealants: Preformed sealant shall be polybutylene or isoprene-butylene based pressure sensitive weather resistant tape or bead sealant capable of sealing out moisture, air, and dust when installed as recommended by the manufacturer. At temperatures from minus 30 to plus 160 degrees F, the sealant shall be non-bleeding and shall have no loss of adhesion.

7. Tape sealant: Dimensions shall be as required for application conditions. Tape sealants shall be type recommended by tape manufacturer for connecting and bonding to surfaces.

8. Filler material shall be resilient, closed-cell polyethylene foam conforming to ASTM D 1752, Type II or III, and/or bond breakers of proper size for joint widths. Filler shall be compatible with sealant manufacturer's product and shall not stain the sealant nor the materials to which applied.

9. Primer: Primers shall be as recommended in the manufacturer's printed instructions for caulking and sealants, and shall not stain the sealant nor the materials to which applied. Manufacturer shall be consulted for all surfaces not specifically covered in submittal application instructions. Primer shall be used in accordance with manufacturer's instructions with all primers being applied prior to the installation of any backer rod or bond breaker tape.

10. Cleaning and cleanup solvents, agents, and accessory materials shall be as recommended in the manufacturer's printed instructions for cleaning up.

2.2 COLOR OF SEALANTS

A. Color of sealants that are visible after installation shall match adjacent building finish. If in doubt of color match, obtain color approval from ENGINEER.

PART 3 -- EXECUTION

3.1 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. **Delivery of Materials:** Manufactured materials shall be delivered in original, unbroken packages or containers bearing the manufacturer's label. Packages or containers shall be delivered to the site with seals unbroken.

B. **Shelf Life:** Materials whose shelf life dates have expired shall not be used in the WORK. Such materials shall be promptly removed from the project site.

C. **Storage:** All materials shall be carefully stored in accordance with the manufacturer's instructions, in an area that is protected from deleterious elements, and in a manner that will prevent damage to the product. Materials shall be stored at temperatures between 40 and 90 degrees unless otherwise specified by the manufacturer.

3.2 INSTALLATION

A. **Manufacturer's Recommendations:** All work under this Section and all testing, where applicable, shall be performed in accordance with manufacturer's printed recommendations, specifications, and installation instructions except where more stringent requirements are indicated herein; and, except where project conditions require extra precautions or provisions to assure performance of the waterproofing system.

B. **Authorized Installers:** Caulking and sealants shall be complete systems and be installed only by installers authorized and approved by the respective manufacturers.

C. Surface Preparation

1. General: The surfaces of joints to be sealed shall be dry. Oil, grease, dirt, chalk, particles of mortar, dust, loose rust, loose mill scale, and other foreign substances shall be removed from surfaces of joints which will be in contact with the sealant. Ferrous metal surfaces shall be cleaned of all rust, mill scale, and other coatings by wire brush, grinding, or sandblasting. Oil and grease shall be removed by cleaning in accordance with sealant manufacturer's printed recommendations. Protective coatings shall be removed from all aluminum surfaces against which caulking or sealing compound is to be placed. Bituminous or resinous materials shall be removed from surfaces to receive caulking or sealants.

2. Concrete and Masonry Surfaces: Where surfaces have been treated with curing compounds, oil, or other such materials, the materials shall be removed by sandblasting or wire brushing. Laitance, efflorescence, and loose mortar shall be removed from the joint cavity.

3. Steel Surfaces: Steel surfaces to be in contact with sealant shall be sandblasted or, if sandblasting would not be practical or would damage adjacent finish work, the metal shall be scraped and wire brushed to remove loose mill scale. Protective coatings on steel surfaces shall be removed by sandblasting or by a solvent that leaves no residue.

4. Aluminum Surfaces: Aluminum surfaces to be in contact with sealants shall be cleaned of temporary protective coatings. When masking tape is used for a protective cover, the tape and any residual adhesive shall be removed just prior to applying the sealant. Solvents used to remove protective coating shall be as recommended by the manufacturer of the aluminum work and shall be non-staining.

5. Wood Surfaces: Wood surfaces to be in contact with sealants shall be free of splinters and sawdust or other loose particles.

D. Joint Types and Sizes: Joint shapes and sizes shall be as indicated or as necessary for job conditions where not indicated. Joints to be caulked or sealed include through-bolt holes, door frames, louver and ventilator frames, joints between openings where items pass through exterior walls, concrete masonry, or combination of these surfaces, and as otherwise indicated or required for watertightness, weatherproofing, or airtightness. Use sealing compound at both exterior and interior surfaces of exterior wall penetrations.

3.3 SEALANT FILLED JOINTS

A. **Manufacturer's Representative:** The CONTRACTOR shall furnish the on-site services

of the sealant manufacturer's representative prior to sealant work for inspection of the joints to be sealed and for instructing the installer in the proper use of the materials.

B. **Sealant:** Sealant shall be used before expiration of shelf life. Multi-component sealants shall be mixed according to manufacturer's printed instructions. Sealant in guns shall be applied with a nozzle of proper size to fit the width of joint. Sealant shall be installed to the required depth without displacing the backing. Unless otherwise indicated or recommended by the manufacturer, the installed sealant shall be tooled so that the surface is uniformly smooth and free of wrinkles and to assure full adhesion to the sides of the joint. Sealants shall be installed free of air pockets, foreign embedded matter, ridges, and sags. Sealer shall be applied over the sealant if recommended by the sealant manufacturer.

C. **Sealant Depth:** Sealant depth in joints shall be 1/2 the width of joint, but not less than 1/8-inch deep and 1/4-inch wide nor more than 1/2-inch deep and 1-inch wide. All joints shall have a rigid filler material installed to proper depth prior to application of sealant.

D. **Masking Tape:** Masking tape shall be placed on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Masking tape shall be removed within 10 minutes after joint has been filled and tooled.

E. **Backing:** Backing shall be installed to provide the indicated sealant depth. The installation tool shall be shaped to avoid puncturing the backing.

F. **Bond-Breaker:** Bond-breaker shall be applied to fully cover the bottom of the joint without contaminating the sides where sealant adhesion is required.

G. **Primer:** Primer shall be used on concrete masonry units, wood, or other porous surfaces in accordance with instructions furnished with the sealant. Primer shall be applied to the joint surfaces to be sealed. Surfaces adjacent to joints shall not be primed.

H. **Applications:** A full bead of sealant shall be applied into the joint under sufficient pressure, with the nozzle drawn across sealant, to completely fill the void space and to ensure complete wetting of contact area to obtain uniform adhesion. During application, the tip of the nozzle shall be kept at the bottom of the joint thereby forcing the sealant to fill from the bottom to the top. Sealants shall be tooled immediately after exposure with a caulking tool or soft bristled brush moistened with solvent. The finished sealant-filled joint shall be slightly concave unless otherwise indicated.

I. **Acoustic Partition Joints:** Acoustic partition joints shall be made air and sound-tight with acoustic caulking material.

1. Partitions shall be sealed where indicated on the Drawings. Gypsum panels may have joint treatment applied in the normal manner over sealed joints, or panels may be finished with base or trim as required.

2. A 1/4-inch minimum round bead of sealant shall be applied around all cut-outs, such as at electrical boxes and air conditioning ducts, sufficient to seal the openings.

3.4 ACOUSTIC CAULKING

A. **Preparation:** Joints and surfaces to be sealed shall be clean, dry, and free of loose materials.

B. **Concealed Joints:** Concealed joints in acoustic partitions including perimeters and intersections of walls and penetrations through finish work and at conduit ends with boxes shall be sealed with acoustic caulking compound. Backs of electrical boxes shall be sealed with acoustic sheet caulking, covering all holes and knock-outs.

3.5 CLEANING

A. After application of sealant and caulking materials, adjacent materials which have been soiled shall be cleaned and left in a neat, clean, undamaged, or unstained condition. On porous surfaces, excess sealant shall be removed per sealant or caulking manufacturer's printed instructions.

- END OF SECTION -

SECTION 08110

STEEL DOORS AND FRAMES

PART 1 - GENERAL

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.01 DESCRIPTION

A. Work included: Perform all work necessary and required for the construction of the project as indicated. Such work includes but is not limited to the following:

1. Provide pressed metal doors, paneled doors and frames for doors, transoms, sidelights, mullions, interior glazed panels and other openings.
2. Provide hollow metal doors and frames.
3. Provide fire rated doors and frame assemblies as above.
4. Installation of all the above.
5. Coordination with template hardware.
6. Installation of finish hardware.

1.02 SUBMITTALS

A. Shop drawings shall be submitted for approval in accordance with section 01300 "Shop Drawings and Submittals", covering each type of door, frame, and frame conditions and showing:

1. Elevations, gauges of metal, hardware reinforcing, locations, markings, quantities and complete anchorage details, supplemented by suitable schedules covering frames.

B. Schedule: Submit a schedule of doors and frames using same reference numbers for details and openings as those on the Contract Drawings.

C. Templates will be furnished by hardware supplier for preparing shop drawings and for preparing and reinforcing hollow metal work to receive hardware.

1.03 QUALITY ASSURANCE

A. Manufacturer: Hollow metalwork shall be manufactured by a member of the Steel Door Institute. Manufacture in accordance with standards of Hollow Metal Manufacturer's Association (SDI-100).

B. Test reports and certifications: Certification of labeled construction fire doors and frames. Certification of label construction for doors not requiring labels but requiring labeled construction shall be furnished.

C. Comply with CBC latest edition, ADA Handicapped, and State Fire Marshal requirements.

D. Clearances: Door/frame clearances shall conform to ANSI/SDI-100 2.2.1.

1.04 PRODUCT HANDLING

A. Deliver, store and handle metal doors and frames in a manner to prevent damage and deterioration.

B. Provide packaging, containers, separators, banding, spreaders, paper wrapping, etc. as required to completely protect units during transportation and storage.

C. Store doors and frames upright in a protected dry area, off the floor and with a 1/4" minimum air space between units.

1.05 FIRE RATINGS

Where a fire-resistance classification is shown or scheduled, provide fire-rated hollow metal door and frames. Identify each fire door and frame with UL labels, indicating applicable fire rating of frames.

PART 2 - PRODUCTS

2.01 BASIC MATERIAL

A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A569 and ASTM A568.

B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A366 and ASTM A568.

C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A525, G60 zinc coating.

D. Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.

E. Inserts, Bolts, and Fasteners: Manufacturer s standard units, except hot-dip galvanized items to be built into exterior walls, complying with ASTM A153, Class C or D as applicable.

F. Shop Applied Paint:

1. Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

2. Finish: Manufacturer's standard baking epoxy or enamel paint.

2.02 STANDARD STEEL DOORS

A. Provide metal doors of types and styles indicated on drawings or schedules.

B. Doors shall be 7’ tall x 1-3/4" thick unless indicated otherwise. Maximum clearance 3/32" at jambs and heads and 1/4" at bottom.

C. All exterior doors shall be insulated and constructed with galvanized sheet steel.

D. Glazed openings shall be prepared for sizes as shown with metal stops shaped the same as for wooden doors.

E. Supports and anchors:

1. Fabricate of not less than 14 gauge galvanized sheet steel.

2. Anchors shall be provided at each jamb for each 2 feet 6 inches of door height or fraction thereof.

3. Anchor types shall be varied to provide positive fastening to adjacent construction.

4. Metal clip angle shall be secured at bottom of each jamb member for anchoring to floor, with a minimum of 2 fasteners.

5. Inserts, bolts and fasteners manufacturer's standard units. Hot dipped galvanized for all exterior wall applications, comply with A153, Class C or D.

6. Reinforce doors and frames to receive surface applied hardware.
   a. 9 gauge at hinges and closures.
   b. 12 gauge at locksets.

2.03 STANDARD STEEL DOOR FRAMES AND FRAMING

A. Frames shall be combination buck, frame, and trim type. Hotel frames may be combination buck and frame, with detachable casings, pre-finished in colors as selected by Architect. All frames shall be of type shown or indicated on drawings and schedules.

1. Designed for use with scheduled wall type as indicated.

B. Minimum gauges shall be: 16 gauge interior, 16 gauge exterior, or heavier gauge if required to achieve fire rating of assembly.

C. Brake form steel sheets:

1. Profiles and shapes free of warp, buckles, fractures, or other defects shall be provided.

2. Stops shall be formed integral with frame unless otherwise shown.

D. Corners and connections: Shall be welded with exposed welds ground flush and smooth.

E. Provide stop/bumpers, 3 bumpers for doors to 7 ft. And 4 for doors over 7 ft. High.

F. Doors, frames and hardware shall be as follows:

A. Overhead Service Doors – Overhead door shall be chain operated, 22 ga. steel per ASTM A-653, mounted to the interior wall face, with factory applied powder coat finish. Doors shall come with a standard 2-year warranty from the factory. Door shall be Type FC manufactured by Cooksen Company, or approved equal.

B. Interior and Exterior Metal Doors **(#1, #2, #5, #6, #7)**

All Hollow Metal Doors Shall be 36" W x 7'-0" T Republic DL Series 16 gauge Extra Heavy Duty A60 Galvanized, with the following exceptions:

a. Door #1 -- Provide 12" x 18" bottom vented opening in bottom panel. Louver shall be made of 12 ga. Steel. Include insect screen in louver.
b. Door #2 – Provide 24" W x 30" T top glazing with STC of door and glazing combination no less than 35

All Hollow Metal Doors to shall have Republic ME Series 16 gauge A60 Welded Hollow Metal Door Frames with Mortar Guards at all cut out locations. Provide 1/16" thick bituminous coating on the back of all Hollow Metal Frames.

Exterior - Each Door opening to have:

3- Hinge BB5002 4.5 x 4.5 NRP 630 Bommer
1- Entry Lockset ML9953D LC B 630 Dorma
1- Emergency exit bar 8000 Series Dorma
1- Door Closer TS-93-1 PTHO 689 Dorma
1- Head Protection 428A 36" Alum Zero
1- Weather Strip 328AA 2/84" Alum Zero
1- Rain Drip 142A 40" Alum Zero
1- Threshold 546A 36" Alum Zero
1- Door Bottom 111A 36" Alum Zero
1- Latch Protector PMLP-111 630 Don-Jo

Interior -- Each door to have:

3- Hinge BB5002 4.5 x 4.5 630 Bommer
1- Emergency exit bar 8000 Series Dorma
1- Latchset ML9010 LC B 630 Dorma
1- Overhead Stop 902S 689 Dorma
3- Rubber Mutes 307D Gray Hager

2.04 Not Used

2.05 DOOR LIGHT FRAMES

Frames for light openings in doors: As detailed and in doors and of fire ratings where indicated, units shall be "Visionlite" as manufactured by Leslie Locke or approved equal.

2.06 PREPARATION FOR FINISH HARDWARE

Frames shall be prepared to receive hardware.

1. Hardware supplier shall furnish hollow metal manufacturer approved hardware schedule, hardware templates, and samples of physical hardware where necessary to insure correct fitting and installation.

2. Preparation includes sinkages and cut-outs for mortise and concealed hardware.

B. Reinforcements shall be provided for both concealed and surface applied hardware.

1. Reinforcements shall be drilled and tapped at factory using templates.
2. Reinforcements shall be installed with concealed connections designed to develop full strength of reinforcements.

2.07 FINISH

A. Frames shall be leveled and ground smooth.

B. Mineral filler shall be applied to eliminate any weld scars or blemishes.

C. Factory coat of rust-inhibitive metal primer shall be applied. Primer shall be not less than 1 mil dry film thickness and shall be applied right after pretreatment is completed.

D. Finish coatings on doors shall be factory applied. Finish coatings on frames can be applied in the field if desired. All prime coatings shall be factory applied.

2.08 ACOUSTICAL TREATMENT

Apply sound deadening material to inside of door frame for STC requirements.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Frames shall be set to maintain scheduled dimensions, hold head level, and maintain jambs plumb and square.

B. Anchorages and connections shall be secured to adjacent construction.

C. Frame spreader bars, wherever possible, shall be left intact until frames are set perfectly square and plumb, and anchors are securely attached.

D. Frames shall be secured to structural steel framing concealed in hollow metalwork, and field splices made.

E. Expansion movement shall be allowed for as required.

F. Doors shall be adjusted to provide even gap between doors and frames.

G. Doors and frames shall comply with Steel Door Institute/ANSI Standards.

3.02 PRIME COAT TOUCH-UP

A. Immediately after erection, areas where prime coat has been damaged shall be sanded smooth and touched up with same primer as applied at shop.

B. Rust shall be removed before above specified touch-up is applied.

C. Touch-up shall not be obvious.

D. Before job painting is started, finish on frame and doors shall comply with finish on approved sample.

3.03 ADJUST AND CLEAN

A. Prime coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

3.04 PROTECTION

Installed hollow metal work shall be protected against damage from other construction work.

END OF SECTION

SECTION 09800 - PROTECTIVE COATING

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide protective coatings, complete and in place, in accordance with the Contract Documents.

B. Definitions

1. The term "paint," "coatings," or "finishes" as used herein, shall include surface treatments, emulsions, enamels, paints, epoxy resins, and all other protective coatings, excepting galvanizing or anodizing, whether used as a pretreatment, primer, intermediate coat, or finish coat.

2. The term "DFT" means minimum dry film thickness, without any negative tolerance.

C. The following surfaces **shall not be protective coated**:

1. Concrete, unless required by items on the concrete coating schedule below or the Drawings.

2. Stainless steel

3. Machined surfaces

4. Grease fittings

5. Glass

6. Equipment nameplates

7. Platform gratings, stair treads, door thresholds, and other walk surfaces, unless specifically indicated to be coated.

8. Above grade galvanized steel and copper pipe

9. Mechanical and piping bolts, washers, and nuts

10. Factory epoxy coated valves, instruments, and fittings.

D. The coating system schedules summarize the surfaces to be coated, the required surface preparation, and the coating systems to be applied. Coating notes on the Drawings are used to show or extend the limits of coating schedules, to show exceptions to the schedules, or to clarify or show details for application of the coating systems.

E. Not Used.

1.2 CONTRACTOR SUBMITTALS

A. **General:** Submittals shall be furnished in accordance with Section 01300 - Contractor

Submittals, unless indicated otherwise below.

B. Submittals shall include the following information and be submitted at least 30 days prior to protective coating work:

1. Coating Materials List: Eight copies of a coating materials list showing the Manufacturer and the coating number, keyed to the coating systems herein. The list shall be submitted prior to or at the time of submittal of samples.

2. Paint Manufacturer's Information: For each coating system to be used, the following data:

a. Paint Manufacturer's data sheet for each product proposed, including statements on the suitability of the material for the intended use.

b. Technical and performance information that demonstrates compliance with the system performance and material requirements.

c. Paint Manufacturer's instructions and recommendations on surface preparation and application.

d. Colors available for each product (where applicable).

e. Compatibility of shop and field applied coatings (where applicable).

f. Material Safety Data Sheet for each product used.

C. Samples

1. Two sets of color samples to match each color selected by the ENGINEER from the Manufacturer's standard color sheets. If custom mixed colors are indicated, the color samples shall be made using color formulations prepared to match the color samples furnished by the ENGINEER. The color formula shall be shown on the back of each color sample.

1.3 SPECIAL CORRECTION OF DEFECTS REQUIREMENTS

A. **Warranty Inspection:** A warranty inspection may be conducted during the eleventh month following completion of all coating and painting work. The CONTRACTOR and a representative of the coating material Manufacturer shall attend this inspection. All defective work shall be repaired in accordance with these specifications and to the satisfaction of the OWNER. The OWNER may, by written notice to the CONTRACTOR, reschedule the warranty inspection to another date within the one-year correction period, or may cancel the warranty inspection altogether. If a warranty inspection is not held, the CONTRACTOR is not relieved of its responsibilities under the Contract Documents.

PART 2 -- PRODUCTS

2.1 GENERAL

A. **Suitability:** The CONTRACTOR shall use suitable coating materials as recommended by the Manufacturer.

B. **Compatibility:** In any coating system only compatible materials from a single Manufacturer shall be used in the work. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, a barrier coat shall be applied between existing prime coat and subsequent field coats to ensure compatibility.

C. **Containers:** Coating materials shall be sealed in containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, and name of manufacturer, all of which shall be plainly legible at the time of use.

D. **Colors:** All colors and shades of colors of all coats of paint shall be as indicated or selected by the ENGINEER. Each coat shall be of a slightly different shade, to facilitate inspection of surface coverage of each coat. Finish colors shall be as selected from the manufacturer's standard color samples by the ENGINEER.

E. Substitute or "Or-Equal" Products

1. To establish equality the CONTRACTOR shall furnish satisfactory documentation from the manufacturer of the proposed substitute or "or-equal" product that the material meets the indicated requirements and is equivalent or better in the following properties:

    a. Quality

    b. Durability

    c. Resistance to abrasion and physical damage

    d. Life expectancy

    e. Ability to recoat in future

    f. Solids content by volume

    g. Dry film thickness per coat

    h. Compatibility with other coatings

    i. Suitability for the intended service

    j. Resistance to chemical attack

    k. Temperature limitations in service and during application

    l. Type and quality of recommended undercoats and topcoats

    m. Ease of application

    n. Ease of repairing damaged areas

o. Stability of colors

2. Protective Coating Materials shall be standard products produced by recognized manufacturers who are regularly engaged in production of such materials for essentially identical service conditions. Where requested, the CONTRACTOR shall provide the ENGINEER with the names of not less than 10 successful applications of the proposed manufacturer's products which comply with these requirements.

3. If a proposed substitution requires changes in the WORK, the CONTRACTOR shall bear all such costs involved.

2.2 INDUSTRIAL COATING SYSTEMS

A. **Material Sources:** Each of the following manufacturers is capable of supplying many of the industrial coating materials indicated herein. Where manufacturers and paint numbers are listed, it is to show the type and quality of coatings that are required. Proposed substitute materials will be considered as indicated above. All industrial coating materials shall be materials that have a record of satisfactory performance in industrial plants, manufacturing facilities, and water and wastewater treatment plants.

1. **Tnemec Company**

B. **System 4 - Aliphatic Polyurethane:** Two component aliphatic acrylic polyurethane coating material shall provide superior color and gloss retention, resistance to splash from acid and alkaline chemicals, resistance to chemical fumes and severe weathering and with a minimum solids content of 58 percent by volume. Primer shall be a rust inhibitive two component epoxy coating with a minimum solids content of 68 percent by volume.

1. Prime coat DFT = 4 mils, **Tnemec 69, or equal.**

2. Finish coat (one or more, DFT = 3 mils), **Tnemec 74, or equal.**

3. Total system DFT = 7 mils.

4. More than one finish coat shall be applied as necessary to produce a finish with uniform color and texture.

C. **System 5 - Inorganic Zinc/Polyurethane:** The inorganic zinc primer shall be a water or solvent based, self-curing, zinc silicate two-component inorganic coating which contains at least 85 percent of metallic zinc by weight in the dried film, and is recommended by the coating manufacturer as a primer for this system. The intermediate coat shall be a high-build two component epoxy with a solids content of at least 70 percent by volume. Finish coats shall be a 2-component aliphatic acrylic or polyester polyurethane coating material that provides superior color and gloss retention, resistance to chemical fumes and severe weathering, and a minimum solids content of 58 percent by volume.

1. Prime coat DFT = 3 mils**.**

2. Intermediate coat DFT = 4 mils**.**

3. Finish coats (one or more, DFT = 3 mils).

4. Total system DFT = 10 mils.

5. Intermediate coat shall be applied in excess of 4 mils DFT or in more than one coat as necessary to completely cover the inorganic zinc primer and prevent application bubbling of the polyurethane finish coat.

6. More than one finish coat shall be applied as necessary to produce a finish with uniform color and texture.

7. If the inorganic zinc primer is used as a pre-construction or shop applied primer, all damaged and uncoated areas shall be spot abrasive blasted and coated after construction using the indicated material.

D. **System 6 - Inorganic Zinc, Water Based:** Water based, self curing, zinc silicate coating material shall be a two component inorganic coating material that contains at least 85 percent of metallic zinc by weight in the dried film.

1. Prime coat and finish coat (One, DFT = 3 mils).

2. Total system DFT = 3 mils.

E. **System 7 - Acrylic Latex:** Single component, water based acrylic latex with a fungicide additive shall have a minimum solids content of 35 percent by volume. Prime coat shall be as recommended by manufacturer. The coating material shall be available in the ANSI safety colors.

1. Prime coat DFT = 2 mils, as recommended by manufacturer.

2. Finish coats (2 or more, DFT = 6 mils).

3. Total system DFT = 8 mils.

F. **System 8 - Epoxy, Equipment:** Two component, rust inhibitive polyamide cured epoxy coating material shall provide a recoatable finish that is available in a wide selection of colors. The coating material shall have a minimum solids content of 66 percent by volume and be resistant to service conditions of condensing moisture, splash and spillage of lubricating oils, and frequent washdown and cleaning.

1. Prime coat DFT = 3 mils.

2. Prime coat, where shop applied. (DFT = 3 mils), universal primer.

3. Finish coats (2 or more, DFT = 6 mils).

4. Total system DFT = 9 mils.

G. **System 9 - Inorganic Zinc/Epoxy, Equipment:** The inorganic zinc primer shall be a water or solvent based, self curing, zinc silicate, two-component inorganic coating that contains at least 85 percent of metallic zinc by weight in the dried film, and is recommended by the coating manufacturer as a primer for this system. The finish coats

shall be a polyamide cured epoxy material with a minimum solids content of at least 80 percent by volume, and available in a large selection of colors.

1. Prime coat DFT = 3 mils.

2. Finish coats (2 or more, DFT = 9 mils).

3. Total system DFT = 12 mils.

H. **System 10 - Acrylic, Concrete:** The acrylic coating material shall be a single component, industrial grade, high molecular weight, waterborne acrylic material with a solids content of at least 35 percent by volume. The filler-sealer shall be a two component epoxy masonry sealer for wet and exterior exposure, with a solids content of at least 64 percent by volume. A 100 percent solids epoxy surfacer shall be used to fill holes and patch the concrete surface after abrasive blasting.

1. Prime coat (filler-sealer), applied in two coats to the entire surface and worked into the surface with a squeegee to achieve a smooth, void-free surface, **Tnemec 54-660.**

2. Finish coats (2 or more, DFT = 6 mils), **Tnemec 6,**

I. **System 11 - Aliphatic Polyurethane, Concrete:** Two component aliphatic polyurethane coating material shall provide superior color and gloss retention, resistance to splash from acid and alkaline chemicals, resistance to chemical fumes and severe weathering, and contain a minimum solids content of 65 percent by volume. Filler-sealer compound shall be a two component epoxy material used to provide a smooth surface for the epoxy intermediate coat. The filler-sealer is applied to the entire concrete surface and worked into the concrete surface with a wide blade putty knife or squeegee. The intermediate coat shall be a high-build epoxy coating with a minimum solids content of 70 percent by volume.

1. Prime coat (Filler-sealer)**, Tnemec 54-660, or equal.**

2. Intermediate coat DFT = 4 mils, **, Tnemec 104 HS, or equal.**

3. Finish coats (2 or more, DFT = 3 mils), **Tnemec 74, or equal.**

J. **System 12 - Aliphatic Polyurethane, Fiber Glass:** Two-component aliphatic polyurethane coating material shall provide superior color and gloss retention, resistance to splash from acid and alkaline chemicals, and resistance to chemical fumes and severe weathering. A primer, tie coat, or mist coat shall be used as recommended by the manufacturer.

1. Prime coat (Tie coat), **, Tnemec 66, or equal.**

2. Finish coats (2 or more, DFT = 3 mils), **, Tnemec 74, or equal.**

2.3 SUBMERGED AND SEVERE SERVICE COATING SYSTEMS

A. **Materials Sources:** The manufacturers' products listed in this paragraph are materials which satisfy the material descriptions of this paragraph and have a documented

successful record for long term submerged or severe service conditions. Proposed substitute products will be considered as indicated above.

B. **System 100 - Amine Cured Epoxy:** High build, amine cured, epoxy resin shall have a solids content of at least 80 percent by volume, and shall be suitable for long-term immersion service in potable water and municipal wastewater. For potable water service, the coating material shall be listed by the NSF International as in compliance with NSF Standard 61 - Drinking Water System Components - Health Effects.

1. Prime coat and finish coats (3 or more, DFT = 16 mils), **, Tnemec 139, or equal.**

2. For coating of valves and non-submerged equipment, DFT = 12 mils.

C. **System 101 - Cold-Applied Tape:** Tape coating materials and procedures shall be in accordance with ANSI/AWWA C209. Prefabricated tape shall be Type II. The system shall consist of a primer layer, inner layer tape (35 mils), and an outer layer tape (35 mils). Total system DFT = 70 mils.

D. **System 102 - Polyamide Cured Epoxy:** High build, polyamide epoxy resin shall have a solids content of at least 56 percent by volume, and shall be suitable for long-term immersion in potable water and municipal wastewater. For potable water service, the coating material shall be listed by the NSF International as in compliance with NSF Standard 61.

1. Prime coat and finish coats (3 or more, DFT = 12 mils), **Tnemec 20, or equal.**

E. **System 103 - Not Used**

F. **System 104 - Not Used**

G. **System 106 - Fusion Bonded Epoxy:** The coating material shall be a 100 percent powder epoxy, certified as compliant with NSF Standard 61, applied in accordance with the ANSI/AWWA C213 - Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines, except that the surface preparation shall be as specified in the coating system schedule of this Section. The coating shall be applied using the fluidized bed or electrostatic spray process.

1. Coating DFT = 16 mils, **Scotchkote 134 or 206N, or equal.**

2. For coating of valves, DFT - 12 mils.

3. Liquid Epoxy: For field repairs, the use of a liquid epoxy will be permitted, applied in not less than 3 coats to provide a DFT of 15 mils. The liquid epoxy shall be a 100 percent solids epoxy recommended by the powder epoxy manufacturer.

4. Coating color per Owner. Provide factory testing results of coating and lining thickness testing.

H. **System 108 - Epoxy, Concrete:** The coating material shall be an amino cured epoxy material suitable for long-term immersion in water and wastewater and for service where subjected to occasional splash and spillage of water and wastewater

treatment chemicals. The finish coating material shall have a minimum solids content of 80 percent by volume. If used for potable water service the finish coating material shall be listed by the NSF International as in compliance with NSF Standard 61, and shall conform with state and local health regulations and policies for service in potable water. The filler-sealer shall be a 100 percent solids amine-cured epoxy material with silica and inert fillers. A 100 percent solids epoxy surfacer shall be used to fill holes and patch the concrete surface after abrasive blasting.

1. Filler-sealer: **Tnemec 69-1211** (6-8 mils) followed by **Tnemec 63-1500 (two coats)** or equal.

2. Finish coats (2 or more, DFT = 12 mils): **Tnemec 69.** On walking surfaces use a non-skid additive such as **Ameron 886** in the final coat.

2.4 SPECIAL COATING SYSTEMS

A. **System 200 - PVC Tape:** Prior to wrapping the pipe with PVC tape, the pipe and fittings first shall be primed using a primer recommended by the PVC tape manufacturer. After being primed, the pipe shall be wrapped with a 20-mil adhesive PVC tape, half-lapped, to a total thickness of 40 mils.

B. **System 201 - Rich Portland Cement Mortar:** Rich portland cement mortar coating shall have a minimum thickness of 1/8-inch, followed by enclosure in an 8-mil thick polyethylene sheet with all joints and edges lapped and sealed with tape.

C. **System 203 - Epoxy Surfacing:** Two-component epoxy floor surfacing shall be formulated to resist many acids, alkalies, and solvents. Material shall be resistant to liquid alum, sodium hydroxide, and 50 percent sulfuric acid. Products shall be as follows, or equal:

D. **System 204 - Water-Retardant:**

1. Two coats (or single coat if manufacturer recommends in writing) of a clear, non-staining, silane-modified-siloxane masonry water-retardant material. The water-retardant system after application shall be provided with not less than a five-year warranty on the performance of the product.

2. Surfaces shall be cleaned with a chemical cleaner approved by the manufacturer and power wash. Surfaces shall be clean and dry before application of the material. Method and rate of application shall be in accordance with manufacturer's published instructions. A manufacturer's representative shall be present during applications if necessary for warranty.

E. **System 205 - Polyethylene Encasement:** Application of polyethylene encasement shall be in accordance with ANSI/AWWA C105 using Method C.

F. **System 206 - Cement Mortar Coating:** A 1-1/2-inch minimum thickness mortar coating reinforced with 3/4-inch galvanized welded wire fabric shall be provided. The cement mortar shall contain no less than one part Type V cement to 3 parts sand. The cement mortar shall be cured by a curing compound meeting the requirements of "Liquid

Membrane Forming Compounds for Curing Concrete," ASTM C 309, Type II, white pigmented, or by enclosure in an 8-mil thick polyethylene sheet with all edges and joints lapped by at least 6 inches.

G. **System 207 - Not Used**

H. **System 208 - Aluminum Metal Isolation:** Two coats of a high build polyamide epoxy paint, such as **Tnemec 66, or equal** (8 mils). Total thickness of system DFT = 8.0 mils.

I. **System 209 - Alkyd-Wood:** Industrial quality, gloss or semi-gloss, medium long oil alkyd coating material with a minimum solids content of 49 percent by volume. Primer shall be an alkyd primer as recommended by the manufacturer.

1. Prime coat DFT = 3 mils.

2. Finish coats (two or more, DFT = 3 mils), **Tnemec 2H, or equal**.

3. Total system DFT = 6 mils.

J. **System 210 - Acrylic-wood:** Single component, water-based acrylic latex coating material with a fungicide additive and a minimum solids content of 35 percent by volume. Primer shall be an alkyd primer as recommended by the manufacturer.

1. Prime coat DFT = 2 mils.

2. Finish coats (two or more, DFT = 6 mils), **, Tnemec 6, or equal**.

3. Total system DFT = 8 mils.

K. **System 211 - Acrylic-Drywall:** Single component, water-based acrylic latex coating material with a fungicide additive and a minimum solids content of 35 percent by volume. Primer shall be a PVA sealer as recommended by the manufacturer.

1. Prime coat DFT = 1.5 mils.

2. Finish coats (two or more, DFT = 6 mils), **Tnemec 6, or equal**.

3. Total system DFT = 7.5 mils.

L. **Concrete Water Storage Tank:** A decorative coating shall be applied to the above grade exterior wall surfaces using two coats of a non-cementitious, high build, 100% acrylic resin polymer such as “Tammscoat Smooth” textured protective coating, “Tnemec Envirocrete 156” or equal. For below grade (to 1’-0” above highest finish grade point), apply polyamidoamine epoxy, Tnemec V69.

PART 3 -- EXECUTION

3.1 MANUFACTURER'S SERVICES

A. The CONTRACTOR shall require the protective coating manufacturer to furnish a qualified technical representative to visit the project site for technical support as may be necessary to resolve field problems attributable or associated with the manufacturer's products.

B. For submerged and severe service coating systems, the CONTRACTOR shall require the paint manufacturer to furnish the following services:

1. The manufacturer's representative shall provide at least 6 hours of on-site instruction in the proper surface preparation, use, mixing, application, and curing of the coating systems.

2. The manufacturer's representative shall observe the start of surface preparation, mixing, and application of the coating materials for each coating system.

3.2 WORKMANSHIP

A. Skilled craftsmen and experienced supervision shall be used on all WORK.

B. Coating shall be done in a workmanlike manner so as to produce an even film of uniform thickness. Edges, corners, crevices, and joints shall receive special attention to insure thorough cleaning and an adequate thickness of coating material. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and variations in color, texture, and finish. The hiding shall be so complete that the addition of another coat would not increase the hiding. Special attention shall be given to insure that edges, corners, crevices, welds, and similar areas receive a film thickness equivalent to adjacent areas, and installations shall be protected by the use of drop cloths or other precautionary measures.

C. All damage to surfaces resulting from the WORK shall be cleaned, repaired, and refinished to original condition.

3.3 STORAGE, MIXING, AND THINNING OF MATERIALS

A. **Manufacturer's Recommendations:** Unless otherwise indicated, the coating manufacturer's printed recommendations and instructions for thinning, mixing, handling, applying, and protecting its coating materials, for preparation of surfaces for coating, and for all other procedures relative to coating shall be strictly observed.

B. All protective coating materials shall be used within the manufacturer's recommended shelf life.

C. **Storage and Mixing:** Coating materials shall be stored under the conditions recommended by the Material Safety Data Sheets, and shall be thoroughly stirred, strained, and kept at a uniform consistency during application. Coatings of different manufacturers shall not be mixed together.

3.4 PREPARATION FOR COATING

A. **General:** All surfaces to receive protective coatings shall be cleaned as indicated prior to application of coatings. The CONTRACTOR shall examine all surfaces to be coated, and shall correct all surface defects before application of any coating material. All marred or abraded spots on shop-primed and on factory-finished surfaces shall receive touch-up

restoration prior to any coating application. Surfaces to be coated shall be dry and free of visible dust.

B. **Protection of Surfaces Not to be Coated:** Surfaces which are not to receive protective coatings shall be protected during surface preparation, cleaning, and coating operations.

C. All hardware, lighting fixtures, switchplates, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not to be painted shall be removed, masked or otherwise protected. Drop cloths shall be provided to prevent coating materials from falling on or marring adjacent surfaces. The working parts of all mechanical and electrical equipment shall be protected from damage during surface preparation and coating operations. Openings in motors shall be masked to prevent entry of coating or other materials.

D. Care shall be exercised not to damage adjacent work during blast cleaning operations. Spray painting shall be conducted under carefully controlled conditions. The CONTRACTOR shall be fully responsible for and shall promptly repair any and all damage to adjacent work or adjoining property occurring from blast cleaning or coating operations.

E. **Protection of Painted Surfaces:** Cleaning and coating shall be coordinated so that dust and other contaminants from the cleaning process will not fall on wet, newly-coated surfaces.

3.5 SURFACE PREPARATION STANDARDS

A. The following referenced surface preparation specifications of the Steel Structures Painting Council shall form a part of this specification:

1. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil, salts, and other soluble contaminants by cleaning with solvent, vapor, alkali, emulsion, or steam.

2. Hand Tool Cleaning (SSPC-SP2): Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, by hand chipping, scraping, sanding, and wire brushing.

3. Power Tool Cleaning (SSPC-SP3): Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, by power tool chipping, descaling, sanding, wire brushing, and grinding.

4. White Metal Blast Cleaning (SSPC-SP5): Removal of all visible rust, oil, grease, soil, dust, mill scale, paint, oxides, corrosion products and foreign matter by blast cleaning.

5. Commercial Blast Cleaning (SSPC-SP6): Removal of all visible oil, grease, soil, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except that staining shall be limited to no more than 33 percent of each square inch of surface area.

6. Brush-Off Blast Cleaning (SSPC-SP7): Removal of all visible oil, grease, soil, dust, loose mill scale, loose rust, and loose paint.

7. Near-White Blast Cleaning (SSPC-SP10): Removal of all visible oil, grease, soil,

dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except that staining shall be limited to no more than 5 percent of each square inch of surface area.

3.6 METAL SURFACE PREPARATION (UNGALVANIZED)

A. The minimum abrasive blasting surface preparation shall be as indicated in the coating system schedules included at the end of this Section. Where there is a conflict between these specifications and the coating manufacturer's printed recommendations for the intended service, the higher degree of cleaning shall apply.

B. Workmanship for metal surface preparation shall be in conformance with the current SSPC Standards and this Section. Blast cleaned surfaces shall match the standard samples available from the National Association of Corrosion Engineers, NACE Standard TM-01-70 - Visual Standard for Surfaces of New Steel Airblast Cleaned with Sand Abrasive and TM-01-75 - Visual Standard for Surfaces of New Steel Centrifugally Blast Cleaned with Steel Grit.

C. All oil, grease, welding fluxes, and other surface contaminants shall be removed by solvent cleaning per SSPC-SP1 - Solvent Cleaning prior to blast cleaning.

D. All sharp edges shall be rounded or chamfered and all burrs, and surface defects and weld splatter shall be ground smooth prior to blast cleaning.

E. The type and size of abrasive shall be selected to produce a surface profile that meets the coating manufacturer's recommendation for the particular coating and service conditions. Abrasives for submerged and severe service coating systems shall be clean, hard, sharp cutting crushed slag. Automated blasting systems shall not be used for surfaces that will be in submerged service. Metal shot or grit shall not be used for surfaces that will be in submerged service, even if subsequent abrasive blasting is planned to be one with hard, sharp cutting crushed slag.

F. The abrasive shall not be reused unless an automated blasting system is used for surfaces that will be in non-submerged service. For automated blasting systems, clean oil-free abrasives shall be maintained. The abrasive mix shall include at least 50 percent grit.

G. The CONTRACTOR shall comply with the applicable federal, state, and local air pollution control regulations for blast cleaning.

H. Compressed air for air blast cleaning shall be supplied at adequate pressure from well maintained compressors equipped with oil and moisture separators which remove at least 95 percent of the contaminants.

I. Surfaces shall be cleaned of all dust and residual particles of the cleaning operation by dry air blast cleaning, vacuuming, or another approved method prior to painting.

J. Enclosed areas and other areas where dust settling is a problem shall be vacuum cleaned and wiped with a tack cloth.

K. Damaged or defective coating shall be removed by the specified blast cleaning to meet the clean surface requirements before recoating.

L. If the specified abrasive blast cleaning will damage adjacent work, the area to be cleaned is less than 100 square feet, and the coated surface will not be submerged in service, then SSPC-SP2 or SSPC-SP3 be used.

M. Shop applied coatings of unknown composition shall be completely removed before the indicated coatings are applied. Valves, castings, ductile or cast iron pipe, and fabricated pipe or equipment shall be examined for the presence of shop-applied temporary coatings. Temporary coatings shall be completely removed by solvent cleaning per SSPC-SP1 before the abrasive blast cleaning work has been started.

N. Shop primed equipment shall be solvent cleaned in the field before finish coats are applied.

3.7 SURFACE PREPARATION FOR GALVANIZED FERROUS METAL

A. Galvanized ferrous metal shall be alkaline cleaned per SSPC-SP1 to remove oil, grease, and other contaminants detrimental to adhesion of the protective coating system to be used, followed by brush off blast cleaning per SSPC-SP7.

B. Pretreatment coatings of surfaces shall be in accordance with the printed recommendations of the coating manufacturer.

3.8 SURFACE PREPARATION OF FERROUS SURFACES WITH EXISTING COATINGS, EXCLUDING STEEL RESERVOIR INTERIORS

A. **General:** All grease, oil, heavy chalk, dirt, or other contaminants shall be removed by solvent or detergent cleaning prior to abrasive blast cleaning. The generic type of the existing coatings shall be determined by laboratory testing.

B. **Abrasive Blast Cleaning:** The CONTRACTOR shall provide the degree of cleaning specified in the coating system schedule for the entire surface to be coated. If the degree of cleaning is not indicated in the schedule, deteriorated coatings shall be removed by abrasive blast cleaning to SSPC-SP6. Areas of tightly adhering coatings shall be cleaned to SSPC-SP7, with the remaining thickness of existing coating not to exceed 3 mils.

C. **Incompatible Coatings:** If coatings to be applied are not compatible with existing coatings the CONTRACTOR shall apply intermediate coatings per the paint manufacturer's recommendation for the indicated coating system or shall completely remove the existing coating prior to abrasive blast cleaning. A small trial application shall be conducted for compatibility prior to painting large areas.

D. **Unknown Coatings:** Coatings of unknown composition shall be completely removed prior to application of new coatings.

E. **Water Abrasive or Wet Abrasive Blast Cleaning:** Where specified or where job site conditions do not permit dry abrasive blasting for industrial coating systems due to dust or air pollution considerations, water abrasive blasting or wet abrasive blasting may be used. In both methods, paint-compatible corrosion inhibitors shall be used, and coating application shall begin as soon as the surfaces are dry. Water abrasive blasting shall be done using high pressure water with sand injection. In both methods, the equipment used shall be commercially produced equipment with a successful service record. Wet blasting

methods shall not be used for submerged and severe service coating systems unless indicated.

3.9 CONCRETE AND CONCRETE BLOCK MASONRY SURFACE PREPARATION

A. Surface preparation shall not begin until at least 30 days after the concrete or masonry has been placed.

B. All oil, grease, and form release and curing compounds shall be removed by detergent cleaning per SSPC-SP1 before abrasive blast cleaning.

C. Concrete, concrete block masonry surfaces and deteriorated concrete surfaces to be coated shall be abrasive blast cleaned to remove existing coatings, laitance, deteriorated concrete, and to roughen the surface equivalent to the surface of the No. 80 grit flint sandpaper.

D. If acid etching is required by the coating application instructions, the treatment shall be made after abrasive blasting. After etching, rinse surfaces with water and test the pH. The pH shall be between neutral and 8.

E. Surfaces shall be clean and as recommended by the coating manufacturer before coating is started.

F. Unless required for proper adhesion, surfaces shall be dry prior to coating. The presence of moisture shall be determined with a moisture detection device such as **Delmhorst Model DB, or equal.**

3.10 PLASTIC, FIBER GLASS AND NONFERROUS METALS SURFACE PREPARATION

A. Plastic and fiber glass surfaces shall be sanded or brush off blast cleaned prior to solvent cleaning with a chemical compatible with the coating system primer.

B. Non-ferrous metal surfaces shall be solvent-cleaned SSPC-SP1 followed by sanding or brush-off blast cleaning SSPC-SP7.

C. All surfaces shall be clean and dry prior to coating application.

3.11 ARCHITECTURAL CONCRETE BLOCK MASONRY SURFACE PREPARATION

A. The mortar surfaces shall be cured at least 14 days before surface preparation work is started.

B. Dust, dirt, grease, and other foreign matter shall be removed prior to abrasive blasting.

C. The masonry surfaces shall be prepared in accordance with the material manufacturer's printed instructions.

3.12 SHOP COATING REQUIREMENTS

A. Unless otherwise indicated, all items of equipment, or parts of equipment which are not submerged in service, shall be shop primed and then finish coated in the field after installation with the indicated or selected color. The methods, materials, application

equipment and all other details of shop painting shall comply with this section. If the shop primer requires topcoating within a specified period of time, the equipment shall be finish coated in the shop and then touch-up painted after installation.

B. All items of equipment, or parts and surfaces of equipment which are submerged or inside an enclosed hydraulic structure when in service, with the exception of pumps and valves, shall have all surface preparation and coating work performed in the field.

C. The interior surfaces of steel water reservoirs, except for Part A surfaces, shall have all surface preparation and coating work performed in the field.

D. For certain pieces of equipment it may be undesirable or impractical to apply finish coatings in the field. Such equipment may include engine generator sets, equipment such as electrical control panels, switchgear or main control boards, submerged parts of pumps, ferrous metal passages in valves, or other items where it is not possible to obtain the indicated quality in the field. Such equipment shall be primed and finish coated in the shop and touched up in the field with the identical material after installation. The CONTRACTOR shall require the manufacturer of each such piece of equipment to certify as part of its shop drawings that the surface preparation is in accordance with these specifications. The coating material data sheet shall be submitted with the shop drawings for the equipment.

E. For certain small pieces of equipment the manufacturer may have a standard coating system which is suitable for the intended service conditions. In such cases, the final determination of suitability will be made during review of the shop drawing submittals. Equipment of this type generally includes only indoor equipment such as instruments, small compressors, and chemical metering pumps.

F. Shop painted surfaces shall be protected during shipment and handling by suitable provisions including padding, blocking, and the use of canvas or nylon slings. Primed surfaces shall not be exposed to the weather for more than 2 months before being topcoated, or less time if recommended by the coating manufacturer.

G. Damage to shop-applied coatings shall be repaired in accordance with this Section and the coating manufacturer’s printed instructions.

H. The CONTRACTOR shall make certain that the shop primers and field topcoats are compatible and meet the requirements of this Section. Copies of applicable coating manufacturer's data sheets shall be submitted with equipment shop drawings.

3.13 APPLICATION OF COATINGS

A. The application of protective coatings to steel substrates shall be in accordance with SSPC-PA1 - Paint Application Specification No. 1.

B. Cleaned surfaces and all coats shall be inspected prior to each succeeding coat. The CONTRACTOR shall schedule such inspection with the ENGINEER in advance.

C. Blast cleaned ferrous metal surfaces shall be painted before any rusting or other deterioration of the surface occurs. Blast cleaning shall be limited to only those surfaces that can be coated in the same working day.

D. Coatings shall be applied in accordance with the manufacturer's instructions and recommendations, and this Section, whichever has the most stringent requirements.

E. Special attention shall be given to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to be present. Use stripe painting for these areas.

F. Special attention shall be given to materials which will be joined so closely that proper surface preparation and application are not possible. Such contact surfaces shall be coated prior to assembly or installation.

G. Finish coats, including touch-up and damage repair coats shall be applied in a manner which will present a uniform texture and color matched appearance.

H. Coatings shall not be applied under the following conditions:

1. Temperature exceeding the manufacturer's recommended maximum and minimum allowable.

2. Dust or smoke laden atmosphere.

3. Damp or humid weather.

4. When the substrate or air temperature is less than 5 degrees F above dewpoint.

5. When air temperature is expected to drop below 40 degrees F or less than 5 degrees F above the dewpoint within 8 hours after application of coating.

6. When wind conditions are not calm.

I. Dewpoint shall be determined by use of a sling psychrometer in conjunction with U.S. Dept. of Commerce, Weather Bureau psychometric tables.

J. Unburied steel piping shall be abrasive blast cleaned and primed before installation.

K. The finish coat on all work shall be applied after all concrete, masonry, and equipment installation is complete and the work areas are clean and dust free.

3.14 CURING OF COATINGS

A. The CONTRACTOR shall maintain curing conditions in accordance with the conditions recommended by the coating material manufacturer or by this Section, whichever is the most stringent, prior to placing the completed coating system into service.

B. In the case of enclosed areas, forced air ventilation, using heated air if necessary, may be required until the coatings have fully cured.

3.15 IDENTIFICATION OF PIPING

A. Identification of piping shall be in accordance with Section 9900 - Piping Identification Systems.

B. Every valve or connection, where it may be possible for a worker to be exposed to a hazardous substance, shall be labeled per OSHA Occupational Safety and Health Standards 29CFR1910.1200.

3.16 SHOP AND FIELD INSPECTION AND TESTING

A. General: The CONTRACTOR shall give the ENGINEER a minimum of 3 days advance notice of the start of any field surface preparation work or coating application work, and a minimum of 7 days advance notice of the start of any shop surface preparation work.

B. All such work shall be performed only in the presence of the ENGINEER, unless the ENGINEER has granted prior approval to perform such work in its absence.

C. Inspection by the ENGINEER, or the waiver of inspection of any particular portion of the WORK, shall not relieve the CONTRACTOR of its responsibility to perform the work in accordance with these Specifications.

D. Scaffolding shall be erected and moved to locations where requested by the ENGINEER to facilitate inspection. Additional illumination shall be furnished to cover all areas to be inspected.

E. **Inspection Devices:** The CONTRACTOR shall furnish, until final acceptance of such coatings, inspection devices in good working condition for the detection of holidays and measurement of dry-film thicknesses of protective coatings. Dry-film thickness gages shall be made available for the ENGINEER'S use at all times while coating is being done, until final acceptance of such coatings. The CONTRACTOR shall furnish the services of a trained operator of the holiday detection devices until the final acceptance of such coatings. Holiday detection devices shall be operated only in the presence of the ENGINEER.

F. **Holiday Testing:** The CONTRACTOR shall holiday test all coated ferrous surfaces inside a steel reservoir, other surfaces which will be submerged in water or other liquids, or surfaces which are enclosed in a vapor space in such structures and surfaces coated with any of the submerged and severe service coating systems. Areas which contain holidays shall be marked and repaired or recoated in accordance with the coating manufacturer's printed instructions and then retested.

G. **Film Thickness Testing:** On ferrous metals, the dry film coating thickness shall be measured in accordance with the SSPC "Paint Application Specification No. 2" using a magnetic-type dry film thickness gage**.** Each coat shall be tested for the correct thickness. No measurements shall be made until at least 8 hours after application of the coating. On non-ferrous metals and other substrates, the coating thicknesses shall be measured at the time of application using a wet film gage.

H. **Surface Preparation:** Evaluation of blast cleaned surface preparation work will be based upon comparison of the blasted surfaces with the standard samples available from the NACE, using NACE standards TM-01-70 and TM-01-75.

3.17 COATING SYSTEM SCHEDULES - FERROUS METALS

A. **Coating System Schedule, Ferrous Metal - Not Galvanized:**

	Item	Surface Prep.	System No.
FM-1	All surfaces indoors and outdoors, exposed or covered, except those included below.	Commercial blast cleaning SSPC-SP6	(1) alkyd enamel
FM-1	All surfaces indoors and outdoors, exposed or covered, except those included below.	Commercial blast cleaning SSPC-SP6	(4) aliphatic polyurethane
FM-1	All surfaces indoors and outdoors, exposed or covered, except those included below.	Near white metal blast cleaning SSPC-SP10	(5) inorganic zinc/polyurethane
FM-2	Surfaces in chlorination room, chlorine storage room.	Commercial blast cleaning SSPC-SP6	(100) amine-cured epoxy
FM-3	Surfaces of equipment and ferrous surfaces submerged or intermittently submerged in potable water, utility water, and wastewater including all surfaces lower than 2 feet above high water level in hydraulic structures, and all surfaces inside enclosed hydraulic structures and vents (excluding shop-coated valves, couplings, pumps).	White metal blast cleaning SSPC-SP5	(100) amine-cured epoxy
FM-4	Surfaces exposed to high temperature (between 150 and 600 degrees F).	Near white metal blast cleaning SSPC-SP10	(6) inorganic zinc, water-based
FM-5	Surfaces exposed to high temperature (between 600 and 1000 degrees F).	Near white metal blast cleaning SSPC-SP10	(3) aluminum silicone resin
FM-6	Buried small steel pipe.	Removal of dirt, grease, oil	(200) PVC tape
FM-7	Where indicated, ferrous surfaces in water passages of all valves 4-	White metal blast cleaning SSPC-SP5	(102) polyamide-cured epoxy

	inch size and larger, exterior surfaces of submerged valves.		
FM-8	Where indicated, ferrous surfaces in water passages and submerged surfaces of all pumps which have discharge size of 4 inches or larger.	White metal blast cleaning SSPC-SP5	(100) amine-cured epoxy
FM-9	Ferrous surfaces of sleeve-couplings.	Solvent cleaning SSPC-SP1, followed by white metal blast cleaning SSPC-SP10	(106) fusion-bonded epoxy
FM-10	All ferrous surfaces of sluice gates, flap gates, and shear gates, including wall thimbles.	White metal blast cleaning SSPC-SP5	(102) polyamide-cured epoxy
FM-11	Buried surfaces that are not indicated to be coated elsewhere.	Near white metal blast cleaning SSPC-SP10	(100) amine-cured epoxy
FM-12	Interior surfaces of all chemical tanks, including tank nozzles, manholes, nozzle necks, flange faces.	White metal blast cleaning SSPC-SP5	(107) chemical-resistant sheet lining
FM-13	External surfaces of buried steel tanks.	White Metal blast cleaning SSPC-SP5	(100) amine-cured epoxy
FM-14	Structural steel, miscellaneous metalwork, and supports for prefabricated metal buildings.	Specifier enter	Specifier enter
FM-15	Structural steel, miscellaneous metalwork, and supports for roof and facia support systems for buildings.	Specifier enter	Specifier enter
FM-16	Surfaces of indoor equipment, not submerged	Commercial blast cleaning SSPC-SP6	(8) epoxy, equipment
FM-17	Specifier list of existing	Specifier enter	Specifier enter

	ferrous equipment or surfaces which are required to be re-coated as part of this WORK.		
FM-18	Buried pipe couplings, valves, fittings, and flanged joints (where piping is plastic).	Removal of dirt, grease, oil	(201) rich portland cement mortar
FM-19	Buried pipe couplings, valves, and flanged joints (where piping is ductile or cast iron, not tape-coated), including epoxy-coated surfaces.	As specified by reference specification	(205) polyethylene encasement
FM-20	Buried pipe couplings, valves, and flanged joints (where piping is mortar-coated steel or reinforced concrete), including epoxy-coated surfaces.	Removal of dirt, grease, oil	(206) cement-mortar coating

B. **Coating System Schedule, Ferrous Metal - Galvanized:** Pretreatment coatings, barrier coatings, or washes shall be applied as recommended by the coating manufacturer.

	Item	Surface Prep.	System No.
FMG-1	All exposed surfaces indoors and outdoors, except those included below.	Solvent cleaning SSPC-SP1	(1) alkyd enamel
FMG-1	All exposed surfaces indoors and outdoors, except those included below.	Solvent cleaning SSPC-SP1	(4) aliphatic polyurethane
FMG-2	Surfaces in chlorinator room, chlorine storage room.	Solvent cleaning SSPC-SP1	(100) amine-cured epoxy
FMG-3	Buried small steel pipe.	Removal of dirt, grease, oil	(200) PVC tape
FMG-4	Surfaces buried or submerged in water or wastewater, including all surfaces lower than two feet above high water level and all surfaces	Solvent cleaning SSPC-SP1 followed by brush-off grade blast cleaning SSPC-SP7	(100) amine-cured epoxy

inside enclosed hydraulic structures and vents.

3.18 COATING SYSTEM SCHEDULE, NON-FERROUS METAL, PLASTIC, FIBER GLASS

A. Where isolated non-ferrous parts are associated with equipment or piping, the CONTRACTOR shall use the coating system for the adjacent connected surfaces. Do not coat handrails, gratings, frames or hatches. Only primers recommended by the coating manufacturer shall be used.

	Item	Surface Prep.	System No.
NFM-1	All exposed surfaces, indoors and outdoors, except those included below.	Solvent cleaned SSPC-SP1	(1) alkyd enamel
NFM-1	All exposed surfaces, indoors and outdoors, except those included below.	Solvent cleaned SSPC-SP1	(4) aliphatic polyurethane
NFM-2	Chlorination room, chlorine storage room.	Solvent cleaned SSPC-SP1	(100) amine-cured epoxy
NFM-3	Aluminum surfaces in contact with concrete, or with any other metal except galvanized ferrous metal.	Solvent cleaned SSPC-SP1	(208) aluminum metal isolation
NFM-4	Polyvinyl chloride plastic piping, indoors and outdoors, or in structures, not submerged.	Solvent cleaned SSPC-SP1	(7) acrylic latex
NFM-5	Fiber glass surfaces.	Per paragraph 3.10	(12) aliphatic polyurethane fiber glass
NFM-6	Buried non-ferrous metal pipe.	Removal of dirt, grease, oil	(200) PVC tape
NFM-7	Specifier list of existing equipment or surfaces which are required to be recoated as part of this WORK.	Specifier enter	Specifier enter

3.19 COATING SYSTEM SCHEDULE-CONCRETE

Item	Surface Prep.	System No.

C-1	All surfaces indoors and outdoors, where indicated.	Per paragraph 3.9	(10) acrylic, concrete
C-1	All surfaces indoors and outdoors, where indicated.	Per paragraph 3.9	(11) aliphatic polyurethane, concrete
C-3	Floor slab and walls, exposure to chemicals, where indicated.	Per paragraph 3.9	(108) epoxy, concrete
C-4	Walls, floors, exposure to chemical splash, washdown, where indicated	Per paragraph 3.9	(11) aliphatic polyurethane, concrete

3.20 COATING SYSTEM SCHEDULE-CONCRETE BLOCK MASONRY

	Item	**Surface Prep.**	**System No.**
CBM-1	All surfaces, indoors and outdoors, where indicated.	Per paragraph 3.9	(10) acrylic, concrete
CBM-1	All surfaces, indoors and outdoors, where indicated.	Per paragraph 3.9	(11) aliphatic polyurethane, concrete
CBM-2	Submerged in wastewater, including all vertical masonry surfaces above waterline where indicated.	Per paragraph 3.9	(108) epoxy, concrete
CBM-3	Exterior surfaces, above grade, where indicated.	Per paragraph 3.11	(204) water-retardant
CBM-4	Specifier list of existing masonry surfaces which are required to be recoated as part of this WORK	Specifier enter	Specifier enter

3.21 COATING SYSTEM SCHEDULE - MISCELLANEOUS SURFACES

	Item	**Surface Prep.**	**System No.**
MS-1	Wood, indoors and outdoors.	Per manufacturer's printed instructions	(209) alkyd-wood

MS-1	Wood, indoors and outdoors.	Per manufacturer's printed instructions	(210) alkyd-wood
MS-2	Drywall	Per manufacturer's printed instructions	(211) acrylic-drywall

3.23 COATING SYSTEM FOR CONCRETE WATER TANK

1. All above grade exterior walls shall be given a two-coat finish consisting of “Tnemec Envirocrete 156”, or approved equal. Each coating shall be no less than 7 mil DFT, with a total system DFT of no less than 15 mil. Apply first coat either with spray and backroll, or with a roller. Second coat may be sprayed if desired. Coatings shall be applied in strict accordance with the manufacturer’s recommendations.

2. All below grade exterior walls (to 1’-0” above highest grade elevation) shall be given a two-coat finish consisting of “TnemecV69”, or approved equal. Each coating shall be no less than 4 mil DFT, with a total system DFT of no less than 10 mil. Apply first coat either with spray and backroll, or with a roller. Second coat may be sprayed if desired. Coatings shall be applied in strict accordance with the manufacturer’s recommendations.

3. The Owner shall select three (3) colors from the manufacturer’s color chart provided in the submittals. CONTRACTOR shall apply each of the three colors as a 10’ x 10’ “patch sample” area on the tank wall. OWNER will select the color based on viewing of the sample patches. CONTRACTOR will coat the entire tank using the approved color.

4. All Work shall be performed by workmen skilled in the application of these types of products. The Manufacturer’s application instructions shall be submitted to the Engineer for approval. The Contractor shall confer with the Manufacturer’s representatives regarding application techniques and shall follow the Manufacturer’s instructions implicitly.

5. The concrete surface to be coated shall be clean, free of all laitance, dirt, grease, or other foreign materials. All defective surfaces shall be filled and/or repaired. Application shall be in full accordance with the manufacturer’s instructions or as amended by the Engineer.

6. The exterior coating for below grade wall surfaces shall be applied by brush, spray or roller to completely cover the underground wall at a maximum usage rate coverage of 80 sqft per gallon in accordance with the Manufacturer’s recommendations except for the above usage rate of the paint.

- END OF SECTION -

SECTION 09900 – IDENTIFICATION OF SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Equipment nameplates.
2. Warning signs and labels.
3. Pipe markers.
4. Duct labels.
5. Stencils.
6. Valve tags.
7. Warning tags.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, provide manufacturer's standard product data sheets. Data sheets must detail compliance with applicable standards for color and size and clearly define durability of no less than 4 years.

B. Samples: For color, letter style, and graphic representation required for each identification material and device.

C. Equipment Nameplate Schedule: Include a listing of all equipment to be labeled with the proposed content for each nameplate.

D. Valve numbering scheme: Provide a list of acceptable abbreviations to be used on each service to be identified and the numbering scheme to be used.

E. Valve Schedules: For each piping system to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 EQUIPMENT NAMEPLATES

A. Metal Nameplates for Equipment:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc. or approved equal; AANP (Anodized Aluminum Nameplates), LESS (Laser Etched Stainless Steel Nameplates), LEBR (Laser Etched Brass Nameplates) or a comparable product by one of the following:
2. Material and Thickness: **Brass, 0.032-inch (0.8-mm), stainless steel, 0.032-inch (0.8-mm), aluminum, 0.032-inch (0.8-mm), or anodized aluminum, 0.032-inch (0.8-mm)** minimum thickness, and having predrilled or stamped holes for attachment hardware of same material. Use only aluminum in areas that store or use corrosive chemicals.
3. Minimum Label Size: Length and width vary for required label content, but not less than 3 by 1 inch (76 by 26 mm).
4. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
5. Fasteners: Stainless-steel or brass **rivets or self-tapping screws**.
6. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

B. Plastic Nameplates for Equipment:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; Engraved Briply EPNP Plastic Nameplates or a comparable product.
2. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, **1/8 inch (3.2 mm)** thick, and having predrilled holes for attachment hardware.
3. Letter Color: **Black**.
4. Background Color: **Blue**.
5. Maximum Temperature: Able to withstand temperatures up to 200 deg F (93 deg C).
6. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
7. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
8. Fasteners: Stainless-steel or brass **rivets or self-tapping screws**.
9. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

C. Equipment Nameplate Content: Each nameplate shall include equipment's Drawing designation or unique equipment number, consistent with Drawings.

D. Equipment Label Schedule: List each item of equipment to be labeled, on 8-1/2-by-11-inch (A4) bond paper. Tabulate equipment identification number, and identify Drawing numbers where equipment is indicated (plans, details, and schedules) and the Specification Section number and title where equipment is specified. Equipment schedule shall be included in operation and maintenance data.

2.2 WARNING SIGNS AND LABELS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; Safety Signs and Decals or a comparable product.

B. General Requirements for Warning Signs and Labels: Comply with ANSI Z535.2 and Z535.4, and with requirements below.

C. Material and Thickness: **Aluminum 0.040 inch (1.02 mm)**.

D. Letter Color: **Red**.

E. Background Color: **White**.

F. Maximum Temperature: Able to withstand temperatures up to 160 deg F (71 deg C).

G. Minimum Label Size: Length and width vary for required label content, but not less than 5 by 3-1/2 inch (125 by 90 mm).

H. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.

I. Fasteners: **Adhesive strip or Self-tapping screws**.

J. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

K. Label Content: Each warning sign or label shall clearly identify the hazard, the method of avoiding the hazard, and the specific consequences of not avoiding the hazard. The sign format and content shall comply with the most current and applicable ANSI Z535 standard and OSHA requirements. If appropriate, emergency notification instructions shall be included on the signs.

L. The sign type and locations shall be as follows:

Type	Message
I	CAUTION—AUTOMATIC EQUIPMENT MAY START AT ANY TIME
II	DANGER—480 VOLTS
III	CAUTION—CORROSIVE CHEMICALS
IV	EXIT

Location	Number	Type	Mount
All 480V Switchgear	2	II	Wall
All 480V Motor Control Centers	2	II	Wall
PLC Controlled Pumps	4	I	Post
Chemical Storage Tanks	2	III	Wall
Exterior Doors	1	IV	Door

2.3 PIPE MARKERS

A. General Requirements for Manufactured Pipe Labels: Identify the content and directional flow of piping systems. Whenever possible select manufacturers standard preprinted, color-coded, pipe markers. Pipe marker sizes and colors shall comply with ANSI / ASME A13.1.

B. Pretensioned Pipe Markers:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; System #1 Markers or comparable product.

2. For Pipe Sizes NPS 6 (DN 150) and Smaller, including Pipe Covering: Semi-rigid plastic wrap around pipe marker that extends 360 degrees around the pipe at each marker location. Include legend (pipe content) and arrows to indicate direction of flow. Equip pretensioned markers with an adhesive strip, 1/2-inch (13-mm) wide on the inside for applications on vertical locations.
3. For Pipe Sizes Larger than NPS 6 (DN 150), including Pipe Covering: Semi-rigid plastic strap-on pipe marker with a height no less than 3 times the letter height. Include legend (pipe content) and arrows to indicate direction of flow. Include at least two nylon straps to secure the marker in place.

C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; EZ Pipe Markers or comparable product.

2. Description: Adhesive backed flexible vinyl pipe markers with a minimum 1.0 mil. (0.02 mm) coating of acrylic adhesive. Include legend (pipe content) and a separate and adjacent arrow marker or arrow banding tape to indicate direction of flow.

2.4 Not Used

2.5 STENCILS

A. General Requirements: Mark all interior doors, hatches, and other access points, in accordance with the Owner's directions.

B. Not Used

C. Stencils for Access Panels and Door Labels, Equipment Labels, and Similar Operational Instructions:
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; Reusable Stencils or a comparable product.
   2. General Requirements for Stencils: Comply with ASME A13.1 for size and color of background and size and color of lettering.
   3. Legend: Match terminology used on Drawings.
   4. Stencil Material: **Polyester or Oil board**.
   5. Stencil Paint: Exterior, gloss, water-based black. Paint may be in pressurized spray-can form.
   6. Stencil Ink: Interior stencil ink shall be compatible with interior surfaces and finishes.

2.6 VALVE TAGS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; RBVT Stock or Custom 1-1/2 Inch Brass Valve Tags or RAVT Custom Aluminum Valve Tags or SSVT Custom Stainless Steel Valve Tags or a comparable product.

B. The content of each tag shall include a 1/4-inch (6-mm) top-line abbreviation identifying the system. Terminology shall match Drawings. Content, second line shall include a unique sequential 1/2-inch (13-mm) number to identify the valve.

   1. Tag Material: **Brass, 0.032-inch (0.8-mm), stainless steel, 0.032-inch (0.8-mm), aluminum, 0.032-inch (0.8-mm), or anodized aluminum, 0.032-inch (0.8-mm)** minimum thickness, and having predrilled or stamped holes for attachment hardware.
   2. Fasteners: Brass or stainless steel **beaded chain of same material.**

C. Valve Schedules: List each valve in the piping system, on 8-1/2-by-11-inch (A4) bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal-operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.

   1. Valve Charts: In each equipment room where plumbing system valve are installed, provide a valve schedule as described above containing only the valves within that room. Mount the schedule in an aluminum valve chart frame with a plastic protector to the wall as close to the entrance as possible.
   2. Valve-tag schedule shall be included in operation and maintenance data.

2.7 WARNING TAGS

A. n Product: Subject to compliance with requirements, provide Brimar Industries, Inc.; Accident Prevention Safety Tags or a comparable product.

B. Description: Preprinted or partially preprinted accident-prevention tags when a hazard or detailed instruction are required. Tags will comply with ANSI Z535, and be constructed of plasticized card stock with matte finish suitable for writing.

1. Size: 3 by 5-1/4 inches (75 by 133 mm) minimum.
2. Fasteners: **Brass grommet and wire**.
3. Nomenclature: Large-size primary caption such as "DANGER," "CAUTION," or "DO NOT OPERATE."
4. Color:

a. Caution: Yellow background with black lettering.
b. Warning: Orange background with black lettering.
c. Danger: Red background with white lettering.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

B. Coordinate installation of identifying devices with locations of access panels and doors.

C. Install identifying devices before installing acoustical ceilings and similar concealment.

3.3 EQUIPMENT NAMEPLATE INSTALLATION

A. General Requirements for Equipment nameplates: Identify equipment on the Project with a metal or plastic nameplate permanently mounted in a visible location directly on or adjacent to the equipment.

B. Install or permanently fasten labels on each major item of mechanical equipment.

C. Locate equipment labels where accessible and visible.

3.4 WARNING SIGN INSTALLATION

A. General Requirements for Warning Signs and Labels: Identify hazards to personnel and equipment with a warning sign or label. Permanently install labels as close to the hazard as possible while providing sufficient advanced notice for avoiding the hazard.

B. Install or permanently fasten labels on each major item of mechanical equipment.

C. Locate equipment labels where accessible and visible.

D. Provide warning signs or labels in accordance with Cal OSHA and local fire marshal. As a minimum, warning signs shall be posted on all doors leading to areas that store, mix, or inject corrosive, flammable, or potentially toxic chemicals, and areas that have high voltage (480V+) equipment.

3.5 PIPE LABEL INSTALLATION

A. Piping Color Coding: Painting of piping is specified in Section 9800.

B. For pipes with an overall diameter including pipe covering of NPS 6 (DN 150) or less identify pipes with pretensioned pipe markers.

C. For pipe with an overall diameter including pipe covering larger than NPS 6 (DN 150) identify pipes with strap on type pipe markers. Straps shall be UV treated nylon and there shall be at least two per pipe marker.

D. Pipe Markers should not be used on bare pipes with temperatures that exceed 160 deg F (71 deg C).

E. Stenciled Pipe Label Option: Stenciling pipes instead of installing manufactured pipe markers may be done on concealed piping only at Installer's option. Stenciling pipes with painted, color-coded bands or rectangles, complying with ASME A13.1, on each piping system.

1. Identification Paint: Use for contrasting background.
2. Stencil Paint: Use for pipe marking.

F. Pipe Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:

1. Near each valve and control device.
2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
3. Near penetrations and on both sides of through walls, floors, ceilings, and inaccessible enclosures.
4. At access doors, manholes, and similar access points that permit view of concealed piping.
5. Near major equipment items and other points of origination and termination.

6. Spaced at maximum intervals of 20 **feet** along each run. Reduce intervals to **5 feet** in areas of congested piping and equipment.
7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.

G. Directional Flow Arrows: Arrows shall be used to indicate direction of flow in pipes, including pipes where flow is allowed in both directions.

H. Not Used

3.6 Not Used

3.7 VALVE-TAG INSTALLATION

A. Install tags on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, control valves, isolation valves, shutoff valves, faucets, convenience and lawn-watering hose connections, and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule.

3.8 WARNING-TAG INSTALLATION

A. Write required message on, and attach warning tags to, equipment and other items where required.

END OF SECTION 9900

SECTION 11100 – VERTICAL TURBINE PUMPS, GENERAL

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide all pumps and pumping appurtenances, complete and operable, in accordance with the Contract Documents.

B. The provisions of this Section shall apply to all pumps and pumping equipment except where otherwise indicated in the Contract Documents.

C. **Unit Responsibility:** A single manufacturer shall be made responsible for furnishing the WORK and for coordination of design, assembly, testing, and installation of the WORK of each pump Section; however, the CONTRACTOR shall be responsible to the OWNER for compliance with the requirements of each pump Section. Unless otherwise indicated, the single Manufacturer shall be the Manufacturer of the pump.

D. **Single Manufacturer:** Where two or more pump systems of the same type or size are required, the pumps shall all be produced by the same Manufacturer. All products shall be provided by FlowServe.

1.2 CONTRACTOR SUBMITTALS

A. **General:** Submittals shall be furnished in accordance with Section 01300 - Contractor Submittals.

B. **Shop Drawings:** Shop Drawings shall contain the following information:

1. Pump name, identification number, and specification Section number.

2. Performance data curves showing head, capacity, horsepower demand, NPSH required, and pump efficiency over the entire operating range of the pump. The equipment Manufacturer shall indicate separately the head, capacity, horsepower demand, overall efficiency, and minimum submergence required at the design flow conditions and the maximum and minimum flow conditions.

3. The CONTRACTOR shall require the Manufacturer to indicate the limits on the performance curves recommended for stable operation without surge, cavitation, or excessive vibration. The stable operating range shall be as wide as possible based on actual hydraulic and mechanical tests.

4. Assembly and installation drawings including shaft size, seal, coupling, bearings, anchor bolt plan, part nomenclature, material list, outline dimensions, and shipping weights.

5. Data for the electric motor proposed for each pump.

6. Elevation of proposed Local Control Panel showing panel-mounted devices, details of enclosure type, single line diagram of power distribution, and current draw of panel, and list of all terminals required to receive inputs or to transmit outputs from

the Local Control Panel.

7. Wiring diagram of field connections with identification of terminations between Local Control Panels, junction terminal boxes, and equipment items.

8. Complete electrical schematic diagram.

9. Fabrication drawings for pump barrel, inlet pipe, and discharge head, including materials, dimensions, coatings and linings, anchor and connection bolts, gaskets, etc.

B. **Technical Manual:** The Technical Manual shall contain the required information for each pump Section, including installation instructions.

C. **Spare Parts List:** A Spare Parts List shall contain the required information for each pump Section.

D. **Factory Test Data:** Signed, dated, and certified factory test data for each pump system which requires factory testing, submitted before shipment of equipment.

E. **Certifications:**

1. Manufacturer's certification of factory test data and proper field installation.

2. CONTRACTOR'S certification of satisfactory field testing.

G. **Structural Calculations:** Provide dynamic load calculations for anchoring of pump base to pump pedestal. Provide anchor bolt diameter, length, type, material, installation method, and embedded length requirements.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Compliance with the requirements of the individual pump Sections may necessitate modifications to the Manufacturer's standard equipment.

B. **Performance Curves:** All centrifugal pumps shall have a continuously rising curve. In no case shall the required horsepower at any point on the performance curve exceed the rated horsepower of the motor or engine, or encroach on the service factor.

C. All components of each pump system provided under the pump Sections shall be entirely compatible. Each unit of pumping equipment shall incorporate all basic mechanisms, couplings, electric motors or engine drives, variable speed controls, necessary mountings, and appurtenances.

2.2 MATERIALS

A. All materials shall be suitable for the intended application; materials not specified shall be high-grade, standard commercial quality, free from all defects and imperfection that might affect the serviceability of the product for the purpose for which it is intended, and shall

conform to the following requirements:

1. Cast iron pump casings and bowls shall be of close-grained gray cast iron, conforming to ASTM A 48 - Gray Iron Castings, Class 30, or equal.

2. Bronze pump impellers shall conform to ASTM B 62 - Composition Bronze or Ounce Metal Castings, or B 584 - Copper Alloy Sand Castings for General Applications, where dezincification does not exist.

3. Anchor bolts, washers, and nuts in Standard Service (Non-Corrosive Application) shall be galvanized steel.

2.3 PUMP COMPONENTS - GENERAL

A. **Flanges:** Suction and discharge flanges shall conform to ANSI/ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800 or B16.5 - Pipe Flanges and Flanged Fittings dimensions.

B. **Lubrication:** Deep-well pumps shall have water-lubricated bearings and seals.

C. **Handholes:** Handholes on pump casings shall be shaped to follow the contours of the casing to avoid any obstructions in the water passage.

D. **Drains:** All gland seals, air valves, cooling water drains, and drains from variable speed drive equipment shall be piped to the nearest floor sink, or drain, with rigged copper pipe or copper tube, properly supported with brackets.

2.4 PUMP APPURTENANCES

A. **Nameplates:** Each pump shall be equipped with a stainless steel nameplate indicating serial numbers, rated head and flow, impeller size, pump speed, and Manufacturer's name and model number.

B. **Seal and Bearing Lubrication:** Provide API Plan 13 – “Single Seals - Flush Thru Seal Chamber Thru Orifice To Suction” for lubrication of mechanical seals in accordance with API 682/ISO 21049 standards, or as indicated on the plans. All solenoid valves associated with lubrication of seals and bearings shall be designed to fail in the open position.

C. Gauges

1. All pumps (except sample pumps, sump pumps, and hot water circulating pumps) shall be equipped with pressure gages installed at pump discharge lines. Gages shall be located in a representative location, where not subject to shock or vibrations, in order to achieve true and accurate readings.

2. Where subject to shock or vibrations, the gages shall be wall-mounted or attached to galvanized channel floor stands and connected by means of flexible connectors.

3. Pump barrels shall be equipped with welded/threaded orifices and piping to allow for measuring pump barrel absolute pressure (i.e. suction head), and provide for venting through an air-vacuum valve mounted on or near the pump discharge head.

2.5 FACTORY TESTING

A. The following tests shall be conducted on each indicated pump system:

1. **Motors:** Electric motors shall be tested at the factory to confirm efficiency ratings.

2. **Pump Systems:** All centrifugal pump systems 10 hp and larger shall be tested at the pump factory in accordance with the American National Standard for Centrifugal Pump Tests (ANSI/HI 1.6) acceptance Level "A" or the American National Standard for Vertical Pump Tests (ANSI/HI 2.6) as approved by ANSI and published by the Hydraulic Institute. Tests shall be performed using the bowl assembly only with calibrated motor. For motors smaller than 15 hp, the Manufacturer's certified test motor shall be acceptable. Testing of prototype models will not be acceptable. The following minimum test results shall be submitted:

a. Hydrostatic test results

b. At maximum speed, a minimum of five hydraulic test readings between shutoff head and 25 percent beyond the maximum indicated capacity, recorded on data sheets as defined by the Hydraulic Institute.

c. Pump curves showing head, flow, bhp, and efficiency requirements. NPSH required test curve if required in each pumps specification otherwise, calculated NPSH required curve may be submitted.

d. Certification that the pump horsepower demand did not exceed the rated motor horsepower beyond the 1.0 service rating at any point on the curve.

3. **Acceptance:** In the event of failure of any pump to meet any of the requirements, the CONTRACTOR shall make all necessary modifications, repairs, or replacements to conform to the requirements of the Contract Documents and the pump shall be re-tested until found satisfactory.

2.6 DRIVERS/MOTORS

A. Drivers for vertical pumps shall be TEFC, premium efficiency, 460V/3ph with Class F insulation and S.F. of 1.15. Provide stray-current shaft protection or grounding rings on motors with VFD's. All motors shall have separate winding heaters or a winding heater feature on the drive. Drivers shall be manufactured by U.S. Motors, G.E., or equal.

PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

A. **Inspection, Startup, and Field Adjustment:** Where required by the individual pump Sections, an authorized service representative of the Manufacturer shall visit the site for the number of days indicated in those Sections to witness the following and to certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation.

1. Installation of the equipment

2. Inspection, checking, and adjusting the equipment

3. Startup and field testing for proper operation

4. Performing field adjustments to ensure that the equipment installation and operation comply with requirements

B. **Instruction of the Owner's Personnel:**

1. Where required by the individual pump Sections, an authorized training representative of the Manufacturer shall visit the site for the number of days indicated in those Sections to instruct the OWNER'S personnel in the operation and maintenance of the equipment, including step-by-step troubleshooting with necessary test equipment. Instruction shall be specific to the models of equipment provided.

2. The representative shall have at least two year's experience in training. A resume for the representative shall be submitted.

3. Training shall be scheduled a minimum of three weeks in advance of the first session.

4. Proposed training material and a detailed outline of each lesson shall be submitted for review. Comments shall be incorporated into the material.

5. The training materials shall remain with the trainees.

6. The OWNER may videotape the training for later use with the OWNER'S personnel.

3.2 INSTALLATION

A. **General:** Pumping equipment shall be installed in accordance with the Manufacturer's written recommendations. Consult manufacturer for horizontal and vertical tolerances of pump enclosure installation. CONTRACTOR shall provide post installation machining of pump base as required and recommended by the pump manufacturer.

B. **Alignment:** All equipment shall be field tested to verify proper alignment, operation as specified, and freedom from binding, scraping, vibration, shaft runout, or other defects. Pump drive shafts shall be measured just prior to assembly to ensure correct alignment without forcing. Equipment shall be secure in position and neat in appearance. Provide testing results to indicate Hydraulic Institute Standards for vibration are met.

C. **Lubricants:** The CONTRACTOR shall provide the necessary oil and grease for initial operation.

3.3 PROTECTIVE COATING

A. Materials and equipment shall be coated as required in Section 09800 - Protective Coating.

3.4 FIELD TESTS

A. Where required by the individual pump Sections, each pump system shall be field tested after installation to demonstrate satisfactory operation without excessive noise, vibration, damaging cavitation, or overheating of bearings and to demonstrate the indicated head, flow, and efficiency at the design point.

B. The following field testing shall be conducted:

1. Startup, check, and operate the pump system over its entire speed range if variable speed at 100 RPM increment or at max RPM if constant speed. Vibration shall be within the amplitude limits recommended by the Hydraulic Institute Standards at a minimum of four pumping conditions defined by the ENGINEER.

2. Obtain concurrent readings of motor voltage, amperage, pump suction head, and pump discharge head for at least four pumping conditions at each pump rotational speed if variable speed at 100 RPM increment or at max RPM if constant speed. Check each power lead to the motor for proper current balance.

3. Electrical and instrumentation tests shall conform to the requirements of the Sections under which that equipment is specified.

C. Field testing will be witnessed by the ENGINEER. The CONTRACTOR shall furnish three days advance notice of field testing.

D. In the event any pumping system fails to meet the indicated requirements, the pump shall be modified or replaced and retested as above until it satisfies the requirements.

E. After each pumping system has satisfied the requirements, the CONTRACTOR shall certify in writing that it has been satisfactorily tested and that all final adjustments have been made. Certification shall include the date of the field tests, a listing of all persons present during the tests, and the test data.

F. The CONTRACTOR shall bear all costs of field tests, including related services of the Manufacturer's representative, except for power and water which the OWNER will bear. If available, the OWNER'S operating personnel will provide assistance in field testing.

- END OF SECTION -

SECTION 11100 – VERTICAL TURBINE PUMPS, GENERAL

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide all pumps and pumping appurtenances, complete and operable, in accordance with the Contract Documents.

B. The provisions of this Section shall apply to all pumps and pumping equipment except where otherwise indicated in the Contract Documents.

C. **Unit Responsibility:** A single manufacturer shall be made responsible for furnishing the WORK and for coordination of design, assembly, testing, and installation of the WORK of each pump Section; however, the CONTRACTOR shall be responsible to the OWNER for compliance with the requirements of each pump Section. Unless otherwise indicated, the single Manufacturer shall be the Manufacturer of the pump.

D. **Single Manufacturer:** Where two or more pump systems of the same type or size are required, the pumps shall all be produced by the same Manufacturer. All products shall be provided by FlowServe, Floway, or Goulds.

1.2 CONTRACTOR SUBMITTALS

A. **General:** Submittals shall be furnished in accordance with Section 01300 - Contractor Submittals.

B. **Shop Drawings:** Shop Drawings shall contain the following information:

1. Pump name, identification number, and specification Section number.

2. Performance data curves showing head, capacity, horsepower demand, NPSH required, and pump efficiency over the entire operating range of the pump. The equipment Manufacturer shall indicate separately the head, capacity, horsepower demand, overall efficiency, and minimum submergence required at the design flow conditions and the maximum and minimum flow conditions.

3. The CONTRACTOR shall require the Manufacturer to indicate the limits on the performance curves recommended for stable operation without surge, cavitation, or excessive vibration. The stable operating range shall be as wide as possible based on actual hydraulic and mechanical tests.

4. Assembly and installation drawings including shaft size, seal, coupling, bearings, anchor bolt plan, part nomenclature, material list, outline dimensions, and shipping weights.

5. Data for the electric motor proposed for each pump.

6. Elevation of proposed Local Control Panel showing panel-mounted devices, details of enclosure type, single line diagram of power distribution, and current draw of panel, and list of all terminals required to receive inputs or to transmit outputs from

the Local Control Panel.

7. Wiring diagram of field connections with identification of terminations between Local Control Panels, junction terminal boxes, and equipment items.

8. Complete electrical schematic diagram.

9. Fabrication drawings for pump barrel, inlet pipe, and discharge head, including materials, dimensions, coatings and linings, anchor and connection bolts, gaskets, etc.

B. **Technical Manual:** The Technical Manual shall contain the required information for each pump Section, including installation instructions.

C. **Spare Parts List:** A Spare Parts List shall contain the required information for each pump Section.

D. **Factory Test Data:** Signed, dated, and certified factory test data for each pump system which requires factory testing, submitted before shipment of equipment.

E. **Certifications:**

1. Manufacturer's certification of factory test data and proper field installation.

2. CONTRACTOR'S certification of satisfactory field testing.

3. Pump and pump barrel manufacturer certification that pump barrels, inlet, discharge head, and pump equipment collectively and individually meet all applicable Hydraulic Institute Standards.

G. **Structural Calculations:** Provide dynamic load calculations for anchoring of pump base to pump pedestal. Provide anchor bolt diameter, length, type, material, installation method, and embedded length requirements.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Compliance with the requirements of the individual pump Sections may necessitate modifications to the Manufacturer's standard equipment.

B. **Performance Curves:** All centrifugal pumps shall have a continuously rising curve. In no case shall the required horsepower at any point on the performance curve exceed the rated horsepower of the motor or engine, or encroach on the service factor.

C. All components of each pump system provided under the pump Sections shall be entirely compatible. Each unit of pumping equipment shall incorporate all basic mechanisms, couplings, electric motors or engine drives, variable speed controls, necessary mountings, and appurtenances.

2.2 MATERIALS

A. All materials shall be suitable for the intended application; materials not specified shall be high-grade, standard commercial quality, free from all defects and imperfection that might affect the serviceability of the product for the purpose for which it is intended, and shall conform to the following requirements:

1. Cast iron pump casings and bowls shall be of close-grained gray cast iron, conforming to ASTM A 48 - Gray Iron Castings, Class 30, or equal.

2. Bronze pump impellers shall conform to ASTM B 62 - Composition Bronze or Ounce Metal Castings, or B 584 - Copper Alloy Sand Castings for General Applications, where dezincification does not exist.

3. Anchor bolts, washers, and nuts in Standard Service (Non-Corrosive Application) shall be galvanized steel.

4. All pump materials, coatings, and components that will be in contact with water shall comply with NSF 61.

2.3 PUMP COMPONENTS - GENERAL

A. **Flanges:** Suction and discharge flanges shall conform to ANSI/ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800 or B16.5 - Pipe Flanges and Flanged Fittings dimensions.

B. **Lubrication:** Deep-well pumps and pumps with dry barrels shall have oil-lubricated bearings and seals and enclosed line shafts.

C. **Handholes:** Handholes on pump casings shall be shaped to follow the contours of the casing to avoid any obstructions in the water passage.

D. **Drains:** All gland seals, air valves, cooling water drains, and drains from variable speed drive equipment shall be piped to the nearest floor sink, or drain, with rigged copper pipe or copper tube, properly supported with brackets.

2.4 PUMP APPURTENANCES

A. **Nameplates:** Each pump shall be equipped with a stainless steel nameplate indicating serial numbers, rated head and flow, impeller size, pump speed, and Manufacturer's name and model number.

B. **Seal Lubrication:** Provide API Plan 13 – “Single Seals - Flush Thru Seal Chamber Thru Orifice To Suction” for lubrication of mechanical seals in accordance with API 682/ISO 21049 standards.

C. Gauges

1. All pumps (except sample pumps, sump pumps, and hot water circulating pumps)

shall be equipped with pressure gages installed at pump discharge lines. Gages shall be located in a representative location, where not subject to shock or vibrations, in order to achieve true and accurate readings.

2. Where subject to shock or vibrations, the gages shall be wall-mounted or attached to galvanized channel floor stands and connected by means of flexible connectors.

3. Pump barrels shall be equipped with welded/threaded orifices and piping to allow for measuring pump barrel pressure (i.e. suction head), and provide for venting through an air-vacuum valve mounted on or near the pump discharge head.

2.5 FACTORY TESTING

A. The following tests shall be conducted on each indicated pump system:

1. **Motors:** Electric motors shall be tested at the factory to confirm efficiency ratings.

2. **Pump Systems:** All centrifugal pump systems 10 hp and larger shall be tested at the pump factory in accordance with the American National Standard for Centrifugal Pump Tests (ANSI/HI 1.6) acceptance Level "A" or the American National Standard for Vertical Pump Tests (ANSI/HI 2.6) as approved by ANSI and published by the Hydraulic Institute. Tests shall be performed using the bowl assembly only with calibrated motor. For motors smaller than 15 hp, the Manufacturer's certified test motor shall be acceptable. Testing of prototype models will not be acceptable. The following minimum test results shall be submitted:

a. Hydrostatic test results

b. At maximum speed, a minimum of five hydraulic test readings between shutoff head and 25 percent beyond the maximum indicated capacity, recorded on data sheets as defined by the Hydraulic Institute.

c. Pump curves showing head, flow, bhp, and efficiency requirements. NPSH required test curve if required in each pumps specification otherwise, calculated NPSH required curve may be submitted.

d. Certification that the pump horsepower demand did not exceed the rated motor horsepower beyond the 1.0 service rating at any point on the curve.

3. **Acceptance:** In the event of failure of any pump to meet any of the requirements, the CONTRACTOR shall make all necessary modifications, repairs, or replacements to conform to the requirements of the Contract Documents and the pump shall be re-tested until found satisfactory.

2.6 DRIVERS/MOTORS

A. Drivers for vertical pumps shall be TEFC, premium efficiency, 460V/3ph induction, solid shaft, high thrust, inverter duty, with Class F insulation and S.F. of 1.15. Provide stray-current shaft protection or grounding rings, and winding heaters. Drivers shall be manufactured by U.S. Motors or GE.

PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

A. **Inspection, Startup, and Field Adjustment:** Where required by the individual pump Sections, an authorized service representative of the Manufacturer shall visit the site for the number of days indicated in those Sections to witness the following and to certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation.

1. Installation of the equipment

2. Inspection, checking, and adjusting the equipment

3. Startup and field testing for proper operation

4. Performing field adjustments to ensure that the equipment installation and operation comply with requirements

B. **Instruction of the Owner's Personnel:**

1. Where required by the individual pump Sections, an authorized training representative of the Manufacturer shall visit the site for the number of days indicated in those Sections to instruct the OWNER'S personnel in the operation and maintenance of the equipment, including step-by-step troubleshooting with necessary test equipment. Instruction shall be specific to the models of equipment provided.

2. The representative shall have at least two year's experience in training. A resume for the representative shall be submitted.

3. Training shall be scheduled a minimum of three weeks in advance of the first session.

4. Proposed training material and a detailed outline of each lesson shall be submitted for review. Comments shall be incorporated into the material.

5. The training materials shall remain with the trainees.

6. The OWNER may videotape the training for later use with the OWNER'S personnel.

3.2 INSTALLATION

A. **General:** Pumping equipment shall be installed in accordance with the Manufacturer's written recommendations. Consult manufacturer for horizontal and vertical tolerances of pump enclosure installation. CONTRACTOR shall provide post installation machining of pump base as required and recommended by the pump manufacturer.

B. **Alignment:** All equipment shall be field tested to verify proper alignment, operation as specified, and freedom from binding, scraping, vibration, shaft runout, or other defects.

Pump drive shafts shall be measured just prior to assembly to ensure correct alignment without forcing. Equipment shall be secure in position and neat in appearance.

C. **Lubricants:** The CONTRACTOR shall provide the necessary oil and grease for initial operation.

3.3 PROTECTIVE COATING

A. Materials and equipment shall be coated as required in Section 09800 - Protective Coating.

3.4 FIELD TESTS

A. Where required by the individual pump Sections, each pump system shall be field tested after installation to demonstrate satisfactory operation without excessive noise, vibration, damaging cavitation, or overheating of bearings and to demonstrate the indicated head, flow, and efficiency at the design point.

B. The following field testing shall be conducted:

1. Startup, check, and operate the pump system over its entire speed range if variable speed at 100 RPM increment or at max RPM if constant speed. Vibration shall be within the amplitude limits recommended by the Hydraulic Institute Standards at a minimum of four pumping conditions defined by the ENGINEER.

2. Obtain concurrent readings of motor voltage, amperage, pump suction head, and pump discharge head for at least four pumping conditions at each pump rotational speed if variable speed at 100 RPM increment or at max RPM if constant speed. Check each power lead to the motor for proper current balance.

3. Electrical and instrumentation tests shall conform to the requirements of the Sections under which that equipment is specified.

C. Field testing will be witnessed by the ENGINEER. The CONTRACTOR shall furnish three days advance notice of field testing.

D. In the event any pumping system fails to meet the indicated requirements, the pump shall be modified or replaced and retested as above until it satisfies the requirements.

E. After each pumping system has satisfied the requirements, the CONTRACTOR shall certify in writing that it has been satisfactorily tested and that all final adjustments have been made. Certification shall include the date of the field tests, a listing of all persons present during the tests, and the test data.

F. The CONTRACTOR shall bear all costs of field tests, including related services of the Manufacturer's representative, except for power and water which the OWNER will bear. If available, the OWNER'S operating personnel will provide assistance in field testing.

- END OF SECTION -

SECTION 11103 – DEEP WELL VERTICAL TURBINE PUMPS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide deep well vertical turbine pumps and drives with associated piping, controls, wiring, and appurtenances, complete and operable, in accordance with the Contract Documents.

B. The requirements of Section 11100 - Pumps, General apply to this Section.

C. The Supplier shall examine the site conditions, intended application, and operation of the pump system and recommend the pump which will best satisfy the indicated requirements.

PART 2 -- PRODUCTS

2.1 GENERAL DESCRIPTION

A. **Identification:**

1.	Pump Name	-	Well 9 and Well 10
2.	Equipment Number	-	NA
3.	Quantity	-	1 (each well)
4.	Location	-	Deep Well

B. **Operating Conditions:** The WORK of this Section shall be suitable for long term operation under the following conditions:

1.	Duty	-	Intermittent		
2.	Drive	-	Constant speed		
3.	Ambient environment	-	Outdoors		
4.	Ambient temperature, (degrees F)	-	20	to	110
5.	Ambient relative humidity (percent)	-	0	to	100
6.	Fluid service	-	Potable water		
7.	Fluid temperature, (degrees F)	-	40	to	60
8.	Project site elevation	-	150’		

(m.s.l)

9.	Minimum available NPSH (ft)	-	15’
10.	Maximum suction pressure (psi)	-	50

C. **Performance Requirements:**

1.	Maximum shutoff head (ft)	-	450
2.	Design flow capacity (gpm)	-	1,500
3.	Design flow bowl head TDH (ft)	-	230
4.	Design flow minimum bowl efficiency (percent)	-	80
5.	Maximum flow capacity at maximum speed (gpm)	-	NA
6.	Maximum flow pump head TDH (ft) plus and minus 5 feet	-	NA
7.	Maximum flow minimum bowl efficiency (percent)	-	NA
8.	Maximum flow NPSH required (ft)	-	NA
9.	Minimum flow capacity at maximum speed (gpm)	-	NA
10.	Minimum flow pump head, TDH at maximum speed (ft) plus and minus 5 ft	-	NA
11.	Minimum flow bowl efficiency (percent)	-	NA
12.	Maximum pump speed (rpm)	-	1770
13.	Minimum motor size (hp)	-	125

D. **Pump Dimensions:**

1.	Length from base plate to suction bell (ft)	-	215
2.	Minimum column diameter (in)	-	10

3.	Minimum discharge diameter (in)	-	10
4.	Discharge flange rating ANSI (psi)	-	150
5.	Minimum column shaft diameter (in)	-	$1\ ^{11}/_{16}$
6.	Maximum bowl diameter (in)	-	12

2.2 PUMP REQUIREMENTS

A. **Pump Construction:** Construction of vertical turbine pumps shall conform to the following requirements:

1.	Bowls	-	Cast-iron, vitreous-enameled for sizes 18 inches in diameter and smaller; larger sizes lined with 3 coats of epoxy having a total thickness of 25 mils. The exterior surfaces of the bowl units shall be coated with 8 mils of epoxy in accordance with Section 09800 - Protective Coating
2.	Impeller	-	Bronze statically and dynamically balanced
3.	Impeller shaft method of connection	-	Type 316 Stainless Steel impeller lock collet
4.	Wear rings	-	Bronze, replaceable
5.	Bowl shaft	-	Stainless Steel, Type 410, 416, or 316
6.	Suction bell	-	Cast iron bell, with bottom bearing and streamlined ribs, lining and coating
7.	Column	-	Steel pipe, not less than Schedule 30, epoxy-lined and coated, in maximum 10-ft lengths, threaded or flanged
8.	Line shaft and couplings	-	416 Stainless steel shaft in maximum 10-ft lengths, sized for a critical speed of min 20 percent above max operating speed, open. Shaft coupling shall be Type 316 Stainless Steel, threaded or keyed to the shaft.
9.	Shaft lubrication	-	Product water lubricated, with solenoid valve normally open
10.	Shaft enclosing tube	-	Not Used
11.	Shaft seal	-	Mechanical

12.	Line shaft bearings	-	Rubber with bronze integral bearing retainers at each joint for open lineshaft
13.	Discharge head	-	Fabricated steel, reinforced to withstand pipe thrust, epoxy-lined with flange drilled for mounting to base (sole) plate, and minimum 1-1/4-inch, 3000 lb forged steel half-couplings for drain connection. Provide 3/16 neoprene gasket between discharge head and sole plate.
14.	Motor shaft coupling	-	Shaft adjusting nut for hollow shaft motors.
15.	Bottom bearing	-	Close tolerance sleeve type with length min 2-1/2 times shaft diameter, permanently grease lubricated for suction bell with non-soluble grease, or bronze sleeve with Type 316 stainless steel grease tube and fitting, extended to base plate
16.	Bowl and suction case bearings	-	Product-lubricated bronze sleeves
17.	Sole plate	-	Extra-heavy (1.5" min.), epoxy coated carbon steel sole plate, drilled and tapped to match discharge head. California P.E. seismic calculations for sole plate anchor bolts shall be submitted to the ENGINEER for review by motor manufacturer. Anchor bolts shall not have less than 18" embedment.

B. **Drive:**

1. Each pump shall be provided with a 125 h.p., vertical, hollow shaft, high efficiency, high thrust open, drip proof (WP1) or TEFC, 480 volt, 3-phase, 60 Hertz, premium efficiency, electric motor in accordance with Section 16460 - Electric Motors. Each electric motor shall be designed to accept the total, unbalanced thrust imposed by the pump. Where rotating parts are joined by threaded connections, a non-reverse-type rachet mechanism shall be provided to lock the shaft against reverse rotation.

2.3 PUMP CONTROLS

A. Pumps shall be controlled in accordance with Section 17100 - Process Control and Instrumentation System.

2.4 SPARE PARTS: Furnish the following spare parts for each pump:

A. [One] suction bell bearing assembly

B. [One] set of all bowl and discharge case bearings

C. [One] set of impellers

D. [One] sets of all wear rings

E. [One] set of all pump shaft bearings

F. [One] [packing assembly] [mechanical seal]

G. [Two] sets of all gaskets and o-rings

2.5 MANUFACTURERS, OR EQUAL

A. **Byron Jackson (BW/IP International, Inc.)**

B. **Goulds Pumps, Inc.**

C. **Peerless Pumps**

D. **Worthington (Ingersoll-Dresser Pump Company)**

E. **Floway**

F. **Johnston Pump Company (Paco)**

G. **FlowServe**

PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

A. **Inspection, Startup, and Field Adjustment:** The service representative of the Manufacturer shall be present at the Site for 1 work day, to furnish the services required by Section 11100. Motor shall be tested for vibration in accordance with Hydraulic Institute Standards.

B. **Instruction of OWNER'S Personnel:** The training representative of the Manufacturer shall be present at the Site for 1 work day to furnish the services required by Section 11100.

C. For the purposes of this paragraph, a work day is defined as an eight hour period at the Site, excluding travel time.

D. The ENGINEER may require that the inspection, startup, and field adjustment services above be furnished in three separate trips.

- END OF SECTION -

SECTION 11105 – CLOSE COUPLED VERTICAL TURBINE SERVICE PUMPS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide close coupled vertical turbine service pumps and drives with associated piping, controls, wiring, and appurtenances, complete and operable, in accordance with the Contract Documents.

B. The requirements of Section 11100 - Pumps, General apply to this Section.

C. The Supplier shall examine the site conditions, intended application, and operation of the pump system and recommend the pump which will best satisfy the indicated requirements.

PART 2 -- PRODUCTS

2.1 GENERAL DESCRIPTION

A. **Identification:**

1.	Pump Name	-	Booster Pumps 1 - 5
2.	Equipment Number	-	NA
3.	Quantity	-	5
4.	Location	-	Well 9 Site

B. **Operating Conditions:** The WORK of this Section shall be suitable for long term operation under the following conditions:

1.	Duty	-	Intermittent		
2.	Drive	-	Variable Speed (VFD)		
3.	Ambient environment	-	Outdoors		
4.	Ambient temperature, (degrees F)	-	20	to	110
5.	Ambient relative humidity (percent)	-	0	to	100
6.	Fluid service	-	Potable water		
7.	Fluid temperature, (degrees F)	-	40	to	60
8.	Project site elevation	-	150’ MSL		

9.	Minimum available NPSH (ft)	-	10’
10.	Maximum suction pressure (psi)	-	50

C. **Performance Requirements:**

1.	Maximum shutoff head (ft)	-	250
2.	Design flow capacity (gpm)	-	1,200
3.	Design flow bowl head TDH (ft)	-	125
4.	Design flow minimum bowl efficiency (percent)	-	80 (design operating point must be to the right of the highest efficiency - 82)
5.	Maximum flow capacity at maximum speed (gpm)	-	1,400
6.	Maximum flow pump head TDH (ft) plus and minus 5 feet	-	100
7.	Maximum flow minimum bowl efficiency (percent)	-	70
8.	Maximum flow NPSH required (ft)	-	25
9.	Minimum flow capacity at maximum speed (gpm)	-	NA
10.	Minimum flow pump head, TDH at maximum speed (ft) plus and minus 5 ft	-	NA
11.	Minimum flow bowl efficiency (percent)	-	NA
12.	Maximum pump speed (rpm)	-	1770
13.	Minimum motor size (hp)	-	60

D. **Pump Dimensions:**

1.	Length from base plate to suction bell (ft)	-	Approximately 10’ – Per pump manufacturer as required for proper pump barrel hydraulic design
2.	Minimum column diameter (in)	-	10

3.	Minimum discharge diameter (in)	-	10
4.	Discharge flange rating ANSI (psi)	-	150
5.	Minimum column shaft diameter (in)	-	1.5
6.	Maximum bowl diameter (in)	-	12

2.2 PUMP REQUIREMENTS

A. **Pump Construction:** Construction of vertical turbine pumps shall conform to the following requirements:

1.	Bowls	-	Cast-iron, vitreous-enameled for sizes 18 inches in diameter and smaller; larger sizes lined with 3 coats of epoxy having a total thickness of 25 mils. The exterior surfaces of the bowl units shall be coated with 8 mils of epoxy in accordance with Section 09800 - Protective Coating
2.	Impeller	-	Bronze statically and dynamically balanced
3.	Impeller shaft method of connection	-	Type 316 Stainless Steel impeller lock collet
4.	Wear rings	-	Bronze, replaceable
5.	Bowl shaft	-	Stainless Steel, Type 410, or 416
6.	Suction bell	-	Cast iron bell, with bottom bearing and streamlined ribs, vortex suppressor, lining and coating
7.	Column	-	Steel pipe, not less than Schedule 30, epoxy-lined and coated, flanged
8.	Line shaft and couplings	-	416 Stainless steel shaft in maximum 10-ft lengths, sized for a critical speed of min 20 percent above max operating speed, open. Shaft coupling shall be Type 316 Stainless Steel, threaded or keyed to the shaft.
9.	Shaft lubrication	-	Product water lubricated, with solenoid valve normally open
10.	Shaft enclosing tube	-	Not Used
11.	Shaft seal	-	Mechanical

12.	Line shaft bearings	-	Rubber with bronze integral bearing retainers at each joint for open lineshaft
13.	Discharge head	-	Fabricated steel, reinforced to withstand pipe thrust, epoxy-lined with flange drilled for mounting to base (sole) plate, and minimum 1-1/4-inch, 3000 lb forged steel half-couplings for drain connection. Provide 3/16 neoprene gasket between discharge head and sole plate.
14.	Motor shaft coupling	-	NA
15.	Bottom bearing	-	Close tolerance sleeve type with length min 2-1/2 times shaft diameter, permanently grease lubricated for suction bell with non-soluble grease, or bronze sleeve with Type 316 stainless steel grease tube and fitting, extended to base plate
16.	Bowl and suction case bearings	-	Product-lubricated bronze sleeves
17.	Sole plate	-	Extra-heavy (1.5" min.), epoxy coated carbon steel sole plate, drilled and tapped to match discharge head. California P.E. seismic calculations for sole plate anchor bolts shall be submitted to the ENGINEER for review by motor manufacturer. Anchor bolts shall not have less than 18" embedment.

B. **Drive:**

1. Each pump shall be provided with a 60 h.p., vertical, solid shaft, high efficiency, TEFC, 480 volt, 3-phase, 60 Hertz, invertor duty, premium efficiency, electric motor in accordance with Section 11100. Each electric motor shall be designed to accept the total, unbalanced thrust imposed by the pump. Provide stray current rings.

2.3 PUMP CONTROLS

A. Pumps shall be controlled in accordance with Section 17100 - Process Control and Instrumentation System.

2.4 SPARE PARTS: Furnish the following spare parts for each pump:

A. [One] suction bell bearing assembly

B. [One] set of all bowl and discharge case bearings

C. [One] set of impellers

D. [One] sets of all wear rings

E. [One] set of all pump shaft bearings

F. [One] [packing assembly] [mechanical seal]

G. [Two] sets of all gaskets and o-rings

2.5 MANUFACTURERS, OR EQUAL

A. **Byron Jackson (BW/IP International, Inc.)**

B. **Floway**

C. **FlowServe**

PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

A. **Inspection, Startup, and Field Adjustment:** The service representative of the Manufacturer shall be present at the Site for 1 work day, to furnish the services required by Section 11100. Motor shall be tested for vibration in accordance with Hydraulic Institute Standards.

B. **Instruction of OWNER'S Personnel:** The training representative of the Manufacturer shall be present at the Site for 1 work day to furnish the services required by Section 11100.

C. For the purposes of this paragraph, a work day is defined as an eight hour period at the Site, excluding travel time.

D. The ENGINEER may require that the inspection, startup, and field adjustment services above be furnished in three separate trips.

- END OF SECTION -

SECTION 11500 - BLOWERS, COMPRESSORS, AND VACUUM PUMPS, GENERAL

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide blowers, compressors, and vacuum pumps and appurtenances, complete and operable, in accordance with the Contract Documents.

B. The provisions of this Section shall apply to all blowers, compressors, and vacuum pumps, except where otherwise indicated.

C. All equipment shall be installed in strict accordance with the manufacturer's recommendations and installation guides. Provide proper mounting base and hardware compatible with the surface Provide mounting hardware and additional appurtenance as needed to resist loads associated with the weight of the unit, electrical connections, seismic loads, vibration, etc.

D. The CONTRACTOR shall assign to a single manufacturer full responsibility for the furnishing and functional operation of the blower, compressor, or vacuum pump unit(s) including drives, drive motors, speed control equipment (where variable speed drives are required), and accessories. The designated single Manufacturer, however, need not manufacture more than one part of the unit(s) (blower, or motor and drive), but shall coordinate the design, assembly, testing, and erection of the unit(s).

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Commercial Standards:**

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800
ANSI B16.5	Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and Other Special Alloys
ANSI/ASME PTC 9	Performance Test Code - Displacement Compressors, Vacuum Pumps and Blowers
ANSI/ASME PTC 10	Performance Test Code - Compressors and Exhausters
ANSI/ASME B31.1	Power Piping
ANSI/IEEE 112	Test Procedure for Polyphase Induction Motors and Generators
ASTM A 48	Gray Iron Castings.

1.3 CONTRACTOR SUBMITTALS

A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.

B. **Shop Drawings:** Shop Drawings shall contain the following information:

1. Equipment name, identification number and specification number.

2. Performance curve and data.

3. The CONTRACTOR shall require the manufacturer to indicate points on the H/Q curves, and the limits recommended for stable operation between which the blowers may be operated without surge and vibration. The stable operating range shall be as wide as possible based on actual tests, performed at the factory in accordance with the ANSI/ASME PTC 9 and 10 test codes.

4. Equipment detailed description and specification.

5. Electrical data including control and wiring diagrams.

6. Assembly and installation drawings including shaft size, seal, coupling, anchor bolt plan, part nomenclature, material list, outline dimensions and shipping weights.

7. Equipment drive and motor in accordance with Division 17 of the contract specifications.

C. **Certification:** The CONTRACTOR shall obtain written certification from the designated single manufacturer, addressed to the OWNER, stating that the equipment will efficiently and thoroughly perform the required functions and that the designated single manufacturer accepts the CONTRACTOR'S assignment of full responsibility for coordination of all equipment, including motors, variable speed drives, controls, and services required for proper installation and operation of the completely assembled and installed unit(s). The CONTRACTOR shall submit all such certificates to the ENGINEER.

D. **O & M Manuals:** Prior to start-up, furnish complete operations and maintenance manuals in accordance with Section 01300. Printed instructions relating to proper maintenance, including lubrication, and parts lists indicating the various parts by name, number, and diagram where necessary, shall be furnished in duplicate with each unit or set of identical units in each station. A recommended spare parts list shall be included. Instructions for field procedures for erection, adjustments, inspection, and testing shall be provided prior to installation of each piece of equipment.

1.4 QUALITY ASSURANCE

A. Not Used.

B. **Field Tests:** Units shall be field tested after installation, in accordance with the Contract Documents, to demonstrate satisfactory operation, without causing excessive noise, vibration, and overheating of the bearings. The field testing shall be performed by the CONTRACTOR in the presence of a factory-trained, experienced field representative of

the manufacturer, who shall supervise the following tasks and shall certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation:

1. Start-up, check, and operate the equipment over the entire speed range. The vibration shall be within acceptable limits.

2. Equipment performance shall be documented by obtaining concurrent readings, showing motor voltage, amperage, and discharge head. Each power lead to the motor shall be checked for proper current balance.

3. Bearing temperatures shall be determined by a contact-type thermometer. A running time of at least 20 minutes shall be maintained for this test.

4. Electrical and instrumentation testing shall conform to other applicable Sections of the Specifications.

5. The field testing will be witnessed by the OWNER or its representative. In the event any of the equipment fails to meet the above test requirements, it shall be modified and retested in accordance with the requirements of this Section. The CONTRACTOR shall then certify in writing that the equipment has been satisfactorily tested, and that final adjustments thereto have been made. Certification shall include date of final acceptance test, as well as a listing of all persons present during tests, and resulting test data. The costs of all work by factory-trained representatives shall be borne by the CONTRACTOR. The OWNER will pay for power costs. When available, the OWNER'S operating personnel will provide assistance in the field testing.

1.5 MANUFACTURER'S SERVICE REPRESENTATIVE

A. **Erection and Startup Assistance:** Service and instruction assistance by the manufacturer's service representative for each blower and compressor unit shall be provided by the CONTRACTOR during the following periods:

1. One day (minimum) during erection.

2. One day (minimum) during startup.

B. **Instruction of OWNER's Personnel:** The CONTRACTOR shall provide for the services of a factory service representative to instruct the OWNER's personnel in the operation and maintenance of the equipment.

1.6 GUARANTEES, WARRANTIES

A. After completion, the CONTRACTOR shall furnish to the OWNER the manufacturer's written guarantees, that the equipment will operate with the published efficiencies, heads, and flow ranges and meet these specifications. The CONTRACTOR shall also furnish the manufacturer's warranties as published in its literature.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Wherever it is required that a single designated manufacturer shall be responsible for the compatible and successful operation of the various components of any equipment, it shall be understood to mean that the CONTRACTOR shall provide only such equipment as the manufacturer will certify is compatible with its equipment and with the further understanding that this in no way constitutes a waiver of any requirements.

B. All manufactured items provided under this Section shall be new, current models, and the products of reputable companies specializing in the manufacture of such products, with previous experience in such manufacture. The CONTRACTOR shall, upon request of the ENGINEER, furnish the names of not less than 5 successful installations of its equipment of comparable nature to that offered under this Contract.

C. Where 2 or more units of the same type and/or size of equipment are required, such units shall be from the same manufacturer.

2.2 MATERIALS

A. Materials employed in the blower, compressor, and vacuum pump equipment shall be suitable for the intended application; material not indicated shall be high-grade, standard commercial quality, free from any defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended, and shall conform to the following requirements:

1. Cast iron casings shall be of close-grained gray cast iron, conforming to ASTM A 48, or equal.

2. Stainless steel shafts shall be of Type 400, Series. Miscellaneous stainless steel parts shall be Type 316.

3. Anchor bolts, nuts, and washers shall be hot-dip galvanized, unless otherwise indicated in individual equipment specifications.

2.3 APPURTENANCES

A. **Nameplates:** Each blower, compressor, vacuum pump, and motor shall be equipped with a stainless steel nameplate indicating rated head and capacity, impeller size, speed, and manufacturer's name, serial, and model number.

B. **Solenoid Valves:** Solenoid valves shall be provided on the water or oil lubrication and cooling lines. Solenoid valve electrical rating shall be compatible with the motor control voltage and shall be provided complete with all necessary conduit and wiring installation from control panel to solenoid.

C. **Gauges:** Blowers, compressors, and vacuum pumps shall be equipped with pressure or vacuum gauges, respectively, installed in the discharge lines. Pressure gauges shall be located in a representative location, where not subject to shock or vibrations, in order to

achieve true and accurate readings. Where subject to shock or vibrations, the pressure gauges shall be wall-mounted or attached to galvanized channel floor stands and connected by means of flexible connectors.

D. **Variable Speed Drives:** Variable speed drives, drive motors, speed control equipment, and accessories shall be in accordance with Division 17 of the contract specifications.

E. **Controls:** Controls shall be in accordance with Division 17 of the contract specifications.

F. **Electric Motors:** Electric motors shall comply with the requirements of Division 17 of the contract specifications.

G. **Flanges:** Suction and discharge flanges shall conform to ANSI B16.1 or B16.5 dimensions.

H. **Lubrication:** Blowers, compressors, vacuum pumps, and motors shall be oil- or-grease-lubricated per individual specifications.

I. **Drains:** Cooling water drains and drains from variable speed drive equipment shall be piped to the nearest floor sink or drain with galvanized steel pipe or copper tube, properly supported with brackets.

2.4 TOOLS AND SPARE PARTS

A. **Tools:** Special tools necessary for maintenance and repair of the equipment and one pressure grease gun for each type of grease required for blowers, compressors, and motors shall be furnished as a part of the WORK hereunder; such tools shall be suitably stored in metal tool boxes, and identified with the equipment number by means of stainless steel or solid plastic name tags attached to the box.

B. **Spare Parts:** The CONTRACTOR shall furnish spare parts subject to wear, such as seals, packing, gaskets, nuts, bolts, washers, wear rings, etc., as well as a set of spare bearings, and one year's supply of filter elements. Furnish parts suitably packaged and labelled in a box as described above for tools.

PART 3 -- EXECUTION

3.1 INSTALLATION

A. **General:** Blowers, compressors, and vacuum pump equipment shall be installed in accordance with the Shop Drawings, as indicated on the plans, and in accordance with the manufacturer’s recommendations. CONTACTOR shall coordinate with the roofing contractor to ensure the blower and fan penetrations and supports are compatible with the roofing system and flashing. Roofing submittals shall indicate how methods used for roof penetrations, and any special mechanical construction requirements needed.

B. **Alignment:** Equipment shall be field tested to verify proper alignment and operation as specified, and freedom from binding, scraping, excessive noise, overheating, vibration, shaft runout, or other defects. Drive shafts shall be measured just prior to assembly to

ensure correct alignment without forcing. Equipment shall be secure in position and neat in appearance.

C. **Piping and Mounting:** Piping shall be provided with sufficient expansion joints, guides, and anchors and be supported so as to preclude the possibility of exerting undue forces and moments on the equipment flanges. Suitable flexible connectors shall be provided to isolate the equipment from the piping system. Each unit shall be mounted on a flat and level concrete pad capable of supporting the dead weight of the unit, by means of restrained vibration isolators or resilient pads of suitable design.

D. **Lubricants:** The installation work shall include furnishing the necessary oil and grease for initial operation and for one year's operation.

- END OF SECTION -

SECTION 13675 - POLYETHYLENE TANKS FOR CHEMICAL STORAGE

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide cross-linked, high density polyethylene tanks and accessories, complete and in place, in accordance with the Contract Documents.

B. The CONTRACTOR shall assign responsibility for furnishing the tank system as indicated to the tank fabricator. CONTRACTOR shall coordinate with tank fabricator to ensure proper location and size of tank orifices, such as overflow, vent, drain, fill, level measuring device, etc.

C. CONTRACTOR shall have tank fabricator provide seismic restraint calculations for all tanks, and provide a proper restraint design or system, and any appurtenances necessary for meeting IBC seismic load requirements.

D. Tank fabricator shall provide an affidavit with submittals stating that the tank and appurtenances are compatible with the chemicals to be used, as stated herein.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Commercial Standards

1.	ASTM C 177	Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
2.	ASTM C 273	Standard Test Method for Shear Properties of Sandwich Core Materials
3.	ASTM D 638	Standard Test Method for Tensile Properties of Plastics
4.	ASTM D 746	Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
5.	ASTM D 790	Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
6.	ASTM D 1505	Standard Test Methods for Density of Plastics by the Density-Gradient Technique
7.	ASTM D 1525	Standard Test Method for Vicat Softening Temperature Plastics
8.	ASTM D 1998	Polyethylene Upright Storage Tanks

9. ASTM D 1621 — Standard Test Method for Compressive Properties of Rigid Cellular Plastics

10. ASTM D 1622 — Standard Test Method for Apparent Density of Rigid Cellular Plastics

11. ASTM D 1623 — Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics

12. ASTM D 1693 — Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics

13. ASTM D 2126 — Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging

14. ASTM D 2842 — Standard Test Method for Water Absorption of Rigid Cellular Plastics]

15. ASTM D 2856 — Standard Test Method for Open Cell Content of Rigid Cellular Plastics by the Air Pycnometer

16. ASTM E 84 — Standard Test Method for Surface Burning Characteristics of Building Materials

1.3 CONTRACTOR SUBMITTALS

A. Submit the following in compliance with Section 01300 - Contractor Submittals.

B. Shop Drawings

1. Tank manufacturer's data and dimensions showing locations of openings, level indicators, tank accessories, and seismic support structure and anchoring system details.

2. Details on inlet and outlet fittings, manways, flexible connections, vents and level indicators.

3. Tank pad requirements such as pads and blockouts.

C. Technical Manual shall include the following:

1. Manufacturer's recommendations for installation.

2. Fitting installation and adjustment procedures.

3. Repair procedures for typical situations including small holes, pinholes, and minor cracks in the tank.

C. Documentation

1. Certification signed by the manufacturer that the tanks have meet the requirements indicated.

2. Seismic restraint plans and instructions as specified in paragraph 2.7.

3. Calculations used to determine wall thickness. Hoop stress shall be indicated.

4. A representative of the manufacturer shall certify in writing that the tank has been installed in accordance with the manufacturer's recommendations. Certification shall be submitted.

1.4 Not Used.

1.5 Not Used.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Tanks shall be circular in cross-section, vertical, complete with piping inlets and outlets, drains, overflows, and anchoring system. Covered tanks shall be vented to building exterior, and where indicated, tanks shall be provided with entrance manways, level indicators, overflow, and other outlets. Tanks shall be marked to identify the manufacturer, date of manufacture, serial number, and capacity. Tank walls (or sections) shall be translucent for level viewing and equipped with gallon indicators. Tanks shall meet the requirements of ASTM D 1998 unless otherwise indicated.

B. Tank materials and other appurtenance that will be in contact with potable water chemicals shall be NSF 61 certified.

C. Tanks and systems shall be compatible with the intended chemical use, as follows:

a. 1,200 gallon tank – Ferric Choride ($FeCl_3$)

b. 6,000 gallon tank – Sodium Hypochlorite (NaOCl)

D. All materials shall be corrosion resistant. Metallic materials shall be 316 stainless steel, titanium, or other as required or recommended by tank manufactuer.

2.2 TANKS

A. **Materials**: Polyethylene shall be the cross-linked, high density type meeting or exceeding the following:

Parameter	ASTM Test Method	Value
Density, gm/cc	D 1505	0.937 to 0.945

Tensile strength at yield, psi minimum	D 638	2600
Elongation at break, min percent	D 638	400
Stress-crack resistance, min hours for F_{50}	D 1693	1000
Vicat softening temperature, deg. F	D 1525	230
Brittleness temperature, deg. F, maximum	D 746	-180
Flexural modulus, psi	D 790	100,000

B. Not Used.

C. **Operating Conditions:** Chemical storage tanks shall be suitable for the following operating conditions:

Chemical stored	-	Ammonium Sulfate	Sodium Hypochlorite
Concentration, percent	-	up to 45%	up to 15%
Maximum fluid temperature, deg. F	-	ambient	ambient
Minimum fluid temperature, deg. F	-	40	40
Minimum ambient air temperature, deg. F	-	30	30

D. **Construction**: Tanks shall be constructed using a rotationally molded fabrication process. Wall thickness of the tank shall be designed by the manufacturer with a hoop stress no greater than 600 psi using 1.5 times the specific gravity indicated. Stress shall be calculated using the Barlow formula.

E. Tanks shall have the following characteristics:

1. Tank Use	-	Ammonia	Chlorine
2. Type (see Note 1)	-	CD	CD
3. Nominal diameter, ft	-	< 4	< 5
4. Nominal height, ft (see Note 2)	-	0.75 D	0.75 D
5. Nominal capacity, gallons	-	250	500
6. Manway (see Note 3)			
Mounting	-	TM	TM

6.	Exposure	-	Interior	Interior
7.	Color	-	White	White

Note 1: CD = closed, domed top; CF = closed, flat top; OIF = open, internal flange; OEF = open, external flange; FLR = flat lid removable; FLH = flat lid hinged.

Note 2: Nominal height of domed top tanks is the dimension measured along the straight cylindrical portion of the tank and does not include the rounded end.

Note 3: TM = top mount; TSM = top and side mount
Unless otherwise indicated, manways shall be integrally molded with the tank.

2.3 TANK FITTINGS

A. Tank fittings shall be according to the contract documents. Gasket material shall be compatible with chemical used. Fittings shall be CPVC compression type Schedule 80 long shank high-torque design with minimum of 85 percent threaded contact. Any screwed fittings shall use American Standard Pipe Threads. No metals shall be exposed to tank contents.

2.4 LEVEL INDICATION

A. Not Used.

B. Level indication shall be by ultrasonic level transmitter as indicated in Divisions 16 and 17.

2.5 Not Used.

2.6 Not Used.

2.7 TANK STANDS, SEISMIC AND WIND RESTRAINT SYSTEM

A. The tank shall be freestanding.

B. The tanks shall be provided with seismic restraint systems manufactured in conformance with plans and instructions prepared by an engineer. The lateral restraint assembly shall be designed for local conditions in accordance with the IBC, I = 1.5.

C. Not Used.

2.8 SAFETY SIGNS

A. Each tank inlet and tank outlet shall be clearly marked with hazardous material warning signs, 10 inches by 14 inches in size. Each sign shall have the word "DANGER" and the name of the chemical stored, printed in large block letters and mounted directly adjacent to the tank outlet and tank inlet. Each entry manway shall be provided with a sign ("DANGER--CONFINED SPACE--HAZARDOUS ATMOSPHERE"). Signs shall comply with Section 9900 and the requirements herein.

PART 3 -- EXECUTION

3.1 INSTALLATION

A. Installation shall be in accordance with the manufacturer's recommendations. Provide seismic restraints as required by tank fabrication engineering calculations and recommendations.

3.2 FIELD TESTING

A. After installation of tank and all fittings, the tank shall be water tested by filling the entire tank with water and monitoring the tank as well as all fitting connections for at least 24 hours. Leaks shall be corrected prior to acceptance. Following successful field testing, the tank shall be completely emptied and allowed to dry before filling with chemical.

** END OF SECTION **

SECTION 15036 - COPPER PIPE
(ASTM B 42, MODIFIED)

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide copper pipe, complete and in place, in accordance with the Contract Documents

B. The requirements of Section 15000 - Piping, General apply to the WORK of this Section.

PART 2 -- PRODUCTS

2.1 PIPE MATERIAL

A. Copper pipe shall be hard drawn and shall conform to the requirements of ASTM B 42 - Specification for Seamless Copper Pipe, Standard Sizes, with regular or extra strong wall thickness, as indicated in the Piping Schedule.

2.2 PIPE JOINTS

A. Copper pipe shall have screwed ends for NPT fittings or brazed joints. Screwed joints shall be made up with Teflon tape. Brazed or screwed joints may be used in connection with flanges and flanged fittings.

B. All connections to mild steel or ductile iron pipe shall incorporate an insulated, dielectric coupling to prevent electrolysis. Tape all buried copper pipe as described in Part 3.

2.3 FITTINGS

A. **Threaded Fittings:** Threaded cast bronze fittings for copper pipe shall be in accordance with ANSI/ASME B 16.15 - Cast Bronze Threaded Fittings, Classes 125 and 250, as indicated in the Piping Schedule.

B. **Flanged Fittings:** Cast copper alloy flanges and flanged fittings shall be in accordance with ANSI/ASME B 16.24 - Cast Copper Alloy Pipe Flanges and Flanged Fittings, and ASTM B 62 - Composition Bronze or Ounce Metal Castings, with 150 lb rating, or as indicated.

PART 3 -- EXECUTION

3.1 INSTALLATION

A. **General:** All copper pipes shall be installed in a neat and workmanlike manner, properly aligned, and cut from measurements taken at the site to avoid interferences with structural members, architectural features, openings, and equipment. Exposed pipes shall afford maximum headroom and access to equipment, and where necessary, all piping shall be installed with sufficient slopes for venting or drainage of liquids and condensate to low points. All installations shall be acceptable to the ENGINEER.

B. **Supports and Anchors:** All piping shall be firmly supported with fabricated or commercial hangers or supports in accordance with the pipe manufacturer's recommendations, local building code and standards, and contract documents. Where necessary to avoid stress on equipment or structural members, the pipes shall be anchored or harnessed. Expansion joints and guides shall compensate for pipe expansion due to temperature differences.

C. **Valves and Unions:** Unless otherwise indicated, piping to fixtures, groups of fixtures, and equipment shall be provided with a shutoff valve and union, unless the valve has flanged ends. Low points in water systems and driplegs in steam, gas, and air systems shall have drainage valves. Unions shall be provided at threaded valves, equipment, and other devices requiring occasional removal or disconnection.

D. **Branch Connections:** Branch connections in horizontal runs of air and gas piping shall be made from the top of the pipe to avoid drainage of condensate into the equipment.

E. **Buried Pipe:** All buried copper pipe shall be encased in plastic wrapping or sleeve, as acceptable to the ENGINEER. Provide minimum 4" sand bedding and 6" sand backfill above pipe. Test pipe for leakage prior to backfill.

3.2 PIPE PREPARATION

A. Prior to installation, each pipe length shall be carefully inspected, flushed clean of any debris or dust, and be straightened, if not true. Ends of threaded pipes shall be reamed and filed smooth. All pipe fittings shall be equally cleaned before assembly.

3.3 PIPE JOINTS

A. **Threaded Joints:** Pipe threads shall conform to ANSI/ASME B 1.20.1 - Pipe Threads, General Purpose (inch), and shall be full and cleanly cut with sharp dies and friction tools. Not more than three threads shall remain exposed after installation.

B. **Brazed Joints:** Brazed joints shall conform to the specifications and recommendations of ANSI/ASME B 31.1 - Power Piping. All welding shall be done by skilled and qualified welders per Section 15000 - Piping, General.

3.4 INSPECTION AND FIELD TESTING

A. **Inspection:** All finished installations shall be carefully inspected for proper supports, anchoring, interferences, and damage to pipe, fittings, and coating. Damage shall be repaired to the satisfaction of the ENGINEER.

B. **Field Testing:** Prior to enclosure or burying, all piping systems shall be pressure tested as required in the Piping Schedule, for a period of not less than one hour at 150 psi, and in accordance with local building code. The CONTRACTOR shall furnish all test equipment, labor, materials, and devices at no extra cost to the OWNER.

1. Leakage may be determined by loss of pressure, soap solution, chemical indicator, or other positive and accurate method. All fixtures, devices, or other accessories which are to be connected to the lines and which would be damaged if subjected to the test pressure shall be disconnected and ends of the branch lines be plugged or

capped as required during the testing procedures.

2. Leaks shall be repaired to the satisfaction of the ENGINEER, and the system shall be re-tested until no leaks are found.

- END OF SECTION -

CITY COUNCIL AGENDA ITEM NO. 4.3
SECTION 4: UNFINISHED BUSINESS

Meeting Date:	**November 9, 2020**
Subject:	**A. Approving Option A of the Bartle Wells Associates Rate Study 2020, Making No Change to the Current Sewer Rates** **B. Adopt Resolution No. 2020-68, Directing the Finance Department to Pay off the Municipal Finance Corporation Loan**
Enclosures:	**Wastewater Flow Evaluation** **2020 Rate Study**
Presented By:	**Lea Simvoulakis, Community Development Director**
Approved By:	Merry Mayhew

Staff Recommendation:

1. Approve Option A of the Bartle Wells Associates Rate Study 2020, making no change to the current sewer rates.

2. Adopt Resolution No. 2020-68, directing the Finance Department to pay off the current balance on the Municipal Finance Corporation Loan.

Background and Overview:

At the June 24, 2019 City Council meeting, the City Council requested that City staff have the 2009 Sewer Rate Study updated due to the significant decrease in the Sewer Operating Fund annual revenue. In the fall of 2018, a business that provided a significant source of revenue to the Sewer Operating Fund ceased its operations in Hughson. The Council wanted an understanding of what this lost revenue would mean for rate payers in the future.

After this request was made, City staff attempted to contact the California Rural Water Association for technical assistance and a fee study review; however, after multiple attempts were made through the contact form on the website, through email, and by phone, City staff were unable to gain assistance through this resource.

The City then contacted Bartle Wells Associates (Bartle Wells) to request an estimate for an updated fee study. The City chose Bartle Wells because their firm completed the City's previous Sewer Rate Study in 2009. The goal of the 2009 study was to ensure repayment of the 20-year loan issued by the State Water Resources Control Board (SWRCB) to build the Hughson Wastewater Treatment Plant, as well

as to ensure that the fees established for rate payers would cover the estimated costs of service, both capital and operational cost. Now that the large rate payer is no longer contributing revenue, information was needed to solve the deficit as well as to determine if it is possible to alleviate some of the burden the rate payers are experiencing.

On February 24, 2020, the Council authorized the City Manager to execute the professional services agreement with Bartle Wells to complete the fee study.

Discussion:

Since February, Bartle Wells has been working with staff to assemble the necessary background information and data to develop a complete understanding of the City's current infrastructure, current finances, future infrastructure needs, and future growth and development of the City. During this information-gathering period, the City experienced another collapse in the Tully Road infrastructure. This collapse required staff to reevaluate future improvement needs to the sewer system. In September 2019, the City contracted with Carollo Engineer's to perform an evaluation of the current wastewater flows and sewer infrastructure. Until this report was complete, Bartle Wells could not provide an accurate fee study as critical capital improvements to the sewer system would likely be needed, which would impact the City's decision regarding any Bartle Wells recommendation. Carollo furnished cost estimates for immediate sewer improvements to Tully Road and for future system infrastructure needs by the end of September 2020. Bartle Wells then incorporated that information into their analysis and have produced the draft report presented to the Council today.

There are two important change of events that have led to the four options made by Bartle Wells. First, the State Water Resources Control Board (SWRCB) recently extended the City's Wastewater Treatment Plant loan terms from a 20-year term to a 30-year term. The amended agreement cuts the annual debt payment by $667,002, from $1,258,138.31 to $591,136.15. The City has a second loan through Municipal Finance Corporation (MFC) with an annual payment of $477,732, a current balance of $3,139,273.66, and an interest rate of 3.4%. Knowing that the term of the SWRCB loan was extended made it possible to consider paying off the MFC loan. Should Council accept Staff's recommendation, there are adequate sewer funds to pay off the MFC loan. Staff have requested a payoff amount from MFC which has been delayed; however, staff have calculated the payoff at approximately $3,197,350 which includes a 1% prepayment penalty.

Second, with the completion of the Carollo study, for the first time the City has a fairly comprehensive list of needed capital improvements for the sewer system. With actual projects and estimated costs identified, Bartle Wells can accurately include the cost of the capital improvements into the rate study. Based on the study provided by Carollo, capital improvement plan (CIP) in excess of $16.9 million dollars needs to be planned for to ensure that the sewer infrastructure functions properly. A summary of the major sewer capital improvements, the timing of those improvements, and the estimated costs of those improvements is identified in Table 6 of the Bartle Wells Report (Attachment A). Accomplishing these CIP projects was factored into the Bartle Wells study.

The fiscal impact of each option prepared by Bartle Wells is listed below:

Option A: Loan Paid off in FY 2020/2021, SWRCB Extension and CIP

This option assumes that the MFC loan ($3,321,672) is paid off in Fiscal Year 2020-2021, the extension for the SWRCB loan is granted, and all necessary capital improvement projects occur. This option does not contemplate a rate increase until some point after Fiscal Year 2029/2030. However, this option does not propose a rate decrease either. Option A is the recommendation that Bartle Wells and staff are making at this time.

With this option, the roughly $3.3 million loan is paid off, the SWRCB loan term is extended to 30 years, and the sewer rates remain the same, ensuring that revenues exceed operating expenses and the fund is generating adequate capital to pay for needed infrastructure improvements. The fund balance is gradually drawn down for capital expenses over the last five fiscal years of the decade, but the Sewer Fund balance is still adequate to cover expenses and to ensure that net revenues are 1.1 times over the annual debt service payment which is a requirement of the SWRCB loan.

Option B: 10% Customer Rate Decrease and Inflationary Increases

This option assumes that the rate payers are offered a 10% rate decrease next fiscal year, with 2% annual inflationary increases beginning in July 2025. This option assumes the payoff of the MFC loan and assumes the SWRCB loan term has been extended to 30 years. The inflationary increases after five years help to keep revenue in pace with expenses. In this scenario, half of the capital projects are funded by rate revenue, and the other half through fund reserves. This is not necessarily bad; rather, it is a question for Council to decide if a rate cut is worth having to use the Fund Reserves as early as 2024 to cover capital costs. If they are used, the City may need to get a loan in addition to the reserve funds to cover necessary capital projects.

Option C: 10% Customer Rate Decrease and No Inflationary Increases

This option assumes that the rate payers are offered a 10% rate decrease in the next fiscal year with no inflationary increases through Fiscal Year 2029/2030. This option assumes the payoff of the MFC loan and assumes the SWRCB loan term has been extended to 30 years. The difference between Option B and C is whether there are or are not annual inflationary increases. Without an inflationary increase and with a rate decrease, fund reserves are drawn down sooner.

Option D: No Loan payoff, No SWRCB Extension, and CIP

This option is just a comparison option that helps identify why a rate increase, decrease, or no change can be contemplated. With no loan payoff and no SWRCB extension, the City would need to consider an 8.5% rate increase and subsequent 2% annual inflationary increases to make up for the lost revenue from DFA.

Based on the four options, Bartle Wells and staff recommend that Council consider Option A as the most fiscally responsible option for the City. While this option does not offer a rate reduction to residents, it does ensure no rate increases for approximately ten years, maintains a healthy reserve, and ensures that expenses do not exceed the revenues in the sewer funds.

Fiscal Impact:

Should Council approve the recommendation of Option A, Sewer Development Impact Fees (Fund 220) will be used to pay off the MFC loan (approximately, $3,197,350), no annual inflationary increases are anticipated, and fund reserves will be used for capital improvements. In addition, the Sewer Fund balance will adequately cover expenses and net revenues will be 1.1 times over the annual debt service payment which is a requirement on the SWRCB loan. Fund reserves are anticipated to be available through Fiscal Year 2029/2030.

The current balance of the Sewer Development Impact Fees (Fund 220) is $1,864,528. It is appropriate to use Sewer Development Impact Fees to pay debt service payments and the use of this fund to pay off the MFC loan will put the fund into a $1,332,822 deficit, which will be made whole over the next couple of years as new homes are built in the Euclid North and South developments. There are adequate funds in the Sewer Fixed Asset Replacement Fund ($4,759,222) and the Sewer Operations Fund ($2,799,675) to cover the Development Impact Fee Fund deficit.

CITY OF HUGHSON
CITY COUNCIL
RESOLUTION NO. 2020-68

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON DIRECTING THE FINANCE DEPARTMENT TO PAY OFF THE MUNICIPAL FINANCE CORPORATION LOAN

WHEREAS, on June 24, 2019 the City Council requested that staff have the 2009 Sewer Rate Study updated to account for the significant decrease in the Sewer Operating Fund annual revenue due to the loss of a large rate payer; and

WHEREAS, on February 24, 2020 the City Council authorized the City Manager to execute a professional services agreement with Bartle Wells Associates to complete a Sewer Rate Study; and

WHEREAS, Bartle Wells Associates developed the Hughson Rate Study 2020 and presented it to Council with four potential scenarios on November 9, 2020; and

WHEREAS, Bartle Wells and staff recommend Option A, which does not identify a rate decrease or a rate increase for the next 10 years; and

WHEREAS, Option A also suggests paying off the Municipal Finance Corporation loan that has a payoff amount of approximately $3,197,350 which will save the City approximately $443,716 in interest payments if the loan is paid off this fiscal year; and

WHEREAS, the Finance Department stated that there is money available in the Sewer Fund to pay off this loan balance.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson directs the Finance Department to pay off the Municipal Finance Corporation Loan per Option A of the Bartle Wells Associates Hughson Rate Study 2020.

PASSED AND ADOPTED by the Hughson City Council at a regular meeting thereof, held on November 9, 2020, by the following vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

»
»
»
»

APPROVED:

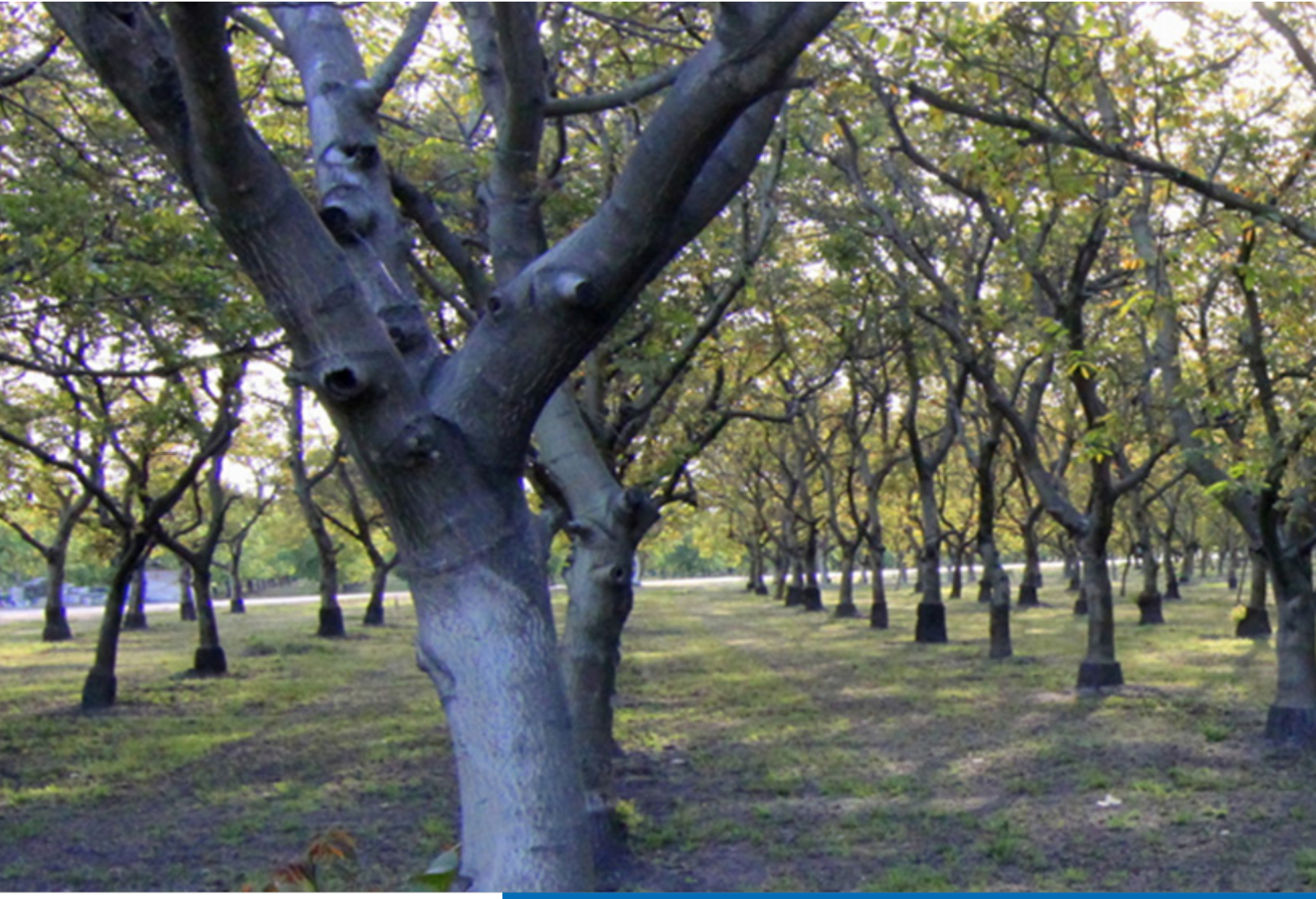
_____

JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk



City of Hughson
Wastewater Flow Evaluation

Technical Memorandum 1

FINAL | September 2020

City of Hughson
Wastewater Flow Evaluation

Technical Memorandum 1

FINAL | September 2020

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Abbreviations

ADF	average daily flow
Carollo	Carollo Engineers, Inc.
City	City of Hughson
d/D	depth to diameter
DFA	Dairy Farmers of America
du	dwelling unit
fps	feet per second
GIS	geographic information systems
gpd	gallons per day
HDPE	high-density polyethylene
HGL	hydraulic grade line
I/I	infiltration/inflow
LDR	Low Density Residential
MDR	Medium Density Residential
mgd	million gallons per day
SOI	Sphere of Influence
TM	technical memorandum
WWTP	wastewater treatment plant

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Technical Memorandum 1

WASTEWATER FLOW EVALUATION

1.1 Background

The City of Hughson (City) lies in the Central Valley of California, just south of the City of Modesto. The City has a population of approximately 6,000 people and provides water and wastewater services for its residential, commercial, and industrial customers. Carollo Engineers, Inc. (Carollo), developed a Sewer System Master Plan in July of 2007 (2007 Master Plan) that included the development of a hydraulic model, evaluation of wastewater flows, and recommendations for collection system improvements.

In August 2019, the City experienced a failure of the Tully Road industrial sewer which caused a sink hole in Tully Road. The City is in the process of performing an assessment of the condition of the remaining portions of the industrial sewer to determine the risk of additional collapse. One alternative the City is considering is abandoning the entire Tully Road industrial sewer and rerouting industrial flows to the parallel domestic sanitary sewer. The City has asked Carollo to conduct an evaluation of the current wastewater flows and to update the hydraulic model to determine if the domestic sanitary sewer on Tully Road had sufficient capacity to convey the additional industrial flows and/or what improvements may be needed to take the industrial pipe offline. The hydraulic model was reviewed, updated, and re-validated to match the current wastewater flows and the entire collection system was evaluated to determine capacity deficiencies under existing and future flow conditions.

The purpose of this technical memorandum (TM) is to:

- Summarize the collection system facilities and updates made from the original 2007 Master Plan.
- Summarize the hydraulic model review and validation process.
- Review the existing system deficiencies and recommended improvements, including options for abandoning the Tully Road industrial sewer.

1.2 Collection System Facilities

The City's existing collection system is shown on Figure 1.1 and consists of approximately 23 miles of gravity sewers (ranging in size from 4 inches to 36 inches), two lift stations and associated force mains. The Hatch Road Lift Station collects wastewater flow from the entire City and conveys it to the wastewater treatment plant (WWTP), which is located at 6700 Leedom Road. A majority of wastewater flow is conveyed to the Hatch Road Lift Station by one of two major trunks along Tully Road (a 24-inch sanitary sewer and a 24-inch industrial sewer). In August 2019, a portion of the Tully Road industrial sewer collapsed between Graybark Lane and Walnut Haven Drive and caused a major sinkhole. Currently, the City is bypass pumping the industrial flows upstream of the collapse to the 24-inch sanitary sewer at Tully Road near Graybark Lane. The extent of the Tully Road industrial sewer collapse is shown on Figure 1.1.

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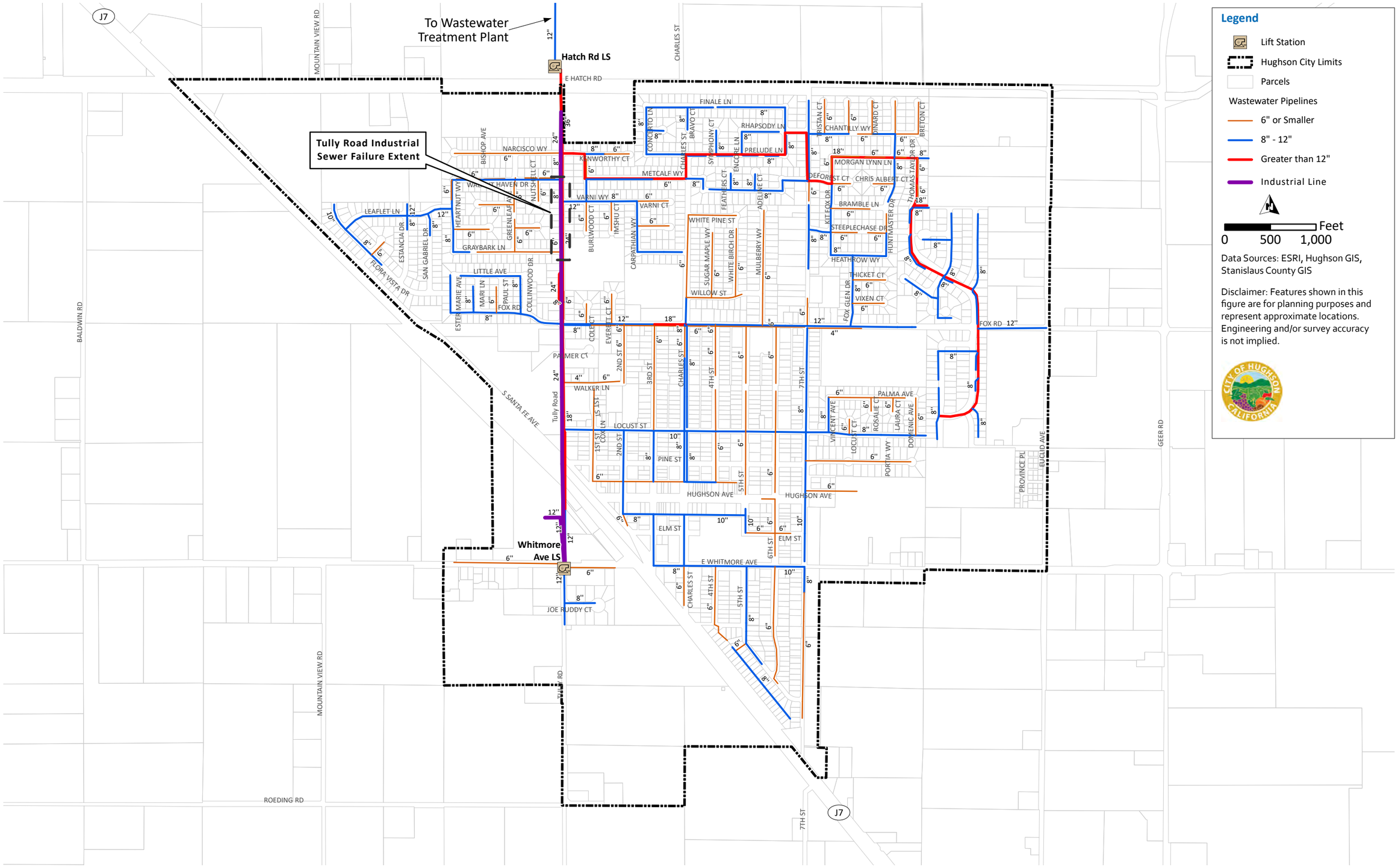

Figure 1.1 Existing Collection System

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It was assumed that there were no other major pipeline abandonment/construction projects implemented since the 2007 Master Plan, with the exception of a few residential areas that had developed.

1.3 Design Flows

This section summarizes the historic flows measured at the City's WWTP and presents the design flows used to model the existing and future sewer collection system.

1.3.1 Historical WWTP Flows

Historical flows at the WWTP from January 2016 to November 2019 were reviewed and analyzed to determine minimum, maximum, and average daily flows experienced by the collection system, and is summarized in Table 1.1. Similar to the historical wastewater flow analysis conducted in the 2007 Master Plan, there is minimal difference in WWTP flow between dry and wet periods. In 2018, the average wet weather flow was actually lower than the average dry weather flow. For modeling purposes, the existing design flow was based on the 2018 average daily flow (ADF) of 0.607 million gallons per day (mgd).

Table 1.1 Historical WWTP Flow Summary

Year	Average Day Flow (mgd)	Average Dry Weather Flow(1) (mgd)	Average Wet Weather Flow(2) (mgd)	Minimum Day Flow (mgd)	Maximum Day Flow (mgd)
2016	0.600	0.556	0.605	0.36	0.82
2017	0.629	0.617	0.630	0.42	0.88
2018	0.607	0.554	0.513	0.42	0.84
2019(3)	0.508	0.503	0.488	0.25	0.86

Notes:
(1) Based on average daily flow during the months of September and October.
(2) Based on average daily flow during the months of November and December.
(3) Includes data up through November 30, 2019. Excludes several data anomalies where daily flows neared or exceeded 1.0 mgd.

1.3.2 Wastewater Flow Factors

In order to develop wastewater flow projections and allocate future flows to the collection system, relationships between land use and wastewater generation need to be developed. These relationships, called wastewater flow factors are established based on the average wastewater flow generated for each existing land use type., The wastewater flow factors from the 2007 Master Plan were used to allocate existing wastewater loads in the model as well as projecting the future flow of vacant infill. The flow factors were validated with a review of the City's water meter billing data. The flow factors for each land use type are summarized in Table 1.2.

Table 1.2 Wastewater Flow Factors

Land Use Type	Flow Factor (gpd/acre)(1)(2)
Low Density Residential	1,200
Medium Density Residential	1,400
High Density Residential	1,800
Downtown Commercial	500
Neighborhood Commercial	500
General Commercial	500
Service Commercial	500
Industrial	500
Park/ Open Space	0
Public Facility	500
Urban Reserve	1,178
Roads/ Right-of-Way	0

Notes:
(1) gpd = gallons per day
(2) From 2007 Master Plan

1.3.3 Projected Average Daily Flow

The total projected ADF for the City consists of several components:

- *Existing ADF:* Contributed by developed parcels currently connected to the collection system (determined based on proximity to the collection system). It was assumed that developed homes not currently connected to the collection system (representing minimal flows) would not connect in the near future and were not included in the future evaluation.
- *Planned Developments:* Future flows for planned developments were based on the number of planned residential dwelling units (du) and a wastewater generation rate of 342.9 gpd/du (for low density residential) and 147.4 gpd/du (for medium density residential). Wastewater generation rates were calculated based on the wastewater flow factors presented in Table 1.2 and the average density of allowable du's/acre as outlined in the City's 2005 General Plan (3.5 du/acre for Low Density Residential [LDR] and 9.5 du/acre for Medium Density Residential [MDR]).
- *Vacant Infill:* It was assumed that all undeveloped (vacant) land within the Sphere of Influence (SOI), unless otherwise noted by City staff, would develop based on the General Plan land use. Vacant areas associated with a planned development were not included in the vacant infill analysis. Projected wastewater flows for vacant infill were based on the parcel land use type, area, and the wastewater flow factors presented in Table 1.2.

The planned developments and the vacant infill are shown on Figure 1.2. Table 1.3 summarizes the number and type of residential dwelling units, land use type, and projected wastewater flows for the planned developments. As shown on Table 1.3, the planned developments contribute an estimated 0.13 mgd ADF in the future.

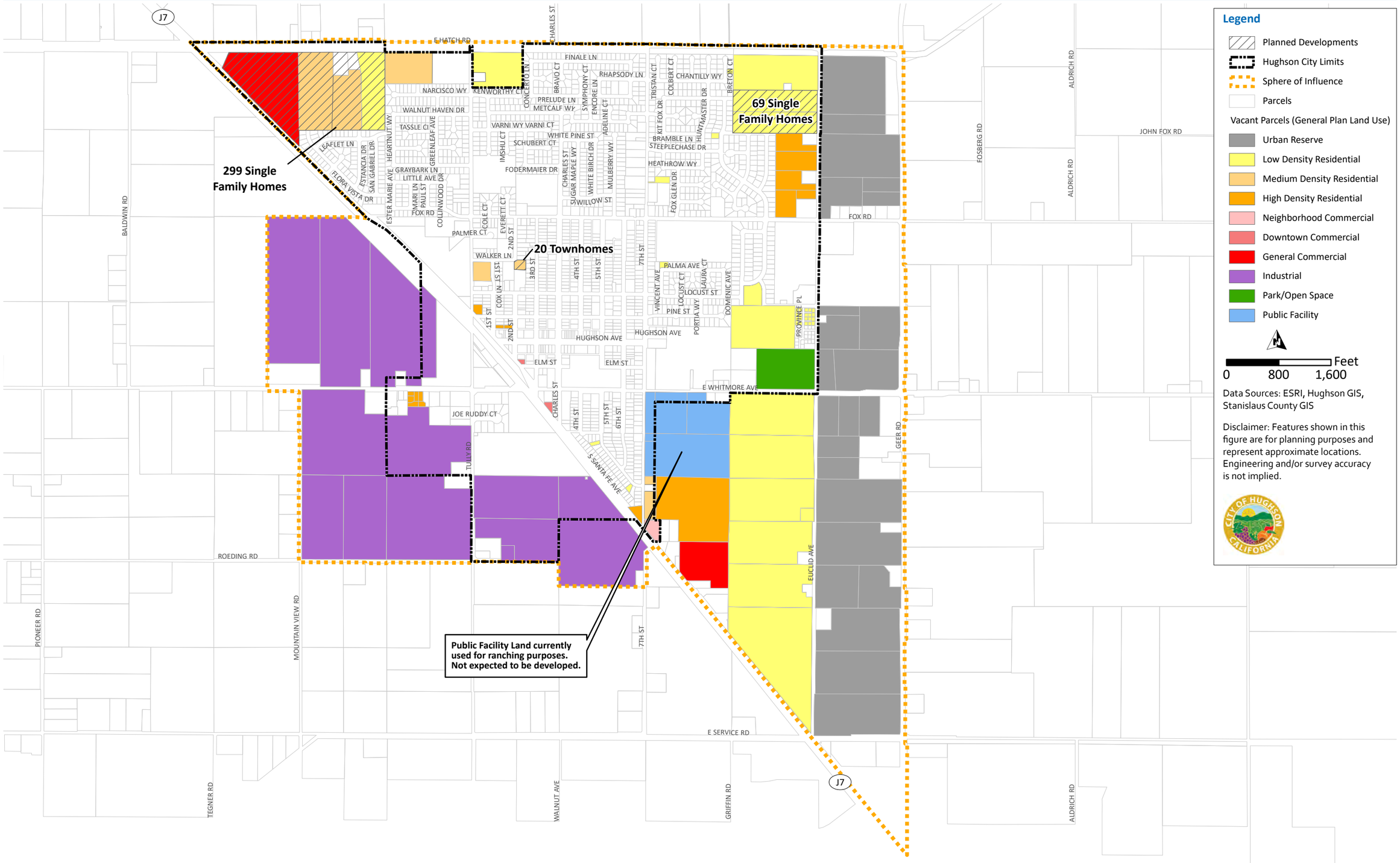

Figure 1.2 Planned Development and Vacant Land Use

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Table 1.3 Planned Development Summary

Development Location	Residential Type	Number of Units	Wastewater Generation Rate(1) (gpd/du)	Projected Wastewater Flow (gpd)
Hatch Rd. & Santa Fe Ave.	Single Family (LDR)	299	342.9	102,527
Morgan Lynn Ln. & Thomas Taylor Dr.	Single Family (LDR)	69	342.9	23,660
Walker Ln. & 2nd St.	Town houses (MDR)	20	147.4	2,948
Total	-	-	-	**129,135**

Notes:
(1) Based on the wastewater flow factors presented in Table 1.2 and the average density of allowable du's/acre as outlined in the City's 2005 General Plan (3.5 du/acre for LDR and 9.5 du/acre for MDR).

The projected wastewater flow for the undeveloped (vacant) parcels is summarized in Table 1.4. The vacant area included in Table 1.4 does not include the planned developments or the vacant Public Facility land southeast of Whitmore Avenue and 7th Street. Assuming the remaining 832.4 vacant acres develop according to the City's General Plan, this will account for approximately 0.76 mgd in additional future flows.

Table 1.4 Vacant Infill Summary

Land Use Type	Vacant Area(1) (acres)	Wastewater Flow Factor (gpd/acre)	Projected Wastewater Flow (gpd)
Low Density Residential	174.9	1,200	209,885
Medium Density Residential	21.6	1,400	30,234
High Density Residential	40.2	1,800	72,364
Downtown Commercial	0.5	500	235
Neighborhood Commercial	1.4	500	710
General Commercial	10.8	500	5,419
Service Commercial	0	500	0
Industrial	335.9	500	167,932
Parks/ Open Space	12.7	0	0
Public Facility	0	500	0
Urban Reserve	234.4	1,178	276,080
Roads/ Right-of-Way	0	0	0
Agriculture	0	0	0
Total	**832.4**	-	**762,859**

Notes:
(1) Does not include vacant area associated with a planned development or the vacant Public Facility land near Whitmore Avenue and 7th Street (currently used for ranching).

The projected wastewater flows for the existing customers, planned developments, and vacant infill is summarized in Table 1.5. As shown in Table 1.5, the City's existing design flow is 0.607 mgd and by buildout the total design flow increases to 1.50 mgd.

Table 1.5 Existing and Projected Wastewater Flow Summary

Component	Design Flow (mgd)
Existing	**0.607**
Buildout	
Planned Developments	0.129
Vacant Infill	0.763
Total Design Flow	**1.499**

1.4 Hydraulic Model Review and Validation

A wastewater collection system model is a simplified representation of the real sewer system. Sewer system models can assess the conveyance capacity for a collection system and can also be used to perform "what if" scenarios to assess the impacts of future developments and land use changes. The City's previous 2007 hydraulic model was developed in the H20MAP Sewer, by Innovyze (formerly MWH Soft). This software is no longer in use; therefore the City's previous model was imported to InfoSewer, also by Innovyze.

1.4.1 Hydraulic Model Review

After the model was imported to InfoSewer, Carollo reviewed the hydraulic model against industry standards to identify discrepancies or data gaps. The model review process included the following:

- Running queries to identify missing attributes, pipes or junctions not connected to the network, and duplicate pipes.
- Verifying that the model data (i.e., inverts, diameters, etc.) was input correctly and that the flow direction, size, and layout of the modeled pipelines were logical.
- Reviewing pipeline connectivity to determine, in a general sense, how flows are routed through the collection system.
- Reviewing other miscellaneous model parameters (including calculation options).

1.4.2 Hydraulic Model Update

The following updates and changes were made to the previous hydraulic model:

- Pump flow rates and controls were updated based on information received from the City.
- The portion of the Tully Road industrial sewer that collapsed was inactivated in the model and the upstream industrial flows were routed to the parallel 24-inch sanitary sewer pipe.
- Previously future pipes serving several proposed residential areas (near Fox Road and Little Avenue , Metcalf Way and Adeline Court, and Fox Road and Thomas Taylor Drive) were assumed to have been constructed (aerial background shows these areas to be developed).
- Average daily wastewater flows (loads) were re-allocated to the appropriate model junctions (discussed further in Section 1.4.3). A representative diurnal pattern from the 2007 flow monitoring program was applied to the updated wastewater loads.
- Dairy Farmers of America (DFA) has come offline since 2007; this industrial wastewater load was removed from the hydraulic model.

- The hydraulic model contains calculation options that need to be set by the user at the beginning of the project. These include run dates, time steps, reporting parameters, and flow routing method. Once the run parameters were established, the model was debugged to ensure that it ran without errors or warnings.

1.4.3 Wastewater Flow Allocation

Determining the quantity of wastewater flow generated by a municipality and how they are distributed throughout the collection system is a critical component of the hydraulic modeling process. Various techniques can be used to assign wastewater flows to individual model junctions, depending on the type of data that is available. Adequate estimates of the volume of wastewater are important in maintaining and sizing sewer system facilities, both for present and future conditions. The following steps outline the wastewater load allocation process:

- Step 1: The service area was broken up into individual loading polygons. Each loading polygon represents the geographic area that contributes flows into a single model node (i.e., manhole). Loading polygons were developed using GIS, based on the City's parcel, sewer pipeline, and lateral shapefiles. In an "all pipe" model, such as the City's model, a loading polygon will usually encompass an area the size of a few lots.
- Step 2: The existing ADF associated with each loading polygon was based on land use designations, parcel area, and wastewater flow factors (Table 1.2).
- Step 3: Once the existing wastewater loads were allocated into the model, they were adjusted as needed during model validation to closely match the average daily flows measured at the WWTP.

1.5 Hydraulic Model Validation

Hydraulic model validation is a crucial component of the hydraulic modeling effort to ensure confidence in the flows that are being simulated. The validated model serves as an established benchmark for further analysis and evaluation. As discussed in Section 1.3.1, evaluation of historical WWTP flow data shows that there is very little impact on the collection system from wet weather inflow and infiltration (I/I). Therefore, the model was validated to ADF only. The 2018 ADF recorded at the WWTP was approximately 0.61 mgd. The model generated flow (0.61 mgd) matched the measured data from the WWTP.

1.6 Evaluation Criteria

This section presents the planning criteria and methodologies for the analysis used to evaluate the City's existing wastewater collection system and associated facilities, which are utilized to identify existing system deficiencies, and to size proposed improvements. The planning criteria, based on the 2007 Master Plan, is summarized in the sections below.

1.6.1 Peak Flow Depth Criteria

The primary criterion used to identify existing pipeline capacity deficiencies or to size new sewer improvements is the peak flow depth criteria. This criterion is expressed as a maximum depth of flow to pipe diameter ratio (d/D). Design d/D ratios typically range from 0.5 to 1.0 (full pipe), with lower values typically used for smaller pipes, which may experience flow peaks greater than planned or may experience blockages from debris, paper, or rags.

The 2007 Master Plan recommended a maximum d/D ratio of 0.92 to evaluate the existing collection system and a maximum d/D of 0.75 be used for sizing future improvements.

1.6.2 Changes in Pipe Size

When a smaller sewer joins a large one, the invert of the larger sewer will be lowered sufficiently to maintain the same energy gradient. An approximate method for securing these results is to place the 0.8 depth point (80 percent of the pipe diameter) of both sewers at the same elevation. For master planning purposes, and in the absence of field data, sewer crowns were matched at the manholes.

1.6.3 Design Velocities

To minimize the settlement of sewage solids, it is standard practice in the design of gravity sewers to specify that a minimum velocity of 2 feet per second (fps) be maintained when the pipeline is half full. At this velocity, the sewer will typically provide self-cleaning.

1.6.4 Pump Stations and Force Mains

Pump stations were evaluated and sized for peak flow with the largest pump out of service. Additionally, the 2007 Master Plan recommended maintaining a force main velocity between 2.0 and 6.5 fps. A Hazen-Williams roughness coefficient 'C' of 120 was used.

1.7 Capacity Evaluation

Following the existing ADF validation, which is summarized in Section 1.5, a capacity analysis of the existing and future collection system was performed. The capacity analysis entailed identifying areas in the collection system where flow restrictions occur or where pipe capacity is insufficient to convey ADF. Sewers that lack sufficient capacity to convey ADF create bottlenecks in the collection system that can potentially cause sanitary sewer overflows (SSOs).

1.7.1 Existing System

For the existing wastewater collection system, the ADF was routed through the hydraulic model. Manholes where the maximum hydraulic grade line (HGL) exceeded the maximum flow depth criteria outlined in Section 1.6.1 were identified. Additionally, pump stations in which the peak hour flow exceeded the firm capacity were identified as deficient. The existing deficiencies are shown on Figure 1.3 in red. In general, the City's collection system has sufficient capacity to convey existing ADF without exceeding the established flow depth criteria. Several segments of the Tully Road industrial pipeline were shown to surcharge under existing ADF conditions, where the Whitmore Avenue Lift Station force main discharges to a manhole followed by a gravity pipe with an adverse slope.

1.7.2 Future System

The analysis of the future system was performed in a manner similar to the existing system analysis. The future system includes the complete buildout of the City limits and SOI, including all known developments and vacant infill. The purpose of the future system evaluation is to verify that the existing system improvements were appropriately sized to convey future flows, and to identify the locations of sewers that are adequately sized to convey existing flows, but cannot convey future flows. The future deficiencies are shown on Figure 1.3 in blue. As shown on Figure 1.3 there were only a few capacity deficiencies triggered under future flow conditions. Evaluation of the future system shows that the existing 24-inch sanitary sewer on Tully Road has sufficient capacity to convey flows from the Tully Road industrial line.

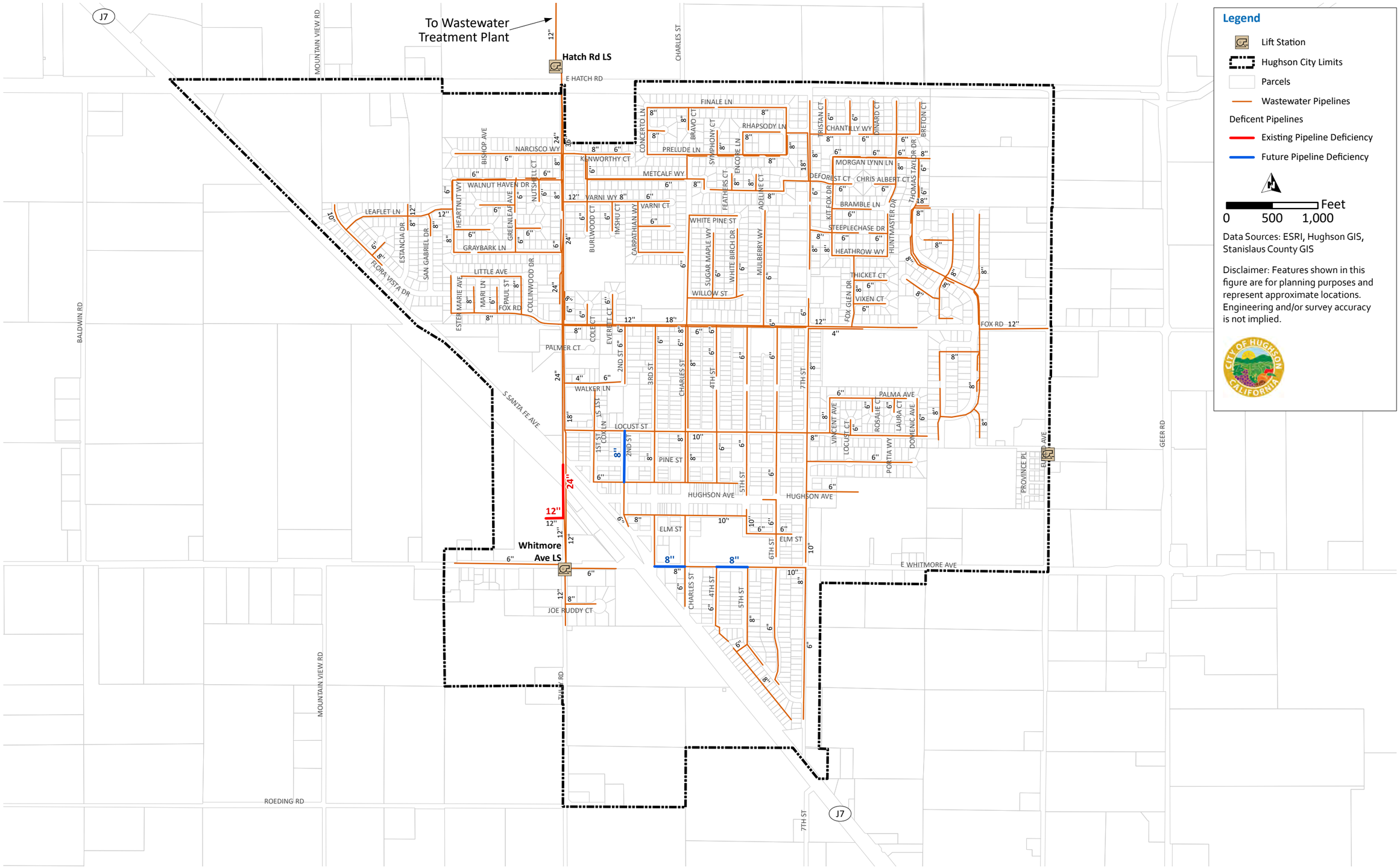

Figure 1.3 Collection System Deficiencies

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1.7.3 Tully Road Industrial Sewer Alternatives

In August 2019, a portion of the Tully Road industrial sewer collapsed causing a sinkhole. The City has been bypass pumping upstream flows from the industrial sewer to the 24-inch sanitary sewer on Tully Road. Due to the unknown condition of the remaining industrial sewer, the City is interested in abandoning the industrial sewer and routing all industrial flows to the 24-inch sanitary sewer trunk on Tully Road. An alternative scenario was set up in the model where all industrial wastewater loads (existing and future) along Tully Road were re-allocated to the sanitary trunk. For this alternative, Whitmore Avenue Lift Station was kept online and the associated force main discharged into the manhole along the sanitary 24-inch line at the intersection of Tully Road and Locust Street. Based on the updated hydraulic model, the 24-inch sanitary sewer does have sufficient capacity to convey the additional industrial loads, under existing and future ADF conditions.

1.8 Collection System Improvements

This section summarizes the improvements recommended for the wastewater collection system. The recommended improvements discussed in this section are needed to mitigate the deficiencies shown on Figure 1.3 and to serve future customers. The proposed existing improvements are sized for future conditions. As the City continues to grow, it is recommended that the proposed pipeline diameters be constructed so that the facilities have sufficient capacity for future conditions. Building a smaller interim project with the plans of upsizing in the future to account for further growth is not recommended due to the extended useful life of the improvements proposed herein. The proposed pipeline diameter represents the ultimate diameter for anticipated future conditions.

1.8.1 Existing System Improvements

Following the completion of the existing system analysis, improvement projects were identified to mitigate pipeline capacity deficiencies while maintaining the maximum flow depth criteria outlined in Section 1.6.1. The proposed improvements to address existing deficiencies are shown on Figure 1.4 and are summarized below:

- Pipeline near Tully Road and Whitmore Avenue Court (P-1): This project includes the addition of approximately 530 feet of 12-inch diameter pipeline along Tully Road, discharging just upstream of the Whitmore Avenue Lift Station. The original pipeline discharges upstream of a gravity pipeline with an adverse pipe slope. Therefore, it is recommended that the 12-inch gravity line be rerouted upstream of the Whitmore Avenue Lift Station.
- Force main near Tully Road and Whitmore Avenue Court (FM-1): This project includes extending the 12-inch diameter force main along Tully Road another 590 feet to the downstream manhole (at Tully Road and Pine Street). The original force main flows into a gravity pipeline that has an adverse slope. Therefore, it is recommended that the force main be extended to the next manhole downstream to bypass the adverse slope pipe. The original 12-inch diameter gravity main with the adverse pipe slope should be abandoned.

1.8.2 Future System Improvements

This section summarizes the proposed improvements that will serve future users. The locations of the new trunk sewers are conceptual and may change during the design phase. The proposed improvements to address future deficiencies are shown on Figure 1.4 and are summarized below:

- Pipeline along 2nd Street (P-2): This project includes the replacement of approximately 560 feet of 8-inch diameter pipeline along 2nd Street, between Hughson Avenue and Locust Street. Under future ADF conditions, the maximum d/D ratio exceeds 0.92. To mitigate this capacity deficiency, it is recommended the existing pipeline be replaced with a 10-inch diameter pipeline.
- Pipeline along Whitmore Avenue (P-3): This project includes the replacement of approximately 1,020 feet of 8-inch diameter pipeline along Whitmore Avenue, between 5th Street and 3rd Street. Under future ADF conditions, the maximum d/D ratio exceeds 0.92. To mitigate this capacity deficiency, it is recommended the existing pipeline be replaced with a 10-inch diameter pipeline.
- Euclid Project: This project consists of multiple gravity pipelines, a pump station, and a force main. These projects are recommended to serve future growth along Euclid Avenue. The project consists of the following:
  - Pipeline along Euclid Avenue (P-4): This project includes the addition of approximately 5,220 feet of 10-inch diameter pipeline along Euclid Avenue, between Dennis Wallace Lane and E Service Road.
  - Lift Station near the intersection of Euclid Avenue and Dennis Wallace Lane (LS-1): This project includes the addition of a 0.9 mgd firm capacity lift station near the intersection of Euclid Avenue and Dennis Wallace Lane.
  - Force Main along Euclid Avenue (FM-2): This project includes the addition of approximately 50 feet of 12-inch diameter force main along Euclid Avenue, north of the lift station.
  - Pipeline along Euclid Avenue (P-5): This project includes the addition of approximately 1,520 feet of 15-inch diameter pipeline from project FM2, west to Mariposa Drive, and north along Mariposa Drive.

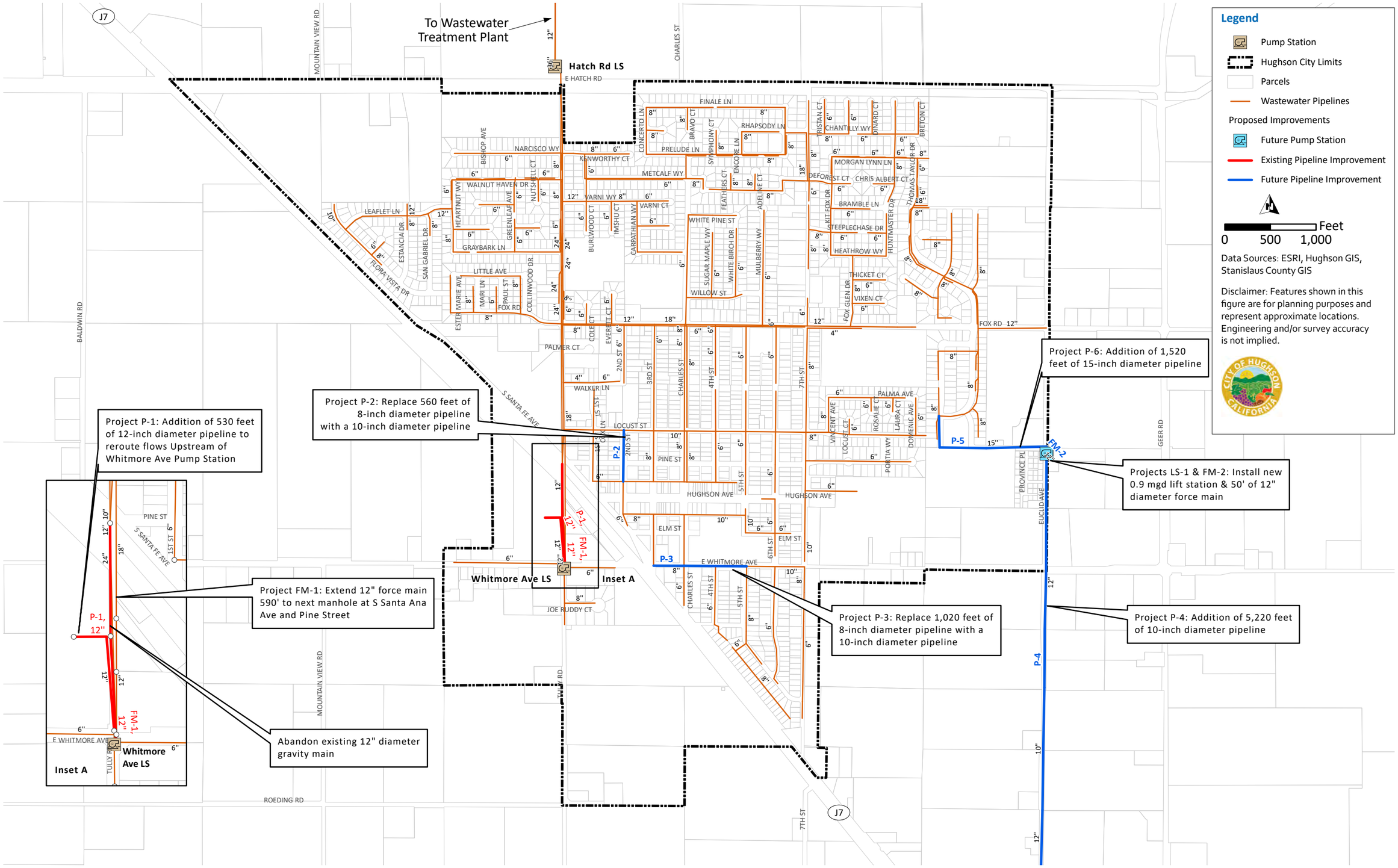

Figure 1.4 Proposed Collection System Improvements

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1.9 Project Costs and Contingency

The cost estimates presented in this study are opinions developed from bid tabulations, cost curves, information obtained from previous studies, and Carollo's experience on other projects. The costs are based on an Engineering News Record Construction Cost Index (ENR CCI) 20-City Average of 11,455 (August 2020).

Project cost estimates are calculated based on the project location, size, length, and other factors. Allowances for project contingencies consistent with an "Order of Magnitude" estimate are also included in the project costs prepared as part of this study, as outlined in this section.

1.9.1 Cost Estimating Accuracy

The cost estimates for the proposed improvements have been prepared for general master planning purposes and for guidance in project evaluation and implementation. Final costs of a project will depend on actual labor and materials costs, competitive market conditions, final project scope, implementation schedule, and other variable factors such as preliminary alignment generation, investigation of alternative routings, and detailed utility and topography surveys.

The Association for the Advancement of Cost Engineering (AACE) defines an Order of Magnitude Estimate, deemed appropriate for master plan studies as an approximate estimate made without detailed engineering data. It is normally expected that an estimate of this type would be accurate within plus 50 percent to minus 30 percent. The following sections present the assumptions used in developing order of magnitude cost estimates for recommended facilities.

1.9.2 Baseline Construction Costs

Baseline Construction Cost is the total estimated construction cost, in dollars, of the proposed improvements for pipelines and lift stations. Baseline Construction Costs for pipelines were calculated by multiplying the estimated length by the unit construction cost listed in Table 1.6. These costs include the construction of pipelines and appurtenances (e.g., manholes). The unit costs are for "typical" field conditions with construction in stable soil at a depth ranging between 10 feet to 15 feet.

Table 1.6 Pipeline Unit Costs

Pipe Size (inches)	Replacement Unit Construction Cost[1] ($/linear foot)	
	Gravity Pipe	Force Main
10	240	235
12	255	245
15	275	320

Notes:
(1) ENR 20 City Average Construction Cost Index for August 2020 is 11,455.

The Baseline Construction Cost for the proposed lift station was estimated based on nine lift station projects completed both by Carollo and other engineering companies. The Baseline Construction Costs and total pump capacities for these nine projects were used to develop a lift station cost curve, which was then used to estimate the Baseline Construction Cost for the proposed lift station. The Baseline Construction Cost for the proposed 0.9-mgd lift station is $652,000.

1.9.3 Estimated Contingency Costs

Contingency costs must be reviewed on a case-by-case basis because they will vary considerably with each project. Consequently, it is appropriate to allow for uncertainties associated with the preliminary layout of a project. Factors such as unexpected construction conditions, the need for unforeseen mechanical items, and variations in final quantities are a few of the items that can increase project costs for which it is wise to make allowances in preliminary estimates. To assist the City in making financial decisions for these future construction projects, the estimated construction cost will include a construction contingency as a percentage of the total construction cost.

Project construction contingency costs include costs associated with project engineering, construction phase professional services, and project administration. The Construction Cost contingency is assumed to be 30 percent of the Baseline Construction Costs for the purposes of this study. Engineering services associated with new facilities include preliminary investigation and reports, Right of Way (ROW) acquisition, foundation explorations, preparation of drawings and specifications during construction, surveying and staking, sampling of testing material, and start-up services. Construction phase professional services cover items such as construction management, engineering services, materials testing, and inspection during construction. Finally, there are project administration costs, which cover items such as legal fees, environmental compliance requirements, financing expenses, administrative costs, and interest during construction.

The cost of these items can vary, but for the purpose of this study, it is assumed that the other project contingency costs will equal approximately 27.5 percent of the Estimated Construction Cost.

As shown in the following sample calculation of the Capital Improvement Cost, the total cost of all project construction contingencies (construction, engineering services, construction management, and project administration) is 166 percent of the Baseline Construction Cost. Note that contingencies were not applied to land acquisition costs. Calculation of the 166 percent is the overall mark-up on the Baseline Construction Cost to arrive at the Capital Improvement Cost. It is not an additional contingency.

Example:

Baseline Construction Cost	**$1,000,000**
Construction Contingency (30 percent)	$300,000
Estimated Construction Cost	**$1,300,000**
Engineering Cost (10 percent)	$130,000
Construction Management (10 percent)	$130,000
Project Administration (7.5 percent)	$98,000
Capital Improvement Cost	**$1,658,000**

1.9.4 Estimated Capital Improvement Costs

A detailed cost estimate for each project is provided in Table 1.7. Based on the Baseline Construction Costs and estimated contingencies, the total estimated capital costs for the proposed improvements is $5.1 million (M). The proposed improvements to address existing system capacity deficiencies accounts for approximately 9 percent of the total estimated capital costs ($473,000). The estimated capital costs to address future capacity deficiencies and provide service for future users accounts for approximately 91 percent ($4.6M).

1.10 Conclusions

The City contracted with Carollo to update and validate their existing wastewater hydraulic model and re-evaluate the existing collection system under existing and future flow conditions. In general, the City's existing collection system has sufficient capacity to convey existing and future average daily flows. Several improvements were recommended to mitigate existing or future capacity deficiencies as well as to serve future growth along Euclid Avenue. In total, 0.3 miles of pipeline were recommended to be upsized and 1.5 miles of new pipeline are recommended to be installed to serve future growth. The recommendations presented in this TM were sized for future conditions. The total estimated capital improvement costs for the recommended improvements is $5.1M, including $473,000 to address existing deficiencies.

The Tully Road sanitary sewer was evaluated to determine if there was sufficient capacity to convey all flows from the Industrial sewer, which has had some recent failures. An alternative scenario was set up in the model where all industrial wastewater loads (existing and future) along Tully Road were re-allocated to the sanitary trunk. Based on the updated hydraulic model, the Tully Road sanitary sewer does have sufficient capacity to convey all existing and future industrial flows along Tully Road.

It is recommended that the City move forward with inspecting the remaining portions of the Tully Road industrial sewer to determine the condition and remaining useful life. The 24-inch sanitary sewer trunk on Tully Road has sufficient capacity to also serve existing and future industrial users on Tully Road (based on data and assumptions presented in this TM), should the City decide to abandon the industrial sewer. Carollo recommends the City inspect the 24-inch sanitary sewer on Tully Road prior to abandoning the industrial line to determine the condition and remaining useful life of that sewer, as it would then be a critical pipeline serving a majority of the City. If the industrial sewer is kept online, two proposed improvements (P-1 and FM-1) were included to mitigate existing deficiencies associated with an adverse pipe just downstream of the Whitmore Avenue Lift Station force main. These projects would not be needed if the industrial sewer is abandoned.

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Table 1.7 Capital Improvement Cost Estimate

Project No.	Type of Improvement	Location Description	Ex. Size/ Diameter (in.)	New Size/ Diameter (in.)	Replace / New	Length (ft)	Firm Capacity (mgd)	Baseline Construction Cost ($)(1)	Estimated Construction Cost ($)(2)	Total Capital Cost(2)(3)(4) ($)
Existing System Improvements										
P-1	Pipe	Tully Road and Whitmore Avenue Court	-	12	New	530	-	$135,000	$175,500	$224,000
FM-1	Pipe	Tully Road and Whitmore Avenue Court	-	12	New	590	-	$150,000	$195,000	$249,000
Subtotal Existing								**$285,000**	**$371,000**	**$473,000**
Future System Improvements										
P-2	Pipe	2nd Street (from Hughson Avenue to Locust Street)	8	10	Replace	560	-	$143,000	$186,000	$237,000
P-3	Pipe	Whitmore Avenue (5th Street to 3rd Street)	8	10	Replace	1,020	-	$260,000	$338,000	$431,000
P-4	Pipe	Euclid Avenue (Dennis Wallace Lane to E Service Road)	-	10	New	5,220	-	$1,331,000	$1,730,000	$2,206,000
LS-1	Lift Station	Euclid Avenue and Dennis Wallace Lane	-	-	New	-	0.9	$652,000	$848,000	$1,081,000
FM-2	Pipe	Euclid Avenue and Orchard Lane	-	12	New	50	-	$13,000	$17,000	$22,000
P-5	Pipe	Orchard Lane and Mariposa Drive	-	15	New	1,520	-	$388,000	$504,000	$643,000
Subtotal Future								**$2,787,000**	**$3,623,000**	**$4,620,000**
Total (Existing and Future)								**$3,072,000**	**$3,994,000**	**$5,093,000**

Notes:
(1) Based on unit costs presented in Section 1.9.2.
(2) Baseline Construction Cost plus 30% to account for unforeseen events and unknown conditions.
(3) Estimated Construction Cost plus 27.5% to cover other costs including Engineering, Construction Management, and Project Administration.
(4) Costs are based on the Engineering News Record Construction Cost Index 20-city average of 11,455 (August 2020).

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City of Hughson
Rate Study 2020

DRAFT Wastewater Tables
9/2020

BARTLE WELLS ASSOCIATES
Independent Public Finance Advisors

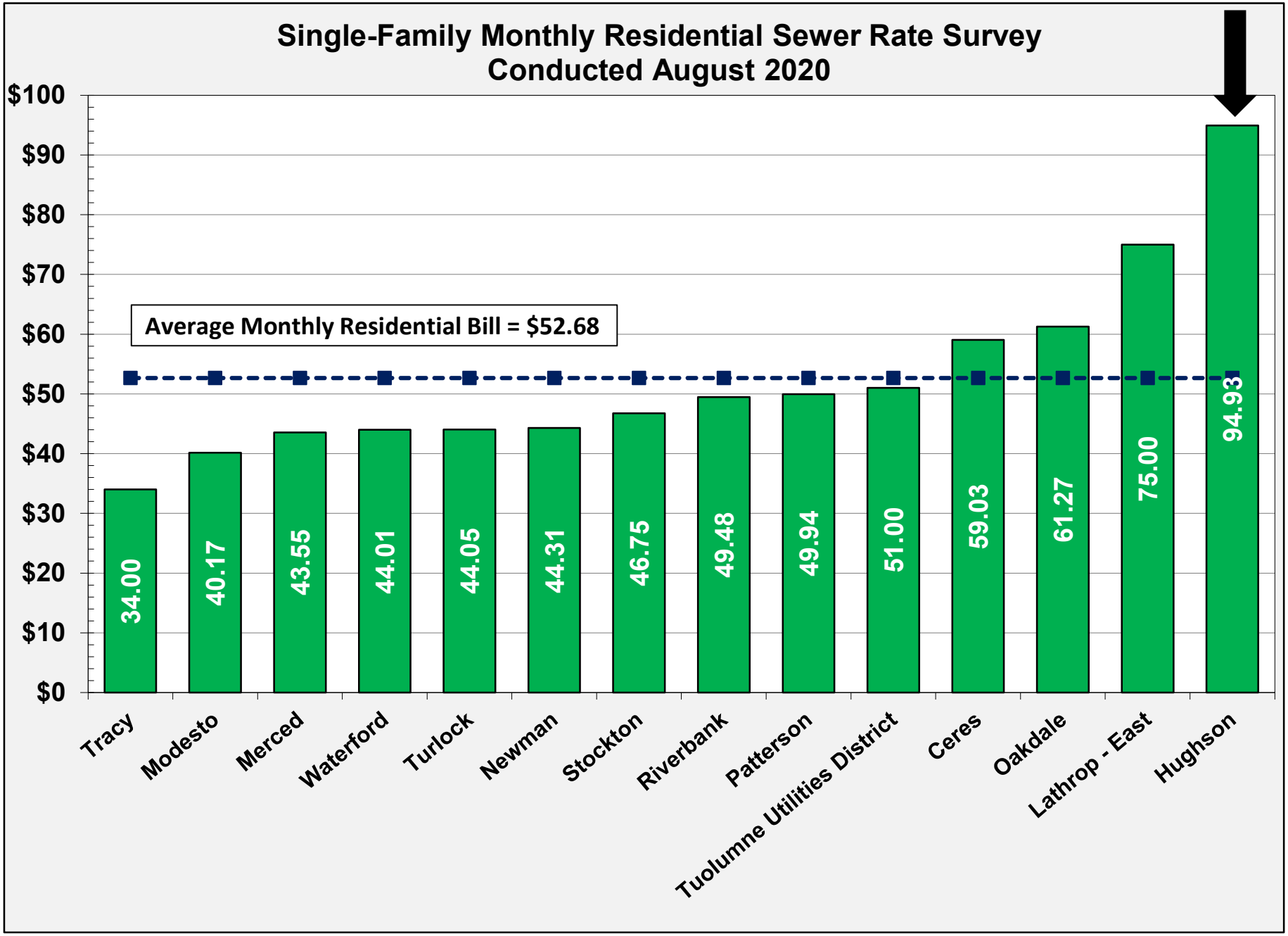

Single-Family Monthly Residential Sewer Rate Survey
Conducted August 2020
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Average Monthly Residential Bill = $52.68
34.00
40.17
43.55
44.01
44.05
44.31
46.75
49.48
49.94
51.00
59.03
61.27
75.00
94.93
Tracy
Modesto
Merced
Waterford
Turlock
Newman
Stockton
Riverbank
Patterson
Tuolumne Utilities District
Ceres
Oakdale
Lathrop - East
Hughson

Table 1
City of Hughson
Wastewater Historical Rates

Sewer ID	Description	Note	Current Rates	1-Sep-14	August 1st, 2015	July 1st, 2016	July 1st, 2017
				3.00%	*2.30%*	*2.70%*	*3.80%*
0	Non-User		$0.00	$0.00	$0.00	$0.00	$0.00
1	Residential		$84.51	$87.05	$89.05	$91.45	$94.93
2	Single Family		$84.51	$87.05	$89.05	$91.45	$94.93
3	El Agave Azul		$284.00	$292.52	$299.25	$307.33	$319.01
4	Duplexes		$169.02	$174.09	$178.09	$182.90	$189.85
5	Main Street Deli		$71.00	$73.13	$74.81	$76.83	$79.75
6	Triplexes		$253.53	$261.14	$267.14	$274.35	$284.78
7	Subway		$124.25	$127.98	$130.92	$134.46	$139.57
8	ABJ Hair		$112.80	$116.18	$118.86	$122.07	$126.70
9	Rico's Pizza		$85.20	$87.76	$89.77	$92.20	$95.70
10	Housing Authority	There are 47 units	$84.51	$87.05	$89.05	$91.45	$94.93
11	Grossi Fabrication		$253.53	$261.14	$267.14	$274.35	$284.78
12	Apartments		$507.07	$522.28	$534.29	$548.72	$569.57
13	Nail Salon		$112.80	$116.18	$118.86	$122.07	$126.70
14	Mobile Home		$754.78	$777.42	$795.30	$816.78	$847.81
15	Parks		$84.51	$87.05	$89.05	$91.45	$94.93
16	Pers Health SVC	Medical Center/Dr. Choo	$84.51	$87.05	$89.05	$91.45	$94.93
17	Housing Authority		$608.46	$626.71	$641.13	$658.44	$683.46
18	Pharmacy & Bank		$84.51	$87.05	$89.05	$91.45	$94.93
19	Business & Aparment	Valadez Jewelry		$174.10	$178.10	$182.91	$189.86
20	Institutional/Civic		$84.51	$87.05	$89.05	$91.45	$94.93
22	Professional Svcs.		$84.51	$87.05	$89.05	$91.45	$94.93
23	Professional Svcs.		$84.51	$87.05	$89.05	$91.45	$94.93
24	Retail Vendors		$84.51	$87.05	$89.05	$91.45	$94.93
25	Mini Mart		$84.51	$87.05	$89.05	$91.45	$94.93
26	Comm/Indust.	DFA	$57,688.46	$59,419.11	$60,785.75	$62,426.97	$64,799.19
27	Restaurant		$71.00	$73.13	$14.81	$76.83	$79.75
28	Restaurant	TACO SHOP	$113.60	$117.01	$119.70	$122.93	$127.60
30	Restraurants	Golden Bowl	$134.90	$138.95	$142.14	$145.98	$151.53
31	Restaurant	Pizza Factory	$170.40	$175.51	$179.55	$184.40	$191.40
32	Drive-in/ Quickfood	Sonora Taco Shop	$177.94	$183.28	$187.49	$192.56	$199.87
33	Restaurant	Hamilton's	$170.40	$175.51	$179.55	$184.40	$191.40
34	Convenience Market		$84.51	$87.05	$89.05	$91.45	$94.93
36	Major Food Mkt.	Rancho Market	$420.35	$432.96	$442.92	$454.88	$472.16
37	Auto Service		$84.51	$87.05	$89.05	$91.45	$94.93
38	Comm Laundry	Hughson Laundry Mat	$393.06	$404.85	$414.16	$425.35	$441.51
39	Car Wash	Hughson Car Wash	$245.99	$253.37	$259.20	$266.20	$276.31
40	Gas Station		$84.51	$87.05	$89.05	$91.45	$94.93
41	Auto Service		$84.51	$87.05	$89.05	$91.45	$94.93
42	Churches 1-100		$84.51	$87.05	$89.05	$91.45	$94.93
43	Churches 100+		$101.39	$104.43	$106.83	$109.72	$113.89
44	School		$101.39	$104.43	$106.83	$109.72	$113.89
45	Schools	Hughson Christian School	$84.51	$87.05	$89.05	$91.45	$94.93
50	Sam. Vil-Res	SAM0001	$3,057.14	$3,148.85	$3,221.28	$3,308.25	$3,433.97
51	Warehouse & Pool House	SAM0002/SAM0004	$84.51	$87.05	$89.05	$91.45	$94.93
52	Sam. Vil-Cot.	SAM0003	$659.16		$0.00	$658.32	$683.34
53	Sam. Vil-Apt.	SAM0005	$3,194.41		$0.00	$3,456.18	$3,587.51
54	Sam. Vil-Hosp	HOS0002	$811.28	$835.62	$854.84	$877.92	$911.28
55	5am. VII-Apt. Ph3 (G)	SAM0008	$2,383.13		$0.00	$2,743.00	$2,847.23
56	Sam. Vil-Apt Ph3 (F)	SAM0007	$2,585.95		$0.00	$2,633.28	$2,733.34
58	Ross Jr.High		$825.60	$850.37	$824.46	$846.72	$878.90
60	Fox Rd. School		$522.68	$538.36	$593.32	$609.34	$632.49
62	High School		$2,503.28	$2,578.38	$2,678.14	$2,750.45	$2,854.97
63	Billie Joe Dickens		$112.88	$116.27	$186.68	$89.32	$92.71
64	Elementary School		$1,021.68	$1,052.33	$1,082.90	$1,112.14	$1,154.40
66	Gas Station	Quick N Save	$84.51	$87.05	$89.05	$91.45	$94.93
67	Auto Sales		$84.51	$87.05	$89.05	$91.45	$94.93
68	Major Food Market	Sav Mor Market	$420.35	$432.96	$442.92	$454.88	$472.16
70	Major Food Market	La Perla	$420.35	$432.96	$442.92	$454.88	$472.16
72	Restaurants	Daily Bread	$124.25	$127.98	$130.92	$134.46	$139.57
74	Restaurant	Dos Locos Mexican Grill	$127.80	$131.63	$134.66	$138.30	$143.55
75	Comm/Indust.		$507.07	$522.28	$534.29	$548.72	$569.57
76	Comm/Indust.	Builders Choice	$507.07	$522.28	$623.35	$640.18	$664.51

77	Comm/Indust.		$169.02	$174.09	$178.09	$182.90	$189.85
78	Comm/Indust.		$84.51	$87.05	$89.05	$91.45	$94.93
79	Comm/Indust.		$84.51	$87.05	$89.05	$91.45	$94.93
80	Comm/Indust.	Hughson Terminal	$221.32	$227.96	$233.20	$239.50	$248.60
81	Comm/Indust.		$0.00	$0.00	$0.00	$274.35	$284.78
82	Comm/Indust.		$169.02	$174.09	$178.09	$182.90	$189.85
84	Pers Health SVC		$84.51	$87.05	$89.05	$91.45	$94.93
85	Beauty Shop/Mini Mark.		$197.31	$203.23	$207.90	$213.52	$221.63
86	Pers Health SVC		$55.42	$57.08	$58.40	$59.97	$62.25
88	Mobile Home 28 space		$2,444.94	$2,518.29	$2,576.21	$2,645.77	$2,746.31
90	Mobile Home 17 Space		$1,515.31	$1,560.77	$1,596.67	$1,639.78	$1,702.09
91	Apartments 8 Units			$696.40	$712.42	$731.65	$759.46
92	Apartments		$507.07	$522.28	$534.29	$548.72	$569.57
93	Apartments		$507.07	$522.28	$534.29	$548.72	$569.57
94	Mobile Home 14 Space		$1,183.16	$1,218.65	$1,246.68	$1,280.34	$1,329.00
95	Gym	Get Fit 24 Hr		$87.05	$89.05	$91.46	$94.93
96	Apartments		$422.56	$435.24	$445.25	$457.27	$474.65
97	Dry Cleaners		$39.31	$40.49	$41.42	$42.54	$44.16
98	Apartments		$591.58	$609.33	$623.34	$640.17	$664.50
99	Institutiona l/Civic		$507.07	$522.28	$534.29	$548.72	$569.57
M4	Parks		$84.51	$87.05	$89.05	$91.45	$94.93
BILLIE JOE DICKENS						$89.32	$92.71

Table 2
City of Hughson
Historical Wastewater Customers

Sewer ID	Customer	Rate	2017 Number of Accounts	2017 Revenue	2018 Number of Accounts	2018 Revenue	2019 Number of Accounts	2019 Revenue
1	Residential	$94.93	7	$7,974	8	$9,113	13	$14,809
2	Single Family	$94.93	1,633	$1,860,248	1,761	$2,006,061	1,915	$2,181,491
3	El Agave Azul	$319.01	1	$3,828	1	$3,828	1	$3,828
4	Duplexes	$189.85	12	$27,338	12	$27,338	12	$27,338
5	Main Street Deli	$79.75	0	$0	1	$957	1	$957
6	Triplexes	$284.78	1	$3,417	1	$3,417	1	$3,417
7	Subway	$139.57	1	$1,675	1	$1,675	1	$1,675
8	ABJ Hair	$126.70	1	$1,520	1	$1,520	1	$1,520
9	Rico's Pizza	$95.70	0	$0	1	$1,148	1	$1,148
10	Housing Authority	$94.93	31	$35,314	31	$35,314	31	$35,314
11	Grossi Fabrication	$284.78	1	$3,417	1	$3,417	1	$3,417
12	Apartments	$569.57	4	$27,339	5	$34,174	5	$34,174
13	Nail Salon	$126.70	0	$0	0	$0	1	$1,520
15	Parks	$94.93	1	$1,139	1	$1,139	1	$1,139
16	Pers Health SVC	$94.93	1	$1,139	1	$1,139	1	$1,139
17	Housing Authority	$683.46	1	$8,202	1	$8,202	1	$8,202
18	Pharmacy & Bank	$94.93	1	$1,139	1	$1,139	2	$2,278
19	Business & Aparment	$189.86	1	$2,278	1	$2,278	1	$2,278
20	Institutional/Civic	$94.93	1	$1,139	1	$1,139	1	$1,139
22	Professional Svcs.	$94.93	10	$11,392	13	$14,809	17	$19,366
23	Professional Svcs.	$94.93	1	$1,139	1	$1,139	1	$1,139
24	Retail Vendors	$94.93	13	$14,809	15	$17,087	15	$17,087
28	Restaurant	$127.60	1	$1,531	1	$1,531	1	$1,531
30	Restraurants	$151.53	0	$0	0	$0	1	$1,818
31	Restaurant	$191.40	1	$2,297	1	$2,297	1	$2,297
32	Drive-in/ Quickfood	$199.87	1	$2,398	2	$4,797	2	$4,797
33	Restaurant	$191.40	1	$2,297	1	$2,297	1	$2,297
34	Convenience Market	$94.93	1	$1,139	2	$2,278	2	$2,278
36	Major Food Mkt.	$472.16	1	$5,666	1	$5,666	1	$5,666
37	Auto Service	$94.93	1	$1,139	1	$1,139	1	$1,139
38	Comm Laundry	$441.51	1	$5,298	1	$5,298	1	$5,298
39	Car Wash	$276.31	0	$0	1	$3,316	1	$3,316
40	Gas Station	$94.93	1	$1,139	1	$1,139	1	$1,139
42	Churches 1-100	$94.93	8	$9,113	8	$9,113	8	$9,113
43	Churches 100+	$113.89	4	$5,467	4	$5,467	4	$5,467
45	Schools	$94.93	1	$1,139	1	$1,139	1	$1,139
50	Sam. Vil-Res	$3,433.97	1	$41,208	1	$41,208	1	$41,208
51	Warehouse & Pool House	$94.93	2	$2,278	2	$2,278	2	$2,278
52	Sam. Vil-Cot.	$683.34	1	$8,200	1	$8,200	1	$8,200
53	Sam. Vil-Apt.	$3,587.51	1	$43,050	1	$43,050	1	$43,050
54	Sam. Vil-Hosp	$911.28	1	$10,935	1	$10,935	1	$10,935
55	5am. VII-Apt. Ph3 (G)	$2,847.23	1	$34,167	1	$34,167	1	$34,167
56	Sam. Vil-Apt Ph3 (F)	$2,733.34	1	$32,800	1	$32,800	1	$32,800
58	Ross Jr.High	$878.90	1	$10,547	1	$10,547	1	$10,547
60	Fox Rd. School	$632.49	1	$7,590	1	$7,590	1	$7,590
62	High School	$2,854.97	1	$34,260	1	$34,260	1	$34,260
63	Billie Joe Dickens	$92.71	1	$1,113	1	$1,113	1	$1,113
64	Elementary School	$1,154.40	1	$13,853	1	$13,853	1	$13,853
66	Gas Station	$94.93	1	$1,139	1	$1,139	1	$1,139
70	Major Food Market	$472.16	1	$5,666	1	$5,666	1	$5,666
72	Restaurants	$139.57	1	$1,675	1	$1,675	1	$1,675
74	Restaurant	$143.55	1	$1,723	1	$1,723	1	$1,723
76	Comm/Indust.	$664.51	1	$7,974	1	$7,974	1	$7,974
78	Comm/Indust.	$94.93	1	$1,139	1	$1,139	1	$1,139

79	Comm/Indust.	$94.93	1	$1,139	1	$1,139	1	$1,139
80	Comm/Indust.	$248.60	1	$2,983	1	$2,983	1	$2,983
81	Comm/Indust.	$284.78	1	$3,417	1	$3,417	1	$3,417
82	Comm/Indust.	$189.85	2	$4,556	2	$4,556	2	$4,556
84	Pers Health SVC	$94.93	1	$1,139	2	$2,278	2	$2,278
86	Pers Health SVC	$62.25	1	$747	1	$747	1	$747
88	Mobile Home 28 space	$2,746.31	1	$32,956	1	$32,956	1	$32,956
90	Mobile Home 17 Space	$1,702.09	0	$0	0	$0	1	$20,425
91	Apartments 8 Units	$759.46	1	$9,114	1	$9,114	1	$9,114
92	Apartments	$569.57	1	$6,835	1	$6,835	1	$6,835
93	Apartments	$569.57	0	$0	0	$0	1	$6,835
94	Mobile Home 14 Space	$1,329.00	1	$15,948	1	$15,948	1	$15,948
95	Gym	$94.93	1	$1,139	1	$1,139	1	$1,139
96	Apartments	$474.65	2	$11,392	3	$17,087	3	$17,087
99	Institutiona l/Civic	$569.57	1	$6,835	1	$6,835	1	$6,835
Totals			**1,778**	**$2,410,588**	**1,920**	**$2,585,864**	**2,088**	**$2,803,285**
DFA				$777,590		$777,590		$777,590
				$3,188,178		$3,363,454		$3,580,875

Table 3
City of Hughson
2019 Wastewater Customers

Sewer ID	Customer	Number of Accounts	Current Monthly Sewer Rate	Current EDUs Per Account	Current Total EDUs	# of Seat/Unit/ Stalls/Businesses	Current Calculated Rate Per Unit
1	Residential	13	$94.93	1.00	13		
2	Single Family	1,915	$94.93	1.00	1,915		
3	El Agave Azul	1	$319.01	3.40	3	80	$3.99
4	Duplexes	12	$189.85	2.00	24	2	$94.93
5	Main Street Deli	1	$79.75	0.80	1	20	$3.99
6	Triplexes	1	$284.78	3.00	3	3	$94.93
7	Subway	1	$139.57	1.50	2	35	$3.99
8	ABJ Hair	1	$126.70	1.30	1		
9	Rico's Pizza	1	$95.70	1.00	1	24	$3.99
10	Housing Authority	31	$94.93	1.00	31	1	$94.93
11	Grossi Fabrication	1	$284.78	3.00	3		
12	Apartments	5	$569.57	6.00	30	6	$94.93
13	Nail Salon	1	$126.70	1.30	1		
15	Parks	1	$94.93	1.00	1		
16	Pers Health SVC	1	$94.93	1.00	1		
17	Housing Authority	1	$683.46	7.20	7		
18	Pharmacy & Bank	2	$94.93	1.00	2		
19	Business & Aparment	1	$189.86	2.00	2		
20	Institutional/Civic	1	$94.93	1.00	1		
22	Professional Svcs.	17	$94.93	1.00	17		
23	Professional Svcs.	1	$94.93	1.00	1		
24	Retail Vendors	15	$94.93	1.00	15		
28	Restaurant	1	$127.60	1.30	1	32	$3.99
30	Restraurants	1	$151.53	1.60	2	38	$3.99
31	Restaurant	1	$191.40	2.00	2	48	$3.99
32	Drive-in/ Quickfood	2	$199.87	2.10	4		
33	Restaurant	1	$191.40	2.00	2	48	$3.99
34	Convenience Market	2	$94.93	1.00	2		
36	Major Food Mkt.	1	$472.16	5.00	5		
37	Auto Service	1	$94.93	1.00	1		
38	Comm Laundry	1	$441.51	4.70	5	10	$44.15
39	Car Wash	1	$276.31	2.90	3	4	$69.08
40	Gas Station	1	$94.93	1.00	1		
42	Churches 1-100	8	$94.93	1.00	8		
43	Churches 100+	4	$113.89	1.20	5		
45	Schools	1	$94.93	1.00	1		
50	Sam. Vil-Res	1	$3,433.97	36.20	36		
51	Warehouse & Pool House	2	$94.93	1.00	2	1 each	

52	Sam. Vil-Cot.	1	$683.34	7.20	7	15	$45.56
53	Sam. Vil-Apt.	1	$3,587.51	37.80	38	43	$83.43
54	Sam. Vil-Hosp	1	$911.28	9.60	10	16	$56.96
55	5am. VII-Apt. Ph3 (G)	1	$2,847.23	30.00	30	35	$81.35
56	Sam. Vil-Apt Ph3 (F)	1	$2,733.34	28.80	29	29	$94.25
58	Ross Jr.High	1	$878.90	9.30	9	453	$1.94
60	Fox Rd. School	1	$632.49	6.70	7	326	$1.94
62	High School	1	$2,854.97	30.10	30	746	$3.83
63	Billie Joe Dickens	1	$92.71	1.00	1	52	$1.78
64	Elementary School	1	$1,154.40	12.20	12	595	$1.94
66	Gas Station	1	$94.93	1.00	1		
70	Major Food Market	1	$472.16	5.00	5		
72	Restaurants	1	$139.57	1.50	2	35	$3.99
74	Restaurant	1	$143.55	1.50	2	36	$3.99
76	Comm/Indust.	1	$664.51	7.00	7	76	$8.74
78	Comm/Indust.	1	$94.93	1.00	1		
79	Comm/Indust.	1	$94.93	1.00	1		
80	Comm/Indust.	1	$248.60	2.60	3		
81	Comm/Indust.	1	$284.78	3.00	3		
82	Comm/Indust.	2	$189.85	2.00	4	2	$94.93
84	Pers Health SVC	2	$94.93	1.00	2		
86	Pers Health SVC	1	$62.25	0.70	1		
88	Mobile Home 28 space	1	$2,746.31	28.90	29	28 & 2 washers	
90	Mobile Home 17 Space	1	$1,702.09	17.90	18	17 & 2 washers	
91	Apartments 8 Units	1	$759.46	8.00	8	8	$94.93
92	Apartments	1	$569.57	6.00	6	6	$94.93
93	Apartments	1	$569.57	6.00	6	6	$94.93
94	Mobile Home 14 Space	1	$1,329.00	14.00	14	14	$94.93
95	Gym	1	$94.93	1.00	1		
96	Apartments	3	$474.65	5.00	15	5	$94.93
99	Institutiona I/Civic	1	$569.57	6.00	6	6	$94.93
Totals		**2,088**		**400**	**2,461**		

Table 4
City of Hughson
Estimated Current Rate Revenue

Sewer ID	Customer	Number of Accounts	Current Monthly Sewer Rate	Estimated Rate Revenue (Annual)
1	Residential	13	$94.93	$14,809
2	Single Family	1915	$94.93	$2,181,491
3	El Agave Azul	1	$319.01	$3,828
4	Duplexes	12	$189.85	$27,338
5	Main Street Deli	1	$79.75	$957
6	Triplexes	1	$284.78	$3,417
7	Subway	1	$139.57	$1,675
8	ABJ Hair	1	$126.70	$1,520
9	Rico's Pizza	1	$95.70	$1,148
10	Housing Authority	31	$94.93	$35,314
11	Grossi Fabrication	1	$284.78	$3,417
12	Apartments	5	$569.57	$34,174
13	Nail Salon	1	$126.70	$1,520
15	Parks	1	$94.93	$1,139
16	Pers Health SVC	1	$94.93	$1,139
17	Housing Authority	1	$683.46	$8,202
18	Pharmacy & Bank	2	$94.93	$2,278
19	Business & Aparment	1	$189.86	$2,278
20	Institutional/Civic	1	$94.93	$1,139
22	Professional Svcs.	17	$94.93	$19,366
23	Professional Svcs.	1	$94.93	$1,139
24	Retail Vendors	15	$94.93	$17,087
28	Restaurant	1	$127.60	$1,531
30	Restraurants	1	$151.53	$1,818
31	Restaurant	1	$191.40	$2,297
32	Drive-in/ Quickfood	2	$199.87	$4,797
33	Restaurant	1	$191.40	$2,297
34	Convenience Market	2	$94.93	$2,278
36	Major Food Mkt.	1	$472.16	$5,666
37	Auto Service	1	$94.93	$1,139
38	Comm Laundry	1	$441.51	$5,298
39	Car Wash	1	$276.31	$3,316
40	Gas Station	1	$94.93	$1,139
42	Churches 1-100	8	$94.93	$9,113

43	Churches 100+	4	$113.89	$5,467
45	Schools	1	$94.93	$1,139
50	Sam. Vil-Res	1	$3,433.97	$41,208
51	Warehouse & Pool House	2	$94.93	$2,278
52	Sam. Vil-Cot.	1	$683.34	$8,200
53	Sam. Vil-Apt.	1	$3,587.51	$43,050
54	Sam. Vil-Hosp	1	$911.28	$10,935
55	5am. VII-Apt. Ph3 (G)	1	$2,847.23	$34,167
56	Sam. Vil-Apt Ph3 (F)	1	$2,733.34	$32,800
58	Ross Jr.High	1	$878.90	$10,547
60	Fox Rd. School	1	$632.49	$7,590
62	High School	1	$2,854.97	$34,260
63	Billie Joe Dickens	1	$92.71	$1,113
64	Elementary School	1	$1,154.40	$13,853
66	Gas Station	1	$94.93	$1,139
70	Major Food Market	1	$472.16	$5,666
72	Restaurants	1	$139.57	$1,675
74	Restaurant	1	$143.55	$1,723
76	Comm/Indust.	1	$664.51	$7,974
78	Comm/Indust.	1	$94.93	$1,139
79	Comm/Indust.	1	$94.93	$1,139
80	Comm/Indust.	1	$248.60	$2,983
81	Comm/Indust.	1	$284.78	$3,417
82	Comm/Indust.	2	$189.85	$4,556
84	Pers Health SVC	2	$94.93	$2,278
86	Pers Health SVC	1	$62.25	$747
88	Mobile Home 28 space	1	$2,746.31	$32,956
90	Mobile Home 17 Space	1	$1,702.09	$20,425
91	Apartments 8 Units	1	$759.46	$9,114
92	Apartments	1	$569.57	$6,835
93	Apartments	1	$569.57	$6,835
94	Mobile Home 14 Space	1	$1,329.00	$15,948
95	Gym	1	$94.93	$1,139
96	Apartments	3	$474.65	$17,087
99	Institutiona l/Civic	1	$569.57	$6,835
Totals		**2088**		**$2,803,285**

Table 5
City of Hughson
Outstanding Debt

Debt Issuance		Interest Rate	Original Prinicpal	Year Issued	Outstanding Principal	Outstanding Interest	Annual Payment Amount	Due Thru
RDA Refunding & Capital projects (Bond payable from Tax increment)	520	2.00%	$ 2,660,000	2016	$ 2,238,500	$ 949,650	Principal $ 100,000 Interest $ 83,500 **Total: $183,500**	2036
Water Tank Project Loan (Loan payable from revenues of the water system)	240	3.40%	$ 2,400,000	2006	$ 1,072,566	$ 141,742	Principal $138,170 Interest $ 35,303 **Total: $ 173,473**	2026
WWTP Expansion Project Preliminary Planning, design and captial exp (Loan payable from revenues of the WWTP and Sewer Revenues)	225	3.40%	$ 6,780,000	2008	$ 3,677,371	$ 622,217	Principal $355,699 Interest $122,033 **Total: $ 477,732**	2028
STATE WATER RESOURCE BOARD SRF LOAN WWTP Expanion Project (Loan payable from revenues of the WWTP and Sewer Revenues)	225	1%	$ 20,871,789	2010	$ 12,282,359	$ 1,041,770	Principal $1,135,314 Interest $122,824 **Total $ 1,258,138**	2030
STATE WATER RESOURCE BOARD SRF LOAN REFINANCE		1%	$ 20,871,789	2020			Principal $479,666 Interest $111,470 **Total $ 591,136**	2041

Table 6
City of Hughson
Capital Improvement Program

Capital Improvement	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Fix cracks on Tully Road residential line Transfer laterals from old DFA line to residential line on Tully Road Abandon DFA line	$750,000	$750,000						
Replace 8” pipe with 10” pipe on 2nd Street from Hughson Ave to Locust Street (560 ft) Replace 8” pipe with 10” pipe on Whitmore Ave from 5th St to 3rd St (1,020 ft)			$500,000	$500,000				
Replace all residential lines and pull manholes out of backyards to the front. South of Whitmore from Charles through 7th Street Replace clay / concrete laterals with pvc pipe					$1,200,000	$1,200,000	$1,200,000	$1,200,000
Replace clay/concrete laterals in downtown Hughson (approx. 3500 ft)								
Camera						$50,000		
Total	**$750,000**	**$750,000**	**$500,000**	**$500,000**	**$1,200,000**	**$1,250,000**	**$1,200,000**	**$1,200,000**
Inflation Adjustment (3% Per Year)	**$750,000**	**$773,000**	**$530,000**	**$546,000**	**$1,351,000**	**$1,449,000**	**$1,433,000**	**$1,476,000**

Table 6
City of Hughson
Capital Improvement Program

Capital Improvement	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	Total
Fix cracks on Tully Road residential line Transfer laterals from old DFA line to residential line on Tully Road Abandon DFA line									**$1,500,000**
Replace 8” pipe with 10” pipe on 2nd Street from Hughson Ave to Locust Street (560 ft) Replace 8” pipe with 10” pipe on Whitmore Ave from 5th St to 3rd St (1,020 ft)									**$1,000,000**
Replace all residential lines and pull manholes out of backyards to the front. South of Whitmore from Charles through 7th Street Replace clay / concrete laterals with pvc pipe	$1,200,000								**$6,000,000**
Replace clay/concrete laterals in downtown Hughson (approx. 3500 ft)		$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000			**$5,000,000**
Camera			$50,000					$50,000	**$150,000**
Total	**$1,200,000**	**$1,000,000**	**$1,050,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$0**	**$50,000**	**$13,650,000**
Inflation Adjustment (3% Per Year)	**$1,520,000**	**$1,305,000**	**$1,411,000**	**$1,384,000**	**$1,426,000**	**$1,469,000**	**$0**	**$77,900**	**$16,900,900**

Table 7A
City of Hughson
Wastewater Cash Flow Projection (Loan paid off in FY 2020/21 & SRF Extension, CIP)

	2020/21	2021/22	2022/23	2023/24	2024/25
Beginning Fund Balance	$9,300,075	$6,029,964	$6,363,278	$6,914,528	$7,425,169
% Rate Revenue Increase	***0.00%***	***0.00%***	***0.00%***	***0.00%***	***0.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$2,817,302	$2,831,388	$2,845,545	$2,859,773	$2,874,072
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	69,751	45,225	47,725	51,859	55,689
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$3,103,567	$3,093,128	$3,109,785	$3,128,147	$3,146,275
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$3,103,567	$3,093,128	$3,109,785	$3,128,147	$3,146,275
EXPENSES					
Operating Expenses					
Salaries and Benefits	$478,016	$492,356	$507,127	$522,341	$538,011
Supplies & Equipment	53,107	54,700	56,341	58,031	59,772
Professional Services	511,986	527,346	543,166	559,461	576,245
Maintenance and Repairs	72,100	74,263	76,491	78,786	81,149
Utilities	133,900	137,917	142,055	146,316	150,706
Miscellaneous	101,064	104,096	107,218	110,435	113,748
Total Operating Expenses	$1,350,172	$1,390,678	$1,432,398	$1,475,370	$1,519,631
NET REVENUES FOR DEBT SERVICE	**$1,753,395**	**$1,702,450**	**$1,677,387**	**$1,652,777**	**$1,626,644**
Non Operating Expenses					
Debt Service	$596,136	$596,136	$596,136	$596,136	$596,136
Debt Payoff	3,677,371	0	0	0	0
CIP	750,000	773,000	530,000	546,000	1,351,000
Total Non Operating Expenses	$5,023,507	$1,369,136	$1,126,136	$1,142,136	$1,947,136
TOTAL EXPENSES	**$6,373,679**	**$2,759,814**	**$2,558,534**	**$2,617,506**	**$3,466,767**
NET INCOME	($3,270,112)	$333,314	$551,251	$510,641	($320,492)
Ending Fund Balance	$6,029,964	$6,363,278	$6,914,528	$7,425,169	$7,104,678
Total Unrestricted Fund Target (25% O&M)	$337,543	$347,669	$358,099	$368,842	$379,908
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.1x)	2.94	2.86	2.81	2.77	2.73

Table 7A
City of Hughson
Wastewater Cash Flow Projection (Loan p

	2025/26	2026/27	2027/28	2028/29	2029/30
Beginning Fund Balance	$7,104,678	$6,652,564	$6,180,545	$5,628,134	$4,992,352
% Rate Revenue Increase	***0.00%***	***0.00%***	***0.00%***	***0.00%***	***0.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$2,888,442	$2,902,884	$2,917,399	$2,931,986	$2,946,645
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	53,285	49,894	46,354	42,211	37,443
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$3,158,242	$3,169,293	$3,180,268	$3,190,712	$3,200,603
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$3,158,242	$3,169,293	$3,180,268	$3,190,712	$3,200,603
EXPENSES					
Operating Expenses					
Salaries and Benefits	$554,151	$570,776	$587,899	$605,536	$623,702
Supplies & Equipment	61,565	63,412	65,315	67,274	69,292
Professional Services	593,532	611,338	629,678	648,569	668,026
Maintenance and Repairs	83,584	86,091	88,674	91,334	94,074
Utilities	155,227	159,884	164,680	169,621	174,709
Miscellaneous	117,160	120,675	124,295	128,024	131,865
Total Operating Expenses	$1,565,220	$1,612,176	$1,660,542	$1,710,358	$1,761,669
NET REVENUES FOR DEBT SERVICE	**$1,593,022**	**$1,557,117**	**$1,519,726**	**$1,480,354**	**$1,438,934**
Non Operating Expenses					
Debt Service	$596,136	$596,136	$596,136	$596,136	$596,136
Debt Payoff	0	0	0	0	0
CIP	1,449,000	1,433,000	1,476,000	1,520,000	1,305,000
Total Non Operating Expenses	$2,045,136	$2,029,136	$2,072,136	$2,116,136	$1,901,136
TOTAL EXPENSES	**$3,610,356**	**$3,641,312**	**$3,732,678**	**$3,826,494**	**$3,662,805**
NET INCOME	($452,114)	($472,019)	($552,410)	($635,782)	($462,202)
Ending Fund Balance	$6,652,564	$6,180,545	$5,628,134	$4,992,352	$4,530,150
Total Unrestricted Fund Target (25% O&M)	$391,305	$403,044	$415,135	$427,590	$440,417
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.1x)	2.67	2.61	2.55	2.48	2.41

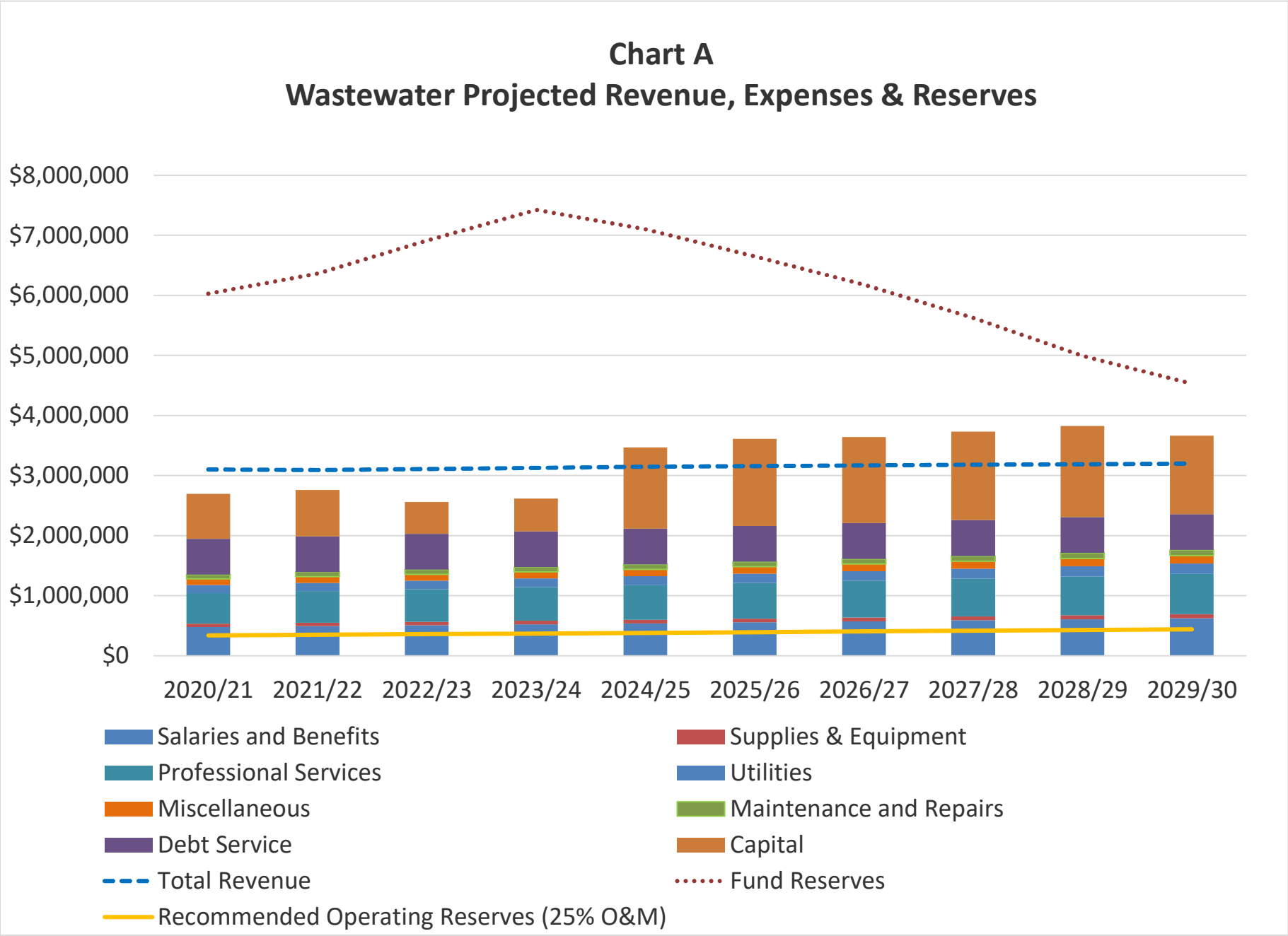


Chart A
Wastewater Projected Revenue, Expenses & Reserves
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
Salaries and Benefits
Supplies & Equipment
Professional Services
Utilities
Miscellaneous
Maintenance and Repairs
Debt Service
Capital
Total Revenue
Fund Reserves
Recommended Operating Reserves (25% O&M)

Table 7B
City of Hughson
Wastewater Cash Flow Projection (10% Rate Cut, Inflationary Increases)

	2020/21	2021/22	2022/23	2023/24	2024/25
Beginning Fund Balance	$9,300,075	$6,029,964	$6,080,139	$6,344,712	$6,565,101
% Rate Revenue Increase	***0.00%***	***-10.00%***	***0.00%***	***0.00%***	***0.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$2,817,302	$2,548,249	$2,560,990	$2,573,795	$2,586,664
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	69,751	45,225	45,601	47,585	49,238
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$3,103,567	$2,809,989	$2,823,106	$2,837,896	$2,852,418
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$3,103,567	$2,809,989	$2,823,106	$2,837,896	$2,852,418
EXPENSES					
Operating Expenses					
Salaries and Benefits	$478,016	$492,356	$507,127	$522,341	$538,011
Supplies & Equipment	53,107	54,700	56,341	58,031	59,772
Professional Services	511,986	527,346	543,166	559,461	576,245
Maintenance and Repairs	72,100	74,263	76,491	78,786	81,149
Utilities	133,900	137,917	142,055	146,316	150,706
Miscellaneous	101,064	104,096	107,218	110,435	113,748
Total Operating Expenses	$1,350,172	$1,390,678	$1,432,398	$1,475,370	$1,519,631
NET REVENUES FOR DEBT SERVICE	**$1,753,395**	**$1,419,311**	**$1,390,709**	**$1,362,526**	**$1,332,787**
Non Operating Expenses					
Debt Service	$596,136	$596,136	$596,136	$596,136	$596,136
Debt Payoff	3,677,371	0	0	0	0
CIP	750,000	773,000	530,000	546,000	1,351,000
Total Non Operating Expenses	$5,023,507	$1,369,136	$1,126,136	$1,142,136	$1,947,136
TOTAL EXPENSES	**$6,373,679**	**$2,759,814**	**$2,558,534**	**$2,617,506**	**$3,466,767**
NET INCOME	($3,270,112)	$50,175	$264,573	$220,390	($614,349)
Ending Fund Balance	$6,029,964	$6,080,139	$6,344,712	$6,565,101	$5,950,752
Total Unrestricted Fund Target (25% O&M)	$337,543	$347,669	$358,099	$368,842	$379,908
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.1x)	2.94	2.38	2.33	2.29	2.24

Table 7B
City of Hughson
Wastewater Cash Flow Projection (10% R

	2025/26	2026/27	2027/28	2028/29	2029/30
Beginning Fund Balance	$5,950,752	$5,253,132	$4,585,877	$3,890,478	$3,165,986
% Rate Revenue Increase	***2.00%***	***2.00%***	***2.00%***	***2.00%***	***2.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$2,651,590	$2,718,145	$2,786,370	$2,856,308	$2,928,001
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	44,631	39,398	34,394	29,179	23,745
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$2,912,735	$2,974,058	$3,037,279	$3,102,001	$3,168,261
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$2,912,735	$2,974,058	$3,037,279	$3,102,001	$3,168,261
EXPENSES					
Operating Expenses					
Salaries and Benefits	$554,151	$570,776	$587,899	$605,536	$623,702
Supplies & Equipment	61,565	63,412	65,315	67,274	69,292
Professional Services	593,532	611,338	629,678	648,569	668,026
Maintenance and Repairs	83,584	86,091	88,674	91,334	94,074
Utilities	155,227	159,884	164,680	169,621	174,709
Miscellaneous	117,160	120,675	124,295	128,024	131,865
Total Operating Expenses	$1,565,220	$1,612,176	$1,660,542	$1,710,358	$1,761,669
NET REVENUES FOR DEBT SERVICE	**$1,347,515**	**$1,361,882**	**$1,376,737**	**$1,391,643**	**$1,406,592**
Non Operating Expenses					
Debt Service	$596,136	$596,136	$596,136	$596,136	$596,136
Debt Payoff	0	0	0	0	0
CIP	1,449,000	1,433,000	1,476,000	1,520,000	1,305,000
Total Non Operating Expenses	$2,045,136	$2,029,136	$2,072,136	$2,116,136	$1,901,136
TOTAL EXPENSES	**$3,610,356**	**$3,641,312**	**$3,732,678**	**$3,826,494**	**$3,662,805**
NET INCOME	($697,621)	($667,254)	($695,399)	($724,493)	($494,544)
Ending Fund Balance	$5,253,132	$4,585,877	$3,890,478	$3,165,986	$2,671,442
Total Unrestricted Fund Target (25% O&M)	$391,305	$403,044	$415,135	$427,590	$440,417
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.1x)	2.26	2.28	2.31	2.33	2.36

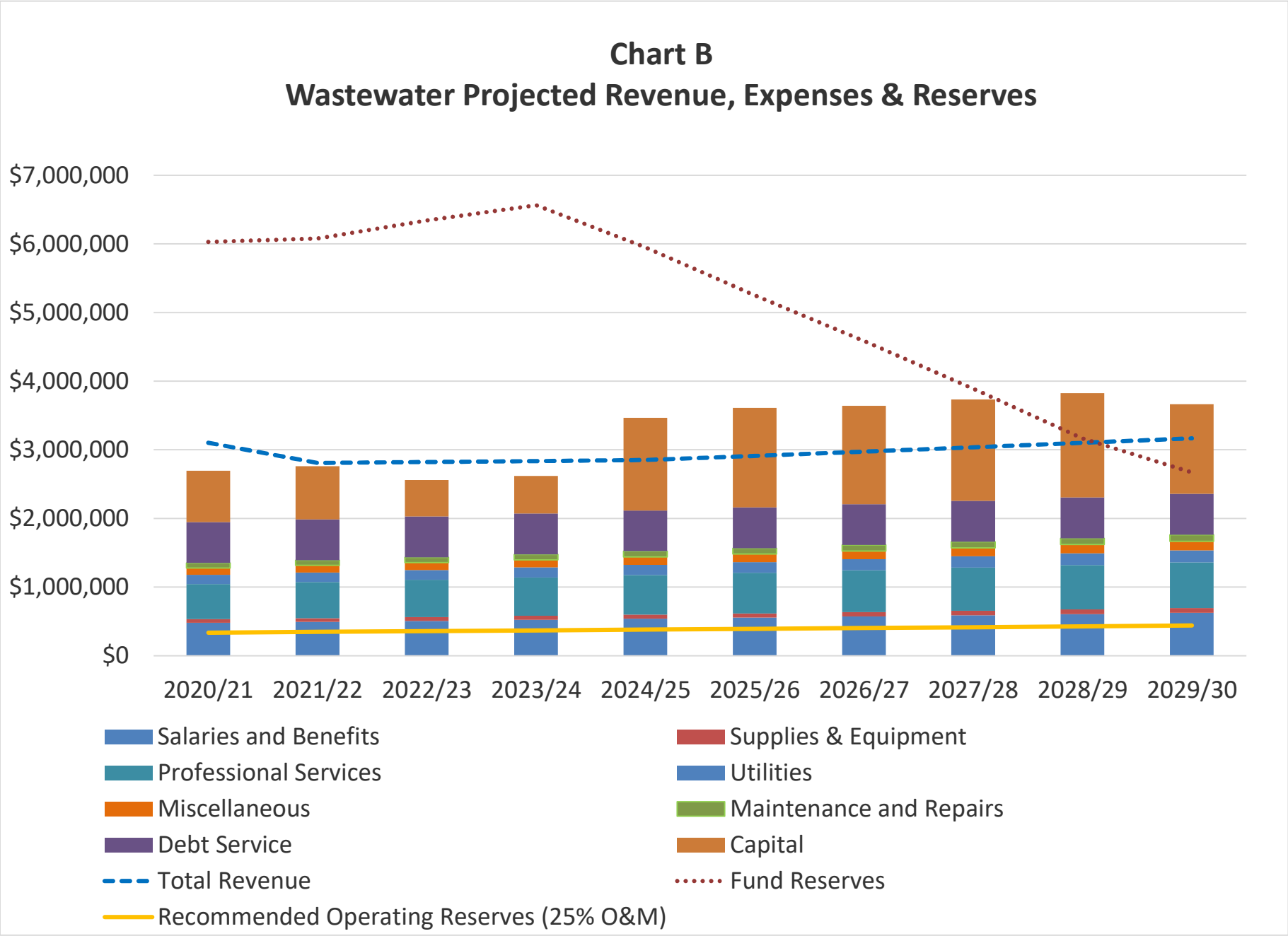


Chart B
Wastewater Projected Revenue, Expenses & Reserves
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
Salaries and Benefits
Supplies & Equipment
Professional Services
Utilities
Miscellaneous
Maintenance and Repairs
Debt Service
Capital
Total Revenue
Fund Reserves
Recommended Operating Reserves (25% O&M)

Table 7C
City of Hughson
Wastewater Cash Flow Projection (10% Rate Cut, No Inflationary Increases)

	2020/21	2021/22	2022/23	2023/24	2024/25
Beginning Fund Balance	$9,300,075	$6,029,964	$6,080,139	$6,344,712	$6,565,101
% Rate Revenue Increase	***0.00%***	***-10.00%***	***0.00%***	***0.00%***	***0.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$2,817,302	$2,548,249	$2,560,990	$2,573,795	$2,586,664
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	69,751	45,225	45,601	47,585	49,238
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$3,103,567	$2,809,989	$2,823,106	$2,837,896	$2,852,418
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$3,103,567	$2,809,989	$2,823,106	$2,837,896	$2,852,418
EXPENSES					
Operating Expenses					
Salaries and Benefits	$478,016	$492,356	$507,127	$522,341	$538,011
Supplies & Equipment	53,107	54,700	56,341	58,031	59,772
Professional Services	511,986	527,346	543,166	559,461	576,245
Maintenance and Repairs	72,100	74,263	76,491	78,786	81,149
Utilities	133,900	137,917	142,055	146,316	150,706
Miscellaneous	101,064	104,096	107,218	110,435	113,748
Total Operating Expenses	$1,350,172	$1,390,678	$1,432,398	$1,475,370	$1,519,631
NET REVENUES FOR DEBT SERVICE	**$1,753,395**	**$1,419,311**	**$1,390,709**	**$1,362,526**	**$1,332,787**
Non Operating Expenses					
Debt Service	$596,136	$596,136	$596,136	$596,136	$596,136
Debt Payoff	3,677,371	0	0	0	0
CIP	750,000	773,000	530,000	546,000	1,351,000
Total Non Operating Expenses	$5,023,507	$1,369,136	$1,126,136	$1,142,136	$1,947,136
TOTAL EXPENSES	**$6,373,679**	**$2,759,814**	**$2,558,534**	**$2,617,506**	**$3,466,767**
NET INCOME	($3,270,112)	$50,175	$264,573	$220,390	($614,349)
Ending Fund Balance	$6,029,964	$6,080,139	$6,344,712	$6,565,101	$5,950,752
Total Unrestricted Fund Target (25% O&M)	$337,543	$347,669	$358,099	$368,842	$379,908
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.1x)	2.94	2.38	2.33	2.29	2.24

Table 7C
City of Hughson
Wastewater Cash Flow Projection (10% R

	2025/26	2026/27	2027/28	2028/29	2029/30
Beginning Fund Balance	$5,950,752	$5,201,140	$4,427,946	$3,570,652	$2,626,240
% Rate Revenue Increase	***0.00%***	***0.00%***	***0.00%***	***0.00%***	***0.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$2,599,598	$2,612,596	$2,625,659	$2,638,787	$2,651,981
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	44,631	39,009	33,210	26,780	19,697
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$2,860,743	$2,868,119	$2,875,383	$2,882,082	$2,888,193
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$2,860,743	$2,868,119	$2,875,383	$2,882,082	$2,888,193
EXPENSES					
Operating Expenses					
Salaries and Benefits	$554,151	$570,776	$587,899	$605,536	$623,702
Supplies & Equipment	61,565	63,412	65,315	67,274	69,292
Professional Services	593,532	611,338	629,678	648,569	668,026
Maintenance and Repairs	83,584	86,091	88,674	91,334	94,074
Utilities	155,227	159,884	164,680	169,621	174,709
Miscellaneous	117,160	120,675	124,295	128,024	131,865
Total Operating Expenses	$1,565,220	$1,612,176	$1,660,542	$1,710,358	$1,761,669
NET REVENUES FOR DEBT SERVICE	**$1,295,523**	**$1,255,943**	**$1,214,842**	**$1,171,724**	**$1,126,524**
Non Operating Expenses					
Debt Service	$596,136	$596,136	$596,136	$596,136	$596,136
Debt Payoff	0	0	0	0	0
CIP	1,449,000	1,433,000	1,476,000	1,520,000	1,305,000
Total Non Operating Expenses	$2,045,136	$2,029,136	$2,072,136	$2,116,136	$1,901,136
TOTAL EXPENSES	**$3,610,356**	**$3,641,312**	**$3,732,678**	**$3,826,494**	**$3,662,805**
NET INCOME	($749,613)	($773,193)	($857,294)	($944,412)	($774,612)
Ending Fund Balance	$5,201,140	$4,427,946	$3,570,652	$2,626,240	$1,851,628
Total Unrestricted Fund Target (25% O&M)	$391,305	$403,044	$415,135	$427,590	$440,417
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.1x)	2.17	2.11	2.04	1.97	1.89

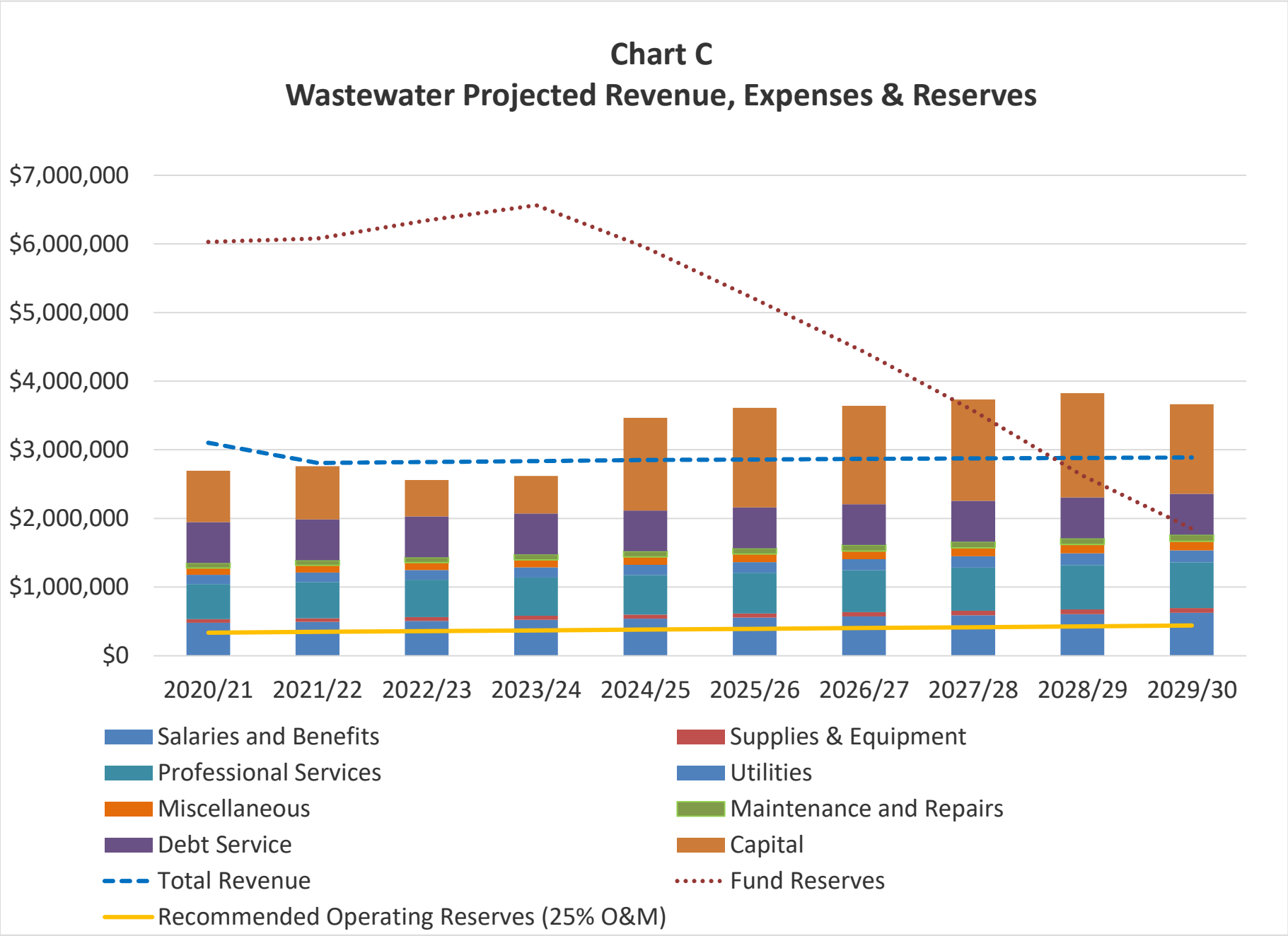


Chart C
Wastewater Projected Revenue, Expenses & Reserves
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
Salaries and Benefits
Supplies & Equipment
Professional Services
Utilities
Miscellaneous
Maintenance and Repairs
Debt Service
Capital
Total Revenue
Fund Reserves
Recommended Operating Reserves (25% O&M)

Table 7D
City of Hughson
Wastewater Cash Flow Projection (No Loan Payoff or SRF Extension, CIP)

	2020/21	2021/22	2022/23	2023/24	2024/25
Beginning Fund Balance	$9,300,075	$8,807,071	$8,323,588	$8,116,410	$7,929,331
% Rate Revenue Increase	***8.50%***	***2.00%***	***2.00%***	***2.00%***	***2.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$3,056,772	$3,133,497	$3,212,148	$3,292,773	$3,375,421
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	69,751	66,053	62,427	60,873	59,470
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$3,343,038	$3,416,065	$3,491,090	$3,570,161	$3,651,406
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$3,343,038	$3,416,065	$3,491,090	$3,570,161	$3,651,406
EXPENSES					
Operating Expenses					
Salaries and Benefits	$478,016	$492,356	$507,127	$522,341	$538,011
Supplies & Equipment	53,107	54,700	56,341	58,031	59,772
Professional Services	511,986	527,346	543,166	559,461	576,245
Maintenance and Repairs	72,100	74,263	76,491	78,786	81,149
Utilities	133,900	137,917	142,055	146,316	150,706
Miscellaneous	101,064	104,096	107,218	110,435	113,748
Total Operating Expenses	$1,350,172	$1,390,678	$1,432,398	$1,475,370	$1,519,631
NET REVENUES FOR DEBT SERVICE	**$1,992,865**	**$2,025,388**	**$2,058,692**	**$2,094,791**	**$2,131,775**
Non Operating Expenses					
Debt Service	$1,735,870	$1,735,870	$1,735,870	$1,735,870	$1,735,870
CIP	750,000	773,000	530,000	546,000	1,351,000
Total Non Operating Expenses	$2,485,870	$2,508,870	$2,265,870	$2,281,870	$3,086,870
TOTAL EXPENSES	**$3,836,042**	**$3,899,548**	**$3,698,268**	**$3,757,240**	**$4,606,501**
NET INCOME	($493,005)	($483,482)	($207,178)	($187,079)	($955,095)
Ending Fund Balance	$8,807,071	$8,323,588	$8,116,410	$7,929,331	$6,974,237
Total Unrestricted Fund Target (25% O&M)	$337,543	$347,669	$358,099	$368,842	$379,908
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.15x)	1.15	1.17	1.19	1.21	1.23

Table 7D
City of Hughson
Wastewater Cash Flow Projection (No Lo

	2025/26	2026/27	2027/28	2028/29	2029/30
Beginning Fund Balance	$6,974,237	$5,953,113	$4,980,224	$3,997,703	$3,482,992
% Rate Revenue Increase	***2.00%***	***2.00%***	***2.00%***	***2.00%***	***2.00%***
Growth - %	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
REVENUES					
Operating Revenue					
Service Charges	$3,460,144	$3,546,994	$3,636,024	$3,727,288	$3,820,843
Connection Fees	178,815	178,815	178,815	178,815	178,815
Penalties	35,000	35,000	35,000	35,000	35,000
Interest	52,307	44,648	37,352	29,983	26,122
Miscellaneous Revenue	2,700	2,700	2,700	2,700	2,700
Total Operating Revenues	$3,728,966	$3,808,157	$3,889,890	$3,973,786	$4,063,480
Non Operating Revenues					
Total Non Operating Revenues	$0	$0	$0	$0	$0
TOTAL REVENUES	$3,728,966	$3,808,157	$3,889,890	$3,973,786	$4,063,480
EXPENSES					
Operating Expenses					
Salaries and Benefits	$554,151	$570,776	$587,899	$605,536	$623,702
Supplies & Equipment	61,565	63,412	65,315	67,274	69,292
Professional Services	593,532	611,338	629,678	648,569	668,026
Maintenance and Repairs	83,584	86,091	88,674	91,334	94,074
Utilities	155,227	159,884	164,680	169,621	174,709
Miscellaneous	117,160	120,675	124,295	128,024	131,865
Total Operating Expenses	$1,565,220	$1,612,176	$1,660,542	$1,710,358	$1,761,669
NET REVENUES FOR DEBT SERVICE	**$2,163,746**	**$2,195,981**	**$2,229,349**	**$2,263,428**	**$2,301,811**
Non Operating Expenses					
Debt Service	$1,735,870	$1,735,870	$1,735,870	$1,258,138	$1,258,138
CIP	1,449,000	1,433,000	1,476,000	1,520,000	1,305,000
Total Non Operating Expenses	$3,184,870	$3,168,870	$3,211,870	$2,778,138	$2,563,138
TOTAL EXPENSES	**$4,750,090**	**$4,781,046**	**$4,872,412**	**$4,488,496**	**$4,324,807**
NET INCOME	($1,021,124)	($972,889)	($982,521)	($514,710)	($261,327)
Ending Fund Balance	$5,953,113	$4,980,224	$3,997,703	$3,482,992	$3,221,666
Total Unrestricted Fund Target (25% O&M)	$391,305	$403,044	$415,135	$427,590	$440,417
Target Met	*yes*	*yes*	*yes*	*yes*	*yes*
Debt Service Coverage (Min. 1.15x)	1.25	1.27	1.28	1.80	1.83

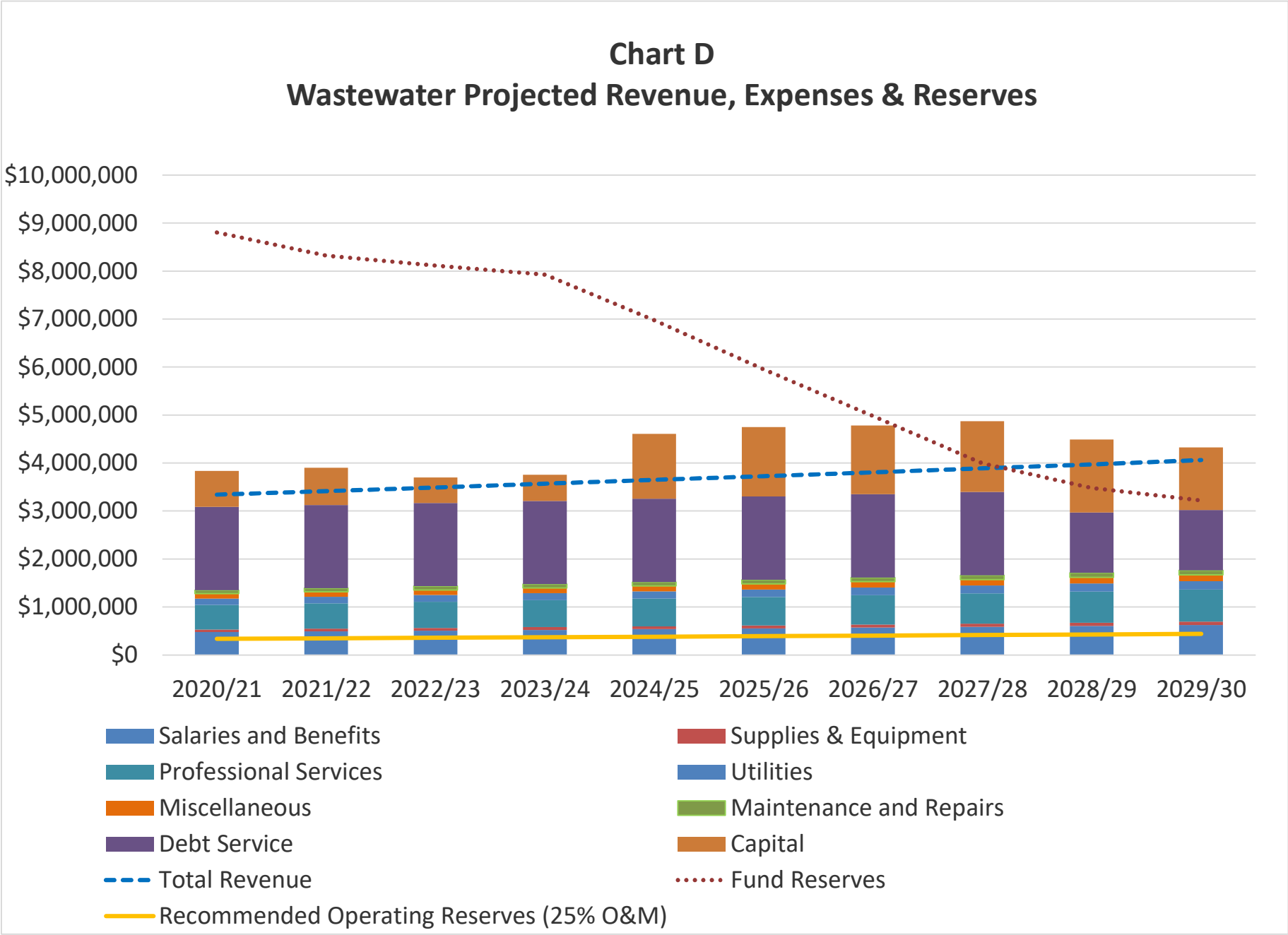


Chart D
Wastewater Projected Revenue, Expenses & Reserves
$10,000,000
$9,000,000
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
Salaries and Benefits
Supplies & Equipment
Professional Services
Utilities
Miscellaneous
Maintenance and Repairs
Debt Service
Capital
Total Revenue
Fund Reserves
Recommended Operating Reserves (25% O&M)

CITY COUNCIL AGENDA ITEM NO. 4.4
SECTION 4: UNFINISHED BUSINESS

Meeting Date:	**November 9, 2020**
Subject:	**Approval of the City of Hughson's Revised Cares Act Spending Plan**
Enclosures:	**First Amendment to CARES Act Coronavirus Relief Fund (CRF) Subrecipient Agreement – Attachment 1** **Revised CARES Act Spending Plan – Attachment 2**
Presented By:	**Merry Mayhew, City Manager**
Approved By:	Merry Mayhew

Staff Recommendation:

Approve the City of Hughson's Revised CARES Act Coronavirus Relief Fund Spending Plan.

Background and Overview:

The Coronavirus Aid, Relief, and Economic Security (CARES) Act was passed by Congress and signed into law by President Trump on March 27, 2020. This $2 trillion plus economic relief package is intended to provide funding for the costs incurred to protect the American people from the public health and economic impacts of COVID-19. The CARES Act provides $150 billion Coronavirus Relief Fund (CRF) for State, Local and Tribal Governments.

Stanislaus County received $96,085,924 of the $150 billion in CARES Act CRF funds and the funds were placed in a deferred revenue account pending the identification of eligible expenditures to claim against CRF funds.

On June 9, 2020, the Stanislaus County Board of Supervisors approved a spending plan for the $96.1 million in CRF funds:

- $30 million for direct budget support for Stanislaus County departments,
- $30 million for Community Support, split equally into two categories with $15 million for Stanislaus County's nine cities and $15 million for business revitalization and economic development support, and
- $36.1 million for County Contingency Reserve.

On June 23, 2020, the Board of Supervisors approved executing subrecipient agreements (Attachment 1) with the nine Stanislaus County incorporated cities to provide financial assistance due to the Public Health Emergency Response to COVID-19. Each city was allocated funding based on population as follows:

Ceres	$ 1,635,165
Hughson	$ 246,406
Modesto	$ 7,506,803
Newman	$ 402,191
Oakdale	$ 776,459
Patterson	$ 779,059
Riverbank	$ 845,100
Turlock	$ 2,508,525
Waterford	$ 300,292
Total	$15,000,000

The Subrecipient Agreement contained language that if the City is awarded direct federal or state funding to address COVID-19 related impacts, that the County CRF funds will be reduced in the same amount. This essentially created a funding ceiling of $246,406 for the City.

Subsequently, in the State of California Fiscal Year 2020-2021 Budget, CARES Act CRF funds were allocated to cities. With the allocation from the State, Stanislaus County reduced the initial allocation of $246,406 to the City of Hughson by an estimated $90,120 allocation from the State for a new allocation of $156,286. The adjusted balance for County/City Agreements total $9,513,927.

On July 13, 2020, the City Council approved and ratified the Certification for Receipt of Funds from the State of California for $90,109 in CARES Act Funds the City received from the State.

On July 27, 2020, the City Council approved the Sub-Recipient Agreement with Stanislaus County for the receipt of $156,286, authorized the City Manager to execute the Agreement and future amendments up to the amount of the County's original allocation of $246,406, and approved the City's Spending Plan for Cares Act Funds.

Discussion:

On October 13, 2020, the Stanislaus County Board of Supervisors approved an Amendment to the Sub-Recipient Cares Act Funding Agreement (Attachment 1) that forwards the balance of the original $15 million CRF to the cities. The City of Hughson will receive an additional $90,120 in CRF funding from Stanislaus County through this Amendment.

City staff have reviewed the CRF funds spent so far and Attachment 2 shows the breakdown of the CRF funds spent to date and anticipated expenditures through December 31, 2020. Also included is staff's recommendation for spending the remaining funds.

Because the CRF funds expire on December 30, 2020, staff reported to the State and the County, that the CRF funds have been used for Police Services costs. The decision to report the full amount as law enforcement costs was due to funds expiring in December, ensuring that the City has the time needed to spend these funds where they are most beneficial, and for ease of auditing purposes. In addition, some of the expenses on the Spending Plan were submitted on an insurance claim and the City has not heard a final determination on the claim. Having reported the use of CRF as Police Services costs prevents the City from accidentally claiming expenses in an insurance claim while also claiming the expenses through CRF. The Federal Treasury's Frequently Asked Questions on the use of CRF, state that public safety salaries can be "presumed" to be due to the COVID-19 pandemic. Specifically, the regulations state,

> "The Fund is designed to provide ready funding to address unforeseen financial needs and risks created by the COVID-19 public health emergency. For this reason, and as a matter of administrative convenience in light of the emergency nature of this program, a State, territorial, local, or Tribal government may presume that payroll costs for public health and public safety employees are payments for services substantially dedicated to mitigating or responding to the COVID-19 public health emergency, unless the chief executive (or equivalent) of the relevant government determines that specific circumstances indicate otherwise."

The administrative use of the presumptively eligible claiming strategy will generate General Fund savings and allows the City to report that all of the funds have been expended for the purpose of public safety. City staff will reserve the CRF funds in a liability account and continue funding the Spending Plan that the City Council has approved beyond December 30th and until such a time as the response to the pandemic is final and closed out. It is anticipated that the pandemic response will continue well into 2021 and until a vaccine is widely distributed to the public.

The Spending Plan includes funds for a Business Relief Program, personal protection equipment and disinfectant, communication and enforcement of public health restrictions, legal fees incurred in the communication of and enforcement of public health restrictions, equipment to improve teleworking capabilities for City Staff, portable audio and video equipment to use the Sr. Community Center for public meetings, and upgrades to public facilities to mitigate the spread of the virus. These measures are being taken to mitigate exposure to COVID-19 for both the public and City employees. While the Spending Plan provides estimates of expenses in various categories, there is a possibility that staff will need to shift funds between categories to fully expend the funds.

As shown on Attachment 2 of the Spending Plan, approximately $243,606 of CRF funds have either been expended to date or are encumbered for an expense. This leaves an additional $92,909 left to spend. Staff are recommending to spend an additional $25,000 on the Business Relief Program, if needed, after the first of the year, and to spend approximately $50,000 on portable electronic road signs that can be used to communicate public health messages to the community and $2,110 for a locking storage unit in which to store the portable audio visual equipment in the

Sr. Community Center. The electronic signs can also be used in the future by Public Works to route traffic during road work and during future events such as the clean-up day events. The remaining CRF funds will be held for additional legal fees, personal protection equipment, signs and other communication needs due to the ongoing pandemic in 2021.

Fiscal Impact:

The Stanislaus County Board of Supervisors approved allocating $15 million of CRF funds to the nine incorporated cities based on population and subsequently reduced the allocation by the amount that the State directly allocated each city. The City of Hughson received $156,286 and this Amendment provides the remaining allocation of $90,120.

First Amendment To
CARES Act Coronavirus Relief Fund (CRF)
Subrecipient Agreement

This First Amendment to CARES Act Coronavirus Relief Fund (CRF) Subrecipient Agreement is entered into by Stanislaus County, a political subdivision of the State of California ("County"), and the City of Hughson ("Subrecipient") as of October 13, 2020 ("First Amendment"). The County and Subrecipient are each referred to as a "Party" and collectively as the "Parties" herein.

Whereas, the Parties entered into that certain CARES Act Coronavirus Relief Fund (CRF) Subrecipient Agreement dated as of July 1, 2020 ("Subrecipient Agreement");

WHEREAS, under the Subrecipient Agreement the County is to pay to Subrecipient an amount of $156,286 ("Allocation"); and

WHEREAS, the Parties have agreed to increase the Allocation to Subrecipient by an additional sum of $90,120 for a revised allocation of $246,406.

NOW THEREFORE, the Parties hereby agree as follows:

1. Section 1 of the Subrecipient Agreement, Amount of Allocation, is amended to read as follows:

   "The County shall pay to Subrecipient an amount of $246,406 in accordance with the terms of this Agreement."

2. Section 7 of the Subrecipient Agreement, Subsequent Funding, is amended to add the words "between October 1, 2020 and December 31, 2020" after the words "related impacts" so Section 7 shall now read as follows:

   "Notwithstanding anything to the contrary contained herein, if Subrecipient is awarded direct federal or state funding to address COVID-19 related impacts between October 1, 2020 and December 31, 2020, Subrecipient CRF allocation shall be reduced equal to the amount subrecipient was awarded and any CRF shall be refunded by an equal amount up to the amount of the CRF allocation. If the reduction is implemented, Subrecipient shall refund to County within ten (10) days of Subrecipient's receipt of such federal/state funding CRF funds amounting to the lesser of (a) the funds paid to Subrecipient under this Agreement or (b) the federal/state funds awarded to Subrecipient."

3. All other terms and conditions of the Subrecipient Agreement not amended herein shall remain in full force and effect.

[signatures appear on following page]

IN WITNESS WHEREOF, the Parties have executed this First Amendment as of the date first written above.

COUNTY OF STANISLAUS

By: _____
Jody Hayes, Chief Executive Officer

APPROVED AS TO FORM:

By: _____
Thomas E Boze, County Counsel

CITY OF HUGHSON

By: _____
Merry Mayhew, City Manager

By: _____
Daniel J. Schroeder, City Attorney

Attachment 2

City of Hughson
CARES Act Spending Plan – REVISED 11-9-2020

State of California: $ 90,109

Stanislaus County: $246,406

Expenses for communication and enforcement by State, territorial, local, and Tribal governments of public health orders related to COVID-19:

- Legal Fees - $9,754 actual
- Video conferencing software - $106 actual
- Signs for parks and businesses, including staff time - $2,345 actual
- Electronic road signs for communicating public health restrictions – est. $50,000

Expenses for acquisition and distribution of protective supplies, including sanitizing products and personal protective equipment for public health and safety workers in connection with the COVID-19 public health emergency:

$4,000 actual

Payroll expenses for public safety, public health, health care, human services, and similar employees whose services are substantially dedicated to mitigating or responding to the COVID-19 public health emergency:

- Payroll expenses of Public Safety-law enforcement (March 1 – December 2020)**

Expenses of actions to facilitate compliance with COVID-19-related public health measures, such as:

Expenses to improve telework capabilities for public employees to enable compliance with COVID-19 public health precautions:

- Equipment to improve telework capabilities for public employees - $14,557.43 actual
- Expenses of providing paid sick and paid family and medical leave to public employees to enable compliance with COVID-19 public health precautions.

Expenses associated with the provision of economic support in connection with the COVID-19 public health emergency:

- Business Relief Program - $50,000; actual expenditures to date $20,200 with $29,800 encumbered for businesses who have not yet turned in reimbursement requests.

- Business Relief Program - $25,000 additional allocation if needed in 2021

Any other COVID-19 related expenses reasonably necessary to the function of government that satisfy the Fund's eligibility criteria:

- Portable equipment used to set up Sr. Community Center for City Council meetings that will allow for appropriate social distancing and public meetings - $51,036 actual; additional $2,110 for a locking storage unit in which to store the equipment.
- Upgrade public facilities with automatic opening doors, auto opening gates, sensing faucets and toilets to assist in mitigating the spread of COVID-19 - $76,666 actual
- City Hall reception barrier with speaker boxes and door - $11,637 actual

Payroll expenses of Public Safety-law enforcement (March 1 – December 2020)**

Expenses of providing paid sick and paid family and medical leave to public employees to enable compliance with COVID-19 public health precautions - (March 1 – December 30, 2020)**

The remaining CRF funds (approximately $50,414) will be held for additional COVID related costs into 2021 as noted on this revised spending plan.

***** Expenses also submitted for insurance reimbursement

******The State has requested that the City submit the full amount of expenses anticipated in the event there is additional funding for cities in the future or if some cities do not spend their full allotment, the remainder will be redistributed. The following expenses are included on the Spending Plan as allowed by Federal CARES Act Guidelines, in the event other anticipate expenses are disallowed or additional funding becomes available in a short time frame.

CITY COUNCIL AGENDA ITEM NO. 5.1
SECTION 5: PUBLIC HEARING

Meeting Date:	**November 9, 2020**
Subject:	**Parkwood Subdivision Project- Summary of Development Agreement Changes**
Enclosures:	**Original Staff Report – September 14, 2020 Public Hearing** **Planning Commission Staff Report – August 18, 2020 Public Hearing** **Project Plans** **Conditions of Approval** **Mitigation Monitoring and Reporting Program** **Design Expectation Checklist** **Response to Comments** **Public Comment (Emails)**
Presented By:	**Lea Simvoulakis, Community Development Director**
Approved By:	Merry Mayhew

Parkwood Public Hearing Synopses:

On July 21, 2020, the Hughson Planning Commission held a public hearing for the Parkwood Subdivision Project. After public comment was received, and a discussion was held between the Commission and staff, the Commission continued the item to the August 18, 2020 Planning Commission meeting so that they could have more time to review the project packet. At the August 18, 2020 meeting, the Planning Commission voted 3-2-0 (Commissioners Strain and Henley voting no) to recommend approval of all six components of the Parkwood project to the City Council.

At the September 14, 2020 Hughson City Council meeting, a public hearing for the Parkwood Subdivision Project was held. After staff and public comment was received, and a discussion was held amongst the Councilmembers, the Mayor made a motion to continue the item until the October 12, 2020 meeting so that staff could continue to research areas of concern and provide more information to the Council at a later meeting. The Council voted 4-1-0 (Councilmember Bawanan voting no) to continue the item until the October 12, 2020 meeting.

At the October 12, 2020 meeting staff again made a presentation to the Council to address items of concern noted at the previous meeting. The Council discussed the project and identified their issues of concern and support. Councilmember Buck indicated that if a bridge were to be proposed from Hatch Road into the project, there would be more support for the project. The Mayor asked the developer to respond to this comment. The developer offered to put in a bridge from Hatch Road with two conditions: a 50% credit in Street Development Impact fees and that the bridge would commence on or before the issuance of the 150th Certificate of Occupancy. The City Attorney suggested that the meeting be continued until the Development Agreement could be modified to include the construction of the bridge and any other terms associated with this offer. A motion was made to continue the meeting until November 9, 2020 so that the Development Agreement could be modified. The motion passed with a 4-1-0 vote (Councilmember Bawanan voting no) to continue the meeting and allow for modifications to the Development Agreement be made before a vote on the project was taken.

Changes to the Development Agreement

The following changes have been made to the Development Agreement:

- Section 6.04 – Modified to include Section 6.04(e)(i) which addresses the credits and provides a trigger on construction (Page 19 of DA)
- Exhibit E – "Conditions of Approval" – New Condition #40 added to address construction timeline and credit *(*Conditions of Approval updated accordingly)
- Exhibit F – "Fees" – Have been updated to reflect the 50% "Streets Fee" credit related to the Rubirosa/Hatch Road connection.

Section 6.04 Change

Section 6.04(e)(i) is an addition to the DA indicating that the Developer will plan, design, bid, and construct the extension of Rubirosa Road across the Turlock Irrigation District Main Canal to Hatch Road in exchange for a 50% credit for the Street Development Impact fee. Currently the City is requiring the Developer to pay $4,101 per dwelling unit for the Street Development Impact Fee. This would be a total of $1,226,199 in Street Impact Fees. The 50% reduction in this fee would allow the Developer to pay $2,050.50 per dwelling unit in Street Impact Fees for a total of $613,099.50 in Street Impact Fees.

This section also identifies that the construction of the Rubirosa Road extension would commence on or before the issuance of the 150th Certificate of Occupancy within the project.

Exhibit E- Conditions of Approval

Condition 40, "Extension of Rubirosa Road" has been added to the Conditions of Approval for the project. This condition reiterates that the Developer shall plan, design, bid, and construct the extension of Rubirosa Road across the Turlock Irrigation District

Main Canal to Hatch Road. The Condition also identifies the 50% credit for the Street Impact Fee.

Exhibit F- Fees

The Development Impact Fees Schedule has been updated to reflect the 50% credit on the Street Development Impact Fee:

1)	Public Facility Fee	$3,050.00
2)	Storm Drain Fee	$2,814.00
3)	Sewer Fee	$13,755.00
4)	Water Fee	$8,119.00
5)	Construction Water Fee	$155.00
6)	Street Fee	~~$4,101.00~~ $2,050.50
7)	Park Development Fee	$2,667.00*
8)	Park In-Lieu Fee	$0.00**
9)	Community Enhancement	$1,008.00
10)	Misc. Fees (Average)	$42.00
11)	Downtown Revitalization Fee (DRF)	$750.00
	Total	**~~$36,461.00~~ $34,410.50**

* Pursuant to Section 6.05(d)(2) of the Development Agreement, Developer may receive a maximum credit of $797,433.00 (299 Residential lots x $2,667.00 = $797,433.00) for the identified infrastructure improvements.
** The Park-in-lieu fee has been satisfied by dedication of parkland.

No other changes are proposed for the development project at this time.

CITY COUNCIL AGENDA ITEM NO. 5.1
SECTION 5: PUBLIC HEARING

Meeting Date: **September 14, 2020**
Subject: **Parkwood Subdivision Project- Planning Commission Summary Report**
Presented By: **Lea Simvoulakis, Community Development Director**

Approved By: Merry Mayhew

Staff Recommendation:

Staff recommends that the City Council:

1. Adopt Resolution No. 2020-55**,** Approving a Mitigated Negative Declaration for the Parkwood Hughson Development Project, APNS 018-017-002, -010, - 014.

2. Adopt Resolution No. 2020-56, Approving a General Plan Amendment 20-01 to change the Land Use diagram from Low Density Residential, Medium Density Residential, and Service Commercial to Medium Density Residential on a 56.04-acre site.

3. Adopt Resolution No. 2020-57, Approving a change in the Zoning District Designation from R-1 single Family Residential, R-2 Medium Density Residential, and C-2 General Commercial to R-2 Medium Density Residential on a 56.04-acre site.

4. Adopt Resolution No. 2020-58, Approving a Vesting Tentative Map for the Subdivision of a 56.04-acre property into 299 residential lots and 3 parks.

5. Adopt Resolution No. 2020-59**,** Approving a Conditional Use Permit to allow a Planned Development Overlay for the Proposed Parkwood Hughson Residential Subdivision, APNS 018-017-002, -010, - 014.

6. Introduce and waive the first reading of Uncodified Ordinance No. 2020-06, Approving a Development Agreement between Parkwood Hughson, LLC and the City of Hughson.

Background and Overview:

The City Council is being asked to consider the six action items listed above for the Parkwood Development project. The purpose of this memo is to provide a summary of the discussion and public comment related to the Parkwood project that occurred at the July 21, 2020 and August 18, 2020 Planning Commission meetings. For the details related to the project, please read and review the attached Planning Commission staff report. The Planning Commission staff report and the accompanying documentation that follows provides you the information necessary to evaluate this project and to make a determination on the above recommendations.

Brief Synopsis:

On July 21, 2020, the Hughson Planning Commission held a public hearing for the Parkwood Subdivision Project. At this meeting, the Community Development Director gave a presentation on the project as it related to the land use facts and environmental findings of the project. The applicant, Mid Valley Engineering (MVE), also gave a presentation on behalf of the developer and landowners. After the presentation, the Commission heard public comment. After public comment was received, and a discussion was held between the Commission and staff, the Commission continued the item to the August 18, 2020 Planning Commission meeting so that they could have more time to review the project packet.

At the August 18, 2020 Planning Commission meeting the Community Development Director again provided a presentation outlining the current land use facts and environmental findings for the project. The applicant, MVE, also provided a second presentation. After both presentations, the Commission heard public comment on the item and held a discussion about the project.

Outcome:

Commission voted 3-2-0 (Commissioners Strain and Henley voting no) to recommend approval of all six components of the Parkwood project to the City Council.

July 21, 2020 Planning Commission Meeting Discussion:

Staff provided a presentation related to the land use facts and issues related to the Parkwood Project. After staff's presentation, the first question raised by Commissioner Strain was about the configuration of one- and two- story homes in the four- and six-pack developments. Staff deferred this question to the developer.

Commissioner Henley then inquired about the City's existing water quality and whether the proposed development would be constructing a well. Staff informed the Commissioner that the applicant was required to perform an evaluation of the proposed Parkwood Subdivision water system to see if there was sufficient water for the proposed project, and whether this water was drinkable. A full hydraulic model of the City's water system, including existing and pending wells and storage, was run by the City's water consultant, Cort Abney. The hydraulic model results indicated that the Parkwood Subdivision water system as proposed, would provide adequate flow and pressure to meet the highest anticipated peak hour needs of the

community. This model showed that there was sufficient water within the City to accommodate the need of the new residents. Additionally, staff identified that the applicant would be paying a double water development impact fee to account for future upgrades to the water system to ensure that the City can continue to provide clean water to the community. At the double rate of $8,119 per home, the total collectable fees for this project just for water capital improvements is $2,427,581. Staff noted that the applicant would provide this double fee in lieu of constructing a well onsite.

Chair Evans asked staff whether the project would have to provide their own sewer infrastructure and how this project would impact the degrading sewer line along Tully Road. Staff informed the Commission that all onsite sewer infrastructure needed to support the project would be constructed by the developer at a cost to the developer. Further, staff noted that the project will be required to pay $13,755 per house in Sewer Development Impact Fees. This $4,112,745 will go to necessary upgrades to the sewer system. Additionally, staff failed to address that the current sewer line on Tully that is collapsing at the moment is currently running on a bypass directing sewer to the newer line installed for the development in the early 2000s. This line will carry the proposed project's sewer out to the treatment plant and is in better condition than the pipe (known as the DFA line) that has collapsed several times on Tully Road.

Commissioner Evans then opened the public hearing. The applicant gave a presentation on the project. Commissioner Strain asked the Developer how many entrances there were into the development. The applicant confirmed that there would be three entrances into the subdivision- one from Santa Fe, one from Flora Vista Drive and one from Estancia Drive. The applicant noted that as the property develops to the east of the project site, there will be an entrance from Tully Road in some form.

Commissioner Cloherty asked what the time frame for completion of the project would be. The applicant stated that the timeline would be dependent upon the market, but the applicant believed that the project would be built out in 3-5 years.

Commissioner Cloherty asked if the school district would have time to respond to the demands placed on them by the new population growth. The applicant stated that the project will be built in phases and that not all 299 homes will be constructed at once, giving the district time to accommodate the growth in students. Commissioner Cloherty asked if City staff or School staff was available to answer the question. There were no school district staff available to directly answer the question. However, staff identified that enrollment at the schools ebbs and flows each year and that school impact fees would be going to the district to address increased enrollment.

Commissioner Strain asked if there was a price range established for the homes and the applicant responded that it was too soon to tell what the price of the homes would be.

Chair Evans asked if the project would address the City's need for low-income housing. Staff indicated that the projects would not be deed-restricted affordable

housing, but that the smaller lots would make the homes more affordable to residents.

After the applicant's presentation and questions by the Commissioners, Ashton Gose, Deputy City Clerk, read the public comments received via email. The five email comments broadly encompassed traffic concerns, school enrollment, the conformance of the project to the design expectations, and the density of the project. There was also a concern that the public could not participate in the public meeting because it was held online during the pandemic. Public comment in the chat section raised concerns over the City's current water supply, impact of development on the sewer system, the availability of school development impact fees, and the adequacy of WebEx as a public forum for a meeting.

Staff first addressed the chat comments since the comments were considered to be "in person". Staff noted that the project is required to show that there is sufficient water and sewer capacity before the project can be considered. As previously noted, the project applicant had to run a hydraulic model to show that there was sufficient water for the new development. Staff noted that the environmental impact report addresses both water and sanitation and identified that the developer would be putting in their own sewer improvements to connect to the City's current system. Staff noted that school impact fees are due at the time a building permit is issued. The schools will be receiving $4.08 per square foot of housing being constructed. Given the number of homes and the anticipated sizing, over $3 million dollars will be going to the school district in school impact fees. The school district receives the funds as each building permit is pulled. Staff noted that the General Plan anticipated this growth and that it is the school district's responsibility to accommodate these students. Staff noted that the State of California allows public meeting to be in a virtual forum given the restrictions in place for group gatherings.

After the chat comments were addressed, the individuals who participated in the meeting virtually then asked individual questions. The first question raised by public was related to the need for a bridge. The member of the public noted that even though the traffic report does not indicate that a bridge is required for non-commercial uses, that doesn't mean there shouldn't be one. This individual also reiterated other concerns already raised during public comment. The final concern raised by this person was a need to preserve the commercial-designated land for a grocery store.

In order to address these concerns, the traffic consultant and members of the project's environmental team responded to the public comment. The traffic consultant is the same consultant who prepared the General Plan EIR work for the City. The consultant reiterated that the bridge anticipated for this site was only needed because of the anticipated traffic assumptions generated by the commercial uses. If the commercial uses are removed, then the need for the bridge is removed. The traffic consultant stated that under CEQA, an impact is determined based on what the General Plan deems acceptable. The General Plan states that intersections and road segments that function at a D level or better are not an impact under CEQA. All of the intersections and road segments impacted by the development function at a B level or better. The only intersections that function at a

C level already function at a C level and this does not change with the introduction of the project.

The environmental consultant addressed the school impact issue. He noted that Senate Bill 50 requires that a school impact fee identified by the school district be charged to charge developers for their impact to existing schools. According to this bill, the impact fee paid serves as mitigation for any impact on a school district under CEQA. The courts have stated that adding capacity to a school is not an environmental impact under the law, and that school districts are required to accommodate new students and use impact fees to do what is necessary to make room for these future students.

A member of the public challenged the validity of the traffic report if it was based on a document written 15 years ago. This was an incorrect deduction on the part of the individual making the comment. The General Plan sets out a 20-year vision for the city based on determined land use designations. Those land use designations identify the proposed use of the site. The traffic consultant stated that land uses come with certain traffic assumptions and he confirmed the basis for the traffic analysis done matches those land uses. He then stated that he used current traffic counts for those land uses to calculate expected traffic. To further explain, the site was given a commercial designation 15 years ago. The assumptions of commercial and residential traffic patterns as they exist today were used to analyze the traffic patterns and projected traffic trips. With this analysis it is still clear that without a commercial component to the site, a bridge over Hatch is not warranted.

After the public's comments were addressed, the public hearing was closed, and the Planning Commission deliberated on the proposed project. The Commission ultimately decided that they would like to continue the meeting to have the opportunity to read the material presented more thoroughly. The meeting was continued until the August 28, 2020.

August 18, 2020 Planning Commission Meeting Discussion:

The Parkwood project was the only item on the agenda for this Planning Commission meeting. After the procedural items were finished, staff provided a presentation on the land use facts and issues related to the Parkwood Project. This project presentation included the same information provided in the presentation at the previous meeting, but staff also included additional information to address comments raised at the previous meeting. After staff's presentation, the applicant, MVE, provided an updated presentation as well.

The format for this meeting was slightly different than the last meeting. The Deputy City Clerk did not read the public comments received by email, as there were several form letters that were lengthy. Instead, all public comment received prior to the meeting were attached to the staff report and given to the Commissioners. These letters are attached to the staff report and in the packet of information for this meeting. Since the emails were not read, after the presentations, the members of the public in the virtual meeting that wished to speak were allowed to provide public comment first.

The first public comment suggested that there was a private real estate deal that was “killed” because a bridge was required by the former Community Development director. The individual also identified what a “small town feel” meant to him and that small lots do not equal a small town feel for him. The individual also noted that he wanted to feel safe while riding a bike through town.

Staff responded that they cannot speak to a prior project discussed with Community Development Director French. There was no project “on file” with the City at any time for this project site. That means that no project made it to a hearing body in order to be denied. Whatever private conversations that happened between this individual and former Director French could not be validated at that time.

In response to the second component of the individual’s comment, staff went through the design expectations and pointed out how the project was conforming to the design expectations that speak to developing a subdivision’s character to match the existing character of Hughson. Staff highlighted the different ways the project is implementing design features that will enhance the “small community” feel and provide a safe and attractive environment for families who choose to walk, ride and play in the subdivision. Specifically, staff noted that there would several points of ingress and egress connecting local streets, bikeways and sidewalks; that the community would not be gated which creates a feeling of exclusion rather than inclusion; that there would be homes fronting the parks, putting “eyes on the street” which adds safety for the community; there will be special paving treatments at crosswalks and key intersections creating a sense of place; there would be landscaping and monuments at key entry points; there will be sidewalks and pedestrian pathways on both sides of the street; these pedestrian walkways will be separated from the curb by a landscaped planter strip; there will be street trees planted in regular intervals in these areas; the trees will be of the variety that has a large canopy for ground coverage; there will be a Class 1 bikeway for off-street, non-vehicular pedestrian circulation; there will be decorative light fixtures and street signs; there will be landscaped setbacks for every house; and there will be a neighborhood entry marker that contributes to creating a sense of place for the residential community to name a few ways the project conforms to the Design Expectations and promotes a “small town feel” for the community.

A second commenter listed a variety of concerns. The individual asked for a detailed plan as to how the school district intended to accommodate the new students that would be coming to the school district from this new development. The individual felt that the bike path, with holes in the fence, was a bridge to nowhere. The individual felt that the comment made by the applicant that kids don’t play outside anymore was wrong. The individual asked if traffic studies have been done at the school sites. The individual questioned the population growth anticipated by the Housing Element.

Brenda Smith, the Superintendent of Hughson Unified School District addressed the issues related to school enrollment and school capacity. For the 2017 plan, the Superintendent indicated that they knew they would have new subdivisions coming into the City, so they raised their development fees accordingly to be prepared for future growth. The development fees are only used for facility upgrades. Superintendent Smith indicated that when the funds are received, they go into a

specific account for building upgrades. Superintendent Smith noted that over the last few years there has been a decline in enrollment and that the school district launched an enrollment campaign to bring students into the district. This campaign brought in 70 students into the district. Some of the schools are limited in physical space to add new classrooms if needed, especially the elementary school. However, the other campuses have room for a permanent building or portables should they be needed. Superintendent Smith identified that 7 new classrooms would be needed for the projected growth of the Parkwood Development. Superintendent Smith indicated that the high school has classrooms that are not in use that need to be taken down and replaced. The school district initially planned on a November 2020 school bond in the future to address building maintenance on the high school. The bond will no longer be proposed in November. Superintendent Smith noted that growth in student population has actually been slower than anticipated in the 2017 study. Student growth has been flat and there was a decrease over the last few years. The Superintendent was supportive of the project and felt that this subdivision would bring in the families that could start rebuilding the kindergarten population in the school district. She stated that there are low elementary school numbers because once families move in, they don't leave and that means there are no students in lower grades coming to the schools. The new homes provide the opportunity to jump start the school-age population.

Staff noted that the comment about the 200 students coming in to Hughson with interdistrict transfers was to show that the perception is that the schools are full in town, yet the school district has to actively recruit outside of town to bring students into the system. Superintended Smith confirmed this.

Staff suggested that the applicant did not mean that people do not play outside anymore so the need for a backyard is moot. Staff noted that when there is access to safe and clean green space, the need for a private backyard is reduced. Hughson did not own a park until 2018. The other green areas in town are considered stormwater basis and flood for a portion of the year, rendering them unusable. This project will provide three parks, and only one is a dual-use basin.

Staff addressed the "trail to nowhere" comment by stating that the trail actually connects to the walking trail in Ceres and that the General Plan identifies this area of the city as a desired location for a fully developed trail. The project applicant has improved the area of the bank that abuts their property. As future development occurs, it is hoped that it will mirror this new trail. There is a subdivision that will create a break in the trail as it was allowed to be built right up against the trail, but that doesn't mean the rest of the area along the canal can't link up in the future.

Staff addressed the projected population growth from the Housing Element by noting that after the development of this site, there is very little untouched land left in the City available for housing. It is actually quite plausible that the 9,500 number will carry the city through 2045 since there is little land left available for housing development.

The traffic consultant addressed traffic around the schools. There is always traffic around schools during the morning drop off and the afternoon pick up times. This is an unavoidable reality for areas around schools. With or without this development,

traffic will not decrease at the schools until there are no students attending schools. This is not a unique situation to Hughson.

The traffic consultant further discussed the standards for traffic on local roads. A street can handle far more traffic than what people in town think is acceptable. The anticipated 3,000 daily trips on the road is far less than the 10,000 trips that the road can handle. As such, the City has considered how many trips is in fact acceptable to have traveling down the road, and the 2,000 trips that this project generates is within this acceptable range.

The next individual equated his mullet to the trend of building dense housing units in Hughson. The individual stated that the Commission should not approve a “trend” since his mullet trend was a bad idea. The individual questioned the amount of acceptable traffic on local streets. The individual asked why a bridge is not required since a bridge was required for Euclid. He questioned how this project conforms to the grid network. The individual questioned the elimination of prime commercial property. The individual discussed “prime arterial streets” attracting commercial uses.

Staff stated that using the word “trend” was a poor word choice for the staff report. Staff was trying to indicate that the cost of land and materials in California is consistently increasing, forcing developers to build smaller lots to get more houses in the project in order to make a profit that is large enough to go through the planning and building process. The word trend was meant to reference a pattern in development that isn’t changing in the State of California any time soon. So unlike the mullet, smaller lots will become the norm rather than the exception.

Staff addressed the elimination of commercial property from the site and why it is a benefit to the community. The Downtown area is the prime commercial hub for a smaller city like Hughson. When you start to have other commercial uses located away from the Downtown area, you are depriving this hub of all of that commercial activity. Commercial at Hatch and Santa Fe will take away from the success of the commercial uses at Hughson’s core. As far as a grocery store is concerned, there is no guarantee that a grocery store would locate at this location, so to preserve this land for that use is essentially ensuring no development will occur there. There are other parcels of land being considered for a grocery store in the downtown area. There is a property owner working to amass properties for the store should one be interested in locating in Hughson.

The traffic consultant again addressed the issue of the bridge, the arterial street networks, and the presumed assumptions in the traffic report. The General Plan Environmental Impact Report addressed the bridge location and linked its presence in the Circulation Element to the retail center. The Mountain View Road extension was intended to provide capacity for access to the commercial and higher density residential uses proposed for the area surrounding the roadway, and was not designed with the sole purpose of relieving congestion at the Hatch Road/Santa Fe Avenue intersection. Eliminating that commercial use reduces the total traffic volume on the connection. This means that without the commercial component, there would be no reason for people that don’t live in this area to turn off of Hatch at a Mountain View bridge.

The project does show that there will be more traffic in the area. More people mean more cars. However, the 3,000 vehicles per day (vpd) threshold is commonly used by cities and counties to help plan local streets. The current daily traffic volumes on the local streets south and east of the project carry volumes that range from 297 to 926 vpd. The Parkwood project is projected to add 45 to 365 vpd, or about 2% to 12% of the threshold volume. The public's statement that a 60% increase in traffic is unacceptable seems like a lot of traffic when it is taken out of context. The 60% increase is an increase of one to two more cars when the existing traffic amounts are not high to begin with.

Staff noted that the Euclid development was not required to build the Euclid bridge. The Development Agreement for that development does not have a clause in it stating that the traffic generated by this subdivision would necessitate a bridge. Given the amount of development that occurred in the City as a whole, a new bridge was planned in the General Plan for the Euclid and Hatch area. This street extends for two miles and is a major road through the City and county. The volume of traffic that Euclid carries is nowhere near as heavy as the cars that would be using the proposed bridge. It would only carry those people living in the Parkwood subdivision, and that is not a comparable amount of traffic.

The Commission closed the public comment period at this point. Each Commissioner was given the opportunity to speak on the project. Commissioner Henley noted that she was on the Planning Commission for a year and she felt her job was to represent the community of Hughson. Commissioner Henley brought up that the City used to have a park that is no longer there. Chair Evans thanked everyone for participating and indicated that his job is to determine whether a project is supported by the General Plan and remove personal feelings.

Commissioner McFadden motioned to approve the project, and Commissioner Evans seconded the motion. The motion carried 3-2-0 (Commissioners Henley and Strain voting no) on all six recommendations.

Updated Information

Since the Planning Commission meeting, the property owners made an offer of a $750 fee per house for a total of $225,000 to be put toward the development of the Downtown area in exchange for eliminating the commercial uses at the project site. This offer is being incorporated into the Development Agreement. Should the project be approved, the fees collected under this special fee will be put towards the economic development and commercial growth of the Downtown.

PLANNING COMMISSION
AGENDA ITEM NO. 4.2
SECTION 4: PUBLIC HEARING

Meeting Date: **August 18, 2020**
Subject: **Parkwood Subdivision Project**
Enclosures: **Plans**
Design Expectation Checklist
Mitigation Monitoring and Reporting Program
Presented By: **Lea C. Simvoulakis, Community Development Director**

PROJECT DATA	
Applicant:	Mid Valley Engineering-MVE, Inc.
Existing Zoning:	C-2 Commercial General R-1 Low Density Residential R-2 Medium Density Residential
Proposed Zoning:	R-2 Medium Density Residential with Planned Development Overlay
Existing General Plan:	Service Commercial Medium Density Commercial Low Density Commercial
Proposed General Plan:	Medium Density Residential
California Environmental Quality Act:	Mitigated Negative Declaration

APPLICATION SUMMARY

The proposed project includes a General Plan Amendment, a Zone Change, a Vesting Tentative Map, a Conditional Use Permit for a Planned Development Overlay Zone, and a Development Agreement for the project known as the Parkwood Subdivision Project (Parkwood). The Parkwood projects is a proposed 299 home subdivision development on a 56.04-acre lot with three community parks. The Planning Commission serves as a recommending body for these actions and can choose to recommend approval or denial to the City Council.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission:

1. Recommend that the City Council Adopt Resolution No. 2020-XX Approving a Mitigated Negative Declaration for the Parkwood Subdivision Project.

2. Recommend that the City Council Adopt Resolution No. 2020-XX Approving a General Plan Amendment 20-01 to change the Land Use diagram from Low Density Residential, Medium Density Residential, and Service Commercial to Medium Density Residential on a 56.04-acre site.

3. Recommend that the City Council Adopt Resolution No. 2020-XX Approving a change in the Zoning District Designation from R-1 single Family Residential, R-2 Medium Density Residential, and C-2 General Commercial to R-2 Medium Density Residential on a 56.04-acre site.

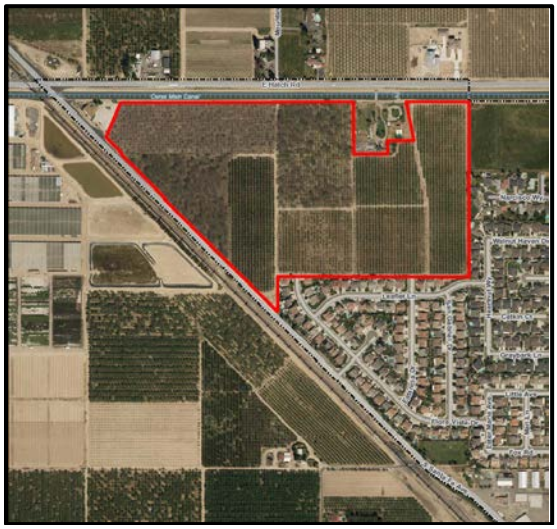
4. Recommend that the City Council Adopt Resolution No. 2020-XX Approving a Vesting Tentative Map for the Subdivision of a 56.04-acre property into 299 residential lots and 3 parks.

5. Recommend that the City Council Adopt Resolution No. 2020-XX Approving a Conditional Use Permit to create a Planned Development Overlay Zone on a 56.04-acre site.

6. Recommend that the City Council Adopt Ordinance No. 2020-XX Approving a Development Agreement between Parkwood Hughson, LLC and the City of Hughson.

PROJECT LOCATION

Location	South East Corner of E. Hatch Road and Santa Fe Avenue
Assessor Parcel No.	018-017-002, 018-017-010, 108-018-014
Annexation Date	August 14, 2006
Acreage	56.04 acres



As the above map indicates, the proposed project site is located at the south east corner of East Hatch Road and Santa Fe Avenue. The project site is approximately 56.04 acres and was annexed into the city limits on August 14, 2006. The site is currently used for agricultural uses and the existing orchards include 5,600 walnut and almond trees. The project site is immediately south of the Turlock Irrigation District (TID) Ceres canal and East Hatch Road. There are agricultural uses located in Stanislaus County to the north of the site, across the canal. There are single family residential uses to the east and south of the site with Santa Fe avenue and the railroad to the west of the site.

There are two areas that are not part of the project site. The first is the Jehovah Witness Kingdom Hall building that is located directly at the tip of the intersection of Hatch and Santa Fe. The second area is two existing single-family homes with associated garages and buildings located on the north boundary of the site adjacent to the TID canal.

PROJECT BACKGROUND

The proposed project includes the subdivision of the 56.04-acre site into 299 single-family residential lots with one single-family house per lot. The density for this site is 5.34 dwelling units per acre. The lots would range in size form 5,005 square feet to 13,280 square feet. There will be two types of single-family housing units. The first is called a "Park Home" which would include the traditional residential lots on the 5,005 to 13,280 square feet lots. The second is called a "Courtyard Home" which would include lots of approximately 5,250 square feet with a shared driveway between a cluster of lots. There will be 99 Park Homes and 200 Courtyard homes. The below map identifies the two areas not part of the project and have them listed as N.A.P. (not apart of project).

Of the 56.04-ares, 6.14 will be park or enhanced landscaped green space. The three parks are a total of 4.88 acres of just park space. The remaining 1.26 acres of green space will be located in the 25' wide landscape buffer along Santa Fe Avenue, along the Class I Bike trail along the TID Ceres main canal, and in a .15-acre enhanced landscape area at the entrance to the project.

In order to construct the project, the existing walnut and almond orchards will need to be removed. When the site was annexed into the City in 2006, it was anticipated that the orchard use of this site would eventually be terminated since the site was pre-zoned with three non-agricultural zoning districts: C-2 General Commercial, R-2 Medium Density Residential, and R-1 Low Density Residential, to match the existing General Plan land use designations of Service Commercial, Medium Density Residential, and Low Density Residential. As a required mitigation for the removal of the 5,600-tree orchard, the project is required to plant a minimum of 560 trees throughout the project. The applicant is proposing to plant over 600 trees, some of which will be non-fruit producing orchard trees to retain the orchard-like feel of the area.

ANALYSIS

The proposed application components were analyzed with respect to conformance with:

1. The Hughson General Plan, adopted 2005
2. The Hughson Municipal Code
3. The Design Expectations, adopted 2004
4. California Environmental Quality act (CEQA)

The Hughson General Plan

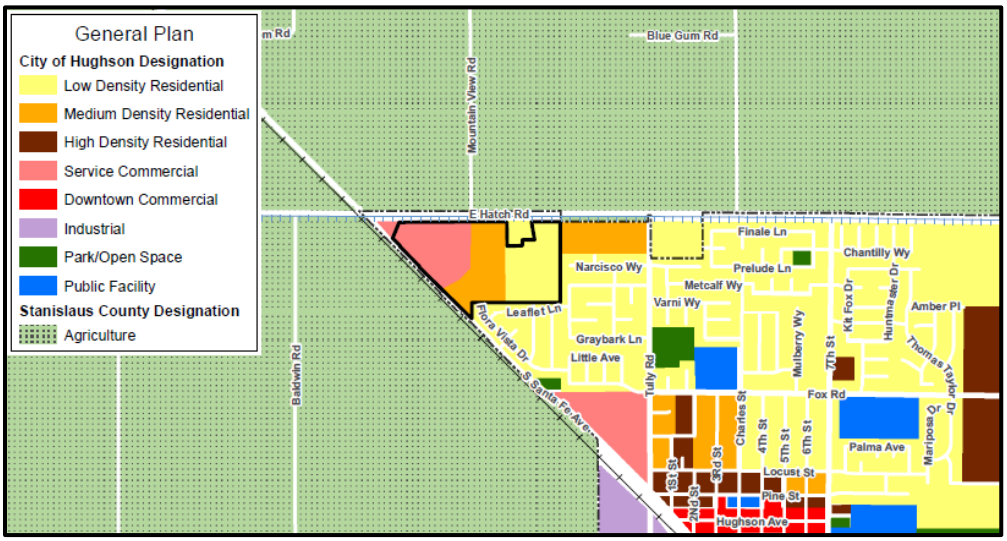
<u>Existing and Proposed Land Use Designation</u>

The first component of the project is a General Plan Amendment request to change two of the existing General Plan Land Use Designation of the site from Service Commercial and Low Density Residential, to Medium Density residential.

Existing Land Use

The site has three existing General Plan Land Use Designations: Service Commercial, Medium Density Residential, and Low Density Residential. The Service Commercial designation of the site is 19 acres of the overall site, the Medium Density Residential designation is 17.73 acres of the overall site, and the Low Density Residential Designation covers 19.28 acres of the overall site. The remaining .03 acres are not designated as they are in the existing right of way of Santa Fe. The below map shows the existing land use designations of the site and the properties surrounding the site. The existing land use designation shows that there are Medium Density residential uses directly adjacent to existing Low Density Residential uses at the terminus of Flora Vista Drive and along the

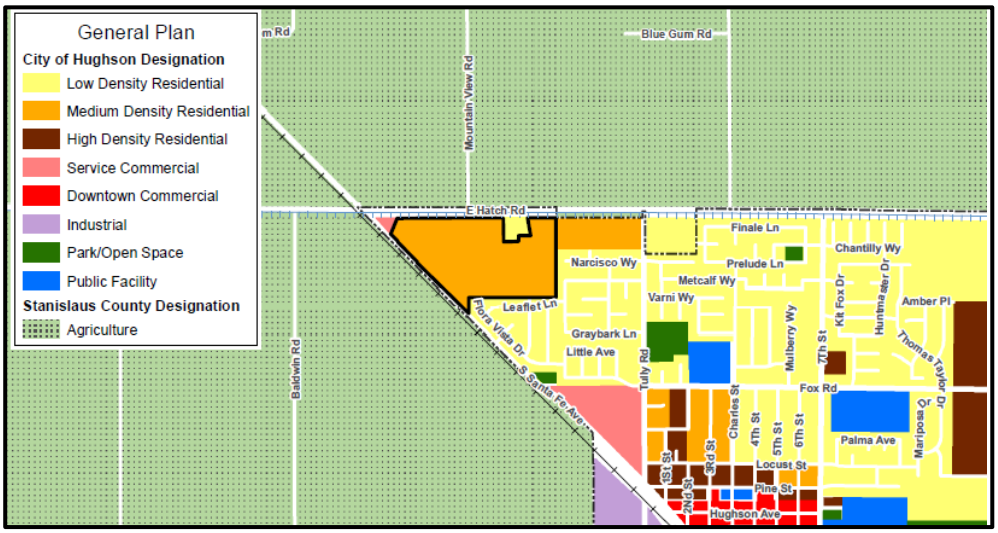
back side of some homes along Leaflet Lane. There is also an existing Medium Density Residential designation north of Narcisco way which is not part of this project.



Should this project not be approved, the current property owners could choose to develop a project that is consistent with the three different land use designations as they exist today. This means that they would be able to build commercial uses on more than a third of the existing property, and medium and low density uses on the remaining two-thirds of the site without Council or Commission approval of the use. The developer may need other approvals or permits from the Council or Commission for the construction of buildings, but they would not need to ask permission to develop the land with conforming residential or commercial uses.

Proposed Land Use Designation

The General Plan Amendment request is to change the Service Commercial and Low Density Residential land use designation (38.28 acres) to Medium Density Residential.



The Medium Density Residential land use designation promotes a mixture of single-family houses, duplexes, triplexes, fourplexes, and townhouses within the same neighborhood. This category is designed to provide a transition between lower density housing and commercial or more urban uses. The designation also ensures that there will be a variety of housing types in Hughson, which is consistent with the original parts of the city. The original areas of the city around downtown and the areas south of Fox Road include a mixture of single-family homes adjacent to more dense housing units and even commercial uses.

As the city experienced development in the early 2000s a stark separation between larger single-family lots uses and more dense uses developed. More recent trends in single-family development in California favor denser development given the cost of land and construction. This trend arrived in Hughson in 2017 with the approval of the Province Place development. Province Place is a 39-unit development on a 4.58-acre site. This development has the density of 8.5 dwelling units per acre. This is a very dense development compared to the developments approved between 2000 and 2008 in Hughson.

The proposed development is a compromise between the large lot single-family subdivisions of the early 2000s and the ultra-dense subdivision of Province Place. The proposed 299-unit subdivision has a density of 5.34 dwelling units per acre. Based on the density allowance for the Low Density land use designation in the General Plan, if this site were to develop as a Low Density Residential use, the maximum density per acre is 5 dwelling units per acre. Given the size of the project property, a development that meets the 5 dwelling units per acre on this site could have 280 homes with even the *lowest* density land use designation. Moreover, the Low Density land use designation allows for a 25 percent increase in units under the Planned Development process per the General Plan. This means that the density on this site could ultimately be 6.24 dwelling units an acre which would translate to 350 units. This is much higher than the proposed 299 units at 5.34 dwelling units per acre. The point of this comparison is to show that the density proposed with the Medium Density designation is right in line with the City's lowest density designation, and that the 299 homes is in line with what could already be built on the site given the current land use designation.

It is important to note that in the year 2000 there were only 3,980 people living in Hughson. Between the years 2000 and 2014, the population increased to 7,118 people. This is a 78% increase in population or about a 5.5% increase in population each year for those 14 years. This time period represents the largest growth period in Hughson's history. Over the last five years, the population has increased to approximately 8,017 people according to the 2019 Department of Finance population estimates. The Housing Element estimates that the population for Hughson will reach approximately 9,500 by the year 2045. The slow growth over the next 15 years is due to the limited land left in the City available for development. The proposed project anticipates adding 1,034 people which is right on track with the Housing Element estimates, as the project site is one of the last large pieces of land available for development in the City. Given

its size, it is reasonable to assume that the development of this site would bring the estimate population to its anticipated peak. While the Euclid Subdivision is under construction at this time, the anticipated individuals moving in to these 69 units have been accounted for in population growth since the project was approved back in 2007, eight years prior to the adoption of the recent Housing Element. Given Hughson's history, the increase of 1,034 residents is relatively minimal compared to the growth that Hughson has experienced in the past.

Before the land use designation can be changed, and the rest of the project can be approved, the Commission and Council need to find that the change in land use designation and the project as a whole, is consistent with the goals and policies of the General Plan and the City's Housing Element.

Need for Housing

California law requires that each City adopt a comprehensive, long-range General Plan, which includes a Housing Element. The Housing Element must identify the jurisdiction's plan for meeting the existing and projected housing needs of all economic segments of the community. As such, the law requires that cities adopt plans and policies that provide opportunities for housing development that foster all different types of housing options for the community. Should cities fall short of supplying their share of the Regional Housing Needs Assessment (RHNA) housing units, future funding sources for things like roads and transportations, could be at risk. There is an expectation that *every city* do their part in meeting housing needs at all income levels. The change to a denser land use designation will allow the City to meet its necessary RHNA numbers by allowing more housing units to be built. The below land use and housing policies from the General Plan and Housing Element all support additional housing types and densities within the City of Hughson:

- **Policy LU-2.3:** New residential neighborhoods will incorporate a mixture of residential types to meet the housing needs of the entire community.

- **Policy LU-3.3:** Residential development within the Medium Density Residential designation should provide a mixture of housing types within the same development.

- **Policy H-1.4:** The City shall ensure that sufficient land is available and zoned at a range of residential densities to accommodate the City's regional share of housing.

- **Policy H-1.4:** The City shall encourage the development of new mixed-income and mixed-use development projects as a means of increasing the housing supply while promoting diversity and neighborhood vitality.

These housing policies in the General Plan encourage the development of a mixture of housing types, styles, and densities in the City. The two different housing types

proposed in this development fulfill this General Plan objective. The General Plan encourages a variety of housing types and styles in order to avoid the visual "sameness" seen in many new subdivisions. The Court Home concept is new to the City and while it will look like a regular street façade at first glance, the façade will actually be varied and provide more depth than a traditional neighborhood street. Including this mixture of housing types also allows for all residents to find more affordable housing as the lots will be smaller, more affordable lots.

Protection of the Downtown Commercial Uses

The change in land use from Service Commercial to Medium Density Residential is also supported by the General Plan. The General Plan has policies that speak to the development of the commercial uses in the Downtown area. Should this site retain its Service Commercial designation rather than Medium Density Residential, 19 acres of commercial uses could be built at the edge of town which would detract activity away from the Downtown. This would be in direct conflict with the efforts the Council has made to develop a strong downtown core. The following General Plan goals and policies support removing the Service Commercial land use designation in favor of another land use designation so as to support and protect the Downtown Core:

- **Goal LU-4:** Enhance the viability of the Downtown and preserve its role as the heart of the community.

- **Policy LU-4.1:** The City will encourage the location and retention of business within the Downtown.

- **Action LU-4.3:** Coordinate with the Hughson Chamber of Commerce and other business organization to enhance the Downtown as the community's primary commercial area.

It would be detrimental to the Downtown Core to have 19 acres of commercial use at the edge of the City. Bringing people into the City's core will help all existing and any new businesses thrive. It is in the City's overall interest to allow the existing site to change its use so that those potential future business uses can be located in the heart of Downtown.

Open Space and Parks

The proposed project also meets various General Plan goals and policies related to open space, pedestrian and bicycle goals, and the preservation of orchard trees. The following goals and policies are related to parks and pedestrian and bicycle amenities:

- **Goal C-6:** Provide a bicycle and pedestrian network to encourage bicycling and walking for transportation and recreational purposes.

- **<u>Policy C-6.1:</u>** Safe, attractive and convenient bicycle and pedestrian friendly facilities will be provided to link schools, parks, civic facilities, employment centers, shopping, and downtown as well as provide a viable alternative to the automobile.

- **<u>Policy C-6.4:</u>** New development will be required to provide sidewalks and connections to the community-wide bicycle and pedestrian network.

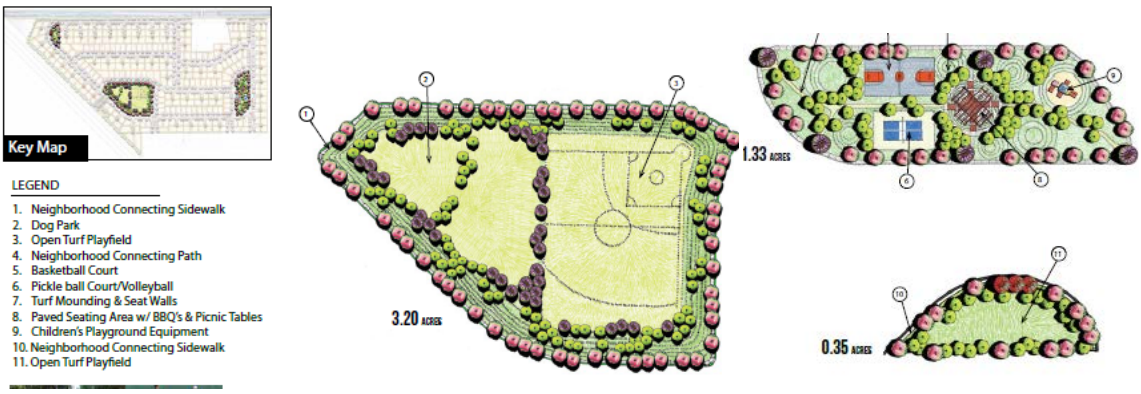
- **<u>Goal COS-2:</u>** Provide parks, open space, and recreation facilities to maintain and improve the quality of life for Hughson residents.

- **<u>Policy COS-2.1:</u>** New Development will be required to provide adequate parkland at a ratio of five acres per 1,000 residents in accordance with the Quimby Act.

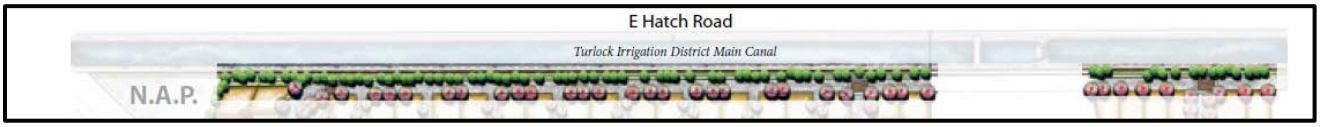
- **<u>Policy COS-2.3:</u>** Where feasible, drainage basis should be built with a contoured or tiered design to optimize the potential for the dual purpose of providing additional recreational opportunities.

- **<u>Policy LU-3.10:</u>** While the City recognizes that there will be a loss of orchard trees as development occurs, new development will be encouraged to design landscaping with mature trees to create a feeling similar to that of an active orchard.

Using the General Plan metric, the project would be required to provide 5.17 acres of parkland for the resulting 1,034 residents. The proposed project includes development of 6.14 acres of open space and park facilities. The facilities are intended to serve the residents of the project and the entire community of Hughson. The proposed project is also being required to zone in park amenities so that the items proposed will actually be constructed. The below illustration provides the required amenities at the three different park locations. The proposed parks will have a dog park, a basketball court, a pickle ball/volleyball court, BBQ areas, seating areas, a play area, and turf areas. The actual placement of the amenities could vary, but these amenities will be put into the development when it is constructed. The main park also serves as the community storm basin.



Facilities for pedestrians and bicyclists are going to be present on the streets adjacent to the south and east sides of the project site, and account for part of the 6.14 acres of green space in the project. Sidewalks will be created along the new streets. A paved walking/jogging path, which is also considered a Class I Bike Trail will be provided along the TID Ceres canal. These facilities will facilitate movement throughout the project and provide connections to the existing neighborhoods. The bike trail is a long-time goal of the city and it is hoped that the trail development will continue all along the canal in the future.



While the City is an agrarian community at its core, the loss of the current orchards was anticipated when this site was annexed into the city, as previously discussed. The applicant will be required to replace trees on site as mitigation for removing the orchards. The project is required to plant at least 560 trees, but the plan is to actually plant a mixture of over 600 trees. This far exceeds the replanting ratio required when orchards are removed in favor of development.

Additional General Plan Policies

The remaining General Plan policies listed below are required of all new development. Each development is required to provide its own infrastructure to adequately serve the residents of the new development. Each project must have adequate circulation, provide all utility connections for sewer and water and to connect to the City's infrastructure.

- **Policy C-2.2:** New development shall provide all improvements necessary to adequately serve the development's traffic access and circulation need, such as roadway improvements, dedications of rights-of-way and reciprocal easements.

- **<u>Policy PSF-7.2:</u>** The approval of new development shall be conditioned on the availability of adequate long-term capacity for wastewater conveyance, treatment and disposal sufficient to serve the proposed development.

- **<u>Policy PSF-7.3:</u>** All new development shall demonstrate to the City that the downstream sanitary sewer system is adequately sized and has sufficient capacity to accommodate anticipated sewage flows.

- **<u>Policy PSF-8.6:</u>** New Development will be required to provide for its stormwater impacts.

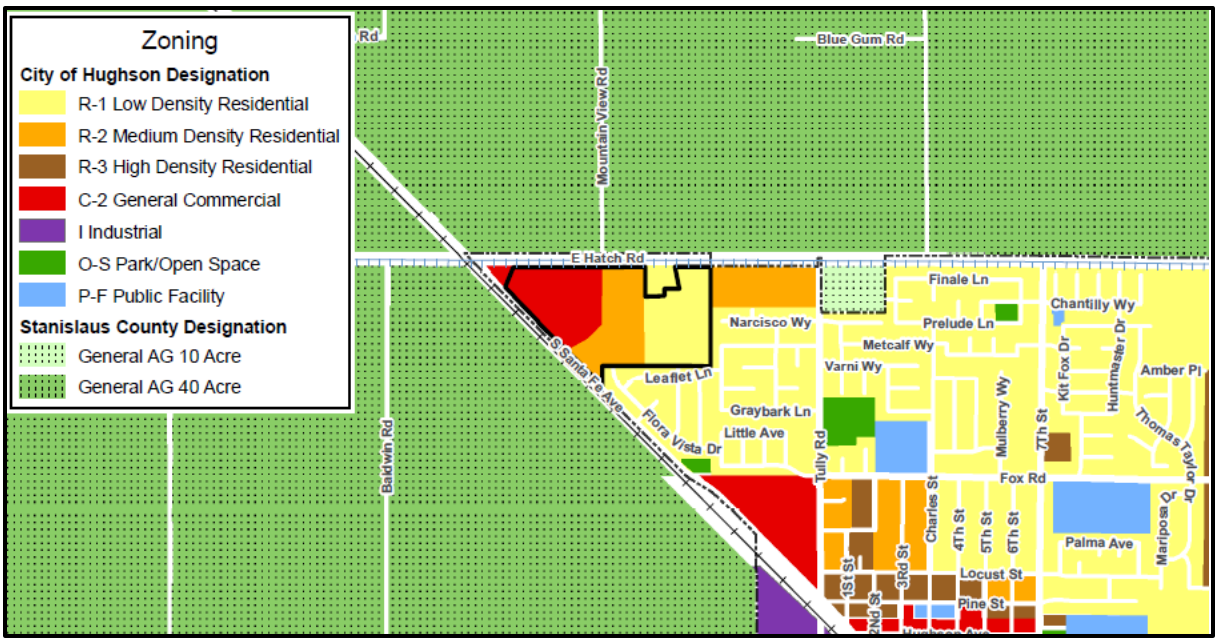
Based on the above conformance to the listed General Plan policies, the proposed change in land use designation and the project as proposed, is consistent with the General Plan and its policies.

The Hughson Municipal Code

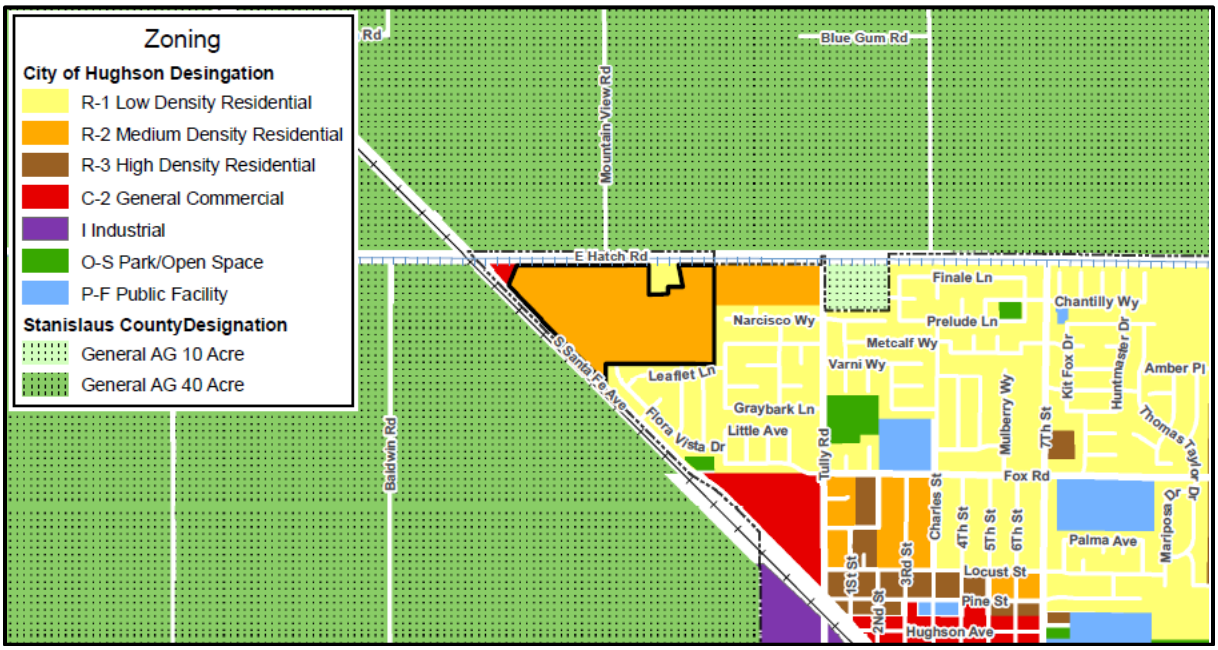
<u>Change in Zoning District</u>

Existing Zoning Districts

The second component of the project is a change in the zoning district designation of the project site. The project site is currently zoned R-1 Single Family Residential (19.28 acres), R-2 Medium Density Residential (17.73 acres), and C-2 General Commercial (19 acres).



The proposed project would change the R-1 and C-2 zoning districts to the R-2 zoning district.



The purpose of the R-2 zoning district is to provide living areas where a compatible mixture of single-family, duplex, triplex, fourplex and townhouse housing will provide a suitable environment for family living to ensure adequate light, air, privacy, and open space for each dwelling and to provide space for community facilities needed to complement urban residential areas. This zoning district is consistent with the Medium Density Residential land use designation. As such, the R-2 zoning district conforms to the General Plan for all of the reasons listed in the above section.

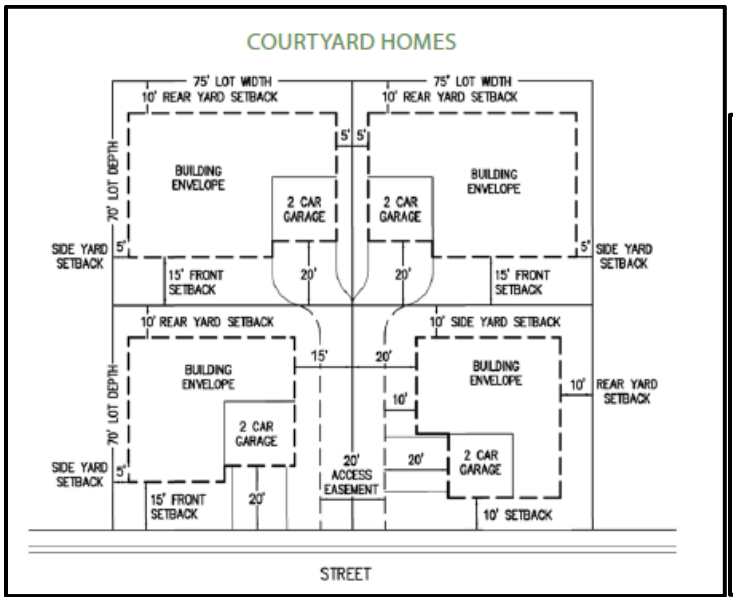
The existing development standards of the R-2 zone in the Hughson Municipal Code are identified in the table below:

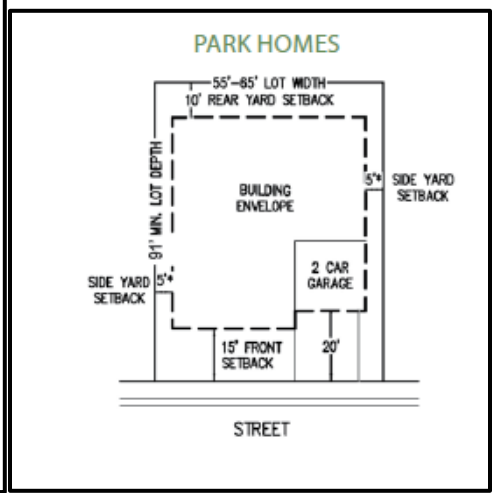
Density	5.1 DU/A to 14.1 DU/A
Average Parcel Size	N/A
Front Setback	20 feet
Side Setbacks	5 feet for one story 7 feet for two story
Side Corner	15 feet
Rear	10 feet
Minimum Width (feet)	65 feet corner- single family 55 feet other- single family 70 feet duplex or multi family
Minimum Driveway Length	20 feet
Maximum Height	35 feet

The proposed project is deviating from some of these standards but not all. There is no average lot size requirement for the R-2 district. The lots for the Park Homes will be about 5,000 square feet, and the lots for the courtyard homes will be 5,250 square feet. The overall average lot size is 5,500 square feet. The table below shows the R-2 development standards as they compare to what the project is proposing (in red):

Existing		Proposed
Density	5.1 DU/A to14.1 DU/A	5.34 DU/A
Average Parcel Size	N/A	5,500 square feet average
Front Setback	20 feet	15 feet front 20 feet garage
Side Setbacks	5 feet for one story 7 feet for two story	5 feet
Side Corner	15 feet	Maintain line of sight
Rear	10 feet	10 feet
Minimum Width (feet)	65 feet corner- single family 55 feet other- single family 70 feet duplex or multi family	55-65 feet
Driveway Length	20 feet	20 feet
Maximum Height	35 feet	35 feet

The layout of the Court Homes and the Park Homes with their prescribed setbacks are below:





While the proposed project conforms to the density and many of the development standards of the R-2 zoning district, there are still differences between the proposed district and the R-2 zoning district. As such, the proposed project will also need a Planned Development Overlay Zone which will allow for reduced setbacks and design flexibility. A Planned Development Overlay Zone requires a Conditional Use Permit.

Conditional Use Permit: Planned Development Overlay

The Planned Development Overlay Zone (PD Zone) section of the Hughson Municipal code is in 17.02.028. The purpose of the PD Zone is to encourage a creative and more efficient approach to the use of land and to provide greater flexibility in the design of integrated developments that would otherwise not be possible through the strict application of the zoning regulations. A PD Zone may be applied to parcels of land of any size and in any zone that is found to be suitable for the proposed development. The permitted uses of land in a PD zone are any use or combination of uses and densities that allow for a development that conforms to the General Plan. In this instance, it has been demonstrated that the proposed zone change and overall project is consistent with the General Plan. As such the 299 unit subdivision with Court Homes and Park Homes would be an allowable use within a PD Zone.

Per the code, the development standards of the proposed project should conform to the underlying zoning district except where it can be found that the total development will be improved by a deviation from the underlying development standards. What constitutes an improvement is listed in the below findings.

Required Findings for an Overlay Zone:

Any proposed development plan containing any modification in or deviation from the standards required in the underlying zone will result in an improved project which is consistent with the General Plan, including at least one of the following findings:

1. Larger and more desirable open space is being provided, other than that required for public facilities such as storm drain retention basins.

2. Housing for very-low-income, lower-income, moderate-income and senior households is provided that meets the affordability requirements and development standards found in HMC 17.03.016.

3. The project will provide for a greater diversity of housing types including duplex and multifamily residences.

4. Provision of infrastructure or land for the provision of needed public facilities approved by the City Council beyond what would have been required for the development under the site's underlying zoning district.

The proposed project meets the first and fourth finding for an overlay zone. As discussed previously, given the size of the development and the number of assumed people that would be coming to the city, the proposed project would be required to provide 5.17 acres of parkland for the resulting 1,034 residents. The project is proposing 6.14 acres of park land and green space throughout the project site. While the largest park will have the storm drain retention basin for the project, there will still be multiple amenities at this park. Specifically, there will be a dog park, with enough room to have separate areas for both

small and large dogs. In addition to this dual use park, the project proposed two other parks, one that is 1.33 and .35 acres. The 1.33 acre park will have a variety of sports amenities, a seating area, a BBQ area, a play area, and walking paths. The smallest park will have open turf playing area, which is always needed for practice for the different sports teams within Hughson.

In addition to the extra park space, this particular project is proposing a unique housing type for Hughson- the Court Home. This court home concept will have four to six homes off of a single drive. The homes will look and feel like regular single family homes, but the lots will be smaller and thus more affordable to members of the community.

For these reasons, it is recommended that the Commission and Council find that the proposed project meets the requirements of the Planned Development Overlay zone findings.

Design Expectations

In 2004, the City Council adopted Design Expectations that inform developers of the City's expectations for new residential development. The Design Expectations build upon the policies described in the General Plan by providing more specific examples of how to achieve a pedestrian-friendly community that builds on Hughson's traditional character. Prior to submitting a project application, developers are required to complete the Self Certification Checklist contained in the Design Expectations to ensure that each development incorporates the spirit of the desired design principles. This Self Certification for the proposed project is attached to the staff report.

Some of the main General Plan Policies that form the basis of the Design expectations are listed below:

- **Policy LU-3.1:** New development should be compatible with physical site characteristics, surrounding land uses, and available public infrastructure.

- **Policy LU-3.2:** New Development should provide a visually interesting appearance through variations of site and building design and building placement and orientation.

- **Policy LU-3.5:** New Development should be designed to connect to the existing community, through the orientation and design of buildings and vehicular, pedestrian, and bicycle connections.

- **Policy LU-3.6:** New development should not be visually or physically separated from the rest of the community.

Broadly, the proposed development is compatible with surrounding land uses. It is a single-family residential development that is right in-line with the surrounding densities in the neighborhoods immediately adjacent to the project and throughout the city. The

planned design of the overall development encourages walking and biking. The facade of the homes will look and feel like traditional single-family homes, despite the lot size. And most importantly, the new neighborhood will be connected to the existing neighborhoods through the existing street system. There will be enhanced landscaping and paving throughout the development, creating a strong sense of place.

The Design Expectations address a variety of different categories related to these four big concepts above. They are broken up into the following categories:

Orientation to Built Community/Adjoining Development

It is expected that new development will have numerous points of ingress and egress, interconnecting with local streets, bikeways and sidewalks. The proposed project will be connected to the neighborhood to the south and east through two streets, Flora Vista Drive and Estancia Drive. There is also a connection to Santa Fe Avenue. Other streets are planned to be stubbed in the development and when future development occurs to the east of the site, the subdivision will be further connected to the existing neighborhoods. There is also a developed Class I Bike trail at the north of the site that links this area of Hughson to Ceres via the TID Ceres Canal. The subdivision is an open community without gates, and it only has a block wall to attenuate the sound along Santa Fe Avenue. The General Plan consistently stated that new development provide connections to existing development, not close them off. These connections are key in ensuring that this development is not separated from the community, and these continued connections will create a feeling of completeness which is lacking with the current orchards.

The homes that will be constructed will not place any two-story homes adjacent to single-story homes. All homes that are within a half mile radius of the railroad or Hatch Road will have rated assemblies or doors, windows and sliding glass doors.

Orientation to Parks, Public Open Space, and “Edges” of the Community

The homes are designed so that they front the parks and bike trail to keep “eyes on the street” and to serve as a safety mechanism for the community. The homes that face the canal also face the city’s edge which is a more attractive view of the city for those traveling on Hatch Road. The only wall edge is along Santa Fe which is needed given the noise of the railroad.

General Street Widths and Block Lengths

The overall street system is a modified grid system that does not include any cul-de-sacs.

Reduce Vehicle Speeds Through Neighborhoods

There are traffic calming measures in the project like round-a-bouts that will slow traffic to enhance the pedestrian experience as well as special paving features that create

attractive sidewalks for pedestrians. In addition, there are key neighborhood entry points that are highlighted with paving, landscaping and signage.

Encourage Pedestrian Activity In Residential Neighborhoods

There are walking paths at the parks, and all of the streets are connected via sidewalls as well as special paving along crosswalk intersections, highlighting the pedestrian experience. In addition, there are key neighborhood entry points in the subdivision that are enhanced through landscaping and roadway texture.

Enhance the Pedestrian Scale of the Residential Streetscape

Pedestrians are encouraged to walk throughout the subdivision but specifically along the TID Ceres Canal enhanced Class I Bike trail. This area is already a walking path, but the project is enhancing it tenfold. There are also over 600 trees planned for the development which will enhance the pedestrian experience even more. The street trees will be decorative and will provide a nod to the agricultural history of the city and site, and functional by providing a shade canopy to encourage outdoor activity.

Provide Variation in Lot Depths and Lot widths

There is a variation of lot sizes and widths incorporated into the project design.

Street View Walls and Monument Entries/Access

There are plans for an enhanced perimeter entry off of Santa Fe. This entry will not only serve as an entry into the neighborhood, but to the City as well. In addition to the enhanced entry off of Santa Fe, each connecting street from the existing neighborhood to the new development will have enhanced paving and landscaping.

Provide Variation in Building Setback and Streetscape Expression

The four-pack and six-pack configuration of the house creates an inherent variation in house placement and will provide for a varied building front. The different housing types will prevent any repetitiveness in the housing type and placement. The homes will be manipulated to allow for visual interest and bulk and height will be varied.

Building Variety and Type

The Court Homes and Park Homes will provide variation to the street scape that is lacking in many current single family neighborhoods. In addition to the different housing type, each housing type will have one and two story models which will provide even more variety and interest to the streetscape.

Minimize the Impact of Garages and Off Street Parking Areas

In the proposed designs, the garage is not the prominent feature in the facades. The main building is closer to the street and there is articulation of the front facades. The second stories will be located above the garages and will have an added architectural element to them.

Creative Entry Walks and Driveways

Each home has a separate pedestrian entrance to the front door. All driveways are 20 feet in length and will have a contrasting paved surface.

Maximize Porches, Entries, and Courts

All homes face the street, and no court home will be turned inward. The conceptual homes have prominent entryways and there is a clear balance in the appearance of the main house and the garage.

General Architecture

The proposed housing designs are conceptual at this point, but the proposed houses are appropriate in scale and mass. They design concepts highlight rich materials and colors and have a lot of windows to allow for natural light. All mechanical equipment will be located in areas not visible from the street, and all trash can areas will be out of immediate view.

Gateways

There are architectural features that complement the existing landscaping along Santa Fe. The new gateways on the existing streets provide new interest to the street.

PUBLIC OUTREACH

Two community meetings were held on June 25, 2020 from 6:00 pm-6:45 pm and from 7:00 pm-7:45 pm. There were nine people at the first meeting and four people at the second meeting. A total of 91 notices went out the community within 300 feet of the project site. It is required by the HMC that notices are set to individuals within 300 feet of the project boundary. The Planning Commission Hearing was also published in the Hughson Chronicle on July 7, 2020. Another notice will be placed in the paper identifying the date of the Council meeting.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

A Mitigated Negative Declaration (MND) was prepared for the Parkwood Subdivision Project in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

The Initial Study prepared in support of the MND identified potentially significant impacts which could be mitigated to less than significant levels. Mitigation measures were developed to lessen the impacts to less than significant. The mitigation measures are included in the Mitigation Monitoring and Reporting Program (MMRP) for the project and are attached to the staff report.

Standard mitigation measures are required to ensure no impacts occur during construction and operation of the project. These mitigation measures include best management practices for construction related air quality impacts, compliance with the California Building Code, erosion control during construction activities, protection of unknown subsurface resources, protection of construction workers, water quality impacts during construction, and impacts to public facilities.

The Draft MND was circulated for public review for 30 days consistent with CEQA Guidelines Section 15132 starting on June 15, 2020 and ending on July 15, 2020. Seven comment letters were received from the following individuals or agencies:

- Hughson Unified School District (HUSD)
- Hughson Fire Protection District
- Email / letter from Gina Oltman
- Email / letter from Michael A. Mitchell
- Email from Robin MacDonald
- Via State Clearinghouse
    - RWQCB
    - Department of Conservation

Many of the comments received focus on potential traffic impacts to the existing neighborhoods and the availability of water and sewer capacity for the new development.

Impacts associated with traffic are discussed in Section XVII of the Initial Study. The transportation analysis is based on the project-specific Traffic Impact Analysis that was completed for the project. The addition of project trips will not result in any location carrying daily volumes in excess of the City of Hughson minimum level of service D goal. The project will add traffic to the local streets south and east of the site. While not an adopted significance criterion, in comparison to the planning level daily volume thresholds typically employed by other communities, the project will not result in any local street carrying volumes that exceed an acceptable level. Additionally, while development of the project will increase the volume of traffic passing through study area intersections, resulting traffic conditions will not exceed the City's minimum LOS D standard. The same holds true during the cumulative traffic condition.

The project includes development of infrastructure (water, sewer, and storm drainage) required to support the proposed subdivision. The project will be served by existing City water, sewer, and storm drainage infrastructure. The existing City laterals and lines currently located in E. Hatch Road and Santa Fe Avenue will be extended to the project

site. The City provides wastewater collection and treatment for the incorporated city and operates a wastewater treatment plant on the northern edge of the city, between Hatch Road and the Tuolumne River. The plant has an existing design capacity for dry weather flows of 800,000 gpd and up to 2.33 mgd for peak wet weather flows. The treatment plant estimated the average flow is currently .6 mgd gpd, leaving 1.73 mgd gpd available for the new development and even future development. There is adequate treatment capacity at the site.

Upon completion of the Well 7 Replacement Project, the City's water supply capacity is expected to be adequate to meet the City's projected water demands at the buildout of the project. The City is currently addressing arsenic and 1,2,3-TCP water quality issues so the City's active water supply wells are in compliance with federal and state drinking water codes. The well supply capacity will not be impacted by the state's groundwater sustainability laws and local basin mitigation plans, and the well supply capacities in single dry and multiple drought years are the same as in normal years. The project applicant will be required to pay water system impact fees to the City totaling $2,427,581. At buildout the subdivision will contribute $190,164 annually in water rates. These fees will be used to partially offset capital costs of the City's planed water system improvements and ongoing operation and maintenance of the water facilities.

The site is required to install infrastructure that will allow storm water to properly drain from the project site and will not result in downstream flooding or major drainage changes.

Responses to these comment letters are provided in the Final MND. The MND and supporting Initial Study, Responses to Comments Document, and the MMRP are available online at www.hughson.org/planning.

PARK WOOD

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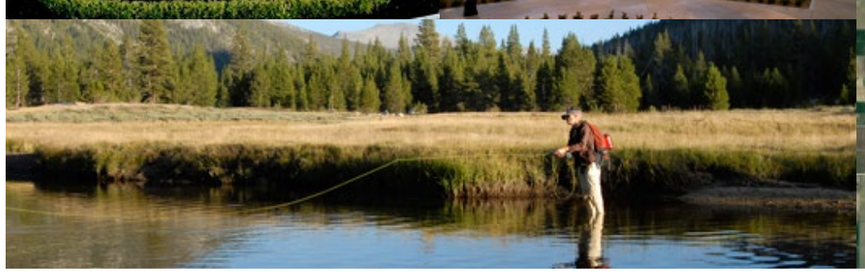
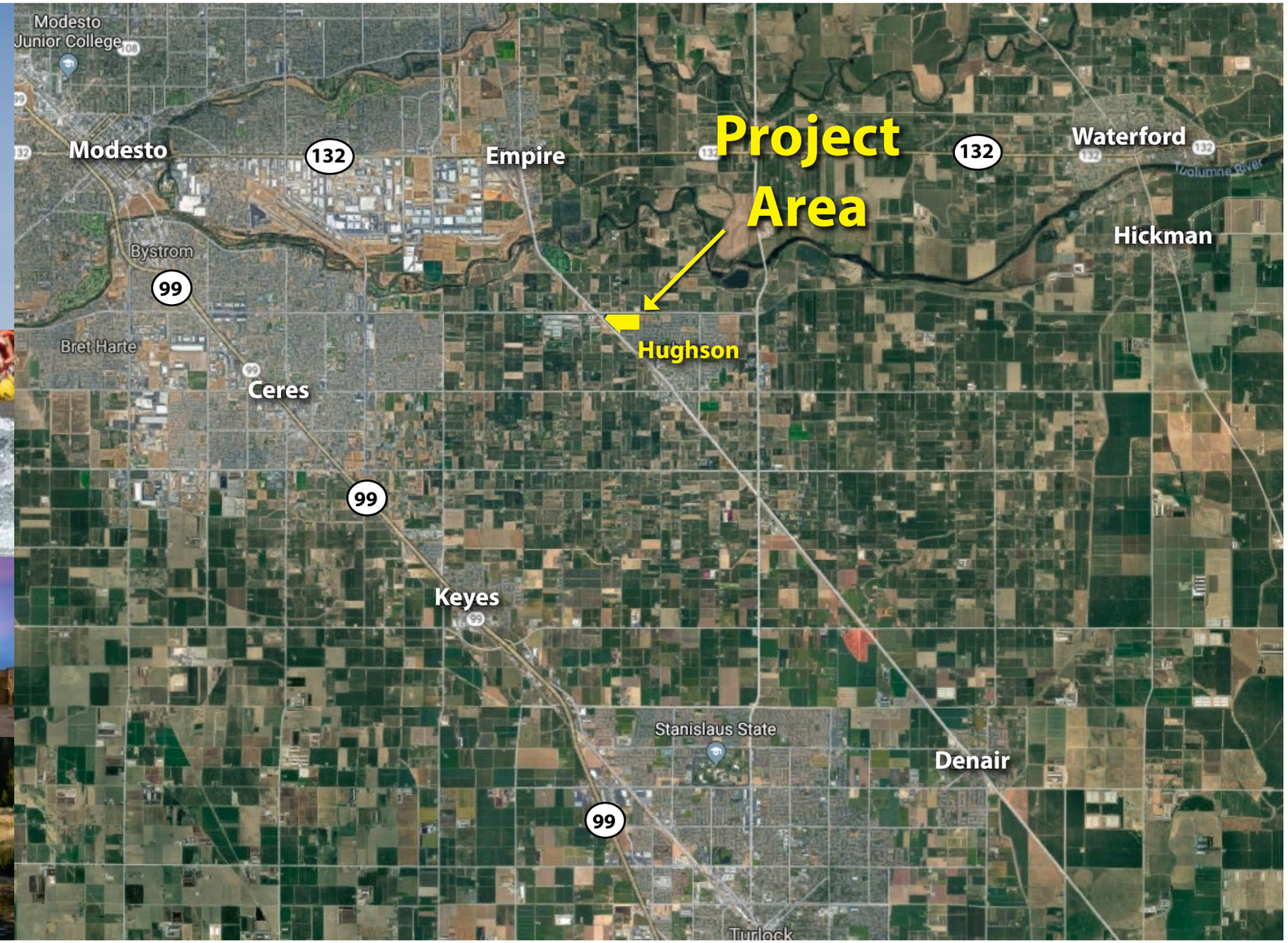
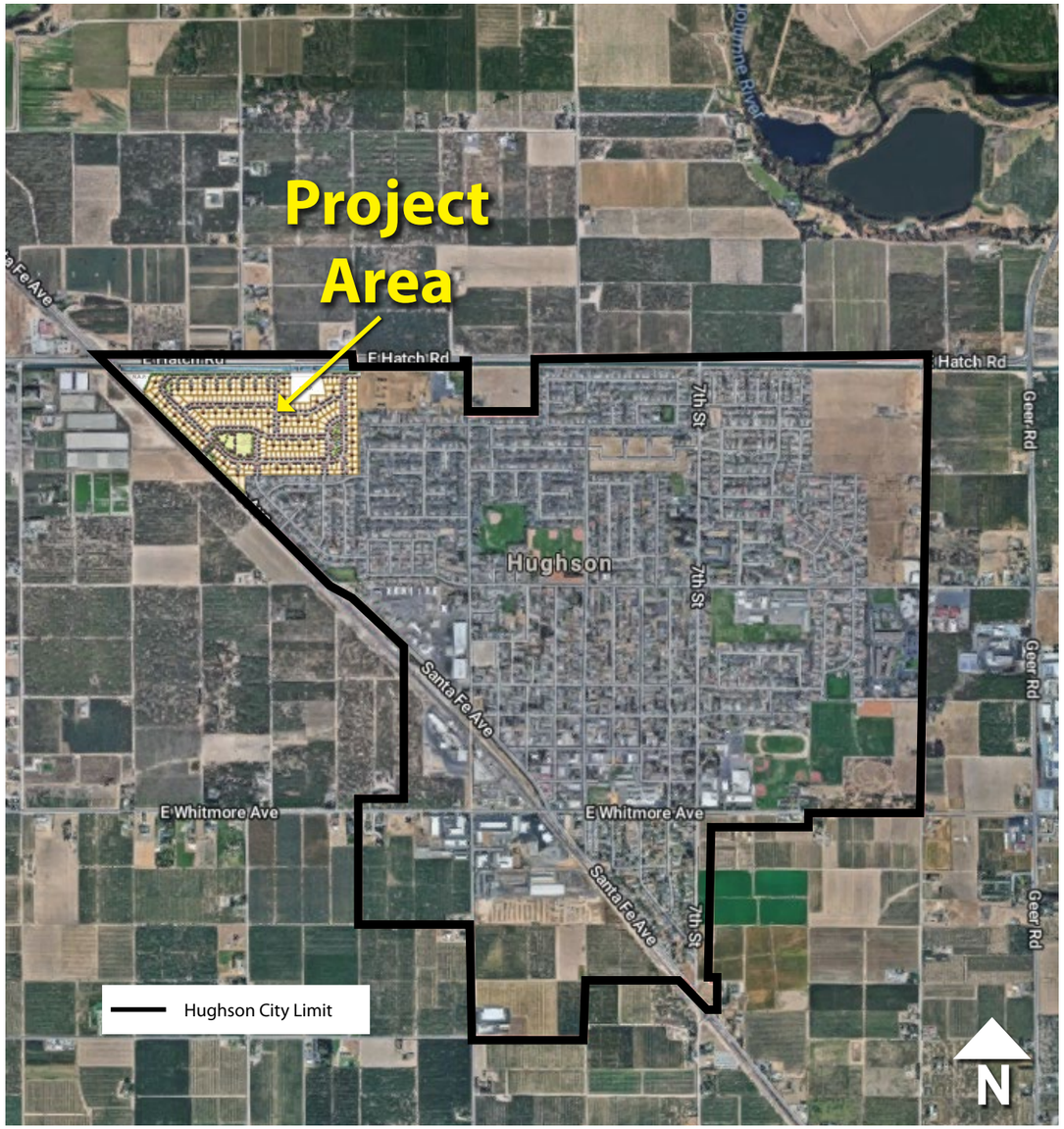
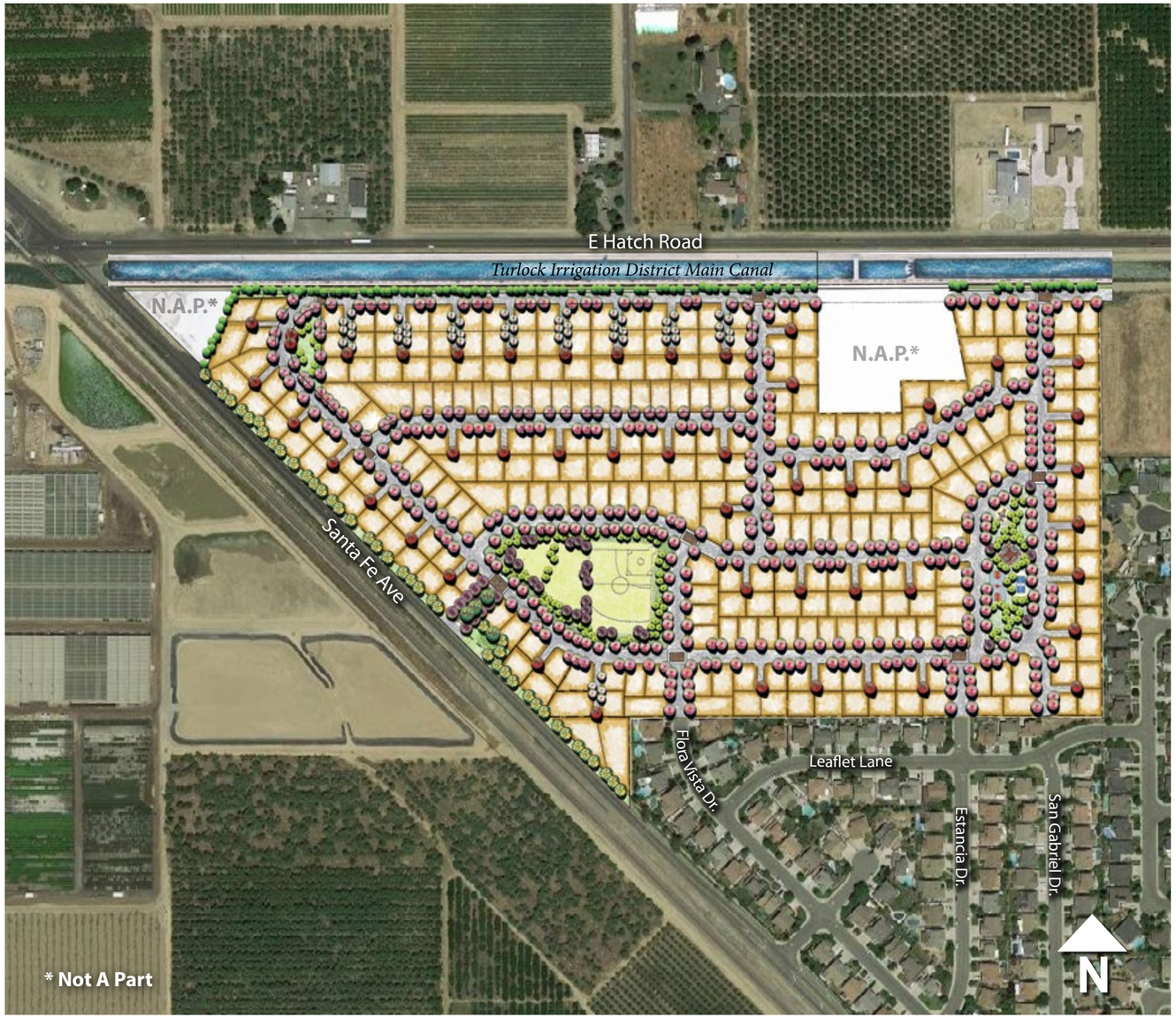
Vicinity Map





Hughson City Limit & Project Location Map





Illustrative Site Plan

LAND USE DATA

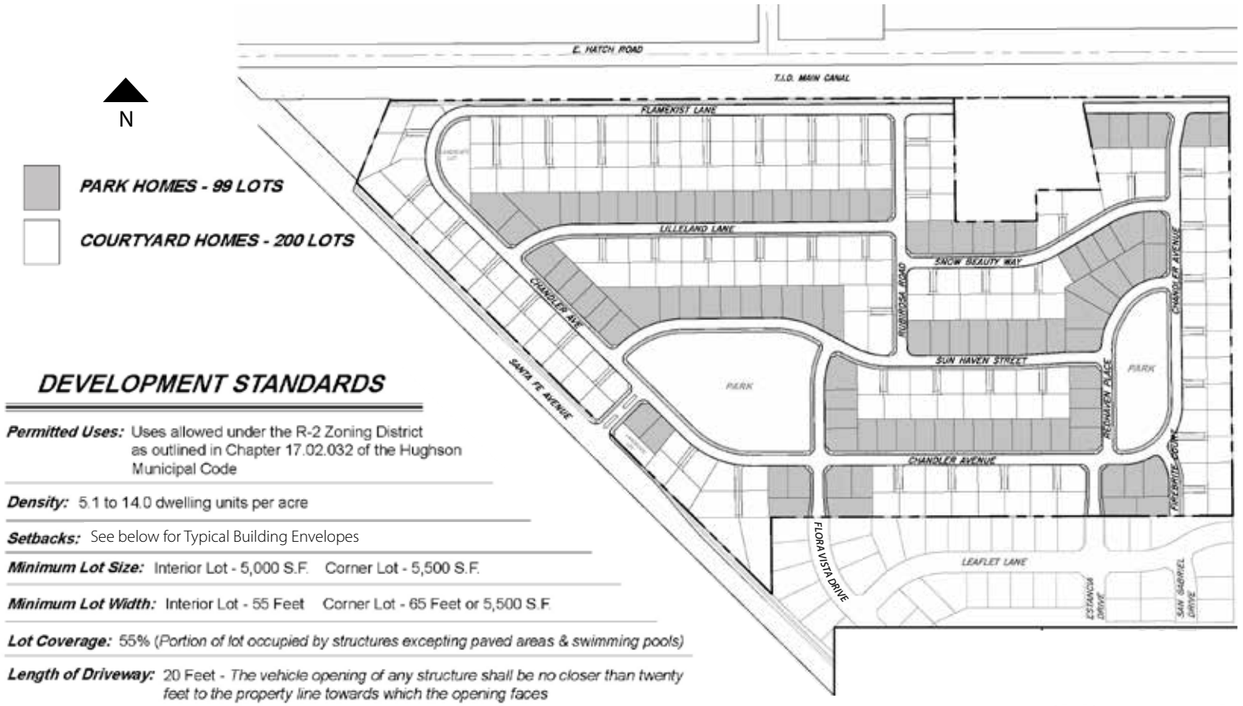
Lot Count : 299 Single Family Residential (SFR) Lots

Park Home Lot Size: 5,005 SF
Courtyard Home Lot Size: 5,250 SF
Overall Average: 5,500 SF

Project Acreage: 56.04 Gross Acres

Parks/Open Space: 6.57 Acres

299 SFR lots / 56.04 Gross Acres = 5.33 D.U./Acres



DEVELOPMENT STANDARDS

Permitted Uses: Uses allowed under the R-2 Zoning District as outlined in Chapter 17.02.032 of the Hughson Municipal Code

Density: 5.1 to 14.0 dwelling units per acre

Setbacks: See below for Typical Building Envelopes

Minimum Lot Size: Interior Lot - 5,000 S.F. Corner Lot - 5,500 S.F.

Minimum Lot Width: Interior Lot - 55 Feet Corner Lot - 65 Feet or 5,500 S.F.

Lot Coverage: 55% *(Portion of lot occupied by structures excepting paved areas & swimming pools)*

Length of Driveway: 20 Feet - *The vehicle opening of any structure shall be no closer than twenty feet to the property line towards which the opening faces*

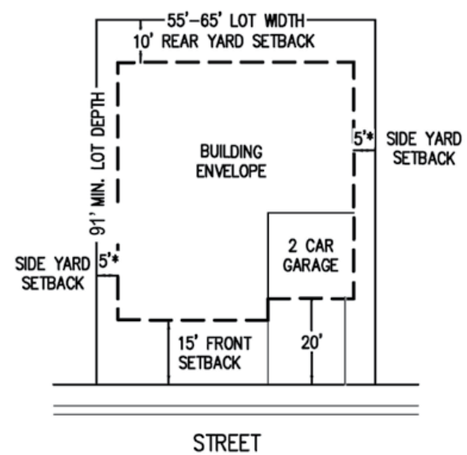
Height Limit: 35 Feet - *See Chapter 17.03.020(B) of the Hughson Municipal Code for height limit exceptions*

Architecture: Design Review Committee Approval is required prior to construction of any new dwelling in order to ensure an attractive development

Parking: Per the requirements of Chapter 17.03.060 (Parking) of the Hughson Municipal Code

Signs, Lighting & Landscaping: Per the requirements of the Hughson Municipal Code - *Type and Style of Lighting and Signage to be equal to or similar to the examples on Sheet 2*

Building Envelope PARK HOMES



* STREET SIDE CORNER LOT 10' SIDEYARD SETBACK

Building Envelopes COURTYARD HOMES

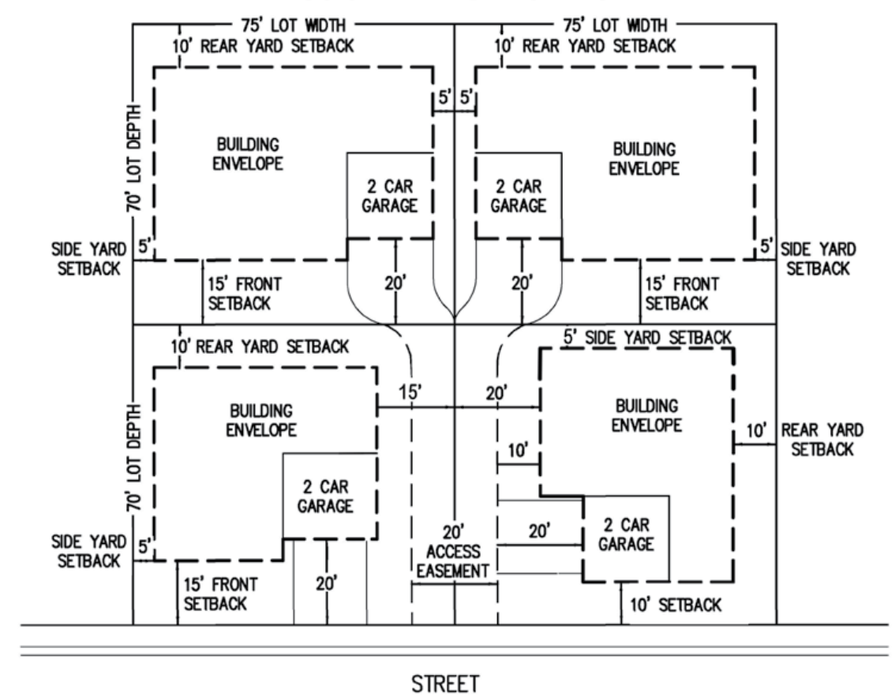


TABLE – PRIVATE ROADS AND OPEN SPACES AND CORRESPONDING LOT NUMBER.

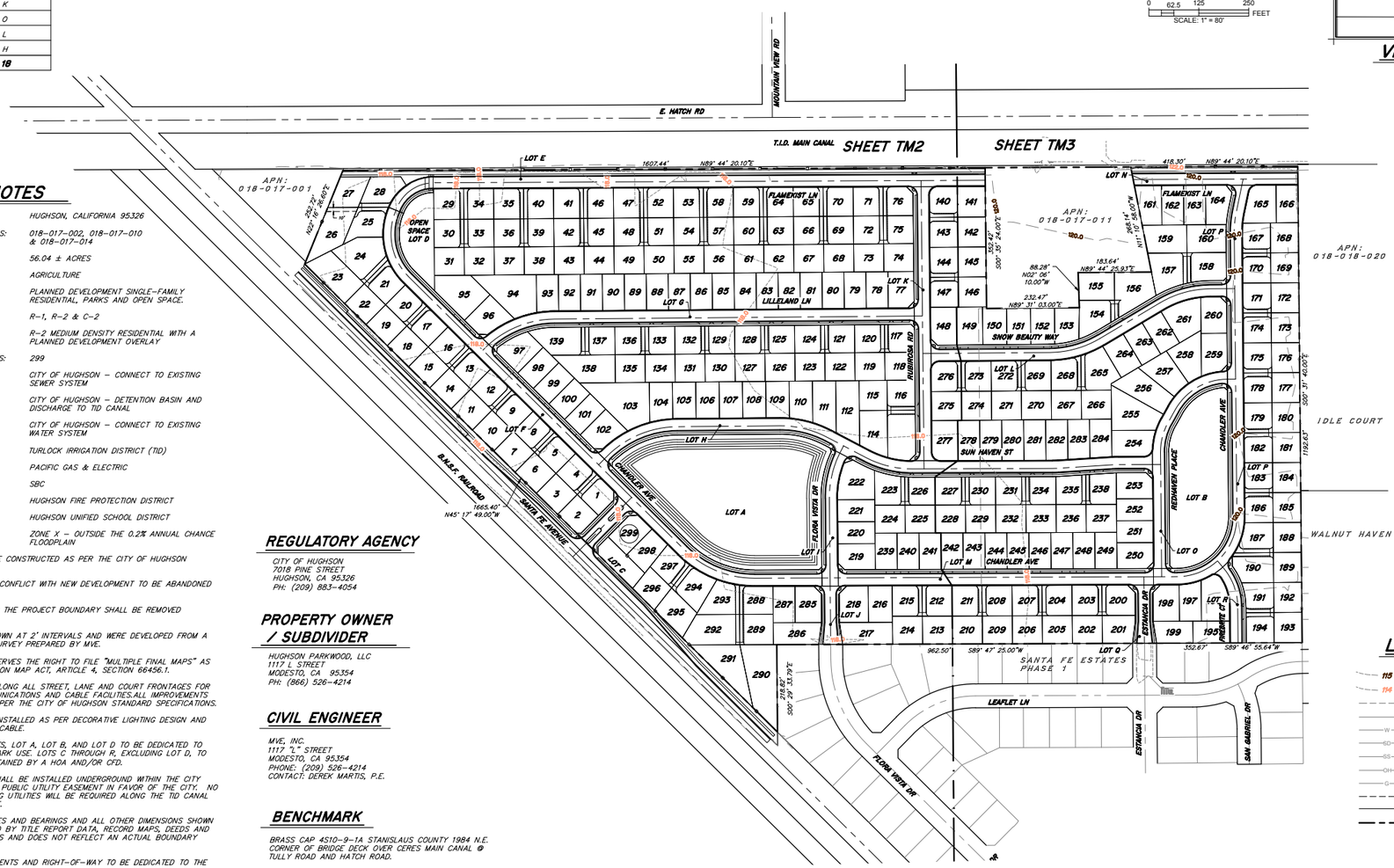
NAME	LOT
PARK/OPEN SPACE	A,B,C,D
CHANDLER AVE	F,M,P
ESTANCIA DR	Q
FIREBRITE CT	R
FLAMEKIST LN	E,N
FLORA VISTA DR	I,J
LILLELAND LN	G
RUBIROSA RD	K
RED HAVEN PL	O
SNOW BEAUTY WAY	L
SUN HAVEN ST	H
TOTAL LOT COUNT	**18**

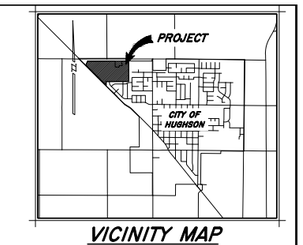
PARKWOOD

VESTING TENTATIVE SUBDIVISION MAP

HUGHSON, CALIFORNIA

BEING A PORTION OF NORTH WEST QUARTER OF SECTION 9,
TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN
COUNTY OF STANISLAUS, STATE OF CALIFORNIA





VICINITY MAP
NTS

GENERAL NOTES

1. PROPERTY LOCATION: HUGHSON, CALIFORNIA 95326
2. ASSESSOR'S PARCEL NUMBERS: 018–017–002, 018–017–010 & 018–017–014
3. PROJECT AREA: 56.04 ± ACRES
4. EXISTING USE: AGRICULTURE
5. PROPOSED USE: PLANNED DEVELOPMENT SINGLE–FAMILY RESIDENTIAL, PARKS AND OPEN SPACE.
6. EXISTING ZONING: R–1, R–2 & C–2
7. PROPOSED ZONING: R–2 MEDIUM DENSITY RESIDENTIAL WITH A PLANNED DEVELOPMENT OVERLAY
8. NUMBER OF RESIDENTIAL LOTS: 299
9. SANITARY SEWER: CITY OF HUGHSON – CONNECT TO EXISTING SEWER SYSTEM
10. STORM DRAIN: CITY OF HUGHSON – DETENTION BASIN AND DISCHARGE TO TID CANAL
11. WATER SERVICE: CITY OF HUGHSON – CONNECT TO EXISTING WATER SYSTEM
12. ELECTRICAL TURLOCK IRRIGATION DISTRICT (TID)
13. GAS SERVICE: PACIFIC GAS & ELECTRIC
14. TELEPHONE SERVICE: SBC
15. FIRE PROTECTION: HUGHSON FIRE PROTECTION DISTRICT
16. SCHOOL DISTRICT: HUGHSON UNIFIED SCHOOL DISTRICT
17. FLOOD ZONE: ZONE X – OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
18. ALL IMPROVEMENTS SHALL BE CONSTRUCTED AS PER THE CITY OF HUGHSON STANDARD SPECIFICATIONS.
19. ALL EXISTING EASEMENTS IN CONFLICT WITH NEW DEVELOPMENT TO BE ABANDONED AND/OR RELOCATED.
20. EXISTING STRUCTURES WITHIN THE PROJECT BOUNDARY SHALL BE REMOVED ACCORDINGLY.
21. EXISTING CONTOURS ARE SHOWN AT 2' INTERVALS AND WERE DEVELOPED FROM A PRELIMINARY TOPOGRAPHY SURVEY PREPARED BY MVE.
22. THE SUBDIVIDER HEREBY RESERVES THE RIGHT TO FILE "MULTIPLE FINAL MAPS" AS SET FORTH BY THE SUBDIVISION MAP ACT, ARTICLE 4, SECTION 66456.1.
23. A PUE WILL BE DEDICATED ALONG ALL STREET, LANE AND COURT FRONTAGES FOR ELECTRICAL, GAS, TELECOMMUNICATIONS AND CABLE FACILITIES.ALL IMPROVEMENTS SHALL BE CONSTRUCTED AS PER THE CITY OF HUGHSON STANDARD SPECIFICATIONS.
24. STREET LIGHTING SHALL BE INSTALLED AS PER DECORATIVE LIGHTING DESIGN AND CITY SPECIFICATION AS APPLICABLE.
25. TOTAL NO. OF LOTS: 317 LOTS, LOT A, LOT B, AND LOT D TO BE DEDICATED TO THE CITY OF HUGHSON AS PARK USE. LOTS C THROUGH R, EXCLUDING LOT D, TO BE DEDICATED TO AND MAINTAINED BY A HOA AND/OR CFD.
26. ALL NEW PUBLIC UTILITIES SHALL BE INSTALLED UNDERGROUND WITHIN THE CITY RIGHT–OF–WAY OR WITHIN A PUBLIC UTILITY EASEMENT IN FAVOR OF THE CITY. NO UNDERGROUNDING OF EXISTING UTILITIES WILL BE REQUIRED ALONG THE TID CANAL OR ALONG SANTA FE AVENUE.
27. THE PROPERTY LINE DISTANCES AND BEARINGS AND ALL OTHER DIMENSIONS SHOWN ON THIS MAP WERE COMPILED BY TITLE REPORT DATA, RECORD MAPS, DEEDS AND STANISLAUS COUNTY RECORDS AND DOES NOT REFLECT AN ACTUAL BOUNDARY SURVEY.
28. SANTA FE AVENUE IMPROVEMENTS AND RIGHT–OF–WAY TO BE DEDICATED TO THE CITY OF HUGHSON.
29. ALL PRIVATE STREETS TO HAVE A P.U.E. OVERLAY FOR PUBLIC UTILITIES.

REGULATORY AGENCY

CITY OF HUGHSON
7018 PINE STREET
HUGHSON, CA 95326
PH: (209) 883–4054

PROPERTY OWNER / SUBDIVIDER

HUGHSON PARKWOOD, LLC
1117 L STREET
MODESTO, CA 95354
PH: (866) 526–4214

CIVIL ENGINEER

MVE, INC.
1117 "L" STREET
MODESTO, CA 95354
PHONE: (209) 526–4214
CONTACT: DEREK MARTIS, P.E.

BENCHMARK

BRASS CAP 4S10–9–1A STANISLAUS COUNTY 1984 N.E. CORNER OF BRIDGE DECK OVER CERES MAIN CANAL @ TULLY ROAD AND HATCH ROAD.

ELEVATION = 124.96, CITY OF HUGHSON DATA.

LEGEND

- 115 EXISTING CONTOURS (MAJOR)
- 114 EXISTING CONTOURS (MINOR)
- EXISTING EASEMENTS
- EXISTING PARCEL LINES
- W EXISTING WATER LINE
- SD EXISTING STORM LINE
- SS EXISTING SEWER LINE
- OH EXISTING OVERHEAD LINE
- G EXISTING GAS LINE
- PROPOSED EASEMENTS
- PROPOSED LOT LINES
- PROJECT BOUNDARY

Drawn By:	TL
Issue Date:	7/13/2020
Job No.:	NC180.39
Checked:	DAM
Design By:	TL

REVISIONS

NO.	DATE	ISSUED FOR	BY

07/13/2020

MVE Inc.
1117 L Street, Modesto, CA 95354 | 866.526.4214 | www.mve.net
Northern California | Southern California | Nevada

PARKWOOD
VESTING TENTATIVE SUBDIVISION MAP
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 9, TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN COUNTY OF STANISLAUS, STATE OF CALIFORNIA
HUGHSON CALIFORNIA

DWG. TM1
SHEET 1 OF 3

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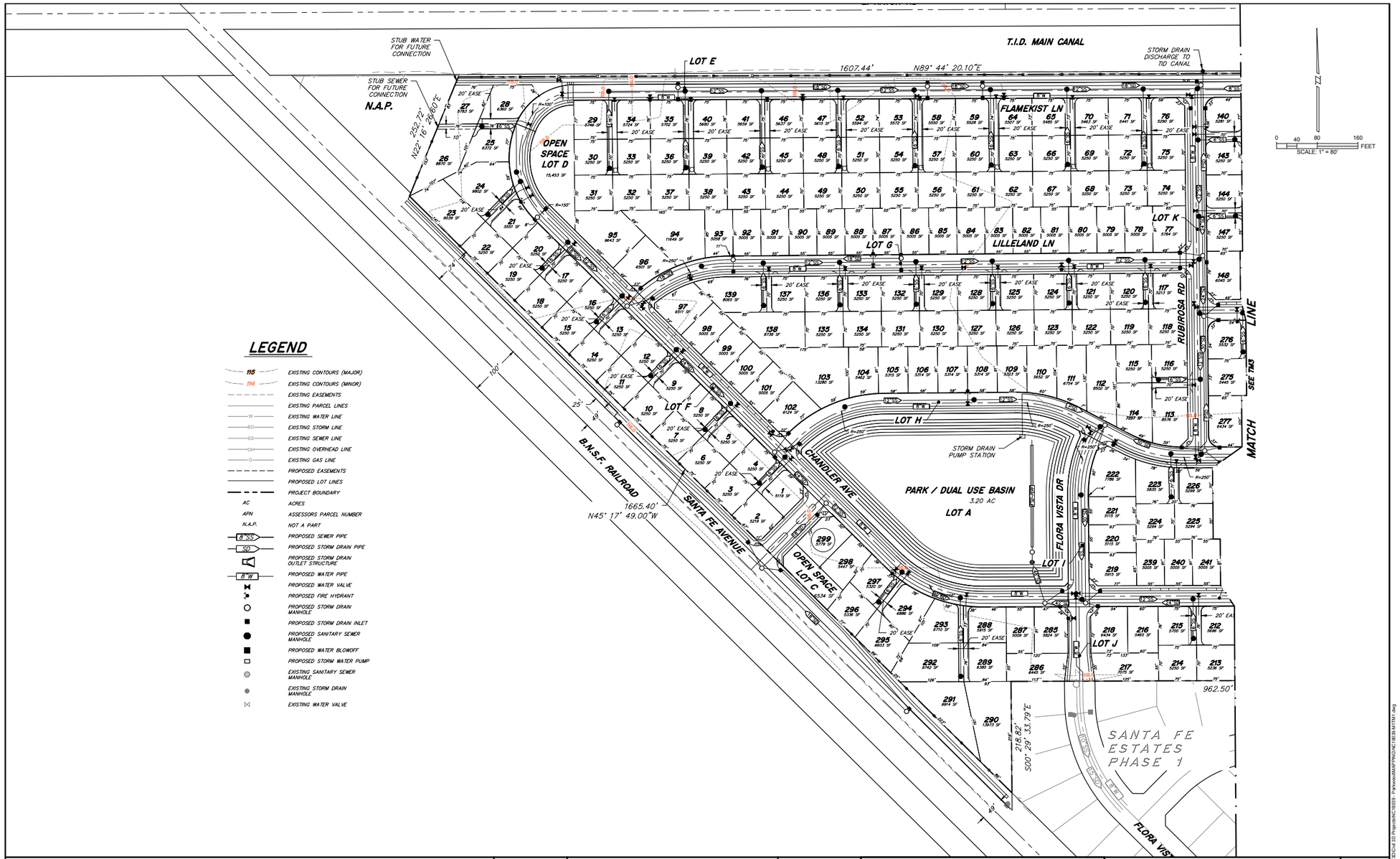

LEGEND

115	EXISTING CONTOURS (MAJOR)
114	EXISTING CONTOURS (MINOR)
	EXISTING EASEMENTS
	EXISTING PARCEL LINES
W	EXISTING WATER LINE
SD	EXISTING STORM LINE
SS	EXISTING SEWER LINE
OH	EXISTING OVERHEAD LINE
G	EXISTING GAS LINE
	PROPOSED EASEMENTS
	PROPOSED LOT LINES
	PROJECT BOUNDARY
AC	ACRES
APN	ASSESSORS PARCEL NUMBER
N.A.P.	NOT A PART
8" SS	PROPOSED SEWER PIPE
SD	PROPOSED STORM DRAIN PIPE
	PROPOSED STORM DRAIN OUTLET STRUCTURE
8" W	PROPOSED WATER PIPE
	PROPOSED WATER VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN INLET
	PROPOSED SANITARY SEWER MANHOLE
	PROPOSED WATER BLOWOFF
	PROPOSED STORM WATER PUMP
	EXISTING SANITARY SEWER MANHOLE
	EXISTING STORM DRAIN MANHOLE
	EXISTING WATER VALVE

Drawn By: TL
Issue Date: 7/13/2020
Job No.: NC18039
Checked: DAM
Design By: TL

REVISIONS

NO.	DATE	ISSUED FOR	BY

07/13/2020

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Northern California | Southern California | Nevada

PARKWOOD
VESTING TENTATIVE SUBDIVISION MAP
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 9, TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN COUNTY OF STANISLAUS, STATE OF CALIFORNIA
HUGHSON CALIFORNIA

DWG. TM2
SHEET 2 OF 3

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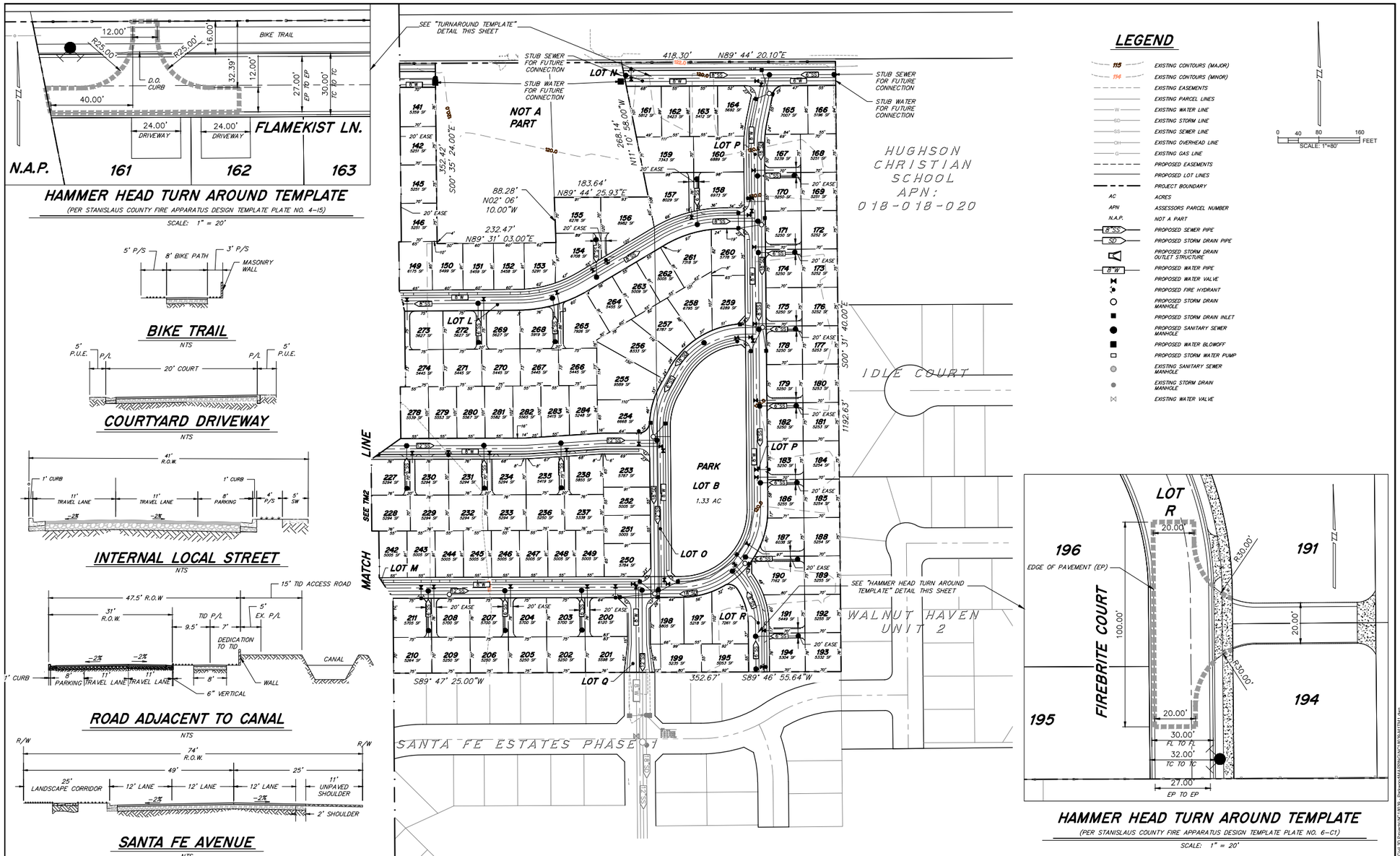

Drawn By: TL	REVISIONS		
Issue Date: 7/13/2020	NO.	DATE	ISSUED FOR	BY
Job No.: NC180.39			
Checked: DAM			
Design By: TL			

07/13/2020

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Northern California | Southern California | Nevada

PARKWOOD
VESTING TENTATIVE SUBDIVISION MAP
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 9, TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN COUNTY OF STANISLAUS, STATE OF CALIFORNIA

HUGHSON CALIFORNIA

DWG. TM3

SHEET 3 OF 3

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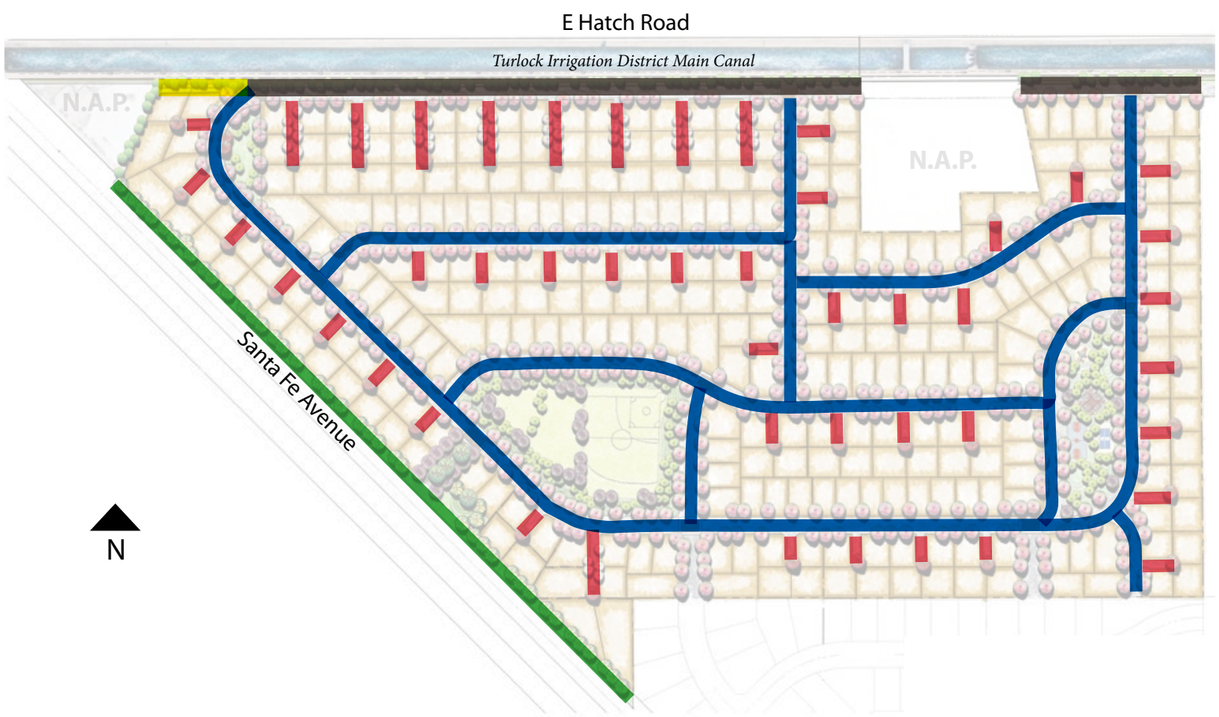
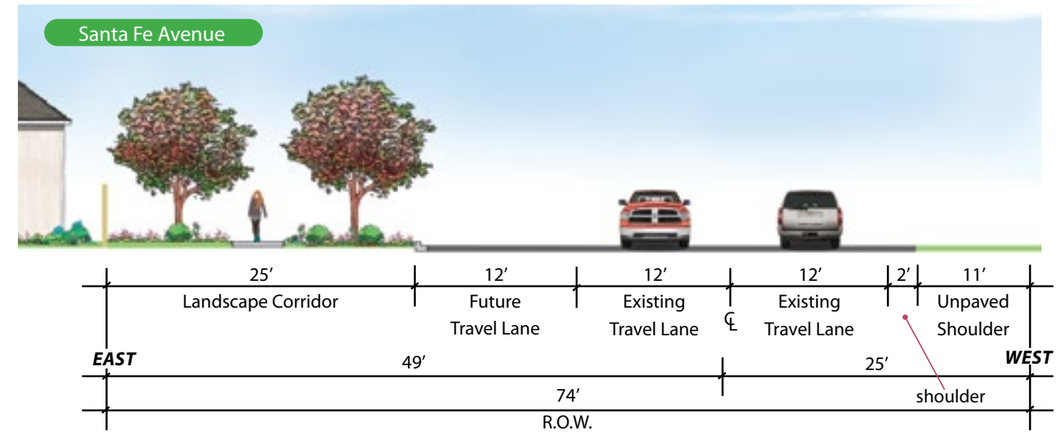
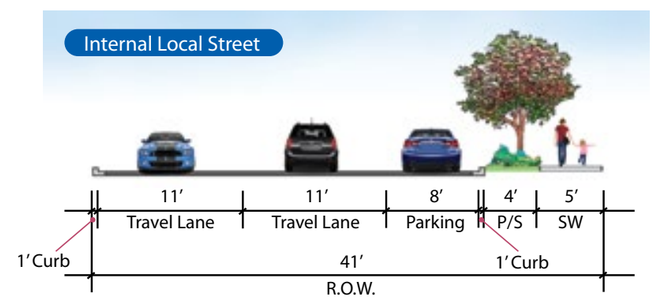
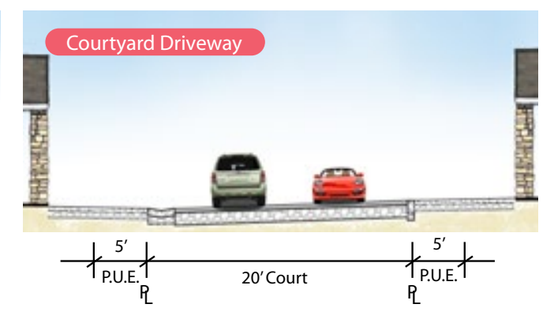
Street Cross-Sections

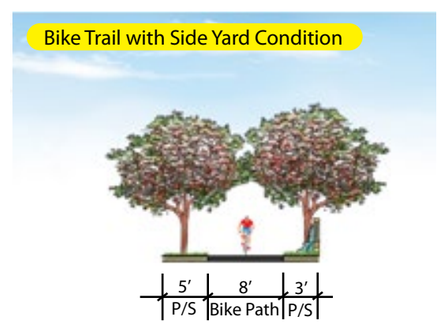


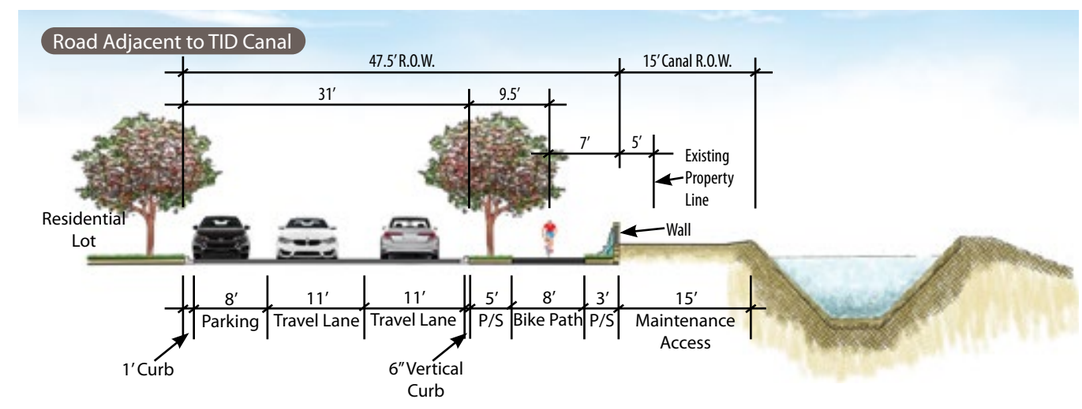






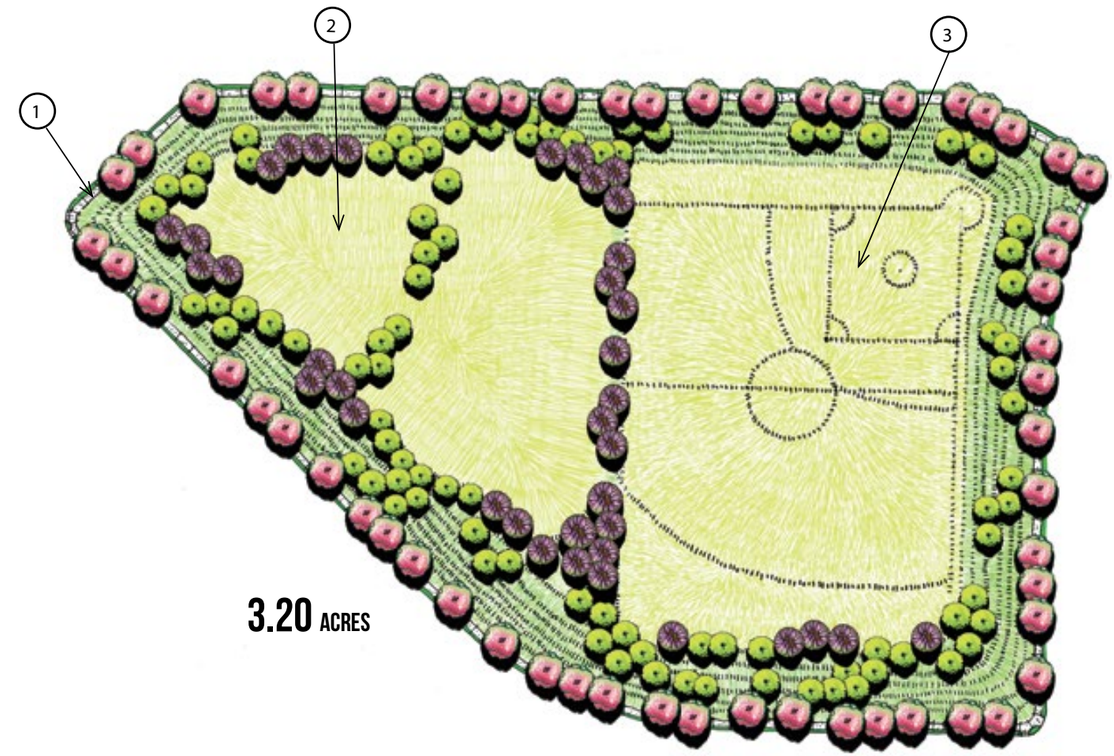
- Santa Fe Avenue
- Internal Local Street
- Courtyard Driveway
- Road Adjacent to TID Canal
- Bike Trail with Side Yard Condition

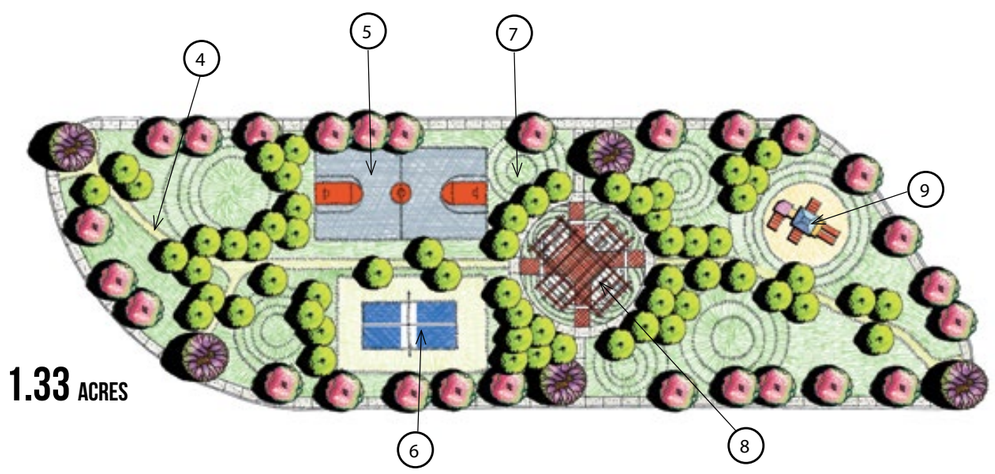


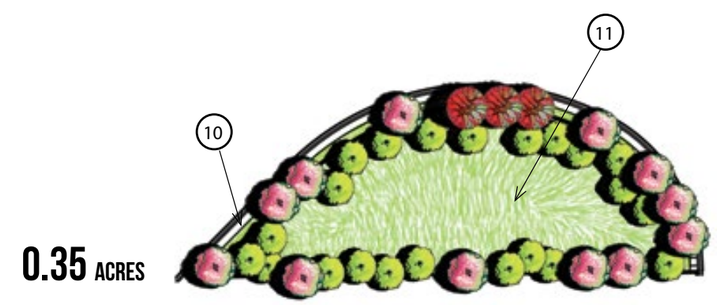


LEGEND

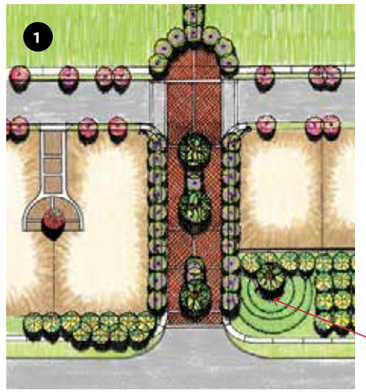
1. Neighborhood Connecting Sidewalk
2. Dog Park
3. Open Turf Playfield
4. Neighborhood Connecting Path
5. Basketball Court
6. Pickle ball Court/Volleyball
7. Turf Mounding & Seat Walls
8. Paved Seating Area w/ BBQ's & Picnic Tables
9. Children's Playground Equipment
10. Neighborhood Connecting Sidewalk
11. Open Turf Playfield







NOTE: Images are for illustrative purposes to provide character to the overall project. Developer may propose alternative designs that provide similar character subject to approval by the Community Development Director.



Santa Fe Avenue Entrance

Entryway Monument Sign

Decorative Street Lighting

Decorative Street Signage

Decorative Stop Sign & Street Sign

NOTE: Images are for illustrative purposes to provide character to the overall project. Developer may propose alternative designs that provide similar character subject to approval by the Community Development Director.

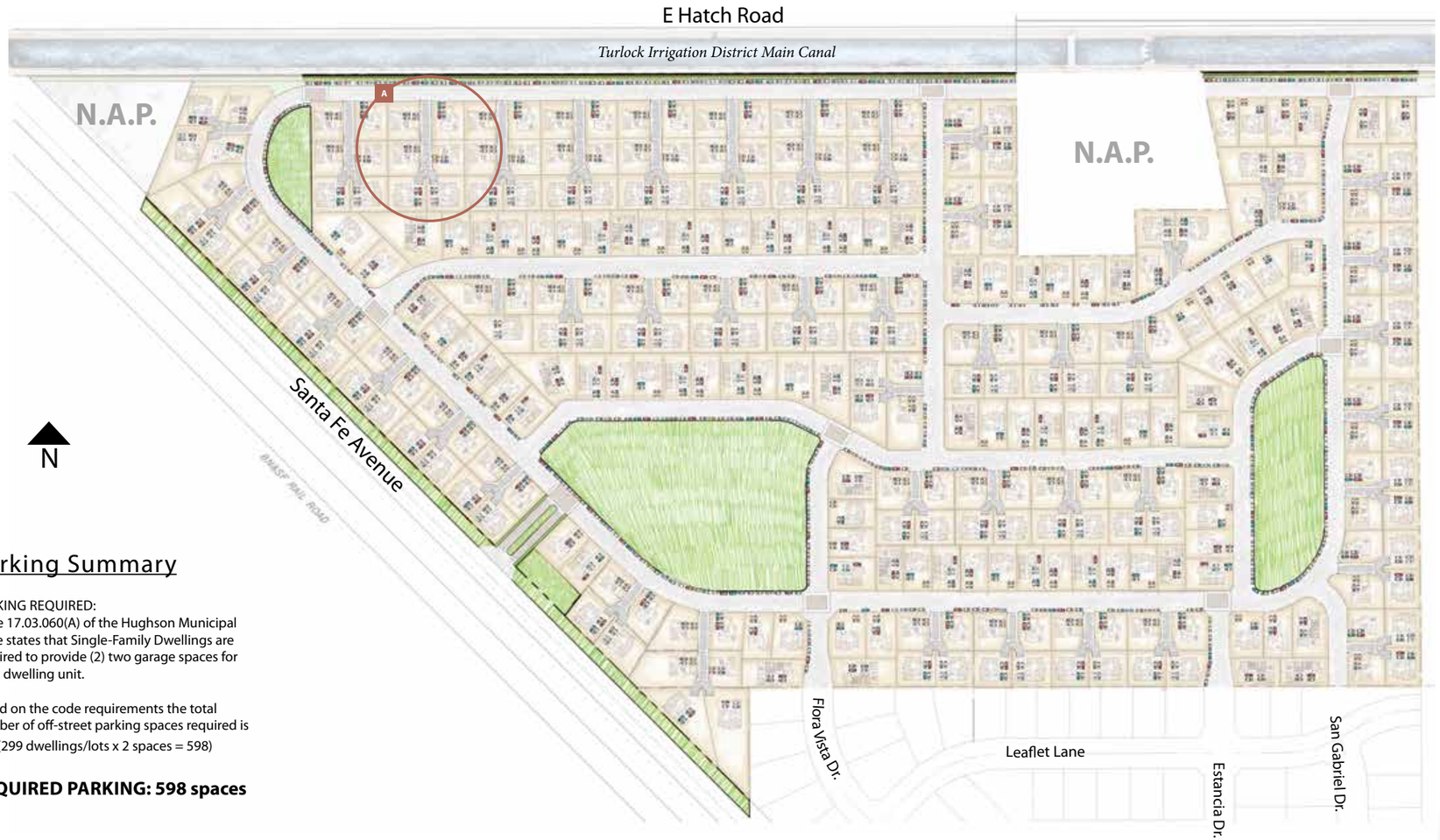
Wall Plan

Wall along Turlock Irrigation District Main Canal

Wall along Santa Fe Avenue

NOTE: Images are for illustrative purposes to provide character to the overall project. Developer may propose alternative designs that provide similar character subject to approval by the Community Development Director.

Parking Plan



Parking Summary

PARKING REQUIRED:
Table 17.03.060(A) of the Hughson Municipal Code states that Single-Family Dwellings are required to provide (2) two garage spaces for each dwelling unit.

Based on the code requirements the total number of off-street parking spaces required is 598 (299 dwellings/lots x 2 spaces = 598)

REQUIRED PARKING: 598 spaces

PARKING PROVIDED:
Each proposed Single-Family Dwelling will provide (2) two required parking spaces within the garage. Additional parking is available for guests/visitors, both on-street and within the driveway areas.

OFF-STREET PARKING
PROVIDED: 1,224

ON-STREET PARKING
PROVIDED: 455

PARKING PROVIDED: 1,679

This document is the Mitigation Monitoring and Reporting Program (MMRP) for the Parkwood Subdivision Project (project). This MMRP has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A MMRP is required for the proposed project because the Initial Study / Mitigated Negative Declaration (IS/MND) has identified significant adverse impacts, and measures have been identified to mitigate those impacts.

The numbering of the individual mitigation measures follows the numbering sequence as found in the IS/MND.

MITIGATION MONITORING AND REPORTING PROGRAM

The MMRP, as outlined in the following table, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in the IS/MND.

The City of Hughson will be the primary agency responsible for implementing the mitigation measures and will continue to monitor mitigation measures that are required to be implemented during the operation of the project.

The MMRP is presented in tabular form on the following pages. The components of the MMRP are described briefly below:

- **Mitigation Measures**: The mitigation measures are taken from the IS/MND in the same order that they appear in that document.
- **Mitigation Timing**: Identifies at which stage of the Project mitigation must be completed.
- **Monitoring Responsibility**: Identifies the agency that is responsible for mitigation monitoring.
- **Compliance Verification**: This is a space that is available for the monitor to date and initial when the monitoring or mitigation implementation took place.

TABLE 1: MITIGATION MONITORING AND REPORTING PROGRAM

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
AGRICULTURAL RESOURCES				
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	***Mitigation Measure AG-1:*** *Prior to approval of the Tentative Map for the project, the project applicant shall comply with the City's Right to Farm Ordinance (Section 17.03.064 of the Municipal Code). In order to comply, the following deed restriction shall be recorded by the owners and run with the land:* *"RIGHT TO FARM DEED RESTRICTION* *Properly conducted agricultural operations are permitted within Stanislaus County, within the City of Hughson, and its Sphere of Influence. You are hereby notified that the property you are purchasing is in an agricultural area. You may be subject to inconvenience or discomfort from lawful agricultural or agricultural processing facilities operations. Discomfort and inconvenience may include, but are not limited to, noise, odors, fumes, dust, smoke, burning, vibrations, insects, rodents and/or the operations of machinery (including aircraft) during any 24 hour period. One or more of the inconveniences described may occur as a result of agricultural operations which are in compliance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in an area with a strong rural character and an active agricultural sector. Lawful ground rig or aerial application of pesticides, herbicides and fertilizers occur in farming operations. Should you be concerned about spraying, you may contact the Stanislaus County Agricultural Commission.* *The City of Hughson Right to Farm Ordinance does not exempt farmers, agricultural processors or others from compliance with law. Should a farmer, agricultural processor or other person not comply with appropriate State, federal or local laws, legal recourse is possible by, among other ways, contacting the appropriate agency. This Right to Farm Deed Restriction shall be included in all subsequent deeds and leases for this property until such time as the City Council shall determine that such a restriction is no longer necessary."* *Additionally, every transferor of property subject to the notice recorded pursuant to subsection C of Section 17.03.064 shall provide to any transferee*	City of Hughson Community Development Department	Prior to the approval of the Tentative Map for the project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	in writing the notice of right to farm recited below. The notice of right to farm shall be contained in each offer for sale, counter offer for sale, agreement of sale, lease, lease with an option to purchase, deposit receipt, exchange agreement, rental agreement, or any other form of agreement or contract for the transfer of property; provided, that the notice need be given only once in any transaction. The transferor shall acknowledge delivery of the notice and the transferee shall acknowledge receipt of the notice. *The form of notice of right to farm is as follows:* *"NOTICE OF RIGHT TO FARM* *Properly conducted agricultural operations are permitted within Stanislaus County and within the City of Hughson Sphere of Influence. You are hereby notified that the property you are purchasing/leasing/renting is in an agricultural area. You may be subject to inconvenience or discomfort from lawful agricultural or agricultural processing facilities operations. Discomfort and inconvenience may include, but are not limited to, noise, odors, fumes, dust, smoke, burning, vibrations, insects, rodents and/or the operation of machinery (including aircraft) during any 24 hour period. One or more of the inconveniences described may occur as a result of agricultural operations which are in compliance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in an area with a strong rural character and an active agricultural sector. Lawful ground rig or aerial application of pesticides, herbicides and fertilizers occur in farming operations. Should you be concerned about spraying, you may contact the Stanislaus County Agricultural Commission.* *The City of Hughson Right to Farm Ordinance does not exempt farmers, agricultural processors or others from compliance with law. Should a farmer, agricultural processor or other person not comply with appropriate state, federal or local laws, legal recourse is possible by, among other ways, contacting the appropriate agency. This notification is given in compliance with Hughson Municipal Code Section 17.03.064. By initialing below, you are acknowledging receipt of this notification.*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	_____ *Transferor's Initials* _____ *Transferor's Initials"*			
AIR QUALITY				
a) Conflict with or obstruct implementation of the applicable air quality plan? b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	***Mitigation Measure AIR-1:*** *Prior to the commencement of construction activities for each phase of the project, the project proponent shall prepare and submit a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021, Section 6.3, for the review and approval of the APCD Air Pollution Control Officer.*	SJVAPCD Air Pollution Control Officer	Prior to the commence-ment of construction activities for each phase of the project	
	Mitigation Measure AIR-2: *During all construction activities, the project proponent shall implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures shall include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules.*	SJVAPCD Air Pollution Control Officer	During all construction activities	
	Mitigation Measure AIR-3: *During all construction activities, the project proponent shall implement the following dust control practices identified in Tables 6-2 and 6-3 of the GAMAQI (San Joaquin Valley APCD, 2002).* *a. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.* *b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.* *c. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.* *d. When materials are transported off-site, all material shall be*	SJVAPCD Air Pollution Control Officer	During all construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained. *e. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.* *f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.* *g. Limit traffic speeds on unpaved roads to 5 mph; and* *h. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.*			
	Mitigation Measure AIR-4: *Architectural coatings applied to all structures in the project site shall meet or exceed volatile organic compound (VOC) standards set in APCD Rule 4601. The project applicant shall submit to the APCD a list of architectural coatings to be used and shall indicate how the coatings meet or exceed VOC standards. If the APCD determines that any architectural coatings do not meet VOC standards, the project applicant shall replace the identified coatings with those that meet standards.*	SJVAPCD Air Pollution Control Officer	During all construction activities	
	Mitigation Measure AIR-5: *Asphalt paving shall be applied in accordance with APCD Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.*	SJVAPCD Air Pollution Control Officer	During all construction activities	
	Mitigation Measure AIR-6: *Prior to final approval of improvement plans for each phase of the project, the project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or project component, the project proponent shall incorporate*	SJVAPCD	Prior to final approval of improvement plans for each phase of the project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	mitigation measures into the proposed project and demonstrate compliance with District Rule 9510 including payment of all fees.			
BIOLOGICAL RESOURCES				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	***Mitigation Measure BIO-1****: The project proponent shall implement the following measures to avoid or minimize impacts on Swainson's hawk:* • *No more than 30 days before the commencement of construction, a qualified avian biologist shall perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31).* • *Appropriate buffers shall be established and maintained around active nest sites during construction activities to avoid nest failure as a result of project activities. The appropriate size and shape of the buffers shall be determined by a qualified avian biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be adjusted if a qualified avian biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified avian biologist has determined that the young have fledged or the nest site is otherwise no longer in use.* • *Before the commencement of construction, the project proponent shall provide compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat. Mitigation shall be at the CDFW specified ratios, which are based on distance to nests. The Plan Area's distance to the closest nest falls within the range of "within 5 miles of an active nest tree but greater than 1 mile from the nest tree." As such, the Project shall be responsible for 0.75 acres of each acre of urban development authorized (0-75:1 ratio). The project proponent shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.* ***Mitigation Measure BIO-2****: The project proponent shall implement the following measure to avoid or minimize impacts on other protected bird*	City of Hughson Community Development Department City of Hughson Community	No more than 30 days before the commence-ment of construction Within 14 days before	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	species that may occur on the site: • *Preconstruction surveys for active nests of special-status birds shall be conducted by a qualified avian biologist in all areas of suitable habitat within 500 feet of project disturbance. Surveys shall be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.* • *If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites shall be determined by a qualified avian biologist to avoid nest failure resulting from project activities. The size of the buffer shall depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified avian biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified avian biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*	Development Department	commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	***Mitigation Measure BIO-3:*** *Prior to approval of any street improvements, the project applicant shall pay to the City the total costs of all the trees, pursuant to Section 12.30.060 of the Municipal Code. The City shall plant the trees at the proper time. Watering and care of the trees thereafter shall be the responsibilities of the applicant or the purchasers of the property. Additionally, pursuant to Section 17.03.092 of the Municipal Code, the project applicant shall not plant trees or shrubs in any street tree area or other public place without permission of the planning officer.* *Further, the project applicant shall submit a tree survey to the City, pursuant to Section 17.03.092(E). The location, size, accurate driplines and species of existing trees shall be shown on the tree survey in the same scale as development plans submitted for development review. All trees proposed for removal shall be identified. If there is disturbance proposed within the dripline of a significant tree, a certified arborist's assessment and protection measures shall be provided. If significant trees are proposed for removal, the applicant shall replace them with trees whose size, number, and planting location shall be determined by the planning officer before final occupancy is granted to any new residents. The size and age of the tree shall be used to*	City of Hughson Community Development Department	Prior to the approval of any street improvements	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	determine how many new trees shall be substituted for the removed tree but, at a minimum, three new trees shall replace one tree removed. The ratio may be increased at the discretion of the planning officer. *Where orchard trees are to be cut down, removed, or relocated as part of new development, the planning commission or planning officer shall require the retention of selected orchard trees within the proposed subdivision that are representative of the land's agricultural heritage. For orchards in productive use for at least five years prior to the new development, a minimum of 10 percent of the existing orchard trees shall be preserved. This shall be determined by the planning officer.*			
CULTURAL RESOURCES				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section15064.5? b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	***Mitigation Measure CUL-1:*** *If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts/features, and paleontological sites) are discovered, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Hughson shall be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology (or a qualified paleontologist in the event paleontological resources are found) shall be retained to determine the significance of the discovery. The City of Hughson shall consider recommendations presented by the professional for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Specific measures are developed based on the significance of the find.*	City of Hughson Community Development Department Qualified archaeologist	If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts / features, and paleontological sites) are discovered	
c) Disturb any human remains, including those interred outside of formal cemeteries?	***Mitigation Measure CUL-2:*** *If any human remains are found during grading and construction activities, all work shall be halted immediately within 50 meters (165 feet) of the discovery and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Additionally, if the Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be*	Stanislaus County Coroner Native American Heritage Commission	If any human remains are found during grading and construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	required and, if required, shall be retained at the applicant's expense.			
GEOLOGY AND SOILS				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: iii) Seismic-related ground failure, including liquefaction? c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	***Mitigation Measure GEO-1:*** *Prior to issuance of any building permits, the developer shall be required to submit building plans to the City of Hughson for review and approval. The building plans shall also comply with all applicable requirements of the most recent California Building Standards Code. All on-site soil engineering activities shall be conducted under the supervision of a licensed geotechnical engineer or certified engineering geologist.*	City of Hughson Building Division	Prior to issuance of any building permits	
b) Result in substantial soil erosion or the loss of topsoil?	***Mitigation Measure GEO-2:*** *The project applicant shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Hughson and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*	City of Hughson Community Development Department Central Valley Regional Water Quality Control Board	Prior to earthmoving activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
HYDROLOGY AND WATER QUALITY				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) Result in substantial erosion or siltation on- or off-site; (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) Impede or redirect flood flows? e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	***Mitigation Measure HYDRO-1:*** *The Stormwater Management Plan shall be designed and engineered to ensure that post-project runoff is equal to or less than pre-project runoff. The Plan shall be consistent with Section 7 of the City's Improvement Standards, which establish minimum storm water management requirements and controls. According to the standards, storm drain discharges must include stormwater quality control measures, and stormwater generated must be adequately treated before discharge. The applicant shall provide the City Engineer with all stormwater runoff calculations with the improvement plan submittal.*	City of Hughson Engineer	With improvement plan submittal	
NOISE				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise	***Mitigation Measure NOI-1:*** *To reduce potential construction noise impacts during project construction, the following multi-part mitigation measure shall be implemented for the project:* • *All construction equipment powered by internal combustion engines shall be properly muffled and maintained.*	City of Hughson Public Works Department	Prior to approval of improvement plans for the project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
ordinance, or applicable standards of other agencies? b) Generation of excessive groundborne vibration or groundborne noise levels?	• *Quiet construction equipment, particularly air compressors, shall be selected whenever possible.* • *All stationery noise-generating construction equipment such as tree grinders and air compressors shall be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.* • *Unnecessary idling of internal combustion engines is prohibited.* • *The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.* • *Construction shall be limited to 7 AM to 7 PM on weekdays and 8 AM to 4 PM on Saturdays with no work allowed on Sundays unless otherwise authorized by the City in writing.* *This requirement shall be noted in the improvement plans prior to approval by the City's Public Works Department.* ***Mitigation Measure NOI-2:*** *Any compaction required less than 26 feet from the adjacent residential structures shall be accomplished by using static drum rollers, which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring shall be conducted to ensure that construction vibrations do not cause damage to any adjacent structures. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*	City of Hughson Public Works Department	Prior to approval of improvement plans for the project	
TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms	***Mitigation Measure TRIBAL-1:*** *If cultural resources are discovered during project-related construction activities, all ground disturbances within a minimum of 50 feet of the find shall be halted until a qualified professional archaeologist can evaluate the discovery. The archaeologist shall examine the resources, assess their significance, and recommend appropriate procedures to the lead agency to either further investigate or mitigate adverse impacts. If*	City of Hughson Community Development Department Qualified archaeologist	If cultural resources are discovered during project-related construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	*the find is determined by the lead agency in consultation with the Native American tribe traditionally and culturally affiliated with the geographic area of the project site to be a tribal cultural resource and the discovered archaeological resource cannot be avoided, then applicable mitigation measures for the resource shall be discussed with the geographically affiliated tribe. Applicable mitigation measures that also take into account the cultural values and meaning of the discovered tribal cultural resource, including confidentiality if requested by the tribe, shall be completed (e.g., preservation in place, data recovery program pursuant to PRC §21083.2[i]). During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project site.*			

- **Self Certification Checklist**

Prior to submittal of any application subject to the design guidelines the applicant shall complete the following self-certification checklist. The completed checklist shall be submitted as part of the formal application materials for review and use by City staff, Design Review Committee, Planning Commission and City Council.

The "Design Expectations" contained herein have been prepared to encourage each applicant to carefully consider the City's expectations as they begin the earliest planning stages of a proposed development. While encouraging fairly broad and flexible solutions to address each "Design Expectations", overall compliance with these "Design Expectations" is not optional. The City Council reserves the right to determine final conformance with these City's objectives and expectations identified herein.

Prior to submittal of any proposed plan, zoning change, and/or tentative subdivision map application, each project proponent, developer, subdivider, or applicant shall complete the following self-certification checklist. The completed checklist shall be submitted as part of the formal application materials for review and use by City staff, Planning Commission and City Council. If the Community Development Director can clearly determine full compliance with the Single-Family Residential "Design Expectations" as noted in this checklist, no additional review by the Commission/Council may be required.
The "Design Expectations" contained herein have been prepared to encourage each developer to carefully consider the City's expectations as they begin the earliest planning stages of a proposed residential development. While encouraging fairly broad and flexible solutions to address each "Design Expectations", overall compliance with these Expectations is not optional. The City Council reserves the right to determine final conformance with these City's objectives and expectations identified herein.
Site Planning

A. Orientation To Built Community/Adjoining Development	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Numerous points of ingress and egress, interconnecting with local streets, bikeways and sidewalks.	✔		Provided throughout the project.	
2. Non-motorized trail system allowing for connecting points to public right-of-ways, trails, streets and public facilities.	✔		Paved Trail/Bike Path provided adjacent to the TID Lateral.	
3. Open community, without gates, unless permitted by City Council in special housing situation.	✔		Project is not a gated community.	

4. Any cul-de-sacs are open ended, providing pedestrian and bicyclist access to adjoining streets and public areas.		✔	Project does not contain cul-de-sacs.	
5. Design developments that decrease densities as development progresses outward from the center of town towards urban/agricultural edges	✔		Site is at the "Urban/Ag edge" & proposed project is not designed as High-Density.	
6. No two-story homes adjacent to existing single-story homes.	✔		Will comply, if conditioned as part of project approval.	
7. Homes within ½ mile of railroad or Hatch Road constructed with specified sound rated assemblies or doors, windows and sliding glass doors.	✔		Will comply, if conditioned as part of project approval.	
B. Orientation to Parks, Public Open Space and "Edges" of the Community.	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Homes that "front" onto parks and open space edges in order to provide "eyes" on passive and active places.	✔		Project designed with this feature.	
2. On lots or homes that "back up" to the edge provide visual breaks through design or open fencing elements.		✔	No homes back-up to open space.	
3. Along permanent city edges provide perimeter streets with homes "facing" the city's edge versus "backing up" to our edge.	✔		Along Hatch Rd - project provides street and homes facing City edge.	
4. Perimeter walls along edges of neighborhoods only permitted when abutting major arterial or expressway.	✔		Wall provided along Santa Fe Avenue (Major Arterial).	
5. In those instances with perimeter lots backing up to arterial roadway, homes limited to single story in height or provide other design solution (i.e., extra deep lots, excessive rear yard setback, etc.) to reduce visual "tunnel look".	✔		Varying elevations provided.	
C. General Street Widths and Block Lengths	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Overall street system that incorporates principles of grid based street system with multiple connections and routes to each destination point.	✔		Modified grid system provided.	
2. Residential streets with hierarchy of size and width which include arterials, collectors, parkway streets, and local residential streets.		✔	Not applicable as project size is not large enough to require streets other than "Locals Streets"	

3. Elongated and open ended cul de sacs may be appropriate only in limited instances.		✔	Not a part of Project design.	
D. Reduce Vehicle Speeds Through Neighborhoods	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Traffic calming features, including bow-outs at intersections of collectors and/or local residential streets, to enhance pedestrian/vehicular separation and lessen speeds.	✔		Incorporated into the project design.	
2. Special paving treatments, such as texturing or interlocking pavers considered in crosswalks at key intersections.	✔		Incorporated into the project design at various points throughout the street system.	
3. Define key neighborhood entry points through the use of bow-outs, landscaping, monuments, and roadway texture changes to create visual and audible cues of entryway.	✔		Incorporated into the project design at the major entrance at Santa Fe Avenue.	
E. Encourage Pedestrian Activity In Residential Neighborhoods	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Pedestrian sidewalks or pathways on both sides of all streets.	✔		Incorporated into the project design.	
2. Pedestrian sidewalk separated from the street curb by a landscaped planter strip ranging in width from a minimum of 4’ to 8’ depending on the classification and function of the adjoining roadway.	✔		Incorporated into the project design.	
3. Installation of Decorative Bollard type bicycle locking devices in lieu of standard bicycle rack devices	✔		As needed, will be provided in proposed Park/Open Space areas.	
4. Street trees planted at intervals of 20-30 feet on center within landscaped planter strip.	✔		Incorporated into the project design.	
5. Street trees incorporate deep-root watering technologies to prevent root intrusion and damage to streets, driveways and sidewalks.	✔		Will comply with City Standards & Project's Conditions of Approval.	
6. Street tree species that have a broad canopy in order to provide shade as well as pleasant enclosure of the street	✔		Incorporated into the project design.	
7. Street tree species to emphasize deciduous varieties that provide summer shading, fall and/or spring colors, and open canopy for winter sun and warmth. Deep rooting varieties will include deep root enclosures.	✔		Incorporated into the project design.	

8. Themed street tree pattern defined by a predominant species along each arterial and collector street. Oak trees encouraged.	✔		Incorporated into the project design along Santa Fe & Hatch.	
9. Development provides for creation of a Landscape and Lighting Maintenance Benefit District (or comparable maintenance districts) to preserve and maintain in perpetuity all district landscape features, lighting elements, special paving/transportation features, pedestrian/bicyclist pathways, and monument/signing entry elements.	✔		Will comply with, as conditioned with Project's approval.	
10. Where possible, a system of Class 1 Bikeways and Trails have been designed within and around the development to encourage off-street, non-vehicular pedestrian circulation.	✔		Class I Bike Lane / Walking Trail provided adjacent to the TID Lateral & Hatch Road.	
11. Class II and III Bikeways have been designed on all arterial or collector streets consistent with the City's Bike and Trail Master Plan.		✔	Not applicable.	
12. Specifications for all related design details for a pedestrian/bicycle trail include pavement striping legends, decorative bollard design and placement details, trail/road crossing intersection details, roadway signing, trail signing, low level security lighting, and acceptable fire-resistive landscape planting materials and has been submitted for review and approval by the City,	✔		Will comply with, as conditioned with Project's approval.	
F. Enhance the Pedestrian Scale of the Residential Streetscape	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Decorative light standards and fixtures consistent with Hughson's small town, rural character is used along residential streets at a scale consistent with the street classification.	✔		Will comply with City Standards and as conditioned with Project's approval.	
2. All new and existing overhead utility lines and structures placed below ground during development to reduce visual clutter and avoid conflicts with street trees.	✔		Will comply with City Standards and as conditioned with Project's approval.	
3. Any above ground utility structure that cannot be mounted or installed below ground sufficiently screened in a manner to soften its visual appearance along the streetscape..	✔		Will comply with, as conditioned with Project's approval.	

4. Decorative Street signing consistent with the City's small town, rural character and meeting all necessary regulatory requirements be installed or used along residential streets and placed in a manner which enhances its scale and is consistent with the street classification.	✔		Will comply with City Standards and as conditioned with Project's approval.	
G. Provide Variation in Lot Depths and Lot Widths	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Provide variation in the width and depth of proposed lots in order to allow opportunities for the construction of homes which include a wide side yard for possible off-street placement of accessory buildings and/or RV parking behind fence	✔		Variation of lot sizes and widths incorporated into project design.	
2. Use any curvilinear or angle streets to allow varied lot width and depth along streets and/or blocks.	✔		Incorporated into project design.	
H. Street View (Perimeter) Walls & Monument Entries/ Access	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Incorporate design features in perimeter walls that include off-sets, wall/metal combinations, walls with varying heights, and extensive landscape screening.	✔		Incorporated into project design.	
2. Plan for multiple ingress and egress points into residential subdivisions along perimeter walls where traffic and noise impacts allow. This orientation should always contribute to a more aesthetic and pedestrian friendly streetscape.	✔		Incorporated into project design.	
3. Enhance the visual attractiveness of the community by providing attractive streetscapes, particularly along major expressways, arterials and collector streets.	✔		Landscaping corridor incorporated into project design along both Santa Fe Avenue & Hatch Road.	
4. Deep, landscaped setbacks to separate perimeter walls from adjoining street right-of-ways and other public views. Class I pathways and bicycle trail systems to be incorporated within these perimeter setback areas.	✔		Incorporated into project design.	
5. Neighborhood entry markers and/or monuments that contribute to creating a sense of place for the residential community.	✔		Incorporated into project design.	

6. Maximize placement of single story residences on lots that back up to the inside or perimeter subdivision walls to lessen the effect or large two-story homes with rear windows facing the arterial or expressway view. [Also See Element 2. (e)]	✔		Will comply, if conditioned as part of project approval.	
I. Provide Variation In Building Setback and Streetscape Expression	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Fully utilize the opportunities to vary plot placements to incorporate varied front building setbacks along each streetscape. [Also See Element No. 8 (a)]	✔		Incorporated into project design.	
2. Design diversity that breaks from repetitive tract house style by providing front elevation variation throughout the neighborhood plan. [Also See Element No. 2 (a) & (b)]	✔		Incorporated into project design.	
3. Options offered that provide variety of Plot Placements and Footprint sizes at time of sale	✔		Incorporated into project design.	
4. Manipulate building massing and exterior elements to allow for visual interest and bulk/height variety along the streetscape.	✔		Incorporated into project design.	
5. Building placement and orientation acknowledging the natural terrain, drainage and vegetation where appropriate that offers variety in streetscape expression.	✔		Incorporated into project design.	
J. Building Variety and Type	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. A combination of both one and two story homes will be provided throughout each residential neighborhood.	✔		Incorporated into project design.	
2. For each housing development of less than 100 units, applicant shall offer a minimum of seven (7) separate floor plans each with four (4) alternate elevations, of which three (3) must be single story and at least two (2) must be plans for 2000 square feet or less. The number of lots that can accommodate each of the seven (7) plans shall be approximately equal.		✔	Not applicable.	

3. For neighborhoods larger than 100 units, applicant shall offer a minimum of ten (10) separate floor plans, each with six (6) alternate elevations, of which four (4) must be single story and at least three (3) must be plans for 2000 square feet or less. The number of lots that can accommodate each of the ten (10) plans shall be approximately equal.	✔		Will comply, if conditioned as part of project approval.	
4. A variety of house sizes provided throughout each separate development in an effort to allow for diversity in the economic makeup and price range with each neighborhood.	✔		Incorporated into project design.	
K. Minimize Impact of Garages and Off Street Parking Areas	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Garages are not to be the prominent feature on the front elevation of any residence. Creative efforts will be expected to lessen the garage as a prominent feature including, but not be limited to, the following design elements:	✔		Incorporated into project design.	
2. Side turn-in garage may protrude in front of front house elevation.	✔		Incorporated into project design.	
3. Provide a second story above the garage with features such as protruding balconies or strong architectural elements to draw attention away from garage doors.	✔		Incorporated into project design.	
4. Detach garage to rear of property – may tie to residence with trellis, breezeway, etc.	✔		Incorporated into project design.	
5. Courtyard garage design.	✔		Incorporated into project design.	
6. Porte-cocheres to create pass-through to side garage and extra parking space.	✔		Incorporated into project design.	
7. On corner lots, garages accessed from side other than front of house when possible	✔		Incorporated into project design.	
8. Front loaded garages wider than two cars in width are only permitted when placed on lots wider than 75'.		✔	Not a part of project design.	
9. Three car garages may be permitted in lots smaller than 75' when the third car space is situated in a tandem parking alignment.		✔	Not a part of project design.	

10. Front loaded garage elements not to exceed more than fifty percent (50%) of the overall width of the residence.	✔		Incorporated into project design.	
11. All garages maintain a setback (driveway length) of at least 20’ from property line of loading street. Alley setbacks will be 3’	✔		Incorporated into project design.	
12. Driveways will be located on the side of the lot farthest from the intersection if the lot is a corner lot.	✔		Incorporated into project design.	
13. There shall be illuminated address numerals posted on the building so as to be plainly visible from all adjoining streets or driveways during both daylight and night time hours.	✔		Will comply with City Standards and as conditioned with Project's approval.	
14. Place active living areas at the front of the structure with windows onto the street limiting garage projection	✔		Incorporated into project design.	
L. Creative Entry Walks and Driveways	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Optional offering of separate pedestrian access to the front door from the driveway.	✔		Incorporated into project design.	
2. Optional offering of “Hollywood” driveways to be used when providing access to garages or off-street parking areas in the rear half of the lot.		✔	Optional.	
3. When any driveway is wider than 20 feet, developer has will offer construction with visually contrasting paving surface elements such as salt finish bomanite, stamped/colored concrete, brick, or paving stones.	✔		Minimum 20' driveways provided in project's design.	
4. Driveway access to “third” garages and/or R.V. parking areas should be offered with alternative paving materials (i.e. Hollywood driveways, pavers, decorative concrete, etc.)		✔	Optional.	
M. Maximize Porches, Entries and Courts	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Each house should have a clearly identified entry and have active use windows (i.e., living room, kitchen, family room) facing the street.	✔		Incorporated into project design.	
2. Porches of sufficient overall size and scale to balance the appearance of the front façade and provide weather protection and shade.	✔		Incorporated into project design.	

3. Front porches large enough (minimum of 6 feet in depth) to accommodate chairs to provide an opportunity for increased interaction among neighbors	✔		Incorporated into project design.	
4. Corner lot houses include wrap around porches on both street sides to establish a strong “street relationship” where possible	✔		Where possible, this has been incorporated into project's design.	
5. At a minimum, the front door should have the same prominence as the garage door.	✔		Incorporated into project design.	
6. Use of courtyards that offer additional semi-enclosed private front yard exterior living area shall be offered where possible.	✔		Incorporated into project design.	
N. General Architecture	Applicable	Not Applicable	Applicant Remarks	Staff Remarks
1. Roof form, mass, shape, material and color changes to create variations in plans. [Also See Element No. 1 (b)]	✔		Incorporated into project design.	
2. Consistent levels of detailing/finish on all sides of structures such as recessed, pop out, or trim features.	✔		Incorporated into project design.	
3. Window shape, placement and detailing that breaks long expanse of exterior walls (i.e., shutters, window boxes, moldings, multi-panes, and decorative window heads	✔		Incorporated into project design.	
4. A minimum of 15 color schemes for exterior surface and five (5) color options for trim are offered to buyer for subdivisions of 100 or more houses, and a proportional number for subdivisions under 100 houses, but never less than 8 color schemes and 3 options for trim.	✔		Incorporated into project design.	
5. Residential heating/air conditioning units located to have the minimum visual impact and noise impact on adjacent residential neighbors. Roof-mounted screens/vents compatible with roof material and color.	✔		Incorporated into project design.	
6. All trash and storage areas, mechanical equipment, and all other building appurtenances (i.e. utility meters, electrical boxes, air conditioners, fire sprinkler backflow valves, etc.) shall be screened from public view and adjacent properties. Details of the proposed screening shall be shown on the final construction and/or landscape plans. Roof-mounted screens and vents shall be compatible with final roof materials and colors.	✔		Will comply with City Standards and as conditioned with Project's approval.	

7. Garage door recessed a minimum of 1 foot behind leading wall of garage (encouraged to have window elements and wall accent/base elements).	✔		Incorporated into project design.	
8. The use of dormers, triangular knees, and exposed beams and rafter tails on exterior eaves to provide design accents.	✔		Incorporated into project design.	
9. The application of architectural embellishments to chimneys, porte-cocheres, porches and entry ways to provide visual interest (i.e., stone work, trellises, extra stickwork, support bases and walls, railings, caps, etc.)	✔		Incorporated into project design.	
10. Solar panels, if used or offered, should be integral with the roof.	✔		If Solar Panels are used, will incorporate into roof/shingles.	
11. Roof chimneys and vents minimized with size, composition and color to harmonize with the surrounding materials.	✔		Incorporated into project design.	
O. Gateways				
1. Require design review on all development projects and capital improvements within view of these designated “gateway zones”	✔		Project landscaping and design incorporated into entries.	
2. Coordinate development of entryway architectural features that compliment and extend features currently found at other “gateway zones” and throughout the city.	✔		Project landscaping and design incorporated into entries.	
3. Create sense of open space use and vista with architectural features that incorporate structure and landscaping.	✔		Incorporated into project design.	

Responses to Comments for the Parkwood Subdivisions Project

Introduction and List of Commenters

The Initial Study / Mitigated Negative Declaration (IS/MND) for the Parkwood Subdivision Project was available for the statutory 30-day public review from June 15, 2020 to July 14, 2020. No new significant environmental impacts or issues, beyond those already covered in the IS/MND for the Parkwood Subdivision Project, were raised during the comment period.

The following table lists the comments on the IS/MND that were submitted to the City of Hughson during the 30-day public review period for the IS/MND. The assigned comment letter, letter date, letter author, and affiliation, if presented in the comment letter or if representing a public agency, are also listed. Letters received are coded with letters (A, B, C, etc.).

LIST OF COMMENTERS ON IS/MND

RESPONSE LETTER	*INDIVIDUAL OR SIGNATORY*	*AFFILIATION*	*DATE*
A	Monique Wilber	California Department of Conservation	7-14-2020
B	Nicholas White	Central Valley Regional Water Quality Control Board	7-8-2020
C	Gina Oltman	Resident of Hughson	6-27-2020
D	Scott Berner	Hughson Fire Protection District	7-14-2020
E	Brenda Smith	Hughson Unified School District	7-14-2020
F	Michael Mitchell	Resident of Hughson	7-14-2020
G	Robin MacDOnald	Resident of Hughson	7-3-2020

Responses to Comment Letters

Written comments on the IS/MND are reproduced on the following pages, along with responses to those comments. To assist in referencing comments and responses, the following coding system is used:

- Those comments received are represented by a lettered response.
- Each letter is lettered (i.e., Letter A) and each comment within each letter is numbered (i.e., comment A-1, comment A-2).

California
Department of Conservation
Division of Land Resource Protection

Gavin Newsom, Governor
David Shabazian, Director

JULY 8, 2020

VIA EMAIL: LSIMVOULAKIS@HUGHSON.ORG
City of Hughson, Community Development Department
Attn: Lea Simvoulakis, Director
P.O. Box 9
Hughson, CA 95326

Dear Ms. Simvoulakis:

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE PARKWOOD SUBDIVISION PROJECT, SCH# 2020060271

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Intent to adopt a Mitigated Negative Declaration for the Parkwood Subdivision Project (Project). The Division monitors farmland conversion on a statewide basis, provides technical assistance regarding the Williamson Act, and administers various agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description

The proposed project includes the subdivision of the approximately 56.04-acre site into 299 single-family residential lots with one single-family home per lot. The lots would range in size from 5,005 to 13,280 square feet. The project also includes development of 6.14 acres of park/dual use facilities. Additionally, the project would include development of circulation and utility infrastructure improvements. A-1

Currently, the project site is in agricultural use and contains Prime Farmland, as identified by the Department of Conservation's Farmland Mapping and Monitoring Program[1].

[1] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, https://maps.conservation.ca.gov/DLRP/CIFF/

State of California Natural Resources Agency | Department of Conservation
801 K Street, MS 14-15, Sacramento, CA 95814
conservation.ca.gov | T: (916) 324-0850 | F: (916) 327-3430

Department Comments

The conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources. Under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project.[2] All mitigation measures that are potentially feasible should be included in the project's environmental review. A measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

A-2

As the courts have shown[3], agricultural conservation easements on land of at least equal quality and size can mitigate project impacts in accordance with CEQA Guideline § 15370. The Department highlights agricultural conservation easements because of their acceptance and use by lead agencies as an appropriate mitigation measure under CEQA. Agricultural conservation easements are an available mitigation tool and should always be considered; however, any other feasible mitigation measures should also be considered.

A source that has proven helpful for regional and statewide agricultural mitigation banks is the California Council of Land Trusts. They provide helpful insight into farmland mitigation policies and implementation strategies, including a guidebook with model policies and a model local ordinance. The guidebook can be found at:

http://www.calandtrusts.org/resources/conserving-californias-harvest/

Conclusion

The Department recommends further discussion of the following issues:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.

A-3

[2] Public Resources Code section 21002.
[3] *Masonite Corp. v. County of Mendocino* (2013) 218 Cal.App.4th 230, 238.

- Proposed mitigation measures for all impacted agricultural lands within the proposed project area. A-3 cont'd

Thank you for giving us the opportunity to comment on the Notice of Intent to adopt a Mitigated Negative Declaration for the Parkwood Subdivision Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Associate Environmental Planner at (916) 324-7347 or via email at Farl.Grundy@conservation.ca.gov. A-4

Sincerely,

Monique Wilber

Monique Wilber
Conservation Program Support Supervisor

Response to Letter A: Monique Wilber, California Department of Conservation

Response A-1: This comment is noted. This comment serves as an introduction to the letter. This comment notes the responsibilities of the Department of Conservation's Division of Land Resources Protection. Additionally, the commenter summarizes the proposed project description, and notes that the project site is in agricultural use and contains Prime Farmland, as identified by the Department of Conservation's Farmland Mapping and Monitoring Program.

As discussed on page 24 of the IS/MND and as shown in Figure 7 of the IS/MND, the majority of the project site is designated Prime Farmland as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. A portion of the site along the northern boundary is designated Urban and Built-Up Land. The proposed project would result in the conversion of this designated Prime Farmland land to a non-agricultural use. Further, as discussed in the Project Description on page 4 of the IS/MND, the site has previously been used for agricultural and single-family ranchette uses. Orchards are currently located throughout the project site, including mature and young walnut and almond trees. No further response is warranted.

Response A-2: The commenter notes that conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources and that, under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project. The commenter also notes that all mitigation measures that are potentially feasible should be included in the project's environmental review, and that a measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

The commenter further notes that agricultural conservation easements on land of at least equal quality and size can mitigate project impacts in accordance with CEQA Guideline §15370. According to the comment, the Department of Conservation highlights agricultural conservation easements because of their acceptance and use by lead agencies as an appropriate mitigation measure under CEQA. In addition, the commenter notes that agricultural conservation easements are an available mitigation tool and should always be considered; however, any other feasible mitigation measures should also be considered. The comment concludes with information regarding regional and statewide agricultural mitigation banks is the California Council of Land Trusts.

This comment is noted. Impacts associated with agricultural land conversion, including impacts associated with other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use, are discussed in Section II, Agriculture and Forestry

Resources, of the IS/MND. As discussed on page 24, the proposed project will convert Prime Farmland to single-family residential uses. However, the project site is designated as Low Density Residential (LDR) (approximately 19.28 acres), Medium Density Residential (MDR) (approximately 17.73 acres), and Service Commercial (SC) (approximately 19.00 acres) by the Hughson General Plan Land Use Map. The Hughson General Plan EIR anticipated development of the project site as part of the overall evaluation of the build out of the City. The General Plan EIR addressed the conversion and loss of agricultural land that would result from the build out of the General Plan (General Plan 2023 Draft EIR, pp. 4.2-1 through 4.2-15). The General Plan EIR determined that even with the implementation of the General Plan goals, policies, and actions (including, but not limited to, Goal COS-1, Actions LU-1.2, COS-1.2, and COS-1.3, and Policies COS-1.1, COS-1.3, COS-1.6, COS-1.7), the impact would be significant and unavoidable. The City subsequently adopted a Statement of Overriding Consideration and certified the General Plan EIR. The proposed project is generally consistent with the General Plan.

Because conversion of the project site from agricultural to urban uses was previously analyzed in the City's General Plan EIR, implementation of the proposed project would have a less than significant impact relative to this issue.

Further, impacts associated with other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use, are discussed on pages 25 and 26. As discussed, the agricultural land located west of the site, opposite Santa Fe Avenue, is designated mainly Vacant or Disturbed Land, with some Prime Farmland located west of the southwestern corner of the site (see Figure 7). The land to the east is designated for Agriculture by the Stanislaus County General Plan land use map. In order to ensure that development of the site does not result in conversion of the portion of Prime Farmland located west of the southwestern corner of the site to non-agricultural use, the project would be subject to the City's Right to Farm Ordinance. Section 17.03.064 of the Hughson Municipal Code outlines the Right to Farm Ordinance, including nuisances, deed restrictions, and notification to buyers.

The project will comply with the City's Right to Farm Ordinance (as required by Mitigation Measure AG-1). Because conversion of the project site from agricultural to urban uses was analyzed in the City's General Plan EIR, and because the project will be subject to the Right to Farm Ordinance, implementation of the proposed project would have a less than significant impact relative to this issue.

Because the conversion of agricultural land to urban uses was analyzed by the City's General Plan EIR, mitigation is not required for conversion of on-site Important Farmland.

Response A-3: The commenter recommends the following issues be further discussed:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measures for all impacted agricultural lands within the proposed project area.

This comment is noted. See Response A-2 which details the: (1) type, amount, and location of on-site and adjacent farmlands, including a discussion of the farmland conversion that would result from implementation of the project; and (2) impacts on agricultural operations in the vicinity. As discussed, the proposed project will convert Prime Farmland to single-family residential uses. Because the conversion of agricultural land to urban uses was analyzed by the City's General Plan EIR, mitigation is not required for conversion of on-site Important Farmland.

As noted in Response A-2, the lands adjacent to the site contain religious uses and residential uses. The agricultural land located west of the site, opposite Santa Fe Avenue, is designated mainly Vacant or Disturbed Land, with some Prime Farmland located west of the southwestern corner of the site (see Figure 7). It is noted that Mitigation Measure AG-1 is included in the IS/MND to ensure that adjacent off-site agricultural operations are not significantly impacted by development of the proposed project.

Impacts associated with cumulative agricultural impacts are discussed on pages 157 and 158 of the IS/MND. As discussed, the Initial Study includes an analysis of the project impacts associated with agricultural resources, and it was found that the proposed project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of Mitigation Measure AG-1. This mitigation measure would also function to reduce the project's contribution to cumulative impacts. There are no significant cumulative or cumulatively considerable effects that are identified associated with the proposed project after the implementation of all mitigation measures presented in the IS/MND, including Mitigation Measure AG-1.

Response A-4: This comment is noted. This comment serves as a conclusion to the letter. This comment letter has been forwarded to the decision-makers for their consideration. No further response is necessary.

CALIFORNIA Water Boards

GAVIN NEWSOM GOVERNOR

JARED BLUMENFELD SECRETARY FOR ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

14 July 2020

Lea Simvoulakis
City of Hughson
P.O. Box 9
Hughson, CA 95326

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, PARKWOOD SUBDIVISION PROJECT, SCH#2020060271, STANISLAUS COUNTY

Pursuant to the State Clearinghouse's 12 June 2020 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Parkwood Subdivision Project, located in Stanislaus County. B-1

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38. B-2

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental

KARL E. LONGLEY ScD, P.E., CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

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Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/ B-2 cont'd

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State. B-3

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml B-4

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process. B-5

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml B-6

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250. B-7

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic B-8

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/ B-8 cont'd

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/ B-9

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge. B-10

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf B-10 cont'd

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf B-11

If you have questions regarding these comments, please contact me at (916) 464-4856 or Nicholas.White@waterboards.ca.gov. B-12

Nicholas White
Water Resource Control Engineer

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Response to Letter B: Nicholas White, Central Valley Regional Water Quality Control Board

Response B-1: This comment is noted. This comment serves as an introduction to the letter and does not warrant a response. No further response is necessary.

Response B-2: The commenter provides background information regarding the responsibilities of the Central Valley Regional Water Quality Control Board (RWQCB). This information further elaborates on regulatory setting information provided in the Initial Study. The City of Hughson, including the proposed project site, is located in the Turlock Groundwater Basin. The project site is located within the Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan) area. This comment is noted. No further response is necessary.

Response B-3: The commenter provides information regarding "Antidegradation Considerations," including the Basin Plan's policy and analysis requirements for National Pollutant Discharge Elimination System (NPDES) and Waste Discharge Requirement (WDR) permitting. Project impacts to groundwater and surface water quality are addressed in Section X, Hydrology and Water Quality, of the IS/MND. Impacts were determined to be less than significant with implementation of Mitigation Measure GEO-2 (preparation of a Storm Water Pollution Prevention Plan [SWPPP]). The IS/MND adequately analyzes the potential impacts to groundwater and surface water quality.

Response B-4: The commenter identifies construction storm water permit requirements for projects that disturb one or more acres of soil or are part of a larger plan that in total disturbs one or more acres of soil. As described on page 68 of Section VII, Geology and Soils, of the IS/MND, without implementation of appropriate Best Management Practices (BMPs) related to prevention of soil erosion during construction, development of the project would result in a potentially significant impact with respect to soil erosion. Mitigation Measure GEO-2 requires preparation of a SWPPP. The SWPPP will include project specific best management measures that are designed to control drainage and erosion. Furthermore, proposed project will include detailed project specific drainage plan that control storm water runoff and erosion, both during and after construction. The SWPPP and the project specific drainage plan would reduce the potential for erosion. Mitigation Measure GEO-2 of the IS/MND requires the applicant to prepare a SWPPP and implement BMPs. The IS/MND adequately reflects the information provided in the comment.

Response B-5: The commenter discusses Best Management Practices and municipal separate storm sewer system (MS4) requirements for storm drainage systems. The City of Hughson is classified as a Phase II city by the State Water Resources Control Board. As such, the City, and consequently new development, is required to comply with the State Board's storm water NPEDS permit for Phase II cities. This

comment does not warrant any modifications to the IS/MND. No further response is necessary.

Response B-6: The commenter discusses Industrial Storm Water General Permit requirements. The proposed project does not include industrial uses. This comment does not warrant any modifications to the IS/MND. No further response is necessary.

Response B-7: The commenter indicates that a Section 404 permit from the U.S. Army Corps of Engineers would be required for activities involving a discharge to waters of the U.S. Section IV, Biological Resources, of the IS/MND analyzes potential impacts to water of the U.S. as a result of project development. As discussed on page 52 of the IS/MND, the project site does not contain protected wetlands or other jurisdictional areas and there is no need for permitting associated with the federal or State Clean Water Acts. The Turlock Irrigation District canal along the northern site boundary is a man-made facility with the sole purpose of agricultural irrigation. These ditches are exempt from permitting. This comment does not warrant any modifications to the IS/MND. No further response is necessary.

Response B-8: The commenter indicates that a Section 401 Water Quality Certification from the State Board would be required for activities that require a Section 404 permit or other federal permits. As noted in Response B-7 above, the project site does not contain protected wetlands or other jurisdictional areas and there is no need for permitting associated with the federal or State Clean Water Acts. This comment does not warrant any modifications to the IS/MND. No further response is necessary.

Response B-9: The commenter indicates that a Waste Discharge Requirement is required if there are State waters that require discharge or dredging. As noted in Responses B-7 and B-8, the project site does not contain protected wetlands or other jurisdictional areas. This comment does not warrant any modifications to the IS/MND. No further response is necessary.

Response B-10: The commenter indicates that if the proposed project includes construction dewatering, the proposed project will require coverage under a NPDES permit. Dewatering is not anticipated to be required during construction of the proposed project, however, should groundwater be encountered during construction and dewatering become necessary, the applicant would be required to seek the proper NPDES permit for dewatering activities.

Response B-11: The commenter indicates that if the proposed project includes construction dewatering, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering is not anticipated to be required during construction of the proposed project, however, should groundwater be encountered during construction and dewatering become necessary, the applicant would be required to seek the proper NPDES permit for dewatering activities.

Response B-12: This comment is noted. This comment serves as a conclusion to the letter and does not warrant a response. No further response is necessary.

From: Gina Oltman <ginaoxyz@gmail.com<mailto:ginaoxyz@gmail.com>>
Sent: Saturday, June 27, 2020 8:07 AM
To: Lea Simvoulakis <lsimvoulakis@hughson.org<mailto:lsimvoulakis@hughson.org>>
Subject: Dog Park in Proposed Development?

Hi, Lea:

In a previous email, you mentioned that you advised the developer of the subdivision proposed for the southeast corner of Hatch and Santa Fe to include a dog park. I was reading the initial study and mitigated neg dec report on the project, and it does not include a dog park. (See quoted text below.) Is a dog park going to be included? The report does not appear to be a draft.

Please let me know what the plan is. From talking to Natalie Mendoza (intern), it sounds like the city's survey a couple of months ago showed significant support for a dog park, so it seems like that would be a good thing to actively pursue for the community.

From the report:
"The project includes two common space areas totaling 6.14 acres: one in the eastern portion of the subdivision, and one in the western portion of the subdivision. The eastern park area will include street, signature, accent, and shade trees, a neighborhood connecting path, children's play equipment, turn mounding and seat walls, terraced grass seating with barbecue tables, and open turf social space. The western park area will include street, accent, and shade trees, a neighborhood connecting path, children's playground equipment, a tennis court, a basketball court, a pickleball court, a gazebo, and open turf social space." C-1

Best,
Gina

Sent from Mail<https://go.microsoft.com/fwlink/?LinkId=550986> for Windows 10

Response to Letter C: Gina Oltman, Resident of Hughson

Response C-1: The commenter questions whether a dog park is included in the proposed project, and notes that a city survey showed significant support for a dog park. The commenter also correctly quotes page 4 of the IS/MND, which discusses the proposed park facilities.

This comment is noted and has been forwarded to the decision-makers for their consideration. The project applicant agrees that a dog park can be an excellent community asset as it provides an avenue for increased social interactions among City residents and presents opportunities for community members to build relationships with their neighbors. Generally, dog parks provide a dedicated space to run free and easily socialize with other dogs in-lieu of open space recreation areas that typically have strict leash-only laws. The latest update to the proposed project site plan incorporates a dog park facility within the main park area. The area designated for a dog park is of such a size that it could accommodate a separate play area for both large and small dogs, should the City desire this type facility. Final design of the dog park, including the types of amenities for both the dogs and their owners, will be subject to review and approval of the City's Community Development Director and/or the City's Planning Commission.

From: Scott Berner <sberner@hughsonfire.com>
Sent: Tuesday, July 14, 2020 1:44 PM
To: Lea Simvoulakis <lsimvoulakis@hughson.org>
Cc: Randall Kelley <rkelley@hughsonfire.com>
Subject: Parkwood Subdivision

Hi Lea,

Thank you for taking the time to meet with Randall and I this morning. We appreciate you explaining in further details of what was outlined and by whom in the "Initial Study" under the Fire Protection section. D-1

As mentioned, one of our key concerns about this project would be making sure the we have proper enough access for the fire apparatus to navigate the streets with or without parked vehicles. We are concerned also about the design of some of these homes that share a common driveway. Not only does it present a challenge from an access standpoint, but the additional expose it presents to the residents neighbor should there be a fire in one of the residents. D-2

Also, as we read thru the Initial Study, we found a lot of the verbiage incorrect, and some of it came across as others were speaking on our behalf. I will try to be more specific. D-3

- In paragraph 2 on page 122, it references that if the Hughson Fire Protection District (HFPD) were not available to respond to a calls, another agency would respond. Yes, we do have mutual aid agreements where is we assist other departments as they assist us as well on call where additional resources are required. However, in the years I have been on the department, I don't recall a time we were "not available to respond" to a call. D-4

- It is referenced a few times that the Stanislaus Consolidated Fire Protection Districts (SCFPD) cooperates with the City. This is not a correct statement, the SCFPD is a district similar to HFPD that provides emergency services to the Empire, Southwest Modesto, Waterford and Riverbank communities. It would be the Stanislaus County Fire Warden office in conjunction with the HFPD that should be working with the City as it relates to fire prevention and various code requirements, water supply and street widths etc. D-5

- Paragraph 4 references that this project "would place additional demands for fire service on the HFPD. What is the definition of the "additional demands" and who is making that decision? D-6

- Paragraph 4 talks about the City of Hughson General Plan that would allow for the HFPD to continue providing adequate facilities and staffing levels. What are these specific plans? It is also our understanding that those plans are 15 years old? D-7

- In the last paragraph of page 123, there is a lot of reference to how this project should have "less than significant" impact on the HFPD and no need to physically or alter fire facilities, and that property tax revenues would fund capital and labor cost associated with fire protection services. What and who defines "less than significant" The concern is with this is who has made this determination in this report on our behalf. D-8

Our goal is to provide a supportive roll in the community for emergency services and fire suppression services, but it is imperative that we take a stronger roll and participation in the ability to communicate directly the impact that future growth and development of the City of Hughson would have on the HFPD. D-9

Thank you again for your time.

Scott

Scott Berner
Fire Chief
Hughson Fire Protection District
Office (209) 883-2863
Cell (209) 541-8657
sberner@hughsonfire.com

Response to Letter D: Scott Berner, Hughson Fire Protection District

Response D-1: This comment is noted. This comment serves as an introduction to the letter. This comment letter has been forwarded to the decision-makers for their consideration. No further response is necessary.

Response D-2: The commenter notes that one of the key concerns about the project is making sure the Hughson Fire Protection District (HFPD) has enough access for the fire apparatus to navigate the streets with or without parked vehicles. The commenter also expresses concerns about the design of some of these homes that share a common driveway. The commenter states that "not only does it present a challenge from an access standpoint, but the additional expose it presents to the residents neighbor should there be a fire in one of the residents."

This comment is noted. Impacts associated with emergency vehicle access are discussed on pages 82, 83, 141, and 142 of the IS/MND. As discussed on page 83, all major roads in Stanislaus County are available for evacuation, depending on the location and type of emergency that arises. The main evacuation routes according the to the Stanislaus County Emergency Operations Plan are State Route (SR) 99 and 132. These roadways are capable of handling heavy truck traffic, as well as traffic from passenger vehicles and would be a primary route for evacuations. The proposed project does not include any actions that would impair or physically interfere with any of Stanislaus County's emergency plans or evacuation routes. Future uses on the project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency.

Additionally, as discussed on pages 141 and 142, no site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay. All emergency vehicles arriving to and from the proposed project would be able to enter via Santa Fe Avenue, Flora Vista Drive or Estancia Drive. All accesses would be designed to City standards that accommodate turning requirements for fire trucks. These multiple entry/exit points provide flexibility for emergency vehicles to access or evacuate from multiple directions during an emergency. There are no safety, capacity, or sight distance issues identified with the project site plan.

Further, as noted on page 122 of the IS/MND, prior to project approval, the Stanislaus Fire Protection District reviews plans for new development to assess design issues, such as the provision of adequate water supply systems, compliance with minimum street widths, and hydrant locations and distances. This plan review process would ensure adequate on-site and adjacent emergency access.

Response D-3: The commenter notes that a lot of the verbiage in the IS/MND is incorrect, and introduces a list of specific concerns. See Responses D-4 through D-8, which address each of the listed concerns.

Response D-4: The commenter notes that the IS/MND "references that if the [HFPD] were not available to respond to calls, another agency would respond. Yes, we do have mutual aid agreements where is we assist other departments as they assist us as well on call where additional resources are required. However, in the years I have been on the department, I don't recall a time we were 'not available to respond' to a call."

This comment is noted. The commenter has adequately described the mutual aid agreements in the project area. As noted on page 122, while the HFPD provides primary fire protection to the community, it also has a mutual aid agreement with most of the other fire protection service providers in Stanislaus County. As a result, if the HFPD is not available to answer a call in the city, another fire department or district will respond to the call. The text in question is intended to convey that, *if* (emphasis added) the HFPD is responding to a call, then other departments could assist *if* (emphasis added) one or more subsequent calls warranted fire response.

Response D-5: The commenter notes that the IS/MND makes an incorrect statement regarding the Stanislaus Consolidated Fire Protection District (SCFPD) cooperation with the City. The commenter further notes that "the SCFPD is a district similar to HFPD that provides emergency services to the Empire, Southwest Modesto, Waterford and Riverbank communities. It would be the Stanislaus County Fire Warden office in conjunction with the HFPD that should be working with the City as it relates to fire prevention and various code requirements, water supply and street widths etc."

This comment is noted. As noted on page 122 of the IS/MND, the HFPD provides primary fire protection to the community. The IS/MND further states that the SCFPD cooperates with the City to reduce the risk of fires in the area. Because this comment does not address the adequacy of the IS/MND, no further response is warranted.

Response D-6: The commenter cites various discussions in the IS/MND pertaining to fire demand and notes that the project "would place additional demands for fire service on the HFPD. The commenter questions what the definition of "additional demands" is, and who makes that decision.

This comment is noted. As stated on page 122 of the IS/MND, the proposed project would add 299 residential units, which is anticipated to add 1,034 people to the City of Hughson. The additional of 1,034 people in the City of Hughson would place additional demands for fire service on the HFPD. The residents of the proposed project may require services from the HFPD over the lifetime of the

project. As such, this is considered an "additional demand" on the HFPD. The decision of "additional demand" is not made by a single person, entity, agency, etc. Instead, the additional demand has been qualified by the analysis included in the IS/MND.

Response D-7: The commenter states that the IS/MND notes that the City of Hughson General Plan would allow for the HFPD to continue providing adequate facilities and staffing levels. The commenter further questions what those specific plans are, and notes that the plans are believed to be 15 years old.

This comment is noted. As discussed on pages 122 and 123, the City of Hughson General Plan includes policies and actions that would allow for the District to continue providing adequate facilities and staffing levels. For example, Policies PSF-2.1 and PSF-2.2, and Action PSF-2.1, address continued cooperation between the City and the Hughson Fire Protection District to provide adequate fire protection service to the community and explore methods to improve the level of service provided. The City would also continue to support the existing mutual aid agreements (Policy PSF-2.3). To reduce the overall need for fire protection, the City would enforce all relevant fire codes and ordinances (Policy PSF-2.4), require all new development to use fire-safe building materials and early warning systems, install sufficient water supply systems (Policy PSF-2.5), and encourage the installation of sprinkler systems (Policy PSF-2.6). The City would also forward new development applications to the Hughson Fire Protection District and Stanislaus County Fire Protection District for their review (Action PSF-2.2).

The commenter is correct that the City's General Plan is 15 years old. However, these policies and actions are intended to provide long term strategies that would allow for the District to continue providing adequate facilities and staffing levels over the lifetime of the City's General Plan document. No further response is warranted.

Response D-8: The commenter notes that the project would have a "less than significant" impact on the HFPD, no need for new fire facilities would be required, and the property tax revenues would fund capital and labor cost associated with fire protection services. The comment also questions what and who defines "less than significant", and expresses a concern with who has made this determination on the HFPD's behalf.

This comment is noted. The evaluation instructions and significance determinations used throughout the IS/MND are included on pages 20 and 21 of the IS/MND. As shown, once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. The "less than significant" impact determination is defined as: "A less than significant impact is one which is deemed to have little or no adverse effect

on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact." Similar to what is noted above in Response D-6, the determination of whether impacts related to fire protection services would be "less than significant" is not made by a single person, entity, agency, etc. Instead, the significance determination has been qualified by the analysis included in the IS/MND.

Response D-9: This comment is noted. This comment serves as a conclusion to the letter and does not warrant a response. No further response is necessary.

From: Brenda Smith <bsmith@hughsonschools.org>
Sent: Tuesday, July 14, 2020 2:43 PM
To: Lea Simvoulakis <lsimvoulakis@hughson.org>
Subject: Re: School enrollment

Ms. Simvoulakis and the City Council,

Thank you for letting me review the plan for the potential new subdivision located at Hatch and Santa Fe. In the section on schools, it was stated:

The Hughson Unified School District (HUSD) provides kindergarten through 12th grade education for students living in Hughson and the surrounding unincorporated areas. All of the HUSD's six schools are located within Hughson, including:
• Hughson Elementary School (pre-kindergarten through 3rd grade) – 583 students during 2015/2016
• Fox Road Elementary School (4th and 5th grades) – 304 students during 2015/2016
• Emilie J. Ross Middle School (6th through 8th grades) – 482 students during 2015/2016
• Hughson High School (9th through 12th grades) – 712 students during 2015/2016
• Billy Joe Dickens Continuation (alternative education) – 29 students during 2015/2016
• Valley Community Day School (8th through 12th grades) – 9 students during 2015/2016 As shown above, the schools in the City had a total enrollment of approximately 2,119 students during the 2015/2016 school year.

According to the City's General Plan EIR, one residential unit would generate an average of 0.7 students. This total is further broken down into 0.4 kindergarten through 5th grade students, 0.1 6th through 8th grade students, and 0.2 high school students per dwelling unit. Using these rates. The proposed 299 units would result in 119 kindergarten through 5th grade students, 29 6th through 8th grade students, and 59 high school students. E-1

With these numbers, Hughson Unified School District would be impacted in regards to our facilities. We would need approximately four elementary classrooms, one middle school classroom, and two high school classrooms. In addition, we may have some issues with our cafeteria facilities at Hughson Elementary School. At this time, since we are on an uptick in enrollment, our campuses are full. This past summer we had to add a new portable to Fox Road Elementary and Ross Middle School. Further growth due to the subdivisions at Hatch and Euclid and then this proposed subdivision would necessitate us needing more classrooms. E-2

Please let me know if you have any questions,
Brenda Smith
Superintendent
Hughson Unified School District

Response to Letter E: Brenda Smith, Hughson Unified School District

Response E-1: This comment is noted. This comment serves as an introduction to the letter. This comment summarizes a portion of the analysis pertaining to schools in the IS/MND. This comment letter has been forwarded to the decision-makers for their consideration. The commenter has correctly cited portions of the IS/MND, and no further response is warranted.

Response E-2: The commenter notes that the proposed project student generation would result in an impact to Hughson Unified School District (HUSD) facilities. The commenter notes that the HUSD "would need approximately four elementary classrooms, one middle school classroom, and two high school classrooms." The commenter also notes that HUSD may have some issues with their cafeteria facilities at Hughson Elementary School. The comment notes that, since HUSD is on an uptick in enrollment, their campuses are full. The comment concludes that "This past summer we had to add a new portable to Fox Road Elementary and Ross Middle School. Further growth due to the subdivisions at Hatch and Euclid and then this proposed subdivision would necessitate us needing more classrooms."

This comment is noted. As discussed on pages 124 and 125 of the IS/MND, the City's General Plan includes policies and actions to work with HUSD to provide for adequate and well-designed public school facilities to meet future demand. As a result of General Plan Policies PSF-3.1 and PSF-3.2, the City would work with HUSD to ensure, to the extent allowed by law, that adequate school facilities are provided concurrently with new development. Hughson would also provide the District with the opportunity to review residential development proposals to assist the City in assessing the potential impacts on schools (Policy PSF-3.5). The location and design of future school sites is also addressed by Policy PSF-3.3 of the 2005 General Plan, which recommends that a school be centrally located to the student population it would serve. To maximize benefits, Policy PSF-3.4 encourages school sites to be integrated with parks to provide additional recreational opportunities for the community.

As discussed in page 5 and throughout the IS/MND, the project site is currently designated Low Density Residential (LDR) (approximately 19.28 acres), Medium Density Residential (MDR) (approximately 17.73 acres), and Service Commercial (SC) (approximately 19.00 acres) by the City's General Plan land use map. As discussed on page 30 if the IS/MND, allowable densities in the MDR designation range from 5.1 to 14.0 dwelling units per gross acre. Allowable densities in the LDR designation range from 0.0 to 5.0 dwelling units per gross acre. A maximum allowed intensity of use for the SC designation is a FAR of 0.5. Therefore, using these allowable densities and intensities for the current land use designations for the site, the City's General Plan anticipated up to 344 residential units (with an associated population of 1,190 persons) and 413,730 square feet of SC within the project area. As such, the proposed project includes fewer residential units than

were anticipated for the project site (in addition to the elimination of the up to 413,730 square feet of commercial uses that were anticipated for the project site) by the City's General Plan and associated EIR.

The planned growth associated with the proposed project is within the range of growth analyzed by the City's General Plan EIR. Existing capacity issues identified at the HUSD are not a result of the proposed project.

Public school facilities and services are partially supported through the assessment of development fees. The HUSD charges every new residential dwelling unit $3.15 per square foot, and all new commercial development $0.36 per square foot. HUSD is limited by State law as to how much it can collect from new development. Funding of school facilities has been impacted by the passing of Senate Bill 50, which limits the impact fees and site dedication that school districts can require of developers, to off-set the impact of new development on the school system.

The provisions of State law are considered full and complete mitigation for the purposes of analysis under CEQA for school construction needed to serve new development. In fact, State law expressly precludes the City from reaching a conclusion under CEQA that payment of the Leroy F. Greene School Facilities Act school impact fees would not completely mitigate new development impacts on school facilities. Consequently, the City of Hughson is without the legal authority under CEQA to impose any fee, condition, or other exaction on the project for the funding of new school construction other than the fees allowed by the Leroy F. Greene School Facilities Act. Although MUSD may collect higher fees than those imposed by the Leroy F. Greene School Facilities Act, no such fees are required to mitigate the impact under CEQA.

July 14, 2020

City of Hughson
Lea Simvoulakis
Community Development Director
7018 Pine Street
Hughson, Ca 95326

Dear Ms Simvoulakis,

After reading the initial study on the Parkwood Subdivision Project, I am vehemently opposed to this enormous development. The study was well written and professional but totally ignores the fact that this project will forever change the flavor and small community uniqueness of Hughson. The change of the General Plan to accommodate this largess should be rejected. This is supposedly a MDR/R-2 usage project but when you look at the proposed map of homes it is a very HDR usage. The developers are attempting to build as many homes as possible on small acreage. My further objections are as follows: F-1

- We are loosing more and more farmland to development and destruction of local species/habitat in the state, plus increasing the un-healthly air quality. pg. 24 & 29. Pg. 45-table 6, pg. 46-table 7 F-2

- Throughout the plan it is stated that there will be no significant impact on surrounding areas. However, there will be increased traffic in all our local roads which are mostly 2 lanes and we are way behind in improving our roads due to state funding. In addition, there is no proposed access onto Hatch road. This is a significant problem for fire/police to reach this subdivision. pg. 36 & 37, 127, 134. F-3

- Our water quality has been an issue for several years as the arsenic and 1,2,3-TCP levels are higher then state standards. The city is working to address these levels but we are only able to perform these high cost repairs with matching state funds. The community has been very angry with the high cost, leading to significant increase in water rates. Knowing this, any impacts on water quality or future repairs the state requires will put the city reserve funds in jeopardy as any matching funds will not be forthcoming from the state d/t the enormous amount of deficits the state is experiencing. Pg. 84, 85. The 'less than significant impact' on pg. 145, 146 is laughable. F-4

- Fire/Sheriff protections: As stated on pg.122, the addition of 1,034 people would place additional demands for fire/police services and EMT's. On going revenues that come from property taxes via the state will eventually be needed to fund fire/police services to maintain the required service ratios and response times. Again, the state is in such a financial deficit that those matching funds will not be forthcoming for these projects. This is very concerning as we have a significant retirement population who require a greater need for services. We will eventually require another sheriff deputy to patrol this new development. Pg. 122, 123, 124. F-5

- Pg. 124, 125 addresses the impact of schools with this new project. The plan states there would be *less than significant impact.* Obviously, the planners did not interview any teachers/administrators for this submission. Our schools are significantly impacted and cannot provide extra or enrichment programs without on-going fundraisers conducted by the schools. Again, the burden falls to the parents to fund these in addition to increased property taxes just to try to maintain programs. Property taxes have never fully funded what schools require to function. F-6

- Pg 157 addresses the Mandatory Findings of Significance. These findings only look at the physical aspects of the project which is of great impact to our little community. In addition, when you increase the population, significant commercial development follows. Our smallness and connectivity to each other need to be considered with this considerable development. F-7

In conclusion, I foresee an irreparable change in the quality of life in Hughson with such a large, in my opinion, a very dense populated project. This is exactly why I moved here instead of Turlock; to live in a rural area with small population and no large commercial/strip mall shops. The flavor and uniqueness of our city will be vastly changed as people will eventually demand more commercial services and the cycle of more development continues. I am asking the City Council to please reject this project. F-8

Sincerely,

Michael A. Mitchell
7415 Deforest Court
Hughson, Ca. 95326

Response to Letter F: Michael Mitchell, Resident of Hughson

Response F-1: This comment is noted. This comment serves as an introduction to the letter. This comment notes "the study was well written and professional but totally ignores the fact that this project will forever change the flavor and small community uniqueness of Hughson. The change of the General Plan to accommodate this largess should be rejected. This is supposedly a MDR/R-2 usage project but when you look at the proposed map of homes it is a very HDR usage. The developers are attempting to build as many homes as possible on small acreage."

This comment letter has been forwarded to the decision-makers for their consideration.

As discussed in page 5 and throughout the IS/MND, the project site is currently designated Low Density Residential (LDR) (approximately 19.28 acres), Medium Density Residential (MDR) (approximately 17.73 acres), and Service Commercial (SC) (approximately 19.00 acres) by the City's General Plan land use map. The proposed project would require a General Plan Amendment to change the LDR and SC land uses to MDR. Allowable densities in the MDR designation range from 5.1 to 14.0 dwelling units per gross acre. The maximum density may be increased by up to 25 percent under the Planned Development process, as part of legally-required affordable density bonuses. With 299 units on 56.04 acres, the proposed density would be 5.34 dwelling units per acre, which is within the allowed density range. The project is requesting a Conditional Use Permit for the proposed Planned Development overlay zone.

Additionally, as discussed on page 30 if the IS/MND, allowable densities in the MDR designation range from 5.1 to 14.0 dwelling units per gross acre. Allowable densities in the LDR designation range from 0.0 to 5.0 dwelling units per gross acre. A maximum allowed intensity of use for the SC designation is a FAR of 0.5. Therefore, using these allowable densities and intensities for the current land use designations for the site, the City's General Plan anticipated up to 344 residential units (with an associated population of 1,190 persons) and 413,730 square feet of SC within the project area. As such, the proposed project includes fewer residential units than were anticipated for the project site (in addition to the elimination of the up to 413,730 square feet of commercial uses that were anticipated for the project site) by the City's General Plan and associated EIR.

Response F-2: The commenter notes that the City is losing more and more farmland to development and destruction of local species/habitat, in addition to unhealthy air quality. This comment is noted. Impacts associated with loss of farmland, loss of species/habitat, and air quality are discussed in Section II, Agriculture and Forestry Resources, Section IV, Biological Resources, and Section III, Air Quality, of the IS/MND, respectively.

As discussed on page 24 of the IS/MND and as shown in Figure 7 of the IS/MND, the majority of the project site is designated Prime Farmland as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. A portion of the site along the northern boundary is designated Urban and Built-Up Land. The proposed project would result in the conversion of this designated Prime Farmland land to a non-agricultural use.

As discussed on pages 44 through 52 of the IS/MND, impacts related to special-status species with a potential to exist in the project area were analyzed. Field surveys and habitat evaluations were performed in March 2019, which generally does not coincide with the special-status plant species blooming period; however, the site was essentially void of natural vegetation based on the orchard operations on the project site and there is no possibility for presence of these species. The project site provides limited habitat for special-status animal species. No special-status fish, amphibian, reptile, or mammal species are expected to be affected by the proposed project. While the project site contains very limited nesting habitat, there are powerlines and trees located in the region that represent potentially suitable nesting habitat for a variety of special-status birds. In addition, common raptors such as among others, may nest in or adjacent to the project site. Mitigation Measure BIO-1 requires measures to avoid or minimize impacts on Swainson's hawk, and Mitigation Measure BIO-2 requires and measures to avoid or minimize impacts on other protected bird species which may be found on-site.

As discussed on pages 30 through 42 of the IS/MND, all air quality-related impacts were determined to be less-than-significant or less-than-significant with implementation of the mitigation measures included in the IS/MND.

Response F-3: The commenter expresses concerns regarding increased traffic on local roads and lack of project access onto Hatch Road, which could result in problems for police or fire. This comment is noted. Impacts associated with traffic are discussed in Section XVII, Transportation, and impacts associated with emergency access are discussed on pages 82, 83, 141, and 142 of the IS/MND. The transportation analysis is based on the project-specific Traffic Impact Analysis that was completed for the project. As discussed on page 136, the addition of project trips will not result in any location carrying daily volumes in excess of the City of Hughson minimum level of service (LOS) D goal. The project will add traffic to the local streets south and east of the site. While not an adopted significance criterion, in comparison to the planning level daily volume thresholds typically employed by other communities, the project will not result in any local street carrying volumes that exceed an acceptable level. Additionally, while development of the project will increase the volume of traffic passing through study area intersections, resulting traffic conditions will not exceed the City's minimum LOS D standard. The same holds true during the cumulative traffic condition.

The commenter is correct that a project access on Hatch Road is not proposed. As discussed on page 83, all major roads in Stanislaus County are available for evacuation, depending on the location and type of emergency that arises. The main evacuation routes according the to the Stanislaus County Emergency Operations Plan are State Route (SR) 99 and 132. These roadways are capable of handling heavy truck traffic, as well as traffic from passenger vehicles and would be a primary route for evacuations. The proposed project does not include any actions that would impair or physically interfere with any of Stanislaus County's emergency plans or evacuation routes. Future uses on the project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency.

Additionally, as discussed on pages 141 and 142, no site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay. Signalization of the Santa Fe Avenue / Project Access intersection would alleviate delays in the Cumulative condition, and signalization could assist emergency vehicles in circulation in and around the project area. All emergency vehicles arriving to and from the proposed project would be able to enter via Santa Fe Avenue, Flora Vista Drive, Estancia Drive, or Hatch Road. All accesses would be designed to City standards that accommodate turning requirements for fire trucks. These multiple entry/exit points provide flexibility for emergency vehicles to access or evacuate from multiple directions during an emergency. There are no safety, capacity, or sight distance issues identified with the project site plan.

Response F-4: The commenter notes that water quality has been an issue for several years as the arsenic and 1,2,3-TCP levels are higher than state standards. The commenter further notes that "the city is working to address these levels but we are only able to perform these high cost repairs with matching state funds. The community has been very angry with the high cost, leading to significant increase in water rates. Knowing this, any impacts on water quality or future repairs the state requires will put the city reserve funds in jeopardy as any matching funds will not be forthcoming from the state d/t the enormous amount of deficits the state is experiencing."

This comment is noted. The City's water quality issues are discussed in Section XIX, Utilities and Service Systems, of the IS/MND. As discussed on page 145, in 2017, the State of California adopted a new standard for a man-made contaminant called 1,2,3-TCP. As of this date, all of the City's wells are in violation of this new standard. The City plans to install treatment for 1,2,3-TCP removal and is actively working to identify funding to pay for these needed treatment facilities.

Additionally, as discussed on page 148, in 2017, the State Water Resource Control Board (SWRCB) Division of Drinking Water (DDW) adopted regulation for 1,2,3-trichloropropane (TCP), setting a maximum contaminant level (MCL) of 0.005 micrograms per liter (µg/L). In 2018, the City collected the first compliance samples for TCP from the active drinking water wells. TCP levels in all the active wells exceeded the MCL. A feasibility study was conducted to evaluate alternatives for TCP mitigation and is documented in the April 2018 *1,2,3-TCP Mitigation Feasibility Study*. Treatment with granular activated carbon (GAC) was determined to be the best solution to mitigate the 1,2,3-TCP contamination, and installation of GAC treatment systems for all the municipal supply wells is planned.

Specifically, the status of the City's wells are as follows:

- Wells 3, 4, and 8 are actively used for municipal supply. All three wells are in violation of 1,2,3-TCP;
- Well 8 is equipped with treatment and in compliance with arsenic standards;
- Well 4 is in violation of arsenic and requires treatment;
- Well 5 was removed from service, and its production capacity will be replaced by Well 10;
- Well 6 was converted to supply non-potable uses in 2013, due to elevated levels of arsenic and nitrate;
- Well 7 has been inactive since 2015, due to elevated levels of nitrate, and its production capacity will be replaced by Well 9.

The Well 7 Replacement Project is currently under construction and involves construction of Wells 9 and 10, installation of a treatment system for arsenic and manganese, and construction of a one-million-gallon water storage tank.

Currently the City has no source water production that meets state and federal water quality standards. Should the City successfully secure funding for 1,2,3-TCP treatment, Wells 3, 4, and 8 can be modified with treatment equipment to be in full compliance for 1,2,3-TCP. With completion of the Well 7 Replacement project in 2021, the City will have two (2) additional wells with treatment for long-term water supply. Since Well 4 requires treatment for arsenic, piping can be constructed to convey untreated water from Well 4 to the Well 7 Replacement facility for treatment.

Lastly, as discussed on page 152, the City of Hughson is actively working to address deficiencies in its water supply system. The City has lost three (3) of its seven (7) water supply wells to groundwater contaminants since 2013, and currently has no wells that meet all federal and state drinking water standards. Projects to address the water system deficiencies include:

- Construction of Well 8 Water Treatment Facility (2013);

- Conversion of Well 6 to a non-potable water supply (2016);
- Design and construction of the Well 7 Replacement Project (2018);
- Planned design and construction of GAC treatment facilities for treatment of 1,2,3-TCP contamination at Wells 3, 4 and 8;
- Planned construction of pipeline from Well 4 to Well 7 Replacement arsenic treatment facility.

The City's plan to address water quality issues is further discussed on pages 152 and 153 of the IS/MND.

The project applicant would be required to pay water system impact fees to the City totaling $2,427,581. At buildout, the subdivision will contribute $190,164 annually in water rates. These fees can be used to partially offset capital costs of the City's planned water system improvements and ongoing operation and maintenance of the water facilities.

Response F-5: The commenter restates portions of the IS/MND text on page 122 and notes that "the state is in such a financial deficit that those matching funds will not be forthcoming for these projects. This is very concerning as we have a significant retirement population who require a greater need for services. We will eventually require another sheriff deputy to patrol this new development."

This comment is noted. The state does not match property tax dollars as claimed in this portion of the comment. All property tax revenue that would be generated by this project remains within the county in which it is collected to be used exclusively by local governments.

Response F-6: The commenter notes that teachers/administrators were not interviewed, and schools are significantly impacted and cannot provide extra or enrichment programs without on-going fundraisers conducted by the schools. The commenter also states that the burden falls to the parents to fund these in addition to increased property taxes just to try to maintain programs. The commenter concludes that property taxes have never fully funded what schools require to function.

This comment is noted. This comment is noted. As discussed on pages 124 and 125 of the IS/MND, the City's General Plan includes policies and actions to work with the Hughson Unified School District (HUSD) to provide for adequate and well-designed public school facilities to meet future demand. As a result of General Plan Policies PSF-3.1 and PSF-3.2, the City would work with HUSD to ensure, to the extent allowed by law, that adequate school facilities are provided concurrently with new development. Hughson would also provide the District with the opportunity to review residential development proposals to assist the City in assessing the potential impacts on schools (Policy PSF-3.5). The location and design of future school sites is also addressed by Policy PSF-3.3 of the 2005 General Plan, which recommends that a school be centrally located to the student

population it would serve. To maximize benefits, Policy PSF-3.4 encourages school sites to be integrated with parks to provide additional recreational opportunities for the community.

As discussed in page 5 and throughout the IS/MND, the project site is currently designated Low Density Residential (LDR) (approximately 19.28 acres), Medium Density Residential (MDR) (approximately 17.73 acres), and Service Commercial (SC) (approximately 19.00 acres) by the City's General Plan land use map. As discussed on page 30 if the IS/MND, allowable densities in the MDR designation range from 5.1 to 14.0 dwelling units per gross acre. Allowable densities in the LDR designation range from 0.0 to 5.0 dwelling units per gross acre. A maximum allowed intensity of use for the SC designation is a FAR of 0.5. Therefore, using these allowable densities and intensities for the current land use designations for the site, the City's General Plan anticipated up to 344 residential units (with an associated population of 1,190 persons) and 413,730 square feet of SC within the project area. As such, the proposed project includes fewer residential units than were anticipated for the project site (in addition to the elimination of the up to 413,730 square feet of commercial uses that were anticipated for the project site) by the City's General Plan and associated EIR.

The planned growth associated with the proposed project is within the range of growth analyzed by the City's General Plan EIR. Existing capacity issues identified at the HUSD are not a result of the proposed project.

Public school facilities and services are partially supported through the assessment of development fees. The HUSD charges every new residential dwelling unit $3.15 per square foot, and all new commercial development $0.36 per square foot. HUSD is limited by State law as to how much it can collect from new development. Funding of school facilities has been impacted by the passing of Senate Bill 50, which limits the impact fees and site dedication that school districts can require of developers, to off-set the impact of new development on the school system.

The provisions of State law are considered full and complete mitigation for the purposes of analysis under CEQA for school construction needed to serve new development. In fact, State law expressly precludes the City from reaching a conclusion under CEQA that payment of the Leroy F. Greene School Facilities Act school impact fees would not completely mitigate new development impacts on school facilities. Consequently, the City of Hughson is without the legal authority under CEQA to impose any fee, condition, or other exaction on the project for the funding of new school construction other than the fees allowed by the Leroy F. Greene School Facilities Act. Although MUSD may collect higher fees than those imposed by the Leroy F. Greene School Facilities Act, no such fees are required to mitigate the impact under CEQA.

Response F-7: The commenter notes that the Mandatory Findings of Significance only look at physical aspects of the project which is of great impact to the community. The commenter further notes that "when you increase the population, significant commercial development follows. Our smallness and connectivity to each other need to be considered with this considerable development."

This comment is noted. The Mandatory Findings of Significance generally analyzes impacts associated with the physical environment. This comment letter has been forwarded to the decision-makers for their consideration.

Response F-8: The commenter summarizes the concerns outlined in the body of the comment, and concludes that the City Council should reject the project. This comment is noted. This comment letter has been forwarded to the decision-makers for their consideration.

From: Robin MacDonald <rmacdca@gmail.com>
Sent: Friday, July 3, 2020 7:40 AM
To: Lea Simvoulakis <lsimvoulakis@hughson.org>
Subject: IS/MND

Good day Lea,

I hope all is well with you and yours.

Comment:
Suggest you post a public response from TID about the feasibility of a bridge over Ceres Main Lateral north of the planned Parkwood Subdivision, a bridge to ameliorate the significant traffic impact on our community. G-1

Thanks for listening.

Robin MacDonald
Steeplechase Drive
Hughson

Response to Letter G: Robin MacDonald, Resident of Hughson

Response G-1: The commenter suggests that the City post a public response from the Turlock Irrigation District (TID) about the feasibility of a bridge over Ceres Main Lateral, located north of the project site. The commenter notes that a bridge could ameliorate the significant traffic impact on the community.

While this comment does not address the adequacy of the IS/MND, it is noted that traffic impacts are discussed in Section XVII, Transportation The transportation analysis is based on the project-specific Traffic Impact Analysis that was completed for the project. As discussed on page 136, the addition of project trips will not result in any location carrying daily volumes in excess of the City of Hughson minimum level of service (LOS) D goal. The project will add traffic to the local streets south and east of the site. While not an adopted significance criterion, in comparison to the planning level daily volume thresholds typically employed by other communities, the project will not result in any local street carrying volumes that exceed an acceptable level. Additionally, while development of the project will increase the volume of traffic passing through study area intersections, resulting traffic conditions will not exceed the City's minimum LOS D standard. The same holds true during the cumulative traffic condition.

This comment is noted and has been forwarded to the decision-makers for their consideration.

1

Ashton Gose

From: susan tanis
Sent: Wednesday, July 22, 2020 10:02 AM
To: Ashton Gose
Subject: Subdivision

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Planning Commissioners and Council Members,

I, a Hughson resident strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. Thank you planning commissioners, and city council members for hearing my voice.

Furthermore, I don't believe that this is the time to hold meetings and make changes to our town until it is ok to meet in person to hear all sides of any issue or development that the city is planning.

Sincerely,
Susan Tanis
Email addresses:
agose@hughson.org
bevans@hughson.org
jstrain@hughson.org
amcfadon@hughson.org
kcloherty@hughson.org
bhenley@hughson.org
gcarr@hughson.org
hhill@hughson.org
mbuck@hughson.org
rbawanan@hughson.org

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2

Ashton Gose

From: Kerrie and Nathan Crain
Sent: Wednesday, July 22, 2020 11:30 AM
To: Ashton Gose; bevans@hughson.org; jstrain@hughson.org; amcfadon@hughson.org; kcloherty@hughson.org; bhenley@hughson.org; George Carr; Harold Hill; Michael Buck; Ramon Bawanan
Subject: Oppose Parkwood Subdivision

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Planning Commissioners and Council Members,

I, a Hughson resident, strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents.

Thank you planning commissioners, and city council members for hearing my voice.

Kerrie Crain
8129 Alderson Road
Hughson, CA 95326
209.380.2445

3

Ashton Gose

From: Sun Valley [illegible]
Sent: Wednesday, July 22, 2020 11:36 AM
To: Ashton Gose; bevans@hughson.org; jstrain@hughson.org; amcfadon@hughson.org; kcloherty@hughson.org; bhenley@hughson.org; George Carr; Harold Hill; Michael Buck; Ramon Bawanan
Subject: Oppose Parkwood Subdivision Project

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Planning Commissioners and Council Members,

I, a Hughson resident, strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. We are in desperate need of a grocery store which this is currently zoned for and would be the perfect location.

Thank you planning commissioners, and city council members for hearing my voice.

Katie Borrelli
8125 Alderson Rd.
Hughson, CA 95326
(209) 678-0548

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4

Ashton Gose

From: Kelly
Sent: Wednesday, July 22, 2020 1:04 PM
To: Ashton Gose
Subject: Oppose Parkwood

Dear Planning Commissioners and Council Members,

I am Hughson resident strongly oppose the rezoning and approval of the Parkwood Subdivision project. I currently live in Sterling Glen on Leaflet and this Subdivision would highly impact my home value and the safety of my children. We play everyday in the front yard which already has a high volume of traffic going home This would also impact our schools who already have no space and high ratios of students and staff. The general plan that is currently approved better suits the needs of Hughson residents.

Thank you planning commissioners, and city council members for hearing my voice.

Please forward to the planning commissioner and council members.

Thank you
Kelly Violette
6326 Leaflet Lane

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5

Ashton Gose

From: Jason Harcrow
Sent: Wednesday, July 22, 2020 5:49 PM
To: Ashton Gose
Subject: Parkwood Subdivision

Ms. Gose,

Please including this public comment in Public Hearing for the Parkwood Subdivision on August 18th, 2020.

Also, please forward my concerns to the planning commissioners personal emails.

Dear Planning Commissioners and Council Members,

I, a Hughson resident strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. Thank you planning commissioners, and city council members for hearing my voice.

Thank you,
Jason Harcrow
Sent from my iPhone

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6

Ashton Gose

From: Samantha Brooks [redacted]
Sent: Wednesday, July 22, 2020 7:38 PM
To: Ashton Gose
Subject: Parkwood Subdivision Rezoning

Dear Planning Commissioners and Council Members,

I, Samantha Brooks, a Hughson resident **strongly oppose** the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. Thank you planning commissioners, and city council members for hearing my voice.

Please forward to planning commissioners personal emails and to be included for public comment on the Public Hearing of the Parkwood Subdivision)

Thank you
Samantha Brooks
4972 Walnut Rd
Hughson, CA

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7

Ashton Gose

From: Lindsay Dickens >
Sent: Wednesday, July 22, 2020 8:06 PM
To: Ashton Gose
Cc: George Carr; Harold Hill; Michael Buck; Ramon Bawanan
Subject: Park wood subdivision

Please including this public comment in Public Hearing for the Parkwood Subdivision on August 18th, 2020
Also, please forward my concerns to the planning commissioners personal emails.

Dear Planning Commissioners and Council Members,

I, a Hughson resident STRONGLY oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. I am a homeowner on Walnut Haven Drive and this proposed subdivision will put over 600 cars daily on our streets! The subdivision were never designed to take that kind of traffic flow. Our town needs a grocery store, not more homes! We are already maxed out in our schools and classrooms. Thank you planning commissioners, and city council members for hearing my voice.

Email addresses:

agose@hughson.org (to deliver to planning commissioners personal emails and to be included for public comment on the Public Hearing of the Parkwood Subdivision)

City Council Members:
gcarr@hughson.org
hhill@hughson.org
mbuck@hughson.org
rbawanan@hughson.org

Have a great day
Lindsay Dickens

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8

Ashton Gose

From: Bill Allen
Sent: Thursday, July 23, 2020 9:09 AM
To: Ashton Gose; Michael Buck; George Carr; Harold Hill; Ramon Bawanan
Subject: Opposed to Parkwood Sub Division

I am strongly opposed to the to the rezoning and planning of the Parkwood sub division. The current general plan better suits the need of the Hughson residents. Thank you for hearing my voice

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9

Ashton Gose

From: jenny foster
Sent: Thursday, July 23, 2020 10:45 AM
To: Ashton Gose
Subject: Public Hearing for the Parkwood Subdivision on August 18th, 2020

I have lived here in Hughson for 20 years. Moved here because of the small town feel. Also have in in this small town area for 48 years of my life. Really hate to see this area rezoned for MORE HOUSES. Isn't this town big enough.

Please including this public comment in Public Hearing for the Parkwood Subdivision on August 18th, 2020 Also, please forward my concerns to the planning commissioners personal emails.

Dear Planning Commissioners and Council Members,

I, a Hughson resident strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. Thank you planning commissioners, and city council members for hearing my voice.

Thanks

Jenny Foster

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10

Ashton Gose

From: jessica thomas [illegible]
Sent: Thursday, July 23, 2020 12:38 PM
To: Ashton Gose; George Carr; Harold Hill; Michael Buck; Ramon Bawanan
Subject: Parkwood

Dear Planning Commissioners and Council Members,
I, a Hughson homeowner strongly oppose the rezoning and approval of the parkwood subdivision project. This project would be directly in my backyard. It would have a dramatic impact on the safety and privacy of many homeowners and our children. Not to mention the value of our homes. Please we beg of you to take all of this into consideration as it would be detrimental to our small town. Thank you Planning Commissioners, and City council members for hearing our voices.
Jessica, Matt, Ryley, Kyle & Olivia Atkinson.
Our beloved home is at 6501 Narcisco way.

Sent from my iPhone

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From: [illegible]

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11

Ashton Gose

From: Samantha Travao
Sent: Thursday, July 23, 2020 8:15 PM
To: Ashton Gose
Subject: Parkwood Subdivision

Please include this public comment in Public Hearing for the Parkwood Subdivision on August 18th, 2020 Also, please forward my concerns to the planning commissioners personal emails.

Dear Planning Commissioners and Council Members,

I, a Hughson resident, strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. Thank you planning commissioners, and city council members for hearing my voice.

Email addresses:

agose@hughson.org (to deliver to planning commissioners personal emails and to be included for public comment on the Public Hearing of the Parkwood Subdivision)

City Council Members:
gcarr@hughson.org
hhill@hughson.org
mbuck@hughson.org
rbawanan@hughson.org

Respectfully,

Samantha Travao

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12

Ashton Gose

From: Michael Travao Jr
Sent: Thursday, July 23, 2020 8:33 PM
To: Ashton Gose
Subject: Parkwood Subdivision

Please include this public comment in Public Hearing for the Parkwood Subdivision on August 18th, 2020 Also, please forward my concerns to the planning commissioners personal emails.

Dear Planning Commissioners and Council Members,

I, a Hughson resident, strongly oppose the rezoning and approval of the Parkwood Subdivision project. The general plan that is currently approved better suits the needs of Hughson residents. Thank you planning commissioners, and city council members for hearing my voice.

Email addresses:

agose@hughson.org (to deliver to planning commissioners personal emails and to be included for public comment on the Public Hearing of the Parkwood Subdivision)

City Council Members:
gcarr@hughson.org
hhill@hughson.org
mbuck@hughson.org
rbawanan@hughson.org

Respectfully,

Michael Travao

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13

Ashton Gose

From: Samantha Brooks [redacted]
Sent: Tuesday, August 11, 2020 7:19 AM
To: Ashton Gose
Subject: Against Parkwood Subdivision

Dear Hughson Planning Commissioners and City Council Members,
I am writing you this letter to bring attention to the major flaws in the proposed Parkwood Subdivision. In this letter, I will highlight the detriment of going against the 2005 General Plan by allowing the rezoning of this parcel. I will also address the traffic concerns that were not appropriately addressed in the traffic study, along with the impact to our schools.
2005 General Plan
General plan policy LU Dash 4.6 states the city will give priority to the location of a supermarket in the general downtown or general commercial parcel located between Santa Fe and Tully before considering alternative locations. The Planning Director will say that the downtown area is the prime location for this commercial grocery store. As we all know, getting a supermarket downtown is next to impossible. The space alone that it would take for the structure and parking lot would way surpasses any available space downtown. In saying that the general plan has already identified a second locations on Santa Fe to Tully. The current zoning supports this as the high traffic volume through the intersection of Hatch and Santa Fe creates enough support for a supermarket. This will benefit our city for years to come and keep the small town feel along Hughson Ave.
This proposed micro community contradicts what was laid out in the 2005 General Plan. According to Policy U-5.2 of the general plan it states neighborhoods should be designed with emphasis placed on high-quality construction innovative architecture to provide a sense of place and preserve the cities small-town character but offering a choice of residential densities and cost that meets the very needs of the residence. A micro community like the proposed Parkwood Subdivision does not preserve the cities small town character with its small street footprints it creates a crowded feeling similar to something you would experience in a Bay Area neighborhood- not HUGHSON. The general plan already outlines some of these higher densities like 2nd and Walker, Euclid Road north and south of Fox Road, 7th towards Santa Fe and some of our current zoning of the proposed Parkwood subdivision. If we honestly we look at Providence Place on Euclid although approved with the best intentions, driving through the narrow streets and houses are so close together it is almost claustrophobic. Getting a fire truck into this is next to impossible. Let this subdivision be an example of what not to do on such a large scale. Retaining the current zoning R-1, R-2 and general commercial can still achieve these objectives if done correctly.
Traffic
I would like to highlight some major traffic issues that were not addressed properly in the Parkwood traffic study. First off being a major collector road that would be eliminated from the 2005 General Plan. Major collector roads are public streets that accumulate traffic from local streets and minor collector roads for distribution to major thoroughfare. A major collector road may have commercial, residential, or have mixed uses abutting. By definition it provides residential access, as well as commercial access and in our case it could also have distribution to two arterials. Referring to General Plan C-1 the arterial roads identified in Hughson are Santa Fe. Ave, Hatch Road, Geer Road and Whitmore Ave. The Mountain View extension in our case here again is identified in the General Plan as a major collector road. This road can accomplish three things. First, it can give us commercial access. Second, it can give us residential access. Third, it can connect to two arterials. In the July, meeting KD Anderson said that the only reason for the Mountain View extension was to service commercial zoning. This is not written in the general plan. The general plan states in
figure C –17 of The Circulation Plan it identifies a variety of road types. In Hughson all these roads currently exist except for one the Mountain View extension. In the general plan this road is mentioned to serve the purpose of relieving traffic on Santa Fe and Hatch Road. As I stated earlier by definition this road will work in three different ways successfully. In the general plan C-1.5 new development should be designed with a grid or modified grid pattern with a variety of block size and street length to facilitate traffic and to provide multiple connections to arterial streets. The Parkwood subdivision as it is currently designed does not follow the general plan for multiple arterial connectors. It is designed to

have two outlets to one arterial. Sterling Glen and neighboring subdivisions would have to bear that burden to provide access to a second arterial with no Mountain View extension.
Another issue that was not properly addressed was the traffic impact to local residents as it was gauged incorrectly, KD Anderson states on page 132 of the "Initial Study" of the Parkwood Subdivision that Hughson has not adopted guidelines for acceptable traffic volumes on local streets. They use the standard from other communities of 3,000 cars. Three thousand is 40% of our towns population driving by a residential house. This is what was used to come up with what is acceptable for our town. Would you like up to a 60% traffic increase in front of your house? There has also not been a traffic study done at our intersections approaching our schools. There is already extremely long lines at these intersections during drop off and pick up times. Additional growth in Hughson may warrant additional traffic studies.
School Impact
The letter from Brenda Smith, HUSD Superintendent dated July 14, 2020 in regards to the impact on the Hughson Unified School District is concerning. In the letter she states,
"HUSD would be impacted in regards to facilitates. We would need approximately four elementary classrooms, one middle school classroom, and two high school classrooms. In addition, we may have some issues with our cafeteria facilities at Hughson Elementary School." To disregard the true reality of the max capacity at our schools would be in poor judgement. The General Plan PSF 3.1 PSF 3.2 calls for the city to work with Hughson Unified School District so that adequate school facilities are provided concurrently with new developments. It was implied during the July Planning Commission Meeting that it was on the schools to be able to provide adequate facilitates. This is statement goes against the General Plan. It is in the best interest of our children to work together to come up with a collaborative comprehensive plan that is in place before anymore developments are approved.
2

In conclusion, it is definitely not in the best interest of our small community to approve the rezoning of the proposed Parkwood Subdivision. It is clear with the issues noted above that this project would be a detriment to what our city was intended to be. Hughson residents are unlike any other. This parcel is truly the "Front Yard" of Hughson, whatever is placed here will make a statement about our community. What statement should we make? Please heed the concerns and hear our voices as many Hughson residents stand in opposition of this development.
Sincerely,
Samantha Brooks -Hughson Resident

Researched from Rich Torres Hughson Resident

14

8/13/20

Dear Hughson Planning Commissioners and City Council Members,

I am writing you this letter to bring attention to the major flaws in the proposed Parkwood Subdivision. In this letter, I will highlight the detriment of going against the 2005 General Plan by allowing the rezoning of this parcel. I will also address the traffic concerns that were not appropriately addressed in the traffic study, along with the impact to our schools.

2005 General Plan

General plan policy LU- 4.6 states the city will give priority to the location of a supermarket in the general downtown or general commercial parcel located between Santa Fe Ave and Tully Road before considering alternative locations. The Planning Director will say that the downtown area is the prime location for this commercial grocery store. As we all know, getting a supermarket downtown is next to impossible. The space alone that it would take for the structure and parking lot would way surpasses any available space downtown. In saying that the general plan has already identified a second location on Santa Fe Ave. to Tully Rd. The current zoning supports this as the high traffic volume through the intersection of Hatch Road and Santa Fe Ave. creates enough support for a supermarket. This will benefit our city for years to come and keep the small town feel along Hughson Ave.

This proposed micro community contradicts what was laid out in the 2005 General Plan. According to Policy U-5.2 of the general plan, it states neighborhoods should be designed with emphasis placed on high-quality construction innovative architecture to provide a sense of place and ***preserve*** the cities small-town character but offering a choice of residential densities and cost that meets the very needs of the residence. A micro community like the proposed Parkwood Subdivision does not preserve the cities small town character with its small street footprints it creates a crowded feeling similar to something you would experience in a Bay Area neighborhood- not HUGHSON. The general plan already outlines some of these higher densities like 2nd and Walker, Euclid Road north and south of Fox Road, 7th towards Santa Fe and some of our current zoning of the proposed Parkwood subdivision. If we honestly look at Providence Place on Euclid although approved with the best intentions, driving through the narrow streets houses are so close together it is almost claustrophobic. Getting a fire truck into this is next to impossible. Let this subdivision be an example of what not to do on such a large scale. Retaining the current zoning R-1, R-2 and general commercial can still achieve these objectives if done correctly.

Traffic

I would like to highlight some major traffic issues that were not addressed properly in the Parkwood traffic study. First off being a major collector road that would be eliminated from the 2005 General Plan. Major collector roads are public streets that accumulate traffic from local streets and minor collector roads for distribution to major thoroughfare. A major collector road

may have commercial, residential, or have mixed uses abutting. By definition it provides residential access, as well as commercial access and in our case it could also have distribution to two arterials. Referring to General Plan C-1 the arterial roads identified in Hughson are Santa Fe. Ave, Hatch Road, Geer Road and Whitmore Ave. The Mountain View extension in our case here again is identified in the General Plan as a major collector road. This road can accomplish three things. First, it can give us commercial access. Second, it can give us residential access. Third, it can connect to two arterials. In the July, meeting KD Anderson said that the only reason for the Mountain View extension was to service commercial zoning. This is not written in the general plan. The general plan states in
figure C –17 of The Circulation Plan it identifies a variety of road types. In Hughson all these roads currently exist except for one the Mountain View extension. In the general plan this road is mentioned to serve the purpose of relieving traffic on Santa Fe Ave. and Hatch Road. As I stated earlier by definition this road will work in three different ways successfully. In the General Plan C-1.5 new development should be designed with a grid or modified grid pattern with a variety of block size and street length to facilitate traffic and to provide multiple connections to arterial streets. The Parkwood subdivision as it is currently designed does not follow the General Plan for multiple arterial connectors. It is designed to have two outlets to one arterial. Sterling Glen and neighboring subdivisions would have to bear that burden to provide access to a second arterial with no Mountain View extension.

Another issue that was not properly addressed was the traffic impact to local residents as it was gauged incorrectly, KD Anderson states on page 132 of the "Initial Study" of the Parkwood Subdivision that Hughson has not adopted guidelines for acceptable traffic volumes on local streets. They use the standard from other communities of 3,000 cars. Three thousand is 40% of our towns population driving by a residential house. This is what was used to come up with what is acceptable for our town. Would you like up to a 60% traffic increase in front of your house? There has also not been a traffic study done at our intersections approaching our schools. There is already extremely long lines at these intersections during drop off and pick up times. Additional growth in Hughson may warrant additional traffic studies.

School Impact

The letter from Brenda Smith, HUSD Superintendent dated July 14, 2020 in regards to the impact on the Hughson Unified School District is concerning. In the letter she states, "HUSD would be impacted in regards to facilitates. We would need approximately four elementary classrooms, one middle school classroom, and two high school classrooms. In addition, we may have some issues with our cafeteria facilities at Hughson Elementary School." To disregard the true reality of the max capacity at our schools would be in poor judgement. The General Plan PSF 3.1 PSF 3.2 calls for the city to work with Hughson Unified School District so that adequate school facilities are provided concurrently with new developments. It was implied during the July Planning Commission Meeting that it was on the schools to be able to provide adequate facilitates. This is statement goes against the General Plan. It is in the best interest of our children to work together to come up with a collaborative comprehensive plan that is in place before anymore developments are approved.

In conclusion, it is definitely not in the best interest of our small community to approve the rezoning of the proposed Parkwood Subdivision. It is clear with the issues noted above that this project would be a detriment to what our city was intended to be. Hughson residents are unlike any other. This parcel is truly the "Front Yard" of Hughson, whatever is placed here will make a statement about our community. What statement should we make? Please heed the concerns and hear our voices as many Hughson residents stand in opposition of this development.

Sincerely,

Rich Torres
Hughson Resident

15

Ashton Gose

From: Ann Mora >
Sent: Monday, August 17, 2020 1:42 PM
To: Ashton Gose
Subject: Concerns regarding new subdivision

To Whom it may concern, Aug 17, 2020

I am writing regarding my concerns over the new proposed subdivision at Santa Fe and Hatch. I live on Flora Vista and am very upset about the Sterling Glen entrance being one of three entrances going to that subdivision. I feel the traffic report is out dated. There needs to be a bridge built over the canal to Hatch road to the subdivision. I live on the corner and it is already so busy that it is hard to back out of my driveway. My son is an Architect and explained to me about the plan for the homes being built. That they share a main driveway, like seen in larger cities. This will increase our population to unsustainable numbers. Every family living in a home normally has 3-4 cars depending on the children's ages. This could mean an additional 1200 cars. I am also concerned with impacting our schools. Needing to build new ones at the tax payers cost. This is not a good idea for our city. I understand there are homes being built on Eulid and another proposed plan for more with the same main driveway concept. Please reconsider all of this. Sincerely, Ann Mora 1900 Flora Vista Dr.

Total Control Panel Login

To: agose@hughson.org
From.

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High (60): Pass
Medium (75): Pass
Low (90): Pass

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16

Ashton Gose

From: Pablo Ocequeda · [illegible]
Sent: Monday, August 17, 2020 3:06 PM
To: Ashton Gose
Subject: Proposed Parkwood Subdivision Concerns

To Whom It May Concern – My name is Pablo Ocegueda and I reside at 1707 Heartnut Way in Hughson. My family and I disagree with the proposed Parkwood Subdivision project and we would like our concerns to be added as a public comment in the public hearing for the proposed Parkwood Subdivision agenda item August 18, 2020.

- **Schools:** We believe our school district is at, or close to max capacity for the number of students we already have in our district. We do have a child attending Ross Middle School. One excellent example of capacity issues is the need to share certain facilities with the neighboring Fox Road School. We feel that a comprehensive plan should be established and implemented PRIOR to adding more homes to our community which will intern add more students and more traffic. Which leads us into our second concern:

- **Traffic:** Currently a large percentage of vehicles using Heartnut way do not reside in the Walnut Haven Subdivision. They are vehicles that are using Heartnut Way as a thoroughfare as access to Leaflet Lane to the Sterling Glenn Subdivision. With only one main entrance from a major road (Santa Fe Ave) to the proposed Parkwood Subdivision, the traffic through the Sterling Glenn subdivision will greatly increase and thus the traffic through the Walnut Haven subdivision will increase that much more. If the Parkwood Subdivision is going to be constructed there should be entrances from other major streets such as Hatch Road.

Thank you for your time!

Best Regards

Pablo Ocegueda

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From: [illegible]@parker.com

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Medium (75): Pass
Low (90): Pass

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17

Ashton Gose

From: Reclaimed Faith USA
Sent: Monday, August 17, 2020 5:48 PM
To: Ashton Gose
Subject: Against housing growth in Hughson

In regards to the proposed Parkwood development. Here is a letter from a Hughson resident who studied the general plan and how the proposed Parkwood subdivision is in conflict with said plan. I know not everyone will be in agreement but for those of you who want to write a letter against the the proposed Parkwood development here are some points to consider. We were told by the planning commission that we have can't just say we are against the development and that we have to have more specific reasons why we are against it. The next meeting is August 18th.

Dear Hughson Planning Commissioners and City Council Members,
I am writing you this letter to bring attention to the major flaws in the proposed Parkwood Subdivision. In this letter, I will highlight the detriment of going against the 2005 General Plan by allowing the rezoning of this parcel. I will also address the traffic concerns that were not appropriately addressed in the traffic study, along with the impact to our schools.
2005 General Plan
General plan policy LU Dash 4.6 states the city will give priority to the location of a supermarket in the general downtown or general commercial parcel located between Santa Fe and Tully before considering alternative locations. The Planning Director will say that the downtown area is the prime location for this commercial grocery store. As we all know, getting a supermarket downtown is next to impossible. The space alone that it would take for the structure and parking lot would way surpasses any available space downtown. In saying that the general plan has already identified a second locations on Santa Fe to Tully. The current zoning supports this as the high traffic volume through the intersection of Hatch and Santa Fe creates enough support for a supermarket. This will benefit our city for years to come and keep the small town feel along Hughson Ave.
This proposed micro community contradicts what was laid out in the 2005 General Plan. According to Policy U-5.2 of the general plan it states neighborhoods should be designed with emphasis placed on high-quality construction innovative architecture to provide a sense of place and preserve the cities small-town character but offering a choice of residential densities and cost that meets the very needs of the residence. A micro community like the proposed Parkwood Subdivision does not preserve the cities small town character with its small street footprints it creates a crowded feeling similar to something you would experience in a Bay Area neighborhood- not HUGHSON. The general plan already outlines some of these higher densities like 2nd and Walker, Euclid Road north and south of Fox Road, 7th towards Santa Fe and some of our current zoning of the proposed Parkwood subdivision. If we honestly we look at Providence Place on Euclid although approved with the best intentions, driving through the narrow streets and houses are so close together it is almost claustrophobic. Getting a fire truck into this is next to impossible. Let this subdivision be an example of what not to do on such a large scale. Retaining the current zoning R-1, R-2 and general commercial can still achieve these objectives if done correctly.
Traffic
I would like to highlight some major traffic issues that were not addressed properly in the Parkwood traffic study. First off being a major collector road that would be eliminated from the 2005 General Plan. Major collector roads are public streets that accumulate traffic from local streets and minor collector roads for distribution to major thoroughfare. A major collector road may have commercial, residential, or have mixed uses abutting. By definition it provides residential access, as well as commercial access and in our case it could also have distribution to two arterials. Referring to General Plan C-1 the arterial roads identified in Hughson are Santa Fe. Ave, Hatch Road, Geer Road and Whitmore Ave. The Mountain View extension in our case here again is identified in the General Plan as a major collector road. This road can accomplish three things. First, it can give us commercial access. Second, it can give us residential access. Third, it can

connect to two arterials. In the July, meeting KD Anderson said that the only reason for the Mountain View extension was to service commercial zoning. This is not written in the general plan. The general plan states in figure C –17 of The Circulation Plan it identifies a variety of road types. In Hughson all these roads currently exist except for one the Mountain View extension. In the general plan this road is mentioned to serve the purpose of relieving traffic on Santa Fe and Hatch Road. As I stated earlier by definition this road will work in three different ways successfully. In the general plan C-1.5 new development should be designed with a grid or modified grid pattern with a variety of block size and street length to facilitate traffic and to provide multiple connections to arterial streets. The Parkwood subdivision as it is currently designed does not follow the general plan for multiple arterial connectors. It is designed to have two outlets to one arterial. Sterling Glen and neighboring subdivisions would have to bear that burden to provide access to a second arterial with no Mountain View extension.

Another issue that was not properly addressed was the traffic impact to local residents as it was gauged incorrectly, KD Anderson states on page 132 of the "Initial Study" of the Parkwood Subdivision that Hughson has not adopted guidelines for acceptable traffic volumes on local streets. They use the standard from other communities of 3,000 cars. Three thousand is 40% of our towns population driving by a residential house. This is what was used to come up with what is acceptable for our town. Would you like up to a 60% traffic increase in front of your house? There has also not been a traffic study done at our intersections approaching our schools. There is already extremely long lines at these intersections during drop off and pick up times. Additional growth in Hughson may warrant additional traffic studies.

School Impact

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"HUSD would be impacted in regards to facilitates. We would need approximately four elementary classrooms, one middle school classroom, and two high school classrooms. In addition, we may have some issues with our cafeteria facilities at Hughson Elementary School." To disregard the true reality of the max capacity at our schools would be in poor judgement. The General Plan PSF 3.1 PSF 3.2 calls for the city to work with Hughson Unified School District so that adequate school facilities are provided concurrently with new developments. It was implied during the July Planning Commission Meeting that it was on the schools to be able to provide adequate facilitates. This is statement goes against the General Plan. It is in the best interest of our children to work together to come up with a collaborative comprehensive plan that is in place before anymore developments are approved.

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18

Ashton Gose

From: Ignacio Ocegueda · [illegible]
Sent: Monday, August 17, 2020 5:56 PM
To: Ashton Gose
Subject: Parkwood

To Whom It May Concern – My name is Ignacio Ocegueda and I reside at 6508 fox rd in Hughson. My family and I disagree with the proposed Parkwood Subdivision project and we would like our concerns to be added as a public comment in the public hearing for the proposed Parkwood Subdivision agenda item.

- **Schools:** We believe our school district is at, or close to max capacity for the number of students we already have in our district. We do have two children attending Ross Middle School and one at the elementary . One excellent example of capacity issues is the need to share certain facilities with the neighboring Fox Road School. We feel that a comprehensive plan should be established and implemented PRIOR to adding more homes to our community which will intern add more students and more traffic. Which leads us into our second concern:

- **Traffic:** Currently a large percentage of vehicles using Heartnut way do not reside in the Walnut Haven Subdivision. They are vehicles that are using Heartnut Way as a thoroughfare as access to Leaflet Lane to the Sterling Glenn Subdivision. With only one main entrance from a major road (Santa Fe Ave) to the proposed Parkwood Subdivision, the traffic through the Sterling Glenn subdivision will greatly increase and thus the traffic through the Walnut Haven subdivision will increase that much more. If the Parkwood Subdivision is going to be constructed there should be entrances from other major streets such as Hatch Road.

Thank you for your time!

Best Regards

Ignacio ocegueda

Sent from my iPhone

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To: agose@hughson.org
From: [illegible]

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Medium (75): Pass
Low (90): Pass

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19

Ashton Gose

From: carlos munoz ....>
Sent: Monday, August 17, 2020 6:53 PM
To: Ashton Gose
Subject: Opposed to Parkwood Subdivision

I would like to say as a homeowner in the close vicinity of this sub division that the impact of traffic will be significant on my street and there is no way that you have been able to account for the traffic of nearly 300 homes that are not here yet. You cannot foresee how many drivers this will bring or vehicles. The numbers you have are only speculations. I want to see that the BUILDER is soley responsible to put a bridge in to exit onto Hatch road. I do not want the city dollars used to build exits for a new subdivision. We have many other items at hand to spend money on. I do not want any of my tax dollars used to benefit a new subdivision now or later. This is the cities responsibility to see and handle right now. Also the impact this subdivision will have on our schools, and environment are great. With Covid in our laps we may need more class space just to accommodate the children we currently have, much less any additional. I would like to see where you intend to put more space to accommodate our current as well as approx. 300 new homeowners children (this not including the subdivision on Euclid.) I also believe just like everyone else you must hold off during this Covid situation to give the community the in person ability's to be heard. So many are not computer savvy and need to be given fair opportunity to be heard. If graduations can be postponed and jobs can be having to comply, so can the city meeting in regards to such a huge impact for all. If the builder is so wanting to be in our wonderful community they will for sure be understanding of our concerns. So I am stating NO to a subdivision that will not include an exit for vehicles to Hatch road. And Yes to holding off until there can be an in person meeting for ALL community residents to attend .

Thank you,
Michell Munoz

Sent from Mail for Windows 10

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From:

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20

Ashton Gose

From: Adriana Magana [illegible]
Sent: Monday, August 17, 2020 10:14 PM
To: Ashton Gose
Subject: Concerns about Parkwood Subdivision

To who it may concern,

I am writing as a concern Hughson resident about the proposal of the Parkwood Subdivision. As a resident of Hughson for over a decade I am against the Parkwood Subdivision being in our small community because it can cause some issues to arise. I and many other residents are concern about how this will impact our children's schools. The Parkwood Subdivision could cause our schools to become overcrowded which will affect our children's quality of education. There is also the factor of the traffic it will create in our small community when dropping off and picking up children. Also the traffic that would be created in the main roads such as Santa Fe. It is uncertain how much disturbance the construction alone will create in our community. I enjoy being a resident in Hughson and am proud of it. The quality I love the most is how peaceful and close of a community we have I would not want it to change due to this subdivision being built.

- Hughson Resident

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From: [illegible]

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21

Ashton Gose

From: Carina Zaragoza
Sent: Tuesday, August 18, 2020 9:39 AM
To: Ashton Gose
Subject: Proposed Parkwood Subdivision

To Whom it may concern,
My name is Carina Zaragoza and my house is on Heartnut Way in Hughson Ca. My family and I deeply disagree on the Parkwood Subdivision project and insist my concerns be added as a public comment in the public hearing for the Proposed Parkwood Subdivision agenda taking effect on August 18,2020.

- **Traffic:** Currently a large percentage of vehicles using Heartnut way do not reside in the Walnut Haven Subdivision. They are vehicles that are using Heartnut Way as a thoroughfare as access to Leaflet Lane to the Sterling Glenn Subdivision. With only one main entrance from a major road (Santa Fe Ave) to the proposed Parkwood Subdivision, the traffic through the Sterling Glenn subdivision will greatly increase and thus the traffic through the Walnut Haven subdivision will increase that much more. If the Parkwood Subdivision is going to be constructed there should be entrances from other major streets such as Hatch Road.

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Medium (75): Pass
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22

Ashton Gose

From: James Brad Becker
Sent: Tuesday, August 18, 2020 11:08 AM
To: Ashton Gose
Cc: Wendy Becker
Subject: Proposed Parkwood Subdivision

We are absolutely against another "orchard of homes". This city has gone from an awesome little farming community when I grew up in here in the 70's and 80's to an over populated mostly bedroom community that we residents have been tolerating up to this point. That the city is even considering another subdivision of homes without ANY REAL grocery shopping options in town is absolutely mind boggling! Answer this, where are you our decision makers shopping at? Do all of you buy your groceries at Dollar General or La Perla? My family and I vehemently oppose this proposed subdivision. PLEASE start concerning yourselves with the residents that live here now before ANYMORE residents are added as a result of MORE homes. At the very least any discussion about this needs to be shelved until after this Covid 19 pandemic is under control so a proper discussion can happen in an open forum with your residents. This decision is much too important to make in this manner.

Respectfully,
James "Brad" and Wendy Becker
6322 Leaflet Ln
Hughson, Ca 95326

209-846-1981

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To: agose@hughson.org
From

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23

Ashton Gose

From: Don Doerksen
Sent: Wednesday, August 12, 2020 4:54 PM
To: Ashton Gose
Subject: New subdivisions traffic

Sent from my iPhone I live at the corner of Flora Vista and Los Alamos. At any given time day or night there's usually a car running through there every two minutes, at first I heard that the new subdivision was going to have another access off of Hatch Road, now what I understand is that there is not going to be one. With only one exit to Santa Fe I'm thinking that most of those people will drive right straight to my intersection because of the fact that it is further away from Hatch Road and easier access because there won't be a line of traffic waiting to get across the light at Hatch and Santa Fe Which will put a major crunch on this intersection 300 more houses at least 600 cars and that's only a man and wife then when you're out a couple of kids or whoever else is staying with them then you up to 900 to 1200 cars and that's once a day. So didn't really move to Hughson a year ago to live in a big city or on a fast street, it's already fast enough Another big concern is the main street in Hughson where they were at proposals to build a big supermarket well built the big supermarket in here comes Taco Bell once you get a couple of those places gone it's just gonna be all about the housing and it will explode there is precious farmland around here and it would shame to ruin the sleepy little town The new subdivision with an exit on hatch and one exit in towards hatch would maybe funnel all the traffic down to Ceres where there is taco bells Walmart everything you could want I have to blow up on the town thank you

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24

Ashton Gose

From: Stoddard, Raymond
Sent: Tuesday, August 18, 2020 3:35 PM
To: Ashton Gose
Subject: Traffic / General Plan

I would like to address the Parkwood study. I live at 6612 Fox rd, for the past 8 years, right on the street headed to the park, baseball fields, football, down town, and the schools. Many of my neighbors that I originally knew on the street have moved. Not because of the wonderful small town or people, but the traffic going down Fox rd. It is at times a great race way too, for people to how fast they can cut the curve of the street. I have seen the study and find it very inaccurate. There needs to be a more thorough study done during peak hours of school, baseball season and /or football season.
Concern Citizen
Raymond Stoddard
Get Outlook for iOS

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25

BellaViva Orchards®

August 14, 2020

Hughson Planning Commission & City Council
PO Box 9
Hughson, CA 95326

Dear Hughson Planning Commission & City Council:

Unfortunately, I may not be able to attend the upcoming Public Meeting, but as the owner of Bella Viva Orchards, Inc., located in downtown Hughson, I would like to express my support for the Hughson Parkwood project, located near the intersection of Hatch Road and Santa Fe Avenue.

As you know, Hughson is an incredibly desirable place to live and own a business. The proposed addition of a high-quality development will serve as a benchmark to which future development proposals in the City will be measured against. In addition, the rezoning of a large commercially zoned property at Hatch Road and Santa Fe Avenue will benefit our downtown revitalization efforts by consolidating the City's commercial zoning to the Downtown core area. With good planning, well-conceived developments like the Parkwood project, Hughson can move forward, retain its small-town charm, boutique downtown and continue to be one of the most delightful cities in the Central Valley to live.

Thank you for working to make Hughson the jewel of Stanislaus County.

Sincerely,

Victor Martino, CFO
Bella Viva Orchards, Inc.

Bella Viva Orchards, Inc. PO Box 249 Hughson, CA 95326 3019 S. Quincy Rd. Denair, CA 95316
(209) 883-4146 (800) 552-8218 Fax: (209) 883-0215 www.BellaViva.com

26

4:43

Done Planning Commission Membe...

Planning Commission Members:

I would like to ask that the Parkwood subdivision and the changing of the zoning be put on hold until the Corona Virus Pandemic is over! I feel that the project is being pushed through because the developer feels there is less resistance from the residents of Hughson with the pandemic still going on. People should be able to physically voice their opinions. Many citizens are not able to access the WebEx meetings.
I am not in favor of the proposed changes to the General Plan that was adopted in 2005. I feel that it was put into place and should not be changed. I feel that the traffic impact to the Sterling Glen subdivision and neighboring subdivisions has not been thought out and will cause serious traffic issues. Our schools are not prepared for the impact this development will have on them. Why don't we slow down and do what's right for the citizens of Hughson and not just to line the pockets of a few.
Thank you,
Gus Villarreal
6309 Los Alamos Court
Hughson, CA

CITY COUNCIL
CITY OF HUGHSON
RESOLUTION NO. 2020-55

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON ADOPTING A MITIGATED NEGATIVE DECLARATION FOR THE PARKWOOD HUGHSON DEVELOPMENT PROJECT, APNS 018-017-002, -010, - 014

WHEREAS, Parkwood Hughson, LLC has made application for a General Plan Amendment, Rezone, Conditional Use Permit for a Planned Development Overlay, Vesting Tentative Subdivision Map, and Development Agreement on APNs 018-017-002, -010, and -014; and

WHEREAS, in accordance with the California Environmental Quality Act (CEQA), an Initial Study/Mitigated Negative Declaration has been prepared; and

WHEREAS, there was a duly notices public hearing before the Hughson Planning Commission on July 21, 2020 which was continued to the August 18, 2020 Planning Commission meeting where the Planning Commission recommended to the City Council adoption of the Mitigated Negative Declaration; and

WHEREAS, subsequent to the duly noticed public hearing before the Hughson City Council held on September 14, 2020, which was continued to the October 12, 2020 City Council meeting, and continued again to the November 9, 2020 City Council meeting the Hughson City Council finds, that the project is consistent with the intent of the General Plan adopted 2005.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson finds, acting as lead agency and using it independent judgment and analysis, based on the whole of the record before it, that there is no substantial evidence that the proposed project will have a significant effect on the environment, adopts a Mitigated Negative Declaration and Mitigation Monitoring Program for the above-referenced project.

PASSED AND ADOPTED by the City Council of the City of Hughson at its regularly scheduled meeting on this 9th day of November, 2020 by the following roll call vote:

AYES: .

NOES: .

ABSTENTIONS: .

ABSENT:

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JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk

CITY OF HUGHSON
CITY COUNCIL
RESOLUTION NO. 2020-56

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON ADOPTING GENERAL PLAN AMENDMENT NO. 2020-01 TO CHANGE THE LAND USE DIAGRAM FROM LOW DENSITY RESIDENTIAL, MEDIUM DENSITY RESIDENTIAL, AND SERVICE COMMERCIAL TO MEDIUM DENSITY RESIDENTIAL FOR THE PARKWOOD SUBDIVISION PROJECT (A 56.04-ACRE SITE)

WHEREAS, Parkwood Hughson, LLC, Inc. made an application for a 299-unit subdivision which requires a General Plan Amendment; and

WHEREAS, the project applicant has requested that the General Plan be amended to change the land use designation of Stanislaus County Assessor Parcel Number 018-017-002, -010, -014 from Service Commercial and Low Density Residential to Medium Density Residential; and

WHEREAS, the Planning Commission held a duly noticed public hearing on July 21, 2020, which was continued until the August 18, 2020 Planning Commission meeting; and

WHEREAS, after consideration and evaluation of the record before them, including any and all comments received during the noticed public hearing, the Planning Commission recommended approval of the proposed General Plan Amendment to the City Council; and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson finds that the General Plan Amendment for APNs 018-017-002, -010, -014 from Service Commercial and Low Density Residential to Medium Density Residential will be compatible with the objectives, policies, general land uses and programs specified in the General Plan and hereby approves the General Plan Amendment as stated in this paragraph.

PASSED AND ADOPTED by the City Council of the City of Hughson at the regularly scheduled meeting on this 9th day of November, 2020 by the following roll call vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

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JERAMY YOUNG, Mayor,

ATTEST:

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ASHTON GOSE, Deputy City Clerk

CITY COUNCIL
CITY OF HUGHSON
RESOLUTION NO. 2020-57

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON APPROVING A CHANGE IN THE ZONING DISTRICT DESIGNATION FROM R-1 SINGLE FAMILY RESIDENTIAL, R-2 MEDIUM DENSITY RESIDENTIAL, AND C-2 GENERAL COMMERCIAL TO R-2 MEDIUM DENSITY RESIDENTIAL FOR THE PARKWOOD SUBDIVISION PROJECT (A 56.04-ACRE SITE).

WHEREAS, Parkwood Hughson, LLC has made application for a Vesting Tentative Subdivision Map, which requires a Zone Change; and

WHEREAS, the official zoning map of the City of Hughson, established by Municipal Code 17.08.020 is to be amended by rezoning the parcels designated 018-017-002, -010, -014 on the Assessor's Map of Stanislaus County from C-2 General Commercial and R-1 Low Density Residential to R-2 Medium Density Residential; and

WHEREAS, there was a duly noticed public hearing before the Hughson Planning Commission on July 21, 2020 where the Commission continued the item until the August 18, 2020 at which date the Planning Commission made the findings required by the Hughson Municipal Code and recommended to the City Council approval of the stated zone change; and

WHEREAS, the City Council, held a duly noticed public hearing on September 14, 2020, which was continued to the October 12, 2020 City Council meeting, and continued again to the November 9, 2020 City Council meeting, on the proposed rezoning.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson makes the following findings:

1. The action is consistent with the general plan or any applicable specific plan;

2. The action will not be detrimental to the public interest, health, safety, convenience, or welfare of the city; and

3. The site is suitable for the requested land uses, if applicable.

NOW, THEREFORE, BE IT FURTHER RESOLVED, the City Council approves the proposed rezoning for the following parcels:

Assessor Parcel Number	Current Zoning	New/Approved Zoning
108-017-002		R-2 Medium Density Residential
108-017-010		R-2 Medium Density Residential
108-017-014		R-2 Medium Density Residential

PASSED AND ADOPTED by the City Council of the City of Hughson at its regularly scheduled meeting on this 9th day of November, 2020 by the following roll call vote:

AYES: .

NOES: .

ABSTENTIONS: .

ABSENT:

_____
JERAMY YOUNG, Mayor

ATTEST:

_____
ASHTON GOSE, Deputy City Clerk

CITY COUNCIL
CITY OF HUGHSON
RESOLUTION NO. 2020-58

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON ADOPTING A VESTING TENTATIVE MAP FOR THE PARKWOOD SUBDIVISION PROJECT, A 56.04-ACRE PROPERTY, SUBDIVIDING THE SITE INTO 299 RESIDENTIAL LOTS AND 3 PARKS

WHEREAS, Parkwood Hughson, LLC have made application for a vesting tentative subdivision map to subdivide an existing parcels into 299 lots for a residential subdivision; and

WHEREAS, the project has been analyzed for consistency with the City's Zoning and Subdivision Ordinance and found to be in substantial compliance subject to certain conditions of approval; and,

WHEREAS, public notice was duly provided in accordance with Subdivision Ordinance, Section 16.04.110; and,

WHEREAS, opportunity for public comment was provided to the Planning Commission at the July 21, 2020 meeting where the matter was continued to the next Planning Commission meeting; and,

WHEREAS, a second opportunity for public comment was provided to the Planning Commission at the continued August 18, 2020 meeting, and the Planning Commission recommends the City Council approve the vesting tentative map; and,

WHEREAS, opportunity for public comment as well as comments from interested agencies has been provided to the City Council at its September 14, 2020 meeting, which was continued to the October 12, 2020 City Council meeting, and continued again to the November 9, 2020 City Council meeting.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson, based on all facts and findings before it and using its own independent judgment does hereby approve the Vesting Tentative Map No. 2020-01 with the attached Conditions of Approval.

PASSED AND ADOPTED by the City Council of the City of Hughson at its regular meeting on this 9th day of November, 2020 by the following roll call vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

_____
JERAMY YOUNG, Mayor

ATTEST:

_____
ASHTON GOSE, Deputy City Clerk

CITY COUNCIL
CITY OF HUGHSON
RESOLUTION NO. 2020-59

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON APPROVING A CONDITIONAL USE PERMIT TO ALLOW A PLANNED DEVELOPMENT OVERLAY FOR THE PROPOSED PARKWOOD HUGHSON RESIDENTIAL SUBDIVISION, APNS 018-017-002, -010, -014

WHEREAS, the Applicant Parkwood Hughson, LLC submitted an application for a Conditional Use Permit to allow a Planned Development Overlay for a 299-unit subdivision located on a 56.04-acre site, APNs 018-017-002, -010, and -014, pursuant to Hughson Municipal Code (HMC) Section 17.02.028; and

WHEREAS, pursuant to Hughson Municipal Code section 17.02.028, a Planned Development Overlay is used to encourage a creative and more efficient approach to the use of land and to provide for greater flexibility in the design of integrated developments than otherwise possible through strict application of zoning regulations; and

WHEREAS, a Planned Development Overlay may be applied to parcels of land of any size in any zone that are found to be suitable for the proposed development; and

WHEREAS, the permitted uses of land shall be any use or combination of uses and densities shown on the approved development plan which are so arranged and designed to provide a development which is in conformity with the General Plan and which is consistent with the requirements of the HMC; and

WHEREAS, all uses shall conform to the area, heights, lot width and yard regulations required in the underlying zone except where the total development will be improved by a deviation from such regulations; and

WHEREAS, at the July 21, 2020 Planning Commission meeting the Planning Commission heard public comment on the item and then continued the item until the August 18, 2020 Planning Commission meeting where the Commission recommended to the City Council approval of the rezoning of the project site to the R-2 zone which will be the underlying zone for this Planned Development Overlay; and

WHEREAS, the development standards of the proposed development do not conform to all of the underlying development standards of the R-2 zoning district, but the Planning Commission was able to find that the total development would be improved by a deviation from such regulations because the proposed development:

1. Is providing larger and more desirable open space, other than that required for public facilities such as storm drain retention basins, and
2. The project will provide for a greater diversity of housing types including duplexes and multifamily residences; and

WHEREAS, notice of Public Hearing was posted in a newspaper of general circulation (Hughson Chronicle) per prescribed procedure—to solicit public input; and

WHEREAS, the Hughson City Council has determined that the use conforms to the requirements and the intent of the City's zoning code and General Plan and recommends approval of the Planned Development Overlay.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson, pursuant to HMC 17.02.028 does hereby approve the issuance of a Conditional Use Permit Application to allow a Planned Development Overlay for a 299-unit subdivision on a 56.04 acre lot in the R-2 Medium Density Residential Zone.

PASSED AND ADOPTED by the City Council of the City of Hughson at its regularly scheduled meeting on this 9th day of November, 2020:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

_____
JERAMY YOUNG, Mayor

ATTEST:

_____
ASHTON GOSE, City Clerk

CITY OF HUGHSON
CITY COUNCIL
ORDINANCE NO. 2020-06

AN UNCODIFIED ORDINANCE OF THE CITY COUNCIL OF THE CITY OF HUGHSON ADOPTING THE DEVELOPMENT AGREEMENT BY AND BETWEEN THE CITY OF HUGHSON AND PARKWOOD HUGHSON, LLC

WHEREAS, pursuant to Hughson Ordinance No. 90-59, the City of Hughson ("City") may enter into, or amend a Development Agreement with the owner and/or developer of real property within the City; and

WHEREAS, Parkwood Hughson, LLC hereinafter referred to as the "Developer", has applied for, and the City has approved, all necessary land use approvals, entitlements and allocations that will allow the development of a 299-unit subdivision at the corner of East Hatch Road and Santa Fe Avenue, without the need to obtain further discretionary approvals other than Design Review by the Planning Commission; and

WHEREAS, the City and Developer have negotiated a Development Agreement by and between the City of Hughson and Parkwood Hughson, LLC (hereinafter "Development Agreement"), a copy of which is attached as Attachment 1; and

WHEREAS, the City Planning Commission on August 18, 2020, determined that the provisions of the Development Agreement are consistent with the City's General Plan and all other applicable plans, policies, and regulations of the City; and

WHEREAS, a duly noticed public hearing was held before the City Council on September 14, 2020, which was continued to the October 12, 2020 City Council meeting, and continued again to the November 9, 2020 City Council meeting; and

WHEREAS, the Council City desires to approve the agreement and enact it as an uncodified ordinance and upon adoption authorize the City Manager to execute the Development Agreement.

NOW, THEREFORE THE CITY COUNCIL OF THE CITY OF HUGHSON DOES ORDAIN AS FOLLOWS:

Section 1. The Development Agreement attached as Attachment 1 and incorporated by this reference as though fully set forth herein is hereby enacted as an uncodified ordinance.

Section 2. This ordinance is not intended to and shall not be construed or given effect in a manner that imposes upon the city or any officer or employee thereof a mandatory duty of care toward persons and property within or without the city so as to provide a basis of civil liability for damages, except as otherwise imposed by law.

Section 3. If any provision of this ordinance or application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are severable. The city council hereby declares that it would have adopted this ordinance irrespective of the validity of any particular portion thereof.

Section 4. This ordinance shall become effective thirty (30) days after its final passage.

Section 5. The City Clerk shall record a copy of the Development Agreement with the County Recorder no later than 10 days after the final passage of this Ordinance.

Section 6. Within fifteen (15) days after its final passage, the City Clerk shall cause this ordinance to be posted in full accordance with Section 36933 of the Government Code.

The foregoing ordinance was introduced, and the title thereof read at the regular meeting of the City Council of the City of Hughson held on November 9, 2020 and by a unanimous vote of the council members present, further reading was waived.

On motion of XXXX, seconded by XXXX, the second reading of the foregoing ordinance was waived and this ordinance was duly passed by the City Council of the Hughson City Council at a regular meeting thereof held on XXXX XX, 2020 by the following vote:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

_____

JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk

RECORDED AT THE REQUEST OF:

CITY MANAGER
CITY OF HUGHSON

WHEN RECORDED PLEASE RETURN TO:

CITY MANAGER
CITY OF HUGHSON
P.O. BOX 9
Hughson, California 95326

Recording fees exempt (Gov. Code §§ 6103, 27383) (Space above line for recorder's use only)

DEVELOPMENT AGREEMENT

BY AND AMONG

THE CITY OF HUGHSON

AND

PARKWOOD HUGHSON, LLC

(PARKWOOD SUBDIVISION)

Adopted by City Council Ordinance No. _____
on_____, 2020

TABLE OF CONTENTS

DEVELOPMENT AGREEMENT

THIS DEVELOPMENT AGREEMENT ("Agreement") is entered into by and among the City of Hughson, a California municipal corporation ("City") and Parkwood Hughson, LLC referred to herein as the ("Developer.") Developer and City may hereinafter be referred to individually as a "Party" and collectively as the "Parties." There are no other parties to this Agreement.

RECITALS

A. To strengthen the public planning process, encourage private participation in comprehensive planning and reduce the economic costs of development, the Legislature of the State of California adopted the Development Agreement Statutes (Gov. Code § 65864 et seq.) which authorizes the City to enter into a development agreement with any person or entity having a legal or equitable interest in real property, to provide for the development of such property and establish certain development rights therein. The Parties acknowledge on their own behalf that each has: (i) negotiated the terms and conditions of this Agreement in good faith; (ii) extensively reviewed the terms and conditions of this Agreement; and (iii) found the terms and conditions of this Agreement to be fair, just and reasonable. Additionally, City acknowledges that this Agreement is consistent with City's General Plan and that buildout of the Project, including the Infrastructure Improvements, in accordance with this Agreement, will provide substantial benefits to City furthering important public health, safety and welfare interests while eliminating uncertainty in planning, and facilitating progressive installation of necessary Infrastructure Improvements to serve the Project.

B. The Developer represents that, upon approval of this Agreement, the Developer owns legal title or an equitable interest (i.e., contractual acquisition right) to that certain real property located on the South Side of the TID Ceres main canal and borders Santa Fe Avenue on the West commonly known as APN's 018-017-002, 010 and 014 consisting of approximately 56.03 gross acres, located in the County of Stanislaus, California, City of Hughson and more particularly described in the Legal Description and Reference Maps attached hereto in **Exhibit A-1** through **A-3** and incorporated herein (the "Real Property") may be referred to as the "Subject Property."

C. Development of the Project, as provided herein, will necessitate right-of-way land dedications and financing for the construction of certain public and private improvements, including water facilities, storm water drainage facilities, sanitary sewer facilities, roadway improvements, streetscape and sidewalk improvements and park improvements, all of which infrastructure improvements specific to the Subject Property are further described in the Conditions of Approval imposed by the City for the Project. Certain improvements will not only benefit the Project but will also benefit the City and Stanislaus County.

D. City recognizes that the success of the Project depends greatly upon the certainty of: (i) providing sufficient water and sewer capacity to serve the Project. (ii) issuance of building permits;(iii) the timing and issuance of Credits and Reimbursements for Infrastructure Improvements installed by Developer;

E. The City has established Development Impact Fees (DIF) for new development as set forth in Chapter 15 of the City of Hughson Municipal Code (HMC) which codifies the principle that new development should fund the cost of the capital improvements required to serve it.

F. In accordance with CEQA, City has determined the impacts of the Project were sufficiently analyzed and addressed in the Certified Mitigated Negative Declaration for the Parkwood Subdivision Project, and no further environmental review is required (CEQA Guidelines § 15162 & 15164). No further environmental documentation is anticipated through the buildout of the Project, as adopted herein, including any Subsequent Approvals that are consistent with the Approved Entitlements. Development of the Subject Property pursuant to the Project Approvals and as set forth in the Conditions of Approvals, will provide for orderly growth and development consistent with City's General Plan, and other applicable development policies and programs of City.

G. For the reasons recited herein, Developer and City have determined that the development of the Subject Property is a development project for which this Agreement is appropriate and that this Agreement:

(i) Will eliminate uncertainty in planning and provide for the orderly development of the Subject Property;

(ii) Will insure progressive installation of necessary Infrastructure Improvements, by Developer in accordance with the terms and conditions of the Approved Entitlements;

(iii) Will provide for public services appropriate to the development of the Subject Property;

(iv) Will insure attainment of the maximum effective utilization of resources within City with the consideration of economic impacts to its citizens; and

(v) Will achieve the goals and purpose of the project approvals, which provides that Project phasing shall remain flexible enough to respond to changing conditions during Project buildout.

H. In entering into this Agreement, the Parties acknowledge that this Agreement and the Project Approvals shall be the primary instrument whereby the timing, phasing, and construction of the entirety of the Infrastructure Improvements and all other terms and conditions pertinent thereto shall be set forth and agreed to by the Parties. In exchange for these benefits to City, together with the public benefits provided by the development of the Project pursuant to this Agreement and the Project Approvals, Developer desires to receive the vested right that it may proceed with development of the Project in accordance with Applicable Laws in effect as of the Approval Date, and the Project Approvals, including without limitation, the Approved Entitlements and Subsequent Approvals.

I. City acknowledges that development of the Subject Property is a large-scale

undertaking, involving major investments by Developer, with development occurring in various phases over several years. Developer is unwilling to incur the required investment in developing the Project, as hereinafter defined, without binding assurances from City of the continuity of vested rights to develop the Project in accordance with the project approvals, Applicable Laws (as defined in Section 5.01) in effect as of the Approval Date and Project Approvals, to proceed with the construction of the Infrastructure Improvements and any other improvements. City, in turn, cannot be assured of realizing the benefits of the Project without granting the binding assurances desired by Developer.

J. This Agreement sets forth provisions for Developer to construct certain Infrastructure Improvements, or portions thereof, in phases as driven by economic and market conditions. The Parties acknowledge that Developer shall not be required to initiate or complete development of any particular Infrastructure Improvement within any period of time except as necessary to serve that phase of the project, and as set forth in the project approvals. The Parties further acknowledge that certain Infrastructure Improvements will benefit the Project, as well as other City areas. As such, this Agreement is intended to grant Developer vested rights to develop the Project as set forth herein.

K. On_____, 2020 the Planning Commission of the City of Hughson, after giving notice pursuant to Government Code Sections 65867, 65090 and 65091, held a public hearing to consider this Agreement and provide recommendations to the City Council.

L. The City Council of the City of Hughson on_____, 2020, after providing public notice pursuant to Government Code Sections 65867, 65090 and 65091, held a public hearing on this Agreement and, following the duly noticed hearing, introduced Ordinance No._____ to approve this Agreement.

M. On_____,2020 the City Council conducted the second reading and adopted Ordinance No. _____, approving and authorizing the execution of the Agreement. The ordinance is effective on_____, 2020 (the "Approval Date"). In approving the Agreement, the City Council adopted findings that the provisions of this Agreement and the Project are consistent with the General Plan, the Parkwood Vesting Tentative Subdivision Map and all other applicable City policies and regulations, and that the requirements of CEQA have been satisfied. Ordinance No. _____ and related policies are attached to this Agreement as **Exhibit B.**

NOW THEREFORE, in consideration of the promises, covenants and provisions set forth herein, the Parties agree as follows:

ARTICLE 1
DEFINITIONS

The following terms shall have the meanings set forth below for purposes of this Agreement:

1.01. "Agreement" means this Development Agreement by and between the City of Hughson, a California municipal corporation and the Parkwood Hughson, LLC.

1.02. "Applicable Law" shall mean the statutes, rules, ordinances and regulations referred to in Section 5.01 below and in effect on the Approval Date of this Agreement.

1.03. "Approval Date" means the legally effective date of City's approval of this Agreement, which shall occur thirty (30) calendar days after the adoption of the second reading of Ordinance No_____, i.e.,_____, 2020.

1.04. "Approved Entitlements" means those certain entitlements listed on **Exhibit C** attached hereto.

1.05. "Assignee" means any person, partnership, joint venture, firm, company, corporation or other business entity to which all or a portion of the Subject Property is sold, assigned, transferred, or conveyed, along with such rights, duties and obligations under this Agreement with respect to all or that portion of the Subject Property which is sold, assigned transferred, ground leased or conveyed pursuant to an Assignment and Assumption Agreement, as provided in Section 3.03 herein. Notwithstanding the foregoing, through the Assignment and Assumption Agreement, Developer may reserve and retain certain rights and benefits contained in this Agreement or created as a result of this Agreement and may withhold the transfer of such rights to any Assignee pursuant to such agreement executed by the Assignee.

1.06. "Assignment and Assumption Agreement" means such agreement that Developer shall be required to enter into, in order to retain certain rights and benefits, and to partially allocate certain rights and benefits to an Assignee, as provided herein and as detailed in Section 3.03 and **Exhibit D** of this Agreement.

1.07. "City" means the City of Hughson, California.

1.08. "CEQA" means the California Environmental Quality Act (Pub. Res. Code § 21000 et seq.) and the implementing CEQA Guidelines (14 Cal. Code Reg. § 15000 et seq.)

1.09. "Community Development Director" means the City's Community Development Director, or the person the City Manager shall designate to act as such for purposes of this Agreement.

1.10. "Conditions of Approval" means all conditions of approval to the Approved Entitlements, which have been required by the City as a condition of regulatory approval of the Project, and which the affected Developer has reviewed and consented to, as set forth in **Exhibit E** attached hereto.

1.11. "Costs of the Infrastructure Improvements" means the right-of-way costs and eligible costs for construction, alteration, demolition and installation of the Infrastructure Improvements.

1.12. "Credits" means an entitlement to be excused from paying into City's DIF program because Developer constructed certain Infrastructure Improvements instead of paying the DIF. The amount of the Credit for construction of a DIF Infrastructure Improvement shall be equal to the

amount identified in this Agreement for such Infrastructure Improvement.

1.13. "Developer" means the Parkwood Hughson, LLC, and any successor-in-interest, or future Assignees.

1.14. "Development Impact Fees (DIF)" means the fee schedule adopted by City that is applicable to the Project for the term of this Agreement attached hereto as **Exhibit F**, as such fees may be modified and limited in accordance with this Agreement.

1.15. "Effective Date" means the legally effective date that all the following have occurred: (a) the ordinance approving this Agreement becomes effective; and (b) this Agreement is executed by the Parties.

1.16. "Mitigated Negative Declaration" shall mean the combined initial study and mitigated negative declaration, including the adopted CEQA findings and Mitigation Monitoring and Reporting Program, Parkwood Subdivision Project (SCH No. _____) certified by City Council Resolution No. _____ on _____, 2020.

1.17. "Final Maps" shall mean the various, phased final maps issued pursuant to the Subdivision Map Act, which may hereafter be filed for record for each respective phase of development of the Project.

1.18. "Financing District" shall mean a community facilities district formed pursuant to the Mello-Roos Community Facilities District Act of 1982, or a comparable special tax, assessment or similar district formed to financing ongoing maintenance or infrastructure obligations for the Subject Property.

1.19. "General Plan" shall mean the City of Hughson General Plan of December 12, 2005.

1.20. "Infrastructure Improvements" means the improvements required to be constructed per the project approvals.

1.21. "Project" means the permitted densities, intensities and uses of the Subject Property as depicted on the Project Approvals, and in the Approved Entitlements.

1.22. "Project Approvals" means all land use and building approvals, permits and entitlements granted by the City for the Project including the Approved Entitlements, Subsequent Approvals, Conditions of Approval and Mitigation Monitoring and Reporting Program.

1.23. "Property Owner" means Parkwood Hughson, LLC.

1.24. "Rules and Regulations" means the rules, regulations, ordinances, laws, general plans, zoning, and official policies governing development, design, density and intensity of permitted uses, growth management, environmental review, or other measures that directly or indirectly limits the rate, timing or sequencing of development or construction, construction and building standards, design criteria and any other standards relating to development of Subject Property within the City, and in effect on the Approval Date of this Agreement.

1.25. "Sanitary Sewer System" means the City's sanitary sewer treatment facility and existing piping and conveyance systems.

1.26 "State" means the State of California.

1.27 "Subject Property" means the Parkwood Hughson, LLC property.

1.28 "Subsequent Approvals" means any approvals required, or desired by Developer and considered by City, as a precondition to the issuance of grading, building or other permits required for the development of the Project granted by City after the Approval Date, including but not limited to (a) Phased Final Maps, which may include all or a portion of the Subject Property identified in the Project Approvals; (b) use permits; (c) building permits; (d) design review and (e) any other approvals necessary for the development of the Project.

1.29 "Subsequent Property Owner" means the person, persons or entity having a legal or equitable interest in the Subject Property as described in **Exhibit A-2** and **Exhibit A-3** and includes any Property Owner's successors in interest.

ARTICLE 2
EXHIBITS AND RECITALS

The Recitals set forth above, and the Exhibits referred to in this Agreement, are incorporated herein as though set forth in full.

ARTICLE 3
GENERAL PROVISIONS

3.01. Property Subject to the Agreement. This Agreement applies to and governs the development of the Subject Property.

3.02. Duration of Agreement. The term of this Agreement shall commence upon the Approval Date and shall expire on the tenth (10th) anniversary following such date, provided, however, that this Agreement shall not become legally enforceable by either Party until the Effective Date. The term of this Agreement may be extended by mutual agreement of the Parties in writing.

3.03. Assignment and Assumption. Developer shall have the right to sell, assign, transfer, ground lease or convey the Subject Property in whole or in part (provided that no such partial transfer shall violate the provisions of the Subdivision Map Act) to an Assignee at any time during the term of this Agreement upon providing notice to City no later than ten (10) days after the effective date of said sale, assignment or transfer. Assignment and assumption shall be administered through the form of Assignment and Assumption Agreement attached to this Agreement as **Exhibit D**. The City will release Developer from all obligations set forth herein with respect to the Subject Property sold, assigned or transferred (or if less than the Subject Property shall be sold, transferred or assigned, then with respect to that portion thereof actually purchased, transferred or assigned), only if Developer conveys, and the Assignee expressly assumes all of the

obligations and other terms and conditions of this Agreement with respect to such Subject Property (or if less than the Subject Property shall be sold, transferred or assigned, then with respect to that portion thereof actually purchased, transferred or assigned). Developer or Assignee shall advise the City of the assignment and assumption.

(a) *Failure to Notify City not Grounds for Default*. Any sale, assignment, transfer, ground lease or conveyance not made in substantial compliance with this Article shall not constitute a default by Developer or any Assignee under this Agreement, provided, however, that City may refuse to issue permits or other entitlements to such purchaser, Assignee or transferee until a copy of the assignment and assumption agreement is received by City.

(b) *Partial Assignment*. Developer reserves the right to partially assign the burdens or benefits of this Agreement to any Assignee, provided that Developer must: (i) provide City with a copy of the Assignment and Assumption Agreement that designates the rights allocated to such Assignee; and (ii) record a memorandum of such agreement on the assigned property, which clearly designates the rights allocated to such Assignee.

3.04. Recording. Upon the Approval Date, the Parties shall fully execute and acknowledge four originals of this Agreement. Within ten (10) days after the Approval Date, the City Clerk shall record this Agreement in the Official Records of Stanislaus County. Upon return from the county recorder, the City Clerk shall send a copy of the recorded Agreement and all exhibits to Developer.

3.05. Amendment or Cancellation of Agreement. Except as otherwise provided herein, including, without limitation, as provided under Article 8 hereof, this Agreement may be cancelled, modified or amended only by mutual written consent of the Parties, in accordance with Government Code Sections 65867, 65867.5 and 65868.

(a) *Minor Amendment of this Agreement*. The Parties acknowledge that refinement and implementation of the Project may demonstrate minor changes, as appropriate with respect to the details of performance by the Parties. The Parties desire to retain administrative flexibility with respect to certain items covered in general terms under this Agreement. If City finds that clarifications, minor changes or minor adjustments are necessary or appropriate to further the intended purposes of this Agreement and will not be materially inconsistent with any Project Approvals, the Parties may effectuate such clarifications, minor changes and adjustments through one or more Operating Memoranda, mutually approved in writing by Developer and the City Manager. Each Operating Memorandum will, after execution and recording, be attached to this Agreement. Unless otherwise required by law, execution of an Operating Memorandum between the Parties shall not require noticed public hearings.

(b) *Effect of Termination*. Termination of this Agreement shall not constitute the automatic termination of any Project Approvals or other land use entitlements approved for the Subject Property. Upon termination of this Agreement, no Party shall have any further right or obligation hereunder, except with respect to any obligation to have been performed prior to such termination, or with respect to any default in the performance of the provisions of this Agreement that has occurred prior to such termination, or with respect to any obligations that are specifically set forth as surviving this Agreement.

(c) *Minor Amendment of Project Approvals.* Developer may provide written request for a minor amendment or modification to any of the Project Approvals, including, but not limited to (a) the location of buildings, streets and roadways and other physical facilities, or (b) the configuration of the buildings, the site plan, elevations, the configuration and number of parcels, lots or development areas. To the extent allowable by law, the Community Development Director shall determine whether the requested amendment or modification is consistent with this Agreement, Project Approvals and applicable provisions of City zoning and subdivision ordinances in effect as of the Effective Date of this agreement. For purposes of this Agreement, the determination of whether such amendment is minor shall be made by reference to whether such amendment or modification is minor in the context of the overall Project. If the Community Development Director finds that the proposed amendment is both minor and consistent with this Agreement, Project Approvals and the applicable provisions of City zoning and subdivision ordinances, the Community Development Director may approve the minor amendment administratively. For purposes of this Agreement and notwithstanding any City ordinance or resolution to the contrary, the following shall be deemed a minor amendment or modification: lot line adjustments, minor adjustments in the number of parcels, minor variances as to density, relocation of densities and/or uses which do not materially alter the overall density of the Subject Property as presently set forth in the Project Approvals and minor changes to any bulk, height, lot coverage, and building setbacks.

3.06. Binding Effect of Agreement. Actions of City and Developer with respect to the Project, including, without limitation, actions by City responding to applications for Subsequent Approvals affecting the Project, shall be made subject to this Agreement. The Project shall be carried out in accordance with the terms of this Agreement. The provisions of this Agreement shall constitute covenants and servitudes, which shall run with the land comprising the Subject Property, and the burdens and benefits hereof shall inure to the benefit of the City and Developer, and all estates and interests in the Subject Property and all successors in interest of the Parties hereto, except as such rights may be materially limited by a recorded Assignment and Assumption Agreement between Developer and any Assignee to the Subject Property. Notwithstanding the above, Developer's determination to construct the Project is left to Developer's sole and absolute discretion and in no event is Developer obligated to construct or undertake commencement of the Project.

3.07. Notices. Any notice or communication required hereunder between City or Developer must be in writing, and may be given either personally, by registered or certified mail (return receipt requested), or by Federal Express, UPS or other similar couriers providing overnight delivery. If personally delivered, a notice or communication shall be deemed to have been given when delivered to the Party to whom it is addressed. If given by registered or certified mail, such notice or communication shall be deemed to have been given and received on the first to occur of (a) actual receipt by any of the addressees designated below as the party to whom notices are to be sent, or (b) five (5) days after a registered or certified letter containing such notice, properly addressed, with postage prepaid, is deposited in the United States mail. If given by Federal Express or similar courier, a notice or communication shall be deemed to have been given and received on the date delivered as shown on a receipt issued by the courier. Any Party may at any time, by giving ten (10) days written notice to the other Party, designate any other address in substitution

of the address to which such notice or communication shall be given.

Notices and communications shall be given to the Parties at their addresses set forth below:

If to City:	City of Hughson Merry Mayhew, City Manager Lea Simvoulakis, Community Development Director P.O. Box 9 Hughson, CA 95326
	Neumiller & Beardslee, Attorneys & Counselors Daniel J. Schroeder, City Attorney 3121 W. March Ln, Ste. 100 Stockton, CA 95219
If to Developer:	Parkwood Hughson, LLC Kirk DeLaMare, Managing Member 1117 L Street Modesto, CA 95354
	Jensen & Jensen Attorneys Mark R. Jensen 1514 H St Modesto, CA 95354
With copies to:	Triebsch & Frampton, APC Attorneys at Law Robert E. Triebsch 300 N. Palm Street Turlock, CA 95380

ARTICLE 4
CONFLICTS OF LAW

4.01. Conflicts between City and State or Federal Laws. In the event that State or federal laws or regulations enacted after the Approval Date prevent or preclude compliance with one or more provisions of this Agreement, or require changes in plans, maps or permits approved by City, each Party shall provide the other Party with written notice of such State or federal restriction, a copy of such regulation or policy and a statement concerning the conflict with the provisions of this Agreement. The Parties shall, within thirty (30) days, meet and confer in good faith in a reasonable attempt to modify this Agreement to comply with such federal or State law or regulation.

4.02. City Council Hearing. After the Parties have met and conferred pursuant to Section 4.01 above, if the Parties have not reached agreement on the effect of the change in the federal or state law or regulation upon this Agreement, Developer may request the matter shall be

scheduled for hearing before the City Council. Written notice of such hearing shall be given pursuant to Government Code Section 65867, or then applicable statutes. The City Council, at such hearing, shall determine the exact modification necessitated by such federal or state law or regulation. Developer, at the hearing, shall have the right to offer oral and written testimony.

4.03. Cooperation in Securing Permits. City shall cooperate with Developer in order to secure any permits that may be required or as a result of modifications, amendments, or suspensions made pursuant to this Article.

4.04. Invalidity of Agreement and Severability. If this Agreement is determined by a court to be invalid or unenforceable in its entirety, the Agreement shall automatically terminate as of the date of final entry of judgment. If any provision of this Agreement relating to fees payable by Developer, Article 6 shall be determined by a court to be invalid and unenforceable, or if any provision of this Agreement relating to fees payable by Developer, Article 6 is rendered invalid or unenforceable according to the terms of any statute of the State of California which became effective after the Approval Date, and Developer in good faith determines such provisions are material to its entering into this Agreement, then Developer may elect to terminate this Agreement as to all of its obligations remaining unperformed.

ARTICLE 5
DEVELOPMENT OF THE SUBJECT PROPERTY

5.01. Applicable Priority. As used in this Agreement regarding the Subject Property, "Applicable Priority" shall mean and include all the following in effect as of the Approval Date, and Applicable Priority shall be interpreted in the following priority:

(a) This Agreement;
(b) Parkwood Vesting Tentative Subdivision Maps;
(c) All other Project Approvals;
(d) City zoning ordinance;
(e) City subdivision ordinance;
(f) Rules and Regulations; and
(g) All other laws, policies, rules and regulations of City (whether the laws be enacted by the City Council, Planning Commission, or City voters) in effect as of the Approval Date, including, without limitation, the laws that relate to or specify any one or more of the following: the permitted uses of land or improvements; the density or intensity of use; the rental rates or vacancy rates or conversion controls regarding rental properties; labor rules and rates; and building and uniform code standards for construction and occupancy. Nothing in this Agreement, or Applicable Law, whether in existence as of the Approval Date or arising in the future, shall be interpreted to provide for or result in any annual (or other) limit, moratorium, or other limitation upon the number of, or phasing or pacing of, units which may be constructed on, or building permits which may be obtained for parcels or lots within the Subject Property, the processing or approval of any final maps, or any other land use entitlements, approvals,

or permits, or the rate, timing, or sequencing thereof, during the term of this Agreement. There are currently no adopted growth controls ordinance, policies or measures that would restrict development of the Project. The terms of this Agreement are consistent with the legislative purposes set forth above and will assure Developer that approvals granted by the City in connection with the development of the Subject Property will not change during the term of this Agreement.

Notwithstanding the foregoing or anything contained herein to the contrary, the standards and regulations provided in this Agreement and the Project Approvals supersede all other laws, policies, rules and regulations of the City in effect as of the Approval Date. If a conflict occurs between the requirements of this Agreement and the Project Approvals and laws, policies, rules, and regulations of the City, the requirements of the Project Approvals and this Agreement shall control. If, however, the Project Approvals does not contain an express requirement consistent with the laws, policies, rules and regulations of the City, then in such event the Parties agree the requirements of Applicable Priority, in order of priority shown above, shall be followed.

5.02. Vested Right to Develop. During the term of this Agreement, Developer shall have the vested right to develop the Subject Property in accordance with the Project Approvals. City agrees and assures Developer that this Agreement establishes vested development rights, obligations, terms and conditions, as specified in the Project Approvals and Applicable Law, including without limitation, any and all Subsequent Approvals and Developer's right to tie in, or connect to, the City sewer and water systems, and that such rights shall be fully vested in Developer and may not be changed or modified by City, except as may be expressly permitted by, and in accordance with, the terms and conditions of this Agreement, or as expressly consented thereto by Developer in its reasonable discretion.

(a) *Water Capacity*. The Parties acknowledge the City's water system has sufficient capacity to adequately serve 299 residential units per the project approvals. To fund water system upgrades and ongoing operations and maintenance of existing water facilities, the City collects DIF and water user rate fees. The DIF is a one-time fee paid for each single-family home constructed within a proposed development. The DIF are currently being updated by the City. The Developer has agreed to pay the proposed water fee in the amount of $8,119 per single family home as set forth in **Exhibit F.**

(b) *Sanitary Sewer Capacity*. The parties acknowledge the City's sanitary sewer systems have sufficient capacity to adequately serve 299 residential units per the project approvals. The Developer shall pay the sanitary sewer capacity fee as set forth in **Exhibit F.**

5.03. City Administration. City shall comply with this Agreement and all Project Approvals, and City shall process any Subsequent Approvals in accordance with the terms of this Agreement. The permitted uses, the density and intensity of use, the maximum height and size of proposed buildings, the construction, installation and extension of Infrastructure Improvements, development guidelines and standards, implementation programs for processing of Subsequent Approvals and other conditions of development for the Subject Property shall be those set forth in this Agreement, the Project Approvals and Applicable Law, including without limitation, any and

all Subsequent Approvals. The Parties intend that the Project Approvals shall serve as the definitive and controlling provisions for all subsequent actions, discretionary or ministerial, relating to the development and occupancy of the Project.

5.04. Other. The vested rights under this Agreement include the protections afforded, including without limitation, protections against later enactments prohibited in this Agreement such as those listed in subsection 5.08(a) and Section 6.13.

5.05. Reimbursement Agreements. Reimbursements shall be administered through this Agreement, and any additional Reimbursement Agreement determined to be necessary by mutual agreement of the Parties. City shall have no further obligation under this Section only after such time that Developer has been fully repaid for the actual cost of all Infrastructure Improvements, including their costs through either Credits or Reimbursements, as applicable.

5.06. Prevailing Wages. The Parties understand and intend that, under this Agreement, City will not contribute any money, or the equivalent of money, to the overall Project than is required to perform the public improvement work and reimburse Developer for installation of the Infrastructure Improvements, as provided herein, which are required as a condition of City's regulatory approval of the Project. The Parties further understand and intend that the Project is a private development project and that City does not and shall not have any proprietary interest therein. It is Developer's understanding and intent that no portion of the project shall be subject to the requirement to pay prevailing wages.

5.07. Reservations and Dedications. Portions of the Subject Property are reserved for dedication or other transfer to City, as shown in the Vesting Tentative Subdivision Map. Such reservations and dedications shall be imposed in accordance with the Applicable Laws in effect as of the Approval Date, and otherwise shall be made in accordance with the Conditions of Approval for the Vesting Tentative Subdivision Maps and the Subdivision Map Act.

5.08. Subsequent Enactments. City and Developer agree that this Agreement shall vest Developer's right to develop the Project pursuant to the Project Approvals and Applicable Law. Neither the City, nor any agency of the City, shall enact any new law, ordinance, resolution, initiative, rule, regulation or other measure applicable to the Project or Subject Property that is in conflict with the Project Approvals or Applicable Law, or that prevents or conflicts with the permitted uses, density and intensity of uses vested by this Agreement, or as set forth in the Project Approvals or Applicable Law.

(a) *Limitations*. Without limiting the foregoing general statement, and for all purposes relating to this Agreement generally, and this Section specifically, the Parties agree that any new law, ordinance, resolution, initiative, rule, regulation or other measure applicable to the Project or Subject Property shall be deemed to conflict with the Project Approvals or Applicable Law if it seeks to accomplish anyone or more of the following results, either with specific reference to the Project, or Subject Property, or as part of a general enactment that applies to this Project or Subject Property:

(i) limiting or reducing the intensity, use, operation or density of

development on the Subject Property, or otherwise requiring any reduction on the square footage of buildings, total number of proposed homes, buildings or other improvements;

(ii) limiting or restricting the development timing or phasing or pace of the development of the Subject Property in any manner;

(iii) limiting the location of building sites, buildings, grading, or other improvements on the Subject Property in any manner;

(iv) applying to the Subject Property a moratorium or other limitation affecting the processing or approval of subdivision maps, including, without limitation, or Final Maps, building permits or any other land use entitlements, approvals or permits, or the rate, timing or sequencing thereof;

(v) applying to the Subject Property rent, vacancy or conversion controls, regulations and/or policies;

(vi) applying to the Subject Property "prevailing wage," "union shop," project labor agreement, labor peace agreement, or other labor regulations or policies, except those required by State or Federal laws and regulations

(vii) requiring any additional on-site or off-site infrastructure improvements to be constructed or paid for by Developer or a Subsequent Property Owner; or

(viii) restricting the permitted uses of the Subject Property in any manner.

The above list of actions is not intended to be comprehensive but rather is illustrative of the types of actions that would conflict with this Agreement, the Project Approvals, and Applicable Law.

(b) *Changes to Applicable Law*. Only the following changes to the Applicable Law effective as of the Approval Date shall apply to the development of the Project:

(i) City land use regulations, ordinances, resolutions or policies adopted after the Approval Date, applicable City-wide, which are not in conflict with the terms and conditions for the development of the Project, and the Project Approvals, and which do not impose additional burdens on the Project; and

(ii) City land use regulations, ordinances, resolutions or policies adopted after the Approval Date, which are in conflict with Project Approvals, but the application of which to the development of the Project has been consented to in writing by Developer in its sole discretion.

(iii) Development of the Subject Property shall be subject to legally mandated changes that occur to the California Building Code and California Fire Code required by State or federal law (the "Applicable Codes"); provided, however, such changed law shall not apply to the Subject Property when permitted or exempted by (a) the rights and benefits of this Agreement, (b) any vesting tentative map, or Final Map, (c) the presence, vesting protections or other benefits conferred under this Agreement, or (d) the presence, vesting protections or benefits conferred under the tentative map, in which event Developer shall not have to comply with the new

Applicable Codes within all or any portion of the Project.

(iv) If any future public health and safety emergencies arise with respect to the development contemplated by this Agreement, City shall attempt, if reasonably possible, to address such emergency in a way that does not have a material adverse impact on the Subject Property. If City reasonably determines that City cannot address the health and safety emergency in a way that avoids any material adverse impact on the Project, City, after consultation with Developer, shall select an option for addressing the situation that minimizes, so far as reasonably possible, the impact of the health and safety emergency on development of the Project.

Therefore, except for the exceptions expressly stated above, the Parties agree that no ordinance, policy, rule, regulation, decision, or any other City action, or any initiative or referendum voted on by the public, which would otherwise be applicable to the Project and would affect in any way the development of the Project, or alter construction standards for the Project, or limit the uses allowed under the Project Approvals or limit the number of building permits issued for the Project, or limit the Project's ability to connect to the City's sewer, water system, storm drainage systems, or to receive any other City services that was not in effect as of the Effective Date, shall be applicable to the Project during the term of this Agreement.

5.09. Development Timing. Developer cannot predict with certainty when or the rate at which phases of the Subject Property will be developed. Such decisions depend on numerous factors that are not entirely within the control of Developer, such as market orientation and demand, interest rates, competition and other factors. It is the intent of City and Developer to hereby acknowledge and provide for the right of Developer to develop the Project in such order and at such rate and times as Developer deems appropriate within the exercise of its sole and subjective business judgment, subject to the terms, requirements and conditions of the Project Approvals and this Agreement. City acknowledges that such a right is consistent with the intent, purpose and understanding of the Parties to this Agreement. Developer shall use their best efforts, in accordance with their business judgment and taking into consideration market conditions and other economic factors, to commence or to continue development, and to develop the Project in a regular, progressive and timely manner in accordance with the provisions and conditions of this Agreement and with the Project Approvals.

Continuation of Existing Agriculture Uses Existing agricultural uses are allowed to continue on the Subject Property until the affected portion of the Subject Property is developed. Proper "right to farm" notices will be required in accordance with the Project Approvals.

ARTICLE 6

FEES, CREDITS, DEDICATIONS, AND INFRASTRUCTURE IMPROVEMENTS

6.01 Water Infrastructure. Water infrastructure for the Project shall be provided pursuant to this Section 6.01.

(a) *Domestic Water Infrastructure*. The project proposed water system consists

of a network of 8" diameter pipes with two points of connection (POC) to the City's water system as set forth in **Exhibit G.** The POC's include a connection to the terminus of an existing 8" pipe in Flora Vista Drive and a second to the terminus of an existing 8" diameter pipe in Estancia Drive, both North of Leaflet Lane. These connections effectively extend the City's water distribution system, relying on pressure and flow capacity from the City's existing system at said POC's. Shoreline Environmental Engineering performed an evaluation of the proposed project water system. The purpose of the evaluation was to determine if the water distribution system proposed for the project is of sufficient capacity to provide for the projects domestic and fire suppression demands and other off-site demands that will rely on the projects water system. The results of the analysis concluded that the water infrastructure improvements as proposed are adequately sized for the required flow conditions.

(b) *Water Infrastructure Financing*. The required water infrastructure improvements described in 6.01 (a) above and as set forth in **Exhibit G** shall be installed and financed by Developer.

(c) *Other Water Improvements.* The City acknowledges that no other water system improvements either on or off-site will be required for Development of the project other than those described in 6.01 (a) above, as set forth in **Exhibit G** and as shown on the approved Vesting Tentative Subdivision Map **Exhibit K**.

6.02 Wastewater Collection and Treatment. Wastewater infrastructure for the Project shall be provided pursuant to this Section 6.02.

(a) *Sanitary Sewer Infrastructure*. The City of Hughson provides wastewater collection and treatment for the incorporated City and operates a wastewater treatment plant on the northern edge of the City between Hatch Road and the Tuolumne River. The project proposed sanitary sewer system is based on a series of gravity conveyance pipes and manholes that connect at two POC's: 1) An existing 10" sanitary sewer stub at Flora Vista Drive 2) An existing 12" sanitary sewer stub at Estancia Drive as set forth on **Exhibit G-1**.

(b) *Sanitary Sewer Infrastructure Financing:* The required sanitary sewer infrastructure improvements described in 6.02(a) above and as set forth in **Exhibit G -1** shall be installed and financed by Developer.

(c) *Other Sanitary Sewer Improvements.* The City acknowledges that no other sanitary sewer system improvements either on or off-site will be required for Development of the project other than those described in 6.02(a) above, as set forth in **Exhibit G-1** and as shown on the approved Vesting Tentative Subdivision Map **Exhibit K.**

6.03 Storm Drainage Infrastructure. Storm drainage infrastructure for the Project shall be provided pursuant to this Section 6.03.

(a) *Storm Drainage Infrastructure Construction.* The proposed storm drainage system will generally consist of a dual use park/basin detention facility, storm drain pump station with ultimate discharge to the TID Ceres main canal, a series of catch basins, manholes and gravity

conveyance systems as set forth in **Exhibit G-2.**

(b) *Storm Drainage Infrastructure Financing.* The required storm drainage infrastructure improvements described in 6.03(a) above and as set forth in **Exhibit G-2** shall be installed and financed by Developer.

6.04 Transportation Infrastructure. Traffic and roadways infrastructure for the Project shall be provided pursuant to this Section 6.04.

(a) *Transportation Infrastructure – General*. All new development within the city limits of City pays impact fees into two different fee programs that address traffic and roadway infrastructure. First, development pays into the traffic portion of the City's DIF. This City program provides funding for the roads and traffic improvements identified in the City's DIF. Second, development pays into the Regional Transportation Impact Fee program imposed by the County of Stanislaus ("County RTIF"). This County program provides funding for various regional roads.

(b) *Transportation Calculation*. The network of roadways surrounding the project consist of arterials and local streets. The Project's internal street system will be constructed including extensions of Flora Vista Drive and Estancia Drive into the site. A project access onto Santa Fe Avenue is planned and the project provides a "stub" street at the Northeast corner that will allow a future extension by others to the East with an ultimate connection to Tully Road and Narcisco Way.

(c) *Transportation Infrastructure Improvements*. Consistent with City policy, development of the Project will be required to install frontage improvements as development occurs. This will include the widening of Santa Fe Avenue to ½ of its ultimate section. Internal streets will be constructed in accordance with project approvals. All project street cross sections shall be installed as set forth on the Vesting Tentative Subdivision Map **Exhibit K** and further identified on **Exhibit H.**

(d) *Non-Motorized Transportation.* The City's non motored transportation plan (NMTP) indicates where facilities may be developed in the future. The NMTP indicates that a class 1 trail may be developed along Hatch Road and that future class 2 Bicycle lanes may be developed on Santa Fe Avenue. The project shall construct a class 1 bike trail on the South Side of the TID Ceres main canal as set forth on the Vesting Tentative Subdivision Map **Exhibit K** and further identified on **Exhibit H**.

(e) *Transportation Infrastructure.* The required transportation infrastructure improvements as described in 6.04 above and as set forth in **Exhibits H** and **K** shall be installed and financed by developer notwithstanding the provisions provided for in Section 6.05 and 6.04(e)(i).

i) *Extension of Rubirosa Road to Hatch Road.* The Parties acknowledge the need to construct Rubirosa Road across the Turlock Irrigation District (TID) Main Canal to Hatch Road. The Project Developer shall plan, design, bid, and construct the extension, obtain all necessary permits and approvals and access to real property at Developer's sole

cost and expense. The City currently collects $4,101 per dwelling for the Streets portion of the DIF. The Developer will receive a 50% credit against the Streets portion of the DIF and will pay a Streets Fee in the amount of $2,050.50 per dwelling for each of the 299 dwellings within the Project as set forth in Exhibit F. The Developer shall commence construction on the extension on or before the issuance of the 150th Certificate of Occupancy within the Project. If Developer fails to commence construction by issuance of the 150th Certificate of Occupancy, Developer shall cease to receive a 50% credit against the Streets Fee until construction commences. Once construction commences, Developer shall receive a 50% credit on all Street Fees such that upon conclusion of the Project, Developer shall have paid no more than $2,050.50 per dwelling for 299 dwellings. If construction of the extension is not completed prior to issuance of the 299th Certificate of Occupancy within the Project, the City shall not issue the Certificate of Occupancy until final completion of the Rubirosa Road extension. Final completion shall occur when all governing bodies with jurisdiction over the extension have determined the work is satisfactorily complete and accepted the extension.

6.05 Parks Infrastructure. Parkland and park infrastructure for the Project, shall be provided pursuant to this Section 6.05.

(a) *Park Development General.* Developer has cooperated with City to provide enhanced landscaping and amenities within the project. These enhanced amenities will benefit the project but will also benefit the City. Said amenities include:

i) A 25' wide landscape buffer along Santa Fe Avenue. Santa Fe Avenue is the main access for entering into the City of Hughson. The increased landscape area will provide a gateway and greenbelt as you enter the City.

ii) Installation of a class 1 bike trail along the TID Ceres main canal. The City has been pursuing avenues to fund and construct a class 1 bike trail along the Northern portion of the City. The construction of the class 1 bike trail by the project will be a large step in achieving this goal for the City.

iii) Three (3) separate parks are proposed within the project for dedication as parks varying in size and scope. The three (3) parks contain approximately 4.89 acres and contain numerous recreational facilities

iv) An open space lot containing approximately 6,500 S.F. (0.15AC) is proposed for dedication that will include enhanced landscaping and monumentation along the Santa Fe Avenue corridor at the project entrance.

(b) *Park land dedication.* In accordance with the section 66477 of the Subdivision Map Act and the Hughson Municipal Code, the proposed project directly increases the number of persons in the area as a result of the proposed residential uses. The proposed project includes 299 residential units, which is projected to increase the population by an estimated 1,034 people (based on 3.46 persons per household). For the purpose of collecting fees to mitigate for increase park demands (Quimby act), the California government code section 66477 states: *The amount of land dedicated or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved conditionally approved tentative map or parcel map and the average number or persons per household. There shall be rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4.*

The City's General plan identifies a park standard based on a goal of five acres of parkland per 1,000 residents within the City limits. Using this parkland goal, the proposed project would be required to provide 5.17 acres of parkland for the resulting 1,034 residents. The project includes development of 6.57 acres of park/dual use facilities and open space. These facilities are intended to serve the residents of the proposed project. Because the project would meet the City's General Plan park standard by, the proposed project is not subject to the City park dedication in-lieu fees as set forth in **Exhibit F.**

(c) *Park Improvements*. Developer shall prepare a park master plan identifying the recreational amenities to be installed as shown on **Exhibit I.** Said park master plan shall be developed and approved by the Community Development Director. The recreational amenities set forth on **Exhibit I** may be relocated to other areas of the park(s) subject to the approval of the Community Development Director.

(d) *Park Credits/Reimbursements*

1. *Developer Responsibility* – As set forth in Chapter 16.32 of the HMC, the developer shall, without credit provide full street improvements and utility connections including curbs, gutters, street paving, traffic control devices, street trees, sidewalks and fencing adjacent to land that is dedicated for public parks, and improved drainage throughout the site.

2. *Credit for Improvements.* Developer is required to provide 5.17 acres of parkland or to pay the appropriate park dedication in lieu fee. Developer is providing 6.57 acres of parkland/open space within the Project which is 1.4 acres more than otherwise required. Developer agrees it shall not receive a credit for the additional 1. 4 acres of parkland/open space as such land is required for the Planned Development overlay zone granted as part of the Project Approvals. Pursuant to HMC Chapter 16.32, Developer shall receive a credit against the park development fee category of the DIF for the cost of the improvements installed within parks "A", "B" and "C". Said

improvements may include but not be limited to site preparation, grading, fine grading, soil amendments, trees, shrubs, grass, bark, gravel, concrete, recreational equipment and related appurtenances, site furniture, site structures, preliminary and final designs, construction staking, construction management, testing and inspections. Parties agree Developer's credit for the value of said improvements shall not exceed Seven Hundred Ninety Seven Thousand Four Hundred Thirty Three and 00/100 Dollars ($797,433.00).

6.07. Development Standards

(a) *Development Standards*. The parties have worked cooperatively to establish certain standards for the project. These development standards are set forth in **Exhibits J-1** and **J2.** Street traffic signs, street name signs, entry monumentation and street light images are for illustrative purposes to provide character to the overall project. Developer may propose alternative designs that provide similar character to the overall project theme, subject to approval by the Community Development Director.

6.08. DIF Fees.

(a) *Existing DIF Program*. Developer shall pay City's DIF at the rate adopted by City prior to the Approval Date, specifically the DIF amounts applicable to the Project and further described in the attached **Exhibit F**. Notwithstanding the preceding sentence, Developer shall pay the agreed upon water fee as stated in Section 5.02(a). Such DIF amounts may be adjusted annually for inflation commencing two (2) years after the Effective Date provided that in no event shall any such escalation exceed 3% per annum.

(b) *Timing of Payment*. Developer shall pay, or request the applicable credit of, the applicable DIF upon City's issuance of final inspection or the date the certificate of occupancy is issued whichever is first per Chapter 15.20.060, (HMC) for the applicable portion of the Project. Payment of DIF, or any portion or category thereof, will not be required for any particular parcel or building that will be offset via Credits provided by City to Developer. The Parties agree that in the event of a transfer of all or a portion of the Subject Property to a third party ("Subsequent Property Owner"), Developer may retain the right to receive fee credits so long as the Subsequent Property Owner pays the applicable DIF without any Credits provided for in this Agreement and the obligations relative to Developer and any Subsequent Property Owner are clearly allocated in an Assignment and Assumption Agreement.

(c) *Other Agency Impact Fees*. This Agreement shall have no effect on any fees that may be collected by City on behalf of any other local agency in connection with the Project.

6.09. Downtown Revitalization Fee (DRF). The Parties acknowledge the City's on-going efforts to revitalize the downtown area. To assist downtown revitalization efforts and to compensate for the loss of commercially zoned property at the Parkwood project site, the City will collect, and Developer will pay, a DRF of $750.00 per dwelling for each of the 299 dwellings within the Project. The DRF is a one-time fee paid by Developer for each single-family home constructed within the proposed development. The Developer has agreed to pay the proposed DRF fee in the

amount of $750.00 per single family home, payable at certificate of occupancy, as set forth in **Exhibit F.** The Parties further agree the Downtown Revitalization Fee will be used by the City to enhance economic development and commercial opportunities in the area designated as the City's downtown. The Downtown area encompasses Hughson Avenue between Santa Fe Avenue and 7th Street, 5th Street between Pine Avenue and Hughson Avenue, Charles Street between Hughson Avenue and Santa Fe Avenue, 3rd Street between Hughson Avenue and Santa Fe Avenue, 2nd Street between Hughson Avenue and Santa Fe Avenue, and 1st Street From Hughson Avenue to Santa Fe Avenue. Funding priority should be given to economic development or commercial opportunities that enhance the City's tax base.

6.10. Building and Grading Permits. Upon application by Developer and payment of proper processing fees in accordance with the provisions governing such fees contained herein, including the application of credits in lieu of said fees as provided in Section 6.11 below, City shall issue building permits to Developer consistent with the Project Approvals and this Agreement, as they may be amended. In addition, upon application by Developer, City shall issue to Developer site clearance permits, rough and final grading permits, demolition permits, building permits, occupancy permits, and other permits required for grading operations consistent with this Agreement and the Project Approvals.

6.11. DIF Credits for Infrastructure Improvements. Developer may elect, in lieu of paying the applicable DIF amount for any portion of the Project, to construct such Infrastructure Improvements eligible for DIF credit in accordance with the terms and conditions of this Agreement. If Developer elects to construct any Infrastructure Improvements eligible for DIF – credit/reimbursement, City shall provide Developer, as an offset against said DIF Fees.

6.12. Development Timing. The Parties acknowledge and agree that the Project will be developed in phases. Developer shall not be required to initiate or complete development of any particular phase of the Project within any period of time. By entering into this Agreement, Developer shall not be obligated to build any structures, make any improvements or otherwise develop the Subject Property; provided, however, if Developer builds any structures, makes any improvements, or otherwise develops any phase of the Project, Developer must comply with all applicable terms of this Agreement with respect to such phase and only such phase, which shall include building any structures, making any improvements or otherwise developing the relevant portion of the Subject Property subject to such phase.

6.13. Fees, Conditions and Dedications. Developer shall make only those dedications, comply with only those conditions, and pay only those fees expressly prescribed in this Agreement and the Project Approvals.

6.14. Processing Fees. City may charge Developer processing fees for land use approvals, building permits as they relate to plumbing, mechanical, electric, fire code permits, or other similar permits and entitlements that are in force and effect on a City-wide basis at the time those permits are applied for, provided that such processing fees are consistent with this Agreement and State law, that the fees do not discriminate against Developer, and that the fees reflect actual costs to provide such processing services in accordance with State law. The Parties acknowledge that City may increase or decrease such processing fees after the Effective Date subject to the City's procedures, codes and policies, and State law.

6.15. Police Power; Taxing Power. City shall not impose or enact any additional conditions, exactions, dedications, fees or regulations, through the exercise of either the police power or the taxing power, whether by direct City action or initiative or referendum, related to the development of the Project which are not in existence at the time of the Approval Date and as expressly permitted by this Agreement. The conditions, exactions, dedications, fees or regulations applicable to the Project as provided in the Project Approvals, or as provided in this Agreement, shall not be subject to modification or renegotiation by City as a result of an amendment to any of the Project Approvals or of this Agreement, or as a result of the filing of any new subdivision map, parcel map, Final Map or any re- subdivision of the Subject Property (including a merger or lot line adjustment or the creation of new lots); provided, however, that if the new map or re-subdivision of the properties increases the density of the Project, City may impose additional fees at the rates vested under this Agreement on the new units added by the new map or re-subdivision to address impacts of the additional density and to adjust for excess Credits given on earlier homes. This may result in a surcharge on subsequent development.

6.16. Design Review. To the extent that City has not previously approved final design details of a structure or improvement to be developed on the Subject Property as part of the Project, the City Design Review Committee shall consider and approve such design details prior to issuance of a building permit for such structure or improvement, provided that such design review shall be limited to those design guidelines listed in the Project Approval and such review shall be limited to consistency with those design guidelines in accordance with the provisions of the Project Approval for Committee review. All City actions in approving, denying, or modifying such design details must be reasonable and consistent with this Agreement, the Project Approvals and Applicable Law in effect as of the Approval Date. If City denies any design review for a structure or improvement that is part of the Subject Property, City will use its best efforts, within ten (10) days of such denial, to specify in writing the modifications which are required to obtain design review approval. Any such specified modifications must comply with this Agreement, the Project Approvals and the Applicable Law in effect as of the Approval Date, and City shall approve any design details, which are subsequently submitted for City review and which comply with such specified modifications. City and Developer shall, with due diligence and in good faith, cooperate to obtain and issue design review approvals, and shall cooperate to require modifications rather than denying design review applications whenever reasonably possible. Design review shall not include any right to review and/or approve any use and/or operation within the Subject Property.

6.17. Life of Subdivision Maps. Pursuant to Government Code Section 66452.6(a), the term of the Vesting Tentative Subdivision Map shall remain valid throughout the term of this Agreement.

6.18. Cooperation-Implementation.

(a) *City Cooperation.* Subject to Developer's compliance with procedural requirements of the Applicable Laws, upon application by Developer, City shall promptly commence and diligently proceed to complete all steps required or necessary for the implementation of this Agreement and the development by Developer of the Project in accordance with the Project Approvals, including, but not limited to, the following:

(i) Scheduling, convening and concluding all required public hearings consistent with Applicable Law and regulations in force as of the Approval Date.

(ii) Processing for approval, in an expeditious manner, all maps, improvement plans, design review, building plans and specifications and other plans relating to the development of the Subject Property filed by Developer, including, but not limited to, Final Maps, re-subdivisions, amendments to maps, subdivision improvement agreements, lot line adjustments, encroachments, grading and building permits, and related matters as necessary for the completion of the development of all lots and parcels comprising the Project.

(b) *Developer Cooperation*. Developer shall, in a timely manner, provide the City with all documents, applications, plans and other information necessary for City to carry out its obligations hereunder, and Developer shall use commercially reasonable efforts to cause its planners, engineers, and all other consultants to submit in a timely manner all required materials and documents. It is the express intent of the Parties to cooperatively and diligently work to implement any zoning, or other land use, grading or building permits or approvals that may be necessary or desirable in connection with the development of the Project in accordance with the Project Approvals. City agrees that it will accept from Developer for processing and review all complete development applications for development permits or other entitlements for the development of the Subject Property in accordance with this Agreement and Project Approvals.

(c) *Other Governmental Permits and Fees*. Developer shall use commercially reasonable efforts to apply in a timely manner for such other permits and approvals that may be required by other governmental or quasi-governmental agencies, including, without limitation, districts and special districts, school districts, flood control districts, storm drainage, sewer, and fire protection districts having jurisdiction over the Project in connection with the development of, or provision of services to, the Subject Property. City shall cooperate with Developer in its efforts to obtain such permits and approvals

(d) *Third Party Legal Challenge*. In the event any legal action or special proceeding is commenced by any third party or entity, to challenge this Agreement or any provision herein, the Parties agree to cooperate with each other in good faith to defend said lawsuit. City may elect to tender its own defense of any lawsuit filed by a third person or entity, as the case may be, to the extent the litigation seeks to over-turn or invalidate any approval held by or granted by City to Developer, and, in such event, Developer shall hold City harmless from and defend City from all costs and expenses incurred in the defense of such lawsuit, including but not limited to, attorneys' fees and expenses of litigation awarded to the prevailing party or parties in such litigation. Developer shall not settle any lawsuit on grounds which include, but are not limited to, non-monetary relief, without the consent of City. City shall act in good faith, and shall not unreasonably withhold, condition or delay consent to settle.

ARTICLE 7
CITY FINANCE DISTRICTS

7.01. City Maintenance and Public Services District.

(a) Consistent with the Project Approvals and Applicable Law, Developer shall

create a Community Facilities District or annex the Subject Property into a Community Facilities District to provide funding for the items set forth in this paragraph. The Parties shall cooperate in good faith: (i) with respect to any residential portion of the Subject Property, to (a) annex such residential portion into City's existing Community Facilities District and to maintain and repair streets including curbs, gutters, sidewalks, and maps; municipal utilities infrastructure, parks maintenance and electrical utility costs, storm drain facilities including manhole covers, catch basins, pipes, drains, and treatment of storm water run-off, landscaping, police services, fire and emergency services.

ARTICLE 8
DEFAULT, REMEDIES AND TERMINATION

8.01. General Provisions. In the event of default or breach of this Agreement or any of its terms and conditions, the Party alleging such default or breach shall provide written notice to the other Party through a Notice of Default, giving the breaching Party at least sixty (60) days to cure the alleged breach, unless the Parties extend such time by mutual written consent. The Notice of Default shall specify the nature of the alleged default, and, where appropriate, the manner and period of time in which said default may be satisfactorily cured. If the nature of the alleged default is such that it cannot reasonably be cured within such 60-day period, the commencement of the cure within such time period and the diligent prosecution to completion of the cure shall be deemed a cure within such period. During any cure period, the Party charged shall not be considered in default for the purposes of terminating or instituting legal proceedings. If the default is cured, then no default shall exist, and the noticing Party shall take no further action. During said sixty (60) day period, the Parties agree to meet and confer and negotiate in good faith on at least two occasions in an attempt to resolve any such dispute. The City Manager shall be present and in charge on behalf of the City.

8.02. Option to Institute Legal Proceedings or to Terminate. After providing Notice of Default, expiration of the cure period, and the conclusion of the aforementioned negotiating sessions, the Party alleging default or breach, at its option, may institute legal or equitable proceedings to cure, correct or remedy any default under this Agreement, including, but not limited to, damages (subject to the limitations set forth in the following paragraph), mandamus, specific performance, injunctive relief, and declaratory judgment, determining that the Party alleging default is entitled to terminate this Agreement, or, alternatively, give notice to the Party allegedly in default of its intent to terminate this Agreement. In the event said notice of intent to terminate is given, said notice shall be served upon the party who allegedly is in default as provided in Section 4.9 of this Agreement. Following notice of intent to terminate, the matter shall then be scheduled for consideration and review by the City Council, within thirty (30) days, in the manner set forth in Government Code Section 65868.

Notwithstanding the foregoing, City shall only be liable for damages arising out of or related to any breach or alleged breach of this Agreement by City that: (i) violates any of Developer's vested rights set forth in Article 5 of this Agreement, including, without limitation, Developer's vested rights in and to the Project Approvals and Developer's vested rights relative to reimbursement for installing Infrastructure Improvement in accordance with this Agreement; (ii) violates any provision set forth in Article 6 of this Agreement, including, without limitation, Developer's vested rights to receive Credits; (iii) places a greater burden on Developer to construct or install any

improvements other than the Infrastructure Improvements; or (iv) reduces the density or intensity, modifies the permitted uses for the Subject Property, or imposes greater burden on the Subject Property in violation of this Agreement, or, withholds available capacities for sewer, water, or any other services required by City to develop the Subject Property consistent with this Agreement, the Conditions of Approval, and Project Approvals.

8.03. Notice of Termination. Following consideration of the evidence presented before the City Council, and findings, if any, made by the City Council, the Party alleging a default may, at its option, give written notice of termination of this Agreement to the other Party; provided, however, Developer may only give such notice of termination with respect to such portion of the Subject Property in which Developer owns an interest or with respect to which Developer is still obligated under this Agreement, and City may only give such notice with respect to the portion of the Subject Property in which the Party in default owns an interest or is responsible hereunder. Written notice of termination of this Agreement shall be effective immediately upon certified mailing to the Defaulting party.

8.04. No Waiver. Failure or delay in providing a Notice of Default pursuant to this Article shall not constitute a waiver of any default. Except as otherwise expressly provided in this Agreement, any failure or delay by the other Party asserting any of its rights or remedies as to any default shall not operate as a waiver of any default or of such rights or remedies or deprive such Party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert, or enforce any such rights or remedies.

8.05. Default by City. If City defaults on this Agreement, City agrees that Developer in no event shall be obligated to proceed with or complete the Project or any phase thereof and may exercise all rights and remedies provided herein or under Applicable Law. In the event of default by City, any resulting delays in Developer's performance shall not constitute grounds for the City to terminate or cancel this Agreement.

8.06. Extension of Time of Performance. Delayed performance by either Party shall not be deemed to be in default where such delay is due to war, inclement weather, insurrection, strikes, walkouts, riots, floods, earthquakes, fires, casualties, acts of God, epidemic, governmental restrictions imposed or mandated by other governmental entities, enactment of conflicting State or federal laws or regulations, litigation, or similar bases for excused performance. In the event of litigation involving this Agreement, the term of this Agreement shall be extended from the time the summons and complaint is served on City, until the judgment on the litigation is entered by the court and is final and not subject to appeal.

8.07. Institution of Legal Action. In addition to any other rights or remedies, either Party may institute legal action to cure, correct or remedy any default, to enforce any covenants or agreements herein or to enjoin any threatened or attempted violation thereof, or to obtain any remedies consistent with the purpose of this Agreement.

8.08. Applicable Law. This Agreement shall be construed and enforced in accordance with the laws of the State of California, and Applicable Law in effect as of the Approval Date.

8.09. Limitation of Damages. In no event shall either Party be entitled to punitive,

special or consequential damages in the event of any breach of this Agreement. Developer's remedy as against City shall be limited to specific performance of the terms of this Agreement, plus court costs, and attorney's fees as provided herein.

ARTICLE 9
MISCELLANEOUS PROVISIONS

9.01. Rules of Construction. The singular includes the plural; "shall" is mandatory, and "may" is permissive.

9.02. Severability. The Parties agree that the provisions are severable. If any provision of this Agreement is held invalid, the remainder of this Agreement shall be effective and shall remain in full force and effect, unless amended or modified by mutual, written consent of the Parties.

9.03. Entire Agreement, Waivers, Amendments. This Agreement constitutes the entire understanding and agreement of the Parties. This Agreement integrates all of the terms and conditions mentioned herein or incidental hereto and supersedes all negotiation or previous agreements between the Parties with respect to the development and buildout of the Project. To the extent there are conflicts or inconsistencies between this Agreement and any prior agreement, map approval, permit or conditions of approval, the provisions of this Agreement shall prevail. All waivers of the provisions of this Agreement must be in writing and signed by the appropriate authorities of City and Developer. All amendments, which are authorized in the manner provided by law, must be in writing, signed by the appropriate authorities of City and Developer, in a form suitable for recording by the Stanislaus County Clerk-Recorder. Any such amendments shall be promptly recorded.

9.04. Termination of Agreement. This Agreement shall terminate upon the expiration of the term as provided in Section 3.02. In addition, when any portion of the Subject Property has been fully developed and all of Developer's obligations in connection therewith are satisfied, as reasonably determined by the City, and all final inspections have been issued, this Agreement shall automatically terminate as to such portion of the Subject Property. Upon termination of this Development Agreement with respect to the entire Subject Property or any portion therein, as the case may be, and upon Developer's request, City shall record with the Stanislaus County Clerk-Recorder a notice evidencing such termination and completion of said development, in a form mutually satisfactory to Developer and the City Attorney, that the Agreement has been terminated with respect thereto.

9.05. Project is a Private Undertaking. It is specifically understood and agreed to by and between the Parties that: (1) each and every phase the Project is a private development;
(2) City has no interests or responsibilities, or duty to third parties, concerning any improvements until such time and only until such time that City accepts any dedications or Infrastructure Improvements pursuant to the provisions of this Agreement or in connection with the Project Approvals; (3) Developer shall have full power over and exclusive control of the Subject Property, subject only to the limitations and obligations of Developer under this Agreement; and

(4) Developer is not an agent of the City, and City is not an agent of Developer, and neither Party shall be considered to be in a joint-venture with the other Party. If any provision of this Agreement results in an obligation of either Party under state or federal law that is contrary to the intent of the Parties expressed herein, said provision shall be invalidated and severed from the Agreement and the rest of the Agreement shall remain in full force and effect.

9.06. Attorneys' Fees. Should any action or dispute arise concerning the provisions of this Agreement, the prevailing party shall be entitled to recover reasonable attorneys' fees and costs, including, without limitation, attorneys' fees on any appeal, reasonable costs for investigating such actions, taking depositions and discovery, and all other necessary or appropriate costs incurred in the action.

9.07. Covenants Run With the Land. The provisions of this Agreement shall constitute covenants or servitudes which shall run with the land comprising the Subject Property and the burdens and benefits hereof shall bind and inure to the benefit of all estates and interests in the Project and the Subject Property, or any portion thereof, and all successors in interest, transferees or assignees to the parties hereto.

9.08. Mortgagee Protection. The mortgage lender for any mortgage or deed of trust that is secured by the Subject Property, or any portion thereof, who has come into possession and title to the Subject Property, or any portion thereof, pursuant to a foreclosure of a Mortgage, or deed in lieu of such foreclosure ("Mortgagee"), shall not be obligated under this Agreement to pay any fees or charges which are a liability of Developer of the lands within the Subject Property that are secured by Mortgagee, or to construct or complete improvements that are to be constructed by Developer under this Agreement, or to guarantee such construction or completion. Such Mortgagee shall otherwise be bound by all the terms and conditions of this Agreement which pertain to the Subject Property, or such portion thereof, in which it holds an interest. Any Mortgagee who comes into possession and title to the Subject Property, or any portion thereof, pursuant to foreclosure by any Mortgagee, or deed-in-lieu of such foreclosure, shall not be obligated to undertake any obligations of Developer, if said obligations remain undischarged as of the date that the Mortgagee comes into possession of the Subject Property, or any portion thereof that is subject to this Agreement. Such Mortgagee shall not be eligible to apply for, receive, or exercise any of the Project Approvals for development with respect to the Subject Property, or portion thereof, which it owns and which were vested in its predecessor in title prior to the time that the Mortgagee comes into possession, until the Mortgagee contractually assumes all of the obligations of its predecessor-in-title under this Agreement with respect to such property. If City receives notice from a Mortgagee requesting a copy of any Notice of Default given Developer hereunder and specifying the address for service thereof, then City shall deliver to such Mortgagee, concurrently with service thereof to Developer, any notice given to Developer with respect to any claim by City that Developer is in default, and if City makes a determination of noncompliance hereunder, City shall likewise serve notice of such noncompliance on such Mortgagee concurrently with service thereof on Developer. Each Mortgagee shall have the right (but not the obligation) for a period of sixty (60) days after the receipt of such notice from City to cure or remedy the alleged default, or to commence to cure or remedy the alleged default or areas of noncompliance set forth in the City's notice. If the default or such noncompliance is of a nature which can only be remedied or cured by such Mortgagee upon obtaining possession, such Mortgagee shall seek to obtain possession with diligence and continuity through a receiver or otherwise and shall thereafter

remedy or cure the default or noncompliance within sixty (60) days after obtaining possession. If any such default or noncompliance cannot, with diligence, be remedied or cured within such sixty (60) day periods, then such Mortgagee shall have such additional time as may be reasonably necessary to remedy or cure such default or noncompliance if such Mortgagee commences the cure during such sixty (60) day periods, and thereafter diligently pursues completion of such cure to the extent possible.

9.09. Estoppel Certificate. Developer may, and from time to time, deliver written notice to City requesting City to certify in writing that, to the best knowledge of City: (i) this Agreement is in full force and effect and a binding obligation of the Parties; (ii) this Agreement has not been amended or modified, or if so amended or modified, identifying the amendments or modifications; and (iii) Developer is not in default in the performance of its obligations under this Agreement, or if in default, to describe therein the nature of such default. City shall execute and return such certificate within fifteen (15) business days following the receipt thereof. City acknowledges that a certificate hereunder may be relied upon by transferees and mortgagees of Developer. Costs incurred by City in preparing any estoppel certificate requested by Developer shall be reimbursed by Developer.

9.10. No Third-Party Beneficiaries. This Agreement is made and entered into for the benefit of Developer and City and their successors and assigns. No other person or third party shall have any right of action based upon any provision in this Agreement.

9.11. Counterparts. This Agreement, and any and all amendments and supplements to this Agreement, may be executed in notarized counterparts, and each of the counterparts together shall be construed as one document.

[Signatures on following page]

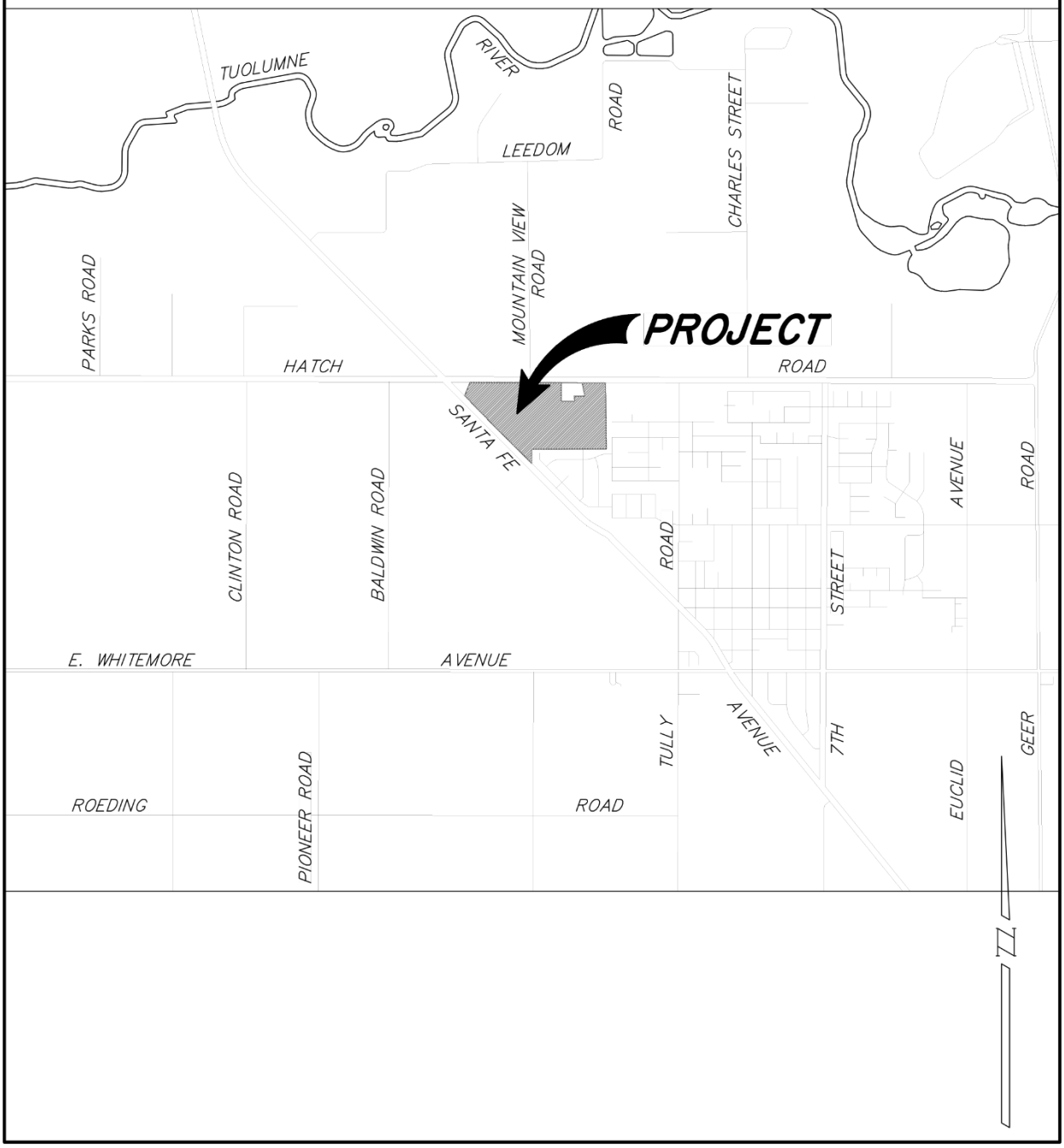
IN WITNESS WHEREOF, the Parties have entered into this Agreement as of the Effective Date, as defined in Section____above, and as authorized by Ordinance No._____.

CITY	**DEVELOPER**
The City of Hughson, a California municipal corporation By: _____ Jeramy Young, Mayor Date: _____ **APPROVED AS TO FORM:** By: _____ Daniel J. Schroeder, City Attorney **ATTEST:** By: _____ Aston Gose, City Clerk	Parkwood Hughson, LLC by; Dasco Development No. 1 LLC By: _____ Date: _____

EXHIBIT A-1
VICINITY MAP

VICINITY MAP

N. T. S.



Plot June 30, 2020 at 3:22 PM P:\CAD\NC18039\MAP\EXHIBITS\NC18039-VICINITY MAP.dwg

EXHIBIT A-2
LEGAL DESCRIPTION

PROPERTY
LEGAL DESCRIPTION

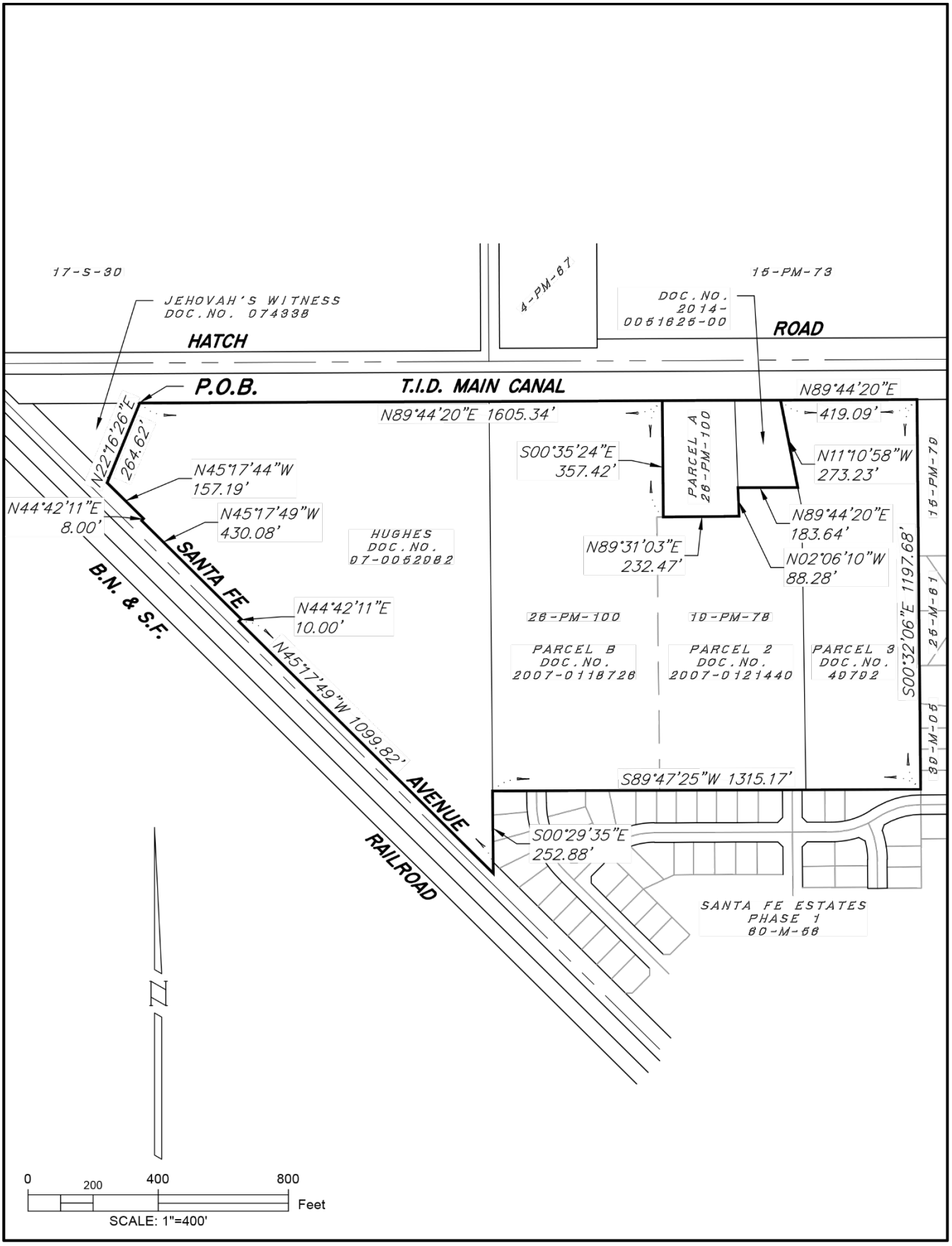
The following real property being a portion of the Northwest Quarter of Section 9, Township 4 South, Range 10 East, M.D.M., in the City of Hughson, County of Stanislaus, State of California, and more particularly described as follows:

BEGINNING at a 3/4" Iron Pipe tagged LS 7126, per Book 31 of Survey Maps, at Page 42, being on the South Right-of-Way of the Turlock Irrigation District Main Canal; Thence along said Right-of-Way of said Canal North 89°44'20" East a distance of 1605.34 feet to the Northwest corner of Parcel A, per Parcel Maps Book 26 Page 100; Thence leaving said Right-of-Way of said Canal, along the Westerly line of said Parcel A South 00°35'24" East a distance of 357.42 feet to the Southwest corner of said Parcel A; Thence along the Southerly line of said Parcel A North 89°31'03" East a distance of 232.47 to the Southeast corner of said Parcel A; Thence along the Easterly line of said Parcel A North 02°06'10" West a distance of 88.28 feet to the Southwest corner of the 1.00 acre parcel described in Document No. 2014-0051625-00 of Official Records, County of Stanislaus; Thence along the Southerly line of said 1.00 acre parcel North 89°44'20" East a distance of 183.64 to a point on the Easterly line of Parcel 2, per Parcel Maps Book 19 Page 78; Thence along said Easterly line of Parcel 2 North 11°10'58" West a distance of 273.23 feet to a point on the said Southerly Right-of-Way line of said canal; Thence along said Right-of-Way line North 89°44'20" East a distance of 419.09 feet to the Northeast corner of Parcel 3 per, Parcel Maps Book 19 Page 78; Thence leaving said Right-of-Way along the Easterly line of said Parcel 3 South 00°32'06" East a distance of 1197.68 to the Southeast corner of said Parcel 3; Thence along the Southerly line of said Parcel 3 also being the 1/4-1/4 Section Line South 89°47'25" West a distance of 1315.17 feet to the Southwest corner of Parcel B, per Parcel Maps Book 26 Page 100; Thence leaving said line 1/4-1/4 Section Line South 00°29'35" East a distance of 252.88 feet to a point on the Northeasterly Right-of-Way line of Santa Fe Avenue; Thence along said Right-of-Way North 45°17'49" West 1099.82 feet; Thence continuing along said Right-of-Way North 44°42'11" East a distance of 10.00 feet; Thence continuing along said Right-of-Way North 45°17'49" West 430.08 feet; Thence continuing along said Right-of-Way North 44°42'11" East a distance of 8.00 feet; Thence continuing along said Right-of-Way North 45°17'49" West a distance of 157.19 feet; Thence leaving said Right-of-Way North 22°16'26" East a distance of 264.62 feet to the **POINT OF BEGINNING.**

Said parcel containing 2,440,612 square feet, or 56.03 acres, more or less.

End of Description

EXHIBIT A-3
LEGAL DESCRIPTION EXHIBIT



Plot June 30, 2020 at 3:41 PM P:\CAD\NC18039\MAP\LEGALS\NC18039-Exhibit A-3.dwg

EXHIBIT B
DEVELOPMENT AGREEMENT ORDINANCE

EXHIBIT C
APPROVED ENTITLEMENTS

EXHIBIT C
Approved Entitlements and Subsequent Approvals

Developer's vested rights to develop the Subject Property shall be in accordance with the following approved entitlements:

1. This Agreement;
2. Parkwood Vesting Tentative Subdivision Map;
3. Conditions of Approval

Subsequent Approvals

The following approvals may be necessary to facilitate development of the subject property:

1. Parcel maps and final maps;
2. Minor and major grading permits, and encroachment permits;
3. Design review and;
4. Any other approval required to facilitate development consisted with approved entitlements.

As provided in this Agreement, City agrees to promptly process any other right, land use entitlement and approval necessary for completing the Project.

EXHIBIT D
ASSIGNMENT AND ASSUMPTION AGREEMENT

RECORDING REQUESTED BY AND

WHEN RECORDED RETURN TO:

City of Hughson
P.O. Box 9
Hughson, CA 95326
Attention: City Clerk

Recording fees exempt (Gov. Code §§ 6103, 27383) (Space above line for recorder's use only)

ASSIGNMENT AND ASSUMPTION AGREEMENT

This ASSIGNMENT AND ASSUMPTION AGREEMENT ("Agreement") shall be deemed effective as of _____, 20__ ("Effective Date"), by and between _____, a_____("Assignor") and_____, a_____("Subsequent Landowner").

R E C I T A L S

A. Assignor has entered into a Development Agreement with the City of Hughson, dated_____, 20_ , which was recorded on_____, 20 as Document No._____in Book , Page of the Official Records of Stanislaus County, California (the "Development Agreement").

B. Assignor has agreed to develop property pursuant to the Development Agreement, which is now proposed for assignment pursuant to this Agreement, and is more particularly described as_____, as set forth in more detail in the Legal Description attached and incorporated hereto as **Exhibit A** (the "Assigned Parcels").

C. Subsequent Landowner desires to assume [all of Assignor's rights, duties and obligations under the Agreement] [a portion of Assignor's rights, duties and obligations as set forth in this Agreement] with respect to the Assigned Parcels and Assignor seeks to be relieved of said assigned rights, duties and obligations in reference to the Assigned Parcels.

NOW, THEREFORE, Assignor and Subsequent Landowner hereby agree as follows:

A G R E E M E N T

1. Assignor hereby assigns, effective as of [the Effective Date or Assignor's conveyance of the Assigned Parcels to Subsequent Landowner], [all of] *or* [if only a portion of, describe] the rights, interests, burdens and obligations of Assignor under the Agreement with respect to the Assigned Parcels. Assignor retains all of the rights, interests, burdens and obligations under this Agreement with respect to all property other than the Assigned Parcels within the Subject Property owned by Assignor.

2. Subsequent Landowner hereby assumes all of the rights, interests, burdens and obligations of Assignor under this Agreement, and agrees to observe and fully perform all of the duties and obligations of Assignor under the Development Agreement, and to be subject to all the terms and conditions thereof, with respect to the Assigned Parcels. It is the express intention of both Assignor and Subsequent Landowner that, upon the Effective Date, Subsequent Landowner shall become substituted for Assignor as a "Developer" under the Development Agreement with respect to the Assigned Parcels. Assignor acknowledges that Assignor shall remain subject to the duties and obligations of the Development Agreement if Assignor retains any portion of the Subject Property subject to the Development Agreement.

3. All of the covenants, terms, and conditions of this Agreement and set forth herein shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, successors and assigns.

4. Subsequent Landowner's address for all notices, as described in Section ____of the Development Agreement, shall be as follows:

_____
_____
_____
_____

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the above-referenced Effective Date.

ASSIGNOR:

_____, a
_____

By:_____

Name:_____

Title: _____

SUBSEQUENT LANDOWNER:

_____, a
_____

By:_____

Name:_____

Title: _____

APPROVED:

_____
City Manager

EXHIBIT E
CONDITIONS OF APPROVAL/MITIGATION MONITORING & REPORTING PROGRAM

CONDITIONS OF APPROVAL
PARKWOOD DEVELOPMENT PROJECT

1. **Acceptance of Conditions.** Applicant accepts these conditions and agrees to be bound by, to comply with all things required of or by the applicant pursuant to all of the terms, provisions, and conditions of this approval and all other approvals related to the Parkwood Development project.

2. **Implementation of Conditions.** The Project Proponent is responsible for ensuring that any contractor, subcontractor, employee, or agent of the Project Proponent is aware of and implements all measures set forth in these conditions.

3. **MMRP.** The project is subject to all conditions listed in the Mitigation Monitoring and Reporting Program. Project Proponent is responsible for ensuring that any contractor, subcontractor, employee, or agent of the Project Proponent is aware of and implements all measures set forth in these conditions.

4. **Conformance to Approved Map.** Development of the site shall conform to the approved Vesting Tentative Map File No. 20-01 plans entitled "Parkwood Vesting Tentative Map" dated July 12, 2020, on file with the Community Development Department with the exception of any subsequently approved changes.

5. **Expiration of Map.** This Vesting Tentative Map shall automatically expire 10 years from the date the Development Agreement becomes effective.

6. **Approval Agreement.** It is understood and agreed upon, that whenever approval of the City Engineer is required, whether by these Conditions, Improvement Plans, or otherwise, the approval of the Community Development Director and/or Building Official shall also be required.

7. **Indemnification.** Project Proponent shall defend indemnify, and hold harmless City and its elected and appointed representatives, officers, agents and employees against actions arising out of such personal injury, death, or property damage or destruction which is caused, or alleged to have been caused, by reason of Project Proponent's activities in connection with the project described in the map to which these conditions are attached ("Project"). Project Proponent further agrees to defend, indemnify and hold harmless City and its elected and appointed boards, commissions, representatives, officers, agents and employees from any and all claims, actions or proceedings brought against City or any of them to attach, set aside, void, or annul any approval of City or any of them concerning the Project which action, claim or proceeding is brought within the time limit specified in California Government Code section 66499.37, or the sufficiency of environmental review pursuant to CEQA.

    a. The above-referenced indemnification and hold harmless requirement shall apply only if the City shall promptly notify the Project Proponent of any claim,

action or proceeding, and cooperates fully in the defense of any such claim, action, or proceeding.

b. The City does not, and shall not, waive any rights against Project Proponent which it may have by reason of the aforesaid hold harmless agreement, or because of the acceptance by City, or the deposit with City by Developer of any of the insurance policies described herein.

8. **Fees.** Ministerial fees, including without limitation, application, processing and inspection fees, Agreement shall apply to the Project provided that: (1) such fees, standards and specifications apply to all works within the City; (2) their application to the Project Site is prospective only as to applications for building and other development permits or approvals not yet accepted for processing; and (3) their application would not prevent development in accordance with these conditions. Notwithstanding any Project Approvals to the contrary, the City may charge, and Project Proponent shall pay all ministerial fees (for example, processing and inspection fees), collected at the building permit stage or other approval stage for subsequent site specific approvals, building permits and other similar permits which are in force and effect on a City-wide basis at the time application is submitted for such permits. Such ministerial fees do not include impact fees or other discretionary fees collected prior to the building permit stage or other approval stage.

9. **Payment timing.** Project Proponent shall pay to City, within thirty (30) days of submission of any invoice, detailing all the work done and costs charged to the City, costs incurred by City for services performed by City Attorney in drafting, negotiating, or in any other way connected with, this project, at the current rate charged, and by the City Engineer in reviewing and approving maps, improvement plans, or in any other way connected with, the Project, at the rate charged the City by the City Engineer.

10. **Fee Deposit.** Project Proponent shall reimburse the City for all engineering, inspection, legal, and administrative expenses, incurred or to be incurred by the City in connection with this development, including expenses incurred through the use of outside consultants and additional inspectors, where necessary. An account with the City for costs associated with the processing for the project will be established by Project Proponent. At the time of submission of the improvement plans for the project, the Project Proponent shall deposit funds sufficient to raise said account to the total of $25,000. The City shall account to Project Proponent for all expenses for which reimbursement is claimed, providing copies of all back-up materials in a timely manner, and shall return any portion of said deposit in excess of the actual amount of expenses incurred. If, in the judgment of the City Manager, it appears that the amount deposited shall not be sufficient to cover all expenses, Project Proponent shall, within 15 days after written request from City, make an additional deposit of funds in an amount determined by the City Manager to be sufficient to make up the deficiency. At no time after submission of improvement plans shall the balance of

the deposit fund be less than $5,000. The need for the maintenance of this account shall cease upon; 1) compliance with all tentative map conditions, 2) compliance with all of the provisions of subdivision improvement agreements for the project, 3) compliance with all mitigation measures set forth in the mitigation monitoring plan, 4) acceptance of the subdivision, and 5) 90 days after completion of construction, all final inspections and final acceptance by the city of all improvements.

11. **Notice of Determination (NOD).** Prior to issuance of a Notice of Determination, the appropriate filing fee, made payable to the "Stanislaus County Clerk/Recorder", shall be verified as received by the Planning Department. Payment is required within two days of City Council approval. Should the finding of a NOD be found invalid for any reason, the applicant will be responsible for Resource Agency fee.

12. **Park Amenities.** The Project Proponent shall provide the park amenities as described in Exhibit I of the Development Agreement and further described in Article 6, Section 6.05 of the Development Agreement. Any substituted park amenity must be approved by the Community Development Director prior to Final Map approval.

13. **Mailboxes.** The Project Proponent shall prepare and submit a design for the installation of mail drop-off boxes within the subdivision and submit the same to the Postmaster for initial approval. The approved plan shall thereafter be submitted to the City for review and approval. Project Proponent shall confer with the local US Postal Service authorities to determine locations of cluster mailboxes. If clustering or special locations are specified, easements or other mapped provisions shall be provided in the final map to the satisfaction of the US Postal Service and Community Development Director. If clustering is not specified, Project Proponent shall provide written evidence from the US Postal Service of the exemption. Project Proponent shall provide the concrete foundation for the cluster boxes at the approved locations.

14. **Conformance to Tentative Map.** Prior to recordation of a final subdivision map, the Project Proponent shall obtain certification from the Community Development Director that the landscaping and irrigation system generally conforms to City standards and the approved Tentative Map, and that all required conditions have been met.

15. **Final Map.** Applicant shall submit the final map application with the improvement plans for the phase which development is proposed. Said improvement plans and final map shall meet all City standards and submittal requirements except as expressly approved for this Planned Development and Development Agreement.

16. **Changes to Site Plan.** Any major alteration to the site plan not in substantial conformance to the approved Tentative Subdivision Map will require approval by the Planning Commission and City Council. At that time an Amendment to the Development Agreement may be required.

17. **Design Review.** The project will be subject to the City's Design Review process. If this project is phased and different builders construct different phases of the project, those individual builders will be subject to Design Review for conformance of their phase to the original project design and previously approved housing design if the original review did not include all 299 homes. Those conditions which are imposed or agreed to in the design review process shall survive the final map in the sense that the project proponent shall insure that any purchaser of any lot or lots receives a copy of these conditions of approval and of any conditions imposed or agreed to in the design review process and proof of such receipt shall be given to the City and any such purchaser of any lot or lots understands by this reference that no building permit will be issued for that lot or lots unless the conditions imposed or agreed to in the design review process are complied with by the actual builder. If construction has not begun five (5) years after the Design Review process for the entire project, or for an individual phase, the builder will be required to go through the Design Review process again to establish conformance with the originally approved design or any subsequent design reviewed phase.

   a. **Floor plans and Elevations.** For subdivisions with over 100 units, four floor plans and four elevations will be required. For subdivisions 99 or fewer units, three floor plans with three elevations will be required.
   b. **Colors and Materials.** A final color and materials board shall be submitted as part of the Design Review Process and approved by the Hughson Planning Commission. No changes to colors shall be made after construction unless approved by the Community Development Director.
   c. Unless indicated otherwise, the design for development shall comply with the following:
      i. All improvements shall be designed and constructed in accordance with the City of Hughson Improvement Standards and Specifications and Municipal Code where applicable, unless otherwise approved/permitted by this Planned Development.
      ii. All construction shall meet the California Building Code (CBC) and all applicable City of Hughson Building Codes and amendments, including Green Building standards.
      iii. Design and construction of all pertinent life safety and fire protection systems shall meet the California Fire Code and all applicable City of Hughson Fire Codes and amendments.
      iv. A detailed Stormwater Treatment Plan and supporting documents, following City ordinances and conforming to Regional Water Quality Control Board's Staff recommendations for new development will be required.

18. **Community Facilities District Annexation.** The Project shall be required to annex into the existing Community Facilities District (CFD). The CFD shall include maintenance and operation of all public amenities of benefit to the future residents of the project site. The homes shall be annexed into the CFD and placed on the County Tax Roll after the final map is approved by Council. The Project Proponent

shall provide written notice to the homebuyers, satisfactory to the City Attorney, that they are part of a Community Facilities District.

19. **Signage.** All signage shall conform to the City Sign Ordinance regarding size, design, and location. All signs shall be reviewed, approved, and a sign permit obtained prior to installation.

20. **Phasing Plan.** A project phasing plan, which shall include the phasing of subdivision construction, subdivision improvements, common area, exterior improvements and housing units shall be approved by the Community Development Director and the City Engineer prior to the issuance of the first building permit.

21. **Impact Fees.** Project Proponent shall pay an applicable development fee per dwelling unit in accordance with the Development Agreement.

22. **Address Numbers.** Internally illuminated address numbers shall be installed on all residences to be easily readable from the public street for emergency services, consistent with Fire Department requirements. In addition, internal illuminated address numbers shall be installed on the exterior of all garages facing alleyways to allow for property identification from the rear alley.

23. **Trucking Route.** Prior to commencement of any grading or other subdivision improvements the Project Proponent shall provide proposed trucking routes for all equipment and material deliveries. Damage to any public improvements, on or off site caused by construction operations, during construction on the subject property shall be repaired to the satisfaction of the City Engineer at full expense to the Project Proponent. This shall include slurry seal, overlay, or street reconstruction if deemed warranted by the City Engineer.

24. **Improvements.** Pursuant to the Development Agreement (hereinafter referred to as "Agreement"), the Subdivider shall, before approval and recording of the Final Map, improve or agree to improve all land within the area proposed for development for public or private streets, alleys, pedestrian ways and easements to the satisfaction of the Community Development Director.

25. **Warranty Bonds**. The developer/Contractor shall furnish the City with a warranty bond in the amount of 10% of the improvement costs to guarantee such Public Improvements for a period of one year following the completion by Developer/Contractor and filing of the Notice of Completion by City against any defective work or labor done, or defective materials furnished, or adverse effect to any portion of adjacent properties in the construction of the public Improvements. Developer/Contractor agrees to remedy any defects in the improvements arising from faulty or defective construction of said improvements within one year of

acceptance thereof, and to incur all expenses of such repairs that exceed the 10% bond. Insurance shall be provided.

26. **Installation of Improvements.** Project Proponent/Contractor shall install all improvements and perform all work required for this Project in accordance with established City Standards or as approved by the City's Engineer. Plans for all improvements, including, but not limited to, storm drainage, water and sewer main sizes, either on-site or off-site, shall be in accordance with City Specifications and shall be approved by the City Engineer unless otherwise amended by the Planned Development approvals.

27. **Easement Dedications.** Unless otherwise stated, all necessary easements shall be dedicated, and all improvements shall be designed and installed, at no cost to the City of Hughson.

28. **Easements.** Project Proponent shall obtain, at Project Proponent's sole expense, any and all easements or real property which may be required for the development of the Project, and which may be necessary and required in order for Project Proponent to comply with these Conditions of Approval, and the applicable ordinances and resolutions of the City. All engineering design, including, but not limited to, storm sewers and appurtenances, sanitary sewers and appurtenances, streets including, but not limited to, geometrics, sight distances, lighting and sound walls, water systems and appurtenances, signing and striping, landscaping and appurtenances, shall be supported by applicable engineering studies/calculations, as required by the City Engineer.

29. **Public Use Easements.** Subdivider shall dedicate on the final map for public use easements for public utilities, streets, pedestrian ways, sanitary sewers, drainage, flood control channels, water systems and slope easements in and upon all areas within the subdivision shown on the Tentative Map for the subdivision to be devoted to such purposes.

30. **Conformance with Municipal Code.** No part of this approval shall be construedto permit a violation of any part of the Hughson Municipal Code. Unless otherwise amended by the development agreement or the planned development.

31. **Other Agency Approvals.** The Project Proponent shall be responsible for obtaining any and all permits and approvals from public agencies whose jurisdiction the project may fall under including, but not limited to, Caltrans, the Regional Water Quality Control Board, the California Department of Fish and Game, the U.S. Army Corps of Engineers, the Stanislaus County Water Resources Agency and the City of Hughson.

32. **Maintenance of Improvements.** All improvements shall allow for continuous maintenance access. Maintenance access measures shall include, but not be limited to, an all weather access ramp to and around the sides of the retention pond for maintenance vehicle access.

33. **Construction Hours.** All site improvements and all contractors involved in site improvements, building construction, and house construction activities shall be limitedto the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 8:00 a.m. to 6 p.m. on Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday. All construction equipment must meet Department of Motor Vehicles (DMV) noise standards and shall be equipped with muffling devices.
    a. The Community Development Director may allow earlier "start-times" for specific building construction activities, e.g., concrete-foundation/floor-pouring, if it can be demonstrated to the satisfaction of the Planning Director that the construction and construction traffic noise can be mitigated.

34. **Grading Drainage and Stormwater.**
    a. **Grading Permit.** A grading permit shall be required prior to mass grading for the project, and include Best Management Practices for erosion and dust control, and immediate revegetation of the site as needed for erosion control. Erosion controls shall be utilized to prevent dirt from lots going into street rights-of-ways and into drainage systems. If the project proposes to have more than 10,000 cubic yards of cut material from the project site, a haul route permit shall be required.
    b. **Grading and Drainage Plan**. The Project Proponent shall submit a final grading and drainage plan prepared by a licensed civil engineer depicting design for the line, grade, on- and off-site drainage control measures, structural sections for the streets and all public improvements serving the development, including land use, infrastructure, circulation and streetscapes, public/park facilities, landscaping and trails, design expectations and environmental mitigation components. This plan shall be subject to the review and approval of the City Engineer, and all lot grades shall conform to the approved grading plan, with written certification by a civil engineer or geotechnical engineer required to assure compliance with all grading plans prior to the issuance of any building permits, and shall be subject to the following:
        i. All lots shall drain toward the street.-
        ii. All required structures such as walls, fences, and drainage facilities, shall be shown on the plan.
        iii. Developed land must be at least six inches higher than adjoining irrigated lands.
    c. **Retaining Walls.** Any grade differential that will be created between new lots or adjacent existing developed lots outside the property shall be supported by engineering documentation subject to approval of by the City Engineer.

d. **Record Grading Plans.** Prior to the issuance of any building permits, lot grades shall conform to the approved grading plan. Written certification by a civil engineer or geotechnical engineer will be required to assure compliance with all grading plans. Including the following:
    i. The Project Proponent shall submit record grading plans showing:
        1. The elevation of all four (4) corners of the lot as well as the center of the lot;
        2. All top and toe of slope elevations, and
        3. The top and bottom of all retaining wall elevations.
        4. Plan will show grading in relation to all adjacent lots, parcels and developments.

e. **Geotechnical.**
    i. A licensed soil engineer shall certify that pad compactions off all lots containing fill have been completed to the satisfaction of the City Engineer.
    ii. A Geotechnical investigation shall be submitted to the City Engineer.
    iii. The minimum soils sampling and testing frequency shall conform to Chapter 8 of the Caltrans Construction Manual. The applicant shall require the soils engineer to daily submit all testing and sampling and reports to the City Engineer.
    iv. A qualified professional geotechnical engineer shall perform on-site monitoring of all grading and excavation activities on the project site. Evidence of an agreement with a geotechnical engineer shall be submitted for review and approval of the Community Development Director and City Engineer prior to commencement of any grading activities or any underground work. The geotechnical engineer shall submit evidence that grading and excavation were performed consistent with the recommendations of the geotechnical investigation. Evidence shall be submitted prior to issuance of building permits for each individual lot.

f. **Stormwater Design.** A detailed hydrology/drainage study shall be completed by the project proponent, and shall provide for a design for a positive drainage system via on- site detention basin within the proposed park/basin facility subject to approval by the City Engineer. The locations and design of storm drains shall meet the City's standard design and be approved by the City Engineer.
    i. Storm drain pipes in streets and courts alleys shall be a minimum of twelve inches in diameter with a minimum cover of three feet over the pipe unless otherwise approved by the City Engineer.
    ii. The project shall not block runoff from–adjacent properties. The drainage area map developed for the project hydrology design shall clearly indicate all areas tributary to the project area.
    iii. All storm drain inlets must be labeled "No Dumping - Drains to River," using City-approved methods.

35. **Storm Water Quality Requirements.** The following materials related to the Storm water quality treatment facility requirements shall be submitted with improvement plans and/or grading permit application:
    a. A Stormwater Treatment Measures Maintenance Agreement shall be submitted to Community Development Department for review and approval. Once approved, the Maintenance Agreement shall be recorded with the Stanislaus County Recorder's Office to ensure that the maintenance is bound to the property in perpetuity.
    b. A Storm Water Pollution Prevention Plan (SWPPP) shall be submitted with a design to reduce discharge of pollutants and sediments into the downstream storm drain system. The plan shall meet the approval of the City Engineer. The certification page of the SWPPP shall be signed by a Qualified SWPPP Developer (QSD) person who prepared the report.
    c. Before commencing any grading or construction activities at the project site, the developer shall obtain a National Pollutant Discharge Elimination System (NPDES) permit and provide evidence of filing of a Notice of Intent (NOI) with the State Water Resources Control Board.
    d. The project plans shall include the storm drain design in compliance with post- construction stormwater requirements to provide treatment of the stormwater according to the National Pollutant Discharge Elimination System (NPDES) permit's numeric criteria. The design shall comply with the C.3 established thresholds and shall incorporate measures to minimize pollutants to the maximum extent practicable (MEP).

36. **Sewer System**. Project Proponent is responsible for constructing all on-site sanitary sewer facilities and the connection to the existing sewer mains in Flora Vista and Estancia Drives. All sanitary sewer improvement necessary to serve the project shall be complete and in place and accepted by the City prior to use of the sanitary sewer system.
    a. All public sewer mains and appurtenances shall be constructed in accordance to the City's Improvement Standards and Specifications and the Sewer Master Plan.
    b. The on-site sanitary sewer system shall have minimum 8-inch public mains, designed with a manhole at all angle points and ending with a manhole. The sewer main design and location shall meet the approval of the City Engineer.
    c. Each residential unit shall have an individual sanitary sewer lateral. The sewer laterals shall have cleanouts and be constructed per City Standards.
    d. Project Proponent shall cause to be placed terminal manholes in courts and knuckles.
    e. 6 inch public sewer mains may be proposed in the Courts subject to approval by the City Engineer.

37. **Water System.** Water service is available from the City of Hughson and is subject to standard conditions and fees as shown in the Development Agreement.
    a. The City is implementing a wireless, cloud-based water usage tracking system. All conforming water meters will need to be purchased by the developer and installed according to City instructions. The specific meters will be dictated by the City's current program.
    b. Project Proponent shall install two water sampling stations. Such stations shall be constructed to plans approved by the City Engineer.
    c. Irrigation lines, canals, or rights-of way are to be abandoned in accordance with Turlock Irrigation District standards. Since this parcel will no longer irrigate, the Project Proponent, at the Project Proponent's expense, shall obtain an agreement with the Turlock Irrigation District to abandon use of any irrigation facilities. This must be requested and signed by the holders of title before final map approval. The Turlock Irrigation District will require two copies of detailed improvement plans for further review and comment. The Project Proponent shall also enter into an Irrigation Improvement Agreement with the Turlock Irrigation District for any work to remove existing irrigation facilities or to construct new irrigation facilities.
    d. The development's water mains shall be public, owned and maintained by the City. The subdivision shall have a looped design water system. For this planned development, the developer will install clusters of water services at the head of each court to minimize the greatest extent the length of dead-end water lines.
    e. Where a public water main is in an unpaved easement or under decorative paving, the water main shall be constructed of Ductile Iron or an approved equal pipe satisfactory to the City Engineer. Shut-off valves are required where a water main transitions from a paved area to an unpaved easement. This requirement does not apply to landscape irrigation facilities within the open space and parks.
    f. All public water mains shall be constructed in accordance with the City's Improvement Standards and Specifications.
    g. Water mains and services, including the meters must be located at least 10 feet horizontally from and one-foot vertically above any parallel pipeline conveying untreated sewage (including sanitary sewer laterals), and at least four feet from and one foot vertically above any parallel pipeline conveying storm drainage, per the current California Waterworks Standards, Title 22, Chapter 16, Section 64572. The minimum horizontal separation distances can be reduced by using higher grade piping materials with the City's approval.
    h. All water services from existing water mains shall be installed by City Water Distribution Personnel at the applicant/developer's expense. This includes relocating existing services and water main tie-ins. The developer may only construct new services in conjunction with the construction of new water mains.

i. Only Water Distribution Personnel shall perform operation of valves on the Hughson Water System.
j. Each dwelling unit shall have an individual water meter.
k. Water meters shall be located a minimum of two feet from the top of driveway flare as per City Standards unless otherwise approved by the City Engineer.

38. **Utilities Undergrounding.** All new utilities must be undergrounded. All services to dwellings shall be undergrounded and installed in accordance with all utility providers, including their highest and best service (i.e. fiber optic network, etc.). Underground utility plans must be submitted for City approval prior to installation.

39. **Public Streets.** Any dedications, offers of dedication, or grants of easements may be dedicated and accepted on the face of the map. Agreements or other required items shall be recorded as separate documents concurrently with recordation of the Final Parcel Map. Improvements for public streets shall incorporate the following:
    a. The design and locations of street approaches including pedestrian ramps shall be approved by the City Engineer. Pedestrian ramps shall be installed at all street intersections or as required by the City Engineer.
    b. The street design shall utilize standard curb and gutter. The street sections shall be constructed to Caltrans H-20 loading requirements and City of Hughson public street standards; (unless otherwise approved by this planned development) including sections of decorative pavement. Curb returns and bulb outs shall be designed to facilitate street sweeping.
    c. The proposed decorative paving shall be enhanced with at least ten feet of raised decorative paving (e.g., interlocking pavers or stamped colored concrete, or bands of decorative paving, etc.). The Community Development Director shall approve the material, color and design, and the City Engineer shall approve the pavement section for the decorative paving. Decorative pavements shall be constructed to Caltrans H-20 requirements.
    d. Upon any necessary repairs to the public facilities under the on-site decorative paved areas, the City shall not be responsible for the replacement cost of the decorative paving. The replacement cost shall be borne by the homeowners' association / CFD established to maintain the common areas within the subdivision boundary.
    e. All street improvements shall conform with the requirements of the Americans with Disabilities Act, including the placement of sidewalk at the rear of the driveway at all driveway locations and adjacent to the back of curb at all non-driveway locations as applicable.

40. **Extension of Rubirosa Road.** The Project Developer shall plan, design, bid, and construct the extension of Rubirosa Road across the Turlock Irrigation District (TID) Main Canal to Hatch Road. The Developer shall commence construction on the Rubirosa Road extension on or before the issuance of the 150th Certificate of

Occupancy within the project. The Developer will receive a 50% credit against the Streets portion of the DIF and will pay a Streets Fee in the amount of $2,050.50 per dwelling for each of the 299 dwellings within the project as set forth in Section 6.04(e)(i) of the Development Agreement.

41. **Landscape**
    a. **Landscape Plans.** Prior to the approval of improvement plans or issuance of the first building permit, detailed landscape and irrigation plans shall be reviewed and approved by the City and shall be a part of approved improvement plans and the building permit submittal. The plans shall be prepared by a licensed landscape architect on an accurately surveyed base plan and shall comply with the City's Low Impact Development manual and Municipal Codes.
        i. Landscaping shall be designed with efficient irrigation to reduce runoff, promote surface infiltration, and minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. Where feasible, as determined by the City Engineer, landscaping should be designed and operated to treat stormwater runoff.
        ii. Locations and layout of all underground utilities lines, boxes and vaults shall be provided as base information on planting plans to minimize conflict with tree planting.
        iii. One twenty-four-inch box tree shall be planted in every front yard. All trees shall be planted twenty feet from a corner, a minimum of five feet away from any underground city utilities, a minimum of fifteen feet from a light pole, or as otherwise specified by the city. Root barrier shall be provided for all trees that are located within seven feet of paved edges or structure. Trees shall be planted according to the City Standard Detail.
        iv. A landscape area shall be provided around bio-treatment areas located adjacent to hardscape areas such as curbs, sidewalks, walkways and structures. The City will require a matched precipitation rotator type irrigation system on a separate valve for the stormwater treatment area irrigation or an approved equal design subject to approval by the Community Development Director. All spray irrigation systems shall be set back twenty-four inches from all impervious hardscape edges such as curbs, sidewalks, walkways and structures, unless otherwise approved by the City Engineer.
        v. Utility boxes and vaults, light fixtures and fire hydrants shall have minimum five feet of clearance from the edge of Stormwater Treatment areas unless otherwise approved by the Community Development.
        vi. Landscape areas may be used to comply with the Stormwater Treatment requirements; however, all tree planting requirements

shall apply. A wider landscape area may be provided if necessary to accommodate both bio-treatment and tree planting.

1. A hose bib shall be provided within each private yard.
2. Safety site lighting shall be provided along private driveways. Site lighting shall not be located to prohibit tree planting required by Zoning Ordinance.
3. The minimum dimension for all planting areas should be four feet, including tree wells in parking lots or sidewalks measured from back of curb/paving unless otherwise approved by the City Engineer.

vii. All front yards of all lots shall be landscaped at the time of construction and shall utilize landscaping as approved by the City Engineer, Community Development Director, and the Design Review Committee.

viii. The Project Proponent shall provide root control barriers and four inch (4") perforated pipes for parking lot trees, street trees, and trees in planting areas less than ten feet (10' 0") in width, as determined necessary by the Planning Director and the Design Review Committee at the time of review of the final landscape plans.

b. **Development Agreement.** The applicant shall install the landscaping infrastructure noted in section 6.05 of the Development agreement and described below:

i. A 25’ wide landscape buffer along Santa Fe Avenue.

ii. Installation of a class 1 bike trail along the TID Ceres main canal.

iii. An open space lot containing approximately 6,500 S.F. (0.15AC) is proposed for dedication that will include enhanced landscaping and monumentation along the Santa Fe Avenue corridor at the project entrance.

42. **Tree Planting Plan.** The project shall provide a minimum of 560 trees throughout the fully developed project site. The planting of these trees shall satisfy Mitigation Measure BIO-3 that is incorporated to address Section 17.03.092(E) of the Hughson Municipal Code.

43. **Electrical:**

a. Lighting for the subdivision shall be shown on the public improvement plans.

b. Provide appropriate clearance for electrical equipment from driveways.

c. Provide clearance for electroliers from overhead utilities and request clearance from utility companies. Clearance from electrolier(s) must provide a minimum of 10' from high voltage lines; 3' from secondary voltage lines; and 1' from communication lines.

44. **Multiple Final Maps.** Multiple Final Maps may be filed for this subdivision if each and all of the following conditions are met with each Final Map:

a. All fees associated with development and a part of this approval shall be apportioned and paid for each portion of this subdivision for which a Final Map is being filed.
b. All public streets on which each Final Map has frontage are improved or bonded to be improved to the satisfaction of the Community Development Director.
c. All grading, drainage and easements for drainage, adequate to protect each lot for which a Final Map is requested, and surrounding parcels, which could be impacted by such design or lack of design, shall be guaranteed to the satisfaction of the City Engineer.
d. Any and all off-site improvements necessary for mitigation of impacts brought about by this project shall be apportioned to the degree possible to guarantee adequate mitigation.

45. **Fire Protection**
    a. **All Weather Roads.** An all-weather surface road, suitable to the Hughson Fire Protection District, adequate for interim emergency vehicle access shall be provided to the project. Interim emergency vehicle access shall be in place prior to placement of construction materials, or beginning construction of structures on the site. Project Proponent shall acquire a permanent emergency vehicle access which shall be dedicated to the City by the property owner, prior to any occupancy.
    b. **Curbs.** All curbs located within a seven feet, six inch (7' 6") radius of a public/private fire hydrant shall be painted red, unless, modified by the Fire Chief. Blue street "hydrant markers" shall be installed for all fire hydrants per City Standard Specifications.
    c. **Fire Lanes.** All public and private streets, driveways, aisles, and alleys designated as fire lanes by the Fire Chief shall be maintained in accordance with Articles 9 and 10 of the Uniform Fire Code which permits towing vehicles illegally parked on the fire lanes. Fire lane curbs shall be painted red with "No Parking, Fire Lane, Tow Away Zone" or "No Parking, Fire Lane, Tow Away Zone" signs shall be installed as required by the Vehicle Code.

46. **Solid Waste Management.** The Project Proponent shall submit a waste management plan to the Building Department prior to issuance of building permits. The plan shall include the estimated composition and quantities of waste to be generated and how the Project Proponent intends to recycle at least 50% (fifty percent) of the total job site construction and demolition waste measured by weight or volume. Proof of compliance shall be provided to the Chief Building Official prior to the issuance of a final building permit. During demolition and construction, the Project Proponent shall mark all trash disposal bins "trash materials only" and all recycling bins "recycling materials only". The Project Proponent shall contact Waste Management for the disposal of all waste from the site.

47. **Construction**

a. **Hazardous Waste.** During construction, hazardous materials used and hazardous waste generated shall be properly managed and disposed.

b. **Hazardous Material.** The City shall be notified immediately if hazardous materials or associated structures are discovered during demolition or during grading. These shall include, but shall not be limited to, actual/suspected hazardous materials, underground tanks, or other vessels that contain or may have contained hazardous materials.

c. **Insurance.** Before commencing work pursuant to any City-approved permit or other entitlement relating to the Project, Project Proponent/Contractor shall obtain the insurance and receive the approval of the City Manager or his designee as to form, amount and carrier. Project Proponent/Contractor shall furnish City satisfactory evidence of the insurance and shall maintain the insurance until completion of the project. Project Proponent/Contractor shall also provide evidence that the carrier is required to give the City at least ten (10) days' prior written notice of the cancellation or reduction in coverage of a policy. The insurance shall name the City as an additional insured and extend to the City, its elective and appointive boards, commissions, officers, agents, employees and representatives and to the Project Proponent and each contractor and subcontractor performing work on the Project.

   i. **Worker's Compensation Insurance:** Project Proponent/Contractor shall maintain workers' compensation insurance for all persons employed at Project Site and provide proof of insurance every six months. Project Proponent shall require each contractor and subcontractor similarly to provide workers' compensation insurance for their respective employees. Project Proponent/Contractor agrees to indemnify the City for damage resulting from Project Proponent's failure to take out and maintain such insurance.

   ii. **Public Liability and Property Damage Insurance**: Project Proponent/Contractor shall maintain public liability insurance in an amount not less than $1,000,000.00 for each injury (including death) to any one person and subject to the same limit of any one occurrence and provide proof to the City every six months.

48. **Monument Replacement.** Project Proponent shall replace, or have replaced, or repair or have repaired, as the case may be, all existing monuments shown on the Map which have been destroyed or damaged by project construction, and Project Proponent shall replace or have replaced, repair, or have repaired, as the case may be, or pay to the owner, the entire cost of replacement by reason of any work done hereunder, whether such property be owned by the United States or any agency thereof, or the State of California, or any agency or political subdivision thereof, or by the City or by any public or private corporation, or by any person whomsoever, or by any combination of such owners. Any such repair or replacement shall be to the satisfaction and subject to the approval of the City Engineer. Project Proponent

shall provide such monumentation as may be required by City Engineer, in accordance with accepted standards.

49. **State Law.** Developer shall conform to and abide by all applicable California State Laws pertaining to construction of public improvements.

50. **Traffic Control.** Project Proponent/Contractor shall, at Project Proponents/Contractor expense, and under City's direction, provide for traffic control, during construction, so as to minimize the impact on residents surrounding or adjacent to the Project. The Project Proponent/Contractor agrees that, during any construction within or as a part of the overall Project, all existing roadways as of the date of approval of this vesting tentative subdivision map shall, at all times, remain passable to a minimum of two lanes of traffic, one in each direction, or an acceptable detour approved by City. Project Proponent/Contractor further agrees that if, at any time, City shall determine that there are not sufficient acceptable traffic lanes or acceptable detour which are passable, that all construction by Project Proponent/Contractor shall immediately cease upon written demand therefore, by City. Traffic Control Plan is required to be submitted for approval by the City Engineer showing how the construction of the entrance to the subdivision off of Santa Fe Avenue will be staged.

51. **Archaeological Material.** If archeological materials are uncovered during project implementation, grading, trenching, or other on-site excavation, all work on site shall be stopped and the City immediately notified. The county coroner and the Native American Heritage Commission shall also be notified and procedures followed as required by the California Environmental Quality Act (CEQA) and California law. A similar note shall appear on the improvement plans.

52. **Prior to Construction Completion/Issuance of Certificate of Occupancy**
    a. **Final Inspection.** Final inspection by the Building Department is required prior to issuance of certificate of occupancy.
    b. **Street Lights.** All lighting on a given street will be fully operational prior to any occupancy being granted on that street.
    c. **Mylar Drawings.** Prior to final acceptance, Project Proponent shall file with the City of Hughson one set of reproducible mylar "record drawings", two sets of "record drawings", and one electronic version. Said drawings shall meet all requirements of Section 66434 of Subdivision Map Act. Said set of drawings shall contain a copy of sheets with construction changes made or an indication that no changes were made and shall be submitted for approval by the City Engineer.
    d. **Inspection of Public Improvements.** The City Engineer or other authorized representative of the City shall inspect all of the Public Improvements to see that they comply with City subdivision regulations including, but not limited to, these Conditions of Approval, Standard Specifications and Design Expectation Guidelines. The Project Proponent hereby grants access to the

Project and Project Site for inspection purposes and agrees to notify City Engineer at least 48 hours in advance of required inspection. Project Proponent shall pay to City the actual cost to City for all inspection, and other services furnished by City in connection with the Project by paying Plan Check and Inspection fees, and shall also reimburse City for the actual cost charged to City by City Engineer for all services performed in accordance with these Conditions, such charges to be at the normal rate charged the City by the City Engineer. However, all costs in soil testing, concrete testing and compaction testing will be the responsibility of the Project Proponent/Contractor. Plan check and inspection fees will be based on the approved engineer's estimate.

e. **Deviation from Plans.** If the Project Proponent/Contractor deviates from the approved improvement drawings, specifications or standards, or shall construct any Public Improvements in such a manner so as to, in the opinion of the City Engineer, endanger the public safety, the City may cause the necessary corrections to be made without notice. In the event such deviations do not, in the opinion of the City Engineer, endanger the public safety, the City Engineer may give the Project Proponent/Contractor written notice of such deviations, and the Project Proponent shall correct the deviation in the time prescribed by the City Engineer. In the event of the failure of the Project Proponent/Contractor to make corrections of deviations, whether or not the public safety is affected, the City may cause the necessary corrections to be made and shall be reimbursed by the Project Proponent/Contractor at cost plus 25%. Said amount shall be deducted from the reimbursement by the City to the Project Proponent/Contractor or shall be paid for by the Project Proponent/Contractor prior to the acceptance of the improvements, or shall be obtained from the improvement securities. Project Proponent/Contractor shall perform any changes or alterations in the construction and installation of such Public Improvements required by City, provided that all such changes or alterations do not exceed 10 percent of the original total estimated cost of such Public Improvements.

f. **Condition Satisfaction.** Prior to final inspections, all pertinent conditions of approval and all improvements shall be completed to the satisfaction of the Community Development Director and City Engineer.

g. **Irrigation Acceptance.** Prior to the issuance of the first Certificate of Occupancy, all landscape and irrigation should be substantially completed in accordance to the approved plan. An Irrigation Schedule shall be submitted prior to the final inspection and acceptance of improvements.

h. **Landscape Installation.** Landscape and tree improvements shall be installed according to the approved plans prior to the occupancy of each building. All common area landscaping, irrigation and other required improvements shall be installed prior to acceptance of tract improvements, or occupancy of eighty percent of the dwelling units, whichever first occurs and a Certificate of Completion, as-built Mylar and an Irrigation Schedule shall be submitted

prior to the Final Approval of the landscaping for the Tract to the Community Development Department by the developer.

53. **Conditions from Responsible Agencies**

a. Hughson Unified School District

i. School Impact Fees shall be submitted to the Hughson Unified School District prior to the time of issuance of building permits for lots in the proposed project. School impact fees shall include those fees required by the state and adopted by the Hughson Unified School District.

b. Stanislaus Consolidated Fire Protection District/Hughson Fire Protection District

i. The Project shall conform to the requirements of the Hughson Fire District. Project Proponent shall, at Project Proponent's expense, install fire hydrants which shall be tested for flow and color-coded to represent the amount of flow, as specified by the Hughson Fire Protection District. Fire hydrants shall be placed on property lines. Reflectors shall be placed in the street adjacent to the fire hydrants. Curbs at the fire hydrants shall be painted to prevent parking. Prior to any construction framing, the Project Proponent shall provide adequate fire protection facilities, including, but not limited to surface roads, fire hydrants, and a water supply and water flow in conformance to the City's Fire Department Standards able to suppress a major fire. When alternate methods of fire protection are approved by the Fire Chief, this requirement may be waived or modified. Proposed alternative methods of fire protection shall be submitted in writing to the Fire Chief prior to any framing construction. Work on the alternative fire protection methods shall not begin until approved by the Fire Chief.

1. The minimum number of fire hydrants shall be provided in accordance with the Hughson Fire Code Ordinance and the California Fire Code. The average spacing between hydrants is 300 feet. All homes shall be within 300 feet of a fire hydrant. Spacing and locations of fire hydrants shall be subject to review and approval by the Hughson Fire District.

ii. **Fees.** Developer shall pay all Fire Facilities Fees. The fees shall be payable at the time of issuance of the building permit for any construction and shall be based on the rates in effect at the time of building permit issuance.

iii. **Access.** Fire department access and water for fire protection shall be provided and maintained in accordance with all requirements, applicable codes and ordinances. Two ingress/egress accesses shall be provided.

iv. **Walk-through.** Upon completion of construction, the Fire District will complete a final walk- through inspection.

c. Stanislaus County:
   i. County Impact Fees shall be submitted to the County prior to the time of issuance of building permits for lots in the proposed project.

d. Stanislaus County Department of Environmental Resources:
   i. All existing on-site wells and/or septic tanks shall be destroyed under permit from the Department of Environmental Resources (DER) and in accordance with all laws and polices as regulated by Stanislaus County and California State Model Well Standards. Notification shall be made to the Community Development Department at least 24 hours prior to removal. Removal of these structures shall be documented and done under permit, as required by law.

e. Turlock Irrigation District (District)
   i. The Developer shall submit plans detailing the existing irrigation facilities, relative to the proposed site improvements, in order for the District to determine specific impacts.

      Properties that will no longer irrigate or have direct access to water must request abandonment from applicable Improvement Districts. Developed property adjoining irrigated ground must be graded so that finished grading elevations are at least 6 inches higher than irrigated ground. A protective berm must be installed to prevent irrigation water from reaching non-irrigated properties. Stub-end streets adjoining irrigated ground must have a berm installed at least 12" above the finished grade of the irrigated parcel(s).

      Any applicable improvements to this property shall be subject to the District's approval and meet all District standards and specifications. If it is determined that irrigation facilities will be impacted, the applicant will need to provide irrigation improvement plans and enter into an Irrigation Improvements Agreement for the required irrigation facility modifications. There is a District Board approved time and material fee associated with this review.

Mitigation Monitoring and Reporting Program

This document is the Mitigation Monitoring and Reporting Program (MMRP) for the Parkwood Subdivision Project (project). This MMRP has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A MMRP is required for the proposed project because the Initial Study / Mitigated Negative Declaration (IS/MND) has identified significant adverse impacts, and measures have been identified to mitigate those impacts. The numbering of the individual mitigation measures follows the numbering sequence as found in the IS/MND.

The MMRP, as outlined in the following table, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in the IS/MND.
The City of Hughson will be the primary agency responsible for implementing the mitigation measures and will continue to monitor mitigation measures that are required to be implemented during the operation of the project.
The MMRP is presented in tabular form on the following pages. The components of the MMRP are described briefly below:

- **Mitigation Measures**: The mitigation measures are taken from the IS/MND in the same order that they appear in that document.
- **Mitigation Timing**: Identifies at which stage of the Project mitigation must be completed.
- **Monitoring Responsibility**: Identifies the agency that is responsible for mitigation monitoring.
- **Compliance Verification**: This is a space that is available for the monitor to date and initial when the monitoring or mitigation implementation took place.

TABLE 1: MITIGATION MONITORING AND REPORTING PROGRAM

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
AGRICULTURAL RESOURCES				
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	***Mitigation Measure AG-1:*** *Prior to approval of the Tentative Map for the project, the project applicant shall comply with the City's Right to Farm Ordinance (Section 17.03.064 of the Municipal Code). In order to comply, the following deed restriction shall be recorded by the owners and run with the land:* *"RIGHT TO FARM DEED RESTRICTION* *Properly conducted agricultural operations are permitted within Stanislaus County, within the City of Hughson, and its Sphere of Influence. You are hereby notified that the property you are purchasing is in an agricultural area. You may be subject to inconvenience or discomfort from lawful agricultural or agricultural processing facilities operations. Discomfort and inconvenience may include, but are not limited to, noise, odors, fumes, dust, smoke, burning, vibrations, insects, rodents and/or the operations of machinery (including aircraft) during any 24 hour period. One or more of the inconveniences described may occur as a result of agricultural operations which are in compliance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in an area with a strong rural character and an active agricultural sector. Lawful ground rig or aerial application of pesticides, herbicides and fertilizers occur in farming operations. Should you be concerned about spraying, you may contact the Stanislaus County Agricultural Commission.* *The City of Hughson Right to Farm Ordinance does not exempt farmers, agricultural processors or others from compliance with law. Should a farmer, agricultural processor or other person not comply with appropriate State, federal or local laws, legal recourse is possible by, among other ways, contacting the appropriate agency. This Right to Farm Deed Restriction shall be included in all subsequent deeds and leases for this property until such time as the City Council shall determine that such a restriction is no longer necessary."* *Additionally, every transferor of property subject to the notice recorded pursuant to subsection C of Section 17.03.064 shall provide to any transferee in writing the notice of right to farm recited below. The notice of right to farm shall be contained in each offer for sale, counter offer for sale, agreement of sale, lease, lease with an option to purchase, deposit receipt, exchange agreement, rental agreement, or any other form of agreement or contract for*	City of Hughson Community Development Department	Prior to the approval of the Tentative Map for the project	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
	the transfer of property; provided, that the notice need be given only once in any transaction. The transferor shall acknowledge delivery of the notice and the transferee shall acknowledge receipt of the notice. *The form of notice of right to farm is as follows:* *"NOTICE OF RIGHT TO FARM* *Properly conducted agricultural operations are permitted within Stanislaus County and within the City of Hughson Sphere of Influence. You are hereby notified that the property you are purchasing/leasing/renting is in an agricultural area. You may be subject to inconvenience or discomfort from lawful agricultural or agricultural processing facilities operations. Discomfort and inconvenience may include, but are not limited to, noise, odors, fumes, dust, smoke, burning, vibrations, insects, rodents and/or the operation of machinery (including aircraft) during any 24 hour period. One or more of the inconveniences described may occur as a result of agricultural operations which are in compliance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in an area with a strong rural character and an active agricultural sector. Lawful ground rig or aerial application of pesticides, herbicides and fertilizers occur in farming operations. Should you be concerned about spraying, you may contact the Stanislaus County Agricultural Commission.* *The City of Hughson Right to Farm Ordinance does not exempt farmers, agricultural processors or others from compliance with law. Should a farmer, agricultural processor or other person not comply with appropriate state, federal or local laws, legal recourse is possible by, among other ways, contacting the appropriate agency. This notification is given in compliance with Hughson Municipal Code Section 17.03.064. By initialing below, you are acknowledging receipt of this notification.* _____ _____ *Transferor's Initials* *Transferor's Initials"*			
Air Quality				
a) Conflict with or obstruct implementation of the applicable air quality plan?	***Mitigation Measure AIR-1:*** *Prior to the commencement of construction activities for each phase of the project, the project proponent shall prepare and submit a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021, Section 6.3, for the review and approval of the APCD Air*	SJVAPCD Air Pollution Control Officer	Prior to the commence-ment of construction	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	*Pollution Control Officer.*		activities for each phase of the project	
	Mitigation Measure AIR-2: *During all construction activities, the project proponent shall implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures shall include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules.*	SJVAPCD Air Pollution Control Officer	During all construction activities	
	Mitigation Measure AIR-3: *During all construction activities, the project proponent shall implement the following dust control practices identified in Tables 6-2 and 6-3 of the GAMAQI (San Joaquin Valley APCD, 2002).* *a. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.* *b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.* *c. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.* *d. When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.* *e. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.* *f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*	SJVAPCD Air Pollution Control Officer	During all construction activities	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
	g. Limit traffic speeds on unpaved roads to 5 mph; and *h. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.*			
	Mitigation Measure AIR-4: *Architectural coatings applied to all structures in the project site shall meet or exceed volatile organic compound (VOC) standards set in APCD Rule 4601. The project applicant shall submit to the APCD a list of architectural coatings to be used and shall indicate how the coatings meet or exceed VOC standards. If the APCD determines that any architectural coatings do not meet VOC standards, the project applicant shall replace the identified coatings with those that meet standards.*	SJVAPCD Air Pollution Control Officer	During all construction activities	
	Mitigation Measure AIR-5: *Asphalt paving shall be applied in accordance with APCD Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.*	SJVAPCD Air Pollution Control Officer	During all construction activities	
	Mitigation Measure AIR-6: *Prior to final approval of improvement plans for each phase of the project, the project proponent shall submit an Air Impact Assessment (AIA) application to the San Joaquin Valley Air Pollution Control District for District Rule 9510 Indirect Source Review (ISR) to obtain AIA approval from the District for the phase or project component that is to be constructed. Prior to the issuance of a building permit of each individual phase or project component, the project proponent shall incorporate mitigation measures into the proposed project and demonstrate compliance with District Rule 9510 including payment of all fees.*	SJVAPCD	Prior to final approval of improvement plans for each phase of the project	
Biological Resources				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	***Mitigation Measure BIO-1****: The project proponent shall implement the following measures to avoid or minimize impacts on Swainson's hawk:* • *No more than 30 days before the commencement of construction, a qualified avian biologist shall perform preconstruction surveys for nesting Swainson's hawk and other raptors during the nesting season (February 1 through August 31).* • *Appropriate buffers shall be established and maintained around active nest sites during construction activities to avoid nest failure as a result of project activities. The appropriate size and shape of the buffers shall be determined by a qualified avian biologist, in coordination with CDFW, and may vary depending on the nest location, nest stage, and construction activity. The buffers may be*	City of Hughson Community Development Department	No more than 30 days before the commence-ment of construction	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
	adjusted if a qualified avian biologist determines it would not be likely to adversely affect the nest. Monitoring shall be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified avian biologist has determined that the young have fledged or the nest site is otherwise no longer in use. • *Before the commencement of construction, the project proponent shall provide compensatory mitigation for the permanent loss of Swainson's hawk foraging habitat. Mitigation shall be at the CDFW specified ratios, which are based on distance to nests. The Plan Area's distance to the closest nest falls within the range of "within 5 miles of an active nest tree but greater than 1 mile from the nest tree." As such, the Project shall be responsible for 0.75 acres of each acre of urban development authorized (0-75:1 ratio). The project proponent shall either provide lands protected through fee title acquisition or conservation easement (acceptable to the CDFW) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.* ***Mitigation Measure BIO-2**: The project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:* • *Preconstruction surveys for active nests of special-status birds shall be conducted by a qualified avian biologist in all areas of suitable habitat within 500 feet of project disturbance. Surveys shall be conducted within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area.* • *If any active nests, or behaviors indicating that active nests are present, are observed, appropriate buffers around the nest sites shall be determined by a qualified avian biologist to avoid nest failure resulting from project activities. The size of the buffer shall depend on the species, nest location, nest stage, and specific construction activities to be performed while the nest is active. The buffers may be adjusted if a qualified avian biologist determines it would not be likely to adversely affect the nest. If buffers are adjusted, monitoring will be conducted to confirm that project activity is not resulting in detectable adverse effects on nesting birds or their young. No project activity shall commence within the buffer areas until a qualified avian biologist has determined that the young have fledged or the nest site is otherwise no longer in use.*	City of Hughson Community Development Department	Within 14 days before commencement of any construction activities that occur during the nesting season (February 15 to August 31) in a given area	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	***Mitigation Measure BIO-3:*** *Prior to approval of any street improvements, the project applicant shall pay to the City the total costs of all the trees, pursuant to Section 12.30.060 of the Municipal Code. The City shall plant the trees at the proper time. Watering and care of the trees thereafter shall be the responsibilities of the applicant or the purchasers of the property. Additionally, pursuant to Section 17.03.092 of the Municipal Code, the project applicant shall not plant trees or shrubs in any street tree area or other public place without permission of the planning officer.* *Further, the project applicant shall submit a tree survey to the City, pursuant to Section 17.03.092(E). The location, size, accurate driplines and species of existing trees shall be shown on the tree survey in the same scale as development plans submitted for development review. All trees proposed for removal shall be identified. If there is disturbance proposed within the dripline of a significant tree, a certified arborist's assessment and protection measures shall be provided. If significant trees are proposed for removal, the applicant shall replace them with trees whose size, number, and planting location shall be determined by the planning officer before final occupancy is granted to any new residents. The size and age of the tree shall be used to determine how many new trees shall be substituted for the removed tree but, at a minimum, three new trees shall replace one tree removed. The ratio may be increased at the discretion of the planning officer.* *Where orchard trees are to be cut down, removed, or relocated as part of new development, the planning commission or planning officer shall require the retention of selected orchard trees within the proposed subdivision that are representative of the land's agricultural heritage. For orchards in productive use for at least five years prior to the new development, a minimum of 10 percent of the existing orchard trees shall be preserved. This shall be determined by the planning officer.*	City of Hughson Community Development Department	Prior to the approval of any street improvements	
Cultural Resources				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section15064.5? b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	***Mitigation Measure CUL-1:*** *If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts/features, and paleontological sites) are discovered, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Hughson shall be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology (or a qualified paleontologist in the event paleontological resources are found) shall be retained to determine the significance of the discovery. The City of Hughson shall consider recommendations presented by the professional for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate*	City of Hughson Community Development Department Qualified archaeologist	If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts / features, and paleontological sites) are discovered	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
	measures. Specific measures are developed based on the significance of the find.			
c) Disturb any human remains, including those interred outside of formal cemeteries?	***Mitigation Measure CUL-2:*** *If any human remains are found during grading and construction activities, all work shall be halted immediately within 50 meters (165 feet) of the discovery and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Additionally, if the Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.*	Stanislaus County Coroner Native American Heritage Commission	If any human remains are found during grading and construction activities	
Geology and Soils				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: iii) Seismic-related ground failure, including liquefaction? c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	***Mitigation Measure GEO-1:*** *Prior to issuance of any building permits, the developer shall be required to submit building plans to the City of Hughson for review and approval. The building plans shall also comply with all applicable requirements of the most recent California Building Standards Code. All on-site soil engineering activities shall be conducted under the supervision of a licensed geotechnical engineer or certified engineering geologist.*	City of Hughson Building Division	Prior to issuance of any building permits	
b) Result in substantial soil erosion or the loss of topsoil?	***Mitigation Measure GEO-2:*** *The project applicant shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce*	City of Hughson Community Development Department Central Valley Regional Water	Prior to earthmoving activities	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
	pollutants in stormwater runoff from the project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Hughson and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.	Quality Control Board		
Hydrology and Water Quality				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) Result in substantial erosion or siltation on- or off-site; (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) Impede or redirect flood flows? e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	***Mitigation Measure HYDRO-1:*** *The Stormwater Management Plan shall be designed and engineered to ensure that post-project runoff is equal to or less than pre-project runoff. The Plan shall be consistent with Section 7 of the City's Improvement Standards, which establish minimum storm water management requirements and controls. According to the standards, storm drain discharges must include stormwater quality control measures, and stormwater generated must be adequately treated before discharge. The applicant shall provide the City Engineer with all stormwater runoff calculations with the improvement plan submittal.*	City of Hughson Engineer	With improvement plan submittal	
Noise				

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? b) Generation of excessive groundborne vibration or groundborne noise levels?	***Mitigation Measure NOI-1:*** *To reduce potential construction noise impacts during project construction, the following multi-part mitigation measure shall be implemented for the project:* • *All construction equipment powered by internal combustion engines shall be properly muffled and maintained.* • *Quiet construction equipment, particularly air compressors, shall be selected whenever possible.* • *All stationery noise-generating construction equipment such as tree grinders and air compressors shall be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.* • *Unnecessary idling of internal combustion engines is prohibited.* • *The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.* • *Construction shall be limited to 7 AM to 7 PM on weekdays and 8 AM to 4 PM on Saturdays with no work allowed on Sundays unless otherwise authorized by the City in writing.* *This requirement shall be noted in the improvement plans prior to approval by the City's Public Works Department.*	City of Hughson Public Works Department	Prior to approval of improvement plans for the project	
	Mitigation Measure NOI-2: *Any compaction required less than 26 feet from the adjacent residential structures shall be accomplished by using static drum rollers, which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring shall be conducted to ensure that construction vibrations do not cause damage to any adjacent structures. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*	City of Hughson Public Works Department	Prior to approval of improvement plans for the project	
Tribal Cultural Resources				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place,	***Mitigation Measure TRIBAL-1:*** *If cultural resources are discovered during project-related construction activities, all ground disturbances within a minimum of 50 feet of the find shall be halted until a qualified professional archaeologist can evaluate the discovery. The archaeologist shall examine the resources, assess their*	City of Hughson Community Development Department Qualified	If cultural resources are discovered during project-related construction	

Environmental Impact	*Mitigation Measure*	*Monitoring Responsibility*	*Timing*	*Verification (Date/Initials)*
cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	*significance, and recommend appropriate procedures to the lead agency to either further investigate or mitigate adverse impacts. If the find is determined by the lead agency in consultation with the Native American tribe traditionally and culturally affiliated with the geographic area of the project site to be a tribal cultural resource and the discovered archaeological resource cannot be avoided, then applicable mitigation measures for the resource shall be discussed with the geographically affiliated tribe. Applicable mitigation measures that also take into account the cultural values and meaning of the discovered tribal cultural resource, including confidentiality if requested by the tribe, shall be completed (e.g., preservation in place, data recovery program pursuant to PRC §21083.2[i]). During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project site.*	archaeologist	activities	

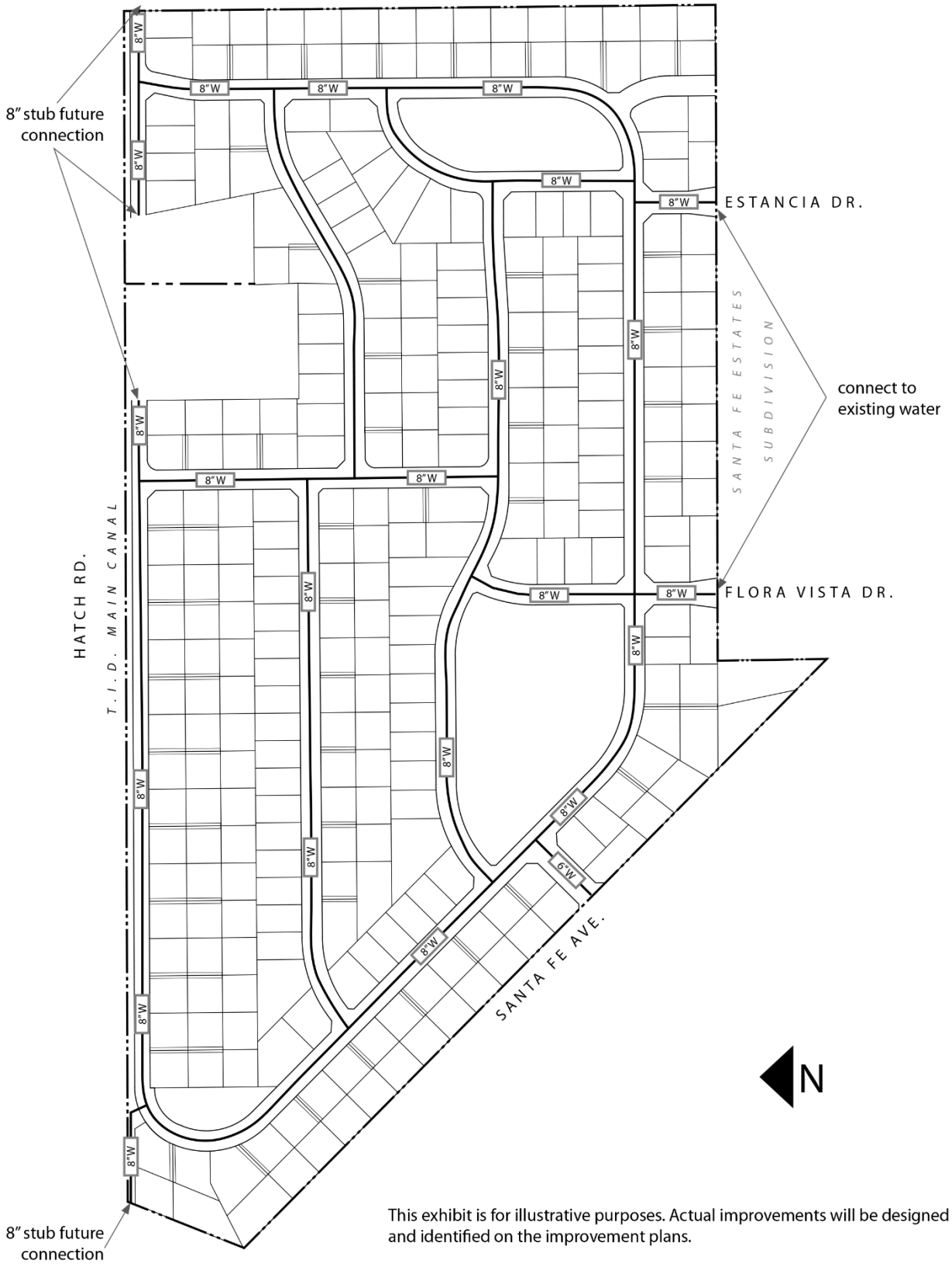
EXHIBIT F
DEVELOPMENT IMPACT FEES

EXHIBIT F
Development Impact Fees (DIF)

1) Public Facility Fee	$3,050.00
2) Storm Drain Fee	$2,814.00
3) Sewer Fee	$13,755.00
4) Water Fee	$8,119.00
5) Construction Water Fee	$155.00
6) Street Fee	$2,050.50*
7) Park Development Fee	$2,667.00**
8) Park In-Lieu Fee	$0.00***
9) Community Enhancement	$1,008.00
10) Misc. Fees (Average)	$42.00
11) Downtown Revitalization Fee (DRF)	$750.00
Total	**$34,410.50**

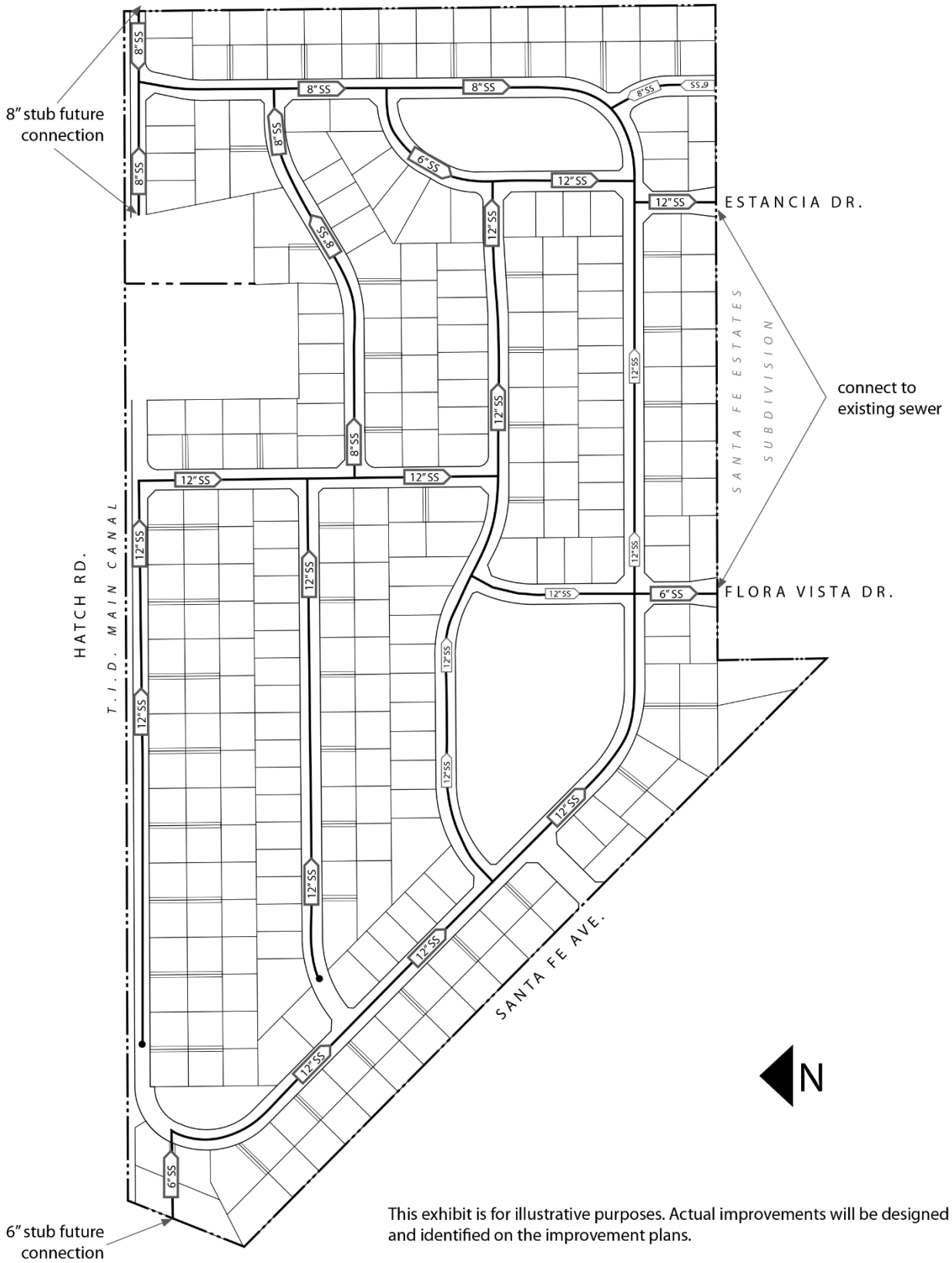
* Pursuant to Section 6.04(e)(i) of the Development Agreement, Developer may receive a 50% credit against the Street Fee for construction of the Rubirosa Road Extension to Hatch Road.
**Pursuant to Section 6.05(d)(2) of the Development Agreement, Developer may receive a maximum credit of $797,433.00 (299 Residential lots x $2,667.00 = $797,433.00) for the identified infrastructure improvements.
*** The Park-in-lieu fee has been satisfied by dedication of parkland.

EXHIBIT G
WATER SEWER AND STORM DRAIN



This exhibit is for illustrative purposes. Actual improvements will be designed and identified on the improvement plans.

IF "" = "1" "" ""
1429220-6



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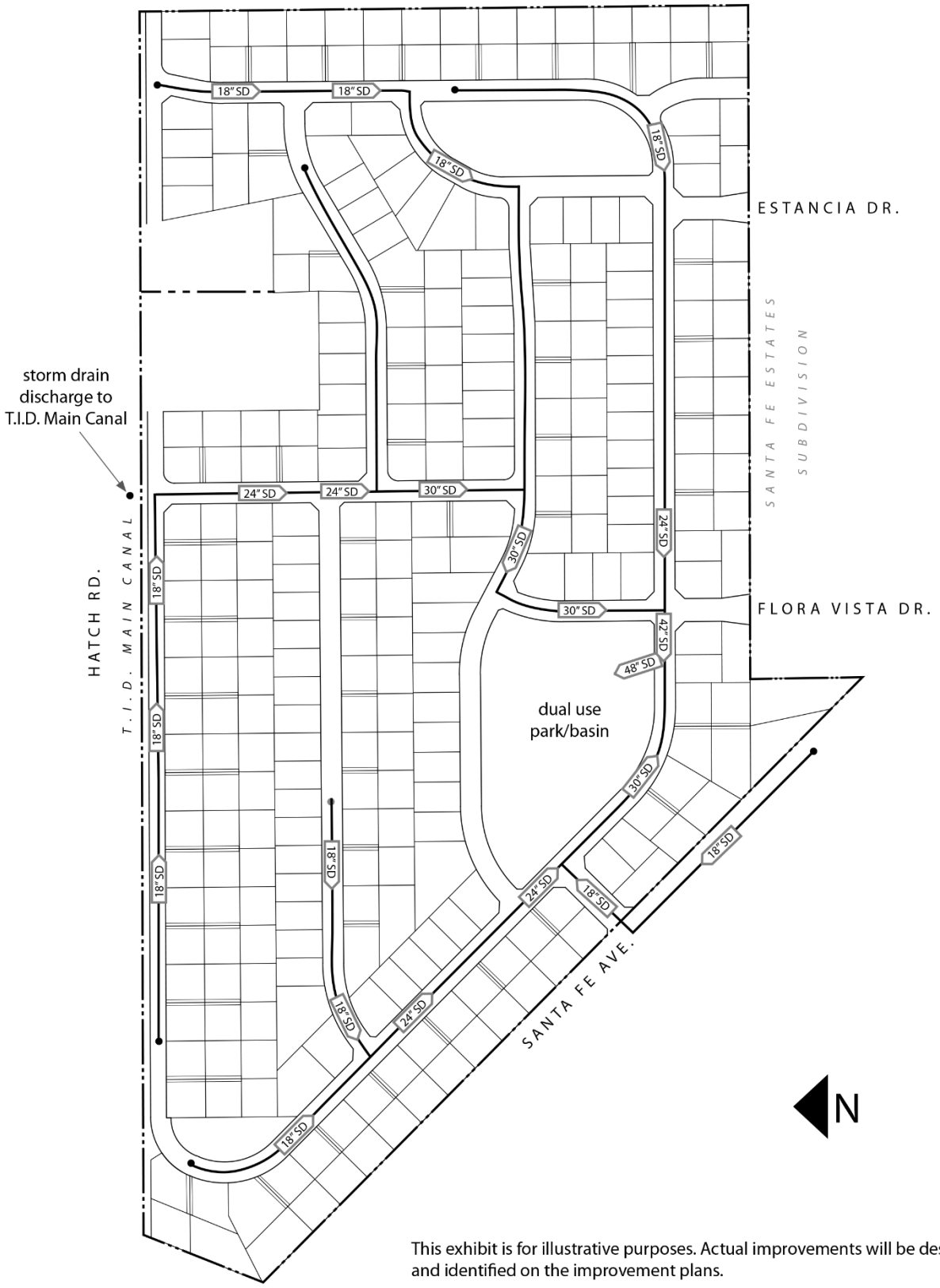

This exhibit is for illustrative purposes. Actual improvements will be designed and identified on the improvement plans.

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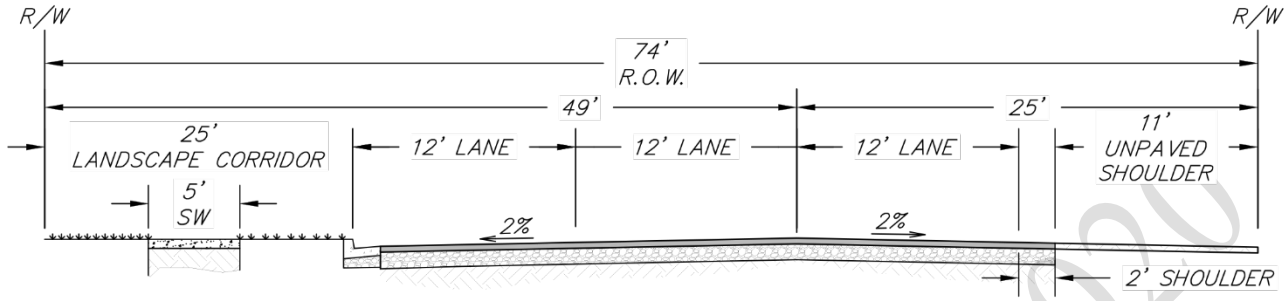
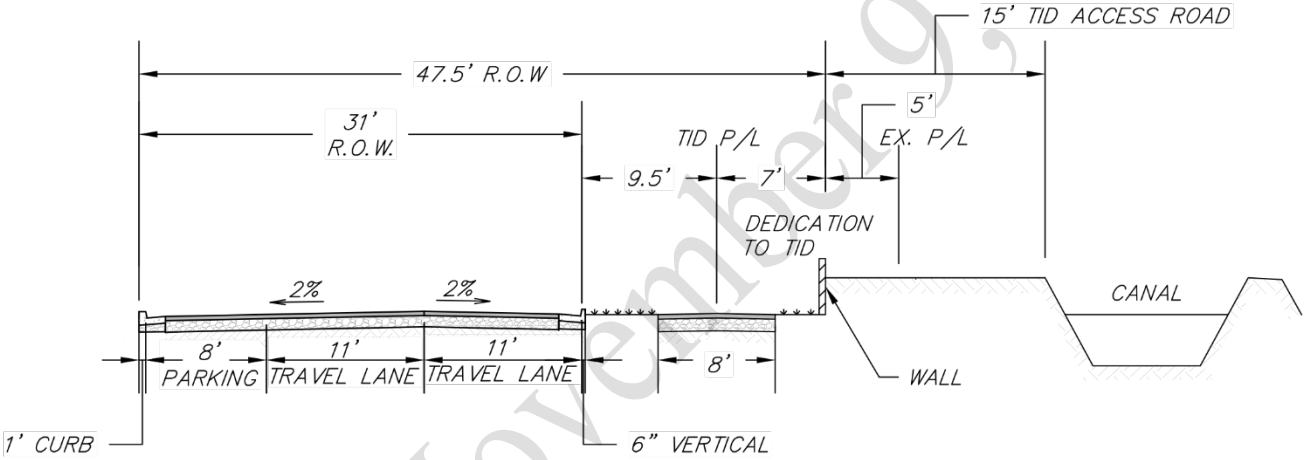
1429220-6

EXHIBIT H
STREET CROSS SECTIONS



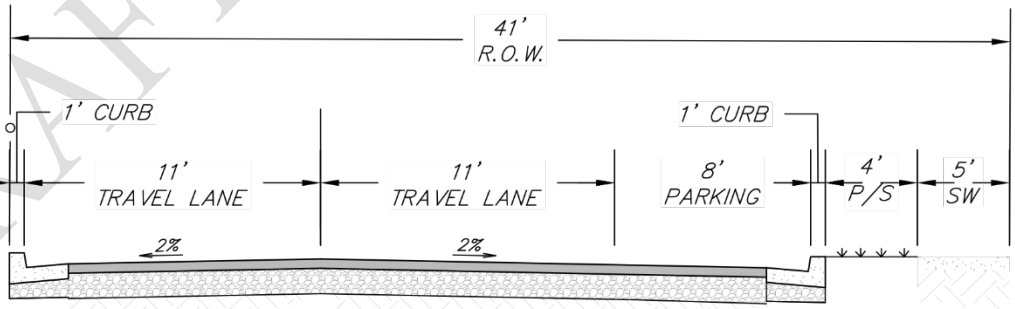
SANTA FE AVENUE

N.T.S.



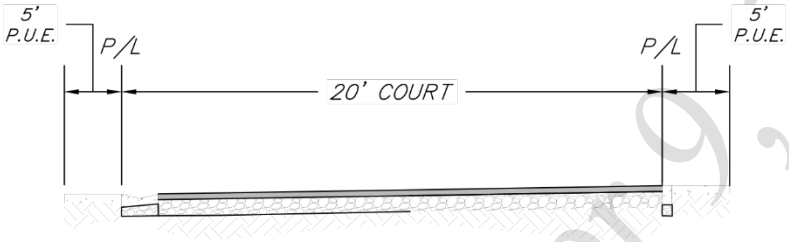
ROAD ADJACENT TO CANAL

N.T.S.



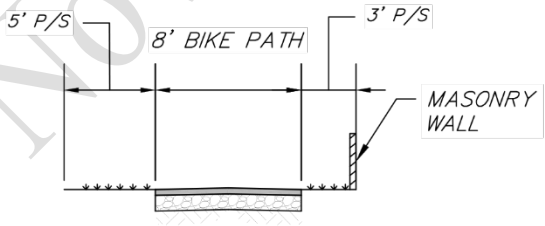
INTERNAL LOCAL STREET

N.T.S.



COURTYARD DRIVEWAY

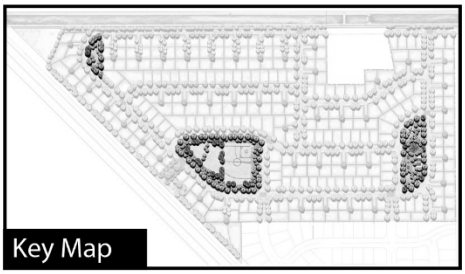
N.T.S.

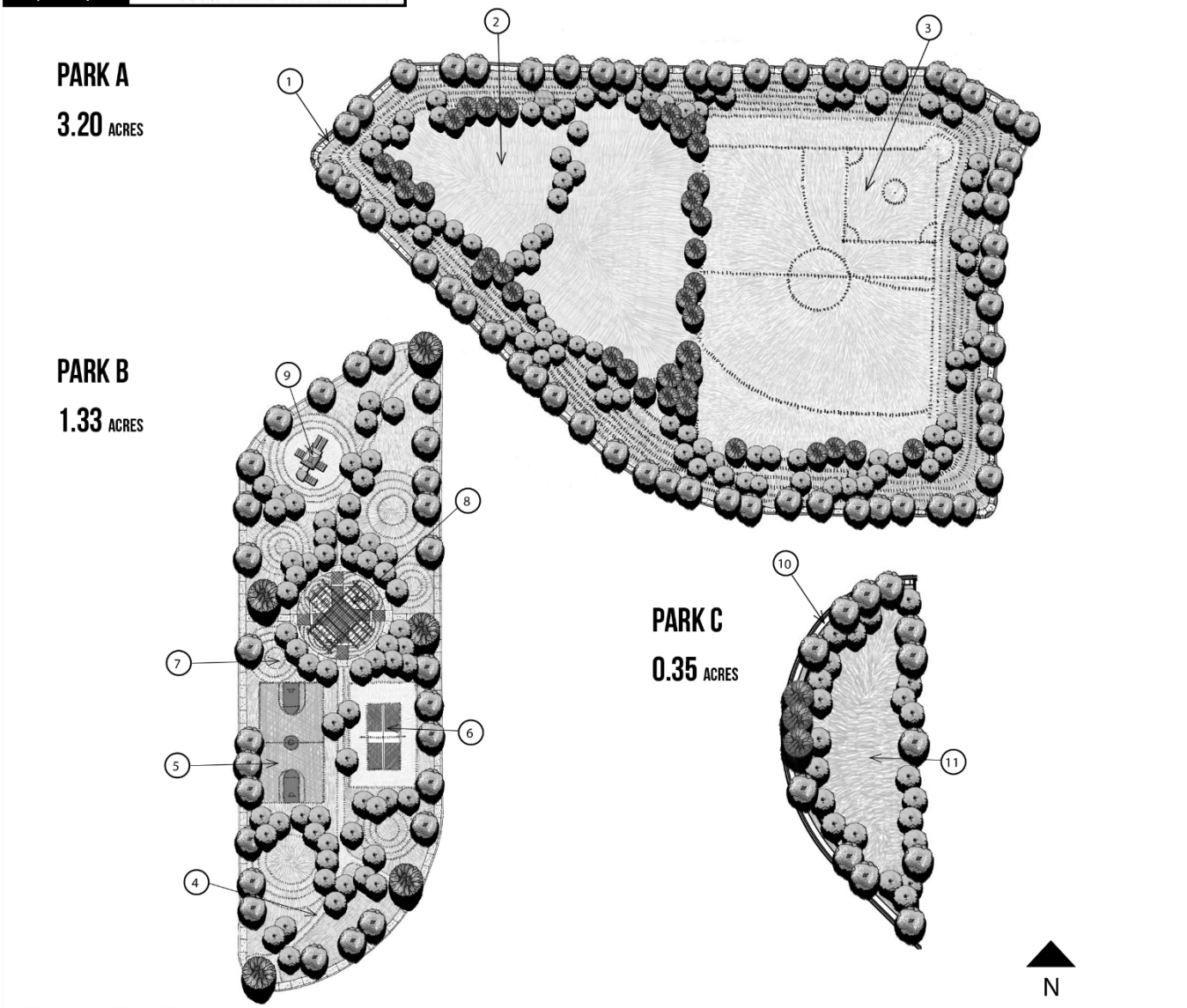


BIKE TRAIL

N.T.S.

EXHIBIT I
PARK AMENITIES



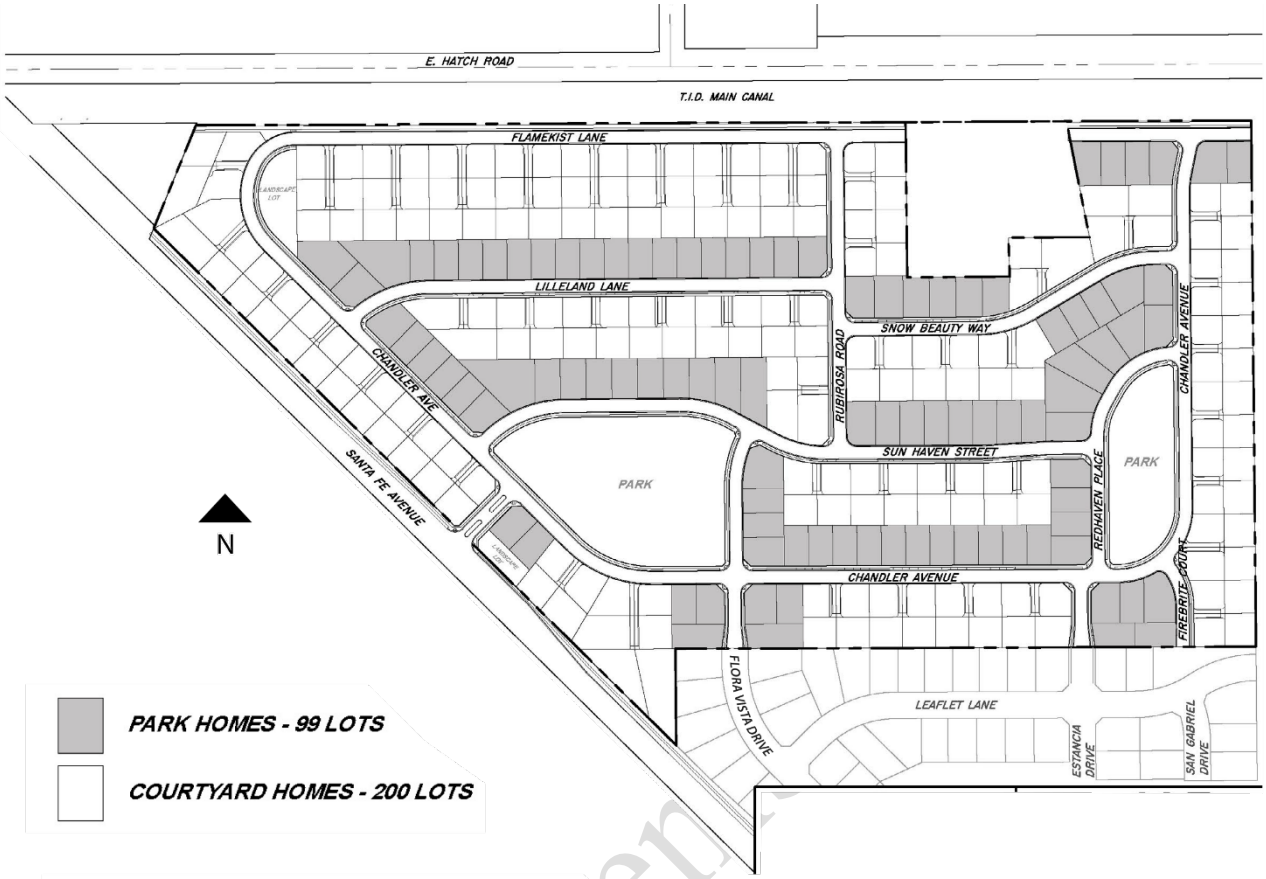


LEGEND

1. Neighborhood Connecting Sidewalk
2. Dog Park(s)
3. Open Turf Playfield
4. Neighborhood Connecting Path
5. Basketball Court
6. Pickle ball Court/Volleyball
7. Turf Mounding & Seat Walls
8. Paved Seating Area w/ BBQ's & Picnic Tables
9. Children's Playground Equipment
10. Neighborhood Connecting Sidewalk
11. Open Turf Playfield

NOTE: Images are for illustrative purposes to provide character to the overall project. Developer may propose alternative designs that provide similar character subject to approval by the Community Development Director.

EXHIBIT J-1 & J-2
DEVELOPMENT STANDARDS



DEVELOPMENT STANDARDS

Permitted Uses: Uses allowed under the R-2 Zoning District as outlined in Chapter 17.02.032 of the Hughson Municipal Code

Density: 5.1 to 14.0 dwelling units per acre

Setbacks: See next page for Typical Building Envelopes

Minimum Lot Size: Interior Lot - 5,000 S.F. Corner Lot - 5,500 S.F.

Minimum Lot Width: Interior Lot - 55 Feet Corner Lot - 65 Feet or 5,500 S.F.

Lot Coverage: 55% (*Portion of lot occupied by structures excepting paved areas & swimming pools)*

Length of Driveway: 20 Feet - *The vehicle opening of any structure shall be no closer than twenty feet to the property line towards which the opening faces*

Height Limit: 35 Feet - *See Chapter 17.03.020(B) of the Hughson Municipal Code for height limit exceptions*

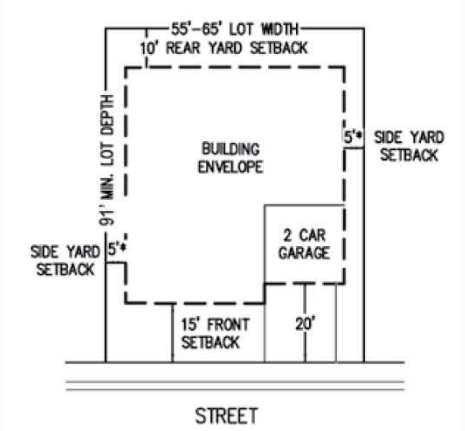
Architecture: Design Review Committee Approval is required prior to construction of any new dwelling in order to ensure an attractive development

Parking: Per the requirements of Chapter 17.03.060 (Parking) of the Hughson Municipal Code

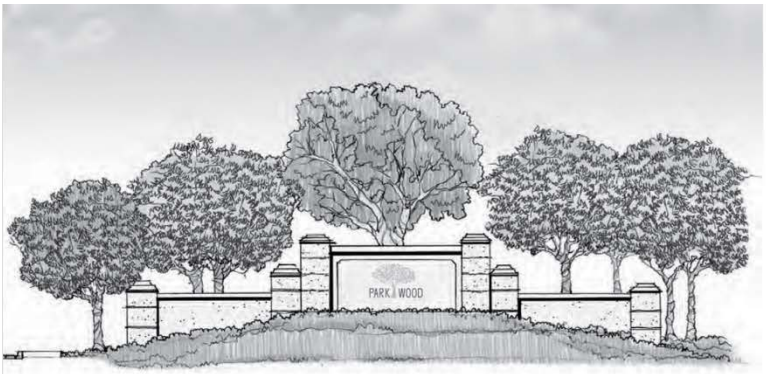
Signs, Lighting & Landscaping: Per the requirements of the Hughson Municipal Code - *Type and Style of Lighting and Signage to be equal to or similar to the examples on Sheet 2*

PARK HOMES

SETBACKS & BUILDING ENVELOPE



* STREET SIDE CORNER LOT 10' SIDEYARD SETBACK

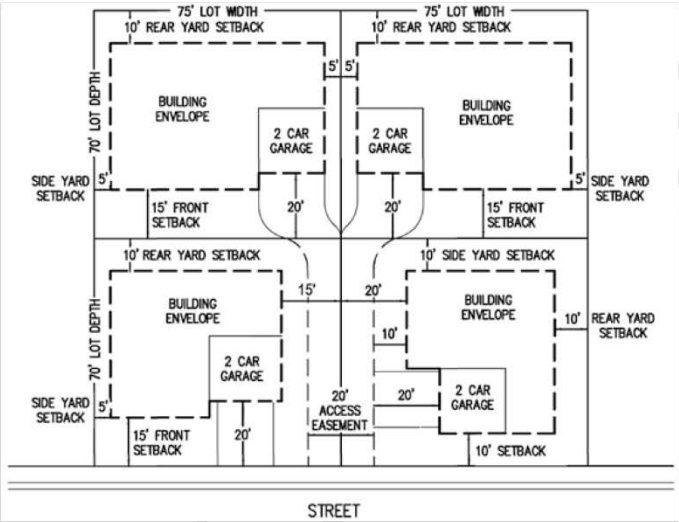


ENTRYWAY MONUMENT SIGN

SANTA FE AVENUE ENTRANCE

COURTYARD HOMES

SETBACKS & BUILDING ENVELOPE



DECORATIVE STOP SIGN & STREET SIGNAGE

DECORATIVE STREET SIGNAGE

DECORATIVE STREET LIGHTING

NOTE: Images are for illustrative purposes to provide character to the overall project. Developer may propose alternative designs that provide similar character subject to approval by the Community Development Director.

EXHIBIT K
VESTING TENTATIVE SUBDIVISION MAP

PARKWOOD

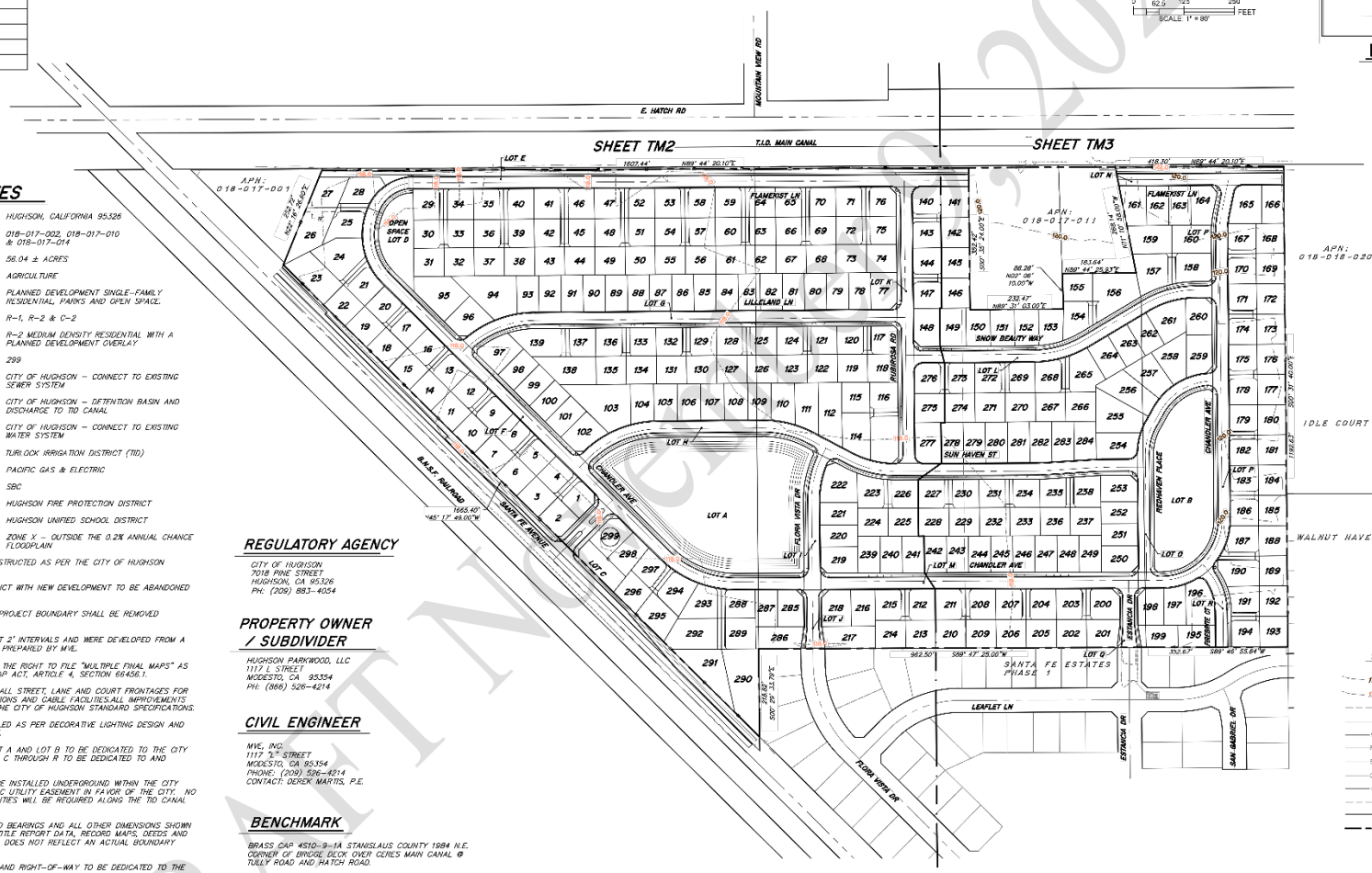
VESTING TENTATIVE SUBDIVISION MAP

HUGHSON, CALIFORNIA

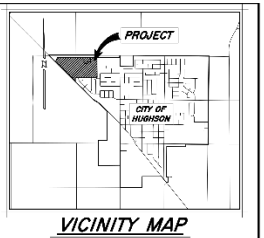
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 9,
TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN
COUNTY OF STANISLAUS, STATE OF CALIFORNIA

TABLE – PRIVATE ROADS AND OPEN SPACES AND CORRESPONDING LOT NUMBER.

NAME	LOT
PARK/OPEN SPACE	A,B,C,D
CHANDLER AVE	F,M,P
ESTANCIA DR	Q
FIREBRITE CT	R
FLAMEKIST LN	E,N
FLORA VISTA DR	I,J
LILLELAND LN	G
RUBIROSA RD	K
RED HAVEN PL	O
SNOW BEAUTY WAY	L
SUN HAVEN ST	H
TOTAL LOT COUNT	**19**



SCALE 1" = 80'



VICINITY MAP
NTS

GENERAL NOTES

1. PROPERTY LOCATION: HUGHSON, CALIFORNIA 95326
2. ASSESSOR'S PARCEL NUMBERS: 018-017-002, 018-017-010 & 018-017-014
3. PROJECT AREA: 56.04 ± ACRES
4. EXISTING USE: AGRICULTURE
5. PROPOSED USE: PLANNED DEVELOPMENT SINGLE-FAMILY RESIDENTIAL, PARKS AND OPEN SPACE.
6. EXISTING ZONING: R-1, R-2 & C-2
7. PROPOSED ZONING: R-2 MEDIUM DENSITY RESIDENTIAL WITH A PLANNED DEVELOPMENT OVERLAY
8. NUMBER OF RESIDENTIAL LOTS: 299
9. SANITARY SEWER: CITY OF HUGHSON – CONNECT TO EXISTING SEWER SYSTEM
10. STORM DRAIN: CITY OF HUGHSON – DETENTION BASIN AND DISCHARGE TO TID CANAL
11. WATER SERVICE: CITY OF HUGHSON – CONNECT TO EXISTING WATER SYSTEM
12. ELECTRICAL: TURLOCK IRRIGATION DISTRICT (TID)
13. GAS SERVICE: PACIFIC GAS & ELECTRIC
14. TELEPHONE SERVICE: SBC
15. FIRE PROTECTION: HUGHSON FIRE PROTECTION DISTRICT
16. SCHOOL DISTRICT: HUGHSON UNIFIED SCHOOL DISTRICT
17. FLOOD ZONE: ZONE X – OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
18. ALL IMPROVEMENTS SHALL BE CONSTRUCTED AS PER THE CITY OF HUGHSON STANDARD SPECIFICATIONS.
19. ALL EXISTING EASEMENTS IN CONFLICT WITH NEW DEVELOPMENT TO BE ABANDONED AND/OR RELOCATED.
20. EXISTING STRUCTURES WITHIN THE PROJECT BOUNDARY SHALL BE REMOVED ACCORDINGLY.
21. EXISTING CONTOURS ARE SHOWN AT 2' INTERVALS AND WERE DEVELOPED FROM A PRELIMINARY TOPOGRAPHY SURVEY PREPARED BY MVE.
22. THE SUBDIVIDER HEREBY RESERVES THE RIGHT TO FILE "MULTIPLE FINAL MAPS" AS SET FORTH BY THE SUBDIVISION MAP ACT, ARTICLE 4, SECTION 66456.1.
23. A PUE WILL BE DEDICATED ALONG ALL STREET, LANE AND COURT FRONTAGES FOR ELECTRICAL, GAS, TELECOMMUNICATIONS AND CABLE FACILITIES.ALL IMPROVEMENTS SHALL BE CONSTRUCTED AS PER THE CITY OF HUGHSON STANDARD SPECIFICATIONS.
24. STREET LIGHTING SHALL BE INSTALLED AS PER DECORATIVE LIGHTING DESIGN AND CITY SPECIFICATION AS APPLICABLE.
25. TOTAL NO. OF LOTS: 317 LOTS, LOT A AND LOT B TO BE DEDICATED TO THE CITY OF HUGHSON AS PARK USE. LOTS C THROUGH R TO BE DEDICATED TO AND MAINTAINED BY A HOA.
26. ALL NEW PUBLIC UTILITIES SHALL BE INSTALLED UNDERGROUND WITHIN THE CITY RIGHT-OF-WAY OR WITHIN A PUBLIC UTILITY EASEMENT IN FAVOR OF THE CITY. NO UNDERGROUNDING OF EXISTING UTILITIES WILL BE REQUIRED ALONG THE TID CANAL OR ALONG SANTA FE AVENUE.
27. THE PROPERTY LINE DISTANCES AND BEARINGS AND ALL OTHER DIMENSIONS SHOWN ON THIS MAP WERE COMPILED BY TITLE REPORT DATA, RECORD MAPS, DEEDS AND STANISLAUS COUNTY RECORDS AND DOES NOT REFLECT AN ACTUAL BOUNDARY SURVEY.
28. SANTA FE AVENUE IMPROVEMENTS AND RIGHT-OF-WAY TO BE DEDICATED TO THE CITY OF HUGHSON.
29. ALL PRIVATE STREETS TO HAVE A P.U.E. OVERLAY FOR PUBLIC UTILITIES.

REGULATORY AGENCY

CITY OF HUGHSON
7018 PINE STREET
HUGHSON, CA 95326
PH: (209) 883-4054

PROPERTY OWNER / SUBDIVIDER

HUGHSON PARKWOOD, LLC
1117 L STREET
MODESTO, CA 95354
PH: (866) 526-4214

CIVIL ENGINEER

MVE, INC.
1117 "L" STREET
MODESTO, CA 95354
PHONE: (209) 526-4214
CONTACT: DEREK MARTIS, P.E.

BENCHMARK

BRASS CAP 4510-9-1A STANISLAUS COUNTY 1984 N.E. CORNER OF BRIDGE DECK OVER CERES MAIN CANAL @ TULEY ROAD AND HATCH ROAD.

ELEVATION = 124.98, CITY OF HUGHSON DATA.

LEGEND

- 115 EXISTING CONTOURS (MAJOR)
- 114 EXISTING CONTOURS (MINOR)
- EXISTING EASEMENTS
- EXISTING PARCEL LINES
- EXISTING WATER LINE
- EXISTING STORM LINE
- EXISTING SEWER LINE
- EXISTING OVERHEAD LINE
- EXISTING GAS LINE
- PROPOSED EASEMENTS
- PROPOSED LOT LINES
- PROJECT BOUNDARY

Drawn By:	TL
Issue Date:	4/29/2020
Job No.:	NC180.39
Checked:	DAM
Design By:	TL

REVISIONS

NO.	DATE	ISSUED FOR	BY

06/30/2020

MVE Inc.
1117 L Street, Modesto, CA 95354 | 866.526.4214 | www.mve.net
Northern California | Southern California | Nevada

PARKWOOD
VESTING TENTATIVE SUBDIVISION MAP
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 9, TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN COUNTY OF STANISLAUS, STATE OF CALIFORNIA

HUGHSON CALIFORNIA

DWG. TM1
SHEET 1 OF 3

IF "" = "1" "" ""
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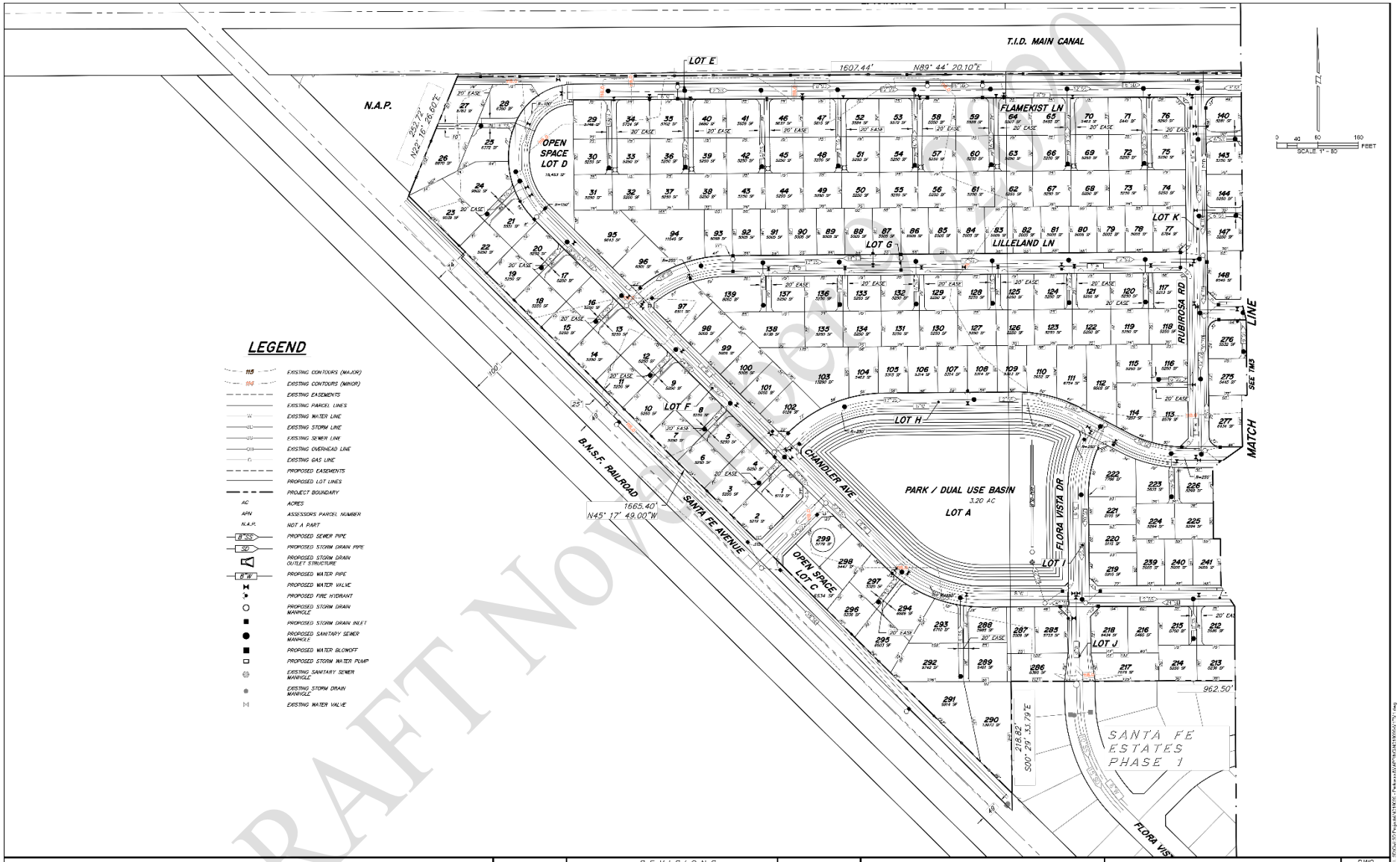

Drawn By: TL	REVISIONS		
Issue Date: 4/29/2020	NO.	DATE	ISSUED FOR	BY
Job No.: NC18039			
Checked: DAM			
Design By: TL			

06/30/2020

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Northern California | Southern California | Nevada

PARKWOOD
VESTING TENTATIVE SUBDIVISION MAP
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 8, TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN COUNTY OF STANISLAUS, STATE OF CALIFORNIA
HUGHSON CALIFORNIA

DWG. TM2
SHEET 2 OF 3

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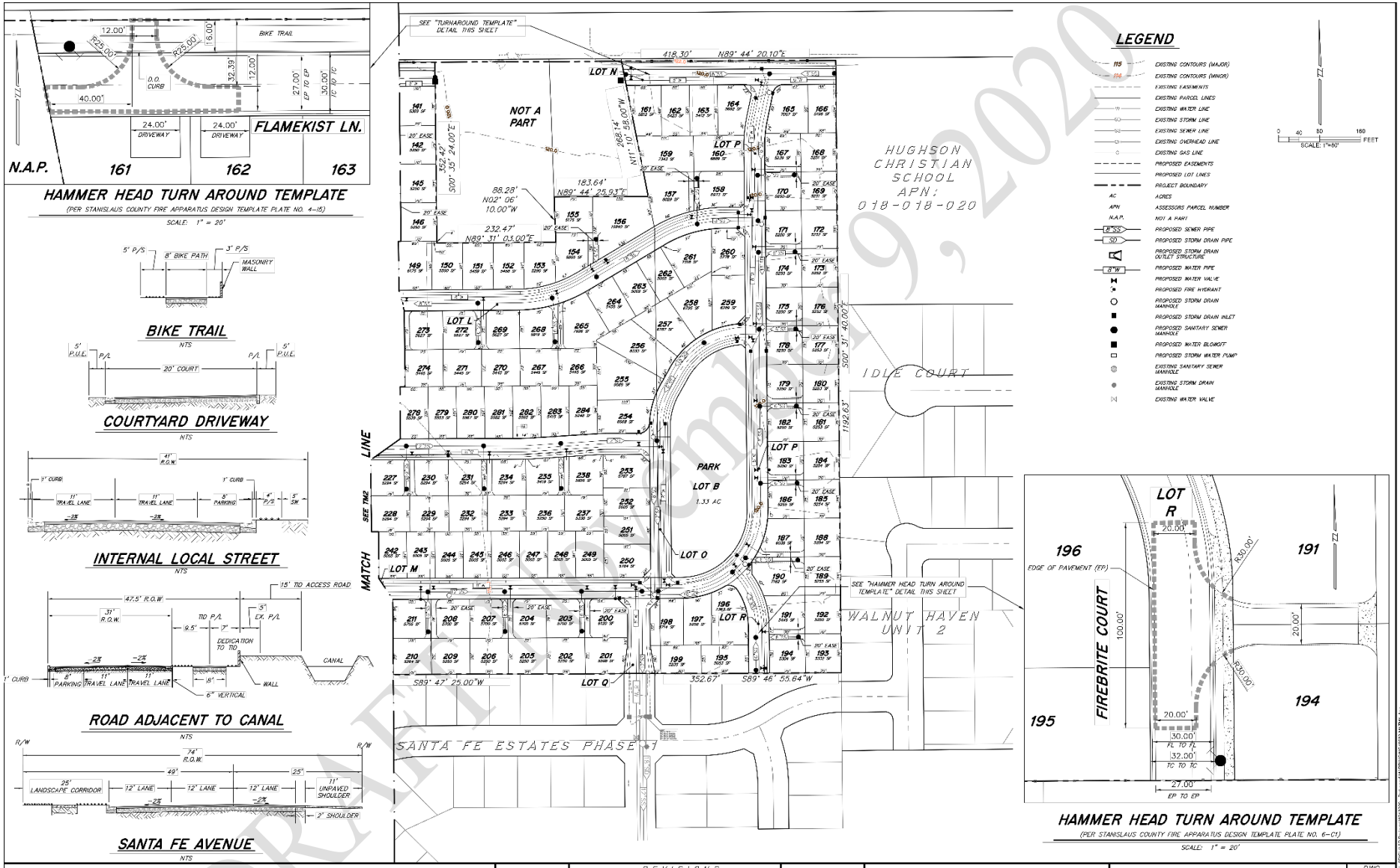


Drawn By:	TL		
Issue Date:	4/29/2020		
Job No.:	NC180.39		
Checked:	DAM		
Design By:	TL		

REVISIONS

NO.	DATE	ISSUED FOR	BY

04/30/2020

MVE Inc.
1117 L Street, Modesto, CA 95354 866.526.4214 | www.mve.net
Northern California Southern California | Nevada

PARKWOOD
VESTING TENTATIVE SUBDIVISION MAP
BEING A PORTION OF NORTH WEST QUARTER OF SECTION 8, TOWNSHIP 4 SOUTH, RANGE 10 EAST, MOUNT DIABLO MERIDIAN COUNTY OF STANISLAUS, STATE OF CALIFORNIA
HUGHSON CALIFORNIA

DWG. TM3
SHEET 3 OF 3

IF "" = "1" "" ""
1429220-6

CITY COUNCIL AGENDA ITEM NO. 5.2
SECTION 5: PUBLIC HEARING

Meeting Date: **November 9, 2020**
Subject: **Adopt Resolution No. 2020-69, Repealing Resolution No. 06-113 and 07-199 and Approving a New Development Impact Fee Nexus Study and Proposed Fees Prepared by Bartle Wells Associates**
Enclosure: **2020 Development Impact Fee Nexus Study**
Presented By: **Lea C. Simvoulakis, Community Development Director**

Approved By: Merry Mayhew

Staff Recommendation:

Adopt Resolution No. 2020-69, repealing Resolution No. 06-113 and 07-199, and approve the new Development Impact Fee Nexus Study and associated fees prepared by Bartle Wells Associates.

Background and Overview:

On April 27, 2020 Bartle Wells Associates (Bartle Wells) gave a presentation to the City Council identifying their analysis and recommendation for updates to the City's Development Impact Fee (DIF) Schedule. Development impact fees are fees charged by a local government agency in connection with a development project for the purpose of defraying all, or a portion of the cost of public facilities related to the development of the project. DIFs are not a tax or special assessment; rather they are voluntary fees that must be reasonably related ("nexus") to the cost of the service provided by the local agency. If a development impact fee does not relate to the impact created by the development or exceeds the reasonable cost of providing the public service, then the fee may be declared a special tax and require voter approval. A well-planned fee program should generate sufficient funds to allow the City to adequately mitigate impacts created by the new development.

In 2006, the City of Hughson contracted with Bartle Wells to develop a nexus study for DIFs. This Fee Nexus Study and fees were adopted by the City Council on July 24, 2006 by Resolution No. 06-113. In 2007 the City again contracted with Bartle Wells to reassess the Development Impact fee for Sewer, as it was based on an underestimated cost of the wastewater treatment plant upgrade and expansion required by the State of California. The Council approved Resolution No. 07-199 to increase the Sewer fee from $3,040.58 to $13,755. This Impact Fee, along with the other fees approved in 2006, have been in place for the last 13 years.

In 2018, City Council directed staff to have the Impact Fees reviewed to determine whether the fees needed to be increased, or even decreased. On December 10, 2018, the City Council approved Resolution No. 2018-51 authorizing the City Manager to execute a professional services agreement with Bartle Wells to amend the Development Impact Fee Nexus Study and identify new fees (lower or higher). The work on the study began in May 2019 and Bartle Wells presented their findings at the April 27, 2020 meeting. At this meeting, the Council asked Bartle Wells to address several outstanding questions related to the information presented.

Bartle Wells worked with City staff to update the City's development impact fees and to provide an analysis and nexus for the existing fees and the associated fund balances for each development impact fee. The updated report reviewed the projects included in the 2006 study with updated costing analysis and considered planned future Capital Improvement Projects. This report (Attachment 1) outlines the basis for increased development impact fees, the relationship between each fee and the development paying the fee, and clearly demonstrates that the fees are proportionate to the costs of the projects being funded.

Staff recommends adopting the new Study and the proposed fee increases presented by Bartle Wells. New Impact Fees have not been adopted by Council since 2006, with the exception of the Sever Impact Fee adopted in 2007. Based on a survey of surrounding cities, Hughson's current fees are about average. Four cities have lower fees (Newman, Modesto, Riverbank, and Stockton) and three cities have higher fees (Turlock, Patterson, and Manteca). The new Development Impact Fees would be higher than all the other cities' fees if adopted. The proposed fees are based on existing capital facilities and future capital improvement projects that will be necessary to keep the City's facilities operating and providing necessary services to the community. These fees essentially finance municipal public facilities to reduce the impacts caused by future development. Such improvements include, but are not limited to, expansion and construction of city streets and crossing systems, water services systems, the sanitary services system, the storm drain system, and future public facilities. The Bartle Wells study identifies that if fees are not increased, there will be deficiencies in the funds required to accommodate future needs within the City. To be clear, the impact fees charged to a development should bear a fair and reasonable relationship to each development's burden on and benefit from the facilities the new residents will be using. Given the future needs of the City and the limited development potential of remaining land uses, the Development Impact Fees should be increased more often to ensure that new development pays accurate fees as it relates to their impact on the City.

The presentation by Bartle Wells at the April 27, 2020 meeting was the first step in looking at the recommended changes to the Development Impact Fees. At this meeting, the Mayor asked the consultants to add several larger cities to their chart for comparison. Turlock, Patterson, Manteca, and Stockton currently all have higher fees than Hughson. Newman, Modesto, and Riverbank currently have lower fees than Hughson, largely due to their minimal sewer impact fee.

Now that these numbers were first reviewed by Council at a prior meeting, the item is now back for Council at a public hearing for review and adoption.

Fiscal Impact:

The below chart is from the Bartle Wells Study and identifies the proposed changes to the existing Development Impact Fees.

Table 7
City of Hughson
Proposed Fees

	SFD		MFD		Non Residential	
Proposed Fee Based on Meter Size	**Current**	**Proposed**	**Current (per DU)**	**Proposed MFD (Per DU)**	**Current**	**Proposed by Meter Size ($/1" Meter Shown)**
Water	$3,803	$8,119	$2,282	$5,277	$9,508 (1" Meter)	$13,623
Sewer	$13,755	$14,642	$9,628	$9,517	$19,395 (per 3,000 sq. ft.)	$24,569

	SFD		MFD		Industrial (1 DU = 3,000 Sq. Ft.)*	
Proposed Fee Based on Equivalent Dwelling Unit	**Current**	**Proposed**	**Current (per DU)**	**Proposed MFD (Per DU)**	**Current (per 1k Sq Ft.)**	**Proposed (per 1k Sq Ft.)**
Storm Drain	$2,814	$6,658	$2,189	$4,327	$1,781	$2,219
Public Facility Fee	$3,050	$4,509	$3,050	$2,931	$1,017	$1,503
Community Enhancement Fee	$1,008	$372	$605	$242	$336	$124
Streets	$4,101	$6,060	$2,778	$3,939	$2,760	$2,020
Park Development Fee	$2,667	$3,623	$1,600	$2,355	N/A	N/A
Park In-Lieu Fee	$1,991	$2,898	$1,194	$1,884	N/A	N/A
Total	**$33,189**	**$46,879**	**$23,326**	**$30,471**	**$46,585**	**$55,790**
% Increase		*41%*		*31%*		*20%*

*Commerical @ 1,700 sq. ft. = 1 SFD; industrial @ 3,000 sq. ft. = 1 SFD.; public @ 2,000 sq. ft. = 1 SFD

This table from the report shows the proposed development impact fee schedule for each customer class. The existing Development Impact Fees for a Single-Family development will increase from $33,189 per home to $46,879 per home which is a 41% increase in fees. The costs of Development Impact fees for Multifamily Development will increase from $23,326 per unit to $30,471 per unit. The Development Impact fees for non-residential uses will increase from $46,585 to $55,790. The most notable change for commercial and industrial development is that Bartle Wells is recommending using the water meter size for the sewer fee rather than a square foot requirement to better align with wastewater flows.

CITY OF HUGHSON
CITY COUNCIL
RESOLUTION NO. 2020-69

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HUGHSON REPEALING RESOLUTION NO. 06-113 AND RESOLUTION NO. 07-199 AND ADOPTING A NEW DEVELOPMENT IMPACT FEE NEXUS STUDY AND PROPOSED FEES PREPARED BY BARTLE WELLS ASSOCIATES

WHEREAS, the City Council seeks to ensure that new development pays for the impacts of new development; and

WHEREAS, in 2006 the City retained the firm Bartle Wells Associates to prepare a Development Impact Fee Nexus Study; and

WHEREAS, the City Council adopted the Development Impact Fee Nexus Study prepared by Bartle Wells by Resolution No. 06-113 and directed the fees of the study in accordance to Government Code Section 66017; and

WHEREAS, in 2007 the City again retained the firm Bartle Wells Associates to update the Sewer Impact Fee so that it would accurately account for the cost of the wastewater treatment plant upgrade and expansion; and

WHEREAS, the City Council adopted the updated Sewer Impact fee proposed by Bartle Wells by Resolution No. 07-199 and directed the fees of the study in accordance to Government Code Section 66017; and

WHEREAS, the City Council approved a Professional Services Agreement with Bartle Wells Associates on December 10, 2018 to review and amend the 2006 and 2007 Development Impact Fees so that the fees consider current City asset valuations and cost estimates for future improvements; and

WHEREAS, Bartle Wells presented an updated Development Impact Fee Nexus Study at the April 27, 2020 City Council meeting for City Council review; and

WHEREAS, the study has been presented for public comment at the regular meeting of November 9, 2020, following appropriate public noticing requirements pursuant to Government Code Section 66017.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Hughson accepts and adopts the amended Development Impact Fee Nexus Study and proposed fees prepared by Bartle Wells Associates dated November 2, 2020, and repeals Resolution No. 06-113 and 07-199, and directs that the fees of this study be applied upon the effective date as prescribed by Government Code Section 66017.

PASSED AND ADOPTED by the Hughson City Council at a regular meeting thereof, held on November 9, 2020, by the following vote:

>
>

AYES:

NOES:

ABSTENTIONS:

ABSENT:

APPROVED:

_____

JERAMY YOUNG, Mayor

ATTEST:

_____

ASHTON GOSE, Deputy City Clerk

BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS

1889 Alcatraz Avenue
Berkeley, CA 94703
510 653 3399 fax: 510 653 3769
www.bartlewells.com

November 2nd, 2020

Merry Mayhew, City Manager
City of Hughson
7018 Pine Street
Hughson, CA 95326

RE: Development Impact Fees Study

Bartle Wells Associates (BWA) is pleased to submit the attached *Development Impact Fees Study*. The report develops updated Development Impact Fees that are designed to equitably recover the costs of infrastructure and assets benefiting new development.

The City's current Development Impact Fees are based on a fee studies conducted in 2006 and 2007. BWA's proposed fees are based on existing City asset valuations and cost estimates for future park land development.

We enjoyed working with the City on this assignment and appreciate the input and assistance received from City staff throughout the project. Please contact us anytime if you have questions about this report or related impact fee issues.

BARTLE WELLS ASSOCIATES

Douglas Dove, PE, CIPFA
Principal/President

Michael DeGroot
Consultant

CONTENTS

Tables

Appendices

1. Background, Objectives, & Government Code

Background

The City of Hughson is an agricultural community located in Stanislaus County with an estimated population of 7,500.

Objectives

Key objectives of the study include:

- Review the City's current fees.
- Ensure that new development is adequately funding the costs of facilities that benefit them.
- Review the various proposed fee methodologies with City staff for conceptual agreement.

Development Impact Fee Government Code

Development impact fees are governed by California Government Code Section 66000 et. seq. commonly known as AB1600. The Code refers to impact fees as *capacity charges* since their purpose is to recover an equitable share of costs for capacity in infrastructure.

Section 66013 of the Code specifically governs water and sewer capacity charges and states that the fee "*shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed*" unless approved by a two-thirds vote.

The Code also states that *"Capacity charge means a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged."* The Code does not detail any specific method for determining an appropriate fee.

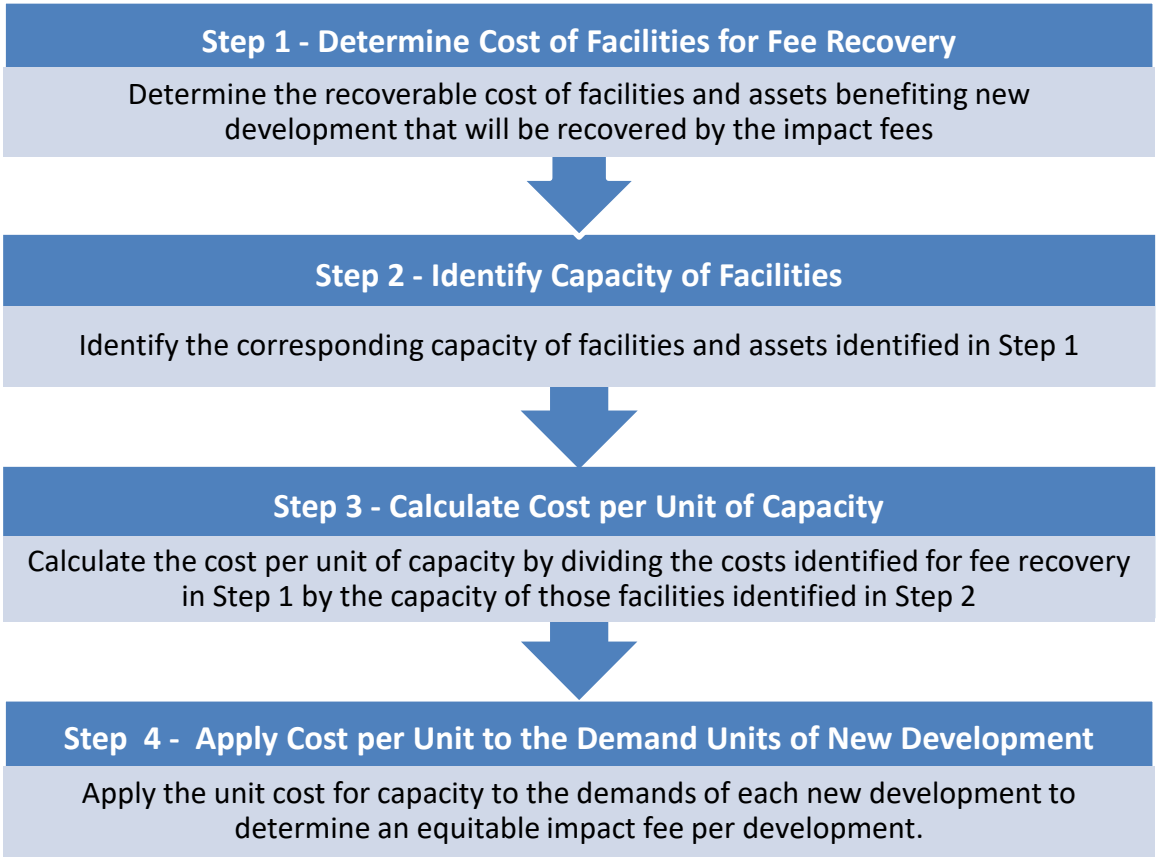
Section 66013 also identifies various accounting requirements for capacity fee revenues, notably that such revenues cannot be co-mingled with other City revenues and must be used solely for the purpose for which the fee was imposed.

2. Impact Fees

This section details the calculation of updated impact fees under the buy-in only approach. The fees were calculated and designed to be simple and straightforward to implement.

Impact Fee Methodology

There are many methods for calculating impact fees. The general methodology used in this report is summarized below.



Facility Cost Valuation

The fees (with exception to park in lieu and park development) are based on existing capital facilities, as identified in by the City's fixed asset list. Public Facilities includes one future project: a $500,000 general plan update and Water includes $5.6 MM of future projects identified to provide reliable water service through a 15-20 year planning period. Park fees are calculated based on the estimated cost per acre to develop future park land. All other fees are calculated based on a buy-in only methodology. Under this approach, the fee is based on the cost of existing facilities and assets (in current dollars) divided by the capacity of the system that would benefit from these assets.

Current Impact Fees

Table 1 shows the City's current impact fees. The fees were last updated in 2006 and 2007. Under the current structure, residential customers are charged a flat rate per unit, while nonresidential customers are charged a rate per one thousand square feet of new development. Water fees for nonresidential are charged based on meter size.

Table 1
City of Hughson
Summary of Current Fees

	Current (SFD)	Current (MFD)	Current (Industrial) - per 1k Sq. Ft.
Public Facility Fee	$3,050	$3,050	$1,017
Storm Drain Fee	$2,814	$2,189	$1,781
Sewer/Wastewater Fee	$13,755	$9,628	$6,465
Water fee	$3,803	$2,282	$9,508 (1" Meter)
Streets Fee	$4,101	$2,778	$2,760
Park Development Fee	$2,667	$1,600	N/A
Park In-Lieu Fee	$1,991	$1,194	N/A
Community Enhancement Fee	$1,008	$605	$336
	$33,189	$23,326	

Projected Customer Base

Table 2 shows the City's current and projected customer base. The customer base is currently comprised of 2,350 residential units (including 275 multifamily units). Non-residential customers floor area amounts to approximately 630,162 square feet. BWA estimates 1,700 commercial, 3,000 square foot of industrial or 2,000 square footage of public floor area to be equivalent to one residential dwelling unit. BWA equates the impact of one multifamily dwelling unit to be 65% of a single family unit based on 2015 U.S. Census data for Stanislaus County showing that multifamily units have 65% of the number of occupants than single family units on average. Based on these ratios, the existing customer base is 2,525 equivalent dwelling units (EDUs). BWA projects the customer base growing at approximately 2% per year over the next 20 years based on City projections, resulting in 3,492 residential units and 936,388 nonresidential square footage or 3,753 EDUs at buildout in 2039.

Table 2
City of Hughson
Existing and Projected Development - Full Sphere of Influence

	Existing Development		Projected New Development (20 Year, 2% Annual Growth)		Total Projected Development	
	Dwelling Units	Square Feet	Dwelling Units	Square Feet	Dwelling Units	Square Feet
Single family / mobile home	2,075		1,008		3,083	
Multi-family	275		134		409	
Commercial		225,766		109,710		335,476
Industrial		379,740		184,534		564,274
Public		24,656		11,982		36,638
Subtotal	2,350	630,162	1,142	306,226	3,492	936,388
Total	2,350	272	1,142	132	3,492	404
Total EDUs (1) (2)	2,525		1,227		3,753	

(1) - Single family @ 1 D.U. = 1 EDU; Multi-family @ 1 D.U. = .65 EDUs
(2) - Commercial @ 1,700 sq. ft. = 1 EDU; industrial @ 3,000 sq. ft. = 1 EDU.; public @ 2,000 sq. ft. = 1 EDU

Table 3 shows the City's current and projected water meters by meter size. The customer base is currently comprised of 1,972 metered connections or 2,341 equivalent 5/8" meters. The meter equivalents are based on American Water Works Association (AWWA) standard flow ratios. BWA projects total 5/8" meter equivalents of 3,479 in 20 years based on a 2% estimated annual growth rate.

Table 3
City of Hughson
Water Meter Count and Equivalent Meters

Meter Type	Total	AWWA* Meter Ratio	Equivalents	Distribution	Projected Meter Equivalents (20 Years, 2% Growth)
5/8 or 3/4"	1,911	1.0	1,911	82%	2,840
1"	13	1.7	22	1%	32
1 1/2"	11	3.3	37	2%	54
2"	24	5.3	128	5%	190
2 & 3/4"	1	6.3	6	0%	9
4"	5	16.7	83	4%	124
6"	1	33.3	33	1%	50
6" Fire Protection	1	3.3	3	0%	5
8"	2	53.3	107	5%	158
8" Fire Protection	2	5.3	11	0%	16
Total Meters	1,972		2,341	100%	3,479

*American Water Works Association

Fee Calculations

Table 4 shows the existing valuation of the City's existing assets by department. The total cost of existing system assets at historical purchase prices is approximately $117 MM. BWA adjusted the purchase cost to

today's dollars using the Engineering News-Record Construction Cost Index (ENR CCI). The current value of City assets in today's dollars excluding depreciation is estimated to be $223 MM. Taking out accrued depreciation, the replacement cost less depreciation (RCNLD) of City assets is estimated to be $145 MM. Appendix A shows detailed asset lists and valuations for each of the City's departments. To calculate capacity fees, BWA divided the RCNLD of City assets by the estimated 2039 meter equivalents for water and sewer and total dwelling units for all other fees.

Table 4
City of Hughson
Existing Asset Valuation

Fee Category	Orig Cost	Current $[1]	RCNLD[2]	Projected EDUs / Meter Equivalents (2039)	$/EDU or Meter Equivalent[3]
Water	$26,001,287	$50,375,929	$28,242,931	3,479	$8,119
Sewer	41,546,971	68,352,419	50,935,539	3,479	$14,642
Storm	12,248,901	45,003,784	24,984,051	3,753	$6,658
Community Enhancement	1,674,215	2,671,695	1,395,728	3,753	$372
Public Facilities	13,770,741	19,055,249	16,919,509	3,753	$4,509
Streets	21,688,532	37,689,760	22,739,747	3,753	$6,060
Total	$116,930,647	$223,148,836	$145,217,504		

1 Valued in current dollars by Engineering News-Record Construction Cost Index (ENR CCI)
2 Replacement Cost New Less Depreciation.
3 Fees for Water & Sewer based on meter size, all other based on equivalent dwelling units (EDU)

Table 5 shows the calculation for the Park In-Lieu Fee. The Quimby Act allows the City to require that new development set aside some amount of land (between 3 and 5 acres / 1,000 people) for the purposes of providing park land. Developers have the choice of physically securing suitable land for this set-aside or paying a park "in-lieu" fee calculated such that the City can use those funds to procure the land itself. For the purposes of this study, we estimate that the cost of providing this land, in-lieu of dedicating it directly, would be approximately $300,000 per acre. We estimate that 10.52 acres of park land would cost approximately $3.2 MM. With 1,089 new residential EDUs being added, the cost per EDU is $2,898.

Table 5
City of Hughson
Park In-Lieu Fee

	Area	Cost / acre	Total Cost	Allocation to growth
Future Park Land Requirements				
Future park land purchases[1]	10.52	$300,000	$3,154,537	100%
	10.52		$3,154,537	100%
Total allocated value to growth			$3,154,537	
Projected future residential EDUs[2]			1,089	
Projected park in-lieu fee (single family residence)			$2,898	
Projected park in-lieu fee (multi-family residence)			$1,884	

1 - BWA estimated cost
2 - Assumes population growth in city limits of 3,505 and desired ratio of 3 acres/1,000 residents

Table 6 shows the calculation for the Park Development Impact Fee. The park development impact fee is assessed to recover the costs of providing parks for future residents. Based on criteria outlined in the Quimby Act, we estimate that the City of Hughson will add 3 acres of developed park for every 1,000 new residents.

BWA estimates that the City will add approximately 1,089 new EDUs and 3,505 residents within the City limits. At this desired ratio, this means the City will need to provide approximately 10.52 acres of new parks for these residents. Rough cost estimates suggest that the cost of developing these parks (exclusive of the cost of purchasing land, see Park In-Lieu Impact Fee), will average around $750,000 per acre. This means total park development costs could approach $7.9 MM. Approximately $3.9 million of this amount is allocable to future development.

These parks will be used almost exclusively for the purposes of providing recreation to City residents and as such, are not allocable to commercial development. Divided among the estimated 1,089 residential EDUs expected within the City limits (with multi-family residences being assessed the fee at 0.65 EDU), the single family residential park development impact fee is $3,623.

Table 6
City of Hughson
Park Development Impact Fee

	Area	Cost / acre[1]	Total cost	Allocation to growth
Future Park Development				
Future park development	10.52	$750,000	$7,886,343	50%
	10.52		$7,886,343	
Total allocated value to growth			$3,943,172	
Projected future residential EDUs			1,089	
Projected parks development fee (single family residence)			$3,623	
Projected parks development fee (multi-family residence)			$2,355	

1 - BWA estimated cost

Proposed Fees

Table 7 shows the proposed development impact fee schedule for each customer class. BWA recommends charging commercial and industrial based on water meter size for sewer rather than square footage to better align with wastewater flows. Proposed fees are based on the following standard ratios: one single family EDU = 0.65 multifamily dwelling units, 1,700 square foot of commercial floor area and 3,000 square foot of industrial floor area.

Table 7
City of Hughson
Proposed Fees

	SFD		MFD		Non Residential	
Proposed Fee Based on Meter Size	**Current**	**Proposed**	**Current (per DU)**	**Proposed MFD (Per DU)**	**Current**	**Proposed by Meter Size ($/1" Meter Shown)**
Water	$3,803	$8,119	$2,282	$5,277	$9,508 (1" Meter)	$13,623
Sewer	$13,755	$14,642	$9,628	$9,517	$19,395 (per 3,000 sq. ft.)	$24,569

	SFD		MFD		Industrial (1 DU = 3,000 Sq. Ft.)*	
Proposed Fee Based on Equivalent Dwelling Unit	**Current**	**Proposed**	**Current (per DU)**	**Proposed MFD (Per DU)**	**Current (per 1k Sq Ft.)**	**Proposed (per 1k Sq Ft.)**
Storm Drain	$2,814	$6,658	$2,189	$4,327	$1,781	$2,219
Public Facility Fee	$3,050	$4,509	$3,050	$2,931	$1,017	$1,503
Community Enhancement Fee	$1,008	$372	$605	$242	$336	$124
Streets	$4,101	$6,060	$2,778	$3,939	$2,760	$2,020
Park Development Fee	$2,667	$3,623	$1,600	$2,355	N/A	N/A
Park In-Lieu Fee	$1,991	$2,898	$1,194	$1,884	N/A	N/A
Total	**$33,189**	**$46,879**	**$23,326**	**$30,471**	**$46,585**	**$55,790**
% Increase		*41%*		*31%*		*20%*

*Commerical @ 1,700 sq. ft. = 1 SFD; industrial @ 3,000 sq. ft. = 1 SFD.; public @ 2,000 sq. ft. = 1 SFD

Table 8 shows the full schedule of water and sewer fees based on meter size. Private fire meters are recommended to be charged 10% of the regular meter fee to reflect the benefits private customers receive such as saving lives and extinguishing fires more quickly. The nature of this capacity differs from a regular meter capacity because it is on standby and not used except in emergencies. Additionally, private fire meters provide benefits to the public at large by preventing the spreading of fires. Therefore, the fee for private fire meters should be a fraction of the fee for a standard meter. Industry standard capacity fees for fire meters range from 0% to 25% of the standard meter capacity fee.

Table 8
City of Hughson
Full Schedule of Fees Based on Meter Size

Meter Type	Meter Ratio	Water Fee	Sewer Fee
3/4" & Below & Residential	1.0	$8,119	$14,642
1"	1.7	$13,623	$24,569
1 1/2"	3.3	$27,061	$48,804
2"	5.3	$43,295	$78,082
2 & 3/4"	6.3	$51,414	$92,723
4"	16.7	$135,302	$244,014
6"	33.3	$270,607	$488,034
8"	53.3	$432,970	$780,852
6" Fire Protection*	3.3	$27,061	N/A
8" Fire Protection*	5.3	$43,297	N/A

*Fire meter ratio 10% of regular meter

APPENDIX A

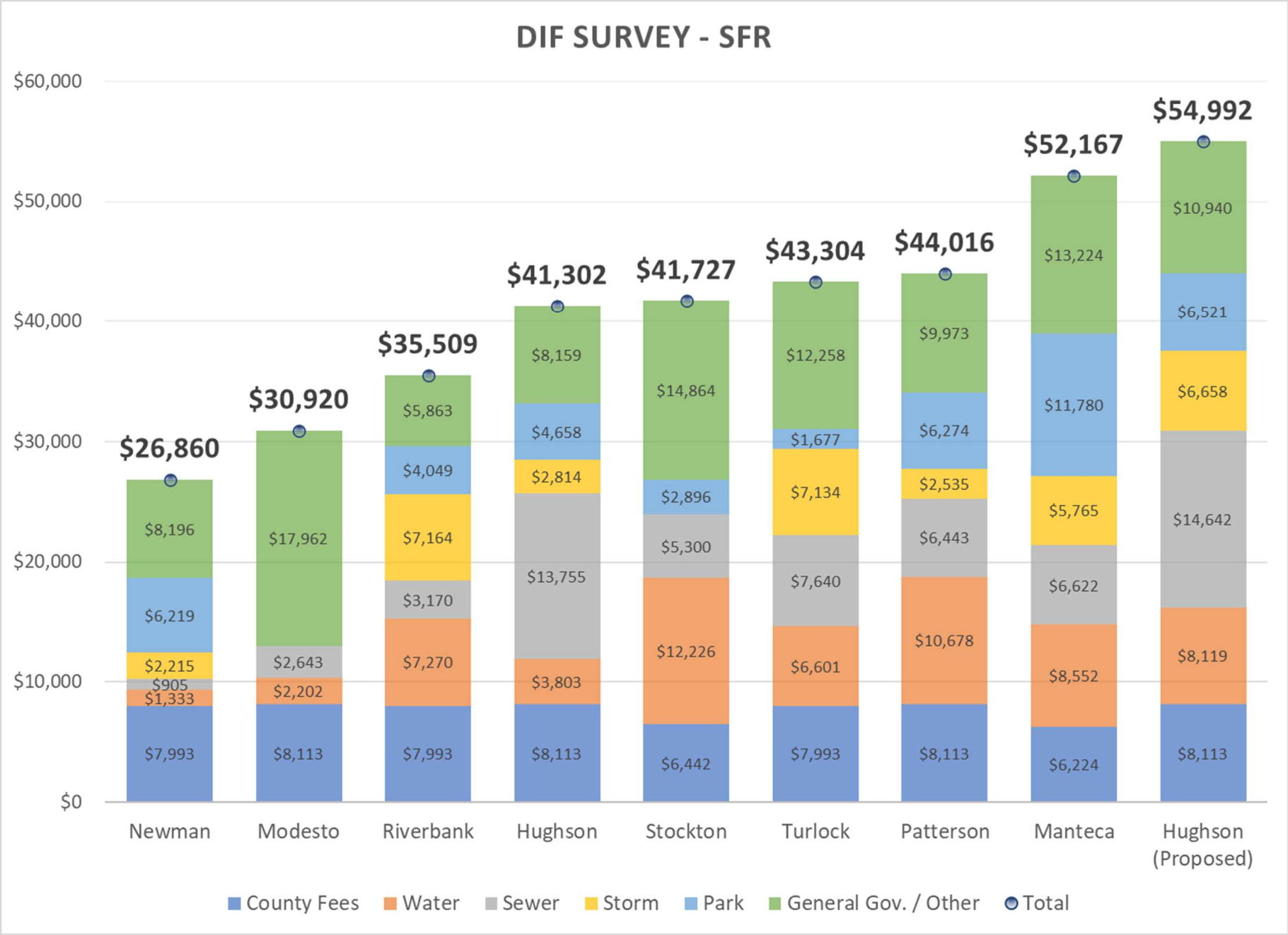
Fixed Asset Lists
& Valuation

Hughson Existing Asset Valuation, 2020			
Water	**Original Cost**	**Original Cost, Current $**	**Replacement Cost New Less Depreciation**
Buildings	$2,127,666	$3,009,737	$1,805,842
Equipment	43,130	48,501	19,044
Improvements	4,174,182	14,279,915	1,452,899
Land	2,928,159	4,527,708	4,527,708
Vehicles	50,822	54,745	24,814
Water Lines	5,961,172	16,971,975	9,463,036
Well #9	4,697,319	4,697,319	4,697,319
Water Conservation Program (Future)	1,700,000	1,700,000	1,700,000
Non-Potable Irrigation System (Future)	1,900,000	1,900,000	1,900,000
Conveyance System Improvements (Future)	1,750,000	1,750,000	1,750,000
Water Master Plan (Future)	250,000	250,000	250,000
Water Meter Radios	21,983	21,983	21,983
Smart Water Meters	250,000	250,000	250,000
Kubota RTV (1/3)	5,517	5,517	5,517
Well	141,337	908,530	374,769
Grand Total	$26,001,287	$50,375,929	$28,242,931
Sewer & Storm	**Original Cost**	**Original Cost, Current $**	**Replacement Cost New Less Depreciation**
Buildings	$25,215,708	$30,213,618	$23,502,209
Equipment	51,295	63,734	2,008
Improvements	114,514	124,821	112,339
Land	15,075,537	30,432,598	30,432,598
Lift Station	219,667	332,435	270,381
Machinery	235,695	486,261	0
Sewer Lines	8,065,453	21,784,365	11,801,455
Storm Drain Lines	4,615,295	29,667,632	9,747,936
Vehicles	191,675	239,706	39,630
Grand Total	$53,784,839	$113,345,170	$75,908,556
Sewer			
Buildings	$25,215,708	$30,213,618	$23,502,209
Equipment	51,295	63,734	2,008
Improvements	114,514	124,821	112,339
Land (1/2)	7,537,769	15,216,299	15,216,299
Lift Station	219,667	332,435	270,381
Machinery	235,695	486,261	0
Sewer Lines	8,065,453	21,784,365	11,801,455
Kubota RTV (2/3)	11,033	11,033	11,033
Vehicles (1/2)	95,837	119,853	19,815
Grand Total	$41,546,971	$68,352,419	$50,935,539
Storm			
Land (1/2)	7,537,769	15,216,299	15,216,299
Storm Drain Lines	4,615,295	29,667,632	9,747,936
Vehicles (1/2)	95,837	119,853	19,815
Grand Total	$12,248,901	$45,003,784	$24,984,051
Community/Senior Center (Community Enhancement)	**Original Cost**	**Original Cost, Current $**	**Replacement Cost New Less Depreciation**
Buildings	$725,283	$1,348,876	$449,625
Land	105,073	195,414	195,414
Grand Total	$830,356	$1,544,289	$645,039
RDA (Community Enhancement)	**Original Cost**	**Original Cost, Current $**	**Replacement Cost New Less Depreciation**
Buildings	$300,891	$425,632	$255,379
Improvements	495,038	633,973	443,781
Statue	47,930	67,800	51,528
Grand Total	$843,859	$1,127,405	$750,688
Community Services (Public Facilities)	**Original Cost**	**Original Cost, Current $**	**Replacement Cost New Less Depreciation**
Buildings	$455,181	$615,209	$394,197
Improvements	5,508,058	6,952,617	5,037,888
General Plan Update (Future)	500,000	500,000	500,000
Lebright Field Purchase (1/2)	149,886	149,886	149,886
Land	7,157,617	10,837,538	10,837,538
Grand Total	$13,770,741	$19,055,249	$16,919,509

General Government (Streets)	Original Cost	Original Cost, Current $	Replacement Cost New Less Depreciation
Buildings	$258,266	$969,119	$0
Equipment	362,360	507,822	29,732
Improvements	102,430	134,462	82,291
Land	1,923,308	3,325,595	3,325,595
Machinery	58,013	103,965	0
Roadways	2,777,617	4,246,654	4,246,654
POD Cameras for LE	42,841	42,841	42,841
Vehicles	74,508	124,614	0
Grand Total	$5,599,343	$9,455,072	$7,727,113
Public Works (Streets)	**Original Cost**	**Original Cost, Current $**	**Replacement Cost New Less Depreciation**
Bridges	$1,696,265	$3,457,095	$1,678,185
Buildings	206,457	514,817	0
Curb & Gutter	2,371,196	4,058,408	2,430,780
Equipment	138,297	183,853	23,182
Land	116,859	196,717	196,717
Machinery	183,889	269,214	0
Pavement	7,541,218	13,373,151	7,392,434
Pump Station	233,183	339,004	283,916
Sidewalk	1,074,859	1,684,849	1,060,107
Soundwalls	313,700	869,386	243,428
Street Lights	167,439	1,076,317	64,579
Mowers	12,500	12,500	12,500
Santa Fe S Overlay (FY 19/20)	362,600	362,600	362,600
Santa Fe N Overlay (FY 18/19)	477,898	477,898	477,898
2nd St Project	342,945	342,945	342,945
Locust Street Widening	208,832	208,832	208,832
Lebright Field Purchase (1/2)	149,886	149,886	149,886
Vehicles	491,167	657,216	84,646
Grand Total	$16,089,189	$28,234,688	$15,012,634

APPENDIX B

Regional Impact Fee Survey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Hughson
Stockton
Turlock
Patterson
Manteca
Hughson (Proposed)
County Fees
Water
Sewer
Storm
Park
General Gov. / Other
Total