



SEASIDE COUNTY SANITATION DISTRICT

440 HARCOURT AVE * SEASIDE, CA 93955

Telephone (831) 899-6825

BOARD MEMBER

Ralph Rubio

Chair

City of Seaside

440 Harcourt Ave

Seaside, CA 93955

(831) 899-6825

Jerry Blackwelder

First Vice Chair

City of Sand City

1 Sylvan Park

Sand City, CA 93955

(831) 394-3054

Pat Lintell

Second Vice Chair

City of Del Rey Oaks

650 Canyon Del Rey

Del Rey Oaks, CA

93940

(831) 394-8511

DISTRICT STAFF

Craig Malin

District Manager

440 Harcourt Avenue

Seaside, CA 93955

(831) 899-6701

Rick Riedl

District Engineer

440 Harcourt Avenue

Seaside, CA 93955

(831) 899-6884

Jesse Avila

Legal Counsel

County Counsel

168 West Alisal Street

Third Floor

Salinas, CA 93901

(831) 755-5045

Lesley Milton-Rerig

District Clerk

440 Harcourt Avenue

Seaside, CA 93955

(831) 899-6707

REGULAR MEETING AGENDA

Board of Directors

Tuesday, December 12, 2017 9:30 AM,

City of Seaside Conference Room

440 Harcourt Ave, Seaside, CA 93955

1. CALL TO ORDER

Ralph Rubio

Jerry Blackwelder

Pat Lintell

Chair

First Vice Chair

Second Vice Chair

2. ROLL CALL

3. ORAL COMMUNICATIONS COMMENTS

Members of the public may address the Board regarding any item within the subject matter jurisdiction of the Board; however, no action may be taken on off-agenda items unless authorized by law. To be able to properly identify those making comments in the meeting minutes, it would be helpful if speakers state their names. Comments shall be limited to matters not listed on the agenda. Members of the public may comment on any matter listed on the agenda at the time the Board considers that matter. Each person's presentation is limited to a maximum of three (3) minutes.

4. CONSENT AGENDA

A. APPROVAL OF MINUTES FROM THE NOVEMBER 14, 2017 REGULAR MEETING.

PURPOSE: To review and approve the minutes from the November 14, 2017 Regular Meeting.

RECOMMENDATION: That the minutes be reviewed and approved.

**B. RECEIVE SEASIDE COUNTY SANITATION DISTRICT
OPERATIONS REPORT FOR NOVEMBER 2017.**

PURPOSE: Receive monthly report for sewer maintenance and stoppages for November 2017.

RECOMMENDATION: Accept reports. This item is presented for information only.

**C. APPROVAL OF OCTOBER AND NOVEMBER 2017
EXPENDITURE REPORT FOR SEASIDE COUNTY
SANITATION DISTRICT**

PURPOSE: Approval of expenditures for October and November 2017 for the Seaside County Sanitation District in the amount of \$86,064.64.

RECOMMENDATION: Approve expenditures for October and November 2017. Total expenditures were \$86,064.64.

5. NEW BUSINESS

A. APPROVE A RESOLUTION AMENDING THE PROFESSIONAL SERVICES AGREEMENT WITH WALLACE GROUP FOR AN AMOUNT NOT TO EXCEED FOURTEEN THOUSAND SIX HUNDRED TWENTY-ONE DOLLARS (\$14,621) TO PROVIDE FINANCIAL SERVICES.

PURPOSE: The purpose of this item is for the District Board to consider amending a professional services agreement with Wallace Group (Wallace) for professional services in support of the possible application to the Monterey County Local Agency Formation Commission (LAFCO) for the expansion of the sphere of influence and service area annexation. The proposed amendment to the agreement would compensate Wallace for professional services provided on a time and materials basis not to exceed Fourteen Thousand Six Hundred Twenty-One Dollars (\$14,621).

RECOMMENDATION: It is recommended that the District Board adopt a resolution approving the amendment to the professional services agreement with Wallace to provide professional services in support of the possible application to the Monterey County Local Agency Formation Commission (LAFCO) for an amount not to exceed Fourteen Thousand Six Hundred Twenty- One Dollars.

**B. APPROVE A RESOLUTION FOR A CONTRACT
AMENDMENT #4 TO A PROFESSIONAL SERVICES
AGREEMENT WITH HARRIS & ASSOCIATES FOR AN
AMOUNT NOT TO EXCEED ONE HUNDRED AND SIXTY
SEVEN THOUSAND THREE HUNDRED AND SEVENTY
DOLLARS (\$167,370) FOR CAPITAL IMPROVEMENT
PROGRAM MANAGEMENT AND PROJECT DELIVERY
SERVICES FOR FISCAL YEAR 2017/2018.**

PURPOSE: The purpose of this item is for the Board to consider a contract amendment with Harris & Associates for an amount not to exceed One Hundred and Sixty Seven Thousand Three Hundred and Seventy Dollars (\$167,370) to provide program management and project delivery services for the 2017/2018 CIP projects and authorizing the District Manager to execute the contract amendment.

RECOMMENDATION: It is recommended that the Board adopt a resolution for a contract amendment with Harris & Associates for an amount not to exceed One Hundred and Sixty Seven Thousand Three Hundred and Seventy Dollars (\$167,370) to provide program management and project delivery services for the 2017/2018 CIP projects and authorizing the District Manager to execute the contract amendment.

C. APPROVE RESOLUTION FOR A CONTRACT AMENDMENT NO. 3 TO A PROFESSIONAL SERVICES AGREEMENT WITH HARRIS & ASSOCIATES FOR AN AMOUNT NOT TO EXCEED THIRTY ONE THOUSAND FOUR HUNDRED THIRTY DOLLARS (\$31,430) FOR EMERGENCY CONSTRUCTION SUPPORT, ENVIRONMENTAL PERMITTING, AND INSPECTION SERVICES FOR 942 ANGELUS WAY SEWER LINE UPGRADE.

PURPOSE: The purpose of this item is to approve the retention of Harris & Associates for emergency construction support, environmental permitting, and inspection services as a result of a sewer main break at 942 Angelus Way (a private residence) that required immediate construction services.

RECOMMENDATION: It is recommended that the Board adopt a resolution for a contract Amendment with Harris & Associates for an amount not to exceed Thirty One Thousand Four Hundred Thirty Dollars (\$31,430) to provide emergency construction support, environmental permitting, and inspection services and authorizing the District Manager to execute the Amendment.

D. ADOPT RESOLUTION APPROVING CONTRACT WITH MONTEREY PENINSULA ENGINEERING INC FOR AN AMOUNT NOT TO EXCEED SIXTY FIVE THOUSAND NINE HUNDRED TWENTY EIGHT DOLLARS (\$65,928) FOR EMERGENCY CONSTRUCTION OF THE 942 ANGELUS WAY SEWER MAIN UPGRADE.

PURPOSE: The purpose of this item is to approve the retention of Monterey Peninsula Engineering Inc. for the emergency construction of the sewer main at 942 Angelus Way.

RECOMMENDATION: It is recommended that the Board adopt a resolution approving the Contract with Monterey Peninsula Engineering for an amount not to exceed Sixty Five Thousand Nine Hundred Twenty Eight Dollars (\$65,928) to provide emergency construction services and authorizing the District Manager to execute the Contract.

6. STAFF REPORTS

Staff reports include items for which verbal reports/presentations will be provided. If a specific Seaside County Sanitation District presentation is planned, it will be listed and information included with the Agenda. Brief oral reports may be provided for items arising after the Agenda was prepared. The Board may wish to ask questions or discuss a staff report, but no action is appropriate other than referral to staff, or request that a matter be set as a future Agenda item.

A. LETTER TO MARINA COAST WATER DISTRICT

7. BOARD MEMBERS COMMENTS

8. ADJOURNMENT

Next Regularly Scheduled Meeting:
January 9, 2018
Seaside City Hall
9:30 AM

In compliance with the Americans with Disabilities Act (ADA), the Seaside County Sanitation District (SCSD) does not discriminate against persons with disabilities. SCSD's meetings are held at an accessible facility. Any person with a disability who requires a modification or accommodation to be able to participate in this meeting is asked to contact the office of the District Clerk at cityclerk@ci.seaside.ca.us 831-899-6707, no fewer than two business days prior to the meeting to allow for reasonable arrangements. Agenda related writings or documents provided to the SCSD Board of Directors are available for public inspection during the meeting or may be requested from the office of the District Clerk. This agenda is posted in compliance with California Government Code Section 54954.2(a) or Section 54956.

Agenda related writings or documents provided to the Board are available for public inspection during the meeting or may be requested from the office of the District Clerk.



DRAFT MINUTES
SEASIDE COUNTY SANITATION DISTRICT
Tuesday, November 14, 2017 9:30 AM
REGULAR MEETING
Seaside Conference Room

1. CALL TO ORDER

The meeting was called to order at 9:30 a.m.

2. ROLL CALL

Present: Lintell, Blackwelder, Rubio

3. ORAL COMMUNICATIONS COMMENTS

There were no public comments.

4. CONSENT AGENDA

On motion by Second Vice Chair Lintell and seconded by First Vice Chair Blackwelder and passed by the following vote the Seaside County Sanitation District approved Consent Agenda.

RESULT:	Approved
MOVER:	Second Vice Chair Pat Lintell
SECONDER:	First Vice Chair Jerry Blackwelder
AYES:	Ralph Rubio, Jerry Blackwelder, Pat Lintell
NOES:	None
ABSENT:	None

A. APPROVAL OF MINUTES FROM THE OCTOBER 10, 2017 REGULAR MEETING.

Action: Approved

B. SEASIDE COUNTY SANITATION DISTRICT OPERATIONS REPORT FOR OCTOBER 2017

Action: Received

5. NEW BUSINESS

A. APPROVE A RESOLUTION AUTHORIZING THE DISTRICT MANAGER TO EXECUTE A SEWER EASEMENT AGREEMENT WITH COMMUNITY HOSPITAL PROPERTIES AT 1156 FREMONT BOULEVARD

Item was presented by District Engineer, Rick Riedl. Mr. Riedl explained that the Community Hospital Properties dedicate an easement to us located at 1156 Fremont Boulevard as it is part of their permit process, this will finalize the dedication with their agreement. Through the resolution we are accepting the easement. Second Vice Chair Lintell had questions that were answered by staff. There were no further questions by the Board.

On motion by First Vice Chair Blackwelder and seconded by Second Vice Chair Lintell

and passed by the following vote the Seaside County Sanitation District adopted Resolution approving sewer easement agreement with Community Hospital Properties at 1156 Fremont Boulevard.

RESULT: **Approved**
MOVER: First Vice Chair Jerry Blackwelder
SECONDER: Second Vice Chair Pat Lintell
AYES: Ralph Rubio, Jerry Blackwelder, Pat Lintell
NOES: None
ABSENT: None

6. STAFF REPORTS

A. FATS, OILS & GREASE (FOG) CORRESPONDENCE

District Engineer Rick Riedl informed the Board about the grease correspondence with different businesses establishments. Most of the businesses were in compliance except for one.

B. 942 ANGELUS WAY SANITARY SEWER OVERFLOW - INFORMATION

District Engineer Rick Riedl informed the Board about the sewer spill on 942 Angelus Way in Del Rey Oaks. SCSD staff with assistance from City of Monterey and Monterey One Water took care of the issue. There were questions by the Board and answered by Mr. Riedl.

7. BOARD MEMBERS COMMENTS

None

8. ADJOURNMENT

On motion, the meeting was adjourned at 9:44 a.m.

Respectfully Submitted,

Lesley E. Milton-Rerig, District Clerk

Ralph Rubio, Chair



**SEASIDE COUNTY SANITATION DISTRICT
STAFF REPORT**

Item No.: 4.B.

TO: Seaside County Sanitation District

FROM: Craig Malin, District Manager

BY: Rick Riedl, City Engineer
Leslie Llantero, Assistant Engineer

DATE: December 12, 2017

**SUBJECT: RECEIVE SEASIDE COUNTY SANITATION DISTRICT
OPERATIONS REPORT FOR NOVEMBER 2017.**

PURPOSE

Receive monthly report for sewer maintenance and stoppages for November 2017.

RECOMMENDATION

Accept reports. This item is presented for information only.

BACKGROUND

Attached is the Seaside County Sanitation District Operations Report and Flush Map for November 2017.

FISCAL IMPACT

There is no fiscal impact associated with this item.

ATTACHMENTS

1. Monthly Operations Report
 2. Flush Map
-

Reviewed for Submission By:

Craig Malin, District Manager

Seaside County Sanitation District Operations Report

Fiscal Year 2017/2018 Month of November

	Del Rey Oaks (42,240)		Sand City (26,400)		Seaside (316,800)		District Totals (385,440 ft.)	
	Month	YTD	Month	YTD	Month	YTD	Month	YTD
Maintenance								
Mainline Rodded		0		0		0	0	0
Main Line Jetted		15,672		0		71,954	0	87,626
Main Line Video		0		0		0	0	0
Main Lines Treated for Grease Control (Jet Power II)		948		760		13,599	0	15,307
Stoppages								
Main Line	1	1		0	1	7	2	8
Laterals		0		0	2	4	2	4

Sewer Repairs

942 Angelus Way-Emergency Repair-Replaced approximate 50' of sewer main

Sewers Video

942 Angelus Way

Stoppage Locations

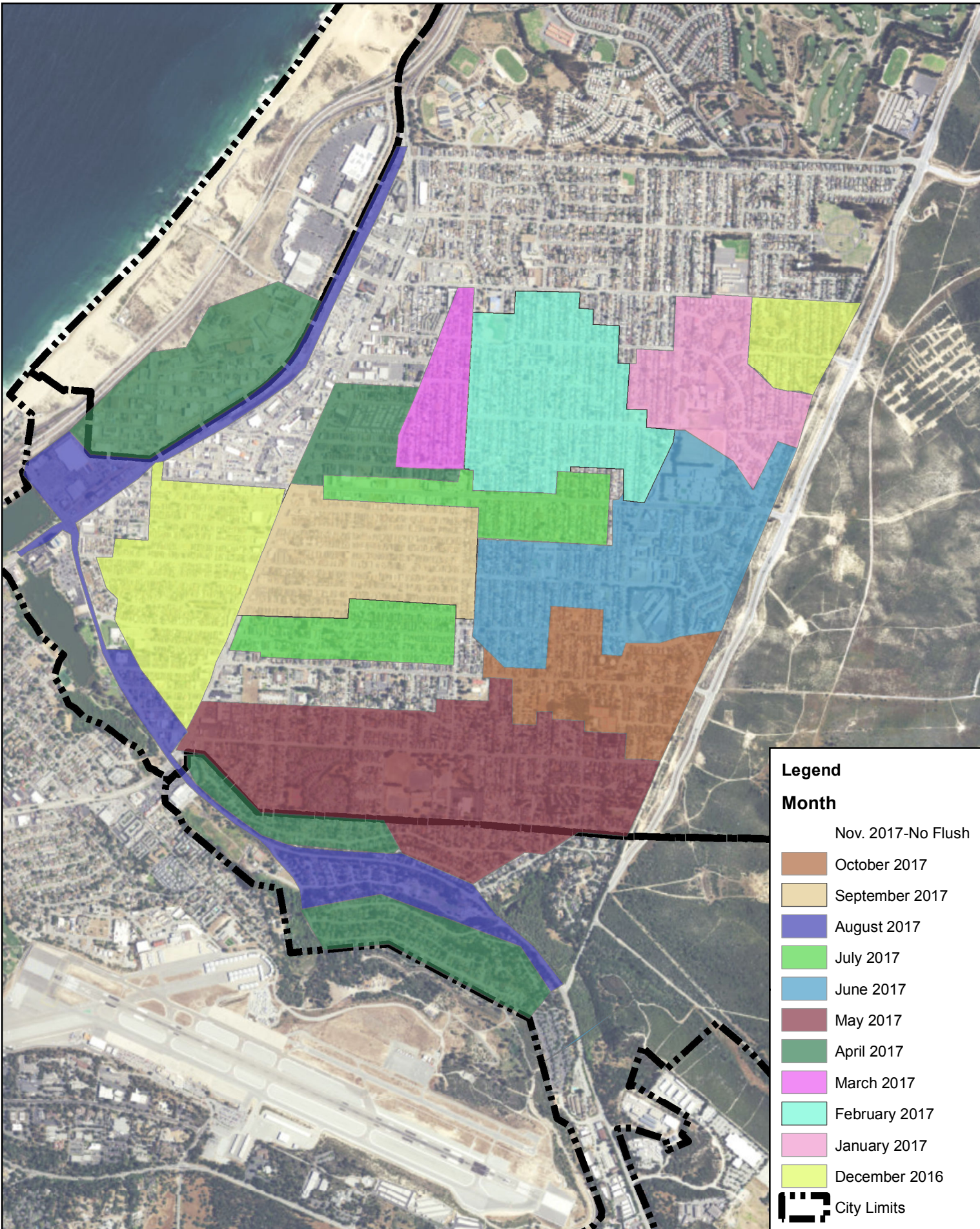
Del Rey Oaks

942 Angelus Way (ML/SSO-debris & rags)

Sand City

Seaside

1699 Soto Street
1081 Douglas Court (ML-grease)
1279 La Jolla Avenue



Legend

Month

Nov. 2017-No Flush

October 2017

September 2017

August 2017

July 2017

June 2017

May 2017

April 2017

March 2017

February 2017

January 2017

December 2016

City Limits



0 1,250 2,500
Feet

Source: SCSD, AMBAG

SEASIDE COUNTY SANITATION DISTRICT

Flush Map

Packet Page 11 Exhibit



**SEASIDE COUNTY SANITATION DISTRICT
STAFF REPORT**

Item No.: 4.C.

TO: Seaside County Sanitation District

FROM: Craig Malin, District Manager

BY: Daphne Hodgson, Deputy City Manager Administrative Services

DATE: December 12, 2017

**SUBJECT: APPROVAL OF OCTOBER AND NOVEMBER 2017 EXPENDITURE
REPORT FOR SEASIDE COUNTY SANITATION DISTRICT**

PURPOSE

Approval of expenditures for October and November 2017 for the Seaside County Sanitation District in the amount of \$86,064.64.

RECOMMENDATION

Approve expenditures for October and November 2017. Total expenditures were \$86,064.64.

BACKGROUND

The expenditure report for the months of October and November 2017 is attached. The cash balance as of November 30, 2017 was \$7,209,210.87.

FISCAL IMPACT

No fiscal impact.

ATTACHMENTS

1. Expenditure Detail - October and November 2017
 2. EFT Report - October and November 2017
-

Reviewed for Submission By:

Craig Malin, District Manager

**Seaside County Sanitation District
Year-to-Date 2017-2018 Expenses
October and November 2017**

Authorized for Payment by the Board of Directors

ACCOUNT NUMBER	DESCRIPTION	TOTAL CHARGES YTD	TOTAL BILLED YTD	TOTAL DUE
951-0-8810-0001	Admin. Salary	17,204.46	10,378.29	6,826.17
951-0-8810-0010	Management Leave Payoff	1,225.25	-	1,225.25
951-0-8810-0012	Vacation	2,217.79	-	2,217.79
951-0-8810-0016	Deferred Compensation	193.12	114.04	79.08
951-0-8810-0031	PERS Pension	1,859.39	3,913.22	(2,053.83)
951-0-8810-0032	PARS Pension	2,758.91	1,606.41	1,152.50
951-0-8810-0033	LIUNA Pension	15.69	12.32	3.37
951-0-8810-0041	Medical Insurance	1,947.97	968.95	979.02
951-0-8810-0051	Dental Ins	283.04	126.34	156.70
951-0-8810-0061	Vision Ins-CPIC	24.58	8.72	15.86
951-0-8810-0071	LTD	60.87	31.25	29.62
951-0-8810-0081	Life Insurance	57.51	29.56	27.95
951-0-8810-0092	Medicare Tax	320.62	176.26	144.36
951-0-8810-1022	Legal Services	1,715.10	-	1,715.10
951-0-8810-1030	Consultant	2,840.00	-	2,840.00
951-0-8810-1033	Fitness Program	56.90	43.40	13.50
951-0-8810-2053	Outside Printing Services	165.08	-	165.08
951-0-8810-3095	Department Consumables	244.87	-	244.87
951-0-8810-5132	Telephone	763.65	458.19	305.46
951-0-8810-9397	Computer System	1,850.00	1,850.00	-
951-0-8820-0001	Salaries	42,370.52	26,766.54	15,603.98
951-0-8820-0002	Overtime	2,952.31	1,491.46	1,460.85
951-0-8820-0012	Vacation	247.51	-	247.51
951-0-8820-0016	Deferred Compensation	441.06	292.29	148.77
951-0-8820-0031	PERS Pension	4,293.27	2,101.76	2,191.51
951-0-8820-0033	LIUNA Pension	1,166.95	743.95	423.00
951-0-8820-0041	Medical Insurance	6,500.32	3,209.10	3,291.22
951-0-8820-0051	Dental In	566.08	342.05	224.03
951-0-8820-0061	Vision Ins	52.51	22.16	30.35
951-0-8820-0071	LTD	75.84	33.19	42.65
951-0-8820-0081	Life Insurance	39.71	12.53	27.18
951-0-8820-0092	Medicare Tax	662.93	439.62	223.31
951-0-8820-1029	Training and Education	256.70	-	256.70
951-0-8820-2049	Uniform Service/ Laundry	822.83	487.16	335.67
951-0-8820-2068	Refuse Disposal	1,174.46	364.82	809.64
951-0-8820-2073	Subcontracted Work	10,070.33	3,008.33	7,062.00
951-0-8820-3095	Department Consumables	1,570.58	244.95	1,325.63
951-0-8820-3097	Safety Equipment	39.00	-	39.00
951-0-8820-4121	Meetings/Travel	1,500.00	900.00	600.00
951-0-8820-5131	Gas & Electric	3,006.46	1,544.73	1,461.73
951-0-8820-5133	Water	1,218.45	-	1,218.45
951-0-8820-8184	Fog Program	1,655.32	-	1,655.32
951-0-8820-9397	Computer System	58.33	58.33	-
951-0-8820-9608	Lease Payments	293.71	-	293.71
952-0-8820-8194	Sewer System Mgmt Plan Update	4,276.50	4,276.50	-

**Seaside County Sanitation District
Year-to-Date 2017-2018 Expenses
October and November 2017**

Authorized for Payment by the Board of Directors

ACCOUNT NUMBER	DESCRIPTION	TOTAL CHARGES YTD	TOTAL BILLED YTD	TOTAL DUE
952-0-8820-8196	LAFCO Application	2,761.50	1,851.50	910.00
952-0-8820-9605	Interest Expense	7,008.07	6,886.20	121.87
952-0-8820-9608	Lease Payments	26,320.91	13,140.18	13,180.73
953-0-8820-0016	Deferred Compensation	0.28	0.28	-
953-0-8820-0031	PERS Pension	2.22	-	2.22
953-0-8820-0032	PARS Pension	20.48	20.48	-
953-0-8820-0041	Medical Insurance - Non LIUNA	4.91	-	4.91
953-0-8820-0061	Vision Ins	0.04	-	0.04
953-0-8820-0092	Medicare Tax	0.34	0.34	-
953-0-8820-9199	942 Angelus Way Pipe	24.81	-	24.81
953-0-8820-9201	Del Monte Lift Station Upgrade	2,740.00	2,740.00	-
953-0-8820-9202	Rosita Lift Station Upgrade	31,910.00	15,150.00	16,760.00
954-0-8810-2090	Insurance	72,082.00	72,082.00	-
			951-1009	55,060.06
			952-1009	14,212.60
			953-1009	16,791.98
			954-1009	-
OCTOBER AND NOVEMBER 2017 DRAWDOWN				86,064.64

COUNTY OF MONTEREY - AUTHORIZATION of ELECTRONIC FUNDS TRANSFER

DEBIT : COUNTY OF MONTEREY
 Account Number : Wells Fargo Bank
 Account Name : Monterey County Treasurer

CREDIT : CITY OF SEASIDE PUBLIC INTEREST CHECKING

Pay to Bank : **RABOBANK**
 1658 FREMONT BLVD., SEASIDE, CA 93955

Account No. 9782713643
 Routing No. 122238420 Amount : \$ **86,064.64**
 Customer Name: CITY OF SEASIDE

AUTHORIZED SIGNATURES: 1
2
3

AUDITOR : ENTER AMOUNT AUTHORIZED FOR TRANSFER AND SIGN FORM

TREASURER : PROCESS TRANSFER, ENTER DATE OF TRANSFER, SIGN FORM AND RETURN TO AUDITOR

AUDITOR		TREASURER	
Hilda Castro	_____	_____	_____
Deputy Auditor	Date	Deputy Treasurer	Date of Transfer

For Auditor-Controller Office use only

Period _____	JV Number _____
Budget Yr. _____	Date _____
Total \$ 86,064.64	

DESCRIPTION	AT	FD	BU	ORG	ACCT	REP	CT	DEBIT	CREDIT
Special District Exp.		603			2530				
Cash		603			1001				

Daphne Hodgson, Deputy City Manager / Administrative Services (831) 899-6718; SCSD

Expenses for OCTOBER & NOVEMBER, 2017.

Prepared By: Hilda Castro Date: _____
 Approved By: _____ Date: _____ Keyed By: _____ Date: _____



**SEASIDE COUNTY SANITATION DISTRICT
STAFF REPORT**

Item No.: 5.A.

TO: Seaside County Sanitation District

FROM: Craig Malin, District Manager

BY: Rick Riedl, City Engineer

DATE: December 12, 2017

SUBJECT: APPROVE A RESOLUTION AMENDING THE PROFESSIONAL SERVICES AGREEMENT WITH WALLACE GROUP FOR AN AMOUNT NOT TO EXCEED FOURTEEN THOUSAND SIX HUNDRED TWENTY-ONE DOLLARS (\$14,621) TO PROVIDE FINANCIAL SERVICES.

PURPOSE

The purpose of this item is for the District Board to consider amending a professional services agreement with Wallace Group (Wallace) for professional services in support of the possible application to the Monterey County Local Agency Formation Commission (LAFCO) for the expansion of the sphere of influence and service area annexation. The proposed amendment to the agreement would compensate Wallace for professional services provided on a time and materials basis not to exceed Fourteen Thousand Six Hundred Twenty-One Dollars (\$14,621).

RECOMMENDATION

It is recommended that the District Board adopt a resolution approving the amendment to the professional services agreement with Wallace to provide professional services in support of the possible application to the Monterey County Local Agency Formation Commission (LAFCO) for an amount not to exceed Fourteen Thousand Six Hundred Twenty- One Dollars.

BACKGROUND

On June 28, 2013, the District issued a Request for Qualifications (RFQ) to provide Professional Services for the District. On December 10, 2013, the Board approved an agreement with Wallace to provide professional services for the District's application to the Monterey County Local Agency Formation Commission (LAFCO). On October 10, 2017, the Board adopted a resolution approving three firms, including Wallace, to provide professional services for the District.

The agreement with Wallace stipulated the work would be performed on a time and materials

basis. Wallace has provide professional services for the SCSD, but due to no fault of Wallace, the process and tasks for the SCSD's application to LAFCO have extended beyond the original project scope. Additionally, SCSD staff determined that the subconsultant on the Wallace team providing professional financial services was not performing adequately. Proposals were solicited from qualified firms to provide a replacement for the required financial services. Two proposals (attached) were received and evaluated by SCSD staff. SCSD staff recommends that Judy R. Lancaster of Civic Publications, Inc. be retained by Wallace Group as the most qualified person to provide the requested financial services. As a part of these financial services, SCSD staff has requested that Civic Publications review the work performed by the previous consultant, provide additional forensic financial analysis, and prepare the required financial documents for the LAFCO application. Therefore, it is recommended that the District Board adopt a resolution approving the amendment to the professional services agreement with Wallace Group to provide professional services in support of the application to the LAFCO.

Environmental Compliance:

In accordance with Title 14, California Code of Regulations (CCR, Title 14), Chapter 3 "CEQA Guidelines," Article 20, Section 15378, the proposed action is not a project as defined by the California Environmental Quality Act (CEQA). In addition, CEQA Guidelines Section 17561 includes the general rule that CEQA applies only to activities which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. Because the proposed action and this matter have no potential to cause any effect on the environment, or because it falls within a category of activities excluded as projects pursuant to CEQA Guidelines section 15378, this matter is not a project.

FISCAL IMPACT

The approval of the amendment to the professional services agreement with Wallace will be funded with fiscal year ending 2017 carry-over funds of approximately \$111,000 in Account #952-0-8820-8196, "LAFCO Application Project." To date, Wallace has expended approximately \$75,827 on the project. Increasing the contract value by \$14,621 would allow Wallace to continue working on the project.

ATTACHMENTS

1. Resolution
2. Contract Amendment
3. Proposal Berkson
4. Proposal Lancaster

Reviewed for Submission By:

Craig Malin, District Manager

RESOLUTION NO. 2017- (SCSD)

A RESOLUTION OF THE SEASIDE COUNTY SANITATION DISTRICT AMENDING THE PROFESSIONAL SERVICES AGREEMENT WITH WALLACE GROUP FOR AN AMOUNT NOT TO EXCEED FOURTEEN THOUSAND SIX HUNDRED TWENTY-ONE DOLLARS (\$14,621) TO PROVIDE PROFESSIONAL SERVICES

WHEREAS, the Seaside County Sanitation District (SCSD) may desire to submit an application to the Monterey County Local Agency Formation Commission (LAFCO) for the expansion of the sphere of influence and service area annexation for sanitary sewer service; and

WHEREAS, the application to LAFCO for expansion of the sphere of influence and the service area annexation is a project that involves the performance of professional and technical services of a temporary nature; and

WHEREAS, based upon demonstrated qualifications, on December 10, 2013, the SCSD retained Wallace Group of San Luis Obispo California to provide professional services for the SCSD's potential application to LAFCO; and

WHEREAS, due to no fault of Wallace Group, the process and tasks for the SCSD's application to LAFCO have extended beyond the original project scope; and

WHEREAS, Wallace Group is willing and capable to provide professional services in support of the SCSD's application to LAFCO.

NOW THEREFORE, BE IT RESOLVED, that the Seaside County Sanitation District awards Contract Amendment Number 2, attached hereto, to the Professional Services Agreement with Wallace Group to extend the contract term to December 10, 2018; increases the contract amount by Fourteen Thousand Six Hundred Twenty-One Dollars (\$14,621); and authorizes the District Manager to execute the contract amendment.

PASSED AND ADOPTED at a joint meeting of the Seaside County Sanitation District duly held on the 12th day of December 2017, by the following vote:

AYES:	BOARD MEMBERS:	
NOES:	BOARD MEMBERS:	None
ABSENT:	BOARD MEMBERS:	None
ABSTAIN:	BOARD MEMBERS:	None

Ralph Rubio, Chair
Seaside County Sanitation District

ATTEST:

Lesley Milton-Rerig District Clerk
Seaside County Sanitation District

CONTRACT AMENDMENT #2
Engineering Support for LAFCO Application
Seaside County Sanitation District

Date: November 29, 2017

Change Requested by: X SCSD Consultant

Contract Date

Project Name

Dec. 10, 2013

Engineering Support for LAFCO Application

To (Consultant): Wallace Group, 612 Clarion Court, San Luis Obispo, CA 93401

You are directed to make the following changes to the Contract Documents or amend the following described work not included in the contract documents for this project.

The purpose of this addendum is to provide additional professional services related to the project named above. The contract terms and conditions shall not be modified except for as stated herein.

MODIFY the following text in **Section 2, “Proposal Submitted.”**

The parties hereto mutually agree that the following documents and any addenda thereto are herewith by reference included in this contract as attachments and are called “the Proposal”:

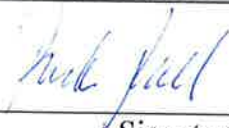
***Exhibit A – Proposal by Wallace Group called Engineering Support for LAFCO
Application dated November 15, 2013***

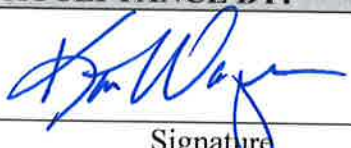
***Exhibit A – Proposal by Wallace Group called Contract Amendment dated January 24,
2014***

***Exhibit A1 – Proposal by Wallace Group called Contract Amendment dated October 17,
2017***

Original Contract Amount	Previous Amendments Total	This Amendment Total	Revised Contract Amount
\$44,777.00	\$31,050.00	\$14,621.00	\$90,448.00
Original Contract Time	Original Completion Date	CCO Days To Date (Including This CCO)	Revised Completion Date
48 Months	December 10, 2017	365	December 10, 2018

CONTRACT AMENDMENT #2
Engineering Support for LAFCO Application
Seaside County Sanitation District

SUBMITTED BY:		
	Rick Riedl District Engineer	November 29, 2017
Signature	Name and Title	Date
CITY APPROVAL BY:		
	Craig Malin District Manager	
Signature	Name and Title	Date

CONSULTANT ACCEPTANCE BY:		
	Kari Wagner, PE (66026) Director of Water Resources	11/30/17
Signature	Name and Title	Date

CONTRACT AMENDMENT



Project Name: LAFCO Support	CA No. 2
Client Name: Seaside County Sanitation District	Project/Phase No. 0876-0006-400
Attention: Rick Riedl	Date: October 17, 2017
Address: 440 Harcourt Avenue, Seaside, California 93955	

Wallace Group requests the Client's authorization to proceed with revisions to the contract agreement for the above referenced project as herein described. Approval below incorporates this document as a part of the original contract signed December 11, 2013. If approved, please return one signed original Contract Amendment to Wallace Group.

Description and Purpose of the Revision(s)

At the request of Seaside County Sanitation District (District or SCSD), Wallace Group is contracting with a new Financial Rate Consultant to support the LAFCO application to acquire the sewer collection system located in the Former Fort Reuse Area within the City of Seaside. Wallace Group is contracting with Judy Lancaster of Civic Publications, Inc. Wallace Group is requesting additional funds for the difference between the new consultant and the old consultant.

Previous Budget: \$31,050
 Previous Budget Spent: \$22,671
 Budget Remaining: \$8,379

Civic Publications, Inc Proposed Fee: \$20,000
 WG Subconsultant surcharge (15%): \$3,000
 Total: \$23,000

CA Request: \$23,000-\$8,379 = \$14,621

Revision(s) Represent:

- ☐ a change in previous instructions
☐ a change in Scope of Services
☒ other: Change in Subconsultant

Revision(s) Fee:

- ☐ hourly (time & materials) \$
☐ progress billing: \$
☒ not-to-exceed w/o authorization: \$14,621

Revision(s) will be invoiced as:

- ☒ increase to an item within the existing contract
☐ a new item added to existing contract

Issued by,

WALLACE GROUP, a California Corporation

Approved by Client

Signature: 	Signature:
Print Name: Kari E. Wagner, PE 66026	Print Name:
Title: Director of Water Resources	Title:
Date: October 17, 2017	Date:



**Berkson
Associates**

Urban Economics
Policy Forensics & Forecasting
Planning & Policy Analysis

PROPOSAL

PLAN FOR SERVICE & FEASIBILITY STUDY FOR THE PROPOSED ANNEXATION TO THE SEASIDE COUNTY SANITATION DISTRICT

Prepared by Berkson Associates
September 8, 2017

richard@berksonassociates.com | 510.612.6906 | www.berksonassociates.com



September 8, 2017

Rick Riedl, Public Works Services Mgr./District Engineer
City of Seaside
610 Olympia
Seaside, CA 93955

Sent via email: RRiedl@ci.seaside.ca.us

Dear Rick,

I appreciate this opportunity to submit a draft Scope of Work to prepare a Plan for Services and Feasibility Study for Seaside County Sanitation District's (SCSD) application to the Monterey County Local Agency Formation Commission (LAFCO). I understand that SCSD plans to request that LAFCO amend SCSD's sphere of influence to include the portions of the City of Seaside within the former Fort Ord.

The attached Scope of Work describes Berkson Associates' (BA) approach to preparing the Plan for Services and Feasibility Study. This Study will help to inform the community and LAFCO about the ability of the SCSD to feasibly serve the annexation area, and will include estimates of service and capital costs.

The assignment will be billed on a "time and materials" basis monthly, not to exceed a maximum amount of **\$54,000** (including expenses billed at cost) without prior authorization. An additional contingency of **\$5,000 to \$15,000** is requested, but will not be utilized without prior authorization; the contingency would apply in the event new information or issues arise, or to provide for additional trips and meetings.

Attached is a draft Scope of Work for your review. I have also included selected project experience and a copy of my resume. Please let me know if you have any questions or comments about this proposal. I can be reached at 510-612-6906.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rick L. Berkson', with a stylized, flowing script.

Richard Berkson, Principal
BERKSON ASSOCIATES



CONTENTS

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3. CLIENT ASSISTANCE	6
4. QUALIFICATIONS AND EXPERIENCE.....	7
5. PROJECT COST	9
6. SCHEDULE.....	10

ATTACHMENT 1 BERKSON RESUME

1. UNDERSTANDING OF THE PROJECT

The Seaside County Sanitation District (SCSD) is preparing a request to the Monterey County Local Agency Formation Commission (LAFCO) to amend its sphere of influence to include the portions of the City of Seaside within the former Fort Ord. LAFCO requires that applicants submit a plan for providing services within the affected territory, which shall include:

- (1) An enumeration and description of the services to be extended to the affected territory.
- (2) The level and range of those services.
- (3) An indication of when those services can feasibly be extended to the affected territory.
- (4) An indication of any improvement or upgrading of structures, roads, sewer or water facilities, or other conditions the local agency would impose or require within the affected territory if the change of organization or reorganization is completed.
- (5) Information with respect to how those services will be financed.¹

Although the requirements do not specify budget forecasts, it is understood that Monterey LAFCO is interested in a financial analysis to help determine the financial feasibility of the annexation and to assure that services will be provided in an efficient and cost effective manner. LAFCO may also require budget, cost, and rate analysis to enable a comparison of governance alternatives. The Plan for Services will also address qualitative issues such as political representation and communities of interest.

Other local factors that LAFCO may consider can be described in the Plan for Services. These factors could include items such as governance accountability and transparency, financial ability, and capacity to expand services for current development as well as for future development. The latter factors are part of a Municipal Services Review (MSR) that would be required by LAFCO prior to a change in a Sphere of Influence (SOI); however, the lack of a current MSR may require preparation of an MSR and the Plan for Services can provide information to inform and facilitate the MSR process.

Currently the Marina Coast Water District (MCWD) provides water and wastewater service to the annexation area by agreement with the Fort Ord Reuse Authority (FORA).² However, FORA dissolves on June 30, 2020. MCWD's SOI does not cover the Fort Ord area, and uncertainty exists regarding its

¹ Gov't Code Sec. 56653(a) and (b).

² Water/Wastewater Facilities Agreement (the Facilities Agreement) dated March 13, 1998.



continued service to the area in the absence of its agreement with FORA (or any potential successors to FORA).

Pending and future development will require water and wastewater service connections. It is important for LAFCO, particularly given the pending FORA dissolution, to determine service providers so that financing mechanisms can be established to assure that services are provided in an efficient and cost effective manner. The Plan for Service will document the ability of the SCSD to be the wastewater service provider to the annexation area.

The enclosed Scope of Work describes Berkson Associates' approach to the preparation of a Plan for Services. The Scope may need to be revised in response to input from LAFCO regarding the content of the Plan. For example, while it is LAFCO's preference that SCSD and MCWD agree to the appropriate organization of services to the area, competing proposals may prompt LAFCO to request a comparison of governance alternatives in the Plan for Service. If alternatives are required, the budget may also require revision, and additional analysis required from SCSD engineers.

2. SCOPE AND APPROACH TO THE PROJECT

The Berkson Associate (BA) scope of work is preliminary, and likely to be revised following initial review and comment by the Client. The scope is based on BA's current understanding of the annexation proposal, and generally follows the approach utilized for other annexation studies.

Task 1: Project Initiation

Richard Berkson of Berkson Associates will meet with City and District staff and consultants to discuss the project Scope of Work, refine objectives, process, products and timeline. The discussion will establish key contacts and communication protocols, and identify initial documents and reference materials, and any other required information.

Task 2: Data Collection and Review

Existing documents prepared by the District and its consultants, and other relevant materials, will be reviewed. Additional information will be compiled, including demographic information and assessed values for the area. BA will coordinate with District staff and other key contacts as needed to obtain the information.

Task 3: Governance Options

While the focus of the Report is on evaluation of District annexation and service to the area, LAFCO will need to consider options during its review and approval process. The options may include: a) status quo; and b) annexation by the Marina Coast Water District (MCWD). The report will summarize opportunities and constraints associated with the options compared to the proposed SCSD annexation. Considerations will include, for example, local control; financial cost effectiveness (capital costs, operating costs and rates, and financing); operating efficiencies, including access to staff and support resources. Differences relative to the SCSD annexation will be highlighted, but the analysis of options will not be to the same depth as the analysis of the SCSD proposal.

Task 4: Financial Analysis

A budget model will be prepared to compare potential operating and capital costs to operating revenues and other funding sources. The focus will be the SCSD and its post-annexation costs and revenues.

Funding sources will be shown sufficient to cover the costs of capital needed to serve the annexation area. Impacts, if any, on existing operations and capital will be identified.

The analysis assumes that no competing proposals are submitted for the annexation area. However, LAFCO may require additional analysis of governance options such as annexation to MCWD; in this case, it will be necessary to review other agency budgets, policies and practices, and create additional budget estimates for comparison to the SCSD proposal.

4.1 Service Cost Estimates

This Scope assumes that the SCSD engineers will provide preliminary operating costs for the annexation area based on potential wastewater generation by type of use. BA will use these costs to estimate fees and charges for operations, and potential capital funding evaluated in **Task 4.3**.

BA will create a cash flow based on the operating costs, augmented by any additional costs that may be incurred for management and oversight, accounting/billing, office expenses, insurance, reserves for operations and repair/replacement, financial reporting, and other annual operating costs.

One-time costs will be included, if any, for example to integrate the annexation area into SCSD GIS and billing functions. Capital costs for the wastewater system will be addressed in **Task 4.3**.

4.2 Operating Revenue Estimates

The analysis will estimate operating revenues required to fund additional annexation area service costs. These revenues may consist of several components, including operations, capital, contingencies and other reserves. Required rates will be compared to current rates in the SCSD and neighboring areas, including rates in the annexation area.

4.3 Capital Costs and Funding

The SCSD engineers will estimate capital costs for the system required to serve the area, and will identify options, if any. As noted above, LAFCO may determine the extent and detail to which costs of wastewater system and governance alternatives need to be considered.

The BA analysis will identify potential funding mechanisms, e.g., assessments, revenue bonds, etc., based on SCSD practices and applicability to the annexation area, and indicate their potential magnitude per parcel or end user. The costs will be compared to value to help assess financial feasibility, and the ability to support debt issuance. The report will not provide the engineering analysis that will be required to determine and create the actual assessments and rates, but will represent an approximation based on similar data and methodology.

Various grants may be available to help fund the system; this Scope does not include research related to grant opportunities, however, the analysis will include any likely sources identified by the SCSD.

Task 5: Report Preparation

The report will provide an overview and summary, and appendices as needed to document the calculations and analysis. The report will be provided electronically as an Adobe Acrobat PDF; the reports also will be provided in a Microsoft Word format to facilitate redlines and comments. All spreadsheets remain the property of BA and will be transmitted in the form of PDF tables only.

BA will prepare an Administrative Draft Report for review by the SCSD and other key individuals including SCSD consultants. The client may ask LAFCO to review an administrative draft.

A Public Review Draft Report will integrate comments and changes to the administrative draft report. This report will be intended for broader public distribution and review, and can serve as the basis for a submittal to LAFCO.

Task 6: Meetings and Presentations

Up to four conference calls with the SCSD and consultants are assumed; other calls may be scheduled as needed to discuss specific items and issues.

This Scope of Work assumes attendance at up to four in-person meetings in Monterey County that could include the following: 1) a kick-off meeting to initiate the Project, within 2 weeks of contract authorization; 2) a meeting to discuss the Administrative Draft Report; 3) a community meeting (or city council meeting) to present the report; 4) attendance at a LAFCO public hearing. Additional meetings can be arranged, and would be billed on a “time and materials” basis.

Task 7: Additional Analysis and Support

Additional analysis may be required as the Project progresses, for example, if additional options are identified and/or annexation boundaries and service agreements changed in such a way as to affect the financial and service analysis. The Scope of Work assumes one LAFCO hearing, however, more hearings and other public meetings may be required.



3. CLIENT ASSISTANCE

Throughout the study Berkson Associates will work closely with the Client to ensure that the project progresses in a timely manner, to seek direction on key issues that arise, and to solicit input on ongoing work products.

It is assumed that the Client will provide assistance in the data collection effort, and help to arrange and coordinate meetings and presentations. The approach to gathering information will be discussed during project initiation. The SCSD engineers will be relied upon for operating and capital cost estimates.

The Client will be expected to review all administrative, draft and final reports and provide comments. Legal issues will be the primary responsibility of SCSD and its consultants.

4. QUALIFICATIONS AND EXPERIENCE

Richard Berkson has prepared numerous annexation feasibility analyses and Plans for Service for a range of public services including water and wastewater. Many of those studies required an evaluation and comparison of governance and boundary options, and estimates of future operating costs, required revenues, and sources of capital funding for utility improvements. Following is a selected list of similar assignments for which Mr. Berkson was Project Manager and/or Principal-in-charge. Mr. Berkson's resume is included as **Attachment 1**.

Plan for Services and Feasibility Study – Los Olivos Water Reclamation

In 1974, Santa Barbara County designated a Los Olivos Special Problems Area (SPA) due to potential adverse impacts of wastewater treatment caused by septic tanks in the area. Additional County review is required for development projects within the SPA to mitigate any potential impacts to public health. Stringent standards for existing and new septic systems are anticipated that may constrain future property use. Mr. Berkson prepared a Plan for Services and Feasibility Study for a community group in Los Olivos that was interested in creation of a local public entity to provide a wastewater system to replace septic tanks.

The report evaluated the opportunities and constraints of a CSD compared to annexation to an existing district, and creation of a County Services Area (CSA). The analysis estimated costs of each option in addition to the system's operating and capital costs to residents. The Local Agency Formation Commission (LAFCO) approved the proposal. Implementation requires voter approval of the CSD and a parcel tax; the CSD, if formed, will then plan and implement the community system to be funded by voter-approved assessments and CSD rate revenues.



East Orange Water and Wastewater Utilities Study

A large property owner/developer in Orange County owned a large area of property located partially within the City of Orange and partially within its sphere of influence. This property had been divided into several planning areas. Richard Berkson, as EPS project manager, conducted financial analysis as part of a report to the Local Agency Formation Commission (LAFCo) evaluating options for the provision of domestic water and wastewater service to the proposed development areas. Two water districts and the City of Orange had all expressed a willingness and desire to provide municipal water and wastewater services to at least portions of the same development areas. To assist the Orange County LAFCo in determining the most appropriate provider, EPS reviewed the financial implications of each prospective service provider, including rate implications.

Victorville District Consolidation and Dissolution

As EPS Project Manager, analyzed options for consolidating water services in the Victorville area, including preparing a budget analysis of the new entity. EPS also assisted the City in its application to LAFCo to consolidate several subsidiary special districts that served the area but were already functionally consolidated into the City organization. The districts included fire, recreation and parks, and sanitation.

Yokohl Ranch Community Services District (CSD) Plan for Services and Feasibility Analysis

Mr. Berkson directed the preparation of a Plan for Services and Feasibility Analysis for a new community. Yokohl Ranch would be unique in Tulare County as a master planned, recreation-oriented community containing clustered development of 10,000 housing units, a town center, resort, parks, schools and other amenities on 36,000 acres in Yokohl Valley in the Sierra Nevada foothills. The Study evaluated the formation of a CSD to provide a broad range of services, including management of a California Water District that would be responsible for water and wastewater in the community. A detailed, multi-year financial plan was prepared, including an operating and capital budget for the sewer and water plant and estimates of required service charges. The analysis compared service charges to other areas of the County, and identified supplemental funding needed in initial phases to assure feasibility of operations. The Project is currently undergoing environmental review.



5. PROJECT COST

The proposed budget will be refined after initial discussions with the Client. Following is a preliminary budget estimate:

Task 1: Project Initiation	\$ 4,000
Task 2: Data Collection and Review	9,000
Task 3: Governance Options	5,000
Task 4: Financial Analysis	14,000
Task 5: Report Preparation	15,000
Task 6: Meetings and Presentations	<u>7,000</u>
Subtotal	\$54,000
Task 7: Additional Analysis & Support	\$ 5,000 to 15,000*

* Estimate only; actual hours, effort and cost to be determined. Contingency may be required if LAFCO requires analysis of alternative government proposal(s) and/or a greater level of detail.

The budget assumes a maximum of four trips for meetings or presentations. Additional meetings can be scheduled and will be billed on a “time and materials” basis at an hourly rate of \$225/hour plus expense.



6. SCHEDULE

Berkson Associates anticipates that an administrative draft Plan for Services and Feasibility Study can be prepared in approximately 10 to 12 weeks following receipt of engineering capital cost and operating cost information. After review and comment by the SCSD on the administrative draft, approximately two to three weeks should be allowed for a revised report depending on the extent and nature of comments, and whether additional research and analysis is needed. Actual dates will be refined at the Project Initiation meeting, and may be revised during the course of the study depending on the timing of meeting dates.



Plan for Services and Feasibility Study
Berkson Associates Proposal 9/8/17

ATTACHMENT 1

BERKSON RESUME



Richard L. Berkson

Principal

EDUCATION

Master of Public Policy,
University of California,
Berkeley

Bachelor of Arts in Social
Science, University of
California, Berkeley

Undergraduate study in
Engineering, Massachusetts
Institute of Technology (2.5
semesters)

AFFILIATIONS

CALAFCO,
Associate Member

PUBLIC SERVICE

Capital Program Monitoring
Committee, Town of San
Anselmo

HONORS AND AWARDS

Anaheim, CA, honoring
contribution to the success of
the Anaheim Resort Project

PRIOR EMPLOYMENT

Founding Principal,
Economic and Planning
Systems, Inc. (EPS)

ABOUT

Richard L. Berkson, Principal of Berkson Associates, believes that sound policies and strategies require careful consideration of causality, creative problem solving, and incentive-based solutions. His practice is founded on 30+ years of experience providing clear and concise fiscal and financial analysis based on a solid understanding of local government organization (e.g., formation, annexation, and consolidation), capital improvement policy and programming, and urban economics (demographics, market & financial analysis).

EXPERTISE

Government Organization

Prepares governance feasibility and special studies addressing municipal incorporation, annexations, service reviews and special studies, special district formations, dissolutions and consolidations, and assists in the preparation of intergovernmental agreements including tax sharing. Creates detailed pro forma operational and capital budgets as well as analysis of reorganization issues, options and impacts upon existing agencies, and develops sustainable mitigation measures.

Fiscal and Economic Analysis

Analyzes and predicts fiscal and economic impacts of land uses, developments, and policies on municipal budgets. Designs fiscal models to evaluate public service and financing issues, and develops mitigation measures for long-term fiscal sustainability. Forecast budgets and develop asset management policies and programs.

Public Finance

Prepares financing strategies and plans for a wide variety of public services and infrastructure projects, including development project-related infrastructure, area-wide capital improvement programs, public safety, and recreation facilities, as well as specific infrastructure projects. Financing techniques applied include formulation of area-specific and facility-specific development impact fees, special tax bonds, sales tax measures, and Infrastructure Financing Districts.

Market and Financial Analysis

Evaluates the market feasibility of a wide range of uses, including recreation, residential, office, industrial, retail, and hotel, as a part of development proposals, specific and general plans, and governance studies. Prepares initial market reviews as well as detailed pricing and absorption estimates, demographic forecasting, and development strategies. Constructs pro forma financial analysis of large-scale mixed-use projects, as well as individual business proposals.



Policy Forensics and Forecasting
Understanding the Past, Managing the Future

34 Terrace Avenue ■ San Anselmo, CA 94960
510.612.6906 ■ Richard@BerksonAssociates.com

Wallace Group
Ms. Kari Wagner
Senior Civil Engineer
612 Clarion Court
San Luis Obispo, CA 93401

Dear Ms. Wagner,

Thank you for the opportunity to submit the attached proposal of work for the proposed LAFCO application by the Seaside County Sanitation District. I estimated the hours to be no more than 50 hours to review documents, prepare the analysis, complete documentation deliverable and if needed some travel time. I have also attached a draft agreement for your review.

I look forward to working with you on this project. If you have any questions, please don't hesitate to call me at (909) 373-7053.

Sincerely,



Judy R. Lancaster
President
Civic Publications, Inc.
3355 N. White Ave., #374
La Verne, CA 91750
cjlancaster62905@verizon.net

Scope of Work:

Task 1

Civic Publications, Inc. (Consultant) will prepare a financial analysis for Wallace Group (WG) regarding the proposed annexation of Seaside County Sanitation District (SCSD) Regions C, E and F. The financial analysis will be to determine if the proposed rates will be able to fiscally sustain the ongoing operational costs and capital projects needed to provide sewer services to each region.

The operational costs, capital project costs and timeline of the construction of the capital projects for Regions C, E and F respectively shall be provided to the Consultant by WG. In addition, for Regions E and F, Consultant shall be provided with the number of existing sewer connections and any estimated growth (as applicable). Escalation factors will be applied to each category of costs. The escalation factors to be applied shall be both mutually determined by the Consultant and WG. However, WG shall render approval of the escalation factors to be applied.

Task 2

Civic Publications, Inc. (Consultant) will prepare a forensic financial analysis for Wallace Group (WG) to determine if Monterey County Water District (MCWD) has ineligible expenditures benefitting the water operations by using sewer ratepayers revenues.

FEES:

Task 1

The Consultant's rate shall be on a time and material basis. The rate shall be \$195 per hour not to exceed \$10,000. In the event that more hours are required to complete the project, Wallace Group will have to authorize Consultant in writing.

If travel is required of the Consultant, WG shall reimburse the Consultant for transportation and lodging expenses. The Consultant is required to obtain prior approval from WG for the travel costs to be incurred.

Task 2

The Consultant's rate shall be on a time and material basis. The rate shall be \$195 per hour not to exceed \$10,000. In the event that more hours are required to complete the project, Wallace Group will have to authorize Consultant in writing.

If travel is required of the Consultant, WG shall reimburse the Consultant for transportation and lodging expenses. The Consultant is required to obtain prior approval from WG for the travel costs to be incurred.



**SEASIDE COUNTY SANITATION DISTRICT
STAFF REPORT**

Item No.: 5.B.

TO: Seaside County Sanitation District

FROM: Craig Malin, District Manager

BY: Richard Riedl, District Engineer

DATE: December 12, 2017

**SUBJECT: APPROVE A RESOLUTION FOR A CONTRACT AMENDMENT #4
TO A PROFESSIONAL SERVICES AGREEMENT WITH HARRIS &
ASSOCIATES FOR AN AMOUNT NOT TO EXCEED ONE HUNDRED
AND SIXTY SEVEN THOUSAND THREE HUNDRED AND SEVENTY
DOLLARS (\$167,370) FOR CAPITAL IMPROVEMENT PROGRAM
MANAGEMENT AND PROJECT DELIVERY SERVICES FOR
FISCAL YEAR 2017/2018.**

PURPOSE

The purpose of this item is for the Board to consider a contract amendment with Harris & Associates for an amount not to exceed One Hundred and Sixty Seven Thousand Three Hundred and Seventy Dollars (\$167,370) to provide program management and project delivery services for the 2017/2018 CIP projects and authorizing the District Manager to execute the contract amendment.

RECOMMENDATION

It is recommended that the Board adopt a resolution for a contract amendment with Harris & Associates for an amount not to exceed One Hundred and Sixty Seven Thousand Three Hundred and Seventy Dollars (\$167,370) to provide program management and project delivery services for the 2017/2018 CIP projects and authorizing the District Manager to execute the contract amendment.

BACKGROUND

The District requires assistance with managing and delivering CIP projects in order to sustain the Districts infrastructure. To address this need, in April of 2016 the District issued an RFP for On-Call CIP Management Services. Harris & Associates (Harris) was selected based upon their qualifications and experience in providing these services.

Based upon recent inspections and staff evaluation, the projects listed below have become a high priority. Implementation of these projects is necessary to meet District needs and to avoid potential emergency work.

- Del Monte Blvd Sewer Line Upgrade (CIP Project # 5)
- Canyon Del Rey Sewer Line (CIP Project #18)
- Highway 1 Sewer Cleaning (CIP Project #19)

At the request of SCSD staff, Harris submitted a Proposal (November 6, 2017) to manage and deliver the CIP projects listed above during this fiscal year (2017/2018).

It is recommended the Board adopt a resolution approving a contract amendment to a professional services agreement with Harris & Associates for an amount not to exceed One Hundred and Sixty Seven Thousand Three Hundred and Seventy Dollars (\$167,370) to provide program management and project delivery services for the 2017/2018 CIP projects and authorizing the District Manager to execute the contract.

FISCAL IMPACT

The project management fees proposed by Harris represent approximately 6% of the estimated budgets to complete the various projects.

The capital improvement plan (CIP) budget for fiscal year 2017/2018, including carry forward items from the previous fiscal year, includes \$40,501 for the Highway 1 Sewer line cleaning (CIP Project #19) and \$265,000 for Del Monte Boulevard sewer main upgrades (CIP Project #5). Staff recommends that funds from CIP Project #8, "Luzern St. Sewer Main Upgrade" in the amount of \$75,000, and CIP Project #9, "La Salle Ave. Sewer Main Upgrade" in the amount of \$115,000 be transferred to Canyon Del Rey Sewer Line Upgrade (CIP Project #18) for this current fiscal year.

FROM Account(s):					
Fund	Proj	Dept	Object	Description	Amount
953	0	8820	9208	Luzern St Sewer Upgrade	\$75,000
953	0	8820	9209	La Salle Ave Sewer Upgrade	\$115,000
Total:					\$190,000

TO Account(s):					
Fund	Proj	Dept	Object	Description	Amount
953	0	8820		Canyon Del Rey Sewer Replacement	190,000

ATTACHMENTS

1. Resolution
 2. Contract Amendment
-

Reviewed for Submission By:

Craig Malin, District Manager

RESOLUTION NO. 2017- XX (SCSD)

CONTRACT AMENDMENT #4 TO A PROFESSIONAL SERVICES AGREEMENT WITH HARRIS & ASSOCIATES FOR AN AMOUNT NOT TO EXCEED ONE HUNDRED AND SIXTY SEVEN THOUSAND THREE HUNDRED AND SEVENTY DOLLARS (\$167,370) FOR CAPITAL IMPROVEMENT PROGRAM MANAGEMENT AND PROJECT DELIVERY SERVICES FOR FISCAL YEAR 2017/2018.

WHEREAS, based on the recommendation of an independent panel on the qualifications of CONSULTANT, Seaside County Sanitation District (District) selected Harris & Associates of Salinas, California (Harris) to provide professional services for the District; and

WHEREAS, at the request of SCSD staff, Harris submitted a proposal as described in the contract amendment attached hereto to provide Capital Improvement Program Management and Project Delivery Services for 2017/2018 CIP Projects; and

WHEREAS, based upon site investigation and staff consideration, the CIP projects identified in the proposal are a priority and necessary to avoid potential emergency work; and

WHEREAS, the SCSD has determined that the proposed scope of work and budget are reasonable and within the acceptable range for typical services.

NOW THEREFORE, BE IT RESOLVED, that the Seaside County Sanitation District authorizes the District Finance Director to transfer funds from approved CIP projects Luzern St and La Salle Ave Main Upgrades (#8 & #9) in the combined amount of \$190,000 to CIP project Canyon Del Rey Sewer Line Replacement (#18) for fiscal year 2017/2018; and

NOW THEREFORE, BE IT FURTHER RESOLVED, that the Seaside County Sanitation District authorizes the District Manager to execute a contract amendment to the professional services agreement with Harris & Associates for an amount not-to-exceed One Hundred and Sixty Seven Thousand Three Hundred and Seventy Dollars (\$167,370) to provide Capital Improvement Program Management and Project Delivery Services for the 2017/2018 CIP Projects as described in the contract amendment attached hereto.

PASSED AND ADOPTED at a regular meeting of the Seaside County Sanitation District duly held on the 12th day of December 2017, by the following vote:

AYES: Board Members:
NOES: Board Members:
ABSENT: Board Members:
ABSTAIN: Board Members:

ATTEST:

Ralph Rubio, Chair
Seaside County Sanitation District

Lesley Milton-Rerig, District Clerk
Seaside County Sanitation District

CONTRACT AMENDMENT #4
CAPITAL IMPROVEMENTS PROJECTS MANAGEMENT
Seaside County Sanitation District

Date: December 1, 2017

Change Requested by: X District Consultant

Contract Date

Project Name

May 30, 2017

Capital Improvements Projects Management

To (Consultant): Harris & Associates, 2 Salinas Street, Suite B, Salinas, CA 93901

You are directed to make the following changes to the Contract Documents or amend the following described work not included in the contract documents for this project.

The purpose of this addendum is to provide additional professional services related to the project named above. The contract terms and conditions shall not be modified except for as stated herein.

MODIFY the following text in **Section 2, "Services."**

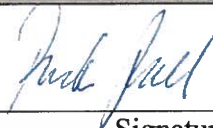
Consultant shall perform the tasks described and set forth in Exhibit A, Exhibit A1, Exhibit A2, Exhibit A3 and Exhibit A4 attached hereto and incorporated herein as though set forth in full. Consultant shall complete the tasks according to the schedule of performance which is also set forth in Exhibit A, Exhibit A1, Exhibit A2, Exhibit A3 and A4.

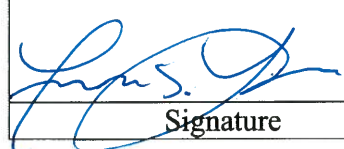
MODIFY the following text in **Section 21, "Contents of Request for Proposal and Proposal."**

Consultant is bound by the contents of City's Request for Proposal, Exhibit "C" hereto and incorporated herein by this reference, and the contents of the proposal submitted by the Consultant, Exhibit A, Exhibit A1, Exhibit A2, Exhibit A3 and Exhibit A4 hereto.

Original Contract Amount	Previous CCO Total (Not including this CCO)	This CCO Total	Revised Contract Amount
\$41,880.00	\$67,080.00	\$167,370.00	\$276,338.00
Original Contract Time	Original Completion Date	CCO Days To Date (Including This CCO)	Revised Completion Date
36 Months	June 30, 2020	0	June 30, 2020

CONTRACT AMENDMENT #4
CAPITAL IMPROVEMENTS PROJECTS MANAGEMENT
Seaside County Sanitation District

SUBMITTED BY:		
	Rick Riedl District Engineer	December 1, 2017
Signature	Name and Title	Date
CITY APPROVAL BY:		
	Craig Malin District Manager	
Signature	Name and Title	Date

CONSULTANT ACCEPTANCE BY:		
	Frank S. Lopez Director, Engineering Services	12/1/2017
Signature	Name and Title	Date



November 6, 2017

Rick Riedl, District Engineer
Seaside County Sanitation District
440 Harcourt Avenue
Seaside, CA 93955

Scope and Fee to provide CIP Management FY17/18 - Task Order #4

Dear Mr. Riedl:

We are pleased to provide this proposal to assist the Seaside County Sanitation District (District) with Capital Improvement Program (CIP) Management for Fiscal Year 2017-2018. Based on our discussions with you and staff, it was decided to implement specific projects this fiscal year. This determination was based on available funding and high priority projects. The following identifies the high priority projects and the services Harris will provide to implement and oversee the projects.

PROJECT UNDERSTANDING

The District developed a CIP which was based on the 2011 Sewer Master Plan. The CIP identified high priority projects to be designed and constructed this fiscal year, however, based on recent inspection and operation, the following projects have been elevated:

- Del Monte Blvd Sewer Line Upgrade (CIP Project # 5)
- Canyon Del Rey Sewer Line (CIP Project #18)
- Highway 1 Sewer Cleaning (CIP Project #19)

The District would like Harris staff to oversee these projects. The following identifies our services.

SCOPE OF SERVICES

This Task Order is to provide assistance with managing the projects identified above. Services for each project may differ based on project location and actual scope for repairs/improvements. The project descriptions shown for each task was taken from the most recent CIP.

Task 001 – Del Monte Blvd Sewer Line Upgrade (CIP Project # 5)

The Del Monte Boulevard project would replace and reroute existing sewer main from Fremont Boulevard to Del Monte Blvd. The existing main has insufficient capacity. Relocating the new sewer in Del Monte Boulevard allows for multiple existing mains to be abandoned and consolidated, and limits construction in Fremont Boulevard which is costly due to the thickness of existing asphalt and concrete in the roadway. Total length of new 15-inch sewer main is approximately 3,200 feet. The proposed sewer line is sized to accept future flow.

Harris will work closely with District staff to provide the following services:

Exhibit A4

- Develop scope of work for Design Consultant
- Manage selected Design Consultant; includes invoice review and approval
- Coordination with District staff and Design Consultant throughout the project (i.e., meetings, phone calls, emails)
- Review of design plans and specifications
- Schedule oversight
- Environmental Permitting documentation. Due to the upsizing of the pipe to accommodate future flows, CEQA compliance may be more extensive and a Categorical Exemption may not be appropriate.
- Manage bid process

Our estimated fee is based on the services shown above and the estimated hours shown in the attached fee estimate. Please note that our fee estimate is lower than what is shown in the CIP Budget for this task. Therefore, we will provide our services as budget permits and coordinate with District staff should the project require additional services that exceed our budget estimate. Construction services are not included and will be addressed in a separate task order.

Task 002 – Canyon Del Rey Sewer Line (CIP Project #18)

The Canyon Del Rey CMP project proposes to replace three existing sewer pipe segments due to potentially poor physical condition. Through routine maintenance operations, the District has determined this sewer main may not be structurally sound, and a nearby stretch of sewer main originally constructed at the same time has already failed and been replaced. The project includes approximately 810 feet of existing 12-inch pipe on Canyon Del Rey from Hilby Avenue to Harcourt Avenue. The pipe segment at Harcourt Avenue, approximately 285 feet, will be upsized to 15-inch to provide capacity for future flow conditions.

Harris will work closely with District staff to provide the following services:

- Develop scope of work for Design Consultant
- Manage selected Design Consultant; includes invoice review and approval
- Coordination with District staff and Design Consultant throughout the project (i.e., meetings, phone calls, emails)
- Review of design plans and specifications
- Schedule oversight
- Environmental Permitting documentation (assumes CEQA Categorical Exemption)
- Manage bid process

Our estimated fee is based on the services shown above and the estimated hours shown in the attached fee estimate. Please note that our fee estimate is lower than what is shown in the CIP Budget for this task. Therefore, we will provide our services as budget permits and coordinate with District staff should the project require additional services that exceed our budget estimate. Construction services are not included and will be addressed in a separate task order.

Task 003 – Highway 1 Sewer Cleaning (CIP Project #19)

The sewer line that runs from Del Monte Blvd to Ortiz Ave turning at Contra Costa St through Sand City and then beneath Highway 1 needs to be periodically cleaned to remove debris. The sewer line size varies from 21-inch to 27-inch diameter and debris accumulate in these pipes due to the low flow velocity. The manhole located in the highway right of way needs to be found so that the cleaning crews can access the sewer line at this location. The sewer line will be cleaned and inspected to ensure that it is operating at full capacity.

It is our understanding that a previous consultant has inspected the pipeline and provided recommendations to clean this pipeline. However, District staff believe the recommendations are not appropriate due to the amount of water required to clean the pipeline. Therefore, District staff has requested Harris to review the previous recommendations and provide direction on how to move forward.

Based on discussions with District staff, Harris will provide the following services:

Exhibit A4

- Review previous consultant recommendations for cleaning pipeline and prepare a plan (and specifications) to clean the pipeline.
- Coordination with District staff and Contractor throughout the project (i.e., meetings, phone calls, emails)
- Schedule oversight

Our estimated fee is based on the services shown above and the estimated hours shown in the attached fee estimate. Our fee estimate is in-line with the CIP Budget for this task. We will provide our services as budget permits and coordinate with District staff should the project require additional services that exceed our budget estimate. Please note that construction services is not included and therefore will be addressed in a separate task order.

PROPOSED FEES

The proposed fee for the subject Scope of Work is shown below and will be provided on a time and materials basis. A detailed estimate is provided as an attachment.

Task	CIP Budget	CIP PM Budget (15%)	Harris Fee	% of CIP Budget
Task 001 – Del Monte Blvd Sewer Line Upgrade (CIP Project # 5)	\$1,847,755	\$178,815	\$84,290	4.5%
Task 002 – Canyon Del Rey Sewer Line (CIP Project #18)	\$625,450	\$60,450	\$57,800	9.2%
Task 003 – Highway 1 Sewer Cleaning (CIP Project #19)	\$217,000	\$21,000	\$25,280	11.6
Total =	\$2,690,205	\$260,265	\$167,370	6.2%

Our proposed fee for the three projects is approximately 6.2% of the total construction value, which is in-line with typical project soft costs.

We thank you for your consideration and contact me with any questions regarding this scope and fee.

Sincerely,
Harris & Associates, Inc.



Frank Lopez, PE, CFM, QSD
Director of Engineering Services
(831) 233-9242 ■ Frank.Lopez@WeAreHarris.com

Enclosure:

(1) Exhibit A: Fee Estimate

LEVEL OF EFFORT - EXHIBIT A

Exhibit A4
HARRIS ASSOCIATESSEASIDE COUNTY SANITATION DISTRICT
CIP MANAGEMENT FY 17/18
TASK ORDER #4

TASK, PHASE, DESCRIPTION	STAFF						
	Project Director F Lopez HOURS	Project Manager J Caprio HOURS	Project Engineer C Mercado Hours	Construction Manager D. Van Horn HOURS	ENV Permit Lead K. Giberson HOURS	Permit Analyst W. Young HOURS	TOTALS
001 Del Monte Blvd Sewer Line Upgrade (CIP Project # 5)							
1.1 Design Consultant Oversight (i.e., schedule, invoicing, design)	40	60					
1.2 Coordination with the District and Consultant	32	60					
1.3 Plan & Specification Review	16	40	36	8			
1.4 Environmental Permitting	8	16			16	64	
1.5 Manage Bid Process	10	40					
SUBTOTAL HOURS	106	216	36	8	16	64	446
SUBTOTAL DOLLARS	\$22,790	\$42,120	\$5,220	\$1,520	\$3,360	\$9,280	\$84,290
002 Canyon Del Rey Sewer Line (CIP Project #18)							
2.1 Design Consultant Oversight (i.e., schedule, invoicing, design)	24	40					
2.2 Coordination with the District and Consultant	34	52					
2.3 Plan & Specification Review	8	24	32	8			
2.4 Environmental Permitting	4	8			8	28	
2.5 Manage Bid Process	2	32					
SUBTOTAL HOURS	72	156	32	8	8	28	304
SUBTOTAL DOLLARS	\$15,480	\$30,420	\$4,640	\$1,520	\$1,680	\$4,060	\$57,800
003 Highway 1 Sewer Cleaning (CIP Project #19)							
3.1 Prepare Plan and Specifications	4	20	32	8			
3.2 Coordination with the District and Contractor	16	32					
3.3 Manage Bid Process		24					
SUBTOTAL HOURS	20	76	32	8	0	0	136
SUBTOTAL DOLLARS	\$4,300	\$14,820	\$4,640	\$1,520	\$0	\$0	\$25,280
HOURS AND COST							
HOURS PER POSITION	178	372	68	16	24	92	
HOURLY RATE (TYPICAL)	\$215	\$195	\$145	\$190	\$210	\$145	
TOTAL COST (NOT TO EXCEED) =							\$167,370



**SEASIDE COUNTY SANITATION DISTRICT
STAFF REPORT**

Item No.: 5.C.

TO: Seaside County Sanitation District

FROM: Craig Malin, District Manager

BY: Richard Riedl, District Engineer

DATE: December 12, 2017

SUBJECT: APPROVE RESOLUTION FOR A CONTRACT AMENDMENT NO. 3 TO A PROFESSIONAL SERVICES AGREEMENT WITH HARRIS & ASSOCIATES FOR AN AMOUNT NOT TO EXCEED THIRTY ONE THOUSAND FOUR HUNDRED THIRTY DOLLARS (\$31,430) FOR EMERGENCY CONSTRUCTION SUPPORT, ENVIRONMENTAL PERMITTING, AND INSPECTION SERVICES FOR 942 ANGELUS WAY SEWER LINE UPGRADE.

PURPOSE

The purpose of this item is to approve the retention of Harris & Associates for emergency construction support, environmental permitting, and inspection services as a result of a sewer main break at 942 Angelus Way (a private residence) that required immediate construction services.

RECOMMENDATION

It is recommended that the Board adopt a resolution for a contract Amendment with Harris & Associates for an amount not to exceed Thirty One Thousand Four Hundred Thirty Dollars (\$31,430) to provide emergency construction support, environmental permitting, and inspection services and authorizing the District Manager to execute the Amendment.

BACKGROUND

On Sunday, November 5th, 2017, the sewer main crossing a creek at 942 Angelus Way (a private residence) experienced a significant blockage and a subsequent failure and break that resulted in a sanitary sewer spill into the creek. Upon notification, Seaside County Sanitation District Staff, along with police, fire, Del Rey Oaks City Manager, Monterey County Health Department, and Monterey One Water staff, responded to the emergency and took appropriate action in order to stabilize the situation. Temporary repairs were made to mitigate the sanitary sewer spill.

The failure of the subject sewer main was a result of its poor condition, declining integrity, and limited access for operations and maintenance. The 942 Angelus Way Sewer Line Upgrade was identified as Project No. 3 in the District's Capital Improvement Project and included 'environmental threat(s)' and 'potential spills' as the 'Project Need'. Unfortunately, the failure of the sewer main was experienced prior to execution of the formal CIP Project through the traditional design, bid, build process and had to be constructed as an emergency effort.

At the request of District staff and upon immediate notification of the subject emergency, Harris & Associates submitted a Proposal to provide emergency construction support, environmental permitting, and inspection services. Staff recommends that the Board adopt the attached resolution approving a contract Amendment to the professional services agreement with Harris & Associates and authorize the District Manager to execute the Amendment.

FISCAL IMPACT

The fiscal year 2017/2018 budget for repairs to 942 Angelus Way is \$373,972 (953-0-8820-9203). Construction costs were \$65,928 (to be presented to the Board as a separate item). There are sufficient funds available for the contract amendment with Harris in the amount of Thirty One Thousand Four Hundred Thirty Dollars.

ATTACHMENTS

1. Resolution
 2. Contract Amendment #3
-

Reviewed for Submission By:

Craig Malin, District Manager

RESOLUTION NO. 2017- XX (SCSD)

**A RESOLUTION OF THE SEASIDE COUNTY SANITATION DISTRICT
APPROVING CONTRACT AMENDMENT #3 TO A PROFESSIONAL SERVICES
AGREEMENT WITH HARRIS & ASSOCIATES FOR AN AMOUNT NOT TO EXCEED
THIRTY ONE THOUSAND FOUR HUNDRED THIRTY DOLLARS (\$31,430) FOR
EMERGENCY CONSTRUCTION SUPPORT, ENVIRONMENTAL PERMITTING, AND
INSPECTION SERVICES FOR 942 ANGELUS WAY SEWER LINE UPGRADE**

WHEREAS, On November 5, 2017 the sewer main at 942 Angelus Way crossing the Del Rey Creek suffered a failure requiring emergency repair; and

WHEREAS, District staff requested Harris perform the emergency construction support, environmental permitting, and inspection services of 942 Angelus Way Sewer Line Upgrade for the District; and

WHEREAS, Harris submitted a proposal to perform the emergency construction support, environmental permitting, and inspection services of 942 Angelus Way Sewer Line Upgrade for the District; and

WHEREAS, the District has determined that the proposed scope of work and budget are reasonable.

NOW THEREFORE, BE IT RESOLVED, that the Seaside County Sanitation District authorizes the District Manager to execute a contract amendment to the professional services agreement with Harris & Associates for an amount not-to-exceed Thirty One Thousand Four Hundred Thirty Dollars (\$31,430) to provide emergency construction support, environmental permitting, and inspection services as described in contract amendment proposal attached hereto.

PASSED AND ADOPTED at a regular meeting of the Seaside County Sanitation District duly held on the 12th day of December 2017, by the following vote:

AYES: Board Members:
NOES: Board Members:
ABSENT: Board Members:
ABSTAIN: Board Members:

Ralph Rubio, Chair

Seaside County Sanitation District

ATTEST:

Lesley Milton-Rerig, District Clerk
Seaside County Sanitation District

CONTRACT AMENDMENT #3
CAPITAL IMPROVEMENTS PROJECTS MANAGEMENT
Seaside County Sanitation District

Date: November 20, 2017

Change Requested by: X City Consultant

Contract Date

Project Name

May 30, 2017

Capital Improvements Projects Management

To (Consultant): Harris & Associates, 2 Salinas Street, Suite B, Salinas, CA 93901

You are directed to make the following changes to the Contract Documents or amend the following described work not included in the contract documents for this project.

The purpose of this addendum is to provide additional professional services related to the project named above. The contract terms and conditions shall not be modified except for as stated herein.

MODIFY the following text in **Section 2, "Services."**

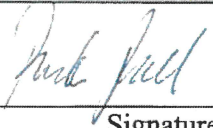
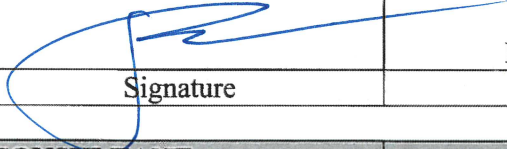
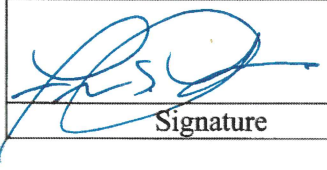
Consultant shall perform the tasks described and set forth in Exhibit A, Exhibit A1, Exhibit A2, and [Exhibit A3](#) attached hereto and incorporated herein as though set forth in full. Consultant shall complete the tasks according to the schedule of performance which is also set forth in Exhibit A, Exhibit A1, Exhibit A2, and [Exhibit A3](#).

MODIFY the following text in **Section 21, "Contents of Request for Proposal and Proposal."**

Consultant is bound by the contents of City's Request for Proposal, Exhibit "C" hereto and incorporated herein by this reference, and the contents of the proposal submitted by the Consultant, Exhibit A, Exhibit A1, Exhibit A2, and [Exhibit A3](#) hereto.

Original Contract Amount	Previous CCO Total (Not including this CCO)	This CCO Total	Revised Contract Amount
\$41,880.00	\$35,650.00	\$31,430.00	\$108,960.00
Original Contract Time	Original Completion Date	CCO Days To Date (Including This CCO)	Revised Completion Date
36 Months	June 30, 2020	0	June 30, 2020

CONTRACT AMENDMENT #3
CAPITAL IMPROVEMENTS PROJECTS MANAGEMENT
Seaside County Sanitation District

SUBMITTED BY:		
	Rick Riedl District Engineer	November 20, 2017
Signature	Name and Title	Date
CITY APPROVAL BY:		
	Craig Malin District Manager	11/21/17
Signature	Name and Title	Date
CONSULTANT ACCEPTANCE BY:		
	Frank S. Lopez Director, Engineering Services	11/21/2017
Signature	Name and Title	Date



November 20, 2017

Rick Riedl, District Engineer
Seaside County Sanitation District
440 Harcourt Avenue
Seaside, CA 93955

Subject: Scope and Fee to Provide Project Management, Construction Support and Environmental Permitting Services for 942 Angelus Way Emergency Sewer Pipeline Repair Project
Engineering Services Contract - Task #2 **Amendment #1**

The District's design consultant, E2 Consulting Engineers, developed Plans, Specifications and Estimate (PS&E) package for a sewer line upgrade at 942 Angelus Way in the community of Del Rey Oaks back in 2015. E2 Consulting Engineers has since finalized the plans and Harris has coordinated this effort on behalf of the District.

On November 5, 2017, the pipeline experienced a blockage that caused sewage to spill from a relief valve in the sewer lateral. SCSD staff have since stabilized the pipe, however, emergency repairs are needed. Therefore, this amendment is to assist the District with this emergency project.

I. SCOPE OF WORK

This Task Order is to provide Project Management, Construction Support, and Emergency Permitting services for the repairs to the Sewer Line Upgrade at 942 Angelus Way. Harris will provide the following services:

Task 001 – Project Management

Harris will manage the project and coordinate with District staff, the design consultant (E2) and the construction management team to deliver this project. This effort includes meetings with the parties noted above as budget permits.

Task 002 – Construction Management and Inspection

Harris staff will serve as the construction manager and inspector for the emergency repair. Based on coordination with the contractor, we expect the construction schedule to last approximately 2-weeks. Richard Burton will serve as our Inspector. He will coordinate directly with the selected contractor and prepare daily inspection notes, which will be submitted to the District.

The time spent on the project site will be subject to prevailing wage rates and therefore our estimated budget reflects this rate.

Task 003 – Emergency Permitting Services

Due to the emergency nature to repair this project, Harris staff has already been in contact with the Army Corps, Central Coast Regional Water Quality Control Board and California Department of Fish and

Wildlife. Based on our discussions with the permitting agencies, we believe the following scope of work is required.

Task 003.1 – USACE RGP-5 Permit

This emergency permit is required by USACE in order to repair to the pipeline. Therefore, Harris staff will prepare the permit application, coordinate to move the permit through the USACE, including providing further information for other agencies, and preparation of the closing report. We will need to detail the work that was done, calculate acreages and work with the USACE to determine mitigation, if necessary.

Task 003.2 - SWRCB and CCRWQCB 401 Emergency Permit for a RGP-5

This includes preparation of an emergency permit (much of the information will come from the RGP-5 that was submitted), preparation of a closing report, and coordination with the agency on potential mitigation, as required.

Task 003.3 - CDFW Emergency Permit for Sandbags/Clean Up Efforts and a second Emergency Permit for the Permanent Fix.

Preparation of an expedited Emergency Permit that includes details of the work that was undertaken to stop the sewage from leaking into the creek and removing the sewage. Preparation of a second Emergency Permit for the fix of the pipeline. This will also involve coordination to determine mitigation, etc.

Our level of effort will be provided on an “hourly not-to-exceed” basis as shown in the attached Exhibit A. Additional efforts (i.e. additional task items unforeseen at the authoring of this task order) will be provided under a subsequent authorization. We have included an expense budget to support the required permit fees.

Please contact me directly at (831) 233-9242 with any questions regarding this scope and fee.

Regards,

HARRIS & ASSOCIATES, Inc.



Frank S. Lopez, PE, QSD, CFM
Director, Engineering Services

Accepted:

By: Seaside County Sanitation District

Date



LEVEL OF EFFORT - EXHIBIT A

HARRIS ASSOCIATES

SEASIDE COUNTY SANITATION DISTRICT
PROJECT MANAGEMENT, CONSTRUCTION SUPPORT AND ENVIRONMENTAL PERMITTING SERVICES FOR
942 ANGELUS WAY EMERGENCY SEWER PIPELINE REPAIR

TASK, PHASE, DESCRIPTION	STAFF						
	Project Director F Lopez HOURS	Project Manger J Caprio HOURS	Construction Manager T O'Halloran HOURS	Construction Inspection R. Burton HOURS	ENV Permit Lead K. Giberson HOURS	Permit Analyst W. Young HOURS	TOTALS
1.0 PROJECT MANAGEMENT							
1.1 Project Oversight	8	16					
SUBTOTAL HOURS	8	16	0	0	0	0	24
SUBTOTAL DOLLARS	\$1,720	\$3,120	\$0	\$0	\$0	\$0	\$4,840
2.0 CONSTRUCTION MANAGEMENT & INSPECTION							
2.1 Construction Management		8	24				
2.2 Inspection (Prevailing Wage)				56			
SUBTOTAL HOURS	0	8	24	56	0	0	88
SUBTOTAL DOLLARS	\$0	\$1,560	\$4,560	\$9,520	\$0	\$0	\$15,640
3.0 EMERGENCY PERMITTING SERVICES							
3.1 USACE Permitting		4			2	20	
3.2 RWQCB Permitting		4			2	12	
3.3 CDFW Permitting		4			2	12	
SUBTOTAL HOURS	0	12	0	0	6	44	62
SUBTOTAL DOLLARS	\$0	\$2,340	\$0	\$0	\$1,230	\$6,380	\$9,950
HOURS AND COST							
HOURS PER POSITION	8	36	24	56	6	44	
HOURLY RATE (TYPICAL)	\$215	\$195	\$190	\$170	\$205	\$145	
HARRIS TOTAL FEE	\$1,720	\$7,020	\$4,560	\$9,520	\$1,230	\$6,380	\$30,430
Expenses (Permit Fees)							\$1,000
TOTAL COST INCLUDING OPTIONAL SERVICES (NOT TO EXCEED):						Total :	\$31,430



**SEASIDE COUNTY SANITATION DISTRICT
STAFF REPORT**

Item No.: 5.D.

TO: Seaside County Sanitation District

FROM: Craig Malin, District Manager

BY: Richard Riedl, District Engineer

DATE: December 12, 2017

SUBJECT: **ADOPT RESOLUTION APPROVING CONTRACT WITH MONTEREY PENINSULA ENGINEERING INC FOR AN AMOUNT NOT TO EXCEED SIXTY FIVE THOUSAND NINE HUNDRED TWENTY EIGHT DOLLARS (\$65,928) FOR EMERGENCY CONSTRUCTION OF THE 942 ANGELUS WAY SEWER MAIN UPGRADE.**

PURPOSE

The purpose of this item is to approve the retention of Monterey Peninsula Engineering Inc. for the emergency construction of the sewer main at 942 Angelus Way.

RECOMMENDATION

It is recommended that the Board adopt a resolution approving the Contract with Monterey Peninsula Engineering for an amount not to exceed Sixty Five Thousand Nine Hundred Twenty Eight Dollars (\$65,928) to provide emergency construction services and authorizing the District Manager to execute the Contract.

BACKGROUND

On Sunday, November 5th, 2017, the sewer main crossing a creek at 942 Angelus Way (a private residence) experienced a significant blockage and a subsequent failure and break that resulted in a sanitary sewer spill into the creek. Upon notification, Seaside County Sanitation District Staff, along with police, fire, Del Rey Oaks City Manager, Monterey County Health Department, and Monterey One Water staff, responded to the emergency and took appropriate, action in order to stabilize the situation. Temporary repairs were made to mitigate the sanitary sewer spill.

The failure of the subject sewer main was a result of its poor condition, declining integrity, and limited access for operations and maintenance. The 942 Angelus Way Sewer Line Upgrade was

identified as Project No. 3 in the District's Capital Improvement Project and included 'environmental threat(s)' and 'potential spills' as the 'Project Need'. Unfortunately, the failure of the sewer main occurred prior to execution of the formal CIP Project through the traditional design, bid, build process and had to be constructed as an emergency effort.

At the request of District staff and upon immediate notification of the subject emergency, Monterey Peninsula Engineering submitted a Proposal to construct the 942 Angelus Way Sewer Line Upgrade. The proposal was determined to be reasonable given the emergency nature and timing of the work. During construction of the sewer main, District staff requested MPE to construction a stabilized access route to provide continued safe access to the site for future maintenance. A change order in the amount of \$2,500 was authorized by District staff to perform this work. Construction of repairs was completed December 5, 2017.

Staff recommends that the Board adopt the attached resolution approving the Contract and associated Change Order with Monterey Peninsula Engineering and authorize the District Manager to execute the agreements.

FISCAL IMPACT

The approved fiscal year 2017/2018 budget for repairs to 942 Angelus Way is \$373,972 (953-0-8820-9203). Project management fees for Harris and Associates were \$31,430, presented to the Board in a separate item. The initial contract award amount was \$63,428. A change order of \$2,500 was necessary for placement and compaction of 20 tons of class II baserock to safely complete the project. There are sufficient funds to award a contract agreement and change order totaling \$65,928 with Monterey Peninsula Engineering.

ATTACHMENTS

1. Resolution
2. Contract Agreements
3. Volume 1A Contract Bid Documents
4. Volume 1B Contract Bid Document
5. Contract Documents Volume II Drawings

Reviewed for Submission By:

Craig Malin, District Manager

RESOLUTION NO. 2017- XX (SCSD)

**A RESOLUTION OF THE SEASIDE COUNTY SANITATION DISTRICT
APPROVING THE CONTRACT WITH MONTEREY PENINSULA ENGINEERING FOR
AN AMOUNT NOT TO EXCEED SIXTY FIVE THOUSAND NINE HUNDRED TWENTY
EIGHT DOLLARS (\$65,928) FOR EMERGENCY CONSTRUCTION OF THE 942
ANGELUS WAY SEWER MAIN UPGRADE**

WHEREAS, On November 5, 2017 the sewer main at 942 Angelus Way crossing the Del Rey Creek suffered a failure requiring immediate emergency repair; and

WHEREAS, District staff requested Monterey Peninsula Engineering perform the emergency construction of 942 Angelus Way Sewer Line Upgrade for the District; and

WHEREAS, Monterey Peninsula Engineering submitted a proposal to perform the emergency construction services of 942 Angelus Way Sewer Line Upgrade for the District; and

WHEREAS, the District has determined that the proposed scope of work and budget are reasonable; and

Whereas, a change order in the amount of \$2,500 to provide compacted base rock access road was requested by District staff to enhance site access for on-going maintenance activities.

NOW THEREFORE, BE IT RESOLVED, that the Seaside County Sanitation District authorizes the District Manager to execute the Contract and the Change Order, attached hereto, with Monterey Peninsula Engineering for an amount not-to-exceed Sixty Five Thousand Nine Hundred Twenty Eight Dollars (\$65,928) to construct the sewer main at 942 Angelus Way, and authorize the District Manager to execute the Contract and Change Order.

PASSED AND ADOPTED at a regular meeting of the Seaside County Sanitation District duly held on the 12th day of December 2017, by the following vote:

AYES: Board Members:
NOES: Board Members:
ABSENT: Board Members:
ABSTAIN: Board Members:

Ralph Rubio, Chair
Seaside County Sanitation District

ATTEST:

Lesley Milton-Rerig, District Clerk
Seaside County Sanitation District

SEASIDE COUNTY SANITATION DISTRICT

942 Angelus Way Project

Contract Agreement

This Agreement, made and concluded in duplicate this 25th day of November, 2017, between the SEASIDE COUNTY SANITATION DISTRICT, herein referred to as "District," and Monterey Peninsula Engineering, herein referred to as "Contractor".

WITNESSETH:

Article I. For and in consideration of the payments and agreements hereinafter mentioned to be made and performed by said District and hereunto annexed, the said Contractor agrees with the said District, at his own proper cost and expense, to do all the work and furnish all the materials, except such as are mentioned in the specifications to be furnished by said District, necessary to construct and complete in a good workmanlike and substantial manner and to the satisfaction of said District, in accordance with the provisions hereto annexed and also in accordance with the latest applicable wage rates hereto annexed and referenced.

The work to be done is specified in these specifications and plans, approved by the District Engineer, which said specifications and plans are made part of this contract. To wit:

- a. Volume IA: Bid Documents consisting of: Contracting Requirements (Documents 00 52 00 through 00 73 00), issued 15 November 2017.
- b. Volume IB: Project Manual consisting of: Special Provisions, General Requirements (Sections 01 11 00 through 01 70 00) and the Technical Specifications, issued 15 November 2017.
- c. Volume II: Drawings (as listed in Drawing G-1) issued 15 November 2017.

Article II. The said District hereby promises and agrees with the said Contractor to employ, and does hereby employ, the said Contractor to provide the materials and do the work according to the terms and conditions herein contained and referred to, for the price hereinafter set forth, and hereby contracts to pay the same at the time, in the manner, and upon the conditions herein set forth; and the said parties for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of the covenants herein contained.

Article III. The State general prevailing wage rates determined by the Director of Industrial Relations are hereby referenced and made a part of this contract. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this instrument and the bid or proposal of said Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said proposal conflicting herewith.

Article IV. By my signature hereunder, as Contractor, I certify that I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's 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.

Article V. And the said Contractor agrees to receive and accept the following price as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this agreement; also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the said District and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of work and for well and faithfully completing the work, and the whole thereof, in the manner and according to the plans and specifications, and the requirements of the Engineer under them, to wit:

ITEM NO.	BID ITEMS	UNIT	TOTAL QNTY	UNIT PRICE	TOTAL COST
1	Complete Project	LS	1	\$63,428.00	\$63,428.00
Total					\$63,428.00

Article VI. - Assignment. The Contractor shall not assign any of his duties, responsibilities or obligations without prior written consent from the District.

Article VII. Indemnity. To the fullest extent permitted by law, the Contractor agrees to indemnify, defend and hold harmless, District and any and all of District's boards, officers, employees, agents, assigns, and successors in interest through legal counsel reasonably acceptable to the District, from and against any and all claims losses, demand and expenses, including, but not limited to, attorney's fees and cost of litigation, on account of bodily injury, including death, or property damage arising out of or in any way connected to the work performed by Contractor under this agreement. Without affecting the rights of District under any provision of this agreement, Contractor shall not be required to indemnify and hold harmless District for liability attributable to the active negligence of District, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In instances where District is shown to have been actively negligent and where District's active negligence accounts for only a percentage of the liability involved, the obligation of Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of District.

Article VIII. Insurance. Prior to the beginning of and throughout the duration of the Work, Contractor and its subcontractors shall maintain insurance in conformance with the requirements set forth below. Contractor will use existing coverage to comply with these requirements. If that existing coverage does not meet the requirements set forth herein, Contractor agrees to amend, supplement or endorse the existing coverage to do so.

Contractor acknowledges that the insurance coverage and policy limits set forth in this section constitute the minimum amount of coverage required. Any insurance proceeds available Contractor or its subcontractors in excess of the limits and coverage identified in this Agreement and which is applicable to a given loss, claim or demand, will be equally available to District.

Contractor shall provide the following types and amounts of insurance:

1. Commercial General Liability Insurance using Insurance Services Office "Commercial General Liability" policy form CG 00 01 or the exact equivalent. Defense costs must be paid in addition to limits. There shall be no cross liability exclusion for claims or suits by one insured against another. Limits shall be no less than \$2,000,000 per occurrence for all covered losses and no less than \$4,000,000 general aggregate.

Contractor's policy shall contain no endorsements limiting coverage beyond the basic policy coverage grant for any of the following:

- Explosion, collapse or underground hazard (XCU)
- Products and completed operations
- Pollution liability
- Contractual liability

Coverage shall be applicable to District for injury to employees of contractors, subcontractors or others involved in the project. Policy shall be endorsed to provide a separate limit applicable to this project.

2. Workers' Compensation Insurance: Contractor shall maintain Workers' Compensation Insurance (Statutory Limits) and Employer's Liability Insurance (with limits of at least \$1,000,000) for Contractor's employees in accordance with the laws of the State of California, Section 3700 of the Labor Code. In addition, Contractor shall require each subcontractor to similarly maintain Workers' Compensation Insurance and Employer's Liability Insurance in accordance with the laws of the State of California, Section 3700 for all of the subcontractor's employees. on a state-approved policy form providing statutory benefits as required by law with employer's liability limits no less than \$1,000,000 per accident for all covered losses.
3. Business Auto Coverage on ISO Business Auto Coverage form CA 00 01 06 92 including symbol 1 (Any Auto) or the exact equivalent. Limits shall be no less than \$1,000,000 per accident, combined single limit. If Contractor owns no vehicles, this requirement may be satisfied by a non-owned auto endorsement to the general liability policy described above. If Contractor or Contractor's employees will use personal autos in any way on this project, Contractor shall provide evidence of personal auto liability coverage for each such person.
4. Excess or Umbrella Liability Insurance (Over Primary) if used to meet limit requirements, shall provide coverage at least as broad as specified for the underlying coverages. Any such coverage provided under an umbrella liability policy shall include a drop down provision providing primary coverage above a maximum \$25,000 self-insured retention for liability not covered by primary but covered by the umbrella. Coverage shall be provided on a "pay on behalf" basis, with defense costs payable in addition to policy limits. There shall be no cross liability exclusion precluding coverage for claims or suits by one insured against another. Coverage shall be applicable to District for injury to employees of Contractor, subcontractors or others involved in the Work. The scope of coverage provided is subject to approval of District following receipt of proof of insurance as required herein. Limits are subject to review but in no event less than \$1,000,000 per occurrence and aggregate.

Article IX. - Legal Action. Should either party to this agreement bring legal action against the other, the case shall be handled in Monterey County, California, and the party prevailing in such action shall be entitled to a reasonable attorney's fee which shall be fixed by the judge hearing the case and such fee shall be included in the judgement, together with all costs.

Article X. - Notices. All notices herein provided to be given, or which may be given by either party to the other, shall be deemed to have been fully given and fully received when made in writing and deposited in the United States mail, certified and postage prepaid, and addressed to the respective parties as follows:

SEASIDE COUNTY SANITATION DISTRICT
Rick Riedl, District Engineer
440 Harcourt Avenue
Seaside, CA 93955

Contractor's Name and Mailing Address:

Monterey Peninsula Engineering
192 Healy Avenue
Marina, CA 93933

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands the year and date first above written.

SEASIDE COUNTY SANITATION DISTRICT

CONTRACTOR

by: 

Craig Malin, District Manager

by: 

Paul Bruno, Manager

11/20/17

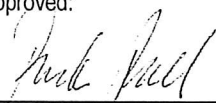
Date

11/17/17

Date

Licensed in accordance with an act providing for the registration of Contractors. License No. 972425

Approved:



Rick Riedl/District Engineer

CONTRACT AMENDMENT #1
942 Angelus Way Sewer Line Upgrade
Seaside County Sanitation District

Date: December 5, 2017

Change Requested by: X City Consultant

Contract Date

May 30, 2017

Project Name

Capital Improvements Projects Management

To (Contractor): Monterey Peninsula Engineering, PO Box 2317, Monterey CA 93942

You are directed to make the following changes to the Contract Documents or amend the following described work not included in the contract documents for this project.

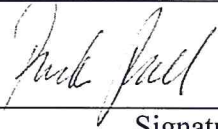
The purpose of this addendum is to provide additional professional services related to the project named above. The contract terms and conditions shall not be modified except for as stated herein.

MODIFY the following table in **Article V**.

ITEM NO.	BID ITEMS	UNIT	TOTAL QNTY	UNIT PRICE	TOTAL COST
1	Complete Project	LS	1	\$63,428.00	\$63,428.00
2	Provide and compact 20 tons class II baserock	LS	1	\$2,500.00	\$2,500.00
Total					\$65,928.00

CONTRACT AMENDMENT #1
942 Angelus Way Sewer Line Upgrade
Seaside County Sanitation District

Original Contract Amount	Previous CCO Total (Not including this CCO)	This CCO Total	Revised Contract Amount
\$63,428.00	\$0.00	\$2,500.00	\$65,928.00
Original Contract Time	Original Completion Date	CCO Days To Date (Including This CCO)	Revised Completion Date
1 Month	December 20, 2017	1	December 21, 2017

SUBMITTED BY:		
	Rick Riedl District Engineer	December 5, 2017
Signature	Name and Title	Date
CITY APPROVAL BY:		
	Craig Malin District Manager	
Signature	Name and Title	Date

CONSULTANT ACCEPTANCE BY:		
	Mike Barthel, Project Manager	12/6/17
Signature	Name and Title	Date

ISSUED FOR CONSTRUCTION

VOLUME 1A

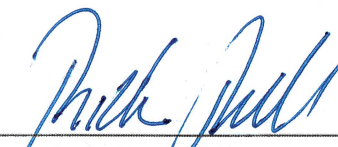
**CONTRACT BID DOCUMENTS FOR
942 ANGELUS WAY SEWER LINE UPGRADE**



Prepared for
SEASIDE COUNTY SANITATION DISTRICT
Department of Public Works

15 November 2017




Approved by: Rick Riedl, P.E.
District Engineer

Prepared by



E2 CONSULTING ENGINEERS, INC.

1900 POWELL STREET, SUITE 250, EMERYVILLE, CA 94608 • 510-428-4721

ISSUED FOR CONSTRUCTION

VOLUME 1A

**CONTRACT BID DOCUMENTS FOR:
942 ANGELUS WAY SEWER LINE UPGRADE**



Prepared for

**SEASIDE COUNTY SANITATION DISTRICT
Department of Public Works**

15 November 2017

Prepared by



E2 CONSULTING ENGINEERS, INC.

1900 POWELL STREET, SUITE 250, EMERYVILLE, CA 94608 • 510-428-4721

942 ANGELUS WAY SEWER LINE UPGRADE

TABLE OF CONTENTS

VOLUME IA – CONTRACT BID DOCUMENTS

DIVISION 00

PROCUREMENT REQUIREMENTS

Documents

00 11 16	Invitation to Bid – NOT USED
00 21 13	Instructions to Bidders – NOT USED
00 41 00	Bid Form – NOT USED
00 43 13	Bid Security Form – NOT USED
00 43 14	Bid Guaranty Bond Form – NOT USED
00 45 19	Non-Collusion Affidavit – NOT USED
00 45 26	Worker’s Compensation Insurance Certificate

CONTRACTING REQUIREMENTS

Documents

00 51 00	Notice of Award
00 52 00	Agreement Form
00 55 00	Notice to Proceed
00 61 13.13	Performance Bond
00 61 13.16	Payment Bond
00 72 00	General Conditions
00 73 00	Supplementary Conditions

VOLUME IB – PROJECT MANUAL

SPECIFICATIONS

DIVISION 01 - GENERAL REQUIREMENTS

01 11 00	Summary of Work
01 14 00	Work Restriction
01 20 00	Price and Payment Procedures
01 30 00	Administrative Requirements
01 31 19	Project Meetings
01 32 16	Construction Progress Schedule
01 33 00	Submittal Procedures
01 41 00	Regulatory Requirements
01 42 13	Abbreviations & Acronyms
01 45 00	Quality Control
01 50 00	Construction and Temporary Facilities
01 57 23	Temporary Erosion Control
01 70 00	Execution and Closeout Requirements

DIVISION 02 – EXISTING CONDITIONS

02 41 00	Demolition
----------	------------

DIVISION 03 – CONCRETE

03 11 00	Concrete Forming
03 20 00	Concrete Reinforcing
03 30 00	Cast-in-Place Concrete

DIVISION 04 - MASONRY (NOT USED)

DIVISION 05 – METALS (NOT USED)

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES (NOT USED)

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

07 92 00	Joint Sealants
----------	----------------

DIVISION 08 – OPENINGS (NOT USED)

DIVISION 09 – FINISHES (NOT USED)

DIVISION 10 – SPECIALTIES (NOT USED)

DIVISION 11 – EQUIPMENT (NOT USED)

DIVISION 12 – FURNISHINGS (NOT USED)

DIVISION 13 – SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 – CONVEYING EQUIPMENT (NOT USED)

DIVISIONS 15 - 19 – RESERVED FOR FUTURE EXPANSION

DIVISION 21 – FIRE SUPPRESION (NOT USED)

DIVISION 22 – PLUMBING (NOT USED)

**DIVISION 23 – HEATING, VENTILATING and AIR CONDITIONING (HVCA)
(NOT USED)**

DIVISION 25 – INTEGRATED AUTOMATION (NOT USED)

DIVISION 26 – ELECTRICAL (NOT USED)

DIVISION 27 – COMMUNICATIONS (NOT USED)

DIVISION 28 – ELECTRONIC SAFETY and SECURITY (NOT USED)

DIVISION 31 – EARTHWORK

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31 23 00	Excavation and Fill
31 23 19	Dewatering
31 23 33	Trenching, Backfilling and Compaction
31 40 00	Sheeting, Waling and Shoring

DIVISION 32 – EXTERIOR IMPROVEMENTS (NOT USED)

DIVISION 33 - UTILITIES –

33 05 16	Utility Structures
33 05 20	General Piping Requirements
33 05 20.11	PVC Gravity Sewer Pipe and Fittings
33 05 20.14	Steel Pipe and Fittings
33 05 20.16	High Density Polyethylene (HDPE) Pipe and Fittings
33 08 30	Commissioning of Wastewater Utilities

DIVISION 34 - TRANSPORTATION (NOT USED)

DIVISION 35 – WATERWAY AND MARINE CONSTRUCTION (NOT USED)

DIVISION 40 – PROCESS INTEGRATION (NOT USED)

**DIVISION 41 – MATERIAL PROCESSING and HANDLING EQUIPMENT
(NOT USED)**

DIVISION 42 – PROCESS HEATING, COOLING, and DRYING (NOT USED)

**DIVISION 43 – PROCESS GAS and LIQUID HANDLING, PURIFICATION and
STORAGE EQUIPMENT (NOT USED)**

**DIVISION 44 – POLLUTION and WASTE CONTROL EQUIPMENT (NOT
USED)**

**DIVISION 45 – INDUSTRY SPECIFIC MANUFACTURING EQUIPMENT
(NOT USED)**

DIVISION 46 – WATER and WASTEWATER EQUIPMENT (NOT USED)

DIVISION 48 – ELECTRICAL POWER GENERATION (NOT USED)

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DOCUMENT 00 51 00

NOTICE OF AWARD

To: _____

Project Description:

942 ANGELUS WAY SEWER LINE UPGRADE PROJECT

The Agency has considered the Bid submitted by you for the above-described Work in response to its Advertisement for Bids dated _____ 2015 and Information for Bidders.

You are hereby notified that your Bid has been accepted for items in the amount of _____.

You are required by the Notice Inviting Bids to execute the Contract Agreement and furnish the required Contractor's Performance Bond, Payment Bond and Certificates of Insurance before execution of the Contract Agreement.

If you fail to execute said Contract Agreement and to furnish said Bonds within ten (10) days from the date of this Notice, said Agency will be entitled to consider all your rights arising out of the Agency's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The Agency will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Agency. Dated this _____ day of _____ 2015.

Seaside County Sanitation District
Agency

By: _____

Title: _____

ACCEPTANCE OF NOTICE OF AWARD

Receipt of the above Notice of Award is hereby acknowledged by:

This the _____ day of _____ 2015.

By: _____

Title: _____

END OF SECTION 00 51 00

DOCUMENT 00 52 00

AGREEMENT FORM

THIS CONTRACT AGREEMENT, made this _____ day of _____, 2015, by and between the SEASIDE COUNTY SANITATION DISTRICT hereinafter called "Agency" and _____, hereinafter called "Contractor".

WITNESSETH

WHEREAS, Agency has caused Volume IA, Bidding Documents (Procurement Requirements and Contracting Requirements), Volume IB, Project Manual (Special Provisions, General Requirements and Technical Specifications) and Volume II (Drawings), and other Contract Documents to be prepared and issued to bidder for certain Work described as the **942 ANGELUS WAY SEWER LINE UPGRADE PROJECT**, and

WHEREAS, Contractor has offered to perform the proposed Work in accordance with the terms of the Contract Documents, and

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the parties herein contained and to be performed, Contractor hereby agrees to complete the Work at the price and on the terms and conditions herein contained, and Agency hereby employs the Contractor and agrees to pay him/her the Contract Price provided herein for the full and complete performance of the Work, pursuant to the terms, conditions and covenants set forth in this Contract Agreement and other Contract Documents referenced below.

The Contract Documents incorporated into this Contract Agreement by this reference and made a part thereof are set forth in the following exhibit parts and include, in addition to this Contract Agreement, the following:

- a. Volume IA: Bid Documents consisting of: Procurement Requirements (Documents 00 11-16 – 00 45 19) and Contracting Requirements (Documents 00 52 00-0055 00), issued 17 February 2015.
- b. Volume 1B: Project Manual consisting of: Special Provisions, General Requirements (Sections 01 11 00 – 01 70 00) and the Technical Specifications, issued 17 February 2015.
- c. Volume II: Drawings (as listed in Drawing G-1) issued 17 February 2015.
- d. Addenda No. __, issued _____, 2015
- e. The Contractor's Bid
- f. The Contractor's Bid Security
- g. The Agency's Notice of Award

- h. The Agency's Notice to Proceed
- i. The Bonds issued by Contractor's Surety
- j. All Modifications issued after the date of this Contract Agreement

IN WITNESS WHEREOF, this Contract Agreement has been executed in duplicate on the day and year first above written.

Seaside County Sanitation District
Agency

Contractor

License No. _____

By: _____
Signature

By: _____
Signature

Title

Title

ATTEST:

ATTEST:

By: _____
Signature

By: _____
Signature

Title

Approved

By: _____
Signature

Title

*Signature must be accompanied by notarized document citing the individual's relationship to the Party of the Contract and his or her power to sign on behalf of the Party.

END OF SECTION 00 52 00

DOCUMENT 00 55 00

NOTICE TO PROCEED

To: _____

Date: _____

Project: **942 ANGELUS WAY SEWER
LINE UPGRADE PROJECT**

You are hereby notified to commence Work in accordance with the Contract Agreement dated _____ 2015, on or before _____ 2015, and you are to achieve Substantial Completion of the Work within _____ consecutive calendar days thereafter, and furthermore achieve Final Completion of the Work within thirty (30) calendar days following and beginning with Certification of Substantial Completion. The date of Substantial Completion of all Work is therefore _____ 2015.

Seaside County Sanitation District
(Agency)

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice to
Proceed is hereby acknowledged by:

This the _____ day of _____ 2015

By: _____

Title: _____

END OF SECTION 00 55 00

This page intentionally blank.

DOCUMENT 00 61 13.13

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, hereinafter called Principal, and _____, hereinafter called Surety, are jointly and severally held and firmly bound into the SEASIDE COUNTY SANITATION DISTRICT, hereinafter called Agency, in the penal sum of _____ Dollars (\$_____) lawful money of the United States, for the payment whereof unto, the Principal and Surety jointly and severally bind themselves forever firmly by these presents.

WHEREAS, Agency has awarded to Principal the construction of the **942 ANGELUS WAY SEWER LINE UPGRADE PROJECT** and

WHEREAS, Principal is required under the terms of the contract to furnish a bond for the faithful performance of the Contract,

NOW, THEREFORE, the condition of this obligation is such that if Principal shall faithfully perform the covenants, conditions and agreements in the Contract and any changes made as therein provided and shall indemnify and save harmless Agency, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise, it shall remain in full force and virtue, and Principal and Surety, in the event suit is brought on this bond, will pay to Agency such reasonable attorney's fees as shall be fixed by the Court.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period of one (1) year after the completion of the Work and its acceptance by Agency, during which time if Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the Agency from loss or damage made evident during the period of one (1) year from the date of acceptance of the Work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. However, nothing in this paragraph to the contrary notwithstanding, the obligation of Surety hereunder shall continue so long as any obligation of Principal remains.

AND Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, the Work to be performed there-under, or to the Contract Documents (including the Specifications and Drawings included therein) shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, the Work or to the Contract Documents (including the Specifications and Drawings included therein).

R0-02-17-15

Performance Bond

00 61 13.13 - 1

Q:\Seaside County Sanitation District (SCSD)\Angelus Way Sewer\05 Construction Phase\Project Manual - IFC\00 61 13.13-Performance Bond Form.Docx

AND IT IS HEREBY DECLARED AND AGREED that this obligation shall be binding upon and inure to the benefit of Principal, Surety and Agency and their respective heirs, executors, administrators, successors and assigns.

SIGNED AND SEALED THIS _____ day of _____ 2015.

Principal

By: _____

Signature

Surety

By: _____

Signature

(Surety's Mailing Address)

(Telephone Number)

(Attach Notarial Acknowledgement of Surety)

Approved as to form this _____ day of _____, 2015

Attorney for Agency

NOTE: The principal amount of this bond shall not be less than 100 percent of the total Contract Price.

END OF SECTION 00 61 13.13

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS;

THAT _____, hereinafter called Principal, and _____ hereinafter called Surety, are jointly and severally held and firmly bound unto the SEASIDE COUNTY SANITATION DISTRICT hereinafter called Agency, in the penal sum of _____ Dollars (\$_____) lawful money of the United States, for the payment whereof unto Agency, the Principal and Surety jointly and severally bind themselves forever firmly by these presents.

WHEREAS, Agency has awarded to Principal the construction of the **942 ANGELUS WAY SEWER LINE UPGRADE PROJECT** and

WHEREAS, said Principal is required to furnish a Payment Bond in connection with said Contract.

NOW, THEREFORE, the conditions of this obligation is such that if said Principal or any of his/her Subcontractors, heirs, executors, administrators, successors, or assigns shall fail to pay any of the persons named in Civil Code Section 3181, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the Wages of employees of the contractor and his/her subcontractors pursuant to Section 18806 of the Revenue and Taxation Code, with respect to such work and labor, Surety will pay the same in or to an amount not exceeding the amount hereinabove set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fee as shall be fixed by the court.

This bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under Section 3181 of the California Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

AND Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, the Work to be performed there-under, or to the Contract Documents (including the Specifications and Drawings included therein) shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, the Work or to the Contract Documents (including the Specifications and Drawings included therein).

AND IT IS HEREBY DECLARED AND AGREED that this obligation shall be binding upon and inure to the benefit of Principal, Surety and Agency and their respective heirs, executors, administrators, successors and assigns.

SIGNED AND SEALED THIS _____ day of _____ 2015.

Principal

By: _____
Signature

Surety

By: _____
Signature

(Surety's Mailing Address)

(Telephone Number)

(Attach Notarial Acknowledgement of Surety)

Approved as to form this _____ day of _____ 2015.

Attorney for Agency

NOTE: The principal amount of this bond shall not be less than 100 percent of the total Contract Price.

END OF SECTION 00 61 13.13

WORKER'S COMPENSATION INSURANCE CERTIFICATE

Execute the following form as required by the California Labor Code, Sections 1860 and 1861:

I am aware of the provisions of Section 3700 of the Labor Code, which require every employer to be insured against liability for worker's 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.

Date: _____

Monterey Peninsula Engineering

Contractor

By: _____
Signature

Title

Attest:

By: _____
Signature

Title

DOCUMENT 00 72 00
GENERAL CONDITIONS
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10. Subcontractors	00 72 00-25
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DOCUMENT 00 72 00

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

- 1.1 Terms used in the Contract Documents are defined in the “Glossary, Water and Wastewater Control Engineering” prepared by the Joint Editorial Board representing the American Public Health Association, American Society of Civil Engineers, American Water Works Association and the Water Pollution Control Federation, recent Edition, and are further defined herein. The terms shall have the meanings described that shall be applicable to both the singular and plural thereof.
- 1.2 **Addenda:** Written or graphic instruments issued prior to execution of the Contract Agreement that modify or interpret the Contract Documents.
- 1.3 **Bid:** The offer or proposal of the Bidder submitted in the prescribed form setting forth the prices for the Work to be performed.
- 1.4 **Bidder:** Any person, firm, corporation or organization submitting a Bid or Proposal for the Work.
- 1.5 **Bonds:** Bid, performance, and payment bonds and other instruments of security furnished by the Contractor and his surety in accordance with the Contract Documents.
- 1.6 **Change Order:** A written order to the Contractor signed by the Agency ordering and authorizing an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or the Contract Time.
- 1.7 **Contract Agreement:** The Contract Documents form the Contract Agreement. The Contract Agreement represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract Agreement may be amended or modified after execution only by a Modification. References herein to the Contract or the Agreement shall be understood to mean and refer to the Contract Agreement.
- 1.8 **Contract:** The Contract is the entire legal agreement between the Contractor and the Agency with respect to the Work of the Project as set forth exclusively and completely in the Contract Agreement and the additional Contract Documents.
- 1.9 **Contract Documents:** The Contract Documents consist of the Contract Agreement, the notices, instructions and forms issued to Bidders in the Procurement and Contracting Requirements for the submittal of Bids, the Contractor’s Bid, the Bid Security, the Notice of Award, the Notice to Proceed,

the Notice to Construct if any, the Conditions of the Contract (General, Supplementary, and other Conditions), the Bonds, the Drawings, the Specifications, all Addenda, and all Modifications.

- 1.10 **Contract Price:** The total moneys payable to the Contractor under the Contract Documents.
- 1.11 **Contract Time:** The number of consecutive calendar days for completion of the Work, or the date upon which the Work shall be completed and ready for use by the Agency, as stated in the executed Contract Agreement.
- 1.12 **Contractor:** The Contractor is the person, firm, corporation, or organization identified as such in the Contract Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.
- 1.13 **Day and Days:** The term day shall mean calendar day, the term days shall mean consecutive calendar days, and the term working days shall mean consecutive calendar days excluding Saturdays, Sundays, and legal holidays, unless otherwise stated or specified.
- 1.14 **Drawings:** The Drawings or exact reproductions thereof which show the scope and character of the Work to be performed and which have been approved by the Agency, and are referred to in the Contract Documents. The terms Drawing, plan, and plans have the same meaning as the term Drawings unless otherwise stated or specified.
- 1.15 **Engineer:** The term Engineer shall mean the person or firm appointed by the Agency to undertake the duties and powers assigned to the Engineer by these Specifications acting directly or through authorized representatives. The term Engineer is referred to throughout the Contract Documents as if singular in number and masculine in gender, and means the Engineer or his authorized representative, including the Engineer's employees, agents, and consultants.
- 1.16 **Field Order:** A Field Order is a written order issued by the Agency to the Contractor that clarifies or interprets the Contract Documents pursuant to **Paragraph 3.2**, or orders minor changes or alterations in the Work pursuant to **Paragraph 16.6**.
- 1.17 **Inspector:** The Inspector is the authorized agent of the Agency, limited in each case to the duties entrusted to him by the Agency. The term Inspector applies to all Inspectors appointed by the Agency.
- 1.18 **Modification:** A Modification is a written amendment to the Contract Agreement signed by both parties, a Change Order, or a Field Order.
- 1.19 **Notice of Award:** The written notice by the Agency to the Contractor that the Contractor is the successful Bidder and that, upon compliance with the conditions

precedent to be fulfilled by the Contractor within the stated time, the Agency will execute the Contract Agreement.

- 1.20 **Notice to Construct:** The written notice by the Agency to the Contractor authorizing the Contractor to begin the physical installation of the particular material or equipment covered by such notice.
- 1.21 **Notice to Proceed:** The written notice by the Agency to the Contractor authorizing him to proceed with the Work and establishing the date of commencement of the Work.
- 1.22 **Agency:** The Agency is the public or quasi-public body or authority, corporation, organization, association, partnership, or individual for whom the Work is to be performed or constructed and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Agency means the Agency or his authorized representative, and includes the Agency's employees, agents, and consultants.
- 1.23 **Project:** The Project is the total construction designed for or by the Agency of which the Work performed or constructed under the Contract Documents may be the whole or a part.
- 1.24 **Shop Drawings:** All drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier, or distributor and which illustrate the equipment, material, or some portion of the Work.
- 1.25 **Samples:** Samples are physical examples furnished by the Contractor to illustrate materials, equipment, or workmanship, and to establish standards by which the Work will be judged.
- 1.26 **Specifications:** The Specifications include the Procurement and Contracting Requirements, the General Requirements and the Divisions and Sections of the Specifications.
- 1.27 **Subcontractor and Sub-subcontractor:** The terms Subcontractor and Sub-subcontractor are referred to throughout the Contract Documents as if each were singular in number and masculine in gender, and means a Subcontractor or Sub-subcontractor or an authorized representative thereof. A Subcontractor is a person, firm, corporation, or organization that has a direct contract with the Contractor to perform any of the Work at the site. A Sub-subcontractor is a person, firm, corporation, or organization that has a direct or indirect contract with a Subcontractor to perform any of the Work at the site.
- 1.28 **Supplier:** Any person, firm, corporation, or organization that supplies materials or equipment for the Work, including that fabricated to a special design, and may also be a Subcontractor or a Sub-subcontractor.

- 1.29 **Surety:** The term Surety is the person, firm, corporation, or organization that joins with the Contractor in assuming the liability for the faithful performance of the Work and for the payment of all obligations pertaining to the Work in accordance with the Contract Documents by issuing the Bonds required by the Contract Documents or by law.
- 1.30 **Work:** The term Work includes all labor, materials, equipment, and incidentals necessary to produce the construction required by the Contract Documents and any and all obligations, duties, and responsibilities necessary to the successful completion of the construction assigned to or undertaken by the Contractor under the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

- 2.1 **Award:** The award of the Contract Agreement, if it is awarded, will be to the lowest responsible Bidder whose qualifications indicate the award will be in the best interest of the Agency and who's Bid complies with all the prescribed requirements. No Notice of Award will be given until the Agency has concluded such investigations as he deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the Agency within the time prescribed. The Agency reserves the right to reject the Bid of any Bidder who does not pass such investigation to the Agency's satisfaction. In analyzing Bids, the Agency may take into consideration alternatives and unit prices, if requested by the Bid forms. If the Contract Agreement is awarded, the Agency will give the successful Bidder a Notice of Award within the time period prescribed in Invitation to Bid after the opening of the Bids and no Bidder may withdraw his Bid for a period of time as prescribed in the Invitation to Bid after the date set for the receipt of Bids unless other time periods are stated in the Bidding Requirements or elsewhere in the Contract Documents.
- 2.2 **Execution of Contract Agreement:** At least two (2) counterparts of the Contract Agreement and such other Contract Documents as practicable shall be suitably identified as agreed by the parties and signed by the Agency and the Contractor. The Contract Agreement shall be executed within the time period prescribed in the Invitation to Bid of the Notice of Award unless otherwise provided in the Bidding Requirements or elsewhere in the Contract Documents. The Agency and the Contractor shall each receive an executed counterpart of the Contract Documents. The Contract Agreement shall be executed in the form adopted or directed by the Agency.
- 2.3 **Delivery of Bonds:** Simultaneously with the execution of the Contract Agreement, the Contractor shall deliver to the Agency the required Bonds.
- 2.4 **Forfeiture of Bid Security:** Failure of the successful Bidder to whom a Notice of Award is tendered to execute the Contract Agreement and deliver the Bonds and

other documents required of him at the time of execution within the time limit provided in the Contract Documents shall be just-cause for the Agency to annul the Notice of Award and declare the Bid and any security therefore forfeited.

- 2.5 **Copies of Documents:** The Agency will furnish to the Contractor up to ten (10) copies of the Specifications and Drawings as are reasonably necessary for the execution of the Work. Upon request, additional copies will be furnished at the cost of reproduction and handling.
- 2.6 **Progress Schedule:** Simultaneously with the execution of the Contract Agreement, the Contractor shall submit to the Agency for review and acceptance an estimated progress schedule in chart form indicating the date that each part or branch of the Work will be started and completed including, where applicable, the continuance of operations as provided in **Paragraph 12.10**, and indicating a schedule of the required submittals including shop drawings, samples, lists of materials and equipment, equipment data, and instruction manuals. The schedule shall conform to the Work and the Contract Time, shall be subdivided and coordinated to the schedule of values, and shall be subject to such revisions the Agency may require for acceptance. The version of the initial progress schedule accepted by the Agency shall become the 'As-Planned Schedule'. The Contractor shall clearly indicate his estimated progress payments for each month in the progress schedule for the Agency's information. The Contractor shall revise the As-Planned Schedule at monthly intervals and in the same form as the original As-Planned Schedule and concurrent with the time periods covered by applications for progress payments. Each revised schedule shall indicate the Work actually accomplished during the time period and the schedule for the performance of the remaining Work. Each revised schedule shall be submitted to the Agency for review and acceptance simultaneously with the Contractor's application for progress payment for the same time period, and shall be subject to such revisions the Agency may require for acceptance. The Agency's acceptance of revised progress schedules will be a condition precedent to the approval of the Contractor's applications for progress payments. Review and acceptance of the As-Planned Schedule or revisions thereto will neither impose on the Agency responsibility for the progress of the Work nor relieve the Contractor from full responsibility therefore. The chart form of progress schedule shall be a critical path type of schedule giving the estimated date that each part, branch or portion of the Work will be started and completed. Schedules shall conform to the Work and time set forth in the Contract Agreement. Monthly updates of the entire critical path schedule shall be submitted to the Agency.
- 2.7 **Schedule of Values:** Simultaneously with the execution of the Contract Agreement, the Contractor shall submit a schedule of values as required by **Paragraph 20.1** for use in progress payments. When directed by the Agency, the Contractor shall submit to the Agency for approval a revised schedule of values coordinated to the revised progress schedules required under **Paragraph 2.6** and pertinent requirements of Supplementary Conditions.

- 2.8 **Insurance:** Before execution of the Contract Agreement, the Contractor shall deliver to the Agency the certificates and proof of insurance as required by **Article 6**.
- 2.9 **Pre-construction Conference:** Before the Work is started, a conference will be held to review the progress schedule and the schedule of values, to establish procedures for handling the required submittals and for processing applications for payment, and to establish a working understanding between the parties as to the Project and the Work. Present at the conference shall be the Agency, the Engineer, and the Contractor and his/her Superintendent.
- 2.10 **Verification:** Before undertaking the Work, the Contractor shall carefully study and compare the Contract Documents for any discrepancies, inconsistencies, ambiguities, conflicts, or other errors in them or between the Contract Documents and the site conditions, and check and verify all figures, dimensions, and quantities shown thereon and all field measurements and actual site conditions, and shall bear all costs for any error in the Work resulting from his/her failure to so compare and verify. The Contractor shall at once report in writing to the Agency any error which he may discover and shall not perform or construct any of the Work affected thereby until an interpretation or clarification has been issued pursuant to **Paragraph 3.2**. The Contractor assumes full responsibility for having familiarized himself/herself with the nature and extent of the Contract Documents, the Work, locality, and local conditions that may in any manner affect the Work to be done, and represents that he/she has visited the site and correlated his/her observations with the requirements of the Contract Documents.
- 2.11 **Qualifications of Subcontractors and Suppliers:**
- 2.11.1 **Listing:** Within time after the opening of Bids as stipulated in the Bid Proposal, unless another time or method is required in the Contract Documents or by law, the apparent low Bidder shall submit to the Agency for acceptance a list of the names and addresses of Subcontractors without change from those which may be listed in the Bid Form and which are proposed to be employed in the performance of the Work, and including the persons and organizations who are to supply the principal items of materials and equipment, as may be contained in the Forms of Bid, and to the extent specified or required by the Agency. The list shall comply with the limitation on subcontracting provided in **Paragraph 10.2** unless the limitation is waived in whole or in part by the Agency. Prior to the Notice of Award, the Agency will notify the apparent low Bidder in writing if the Agency, after due investigation, has reasonable objection to any Subcontractor, person or organization on such list. The failure of the Agency to make objection to any Subcontractor, person or organization on the list prior to the Notice of Award shall constitute an acceptance of such Subcontractor, person or organization. Acceptance of any such Subcontractor, person or organization shall not constitute a waiver of any right of the Agency to

reject defective Work. The listing of Subcontractors shall be submitted with the Bid as required by the Instructions to Bidders and the Bid Form.

2.11.2 **Revision of Listing:** If, prior to the Notice of Award, the Agency has reasonable objection to and refuses to accept any Subcontractor, person or organization on such list, or if such list is rejected by the Agency because of proposed subcontracting in excess of the limitation provided in **Paragraph 10.2**, the apparent low Bidder may, prior to the Notice of Award (a) submit an acceptable substitute Subcontractor, person or organization without an increase in his Bid price or (b) submit a revised list complying with **Paragraph 10.2** or such waiver thereof the Agency may elect to issue, subject to all the preceding requirements of this subparagraph, with no increase in his Bid price or (c) withdraw his Bid and forfeit his Bid security. If, after the Notice of Award, the Agency refuses to accept any Subcontractor, person or organization on such list, the Contractor shall submit an acceptable substitute and the Contract Price will be increased or decreased by the proven difference in cost occasioned by such substitution and an appropriate Addendum or Change Order will be issued. No change or revision shall be made to the list accepted by the Agency nor shall any other Subcontractor, person, or organization not named in the accepted list be employed on or for the Work without the issuance of an appropriate Modification and at no additional cost to the Agency.

2.12 **Starting the Work:** The Contractor shall start the Work not later than the date stated in the Notice to Proceed, which date will be the first day of the Contract Time. Unless otherwise provided in the Procurement and Contracting Requirements, the date so stated for the Work to start will be the fifteenth day from the date of the Notice to Proceed. The Agency reserves the right to delay issuance of the Notice to Proceed for a period not to exceed thirty (30) after the date the Contract Agreement is executed, unless otherwise provided in the Procurement and Contracting Requirements, and no additional payment will be made to the Contractor on account of such delay.

ARTICLE 3 - INTENT AND INTERPRETATION OF CONTRACT DOCUMENTS

3.1 **Intent of the Contract Documents:** The Contract Documents are complementary and what is called for by one is as binding as if called for by all. Any Work that may be reasonably inferred from the Drawings or Specifications as being required to produce the intended result shall be provided by the Contractor whether or not it is specifically called for. The Contractor shall furnish and pay for all labor, supervision, materials, equipment, transportation, construction equipment and machinery, tools, appliances, water, fuel, power, energy, light, heat, utilities, telephone and communications, temporary and sanitary facilities, storage, protection, safety provisions, and all other facilities, services, and incidentals of any nature whatsoever necessary for the satisfactory and acceptable execution,

testing, initial operation, and completion of the Work in accordance with the Contract Documents, ready for use, occupancy or operation by the Agency.

- 3.2 **Interpretations:** Written clarifications or interpretations necessary for the proper execution or progress of the Work, in the form of drawings, or otherwise, will be issued with reasonable promptness by the Agency and in accordance with any schedule agreed upon. Such clarifications or interpretations shall be consistent with or reasonably inferable from the intent of the Contract Documents and shall become a part thereof, and may be effected by Field Order. If the Contractor believes that a written clarification or interpretation entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in **Paragraph 16.4**.
- 3.3 **Organization of Drawings and Specifications:** Except where a particular item or type of equipment is specified or otherwise required to be assembled of various components under the coordination and responsibility of one manufacturer or supplier (sometimes referred to or specified as unit responsibility), the organization of the Specifications into Division, Sections, Articles, and paragraphs, the listing of Work included and not included in the various Sections of the Specifications, and the arrangement of the Drawings shall not control the Contractor in dividing the Work among Subcontractors nor establish the extent of Work to be performed by a trade.
- 3.3.1 **Drawings:** Scale dimensions on Drawings shall govern where figured dimensions are not indicated. Figured dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.
- 3.3.2 **Specification Titling and Arrangement:** The Article and paragraph titles and other identifications of subject matter in the Specifications are intended as an aid in locating and recognizing various requirements. Except where titling forms a part of the text, such as the beginning words of a sentence or establishes the subject of an Article or paragraph, the titles are subordinate to and do not define, limit, or otherwise restrict the Specification text. Underlining or capitalizing of words in the text does not signify or mean that such words convey special or unique meanings having precedence over any other part of the Contract Documents. The Specification text shall govern over titling and shall be understood to be and interpreted as a whole. The order of Articles, paragraphs, and subparagraphs is established by the alpha-numeric or similar system employed in the text.
- 3.3.3 **Specification Language:** Words and phrases requiring an action or performance, such as perform, provide, install, furnish, erect, connect, test, operate, and adjust, shall be understood to include the meaning of the phrase "The Contractor shall" unless otherwise specified. The requirements of the Drawings and Specifications apply to all Work of

the same type, kind, and class even though the word “all” may not be stated. The usage and meaning of various words and phrases employed in the Specifications and herein are as follows, and shall be understood to apply to the future, present, and past tenses according to the context.

- 3.3.3.1 **References to Drawings:** The words indicated, shown, detailed, noted, scheduled, illustrated, and words of like import shall mean that reference is made to the Drawings, unless stated otherwise.
- 3.3.3.2 **Directives:** The words directed, direction, designated, selected, and words and phrases of like import shall mean that the direction, designation, selection, or like action of the Agency is intended, unless stated otherwise.
- 3.3.3.3 **Submittals:** The words submit, submittal, submission, and words of like import shall be understood to include the meaning of the phrase “Submit to the Agency for approval”, unless stated otherwise.
- 3.3.3.4 **Equals and Approvals:** The words equal, approved equal, equivalent, and words and phrases of like import shall be understood to be followed by the expression “in the opinion of the Agency” unless stated otherwise. The words approval, acceptable, acceptance, satisfaction, and words of like import shall mean that the approval, acceptance, or satisfaction of the Agency is intended, unless stated otherwise.
- 3.3.3.5 **Perform:** The word perform shall mean that the Contractor shall perform all operations required to complete the mentioned action or Work in accordance with the intent of the Contract Documents.
- 3.3.3.6 **Provide:** The word provide shall mean that the Contractor shall furnish and install the mentioned Work, complete in place, connected, and ready for use by the Agency in accordance with the intent of the Contract Documents, except the words providing and provided may mean “contingent upon” and the phrase “as provided in” may mean “in accordance with” where such is the context.
- 3.3.3.7 **Required:** The word required and words of like import shall mean “as required to complete the Work” and “as required by the Agency” according to the context, unless stated otherwise.
- 3.3.3.8 **Technical Words:** Work, materials, or equipment described in words, which so applied, have a well-known trade or technical meaning shall be deemed to refer to such recognized meanings.

- 3.4 **Reference or Standard Specifications:** Specifying in the Contract Documents by reference to standard or reference type specification documents or to another part of the Contract Documents shall have the same force and effect as if the document or portion referred to were exactly repeated at the place where reference is made. In case of conflict between any applicable code, law, ordinance, rule, regulation, or order and the referenced standard or reference specification documents, the Contractor shall conform to the most restrictive requirement provided such conformance is lawful. Standard or reference specification documents incorporated into the Contract Documents by reference shall be those in effect on the day that the Contract Documents are approved by the Agency, unless otherwise specified. The Contractor, Subcontractors, Sub-subcontractors, and suppliers of materials and equipment for the Work shall be fully familiar with the referenced documents. Abbreviations specified to indicate or identify standard or reference specification documents, such as ASTM, ANSI, AWWA, and ASME, shall be interpreted according to their well-known technical and trade meanings and usage.

ARTICLE 4 - TIME

- 4.1 **Time Limits:** All time limits stated in the Contract Documents are of the essence of the Contract Agreement.
- 4.2 **Time of Performance:** The Contractor shall construct and complete the Work, including final clean up, final inspection, and final acceptance of the Work, within the Contract Time. Substantial Completion and Final Completion shall be attained within the time period specified in **Paragraph 1.11**, Contract Time. It is expressly understood and agreed, by and between the Agency and the Contractor, that the Contract Time for the completion of the Work is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work. It is further agreed that local average climatic conditions may result in up to thirty (30) calendar days per year in which outside work is not feasible. A request for an extension of Contract time based upon lost working days due to climatic conditions will not be considered for approval unless all of the following three conditions are met: (1) the number of such lost working days exceeds thirty (30) per year, (2) the Contractor's work schedule requires the performance of outside work on each such day, (3) such outside work is on the Critical Path as shown on the schedule in effect at that time.
- 4.3 **Extension of Contract Time:** When it is not possible to complete the Work within the contract time, or the contract time extended, the Contractor shall request a time extension and the Agency will grant it if the Agency wishes to keep the Contract in effect. In granting a time extension, the Agency will specify the type of delay responsible for the required time extension. There are three (3) types of delay:

- A. **Authorized Delays** due to extra work or Contract Change Orders where such work is on the critical path of the Project. For this type of delay, the extension is granted without prejudice or penalty to the Contractor. The Contractor shall not be entitled to additional contract time or related impact costs unless the as-planned completion date, as latest revised, is delayed beyond the contract completion date in effect at the time of the delay.
- B. **Authorized Delays** due to events and acts of God beyond control of the Contractor that delay work on the critical path. These events include, but are not limited to, damage to the plant by flood, fire, wind, tidal wave, or earthquake; delays due to strikes, epidemic, quarantine restrictions, freight embargoes, acts of war or national emergency, acts of the public enemy, acts of the government, or rainfall, where more than thirty (30) working days are lost due to rain, within a time span of one (1) year. Time extensions for delays in this category will be non-compensable and will be granted without prejudice or penalty to the Contractor.
- C. **Unauthorized delays** due to lack of diligence on the part of the Contractor, his/her subcontractors or supplier, or simply the Contractor's inability to overcome job site difficulties in a timely fashion. In granting the time extension for this category of delay, the Agency may assess the Contractor for costs accruing to the Agency, by virtue of the delay, for additional engineering, consulting, or professional services, tests, inspections, administration, and other incidental and overhead expenses and loss of revenue up to the amount of the fixed liquidated damage per calendar day specified in the Invitation to Bid.

4.4 **Delays and Liquidated Damages:**

- A. If a time extension is granted due to unauthorized delays, it shall be understood and agreed that the Agency will suffer damage solely by reason of delays and, it being impractical and infeasible to determine the amount of actual damage, it is agreed that the Contractor shall pay to the Agency, as fixed and liquidated damages and not as a penalty, the amount stated in the Procurement and Contracting Requirements, unless otherwise provided or agreed by the parties, for each calendar day of delay until the Work is completed and accepted; and the Contractor and his surety shall be liable for the amount thereof.
- B. The Contractor shall, within ten (10) days from the beginning of any delay, notify the Agency in writing of the cause of the delay, whereupon the Agency will ascertain the facts and the extent and category of the delay and determine whether or not the Agency wishes to extend the time for completing the Work.

4.5 **Working Hours:** Normal working hours are considered to be the standard, single 8-hour shift, five (5) days per week, Monday through Friday.

ARTICLE 5 - LANDS, CONDITIONS, AND LAYOUT

- 5.1 **Land and Rights-of-Way:** The Agency will furnish and pay for the land, easements, and rights-of-way (ROW) for the Work. The Contractor shall obtain consents from the property owners, make all necessary arrangements, and pay all costs for additional land areas or access required by him/her outside the limits of the land, easements, and ROW furnished by the Agency, without liability to the Agency.
- 5.2 **Data Furnished By Agency:** Upon written request, the Agency will furnish to the Contractor a copy of all available boundary surveys and subsurface investigations. Before delivery the Contractor shall sign a release, which releases the Agency from any liability regarding any difference that might exist between the information furnished by the Agency and actual site conditions.
- 5.3 **Subsurface Conditions:** Where the Agency has conducted subsurface investigations for the Work by borings, samples, tests, analysis, or otherwise, a report of such investigation will be available for examination by the Contractor. Neither the Agency nor the Engineer warrant or guarantee the accuracy or adequacy of such report or any data, statements, opinions, recommendations, or conclusions therein, nor shall the Agency or the Engineer be responsible or liable for any loss sustained by the Contractor because of any variance between the conditions indicated in or deduced by the Contractor from such report or the Contract Documents and the actual conditions encountered in the Work. The Contractor shall make such subsurface investigations as he may be required to establish the true nature of the subsurface conditions affecting the Work, the difficulties that may be encountered, and the dewatering or other operations that may be required to complete the Work.
- 5.4 **Laying Out The Work:**
- 5.4.1 **Surveys:** Property and boundary surveys will be established by the Agency, and the Contractor shall furnish to the Agency such assistance and materials as the Agency may require. The Contractor shall carefully preserve all survey stakes, reference points, benchmarks, and monuments. Should any stakes, points, or benches be removed or destroyed by any act of the Contractor or his/her employees, they may be reset at the Contractor's expense. Any expense incurred in replacing permanent monuments that the Contractor may have failed to preserve shall be borne by the Contractor unless the removal of the monuments is required by the Contract Documents.
- 5.4.2 **Lines and Grades, Setting Stakes:** The Contractor shall give at least five (5) working days' notice in writing when he will require the services of the Agency for laying out any portion of the Work. The Agency will set a baseline and benchmark near the beginning of the project site(s) to be used for the horizontal and vertical control of construction. The

Contractor shall conduct all surveys necessary to complete the project by working from these reference points. The Agency will use these points to check the Work. The Contractor shall preserve all stakes set for lines, grades, or measurements of the Work in their proper places until authorized to move them by the Agency. Any expense incurred in replacing said stakes that the Contractor may have failed to preserve shall be borne by the Contractor.

5.4.3 **Preparation:** Prior to any request for base line and grade stakes, the Contractor shall have all utility lines located and marked in the field and shall have all rights-of-way cleared, graded, and ready for construction activities. The term “grade stakes” shall be taken to mean the “benchmark” mentioned in **Subparagraph 5.4.2.**

5.4.4 **Contractor’s Verification:** The Contractor shall verify the locations and elevations of the base lines and grades set by the Agency. Not less than three consecutive points set on the same line, slope, or grade shall be used together in order that any variation from a straight line or grade can be detected. If any such variation is found, the Contractor shall report it in writing to the Agency. In the absence of such report, the Contractor shall be responsible for any error in the Work resulting from such variations and shall bear the costs of corrective Work.

ARTICLE 6 - BONDS, INSURANCE AND INDEMNITY

6.1 **Bonds:** The Contractor shall furnish performance and payment Bonds for the faithful performance and payment of all his/her obligations under the Contract Documents. Each Bond shall be in penal sums at least equal to the Contract Price unless otherwise stated in the Bidding Requirements, and in such form and with such sureties as are acceptable to the Agency. Prior to execution of the Contract Agreement the Agency may require the Contractor to furnish other Bonds in such form and with such sureties as the Agency may require. Sureties, to be acceptable to the Agency, shall be legally authorized to do business in the State and jurisdiction where the Work is to be constructed, and be named in the current list of “Surety Companies Acceptable On Federal Bonds” as published by the United States Treasury Department, and their Bonds will be limited to such amounts as would be acceptable to said Treasury Department. The performance bond shall remain in full force and effect for the entire guarantee period as provided in **Paragraphs 19.1 and 19.2.** If such Bonds are required by written instructions given prior to the opening of Bids, the premiums shall be paid by the Contractor; if subsequent thereto, they will be paid by the Agency. If at any time a surety on any such Bond is declared bankrupt or loses its right to do business in the State or jurisdiction in which the Work is to be performed or is removed from the list of Surety Companies Acceptable on Federal Bonds, the Contractor, within ten (10) days after notice by the Agency to do so, shall substitute an acceptable Bond or Bonds in such form and sum and signed by such other surety or sureties as may be

satisfactory to the Agency. The premium on such Bond or Bonds shall be paid by the Contractor. No further payments shall be deemed due nor shall be made to the Contractor until the new surety or sureties shall have furnished an acceptable Bond or Bonds to the Agency.

- 6.2 **Workers' Compensation Insurance:** By his/her signature hereunder, the Contractor certifies that he/she is aware of the provisions of Section 3700 of the California 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 he/she will comply with such provisions before commencing the performance of the work of this agreement.
- 6.3 **Indemnification:** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless and defend the Agency, its directors, officers, employees, or authorized volunteers, and each of them from and against the following:
- A. Any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind or nature whatsoever for, but not limited to, injury to or death of any person including the Agency and/or Contractor, or any directors, officers, employees, or authorized volunteers of the Agency or Contractor, and damages to or destruction of property of any person, including but not limited to, the Agency and/or Contractor or their directors, officers, employees, or authorized volunteers, arising out of or in any manner directly or indirectly connected with the work to be performed under this agreement, however caused, regardless of any negligence of the Agency or its directors, officers, employees, or authorized volunteers, except the sole negligence or willful misconduct or active negligence of the Agency or its directors, officers, employees, or authorized volunteers.
 - B. Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from, or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of Contractor.
 - C. Any and all losses, expenses, damages (including damages to the work itself), attorneys' fees, and other costs, including all costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the work and all of the Contractor's obligations under the agreement. Such costs, expenses, and damages shall include all costs, including attorneys' fees, incurred by the indemnified parties in any lawsuit to which they are a party.

The Contractor shall defend, at Contractor's own cost, expense and risk, any and all such aforesaid suits, actions, or other legal proceedings of every kind that may

be brought or instituted against the Agency or its directors, officers, employees, or authorized volunteers.

The Contractor shall pay and satisfy any judgment, award or decree that may be rendered against the Agency or its directors, officers, employees, or authorized volunteers, in any and all such suits, actions, or other legal proceedings.

The Contractor shall reimburse the Agency or its directors, officers, employees, or authorized volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided.

The Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the Agency, or its directors, officers, employees, or authorized volunteers.

6.4 Commercial General Liability and Automobile Liability Insurance - The Contractor shall provide and maintain the following commercial general liability and automobile liability insurance:

6.4.1 **Coverage:** Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001)
2. Insurance Services Office (ISO) Business Auto Coverage (Form CA 0001), covering Symbol 1 (any auto)

6.4.2 **Limits:** The Contractor shall maintain limits no less than the following:

1. General Liability. One million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2503, or ISO CG 2504, or insurer's equivalent endorsement provided to the Agency) or the general aggregate limit and products-completed operations aggregate limit shall be three million dollars (\$3,000,000).
2. **Automobile Liability:** One million dollars (\$1,000,000) for bodily injury and property damage each accident limit.

6.4.3 **Required Provisions:** The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The Agency, its directors, officers, employees, and authorized volunteers are to be given insured status (via ISO endorsement CG 2010, CG 2033, or insurer's equivalent for general liability coverage) as respects: liability arising out of activities performed by or on behalf of the Contractors; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; and automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its directors, officers, employees, or authorized volunteers.
2. For any claims related to this project, the Contractor's insurance shall be primary insurance as respects the Agency, its directors, officers, employees, or authorized volunteers. Any insurance, self-insurance, or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall not contribute to it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the Agency, its directors, officers, employees, or authorized volunteers.
4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this agreement shall state, or be endorsed to state, that coverage shall not be canceled by the insurance carrier or the Contractor, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to the Agency.
6. ***Additional Named Insureds and Subrogation Waivers:*** The Agency, and such other persons or organizations as the Agency may designate shall be named as Additional Named Insureds. Exclusions in said insurance policies are subject to the approval of the Agency. No insurance policies shall exclude coverage for claims against the Contractor by any additional named insured for payment of damages or injury to persons or property resulting from Contractor's operations or the operations of any Subcontractor or Sub-subcontractor under him. All required insurance policies shall waive all insurer or Contractor subrogation rights against the Agency.

Such liability insurance shall indemnify the Contractor and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Contractor or his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation, and removal of lateral support.

The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

All of the insurance shall be provided on policy forms and through companies satisfactory to the Agency.

- 6.5 ***Deductibles and Self-Insured Retentions:*** Any deductible or self-insured retention must be declared to and approved by the Agency. At the option of the Agency, the insurer shall either reduce or eliminate such deductibles or self-insured retentions.
- 6.6 ***Acceptability of Insurers:*** Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII or equivalent or as otherwise approved by the Agency.
- 6.7 ***Workers' Compensation and Employer's Liability Insurance:*** The Contractor and all sub-contractors shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the "Workers' Compensation and Insurance Act", Division IV of the Labor Code of the State of California and any Acts amendatory thereof. The Contractor shall provide employer's liability insurance with limits of no less than \$1,000,000 each accident, \$1,000,000 disease policy limit, and \$1,000,000 disease each employee.
- 6.8 ***Responsibility for Work:*** Until the completion and final acceptance by the Agency of all the work under and implied by this agreement, the work shall be under the Contractor's responsible care and charge. The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections, and repairs occasioned or rendered necessary by causes of any nature whatsoever.

The Contractor shall provide and maintain builder's risk insurance (or installation floater) covering all risks of direct physical loss, damage or destruction to the work in the amount specified in the **Paragraph 6.4**, to insure against such losses until final acceptance of the work by the Agency. Such insurance shall insure at least against the perils of fire and extended coverage, theft, vandalism and malicious mischief, and collapse. The Agency, its directors, officers, employees, and authorized volunteers shall be named insureds on any such policy. The

making of progress payments to the Contractor shall not be construed as creating an insurable interest by or for the Agency or be construed as relieving the Contractor or his/her subcontractors of responsibility for loss from any direct physical loss, damage or destruction occurring prior to final acceptance of the work by the Agency.

The Contractor shall waive all rights of subrogation against the Agency, its directors, officers, employees, or authorized volunteers.

- 6.9 **Evidences of Insurance:** Prior to execution of the agreement, the Contractor shall file with the Agency a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative and evidence of waiver of rights of subrogation against the Agency (if builder's risk insurance is applicable). Such evidence shall also include confirmation that coverage includes or has been modified to include Required Provisions.

The Contractor shall, upon demand of the Agency, deliver to the Agency such policy or policies of insurance and the receipts for payment of premiums thereon.

- 6.10 **Continuation of Coverage:** If any of the required coverage expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement and evidence of waiver of rights of subrogation against the Agency (if builder's risk insurance is applicable) to the Agency at least ten (10) days prior to the expiration date.
- 6.11 **Subcontractors:** In the event that the Contractor employs other contractors (subcontractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each subcontractor meets the minimum insurance requirements specified above.

ARTICLE 7 - SUPERVISION AND SUPERINTENDENCE

- 7.1 **Contractor's Supervision:** The Contractor shall supervise and direct the Work efficiently and with his/her best skill and attention. The Contractor shall be solely responsible for means, methods, techniques, procedures, and sequences of construction. The Contractor shall coordinate all parts of the Work and shall be responsible to see that the finished Work complies accurately with the Contract Documents.
- 7.2 **Superintendent:** The Contractor shall keep on the Work at all times during its progress a competent resident Superintendent satisfactory to the Agency, who shall not be replaced without ten (10) days' written notice to the Agency except under extraordinary circumstances. The Superintendent shall be the Contractor's representative at the site and shall have the authority to act on behalf of the Contractor. All communications, instructions, and directions given to the

Superintendent shall be as binding as if given to the Contractor. Whenever the Contractor or the Superintendent is not present on a part of the Work where the Agency wishes to give orders or directions, the orders or directions shall be received and obeyed by the foreman in charge of that part of the Work the same as if the order or direction had been given to the Contractor or the Superintendent. Any order or direction given by the Agency not otherwise required to be in writing will be given or confirmed in writing upon request of the Contractor.

ARTICLE 8 - CONSTRUCTION PROCEDURES AND PROTECTION

- 8.1 ***Contractor's Plant and Equipment:*** The Contractor shall furnish modern plant and equipment as necessary to perform the Work in a manner satisfactory to the Agency and in accordance with the Contract Documents, types and designs that comply with the requirements of **Paragraph 9.3** and with the requirements prescribed by laws, ordinances, codes, rules, regulations, and orders pertaining to wind and seismic forces at the place of the Project. Construction equipment or machinery that at any time produces unsatisfactory results shall be promptly repaired or replaced by the Contractor and as the Agency may require.
- 8.2 ***Use of Site:*** The Contractor shall confine his equipment, the storage of materials and equipment, and the operations of those directly and indirectly employed by him to areas permitted by law, ordinances, permits, and the Contract Documents, and shall not unreasonably encumber the site with materials and equipment. Nothing in the Contract Documents shall grant to the Contractor exclusive occupancy of the site of the Work and Project.
- 8.3 ***Overloading:*** No part of the Work or new and existing structures, scaffolding, shoring, sheeting, construction machinery and equipment, or other permanent and temporary facilities shall be loaded with weights or subjected to stresses or pressures that endanger any of them. The Contractor shall bear the cost of correcting damage caused by overloading or excessive stresses or pressures.
- 8.4 ***Use of Explosives:*** The Contractor shall comply with all laws, ordinances, regulations, codes, and orders governing the transportation, storage, and use of explosives, shall exercise extreme care not to endanger life or property, and shall be responsible for all injury or damage resulting from the use of explosives for or on the Work. No blasting shall be done in the vicinity of existing structures above or below the ground without the prior written consent of the Agency thereof.
- 8.5 ***Cutting and Patching:*** The Contractor shall perform all cutting, fitting, or patching of the Work that may be required to make its several parts fit together properly and satisfactorily, and shall not endanger any Work, structures, adjacent property, workmen, or the public by cutting, excavating, or otherwise altering the Work or any part of it. The Contractor shall restore all such cut or patched Work and improvements as approved by the Agency.

- 8.6 **Verification of Installed Work:** The Contractor shall correct all defects in installed Work of the Contract before subsequent related or connected Work is applied or installed. Where the Contract Documents require a material or item of equipment to be applied or installed under the supervision, inspection, or direction of the supplier or manufacturer, or his/her representative, the supplier, manufacturer, or his/her representative shall inspect the applicable installed Work and issue a letter to the Agency stating the corrections required to or approval of the installed Work before his/her material or equipment is installed or applied.
- 8.7 **Manufacturers' Instructions:** Unless otherwise provided in the Contract Documents, the Contractor shall store, apply, install, erect, connect, use, clean, condition, and operate manufactured articles, materials, and equipment in accordance with the various manufacturers' instructions including those in the instruction manuals required in **Paragraph 12.7** and other instructions required in **Paragraph 12.8**. The Contractor shall compare the requirements of the various manufacturers' instructions with the requirements of the Contract Documents, shall promptly notify the Agency in writing of any difference between such requirements, and shall not proceed with any of the Work affected by such differences until an interpretation or clarification is issued pursuant to **Paragraph 3.2**. The Contractor shall bear all costs for any error in the Work resulting from his/her failure to so compare the various requirements and notify the Agency of any such differences.
- 8.8 **Public Convenience:** The Contractor shall at all times so conduct his operations as to ensure the least possible obstruction and inconvenience to traffic and the general public and the residents in the vicinity of the Work, to protect persons and property, and to preserve access to driveways, house, and buildings. The Contractor shall have under construction no greater amount of Work than he/she can properly perform with due regard to the rights of the public, and shall not create any public nuisance. No road, street, or highway shall be closed to the public except with the permission of the proper authorities. Where existing streets are not available as detours, the Contractor shall permit traffic to safely pass through the Work with as little delay and inconvenience as possible, unless otherwise authorized by the Agency. When a section of new surfacing, paving, or a traffic structure intended for public use has been completed, it shall be opened for use at the request of the Agency. The Contractor shall furnish competent flagmen whose sole duty shall be the directing of traffic through or around the Work when ordered by the Agency, required by public authorities having jurisdiction, or required by law. At no time shall the Contractor prevent free access to fire hydrants, water and gas main valves, manholes or vaults, or other utility facilities. The Contractor shall make temporary provisions to ensure the use of walkways and sidewalks and the proper functioning of gutters, sewer and storm drain inlets, and ditches, which shall not be obstructed.
- 8.9 **Protection:** The Contractor shall take all precautions and furnish and maintain protection to prevent damage, injury, or loss to all employees and workers on the Work and all other persons who may be affected thereby; all the Work and all

materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his/her Subcontractors or Sub-subcontractors; and other improvements and property at the site or where Work is to be performed including buildings, trees and plants, pole lines, fences, guard rails, guide posts, culvert and project markers, signs, structures, conduits, pipe lines, and improvements within or adjacent to streets, rights-of-way, or easements, except those items required to be removed by the Contractor in the Contract Documents. The Contractor's protection shall include all the safety precautions required under Article 13 and other necessary forms of protection, and the notification of the owners of utilities and adjacent property.

- 8.9.1 ***Utilities and Substructure:*** The indication of the type and approximate location of existing utilities and substructures in the Contract Documents represents a diligent search of known records, but the accuracy and completeness of such indications are not warranted by the Agency or the Engineer and utility structures and services not so indicated may exist. Before commencing any excavations, the Contractor shall investigate, determine the actual locations, and protect the indicated utilities and structures, shall determine the existence, position, and ownership of other utilities and substructures in the site or where the Work is to be performed by communication with such owners, search of records, or otherwise, and shall protect all such utilities and substructures.
- 8.9.2 ***Maintenance of Facilities:*** Unless otherwise provided in the Contract Documents or unless otherwise cared for by the owner thereof, all water, gas, oil, or irrigation lines, all lighting, power, communication, or telephone conduits, all sewer and drainage lines and house connection lines, sprinkling systems, and other subsurface structures of any nature along the Work shall be maintained by the Contractor at his/her expense, and shall not be disturbed, disconnected, or damaged by him/her during the progress of the Work. The Contractor shall install temporary pipes of adequate size to carry off sewage from any sewer facilities cut off by construction operations. Installation of temporary pipes shall be made immediately upon cutting of the existing facility, and no sewage shall be allowed to flow from any severed facility upon the ground surface or in the trench excavation. Pipe used in temporary sewers may be clay, metal, concrete, or composition. Before completion of Work, the Contractor shall replace all severed connections and restore to operating order the existing sanitary facilities with matching materials and construction.
- 8.9.3 ***Restoration and Repair:*** Except for those improvements and facilities required to be permanently removed by the Contract Documents, the Contractor shall make satisfactory and acceptable arrangements with the appropriate owners and, at his/her expense, shall repair and restore all improvements, structures, property, utilities, and facilities disturbed, disconnected, or damaged as a result or consequent of his/her Work or

the operations of those for whom he/she is responsible or liable, including that caused by trespass of any of them with or without his/her knowledge or consent, or by the transporting of workers, materials, or equipment to or from the site.

8.10 **Utilities:**

- 8.10.1 **Water Supply:** The Contractor shall not draw water from any fire hydrant or service, nor operate any valve or control of any water system without the written permission of the owner thereof, and a copy of each written permission shall be filed with the Agency.
- 8.10.2 **Temporary Utility Interruptions:** If the temporary interruption of utility services is necessary for the prosecution of the Work, the Contractor shall make all arrangements with the utility owners and pay all fees and charges levied by them for the interruptions, and shall notify the affected users at least twenty four hours in advance of the probable duration of interruption unless such notice is given by the appropriate utility owner.
- 8.10.3 **Temporary Removal or Maintenance:** If it should be necessary to move or temporarily maintain the property of any public utility or other property, the cost of which because of the terms of any franchise or for any other reason must be borne by the owner thereof, such owner will, upon proper application by the Contractor, be notified by the Agency to move or temporarily maintain such property until after the expiration of the time required for the Work. The Agency, public authorities having jurisdiction, and the owners of public utilities and franchises shall have access to any street, alley, right-of-way, or easement for the purpose of maintaining or of making repairs or changes in property made necessary by the Work.

ARTICLE 9 - LABOR, MATERIALS, AND EQUIPMENT

- 9.1 **Workers:** The Contractor shall at all times enforce strict discipline and good order among his employees and those of any Subcontractor or Sub-subcontractor, and shall not employ on the Work any unfit person or anyone not skilled and experienced in the assigned task. All Superintendents and foremen shall be English-speaking. Any Superintendent, foreman, laborer, or other person employed on the Work who fails or refuses to perform the Work in the manner required by the Contract Documents shall be discharged immediately and such person shall not again be employed on the Work. When required in writing by the Agency, the Contractor, Subcontractor, or Sub-subcontractor shall discharge any person who is, in the opinion of the Agency, incompetent, unfaithful, disorderly, or otherwise unsatisfactory. Such discharge shall not be the basis of any claim for compensation or damages against the Agency or the Engineer.

- 9.2 **Workmanship:** The quality of workmanship produced by skilled, knowledgeable, and experienced journeymen mechanics and artisans is required for the Work. Particular attention shall be given to the appearance and finish of exposed Work. The decision of the Agency with regard to the quality and adequacy of workmanship shall be final and binding.
- 9.3 **Materials and Equipment:** All materials and equipment incorporated in the Work shall be new unless otherwise specified. Materials and equipment not covered by detailed requirements in the Contract Documents shall be of the best commercial quality, suitable for the purpose intended, and approved by the Agency prior to use in the Work. The Contractor shall provide proper storage facilities and exercise such measures as will ensure the preservation of the required quality and fitness of all materials and equipment. Materials or equipment not conforming to the requirements of the Contract Documents shall be rejected and immediately removed from the site of the Work. Materials, supplies, or equipment to be incorporated into the Work shall not be purchased by the Contractor or any Subcontractor or Sub-subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.
- 9.3.1 **Plurality of Terms:** Where materials or equipment are referred to in the singular number, it is intended unless otherwise limited that such references shall be applied to as much material or equipment as is required to complete the Work.
- 9.3.2 **Optional Materials:** Where any material or equipment item is specified by two or more manufacturer's name or proprietary identifications, the Contractor may provide any one of the materials or equipment so specified. Only one brand, kind, or make of material or equipment shall be used for each specific purpose throughout the Work notwithstanding that similar material or equipment of two (2) or more manufacturers may be specified for the same purpose.
- 9.3.3 **Space Requirements and Arrangement:** The Contractor shall ensure that the materials and equipment to be furnished fit the space available, and shall make the necessary field measurements to ascertain space requirements including those for connections. If material or equipment requiring arrangement or connections different from those required by the Contract Documents is approved by the Agency, the Contractor shall bear all costs for installing the material or equipment and for changes to adjoining or related Work the Agency may require.
- 9.3.4 **Materials Furnished By Agency:** Material or equipment to be furnished by the Agency will be supplied in accordance with the Specifications.
- 9.4 **Substitutions and Equals:** References in the Contract Documents to any material, item of equipment, or type of construction by manufacturer's name, make, catalog

number, or other proprietary identification shall be interpreted as establishing a standard of quality. If the Contractor wishes to furnish or use a proposed substitute or equal material, item of equipment, or type of construction, Contractor shall make written application to the Agency for approval, certifying in writing that the proposed substitute or equal will perform adequately the duties imposed by the general design, be similar and of equal substance to that specified, and be suited to the same use and capable of performing the same function as that specified, and stating all variations in costs pertaining to the application. No proposed substitute or equal shall be ordered or installed without the written approval of the Agency, and it shall be understood and agreed that the decision of the Agency in this matter shall be final and binding.

Prior to the receipt of Bids, requests for consideration of proposed substitute or equal materials or equipment shall comply with the Bidding Requirements. After receipt of Bids, if the Contractor should wish to propose a substitute or equal item for any specified by brand or trade name, **within five (5) days after issuance of the Notice of Award**, Contractor shall in writing notify the Agency of his/her intent to do so and at this time submit to the Agency an itemized list of the item or items Contractor proposes setting forth the various manufacturers' names and such other information Contractor has available. Unless this notification is given within the time stated, the Contractor shall provide only the items specified by brand or trade name. If notification is so given the Agency, **within thirty-five (35) days after issuance of the Notice of Award**, the Contractor shall supply data to the Agency to substantiate the proposed substitution or equal. The Agency will then decide whether the proposed substitution or equal is in fact equal in quality and utility to the specified trade or brand name items. It is agreed that the decision of the Agency in this matter shall be final.

9.4.1 ***Use of Approved Substitutions or Equals:*** The Contractor's use of approved substitutions or equals shall in no way relieve the Contractor from compliance with the Contract Documents. The Contractor shall bear all extra expense resulting from providing or using approved substitutions or equals where they affect the adjoining or related Work, including the expense of required engineering, redesigning, drafting, and permits where necessary, whether the Agency's approval is given before or after receipt of Bids.

9.4.2 ***Unauthorized Substitutions:*** If substitute materials or equipment are installed without the Agency's approval, the Contractor shall remove the unauthorized materials or equipment and install those required by the Contract Documents at his expense.

ARTICLE 10 - SUBCONTRACTORS

10.1 ***Responsibility for Subcontractors:*** The Contractor shall be fully responsible for all acts and omissions of his Subcontractors, Sub-subcontractors, and of persons

directly or indirectly employed by them and of persons for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him/her. Under these Contract Documents, no Subcontractor or Sub-subcontractor will be recognized as such, and all persons and organizations engaged by the Contractor for the furnishing or installing of any part of the Work, either at the site or elsewhere, are considered as and agreed to be employees of the Contractor except with regard to insurance as provided in Article 6 and except with regard to payment as provided in Article 20. Nothing in the Contract Documents shall create any contractual relationship between any Subcontractor, Sub-subcontractor, or any person directly or indirectly employed by them, and the Agency and the Engineer.

- 10.2 **Extent of Subcontracting:** It is the Agency's intent that the Work shall be performed and constructed by a Contractor who is staffed and equipped to construct the major portion of the Work with his/her own directly employed personnel and with the minimum feasible subcontracting. Subcontracting may be permitted by the Agency to such extent as is shown to be necessary or advantageous to the Contractor without injury to the intent and interests of the Agency. Under these Contract Documents, the limitation on subcontracting is to be not more than fifty percent (50%) of the value of the Work. Any Bid proposing subcontracting in excess of this limit is subject to rejection at the discretion of the Agency.
- 10.3 **Sub-contractual Relations:** All Work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor (and where appropriate between Subcontractor and Sub-subcontractor) which shall contain provisions that: (a) protect and preserve the rights of the Agency and the Engineer with respect to the Work to be performed under the subcontract so that the Subcontracting thereof will not prejudice such rights; (b) require that such Work be performed in accordance with the requirements of the Contract Documents; (c) require under each subcontract to which the Contractor is a party the submission to the Contractor of applications for payment and claims for additional costs, extension of time, damages for delay or otherwise with respect to the subcontracted portions of the Work (via any Subcontractor or Sub-subcontractor where appropriate) in sufficient time that the Contractor may apply for payment in accordance with Article 20 and comply in accordance with the Contract Documents for like claims by the Contractor upon the Agency; (d) waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance except such rights as they may have to the proceeds of such insurance held by the Agency as trustee as provided in **Paragraph 6.8**; and (e) obligate each Subcontractor specifically to consent to the provisions of this paragraph.

ARTICLE 11 - LAWS AND REGULATIONS

- 11.1 **Governing Law:** The Contract Documents shall be governed by the law of the place where the Project is located.
- 11.2 **Compliance:** The Contractor shall inform himself of all laws, ordinances, codes, rules and regulations in any manner affecting those employed on the Work, or the materials used in the Work, or in any way affecting the conduct of the Work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the Work. He/She shall at all times himself/herself give all notices and observe and comply with, and shall require all his/her agents, employees, Subcontractors and Sub-subcontractors to observe and comply with all such applicable laws, ordinances, rules, regulations, orders, and decrees in effect or which may become effective before completion and acceptance of the Work; and shall protect and indemnify the Agency and the Engineer against any claim of liability arising from or based upon the violation of any such law, ordinance, code, rule, regulation, order, or decree, whether by himself, his/her employees, or his/her Subcontractors or Sub-subcontractors, or any other person or organization employed for or upon the Work. If the Contractor observes that any requirement of the Contract Documents is at variance with such laws, ordinances, codes, rules, regulations, orders, or decrees, he shall promptly notify the Agency in writing and shall not proceed with any Work affected by such variance without the Agency's written instructions or the issuance of an appropriate Modification.
- 11.3 **Permits, Fees, and Taxes:** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for all permits, governmental fees, and licenses necessary for the execution and completion of the Work. The Contractor shall pay all sales, consumer, use, and other taxes required by law including all taxes properly assessed against his equipment or property used in connection with the Work.
- 11.4 **Provisions of Law Deemed Inserted:** Each and every provision of law required by law to be inserted in the Contract Documents shall be deemed to be inserted and the Contract Documents shall be read and enforced as though it were included. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either party to the Contract Agreement, the Contract Documents will be physically amended to make such insertion or correction and an appropriate Modification will be issued.

ARTICLE 12 - SUBMITTALS

- 12.1 **General:** Unless otherwise specified or directed by the Agency, the Contractor shall submit to the Agency for his review and approval all shop drawings, samples, materials lists, equipment data, instruction manuals, record documents, manufacturers' equipment manuals, and other submittals required by the Contract Documents and herein, or subsequently as covered by Modifications. Submittals

and their contents shall be properly prepared, identified, and transmitted as provided herein or as the Agency may otherwise direct. Except for record documents and instructional manuals for operation and maintenance, submittal shall be approved before the material or equipment covered by the submittal is delivered to the site. The Progress Schedule required under **Paragraph 2.6** shall be coordinated to this requirement.

12.1.1 **Deviations:** At the time of the submission, the Contractor shall give notice in writing in the submittal of any deviation from the requirements of the Contract Documents. The deviations shall be clearly indicated or described including all other changes required to correlate the Work. The Contractor shall state in writing all variation in costs occasioned by the deviations and his assumption of the cost of all related changes if the deviation is approved.

12.1.2 **Schedule of Submittals:** The Progress Schedule required under **Paragraph 2.6** shall allow not less than fifteen (15) working days for the review of submittals, not including the time necessary for delivery or mailing, and shall cause no delay in the Work or the work of any other contractor. Extension of the Contract Time will not be granted because of the Contractor's failure to make timely and correctly prepared and presented submittals with allowance for the checking and review periods.

12.1.3 **Method of Submittal:** The Contractor shall deliver submittals by means of dated, signed, and sequence numbered transmittals on the Agency provided forms, identifying as to initial or re-submittal status, and fully describing the submittal contents. Equipment which is specified in one section of the Specifications shall not be combined in a single submittal with equipment specified in other Sections of the Specifications. Submittals are not acceptable directly from Subcontractors, suppliers, or manufacturers. In each transmittal the Contractor shall state the Agency's Project Number and Name, Name and Address of Contractor, Name and Address of Subcontractor, Manufacturer, Supplier or Distributor as applicable, Plan Reference(s) and Specification Section(s), Article(s), and paragraph(s) to which the submittal pertains; accompanying data sheets, catalogs, and brochures shall be identified in the same manner. Where several types or models are contained in the literature the Contractor shall delete non-applicable portions or specifically indicate which portions are intended and applicable. Submittal transmittals shall fully index all items submitted.

1. Incomplete Submittals, including those not correctly transmitted, not correctly titled and identified, or not bearing the Contractor's review and approval stamp, shall be returned to the Contractor without review.

2. Interrelated Submittals: Except where the preparation of a submittal is dependent upon the approval of a prior submittal, all submittals pertaining to the same class or portion of the Work shall be submitted simultaneously.
- 12.1.4 **Contractor's Review and Approval**: Every submittal of shop drawings, samples, materials lists, equipment data, instruction manuals, and other submittals upon which the proper execution of the Work is dependent shall bear the Contractor's review and approval stamp certifying that the Contractor (a) has reviewed, checked, and approved the submittal and has coordinated the contents with the requirements of the Work and the Contract Documents including related Work, (b) has determined and verified all quantities, field measurements, field construction criteria, materials, equipment, catalog numbers, and similar data, or will do so, and (c) states the Work covered by the submittal is recommended by the Contractor and the Contractor's guarantee will fully apply thereto. The Contractor's stamp shall be dated and signed by the Contractor in every case. It is expected that the Contractor will prepare his submittals in such a manner that he/she is able to obtain a submittal approval by the second submission. The Agency reserves the right to deduct moneys from the amounts due to Contractor to cover the cost of the Engineer's review time beyond the second submission.
- 12.1.5 **Corrections and Re-submittals**: The Contractor shall make all required corrections and shall resubmit the required number of corrected submittals until approved. The Contractor shall direct specific attention in writing to revisions other than the corrections called for on previous submittals, and shall state in writing all variations in costs and his assumption of the cost of related changes the same as is required for deviations in **Subparagraph 12.1.1**. Identify each re-submittal with number of the original submittal followed by consecutive letters starting with "A" for first re-submittal, "B" for second re-submittal, etc.
- 12.1.6 **Checking of Returned Submittal**: The Contractor shall check submittals returned to him/her for correction and ascertain if the corrections result in extra cost to him/her above that included under the Contract Documents, and shall give written notice to the Agency within five (5) days if, in his/her opinion, such extra cost results from corrections. By failing to so notify the Agency or by starting any Work covered by a submittal, the Contractor waives all claims for extra costs resulting from required corrections.
- 12.1.7 **Review and Approval**: Submittals will be reviewed with reasonable promptness, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. The approval of submittals shall

not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents or for any revision in resubmittals unless the Contractor has given notice in writing of the deviation or revision at the time of submission or resubmission and written approval has been given to the specific deviation or revision, nor shall any approval relieve the Contractor of responsibility for errors or omissions in the submittals or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, and completion of the Work.

- 12.1.8 Incomplete Submittals, including those not correctly transmitted, not correctly titled and identified, or not bearing the Contractor's review and approval stamp, will be returned to the Contractor without review.
- 12.1.9 **Conformance:** No Work represented by required submittals shall be purchased or commenced until the applicable submittal has been approved. Work shall conform to the approved submittals and all other requirements of the Contract Documents unless subsequently revised by an appropriate Modification, in which case the Contractor shall prepare and submit revised submittals as may be required. The Contractor shall not proceed with any related Work which may be affected by the Work covered under submittals until the applicable submittals have been approved, particularly where piping, machinery, and equipment and the required arrangements and clearances are involved.
- 12.1.10 **Interrelated Submittals:** Except where the preparation of a submittal is dependent upon the approval of a prior submittal, all submittals pertaining to the same class or portion of the Work shall be submitted simultaneously.
- 12.2 **Shop Drawings:** Each submittal shall be complete with respect to dimensions, design criteria, materials, connections, bases, foundations, anchors, and the like, and shall be accompanied by technical and performance data as necessary to fully illustrate the information in the shop drawings. Unless otherwise specified, each submittal shall include six (6) sets of black-line printed copies or, at the option of the Agency, one (1) set of reproducible copies and two (2) sets of black-line printed copies. At least two (2) sets, one for Agency and one for the Engineer, shall be submitted folded to 8 ½-inch by 11-inch size. Three (3) sets of printed copies or the reproducible set, as applicable, will be returned to the Contractor marked to show the required corrections or approval.
- 12.3 **Samples:** Unless otherwise specified, each submittal shall include two (2) sets of samples. One (1) set of approved samples and all disapproved samples will be returned to the Contractor. Samples of value retained by the Agency will be returned to the Contractor after completion of the Work if the Contractor's first transmittal for the sample requests its return. Approved samples of manufactured items returned to the Contractor may be installed in the Work if the location is

recorded and the samples bear temporary identification as such. Required number of submittals and samples shall be as specified in Section 01 33 00, "Submittal Procedures".

- 12.4 **Materials Furnished Under Standard Specifications:** For materials specified by reference to standard or reference specifications, the Contractor shall prepare and submit for approval a list of such materials by manufacturer's names and identifications to the extent requested by the Agency.
- 12.5 **Material Lists:** Submittal copies shall be neatly bound with sturdy labeled covers complying with **Subparagraph 12.7.3**, and shall have an index listing the contents. Loose submittals will be returned un-reviewed. For each item listed, the Contractor shall include the manufacturer's name and address, trade or brand name, local supplier's name and address, catalog numbers and cuts, brochures, terms and conditions of manufacturer's guarantee and warranty, other information to fully describe the item, and supplementary information as may be required for approval. Cuts, brochures, and data shall be marked to indicate the items proposed and the intended use. Unless otherwise specified, each submittal shall include six (6) bound copies, three (3) of which will be returned to the Contractor marked to show the required corrections or approval.
- 12.6 **Equipment Data:** The Contractor shall submit complete technical and catalog data for every item of mechanical and electrical equipment and machinery to be incorporated in the Work, including components. Submittal copies shall be bound, indexed, and contain information as required in **Paragraph 12.5** for submittal of materials lists and shall further include specific information on performance and operating curves and data, ratings, capacities, characteristics, efficiencies, and other data to fully illustrate and describe the items as may be specified or required for approval. Data shall be submitted in sets covering complete systems or functioning units. Unless otherwise specified, each initial submittal shall include six (6) bound copies, three (3) of which will be returned to the Contractor marked to show the required corrections or approval.
- 12.7 **Instruction Manuals:** The Contractor shall obtain data from the various manufacturers and submit instruction manuals covering all mechanical equipment and machinery installed in the Work.
- 12.7.1 **Contents:** Each manual shall have an index listing the contents. Information in the manuals shall include not less than (a) general, introduction and overall equipment description, purpose, functions, and simplified theory of operation, (b) specifications, (c) installation instructions, procedures, sequences, and precautions, including tolerances for level, horizontal, and vertical alignment, (d) grouting requirements including grout spaces and materials, (e) list showing lubricants for each item of mechanical equipment, approximate quantities needed per year, and recommended lubrication intervals; where possible, types of lubricants shall be consolidated with equipment

manufacturers' approval to minimize the number of different lubricants required for plant maintenance, (f) startup and beginning operation procedures, (g) operational procedures, (h) shut down procedures, (i) short and long term inactivation procedures, (j) maintenance, calibration, and repair instruction, (k) parts lists and spare parts recommendations, (1) lists of all special tools, instruments, accessories, and special lifting and handling devices required for periodic maintenance, repair, adjustment, and calibration, (m) wiring diagrams and detailed circuit operations, (n) performance curve and data , and (o) other information as may be specified or required for approval.

12.7.2 **Format and Organization:**

- a. Use drawings and pictorials to illustrate the printed text as necessary to fully present the information.
- b. Where information covers a family of similar items of equipment, identify the applicable portions by heavy weighted arrows, boxes or circles, or strike-out the inapplicable information. Non-conforming data are not acceptable and will be returned for rework and re-submittal.
- c. Contractor shall incorporate into books all Manufacturers' Equipment Manuals including those specified in pertinent Sections of the Specifications. These books shall be organized by Equipment Class in same manner and sequence as the Specifications, i.e. Mechanical, Electrical, Instrumentation, etc. Book size and quantity shall be sufficient for inclusion of all data, and be of type and quality hereinafter specified in **Subparagraph 12.7.3**.
- d. Within each book of manuals, provide a Table of Contents for that book. If more than one book is necessary for a Class of Equipment, place a complete Table of Contents for that Class of Equipment within each book of that Class.
- e. In addition, an overall Index of Contents shall be prepared in ten (10) sets and submitted separately to the Agency for his insertion in his Operation and Maintenance Manuals.
- f. When a manufacturer's manual exceeds one inch in thickness and is bound as specified in **Subparagraph 12.7.3** it need not be rebound within another book, but the Overall Index shall refer to it by title and indicate that it is bound separately.

12.7.3 **Manual Binding:**

- a. Bind all books in sturdy hard covers fastened to provide full view of contents on each page, and ease of making content additions or replacements. No book shall be more than four inches thick. Manuals less than one inch thick shall be bound in substantial three-ring loose leaf binders; others shall have covers secured by

operable locking-bars to permit full view opening with contents bound by hinged interfacing pairs of three-ring binding posts, Model S70468-12 by McBee, Springfield, MO., or Model 745483 by Inter-City, St. Louis, Mo., or equal.

- b. Permanently label face of cover and bound edge of each book "MANUFACTURERS' INSTRUCTION MANUAL," and indicate Class of Equipment, i.e., Mechanical, Electrical, Instrumentation, etc. or name specific equipment if a single unit is contained. Where more than one (1) book is needed for a Class of Equipment or a single specific equipment unit, number books consecutively BOOK I, BOOK II, etc.
- c. If more than one (1) Class of Equipment is contained in a book, separate each class with a tabbed stiff divider insert page.
- d. Prior to purchase or delivery, submit samples of each intended type of binder and obtain approval from the Agency.

12.7.4 **Manual Submittals:** Submittals shall include two (2) copies of each manual, one of which will be returned to the Contractor marked to show the required corrections or approval. When approved, the Contractor shall deliver ten (10) copies to the Agency unless otherwise specified. Required number of submittals and samples shall be as specified in Section 01 33 00.

12.8 **Manufacturers' Instructions:** In addition to the instructions submitted under **Paragraph 12.7**, the Contractor shall submit manufacturers' instructions to the extent specified or requested by the Agency for his determination of their adequacy and approval. When approved, the Contractor shall distribute copies to all those involved with the instructions.

12.9 **Tools, Accessories, Spare Parts, and Maintenance Materials:** The Contractor shall furnish and deliver all special tools, instruments, accessories, spare parts, and maintenance materials required by the Contract Documents, and shall furnish and deliver the special tools, instruments, accessories, and special lifting and handling devices shown in the instruction manuals approved under **Paragraph 12.7**. Unless otherwise specified or directed by the Agency, the items shall be delivered to the Agency, with the Contractor's written transmittal accompanying each shipment, in the manufacturers' original containers labeled to describe the contents and the equipment for which it is furnished. The Contractor shall deliver a copy of each transmittal to the Engineer for record purposes.

12.10 **Continuance of Operations:** The Contractor shall arrange and schedule the Work in such manner as to ensure that all existing utility, treatment or disposal operations and facilities are maintained in operation and in no way disrupted or disabled as a result of the Work. The Contractor shall submit for approval a

written plan and description of the proposed schedule, methods, and facilities to be employed in conforming to this requirement.

- 12.11 **Record Drawings and Specifications:** The Contractor shall maintain one record copy of all Drawings, Specifications, Addenda, Modifications, approved submittals, correspondence, and transmittals at the site in good order and readily available to the Agency, the Engineer, and the Inspector. The Record Drawings shall be clearly and correctly marked and the Record Specifications annotated by the Contractor to show all changes made during the construction process at the time the changed Work is installed. No such changes shall be made in the Work unless previously authorized by a Modification or by specific approval of deviations or revisions in submittals.

12.11.1 **Buried and Concealed Work:** The Contractor shall record the precise location of all piping, conduits, ducts, cables, and like Work that is buried, embedded in concrete or masonry, or concealed in wood or metal-framed walls and structures at the time such Work is installed and prior to concealment. Each feature of the concealed Work, such as the beginning and end of straight runs, radius center point of curved runs, angles, connections, plugged tees or other fittings for future connections, and like items shall be accurately located by not less than two (2) dimensions to permanent structures. The depth below finish grade, slab, or paving shall be noted for buried pipe, conduit, or ducts at the beginning and end of straight grade runs and at all grade change points, excepting sewer or drain lines run between manholes. Should the Contractor fail to record such buried or concealed Work, he shall uncover the unrecorded Work to the extent required by the Agency and shall satisfactorily restore and reconstruct the removed Work with no change in the Contract Price or the Contract Time.

12.11.2 **Delivery:** Upon completion and prior to Final Inspection of the Work, the Contractor shall submit the Record Drawings and Specifications to the Agency for review, and shall make such revisions or corrections as may be necessary for them to be a true, complete, and accurate record of the Work in the opinion of the Agency. When approved, the Contractor shall deliver the Record Drawings and Specifications to the Agency.

- 12.12 **Revision of Submittals:** Whenever a Modification causes a change to the information contained in previously approved submittals; the Contractor shall submit information and data corresponding to the changed requirements for approval. After completion of the operational test required in **Paragraph 17.4**, the Contractor shall submit revised or additional information and data for the instruction manuals and equipment data as the Agency may require. Revision submittals shall be submitted following the procedures required for previously approved submittals.

ARTICLE 13 - SAFETY PRECAUTIONS AND EMERGENCIES

- 13.1 **Contractor's Responsibility for Safety:** The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. This requirement will apply continuously twenty-four hours a day every day until final acceptance of the Work and shall not be limited to normal working hours. The duties of the Agency, Engineer and Inspector do not include review of the adequacy of the Contractor's safety measures in, on, or about the site and vicinity.
- 13.2 **Safety Officer:** The Contractor shall designate a responsible member of his/her organization at the site whose duty shall be the prevention of hazards and accidents. This person shall be the Contractor's Superintendent unless otherwise designated in writing by the Contractor to the Agency.
- 13.3 **Safety Measures:** The Contractor shall comply with all laws, ordinances, codes, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. The Contractor shall comply with the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., including the recommendations for safe construction methods and the requirements for the guarding of machinery and equipment therein, to the extent that the provisions of the manual are not in conflict with applicable laws, ordinances, rules, regulations, and orders. The Contractor shall maintain copies of all documents mentioned or referenced in this paragraph readily available at the site until the Work is completed. In the event the Contractor fails to observe any of the necessary safety provisions, the Agency may order the necessary work done by others, and all such necessary work shall be done at the expense of the Contractor.
- 13.4 **Warnings and Barricades:** The Contractor shall provide and maintain barricades, guards, temporary bridges and walkways, watchmen, nightlights and danger signals illuminated from sunset to sunrise, and all other necessary appliances and safeguards to protect the Work, life, property, the public, excavations, equipment, and materials. Barricades shall be of substantial construction and shall be painted such as to increase their visibility at night. Suitable warning signs shall be so placed and illuminated at night as to show in advance where construction, barricades, or detours exist. Guardrails shall be provided for bridges and walkways over or adjoining excavations, shafts, and other openings and locations where injury may occur.
- 13.5 **Fire Prevention:** The Contractor's Safety Officer shall inspect the entire Work and site, including storage areas, at frequent intervals to verify that fire prevention measures are constantly enforced.
- 13.5.1 **Fire Extinguishers and Hoses:** The Contractor shall furnish and maintain fully charged fire extinguishers of the appropriate type,

supplements with temporary fire hoses wherever an adequate water supply exists, at the places where burning, welding or other operations that may cause a fire are being performed.

- 13.5.2 **Flammable or Toxic Materials:** Only a working supply of flammable or toxic materials shall be permitted in or on any of the permanent structures and improvements, and shall be removed at the end of each day's operations. The Contractor shall store flammable or toxic materials and waste separate from the Work and stored materials for the Work in a manner that prevents spontaneous combustion or dispersion, and none shall be placed in any sewer or drain piping nor buried on the Agency's property.
- 13.6 **Safety Helmets, Clothing, and Equipment:** The Contractor shall not permit any person for whom he/she is responsible or liable to enter or remain on the site of the Work unless the person is equipped with and wearing a safety helmet and other protective clothing and safety equipment conforming to the requirements of **Paragraph 13.3**, and shall discharge from the site all persons not so equipped. The Contractor shall post conspicuous signs at appropriate locations warning the public and persons engaged upon the Work of this requirement. The Contractor shall furnish for their temporary use such safety helmets, protective clothing, and safety equipment as the Agency, the Engineer, or their representatives may request of him.
- 13.7 **Hazardous Areas:** The Contractor shall not permit or allow any person or persons to enter any pipe or space containing hazardous or noxious substances or gases, or where there is an insufficient amount of oxygen to sustain life and consciousness, or any other hazardous area unless equipped with lawful and appropriate safety equipment and life-supporting apparatus, and unless those entering are continually monitored and guarded by and in communication with other persons outside the space or area who are equipped in the same way, can give an alarm to others for assistance, and initiate immediate rescue operations in the event of mishap.
- 13.8 **Emergencies:**
- 13.8.1 **Work During an Emergency:** The Contractor shall perform any and all operations and shall furnish any materials and equipment necessary during an emergency endangering life or property and, in all cases, shall notify the Agency of the emergency as soon as practicable, but shall not wait for instruction before proceeding to properly protect both life and property. Any additional compensation or extension of Contract Time claimed by the Contractor on account of an emergency shall be applied for as provided in **Paragraph 16.4**.
- 13.8.2 **Representatives for Emergencies:** The Contractor shall file with the Agency a written list giving the names, addresses, and telephone numbers of at least two (2) of his representatives who can be contacted

at any time in case of emergency. The representatives shall be fully authorized and equipped to correct unsafe or inconvenient conditions on short notice. The Contractor shall promptly notify the Agency of all changes in the listing.

ARTICLE 14 - SEPARATE CONTRACTS

14.1 ***Award of Separate Contracts:*** The Agency reserves the right to award other contracts in connection with other portions of the Project. When separate contracts are awarded for different portions of the Project, “the Contractor” in the contract documents in each case shall be the contractor who signs each separate contract. The Contractor shall not cause any unnecessary hindrance or delay to any other contractor working on the Project. If the performance of any contract for the Project is likely to be interfered with by the simultaneous execution of some other separate contract or contracts, the Agency will decide which contractor may proceed. The Agency shall not be responsible for any damages suffered or extra costs incurred by the Contractor resulting directly or indirectly from the award or performance or attempted performance of any other separate contract or contracts on the Project, or caused by any decision or omission of the Agency respecting the order of precedence in the performance of the separate contracts awarded for completion of the Project. Any costs caused by defective or ill-timed work shall be borne by the contractor responsible therefore.

14.2 ***Mutual Responsibility of Contractors:*** The Contractor shall cooperate with other contractors with regard to storage of materials and execution of their work, and shall coordinate with them with respect to construction scheduling and sequence of operations, all subject to the approval of the Agency. The Contractor shall properly connect his/her Work to the work of separate contractors, and shall inspect the work of other contractors affecting his/her Work and promptly report to the Agency in writing any irregularities or defects in the separate contract work which renders it unsuitable for reception or connection of his/her Work. Failure of the Contractor to inspect and report shall constitute an acceptance of the other contractor’s work as fit and proper to receive his Work, except as defects that may develop in the other separate contractor’s work after the execution of the Contractor’s Work.

Each Contractor shall monitor the schedule and progress of each other Contractor whose work affects his own work, and shall be responsible for giving timely notice to the Agency of potential problems of interface so that the Agency can mitigate the issue.

14.3 ***Cutting and Patching Under Separate Contracts:*** The Contractor shall be responsible for any cutting, fitting and patching that may be required to complete his/her Work except as otherwise specifically provided in the Contract Documents. The Contractor shall not endanger any work of any other contractor

by cutting, excavating, or otherwise altering any work and shall not cut or alter the work of any other contractor except with the written consent of the Agency.

- 14.4 ***Claims between Separate Contractors:*** Should the Contractor cause damage to the work or property of any separate contractor on the Project, the Contractor shall, upon due notice, settle with such other contractor by agreement or arbitration, if he/she will so settle. If such separate contractor sues the Agency or initiates an arbitration proceeding on account of any damage alleged to have been so sustained, the Agency will notify the Contractor who shall defend such proceedings at the Contractor's expense, and if any judgment or award against the Agency arises there-from the Contractor shall pay or satisfy it and shall, as provided in **Paragraph 20.12**, pay the Agency for all attorneys' fees, court or arbitration costs, and additional administrative, professional, consultant, inspection, testing, and other service costs which the Agency has incurred.

ARTICLE 15 - AGENCY'S AND ENGINEER'S STATUS DURING CONSTRUCTION

- 15.1 ***Authority of the Agency:*** The Agency shall have the authority to enforce compliance with the Contract Documents. On all questions relating to quantities, the acceptability of materials, equipment, or Work, the adequacy of the performance of the Work, and the interpretation of the Drawings and Specifications, the decision of the Agency is final and binding and shall be precedent to any payment under the Contract Agreement unless otherwise provided in the Contract Documents. The Agency shall have the authority to stop the Work or any part thereof as may be necessary to ensure the proper execution of the Work, to disapprove of or reject Work which is defective, to require the uncovering and inspection or testing of Work as provided in **Paragraph 17.5**, to require re-examination of Work as provided in **Paragraph 18.4**, to issue interpretations and clarifications as provided in **Paragraph 3.2**, to order minor changes or alterations in the Work as provided in **Paragraph 16.6**, and other authority as provided elsewhere in the Contract Documents. The Agency shall not be liable for the results of any ruling, interpretation or decision rendered or request, demand, instruction, or order issued by him in good faith. The Contractor shall promptly comply with request, demands, instructions, and orders from the Agency.
- 15.2 ***Engineer's Observation of the Work:*** The Engineer will make periodic observations of the progress and quality of the executed Work and will 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 observations to check the quality or quantity of the Work. Neither observations by the Engineer nor inspections, tests, or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform and construct the Work in accordance with the requirements of the Contract Documents. The Agency will inform the Contractor in writing of other duties of the Engineer under the Contract Documents, if any.

- 15.3 **Limitations on Responsibility:** The Agency and the Engineer will not be responsible for construction means, methods, techniques, procedures, sequences, or the safety precautions and programs incident thereto, or for the acts or omissions of the Contractor or any Subcontractor, Sub-subcontractor, or any of their agents or employees, or any other persons performing any of the Work, or for the Contractor's failure to perform and construct the Work in accordance with the Contract Documents. Neither the Engineer's authority to act under the Contract Documents nor any decision made by 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 or Sub-subcontractor, any of their agents or employees or any other person performing any of the Work, nor shall anything in the Contract Documents create any contractual relationship between any of them and the Engineer.
- 15.4 **Protests:** If the Contractor considers any Work requested or ordered of him/her to be outside the requirements of the Contract Documents, or considers any request, demand, instruction, order, ruling, or decision of the Agency to be unfair, he shall, within ten days after any such request, demand, instruction, orders, ruling, or decision is made or given, file a written protest with the Agency stating clearly and in detail his objections and the reasons therefore. Except for written protests as are made of record in the manner and within the time stated herein, the Contractor shall be deemed to have waived and does hereby waive all grounds for protests or objections to such request, demands, instruction, orders, ruling, or decisions. The Agency will issue a written decision regarding each protest so filed with reasonable promptness.

ARTICLE 16 - CHANGES IN THE WORK

- 16.1 **Change Orders:** Without invalidating the Contract Agreement and without notice to sureties or insurers, the Agency may, at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by Change Order. The Contractor shall comply promptly with the requirements of all executed Change Orders. The Work involved in Change Orders shall be executed under the applicable conditions and requirements of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made and included in the Change Order. Additional or extra Work performed by the Contractor without authorization of a Change Order will not entitle the Contractor to an increase in the Contract Price or an extension of the Contract Time, except as provided in **Subparagraph 13.8.1** for emergencies and in **Paragraph 18.4** for the re-examination of Work. Change Orders are authorized and become effective only when signed by the Agency or Agency's representative, who will be identified by name in writing to the Contractor. No other agents of the Agency, other than those persons so identified, are authorized to execute Change orders or to otherwise obligate the Agency to costs or time extensions beyond those contained in the original Bid Documents or the Contract.

The Agency will not be obligated for payments or time extensions not authorized by a properly executed Change Order as described above.

16.2 Valuation of Change Orders:

Whenever corrections, alterations, or modifications of the work under this Contract are required by the Agency and increase the amount of work to be done, such added work shall be known as extra work; and when such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as work omitted.

The difference in cost of the work affected by such change will be added to or deducted from the amount of said Contract price, as the case may be, by a fair and reasonable valuation, which shall be determined in one or more of the following ways as directed by the Agency:

- A. By unit prices accepted by the Agency and stated in the Contract Documents;
- B. By unit prices subsequently fixed by agreement between the parties;
- C. By an acceptable lump sum proposal from the Contractor; or
- D. By Force Account, when directed in writing and administered by the Agency through its agents or representatives.

When required by the Agency, the Contractor shall submit, in the form prescribed by the Agency, an itemized breakdown with supporting data of the quantities and prices used in computing the value of any change that may be ordered.

The Agency will review the Contractor's proposal for the change and negotiate an equitable adjustment with the Contractor. After there is an agreement, the Agency will prepare and process the Change Order. All Change Orders must be approved by the Agency in writing before the work can be authorized and the Change Order executed.

The prices agreed upon and any agreed upon adjustment in Contract Time shall be incorporated in the written order issued by the Agency, which shall be written so as to indicate an acceptance on the part of the Contractor as evidenced by its signature. By signature of the Change Order, the Contractor acknowledges that the adjustments to cost and time contained in the Change Order are in full satisfaction and accord, payment in full, and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by the Change Order.

16.2.1 Negotiated Change Orders:

Under the methods described in **Paragraphs 16.2B and 16.2C** above, the Contractor shall submit substantiating documentation with an itemized breakdown of Contractor and subcontractor direct costs, including labor, material, equipment rentals, engineering, shop drawing preparations, and approved services, pertaining to such ordered work in the form and detail acceptable to the Agency. The direct costs shall include only the payroll cost for workers and foremen, including wages and fringe benefits as established by negotiated labor agreements or state prevailing wages. To the actual payroll cost will be added a labor surcharge which shall be the actual costs of taxes and insurance. Such labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workers, other than actual payroll cost and subsistence and travel allowances. No other fixed labor burdens will be considered, unless approved in writing by the Agency.

Other direct costs include the cost of materials used and equipment delivered and installed in such work as substantiated by appropriate documents; the cost of construction machinery and equipment based on fair rental or ownership values acceptable to the Agency as described in **Subparagraph 16.2.2**, "Force Account Payment"; and the cost of incidentals directly related to such work. The direct costs shall not include any labor or office costs pertaining to the Contractor's managers or superintendents, its office and office facilities, or anyone not directly employed on such work, nor the cost of small tools as all such indirect costs form a part of the Contractor's overhead expense.

Under the method described in **Paragraphs 16.2B and 16.2C**, the maximum percentage which will be allowed for the Contractor's combined overhead and profit will be:

- A. For work by its own organization, the Contractor may add the following percentages:
 - 1. Direct Labor 15 percent
 - 2. Materials 15 percent
 - 3. Equipment (owned or rented) 15 percent
- B. For all such work performed by a subcontractor, an additional markup of 5 percent will be added to the total cost of said extra work including all markups specified in this **Subparagraph 16.2.1**. Said additional 5 percent markup shall reimburse the Contractor for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

- C. To the total of the actual costs and fees allowed hereunder, not more than 2 percent shall be added for additional bond and insurance other than labor insurance.

The above costs represent the maximum limits which will be allowed, and they include the Contractor's and all subcontractors' indirect home office expenses and all costs for cost proposal preparation.

When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any, for each area of work, i.e. direct labor, materials, equipment, and subcontractors. The amount of credit to be allowed by the Contractor to the Agency for any such change which results in a net decrease in cost will be the amount of the actual net decrease and a credit in accordance with the markups allowed under the use of the method described in **Subparagraph 16.2.2, "Force Account Payment"**. The Contractor shall not claim for anticipated profits on work that may be omitted.

16.2.2 **Force Account Payment:**

If either the amount of work or payment for a Change Order cannot be determined or agreed upon beforehand, the Agency may direct by written Change Order or Field Order that the work be done on a force account basis. The term "force account" shall be understood to mean that payment for the work will be done on a time and expense basis, that is, on an accounting of the Contractor's forces, materials, equipment, and other items of cost as required and used to do the work. For the work performed, payment will be made for the documented actual cost of the following:

- A. Direct labor cost for workers, including foremen, who are directly assigned to the force account work: Direct labor cost is the actual payroll cost, including wages and fringe benefits as established by negotiated labor agreements or state prevailing wages. To the actual payroll cost will be added a labor surcharge which shall be the actual costs of taxes and insurance. Such labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workmen, other than actual payroll cost and subsistence and travel allowances. No other fixed labor burdens will be considered, unless approved in writing by the Agency.
- B. Material delivered and used on the designated work, including sales tax, if paid for by the Contractor or its subcontractor.

- C. Equipment rental, including necessary transportation for items having a value in excess of \$1,000.00.
- D. Additional bond.
- E. Additional insurance, other than labor insurance.

To the preceding costs, there shall be added the following fees for the Contractor, subcontractor, or sub-subcontractor actually performing the work:

- A. A fixed fee not to exceed 15 percent of the cost of Item A above, and 15 percent of the costs of Items B and C above.
- B. To the total of the actual costs and fees allowed in items A, B, and C above, not more than 2 percent shall be added for additional bond and insurance as the cost of Items D and E above.

For all such work performed by forces other than the Contractor's organization, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the Agency for such work. No additional payment therefore will be made by the Agency by reason of the performance of the work by a subcontractor or other forces.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, profit, and any other general expense. The above fixed fees represent the maximum limits which will be allowed, and they include the Contractor's and all subcontractors' indirect home office expenses and all costs for cost proposal preparation and record keeping.

The Agency reserves the right to furnish such materials and equipment as it deems expedient and the Contractor shall have no claim for profit or added fees on the cost of such materials and equipment.

For equipment under Item C above, rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Payment shall be based on actual rental and transportation invoices but shall not exceed the monthly rate in the SS Caltrans "Labor Surcharge and Equipment Rental Rates" publication. The rental cost allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, ownership, and incidental costs and no further allowances will be made for those items, unless specific agreement to that effect is made. For Contractor owned equipment, costs shall be based on either actual cost accounting records or the SS Caltrans "Labor Surcharge and Equipment Rental Rates" publication. Hourly rates shall be determined by dividing the monthly rate by 176 hours.

Prior to the commencement of force account work, the Contractor shall notify the Agency of its intent to begin work. Labor, equipment, and materials furnished on force account work shall be recorded daily by the Contractor upon report sheets approved by the Agency. The reports, if found to be correct, shall be signed by both the Contractor and Agency, and a copy of which shall be furnished to the Agency no later than the working day following the performance of said work. The Daily Report sheet shall thereafter be considered the true record of force account work provided. If the Agency does not agree with the labor, equipment, and/or materials listed on the Contractor's daily force account report, the Contractor and Agency shall sign-off on the items on which they are in agreement. The Agency shall then review the items of disagreement and will advise the Contractor, in writing, of its determination. If the Contractor disagrees with this determination, it shall have the right to file a claim in accordance with the General Conditions in **Paragraph 16.4** of this Contract. The Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of work paid for on a force account basis and the costs of other operations.

To receive partial payments and final payment for force account work, the Contractor shall submit, in a manner approved by the Agency, detailed and complete documented verification of the Contractor's and any of its subcontractor's actual costs involved in the force account pursuant to the pertinent Change Order or Field Order. Such costs shall be submitted within thirty (30) days after said work has been performed.

The force account invoice shall itemize the materials used and shall cover the direct costs of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces. The invoice shall be in a form acceptable to the Agency and shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated. Material charges shall be substantiated by valid copies of vendor's invoices.

When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any. The amount of credit to be allowed by the Contractor to the Agency for any such change which results in a net decrease in cost will be the amount of the actual net decrease and a credit in accordance with the markups allowed under the use of the method described in this Section. The Contractor shall not claim for anticipated profits on work that may be omitted.

- 16.3 **Notice to Sureties:** The Contractor shall notify his sureties and the carriers of the insurance furnished and maintained by him/her of any changes affecting the general scope of the Work or change in the Contract Price, and the amount of the

applicable Bonds and the coverage of the insurance shall be adjusted accordingly. The Contractor shall furnish proof of such adjustments to the Agency.

- 16.4 **Contractor's Claims:** If the Contractor wishes to make a claim for a change in the Contract Price or the Contract Time, the Contractor shall give the Agency written notice thereof within 5 working days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work covered by the claim except in an emergency endangering life or property. No such claim shall be valid unless so made. Any change in the Contract Price or the Contract Time resulting from a claim that is approved by the Agency will be authorized by Change Order.
- 16.5 **Adjustment of Unit Prices:** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed (by the lesser of \$5,000 or 20 percent quantity change) in a proposed Change Order that application of the agreed unit prices to the quantities of Work proposed will create a hardship on the Agency or the Contractor, the applicable unit prices will be equitably adjusted to prevent such hardship by negotiation or by force account. Any equitable adjustment increase shall only apply to the unit quantities greater than 120 percent of the original quantities of the Work. Any equitable adjustment decrease shall apply to all quantities encountered.
- 16.6 **Minor Changes:** The Agency may issue written Field Orders or other written orders that authorize minor changes or alterations in the Work consistent with the overall intent of the Contract Documents that do not involve an adjustment in the Contract Price or an extension of the Contract Time. Such orders shall be binding on the Contractor and he shall carry out such orders promptly. If the Contractor believes any minor change or alteration ordered by the Agency entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in **Paragraph 16.4**.
- 16.7 **Information Revisions Caused By Change Orders:** As provided in **Paragraph 12.12**, whenever a Change Order or other Modification causes a change in the information contained in previously approved submittals, the Contractor shall include in the itemized breakdown required of him under **Paragraph 16.2** all costs for preparing and submitting revised information and submittals corresponding to the changed requirements. If the Change Order or other modification(s) causes no change in such information or submittals, the Contractor shall so certify in writing in his itemized breakdown.

ARTICLE 17 - ACCESS, INSPECTIONS, AND TESTS

- 17.1 **Access to the Work and Records:** The Agency, the Engineer, the Inspector, and the representatives of any Federal, State, or other public body or authority having jurisdiction of the Project shall have, at all times and for any purpose, immediate access to the Work and the premises used by the Contractor for the Work and

shall have access to the places where materials or equipment are being fabricated, manufactured, or produced for the Work. To the extent requested by the Agency, the Contractor shall furnish access to the purchase orders and records, invoices, bills of lading, payroll records, and other documents and records pertaining to the Work, or shall furnish certified true copies thereof at his expense.

- 17.2 **Inspection:** The Agency will furnish inspection of the Work at no cost to the Contractor except as provided in **Paragraphs 4.3, 14.4, 17.5, 17.6, 18.1, and 21.2**, and except for inspections required to be furnished and paid for by the Contractor elsewhere in the Contract Documents. All Work shall be performed and constructed under the inspection of the Inspector unless waived in writing by the Agency in each case or exempted wholly or in part from inspection elsewhere in the Contract Documents. Any Work requiring such inspection that is performed or constructed in the absence of the Inspector shall be considered defective and is subject to rejection. Inspection of any material or equipment at the factory or shop will not constitute an acceptance. The Inspector is authorized to suspend any part or all of the Work, by notice to the Contractor confirmed in writing, when a question arises as to whether the materials or equipment being installed or the methods or workmanship being used comply with the Contract Documents until such question is decided by the Agency. The Inspector is not authorized to accept or reject any Work, to modify or change any requirement of the Contract Documents, to advise or instruct the Contractor or his/her employees as to the prosecution of the Work, to perform any duty or service for the Contractor, or relieve the Contractor of the obligation to fulfill any conditions and requirements of the Contract Documents. The Contractor shall give written notice to the Agency at least ten working days in advance of the performance of any part of the Work requiring special inspection by someone other than the Inspector and shall state the probable duration of the required special inspection. The Special Inspector is authorized to reject work that does not meet the Contract Documents. Such rejection shall be confirmed by the Agency in writing.
- 17.3 **Testing:** All Work, materials, and equipment to be performed and constructed by the Contractor are subject to testing for compliance with the Contract Documents and shall be tested when required by the Contract Documents. The Contractor shall give the Agency timely written notice of the dates and times that testing is to be performed at the site or the place of manufacture or fabrication. All tests are subject to the observation of the Engineer and approval of the Agency and shall be performed as directed by the Agency unless otherwise provided in the Contract Documents. Materials or equipment required to be tested prior to installation shall not be installed until the Agency has approved the test results and the tested material or equipment in writing.
- 17.3.1 **Contractor's Testing Agency:** If materials or equipment are required to be tested by a testing laboratory or agency employed by the Contractor, the testing laboratory or agency shall be satisfactory to and approved by the Agency. The Contractor shall deliver five certified copies of each test report to the Agency unless otherwise specified.

- 17.3.2 **Test Samples:** The Contractor, at his/her expense, shall furnish samples of materials to be tested in sufficient time before use to allow for testing and to cause no delay in the Work.
- 17.3.3 **Test Costs:** The Contractor shall bear all testing costs, unless otherwise provided in the Contract Documents.
- 17.4 **Operational Tests:** After the Work is completed and as one of the precedents to final inspection, the Contractor shall perform operational tests as required by the Contract Documents and as required to demonstrate to the Agency the correct and proper operation of the various facilities forming a part of the Work including but not limited to the correct sequences of operation and the satisfactory performance of all components. The Contractor shall repair, replace, adjust, or otherwise correct the improper operation of any system or component and all faulty or defective Work as the Agency may require for his approval. Based upon the operational test results, the Contractor shall prepare and submit revised or additional information and data for the previously approved submittals as required by the Agency and as provided in **Paragraph 12.12**.
- 17.5 **Uncovering of Work:** Any Work that is covered by the Contractor before required inspections or tests are performed or approvals are given shall be uncovered by the Contractor to the extent directed by the Agency, and the Contractor shall bear all the expense for uncovering, exposure, inspection, testing, and of satisfactory reconstruction.
- 17.6 **Inspections, Tests, and Approvals Required By Others:** If the laws, ordinances, rules, regulations, or orders of any public body or authority having jurisdiction require any Work to be specifically inspected, tested, or approved by someone other than the Contractor, the Agency, or the Inspector, the Contractor shall give all required notices and make all required arrangements therefore and shall deliver to the Agency certificates of inspection, testing, or approval issued by the applicable public bodies or authorities having jurisdiction. The cost of all such inspections, tests, and approvals shall be borne by the Contractor unless otherwise provided in the Contract Documents.

ARTICLE 18 - DEFECTIVE WORK

- 18.1 **Correction of Defective Work:** All Work, material, or equipment that is unsatisfactory, faulty, incomplete, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, test, or approval is defective. If the Work or any part thereof is found to be defective, whether or not manufactured, fabricated, installed, completed, or overlooked and accepted by the Agency, the Contractor shall, promptly and in accordance with the written instructions of the Agency and within the reasonable time limits stated therein, either correct such defective Work or, if it has been rejected by the Agency, remove it from the site and replace it with non-defective and conforming Work.

The Contractor shall bear all costs for the correction or removal and replacement of defective Work and all additional direct and indirect costs the Agency may incur on account of defective Work including the costs of additional administrative, professional, consultant, inspection, testing, and other services. If such additional costs are incurred by the Agency prior to the making of final payment, a Change Order will be issued to effect a reduction in the Contract Price in the amount of the Agency's additional costs; otherwise, the Contractor shall pay the amount to the Agency in accordance with **Paragraph 20.12**. The Contractor shall also bear all costs of making good all Work and the work and property of separate contractors, the Agency, and others that is destroyed or damaged by his correction or removal and replacement of his defective Work.

- 18.2 ***Agency's Right to Correct Defective Work:*** If the Contractor fails to correct or remove and replace defective Work in accordance with the requirements of **Paragraph 18.1**, the Agency may correct or remove and replace it without prejudice to any other remedy the Agency may have, and the Agency may store the removed materials or equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten (10) days thereafter, the Agency may upon ten (10) additional days' written notice sell such removed Work at auction or private sale and shall account for the net proceeds or deficit thereof, after deducting all expenses the Agency may incur from such removal, storage, or sale. If the Agency corrects or removes and replaces defective Work prior to the making of final payment, one or more Change Orders will be issued to effect appropriate reductions in the Contract Price for all costs and expenses incurred by the Agency in the correction or removal and replacement of defective Work, adjusted to account for the net proceeds or deficit of said auction or sale, if any, and all additional costs the Agency may incur on account of defective Work as provided in **Paragraph 18.1**; otherwise, the Contractor shall pay to the Agency the amount of all such costs and expenses incurred by the Agency adjusted to account for the net proceeds or deficit of said auction or sale, if any, in accordance with **Paragraph 20.12**.
- 18.3 ***Agency's Right to Accept Defective Work:*** The Agency may accept defective Work instead of requiring its correction or removal and replacement. In such case, if acceptance occurs prior to the making of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price covering the value of such accepted defective Work and the additional costs the Agency may incur on account of such defective Work as provided in **Paragraph 18.1**; or, if the acceptance occurs after the making of final payment, the amount that would have been the reduction in the Contract Price prior to the making of the final payment shall be paid by the Contractor to the Agency in accordance with **Paragraph 20.12**.
- 18.4 ***Re-Examination of Work:*** If the Agency, at any time prior to the final acceptance of the Work, orders reexamination of Work completed, including the uncovering, removing, exposing, dismantling, inspecting, or testing of Work covered by such order, the Contractor shall promptly comply with the order. If the Work so

re-examined is defective, the Contractor shall correct or remove and replace it with non-defective and conforming Work in accordance with all the provisions of **Paragraph 18.1** and also shall bear the cost of the satisfactory reconstruction of the Work. If the Work so re-examined is not defective or if any defective or deficient condition discovered was caused by a separate contractor employed on the Project, the Contractor shall satisfactorily reconstruct the Work as ordered by the Agency and, if claim is made as provided in **Paragraph 16.4**, a Change Order will be issued to compensate the Contractor for his Work under such order, valued as provided in **Paragraph 16.2**, and to effect an appropriate adjustment of the Contract Time.

ARTICLE 19 - GUARANTEES AND WARRANTIES

- 19.1 **Contractor's Guarantee:** The Contractor shall warrant and guarantee the entire Work and all parts thereof, including that performed and constructed by Subcontractors, Sub-subcontractors, and others employed directly or indirectly on and for the Work, against faulty or defective materials, equipment, or workmanship for a period of one year from the date of the Agency's written final acceptance of the Work or such longer period of time as may be prescribed by law or by the terms of any special guarantee or warranty required by the Contract Documents.
- 19.2 **Bonds and Insurance:** The performance bond and the public liability and property damage insurance required of the Contractor in Article 6 shall remain in full force and effect for the entire time of the Contractor's guarantee.
- 19.3 **Corrections during Guarantee Period:** The Contractor's correction of defective Work during the guarantee period shall be in accordance with all the provisions of **Paragraph 18.1**, or the Agency may correct or accept it as provided in **Paragraphs 18.2 and 18.3**.
- 19.4 **Guarantee of Work on Property of Others:** The Contractor's guarantee shall cover and include any of the Work installed on property not owned by the Agency, whether public or private, and shall include the repair of damage to improvements and existing conditions on such other property caused by settlement or otherwise resulting from the Contractor's operations unless the owner of such other property shall in writing release the Agency from liability and responsibility for Work or damage on such other property.
- 19.5 **Manufacturers' Warranties:** As a precedent to final inspection, the Contractor shall deliver to the Agency all the manufacturers' warranties required by the Contract Documents, with the Agency named as beneficiary. In addition, for all equipment and machinery bearing a manufacturer's warranty that extends for a longer period of time than the Contractor's guarantee, the Contractor shall secure and deliver the warranties to the Agency in the same manner.

ARTICLE 20 - PAYMENTS AND COMPLETION

- 20.1 ***Schedule of Values:*** The Contractor shall submit to the Agency for approval, in the form directed by or acceptable to the Agency, a complete schedule of the values of the various portions of the Work, including quantities and unit prices if required by the Agency, aggregating the Contract Price (except in cases and to the extent that accepted unit prices form the basis for payment). The schedule shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction and to coordinate with the progress schedule required under **Paragraph 2.6**, and shall be supported by such data to substantiate its correctness as the Agency may require. Each item in the schedule of values shall include its proper share of overhead and profit. An unbalanced breakdown providing for overpayment to the Contractor on items of Work that will be performed first will not be approved. The Schedule of Values, when approved by the Agency, shall be used only as a basis for the Contractor's applications for payment and not for additions to or deductions from the Contract Price.
- 20.2 ***Contractor's Certification:*** All applications for payment shall contain the Contractor's certification that all his/her labor for the period for which payment is claimed has been paid, including all amounts to the account of such labor lawfully required to be allocated, withheld, or set aside, and that he/she has assured himself/herself and represents that all labor on the account of Subcontractors or Sub-subcontractors for which payment amounts are claimed has also been paid.
- 20.3 ***Contractor's Warranty of Title:*** 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 have passed to the Agency prior to the making of the application for payment, free and clear of all liens, claims, security interests or encumbrances (hereafter in these General Conditions referred to as "liens"); and that no Work, materials or equipment covered by an application for payment will have been acquired by the Contractor or by any other person performing the Work at the site or furnishing materials and equipment for the Work, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.
- 20.4 ***Progress Payments:*** Unless otherwise provided in the Contract Documents, the Contractor shall submit to the Agency for review and approval an itemized progress payment application in the form required by the Agency, filled out and signed by the Contractor. The application shall be supported by such data as the Agency may require substantiating the Contractor's right to payment, and Contractor shall provide conditional and unconditional mechanic's lien waivers and releases which comply with the requirements of Civil Code Section 3262 and which are signed by all subcontractors, sub-subcontractors, material suppliers and others that have performed work on or furnished equipment or materials to the job as reflected in the Contractor's application. Any progress payment application not

accompanied by the revised progress schedule required of the Contractor in **Paragraph 2.6** or by the additional documentation required by this paragraph will be rejected and returned to the Contractor. The payment for the Progress Payment will be made within thirty (30) calendar days from Agency's approval date.

20.4.1 ***Progress Payment for Materials and Equipment:*** If an application requests payment on account of imperishable materials or equipment not incorporated in the Work but delivered and suitable stored at the site, or at some other location approved by the Agency and agreed to in writing, the application shall be accompanied by such bills of sale, data, and other procedures satisfactory to the Agency as will establish the Agency's title to such materials or equipment or otherwise protect the Agency's interest including applicable liability and property insurance and transportation to the site. Payment on account of such materials or equipment will not include any amount for the Contractor's overhead or profit or relieve the Contractor of his obligation to protect and install such materials or equipment in accordance with the Contract Documents and for the restoration of damaged or defective Work.

20.4.2 ***Basis of Progress Payments:*** Unless otherwise provided in the Contract Agreement or subsequently agreed by the parties, progress payments will be in an amount equal to 95 percent of the value of the Work performed and the value of materials and equipment delivered and stored as provided in **Subparagraph 20.4.1** less the aggregate of previous progress payments.

20.4.3 ***Approval of Progress Payments:*** The Agency will either indicate in writing his approval of payment or return the application to the Contractor indicating in writing his reasons for refusing to approve payment. With respect to disapproved applications, the Contractor may make the necessary corrections and resubmit the application. Unless otherwise provided or agreed by the parties, the Agency will approve or return an application within ten (10) days after receipt, and the Agency will, within thirty (30) days after his approval of an application for payment, pay the Contractor the amount so approved.

20.5 **Withholding of Payments:**

20.5.1 ***Right to Withhold:*** The Agency may refuse to approve any such payment, or, because of subsequently discovered evidence or the results of subsequent inspection or tests, nullify any such payment previously approved to such extent as may be necessary in the opinion of the Agency to protect the Agency from loss because: (a) the Work is defective; (b) third party claims have been filed or there is reasonable evidence indicating probable filing of such claims; (c) the Contract Price has been reduced because of modifications; (d) of the Contractor's failure to make payment properly to Subcontractors or for labor,

materials, or equipment; (e) of damage to another contractor or to the property of others caused by the Contractor; (f) of reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price; (g) of reasonable indication that the Work will not be completed within the Contract Time; (h) of the Contractor's neglect or unsatisfactory prosecution of the Work including failure to clean up; (i) the Agency has been required to correct defective Work as provided in **Paragraph 18.2** or to finish the Work as provided in **Paragraph 21.2**; (j) of insurance premium costs the Agency has incurred by the Contractor's failure to maintain the insurance required of him; (k) of reasonable doubt as to the Contractor's warranty of title required under **Paragraph 20.3**; (l) of payments due the Agency from the Contractor; or (m) of provisions of law that enable or require the Agency to withhold such payments in whole or in part. When the grounds for withholding payments are removed, payment will be made for amounts withheld because of them to the extent the Contractor is entitled to payment.

20.5.2 **Agency's Right to Apply Withheld Payments:** The Agency may, but is not obligated to the Contractor, his/her surety or sureties, or any third party, to apply the amounts withheld pursuant to **Subparagraph 20.5.1** to the payment of any and all claims which are grounds for such withholding. In so doing, the Agency shall be deemed the agent of the Contractor and any payments so made by the Agency shall be considered as a payment made under the Contract Agreement by the Agency to the Contractor and the Agency shall not be liable to the Contractor for such payment made in good faith. Such payment by the Agency may be made without prior judicial determination of the Claim(s). The Agency will render to the Contractor a proper accounting of such funds disbursed on behalf of the Contractor.

20.6 **Payments to Subcontractors:** The Contractor shall pay each Subcontractor, upon receipt of payment from the Agency, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's Work, less the percentage retained from payments to the Contractor. The Contractor shall also require each Subcontractor to make similar payments to his/her Sub-subcontractors. If the Agency refuses or fails to approve an application for payment for any cause which is the fault of the Contractor and not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand, made at any time after the Agency's approval for payment should otherwise have been issued, for his/her Work to the extent completed less the retained percentage. The Contractor shall pay each Subcontractor a just share of any insurance moneys received by the Contractor under **Paragraph 6.8**, and he shall require each Subcontractor to make similar payment to his Sub-subcontractors. Neither the Agency nor the Engineer shall have any obligation to pay or to see to the payment of any moneys to any Subcontractor or Sub-subcontractor except as may otherwise be required by law.

- 20.7 ***Final Inspection and Acceptance:*** Upon written notice from the Contractor that the entire Work required by the Contract Documents is complete and that all submittals required of him/her are made, and after the Contractor has delivered the Bonds, Certificates of Inspection, proof of insurance, guarantees, warranties, releases, and other documents, all as required by the Contract Documents or by law, a Post-construction Conference will be held to review the Work and resolve any unsettled matters. Present at the conference shall be the Agency, the Engineer, the Inspector, the Contractor, and the Superintendent. Following this conference, Engineer will make a final inspection with the Agency and the Contractor, and the Agency will notify the Contractor in writing of any particulars in which this inspection reveals that the Work is defective, and will also notify the Contractor in writing of any deficiencies in the submittals and other documents required of him. The Contractor promptly shall make such corrections as are necessary to remedy all defects or deficiencies. After the Contractor has completed any such corrections to the satisfaction of the Agency, the Agency will issue a written Final Acceptance of the Work and file any notice of completion required by law or otherwise.
- 20.8 ***Application for Final Payment:*** After issuance of the Agency's Final Written Acceptance, the Contractor may make application for Final Payment following the procedure for Progress Payments. Neither the final payment nor the remaining retained percentage shall become due unless the application for final payment is accompanied by such supporting data as the Agency may require, together with complete and legally effective releases or waivers, satisfactory to the Agency, of all liens arising out of the Contract Documents and the labor and services performed and the materials and equipment furnished there-under. In lieu thereof and as approved by the Agency, the Contractor may furnish receipts or releases in full; an affidavit of the Contractor that the releases and receipts include all labor, services, material and equipment for which a lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which the Agency or his/her property might in any way be responsible, have been paid or otherwise satisfied; and consent of Surety, if any, to final payment. If any Subcontractor, Sub-subcontractor, or supplier fails or refuses to furnish a release or receipt in full, the Contractor may furnish a Bond satisfactory to the Agency to indemnify him/her against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor or his/her surety shall pay to the Agency all moneys the Agency may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.
- 20.9 ***Approval of Final Payment:*** The Agency will, within ten (10) days after the Contractor has fulfilled and satisfied all the requirements of **Paragraph 20.8**, indicate in writing his approval of payment or will return the application to the Contractor, indicating in writing his reasons for refusing to approve Final Payment, in which case the Contractor shall make the necessary corrections and resubmit the application. The Agency, within thirty-five (35) days after his approval of the application for Final Payment, will pay the Contractor the amount

so approved unless a longer period of time is prescribed by law or required for the lawful filing and publishing of Notice of Completion.

- 20.10 ***Continuing Obligation of the Contractor:*** The Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is and shall be absolute. Neither the observation during construction and Final Inspection of the Work by the Agency and the Engineer, nor any payment by the Agency to the Contractor under the Contract Documents, nor any use or occupancy of the Work or any part thereof by the Agency, nor any act of acceptance by the Agency nor any failure to do so, nor any correction of defective Work by the Agency shall constitute acceptance of Work not in accordance with the Contract Documents.
- 20.11 ***Waiver of Claims.:*** The making and acceptance of Final Payment shall constitute: (a) a waiver of all claims by the Agency against the Contractor except those arising from unsettled liens, from faulty or defective Work appearing after Final Acceptance of the Work by the Agency, from failure of the Work to comply with the requirements of the Contract Documents, or from the terms of any special guarantees or warranties required by the Contract Documents, or from the terms of any special guarantees or warranties required by the Contract Documents, and (b) a waiver of all claims by the Contractor against the Agency except those previously made in writing and still unsettled. However, any payment, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract Documents or the Performance Bond and Payment Bond.
- 20.12 ***Contractor's Payment to Agency:*** The Contractor shall pay to the Agency all moneys so required of him/her under the provisions of the Contract Documents. If any such payments are required prior to final payment, an appropriate Change Order will be issued and, as provided in **Subparagraph 20.5.1**, the amount of such payments may be withheld from payments due the Contractor. If the payments then or thereafter due the Contractor are insufficient to cover any payments due the Agency from the Contractor, or if the amount of such payment due the Agency is determined after the making of final payment, the difference in the amounts of the payments or the amount so determined shall be paid by the Contractor to the Agency. The obligation of the Contractor to pay the moneys due the Agency from him/her shall specifically bind the Contractor's sureties, assigns, executors, administrators, and heirs to his/her obligation to so pay the Agency.
- 20.13 ***Interest:*** Any moneys not paid when due to either party under this Contract Agreement shall bear interest at the maximum legal rate in force at the place of the Project.
- 20.14 ***Non-receipt of Payment:*** The Contractor shall notify the Agency in writing of any approved progress payment not received by him/her within five (5) days after the date the payment should properly have been paid to him/her. In the absence of such written notice in each case, the Contractor hereby agrees and waives his/her right under **Paragraph 21.5** to terminate the Contract Agreement or stop the Work on account of nonpayment by the Agency and further waives his/her right under

Paragraph 20.13 to interest on the amount of any such payment not received by him.

ARTICLE 21 - SUSPENSION AND TERMINATION

- 21.1 ***Suspension of Work:*** The Agency, at any time and without cause, may suspend the Work or any part thereof by notice in writing to the Contractor. Unless otherwise provided in the Contract Documents, the Contractor shall have no claim for damages or compensation on account of such suspension unless he/she makes a claim therefore as provided in **Paragraph 16.4**, but the Contractor will be allowed an extension of the Contract Time to complete the Work and an appropriate Change Order will be issued. The Contractor shall resume the Work when so notified in writing by the Agency.
- 21.2 ***Suspension of Contract Agreement:*** If the Contractor abandons the Work, or if he/she is adjudged a bankrupt or insolvent, or if he/she makes a general assignment for the benefit of his/her creditors, or if a trustee or receiver is appointed for the Contractor or for any of his/her property, or if he/she files a petition to take advantage of any debtor's act or to reorganize under bankruptcy or similar laws, or if he/she persistently fails to supply sufficient skilled superintendence and workers or suitable materials or equipment, or if he/she persistently fails to make prompt payments to Subcontractors or for labor, materials or equipment, or if he/she disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction, or if he/she disregards the authority of the Agency, or neglects to prosecute the Work in accordance with the Contract Documents including requirements of the progress schedule, or if he/she fails to promptly comply with the requirements of any Change Order, or if he/she assigns this Contract Agreement otherwise than herein provided, or if the Agency at any time is of the opinion that the performance of the Work is unnecessarily or unreasonably delayed or that the Contractor is willfully violating any of the provisions of the Contract Documents or is executing the same in bad faith, or if the Work is not fully completed within the Contract Time and any authorized extensions thereof, or if the Agency is of the opinion that the Work cannot be completed for the unpaid balance of the Contract Price or will not be completed within the Contract Time, or if the Contractor otherwise violates any provisions of the Contract Documents, then the Agency may, without prejudice to any other right or remedy and by means of written notice to the Contractor and his/her surety, instruct the Contractor to discontinue all Work or any part thereof under the Contract Agreement or terminate the services of the Contractor. The Contractor, under a written instruction to discontinue, shall not resume any of the Work except by written notice from the Agency. In either such case, the Agency may take possession of the Work and Project and of all materials, equipment, plant, tools, supplies, construction machinery and equipment, and property of every kind thereon owned and furnished by the Contractor for the purpose of the Work, and finish the Work by whatever method the Agency may deem expedient. The Contractor shall not be entitled to receive any further payment after the date

of said written notice from the Agency unless instructed in writing by the Agency to resume any part of the Work, or until the Work is finished by the Agency if the Agency so elects. If the unpaid balance of the Contract Price exceeds the direct and indirect costs to the Agency of finishing the Work, including compensation for additional administrative, consultant, professional, testing, and inspection services, such excess will be paid to the Contractor. If such costs to the Agency exceed such unpaid balance, the Contractor, in accordance with **Paragraph 20.12**, shall pay the difference to the Agency.

- 21.3 **Contractor's Continuing Liability:** When the Contractor's services have been discontinued or terminated as provided in **Paragraph 21.2**, said discontinuance or termination shall not affect any rights of the Agency against the Contractor, then existing or which may thereafter accrue. Any retention or payment of moneys by the Agency due the Contractor will not release the Contractor from liability.
- 21.4 **Termination of Contract Agreement:** Upon seven (7) days after written notice to the Contractor, the Agency may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Contract Agreement. In such case, the Contractor will be paid for all Work satisfactorily executed and any proven expense sustained plus a reasonable profit.
- 21.5 **Stopping Work or Termination by Contractor:** If, through no fault, act, or omission of the Contractor or a Subcontractor or Sub-subcontractor or their agents or employees or any other person performing any of the Work under a contract with the Contractor, the Work is suspended for a period of more than ninety days by the Agency (except as provided in **Paragraph 23.7** for Federal hindrance) or under an order of any court or other public authority having jurisdiction, or the Agency fails to act on any application for progress payment within thirty (30) days after it is submitted or the Agency fails to pay the Contractor any progress payment sum approved by the Agency within forty-five (45) days of its approval, or the Agency fails to pay the Contractor any sum awarded by arbitrators within sixty (60) days of its approval and presentation, then the Contractor may, upon ten (10) days after written notice to the Agency, terminate the Contract Agreement and recover from the Agency payment for all Work satisfactorily executed and for any proven loss sustained upon any materials, equipment, tools, and construction equipment and machinery, including reasonable profit and damages. In addition and in lieu of terminating the Contract Agreement, if the Agency has failed to act on an application for progress payment or has failed to make any progress payment as aforesaid, the Contractor may, upon ten days' written notice to the Agency, stop the Work until he/she has been paid all amounts then correctly due him/her, in which event and upon resumption of the Work, an appropriate Change Order will be issued for adjusting the Contract Price or extending the Contract Time, or both, to compensate for the costs and delays attributable to such stoppage of the Work.

ARTICLE 22 - ARBITRATION

22.1 ***Basis of Arbitration:*** When agreed to by both parties in advance, Claims, disputes, and other matters in question arising out of or relating to the contract or the breach thereof, unless otherwise settled and except for claims which have been waived by the making or acceptance of final payment as provided by **Paragraphs 20.8 and 20.11**, may be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then pertaining. The results of the arbitration must be made in writing and must include the following:

- a. Legal “findings of fact” established by the arbitrators;
- b. Specific breakdown of dollar amounts allocated to each issue under arbitration;
- c. The arbitrator’s conclusions of law;
- d. A summary of the evidence; and
- e. Reasons underlying the arbitrator’s award.

These preceding items must be made available in the arbitrated settlement. The award rendered by the arbitrators shall be final and judgments may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

22.2 ***Request to Arbitrate:*** Written notice of a request for arbitration shall be filed with the other party to the contract. Requests for arbitration shall be made by (a) the Contractor within thirty (30) days after the date the Agency issues a decision upon a protest filed in accordance with **Paragraph 15.4** when the demand is based upon the filed protest, and if not so made, the Contractor agrees that the decision of the Agency is final and binding upon him, or (b) either party with respect to demands not based upon filed protests within a reasonable time after the claim, dispute, or other matter in question has arisen, and in no event after the date when institution of legal or equitable proceedings based on such claim, dispute, or other matter in question would be barred by the applicable statute of limitations.

22.3 ***Continuance of Work:*** The Contractor shall carry on the Work and maintain the Progress Schedule during any arbitration proceedings unless otherwise agreed by him and the Agency in writing.

ARTICLE 23 - MISCELLANEOUS PROVISIONS

23.1 ***Successors and Assigns:*** The Agency and the Contractor each binds himself/herself, his/her partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and

obligations contained in the Contract Documents. Neither party to the Contract Agreement shall assign the Contract Agreement or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him/her hereunder without the previous written consent of the Agency.

- 23.2 **Written Notice:** Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to him/her who gives the notice, or delivered to the Project Superintendent. The address given in the Contractor's Bid on which the Contract Agreement is founded is hereby designated as the place to which all notices, letters, and other communications to the Contractor shall be mailed or delivered, except that said address may be changed by the Contractor by notifying the Agency in writing. This shall not preclude the service of any notice, letter or other communication upon the Contractor personally.
- 23.3 **Communications:** The Agency will issue all communications to the Contractor and the Contractor shall deliver all communications to the Agency unless otherwise provided in the Contract Documents or directed by the Agency.
- 23.4 **Claims for Damages:** Should the Agency or the Contractor suffer injury or damage to its person or property because of any error, omission or act of the other or of any of his employees or agents or others for whose acts he is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage.
- 23.5 **Rights and Remedies:** The duties and obligations imposed by the Contract Documents and the rights and remedies available there-under and, in particular but without limitation, the warranties, guarantees and obligations imposed upon the Contractor by **Paragraph 6.4** and by **Paragraphs 6.3, 19.1, and 20.3** and the rights and remedies available to the Agency and the Engineer there-under, shall be in addition to and not a limitation of any otherwise imposed or available by law, by special guarantee or warranty, or by other provisions of the Contract Documents.
- 23.6 **Royalties and Patents:** Unless otherwise specifically stipulated elsewhere in the Contract Documents, the Contractor shall pay all royalties and license fees and assume all costs and expenses incident to the use of any invention, composition, process device, article, appliance, or design which is the subject of patent rights, copyrights, or other legal rights of ownership held by others. The Contractor shall indemnify and hold harmless the Agency and the Engineer and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses, including attorneys' fees, arising out of any infringement of such rights during or after completion of the Work, and shall defend all such claims in connection with any alleged infringement of such rights.

- 23.7 **Federal Hindrance:** In entering into this Contract Agreement, it is clearly understood by all parties hereto that conditions may subsequently arise resulting from, connected with, or growing out of any war in which the United States may be engaged, or any national emergency or condition created directly or indirectly by or for the national defense or national interests, and which are entirely beyond the control of either party, that may hinder, delay or render impossible the performance of this Contract Agreement in accordance with its terms and conditions. It is therefore mutually understood and agreed, anything herein contained to the contrary notwithstanding, that in the event the Contractor shall be prevented from performing the Work or any part thereof by reasons of the conditions above stated, the Contractor shall notify the Agency in writing of his/her inability to perform, stating in full the reason therefore and the probable duration of such inability. If required, he/she shall also submit proof or evidence in support of his/her claim of inability to perform. If it shall appear to the satisfaction of the Agency that the cause of inability to perform arose after the Contract Agreement was entered into and is beyond the control of the Contractor, the Agency may, (a) if lawfully within its power, remove the cause which prevents performance; or (b) suspend this Contract Agreement until the cause of inability to perform is removed; or (c) with the consent of the Contractor, renegotiate or amend this Contract Agreement by extending the time of performance or by making the changes in the character of the Work, or in the materials or equipment required in order to enable performance of the Work; or (d) waive performance of that part of the Work which is impossible or supply substitute materials for those unavailable, and where this remedy is resorted to, the payment due the Contractor will be reduced to the extent of the Work not required to be performed based so far as is practicable upon unit prices bid, by an appropriate Change Order. If none of the foregoing procedures are adopted by the Agency within thirty (30) days after the Agency is satisfied and so finds that the Contractor is unable to perform for the reasons above stated, then either party hereto may, without incurring any liability, elect to declare this Contract Agreement terminated upon the ground of impossibility of performance. Upon such termination, the Contractor will be paid as provided in **Paragraph 21.4** for termination of the Contract Agreement.
- 23.8 **Oral Agreements:** No oral order, objection, claim or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents, and none of the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification.
- 23.9 **Work in Jurisdiction of Others:** Where any of the Work is adjacent to or crosses highways, railroads, streets, utilities, property, rights-of-way, or easements under the jurisdiction of Federal, State, County, City or other public agency, public utility, or private entity from whom the Agency has not obtained permits, the Contractor shall secure written permission from the proper authority and furnish bonds and insurance and pay all fees and charges as the proper authority may

require for permission before executing such Work. A copy of each written permission shall be filed with the Agency before such Work is begun. The Contractor shall repair or replace all existing construction damaged in the execution of the Work to the satisfaction of the proper authority, and shall furnish to the Agency a release from the proper authority prior to Final Inspection of the Work.

- 23.10 **Cash Allowances:** The Contractor shall include in his Bid and the Contract Price the cash allowances stated in the Contract Documents. These stated allowances represent the net cost estimate of the materials and equipment delivered and unloaded at the site, and all applicable taxes. The Contractor's handling costs on the site, labor, installation costs, overhead, profit and other expenses contemplated for the cash allowance material and equipment shall be included in the Contract Price since they are not included in the cash allowance estimates. The Contractor shall purchase the cash allowance materials and equipment as directed by the Agency on the basis of the lowest responsive bid of at least three (3) competitive bids. If the actual cost of the materials and equipment approved by the Agency delivered and unloaded at the site and all applicable taxes is more or less than the cash allowance estimates, the Contract Price will be adjusted accordingly via Change Order.
- 23.11 **Ownership of Documents and Models:** All Drawings, Specifications and copies thereof furnished to or obtained by the Contractor, and all models pertaining to the Work are the property of the Agency or the Engineer as they may agree. These documents and models shall not be used on any other project. All documents and models, with the exception of one contract set of Drawings and Specifications to be retained by the Contractor, shall be returned to the Agency or the Engineer on request and as directed, prior to Final Acceptance of the Work.
- 23.12 **Use of Completed Portions:** The Agency shall have the right, upon written notice to the Contractor, to take possession or occupancy of and use any completed or partially completed portions of the Work, notwithstanding that the time for completing the entire Work or such portions may not have expired. However, such taking possession or occupancy and use shall not be deemed a waiver of any requirement of the Contract Documents or a waiver or acceptance of any Work not completed in accordance with the Contract Documents. If such prior possession, occupancy, or use increases the cost of or delays the completion of uncompleted Work or causes repair or refinishing of completed Work, the Contractor shall be entitled to such extra compensation or extension of time, or both, as agreed by the Agency and an appropriate Change Order will be issued. The Contractor will not be required to perform housekeeping obligations in or bear utility costs for buildings or structures to the extent so occupied or used by Agency. If the Agency takes possession of and places any of the machinery or equipment of the Work into continuing operation consonant with its intended final service or purpose and for his beneficial use, the period of the Contractor's guarantee, solely with respect to such machinery or equipment, shall begin on the first day of such beneficial use by the Agency and the Agency will bear the utility

and maintenance costs for such beneficial use. Prior to the Agency taking possession, occupancy, or use of any portion of the Work, but not as a condition or precedent to the Agency's right thereto, the Agency and the Contractor shall jointly inspect and determine the condition and completeness of the involved portions of the Work, shall agree upon appropriate procedures and other pertinent matters including the payment or apportioning of utility costs, and shall execute a memorandum recording the inspection determination and the procedures and matters agreed. Such possession, occupancy, or use by the Agency under this paragraph shall not entitle the Contractor to claim or receive payment of any amounts retained or withheld by the Agency pursuant to **Subparagraphs 20.4.2 and 20.5.1** unless otherwise agreed by the parties.

- 23.13 ***Cleaning Up.*** The Contractor shall at all times during the Work keep the site and premises, adjoining property, and public property free from accumulations of waste materials, rubbish, and other debris resulting from the Work, and at the completion of the Work shall remove all waste materials, rubbish and debris from and about the site and premises as well as all tools, construction equipment and machinery, and surplus materials, and shall leave the site and premises clean and ready for occupancy by the Agency. The Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents. Paved walkways, parking areas, and roadways shall be swept and broom clean. Cleaning up operations shall include the removal and disposal of earth that is contaminated and the filling of resulting excavations with sound compacted earth as directed and approved by the Agency. Contamination includes: (1) the earth in areas used for disposal of waste concrete, mortar, plaster, masonry, and like materials; (2) areas in which washing out concrete and plaster mixers or washing of tools and like cleaning operations have been performed; (3) areas that have been oiled, paved, or chemically treated; and (4) areas where waste oils, solvents, paints, solutions, or similar materials of a penetrating nature have been incorporated into the soil. The Agency will determine the contaminated earth areas. No waste material shall be buried or disposed of on the Agency's property unless so permitted in the Contract Documents or approved in writing by the Agency. Before the Contractor applies for Final Inspection and Acceptance of the Work, all items of Work shall be complete, ready to operate, and in a clean condition as determined by the Agency.
- 23.14 ***Agency's Right To Clean Up:*** If the Contractor fails to satisfactorily clean up or if a dispute arises between the Contractor and any separate contractor as to their responsibility for cleaning up, the Agency may clean up and charge the cost thereof to the Contractor for his failure, or to the several contractors as the Agency shall determine to be just.
- 23.15 ***Certificates:*** Each certificate required under the Contract Documents shall be signed by the individual, office(s), or agent(s) lawfully authorized to execute the certificate, and such authority shall be cited in the certificate by title, description, or other acceptable evidence. All certificates shall be sworn and notarized as to

the correctness and validity of the contents, and duplicate copies shall be notarized to be true copies.

- 23.16 ***Attorney's Fees and Venue:*** If either party becomes involved in litigation or arbitration arising out of this Contract or the performance thereof, the court shall award reasonable costs and expenses, including attorney's fees, to the prevailing contracting party. Any such action shall be initiated in the County of Monterey, California, unless otherwise mutually agreed by the parties.
- 23.17 ***Entire Agreement:*** This Contract and the documents referenced herein constitute the entire agreement between the contracting parties relating to the Work of the Project to be provided by Contractor. No other proposals, conversations, bids, memoranda, negotiations, agreements, promises, representations, or other forms of communication shall vary or alter the terms of this Contract except by written modification as provided herein.
- 23.18 ***Assignment of Antitrust Actions to Awarding Body:*** 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 acknowledgment by the parties. See also Section 4552 for related requirements for those who submit bids.

END OF SECTION 00 72 00

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SUPPLEMENTARY CONDITIONS

SC-01 MODIFICATION OF THE GENERAL CONDITIONS

- A. **General:** These Supplementary Conditions form a part of and modify the preceding General Conditions. Provisions and requirements of the General Conditions not so modified shall remain in full force and effect.
- B. **Modifications:** The Articles, paragraphs, and subparagraphs mentioned are those of the General Conditions.
1. **Paragraph 1.15 – Engineer:** Under these Contract Documents, the Engineer is E2 Consulting Engineers, Incorporated, (E2) acting through its authorized representative.
 2. **Paragraph 1.22 – Agency:** Under these Contract Documents, the Agency is SEASIDE COUNTY SANITATION DISTRICT (SCSD).
 3. **Paragraph 4.5 - Working Hours:** Delete the text in entirety and replace with the following: “Working Hours: Normal working hours are considered to occur within the time frame of 8:00 AM to 5:00 PM, five (5) days per week, Monday through Friday. Additional time at the end of this period will be considered on a case-by-case basis. Earlier starting time will not be permitted except in the case of an emergency or other Agency approved reason.”
 4. **Paragraph 5.4 – Laying Out the Work:** For this Work, the Agency will not establish property, easement, or right-of-way boundary surveys. Furthermore, the Agency will not provide or set a bench-line or benchmark for any portion of the Work. In performing the Work, the Contractor shall conduct such surveys as necessary to tie the new work into existing facilities and complete the Work as shown on the Drawings.
 5. **Paragraph 6.4.3.6 – Additional Named Insureds and Subrogation Waivers:** E2 Consulting Engineers, Inc. shall be named as Additional Named Insureds in all insurance policies required by Article 6 of the General Conditions and shall also be named as certificate holders.
 6. Article 23 - Miscellaneous Provisions. Add the following:
23.18 Assignment of Antitrust Actions to Awarding Body: 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 acknowledgment by the parties. See also Section 4552 for related requirements for those who submit bids.

SC-02 ADDITIONAL CONDITIONS: The following Conditions of the Contract form a part of the General Conditions and Supplementary Conditions.

A. California State Codes:

1. The Agency has obtained from the Director of the Department of Industrial Relations the general prevailing rate or per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the public work is to be performed for each craft, classification or type of worker needed to execute the Contract. (A copy of the wage determinations is included at the end of this Section.) The Contractor and all Subcontractors shall comply with all requirements and provisions of Sections 1775 and 1776 of the California Labor Code. The Contractor shall forfeit as a penalty to the Agency \$25.00 for each calendar day, or portion thereof, for each worker paid less than stipulated prevailing rates for Work done under the Contract Agreement by him/her, or any Subcontractor under him/her, in violation of the provisions of the California Labor Code. Copies of these wage determinations shall be posted and maintained at the job site by the successful bidding Contractor, and thereafter Contractor shall be responsible for obtaining and posting all applicable updates to said Prevailing Rate Determinations. Any changes in the Prevailing Rate Determinations during the course of the Work, however, shall not affect the Contract Price.
 - a. Subject to the provisions of Sections 1810 to 1815, both inclusive, of the California Labor Code, the time of service of any laborer, worker, or mechanic employed on the Work shall be limited and restricted to eight hours during any one calendar day, except as otherwise provided in said sections, and the Contractor shall forfeit as a penalty to the Agency \$25.00 for each laborer, worker, or mechanic employed in the execution of the Work by him/her or any Subcontractor under him/her for each calendar day during which such laborer, worker, or mechanic is required or permitted to labor more than eight hours in violation of the provisions of the California Labor Code.
 - b. The Contractor shall make travel and subsistence payments to each worker needed to execute the Work in accordance with the requirements of Section 1773.8 of the California Labor Code.
 - c. The Contractor shall conform to all the requirements of Sections 1777.5 and 1777.6 of the California Labor Code concerning the employment of apprentices by the Contractor or any Subcontractor under him/her.
 - d. Each Contractor and 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. The payroll records shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor under certain specified conditions and shall be submitted to the Agency upon request.

2. The California Construction Safety Orders in effect during the Work shall apply continuously until final acceptance of the Work.
3. In compliance with California Government Code Section 4100 et seq., each Bidder shall state in his/her Bid the name and business address of each Subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the Work in an amount in excess of one-half of one percent (0.5%) of the total Bid amount, and the portion of the Work which will be done by each Subcontractor. Each portion of the Work shall be performed by an organization equipped and experienced to do the Work in the particular field or discipline, and no portion of the Work shall be reserved by the Bidder or the Contractor to him(her)self unless he/she is so equipped and experienced. Not more than one Subcontractor shall be listed for the same portion of the Work. If a particular portion of the Work would be modified by an Alternative Bid or work unit bid item required by the Bid, the Bidder shall separately identify such portions of the Work and list the Subcontractors appropriately where they differ from those listed for the basic Work. The substitution of Subcontractors shall comply with California Government Code Section 4107. Requirements of General Conditions Paragraphs 2.11 and 10.2 shall also govern, except where differing in which instances these requirements shall govern.

B. Security Substitutions for Moneys Withheld to Ensure Contractor's Performance: The Contractor, at his request and expense, will be permitted to substitute equivalent securities for any moneys withheld to ensure performance as follows, and in accordance with Section 4590 Chapter 13 of Division 5 of Title 1 and with amended Section 14402.5, each of the State of California Government Code. The term satisfactory completion of the contract in Section 4590 of the California Government Code shall mean the time the Agency has issued written final acceptance of the Work and filed a Notice of Completion required by law.

At the Contractor's request, securities equivalent to the monetary amount withheld shall be deposited with the Agency, or with state or federally chartered bank as the escrow agent, who shall pay such moneys to the Contractor upon satisfactory completion of the Contract. Securities eligible for this investment shall include those listed Section 16430 of the State of California Government Code or bank or savings and loan certificates of deposit. The Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon. Any escrow agreement entered into pursuant to these conditions shall contain as a minimum, the following provisions:

1. The amount and type of securities to be deposited;
2. The terms and conditions of conversion to cash in case of the default of the Contractor; and
3. The termination of the escrow upon completion of the Contract.

The Contractor shall pay all costs and fees associated with the escrow or deposit.

- C. Attachments: The following documents form a part of these Supplementary Conditions:

<u>Documents</u>	<u>Pages</u>
State of California Prevailing Wage Determinations as provided in Paragraph SC-02A	See attached inserts

END OF DOCUMENT 00 73 00

ISSUED FOR CONSTRUCTION

VOLUME IB

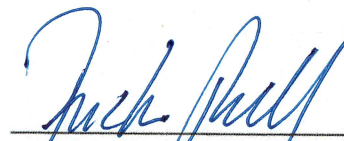
**CONTRACT BID DOCUMENTS FOR
942 ANGELUS WAY SEWER LINE UPGRADE**



Prepared for
SEASIDE COUNTY SANITATION DISTRICT
Department of Public Works

15 November 2017




Approved by: Rick Riedl, P.E.
District Engineer

Prepared by

 **E2 CONSULTING ENGINEERS, INC.**

1900 POWELL STREET, SUITE 250, EMERYVILLE, CA 94608 • 510-428-4721

ISSUED FOR CONSTRUCTION

VOLUME IB

**PROJECT MANUAL FOR THE CONSTRUCTION OF:
942 ANGELUS WAY SEWER LINE UPGRADE**



Prepared for

SEASIDE COUNTY SANITATION DISTRICT
Department of Public Works

15 November 2017

Prepared by



E2 CONSULTING ENGINEERS, INC.

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SEASIDE COUNTY SANITATION DISTRICT

SPECIAL PROVISIONS

SEASIDE COUNTY SANITATION DISTRICT

SPECIAL PROVISIONS

NOTE:

THIS SECTION HAS BEEN REPLACED WITH CONTRACTING REQUIREMENTS DOCUMENTS:

00 72 00 – GENERAL CONDITIONS; AND

00 73 00 – SUPPLEMENTARY CONDOTIONS.

ALL REFERENCES TO SPECIAL PROVISION SECTIONS IN SPECIFICATIONS WILL BE REFERED TO SIMILAR PROVISIONS UNDER CONTRACTING REQUIREMENTS DOCUMENTS:

00 72 00 – GENERAL CONDITIONS; AND

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SPECIFICATIONS

DIVISION 01

GENERAL REQUIREMENTS

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK UNDER THIS CONTRACT AGREEMENT

- A. The Work of this Contract includes repair / replacement of two (2) separate sections of existing 6-inch diameter gravity sewer main that are on 942 Angelus Way in the City of Del Rey consisting of:
1. Replace approximately 52 ft of existing 6-inch diameter gravity sewer pipe with new 8-inch HDPE pipe installed in a nominal 12-inch diameter steel casing pipe crossing Del Rey Creek between Manholes B 12-52 and B 12-53.
 2. Construction of two (2) drilled and cast-in-place concrete pilings for pipe support.
 3. Restoration of the creek embankments and flow channel following completion of the pipeline replacement.
 4. Removal and replacement of approximately 14 LF of existing 6-inch diameter VCP downstream of Manhole B 12-53 found to have multiple cracks with new 6-inch diameter PVC gravity sewer pipe. A copy of the inspection report (2 pages) by Greenline that discovered and located the damaged pipe is included at the end of this Section.
 5. Surface restoration of disturbed area resulting from construction activities for this Work
- B. The Work shall be in accordance with the intent of the Contract Documents as stated in Division 1 of the Standard Specifications and the Special Provisions, excluding only the Work indicated or specified to be provided by the Agency or others under separate contract or other arrangement.

1.02 TIME ALLOWED FOR COMPLETION.

- A. **Substantial Completion for the Project:** Refer to Document 00 11 16, "Invitation to Bid", for Contract Time, said time to begin with the date of the Notification to Proceed (NTP) from the Agency.
- B. **Final Completion of the Project:** The Contract Time for **Final Completion** is established at **thirty (30) consecutive calendar days** following and beginning with the date of certification of Substantial Completion of the Work.

1.03 CONSTRUCTION MANAGEMENT

- A. E2 Consulting Engineers, Inc., is the design engineer and construction manager (“Engineer”) for the subject facilities. The Agency will furnish inspection of the Work.

1.04 DRAWINGS

The Drawings forming a part of the Contract Documents are listed on Drawing G-2.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 11 00

GREENLINE

GREENLINE

1128A MADISON LANE
SALINAS, CA 93907

Tel: (831) 422-2298, Fax: (831) 757-8310

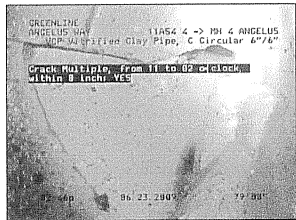
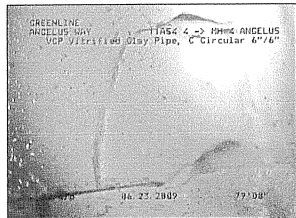
Inspection report

Date: 06/23/2009	P.O.#	Weather: 1 Dry	Surveyed By: TOM	section number: 7	PSR:
Total Pipe Length:	Survey Customer:	System Owner:	Clean Date:	Pre-Cleaned: J Jetting	rate:

Street: ANGELUS WAY	Flow Control: N Not Controlled	Start MH: 11A54 4
City: SEASIDE	Year Renewed	End MH: MH 4 ANGELUS
Location Code: D Easement/Right of Way	Tape/Media #: 1	pipe length: 183.72 ft

Reason for inspection: A Maintenance Related	Dia/Height: C Circular 6"/6"
Use of Sewer:	Material: VCP Vitrified Clay Pipe Pipe Length:
Drain. Area:	Lining Method:
	Category:

Remark::

1:375	position	code	observation	grade			
HA -0.3	11A54 4						
	79.68	CM	Crack Multiple, from 11 to 02 o'clock, within 8 inch: YES S 3	 79.68 FT // 01:36:41			
	147.84	MCU	Camera Underwater	 79.68 FT // 01:36:41			
HE 56	MH 4 ANGELUS						
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3100	4100	3	4	7	3	4	3.5

GREENLINE**GREENLINE**1128A MADISON LANE
SALINAS, CA 93907

Tel: (831) 422-2298, Fax: (831) 757-8310

Inspection photos

City: SEASIDE	Street: ANGELUS WAY	Date: 06/23/2009	section number: 7	PSR:
-------------------------	-------------------------------	----------------------------	-----------------------------	------

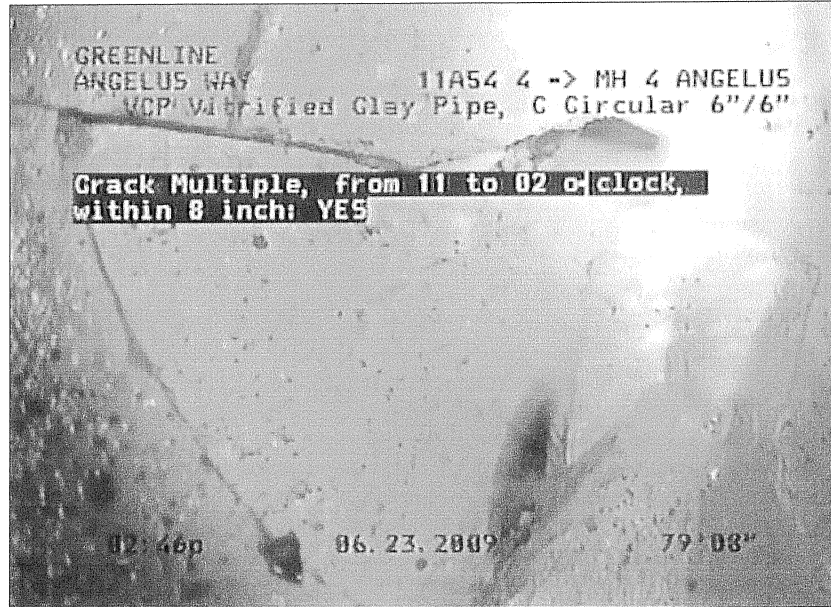


Photo: 46a, Tape/Media No.: 1, 01:36:41

79.68FT, Crack Multiple, from 11 to 02 o'clock, within 8 inch: YES

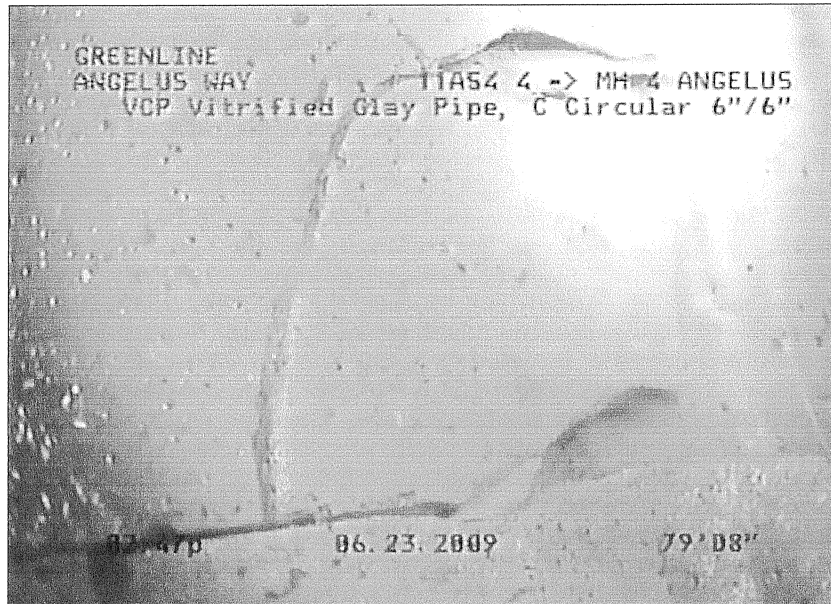


Photo: 46b, Tape/Media No.: 1, 01:36:41

79.68FT, Crack Multiple, from 11 to 02 o'clock, within 8 inch: YES

SECTION 01 14 00
WORK RESTRICTIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section covers restrictions that affect construction operations and is supplementary to those of Division 1 of the Standard Specifications and the Special Provisions. The requirements include but are not limited to coordination with entities having jurisdiction over work in the project area or are responsible for maintaining existing improvements in the project area.
- B. Section Includes:
 - 1. Project Coordination.
 - 2. Construction Sequence.
- C. Related Sections:
 - 1. Special Provisions Section 7-1.04 – Public Safety
 - 2. Section 01 41 00 – Regulatory Requirements
 - 3. Section 01 50 00 - Construction and Temporary Facilities
 - 4. Section 01 70 00 – Execution and Closeout Requirements
 - 5. Section 02 41 00 – Demolition
 - 6. Section 31 23 33 – Trenching, Backfilling and Compaction

1.02 PROJECT COORDINATION

- A. Seaside County Sanitation District (SCSD) (Agency): Where the activities for this work cross existing utilities, exercise caution in construction activities to protect the integrity of the existing utilities. Promptly notify the SCSD of any potential interference with existing utilities. Where damage to any existing utilities occurs as a result of construction activities for this Work, promptly perform repairs and/or replacement in accordance with the requirements of and as directed by the SCSD, at no additional costs to the Agency.
 - 1. Work on Private Property : Much of the work for this Project – excavation, trenching, pipe laying, etc., will occur on private property, outside the SCSD sewer line easement. Coordinate with Agency in working with the private property owner to schedule and perform required construction activities in a manner that will result in least disruption to improvements and landscaping made by the private property owner. Relocation of buildings, fences, etc. may

be necessary prior to commencing work to minimize disruption and damage. Upon completion of the work, restore property improvements to original or better condition to the satisfaction of the private property owner.

- B. California-American Water Company (Cal-Am): California-American Water Company (Cal-Am): See Technical Specification Section 01 30 00, "Administrative Requirements", regarding requirements for maintenance of constant operation of the existing water distribution system facilities. Notify Cal-Am at least five (5) working days in advance of the work and fully coordinate connection work with Cal-Am. Be prepared to restore the active mains and other affected portions of the distribution system and its facilities to service within reasonable time limits as established by Cal-Am, said disruption to be limited to that which will not jeopardize fire protection or the public health of the customers. When the precise procedures and time factors to be used in performing each element of the Work, and the responsibilities involved, have been determined and agreed upon with Cal-Am, notify the Agency in writing of the accepted procedure and revise the Progress Schedule accordingly to ensure satisfactory coordination and system operation.
- C. City of Seaside:
1. The City of Seaside is responsible for traffic safety and for the maintenance of roads within the City of Seaside boundaries. Access and haul routes to and from the project site are likely to require travel over streets under the jurisdiction of the City of Seaside. Coordinate with the City of Seaside Public Works Department in advance of the Work to ensure compliance with the notification requirements for haul routes and in general to minimize the impacts on traffic disruption and safety.
 2. In addition to any special events identified in Paragraph 1.02G below, conduct construction activities for this Contract in a manner that will not impede or interrupt normal flow of traffic on any City streets.
- D. City of Del Rey Oaks:
1. The City of Del Rey Oaks is responsible for traffic safety and for the maintenance of roads within the Del Rey Oaks boundaries, which includes the Angelus Way and parking within Del Rey Park. Refer to the requirements described in Special Provisions Section 7-1.04 regarding traffic control. Coordinate with the City of Del Rey Oaks Maintenance Department in advance of the Work at this site to ensure compliance with the notification requirements for road closures, signage for detours and in general to minimize the impacts on traffic disruption and safety.
 2. Prevent excavated soils and backfill materials resulting from or used on this Work that are stored on the Project site from being carried into storm drains or the nearby stream by rainfall run-off or by drainage water from the

construction operation. See Special Provisions Section 7-1.04 for general requirements.

- E. California Department of Transportation (Caltrans):
 - 1. Canyon Del Rey Boulevard is also State Route 218 (SR218). Any use of this street or the right-of-way of SR 218 is therefore in the jurisdiction of Caltrans.
- F. Pacific Gas and Electric Company (PG&E): Exercise care in the construction activities to protect the integrity of the existing gas mains and transmission lines within project area. Coordinate all activities with PG&E as required.
- G. Special Events Listing: During the contract period special events will occur on the Monterey Peninsula that will result in a marked increase in traffic volumes on SR218 (Canyon Del Rey Blvd.), Del Monte Blvd. and State Highway 68. During these events, construction activities that will impact the traffic carrying capacity of these traveled ways may not be permitted at Agency's discretion or may be subject to restrictions to ensure conflicts are avoided. Prepare the project schedule accordingly. **Contractor is cautioned that restrictions on construction may also be imposed during the week preceding the identified events.** No extension of contract time will be given for the interruption of work because of these events.
 - 1. Sea Otter Classic at Laguna Seca Recreation Area – 4/16-19/2015
 - 2. Big Sur Marathon between Carmel and Big Sur – 4/26/2015
 - 3. Tudor United Sportscar Championship at Mazda Raceway Laguna Seca – 5/1-3/2015
 - 4. California Roots Music Festival at Monterey County Fair & Events Center – 5/22-24/2015
 - 5. Artichoke Festival at Monterey County Fair & Events Center – 5/30-31/2015
 - 6. Monterey Beer Festival at Monterey County Fair & Events Center – 6/13/2015
 - 7. Monterey Americana Festival at Monterey County Fair & Events Center – 6/27-28/2015
 - 8. FIM Superbike World Championship at Mazda Raceway Laguna Seca – 7/17-19/2015
 - 9. Monterey Scottish Games and Celtic Festival at Monterey County Fair & Events Center – 8/1-2/2015
 - 10. Blues, Brews and Barbecue at Monterey County Fair & Events Center – 8/8-9/2015
 - 11. Monterey Bay Reggaeifest at Monterey County Fair & Events Center – August date TBD
 - 12. Sand City West End Celebration at Sand City – 8/22-23/2015

13. Monterey County Fair at Monterey County Fair & Events Center – 9/2-7/2015
14. Monterey Jazz Festival at Monterey County Fair & Events Center – 9/18-20/2015
15. Octoberfest Monterey Bay at Monterey County Fair & Events Center – 10/3-4/2015

The schedule and dates of any additional relevant events will be announced by the Agency during the next regularly scheduled construction progress meeting following confirmation.

1.03 CONTRACTOR'S USE OF SITE AND PREMISES

- A. In performing this Work, observe the same holidays as the Agency, which are: New Year's Day, Martin Luther King Day, President's Day, Cesar Chavez Day, Memorial Day, 4th of July, Labor Day, Admissions Day, Columbus Day, Veteran's Day, Thanksgiving Day and all days during that week, Christmas Day and all days during that week.
- B. Do not perform any work for the Agency not shown on or described in the Contract Documents unless authorized by the Agency's representative.

PART 2 – PRODUCTS NOT USED.

PART 3 - EXECUTION

3.01 CONSTRUCTION SEQUENCE

- A. General description of work elements of this project is provided in Section 01 11 00, "Summary of Work," of these specifications. The sequence of the work must be scheduled to meet completion schedule given in paragraph 1.02, "Time Allowed for Completion," of Section 01 11 00 of these Specifications. The Special Events Listing in Paragraph 1.02G above may affect the scheduling and sequencing of the Work.

END OF SECTION 01 14 00

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section defines the prices and the manner in which they will be used to determine measurement and payment for all items in the Bid Schedule for the Contract.

1.02 PRICES REQUIRED

- A. In the appropriate places in the Bid Form, each Bidder shall quote prices for the appropriate items of Work stated in the Bid Form. Failure to quote on each price item may cause rejection of the Bidders' entire Bid at the discretion of the Agency.
- B. Unbalanced Prices: Proposed prices which are so unbalanced as to be detrimental to the Agency's interests may be rejected or cause rejection of the Bidder's entire Bid, at the discretion of the Agency.
- C. Costs Included: Each proposed price, whether additive or deductive, shall cover all costs and charges including without limitation the costs of material, fabrication, delivery, installation or application, supervision, bond and insurance charges, overhead, profit, and taxes. Quoted prices shall be the exact amount for all work required to complete the respective item as described and shown in the Contract Documents. No adjustment in prices will be made where any quantities provided in the Item Description vary from actual quantities, unless the work described and shown in the Contract Documents has been modified by the Agency.
- D. Duration of Prices: Quoted prices accepted by the Agency shall be held good and in effect until the Work is completed and accepted by the Agency, unless modified by Change Order.

1.03 MEASUREMENT AND PAYMENT

- A. General: This section defines the manner and method of measurement and payment for all items included in the Contract.

B. Compensation for all plant, equipment, tools, materials, labor, service, and all other items required to complete the Work in conformity with the Contract Documents will be included in the payment provided in this Section unless specifically excluded. No other compensation will be made except for the items listed in the Bid Proposal. Work for which no separate payment has been provided will be considered as a subsidiary obligation of the Contractor, and the cost therefore shall be included in the applicable contract price for the item to which the work applies. All measurements of work done, if required, will be made by the Agency.

C. **Bid Item 1-Mobilization and Demobilization:**

1. **Mobilization** includes preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site for; a) the establishment of all offices, supplies, and incidentals to the project site; b) the establishment of all buildings and facilities necessary for work on the project; c) the marshaling of equipment; and d) all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site, including obtaining the bonds, insurance policies and permits except as covered by other items, required by the Contract Documents for this Project.
 - a. Payment for Mobilization will be at seventy (70) percent of the fixed lump sum price amount as shown in the Bid Schedule.
 - b. Payment for Mobilization will be made in the indicated amount in Paragraph 1a above, contingent upon the Contractor furnishing and Agency's acceptance of: 1) the Construction Progress Schedule, 2) the Schedule of Values, and 3) proof of acquisition of all required bonds, insurance and permits, and 4) the establishment of the Contractor's field office on site, where used, including all utilities and ready for occupancy.
 - c. Payment for Mobilization will be subject to retention in accordance with the procedures described in Section 9-1.16 of the Special Provisions. Any mobilization cost not covered in the fixed price given in the Bid Schedule shall be considered included in the lump sum and/or unit fixed prices given in the Bid Schedule for the remaining Bid Items. No additional compensation will be made therefore.
2. **Demobilization** of the Contractor's forces, materials and equipment from the project area(s) includes the cleanup and removal of all debris and unused materials and equipment resulting from this Work and such work as is

necessary to leave the site(s) affected by the work of this Contract in a clean, acceptable condition.

- a. Work includes, but is not limited to, disposal of debris and unused materials and equipment in a manner in accordance with applicable local, state and federal codes and regulations and clean up.
- b. Payment for Demobilization will be made at thirty (30) percent of the fixed lump sum price amount given in the Bid Schedule, in accordance with the accepted Schedule of Values and subject to retention in accordance with applicable Contract requirements.
- c. Any cost for demobilization not covered in the fixed price given in the Bid Schedule shall be considered included in the lump sum and/or unit fixed prices given in the Bid Schedule for the remaining Base Bid Items. No additional compensation will be made therefore.

D. **Bid Items 2 and 3:** These are furnish and install bid items. The work to be done for these Bid Items include all material, labor, equipment, piping and appurtenances required to remove existing gravity sewer main piping and construct replacement gravity sewer main piping of the size indicated on the Drawings, and the restoration of site surfaces disturbed by the construction activities for the Work. Temporary flow bypass system(s), including pumping, required to perform and complete the construction for Bid Items 2 and 3 is covered in Bid Item 4.

1. Work for each Bid item includes, but is not limited to, site preparation; installation and maintenance of erosion control measures and dust control measures; cutting and demolition; excavation and trenching and maintenance of same stable and dewatered; fine grading and shaping of the bottom of excavations and trenches; removal , disposal and where required, relocation and replacement of obstructions encountered; furnishing , placing and joining pipe (main and casing pipe), fittings and appurtenances, special bedding and concrete encasement, and temporary plugs and caps; protection of subsurface utilities encountered; protection and support of surface improvements, drainage structures, trees and vegetation not specifically designated for removal; backfilling and compaction of trenches and excavations to finish surface subgrade; flushing and testing the completed sections of gravity sewer main pipe; construction of cast-in-place concrete piling type pipe supports at the creek crossing [Bid Item 2]; in unpaved areas the surface restoration of topsoil and, where applicable, landscaping or re-sodding as shown on the Drawings and as specified; restoration of damaged drainage ditches and creek embankments; video inspection and leakage and mandrel testing of the completed replacement sections of new gravity sewer main; and satisfactory

clean-up of the site(s) and all other work necessary to provide a finished result as shown on the Drawings, specified or matching conditions existing prior to commencement of the work.

2. There will be no extra payment for imported backfill material where it is specified as part of the backfill requirements for pipe installation.
3. Payment of Bid Items 2 and 3 will be made at the respective lump sum price given in the Bid Schedule, in accordance with the accepted Schedule of Values, and subject to retention in accordance with applicable Contract requirements.

E. **Bid Item 4 – Temporary Flow Bypassing System(s):** This is a furnish, install and remove item. The work to be done for this Bid Item includes all material, labor, equipment and appurtenances necessary for providing a temporary flow bypass pumping system to maintain uninterrupted wastewater flow in the affected gravity mains for the duration of the Work as shown on the Drawings and described in the Specifications while performed and completed.

1. Work for this Bid Item includes, but is not limited to, site preparation; furnishing and set up of the flow bypass pumps (duty and standby/reserve pump in the event the duty unit fails), piping, valves as required and electrical generator for supply of power; connection of the bypass pump discharge piping to existing sewer manholes shown on the Drawings; erosion control measures; maintenance of the flow bypass pumping system to ensure uninterrupted flow service; and removal of the flow bypass equipment and material upon completion and acceptance of the permanent work; and clean-up of the work sites and all other work necessary to provide a finished result as shown on the Drawings, specified or to match conditions existing prior to commencing the Work.
2. Payment for Bid Item 4 will be made at the lump sum price given in the Bid Schedule, with monthly progress payment estimates made in accordance with the accepted Schedule of Values and the Contractor's as-planned schedule based in terms of the elapsed time of the scheduled construction period, and subject to retention in accordance with applicable Contract requirements.

F. **Bid Item 5-Excavation Safety Measures:** The requirements of Sections 6705 and 6707 of the California Labor Code apply to this project. Accordingly, each Bidder shall state in Bid Item 5 the lump sum bid price for providing shoring, sheeting, bracing, dewatering and other safety measures for all excavations 5 feet or more in depth. Before any work is commenced, the Contractor shall secure and pay for the required excavation permits.

1. Payment of this Bid Item will be made at the applicable lump sum fixed price given in the Bid Schedule, in accordance with the accepted Schedule of Values, and subject to retention in accordance with the Contract requirements.
- G. **Bid Item 6-Contractor's Record Drawings:** The work to be done for Bid Item 6 includes the furnishing of all material, labor, equipment, supplies, and incidentals, and performance of the work necessary for the maintenance and submission of the Contractor's Record Drawings, as shown on the Drawings and as described in the Specifications.
1. Payment for Bid Item 6 will be made at the lump sum fixed price given in the Bid Schedule, in accordance with the accepted Schedule of Values and subject to retention in accordance with applicable Contract requirements. Any costs for Bid Item 6 not covered by the fixed price given in the Bid Schedule shall be considered as included in the lump sum fixed prices given in the Bid Schedule for Bid Items 2 through 5, and no additional compensation will be made therefore.

END OF SECTION 01 20 00

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R0-02-17-15

Price and Payment Procedures

01 20 00 - 6

Q:\Seaside County Sanitation District (SCSD)\Angelus Way Sewer\Project Manual\IFB\Vol 1B\Division 1 - General Requirements\01 20 00 -
Price And Payment Procedures.Docx

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section covers general provisions and requirements for the Work and is supplementary to Division 1 of the Standard Specifications and the Special Provisions.

1.02 GUARANTEE

- A. Guarantee that the equipment, materials, and workmanship furnished under this Contract will be as specified and will be free from defects for a one-year guarantee period, starting from the date of Final Completion of the Work, unless a longer period of time is prescribed by law or required by special provisions elsewhere in the Contract Documents and except as otherwise noted herein. If a specific item (or items) of equipment or material cannot be utilized by the Agency at Substantial Completion because the Work is incomplete or defective, the guarantee for that item (or items) shall begin when the Agency is provided beneficial use. Provide beneficial use for any such items prior to Final Completion. In addition, guarantee the equipment furnished is free from defects in design. Within the guarantee period and upon notification by the Agency, promptly make all needed adjustments, repairs or replacements arising out of defects, failure or abnormalities, which, in the judgment of the Agency, become necessary during such period. Bear responsibility for the cost of all materials, parts, labor, transportation, supervision, special tools and supplies required for correction of defects, failure, or abnormalities. In the event warranty work involves repair or replacement of parts, machine work, or any other work which affects the equipment or materials installed under this Contract, extend the guarantee on such items and work shall be extended for a period of one year from the date of installation of said items, or the performance of said work. If, within fifteen (15) days, unless specified otherwise by the Agency, after the Agency gives the Contractor notice of a defect, failure, or abnormality of the Work, the Contractor neglects to make the necessary repair or adjustments, the Agency may make the repair or adjustments or order the Work to be done by a third party, with the cost of the Work to be paid by the Contractor. In the event of an emergency where, in the judgment of the Agency, delay would cause serious loss or damage,

repairs or adjustments may be made by the Agency, without giving notice to the Contractor, and the cost of the work shall be paid by the Contractor.

1.03 PERMITS AND LICENSES

- A. At the time of the bid for this Contract, possession of a valid California Class A General Engineering Contractor's License is required. For those permits and licenses generally required to work or do business, procure the permit or license and pay all charges and fees. Unless otherwise specified in the Contract Documents, pay all costs for complying with special requirements of permits and give notice necessary and incident to the prosecution of the Work.

1.04 PATENTS

- A. Include in the Contract amount royalties and fees from patents covering materials, articles, apparatus, devices, or equipment (as distinguished from processes) used in the Work. Satisfy all demands that may be made at any time for such royalties or fees and be liable for any damage or claims for patent infringements. At no additional cost and expense to the Agency, defend all suits or proceedings that may be instituted against the Agency for infringement or alleged infringement of any patents involved in the Work and, in case of an award of damages, pay such award. Final payment to the Contractor by the Agency will not be made while any suit or claim remains unsettled. The Contractor, however, will not be held liable for the defense of any suit or other proceeding, nor for the payment of any damages or other costs for the infringement of any patented process required by the Contract Documents; except if the Contractor has information that the process so required is an infringement of a patent, the Contractor shall be liable for any damages or claims in connection therewith unless he promptly notifies the Agency of such infringement.

PART 2 - PRODUCTS (NOT APPLICABLE IN THIS SECTION)

PART 3 - EXECUTION

3.01 SUPERVISION

- A. Contractor's Supervision: Supervise and direct the Work efficiently and with best skill and attention. Bear sole responsibility for means, methods, techniques, procedures, and sequences of construction. Coordinate all parts of the Work and

bear responsibility to see that the finished Work complies accurately with the contract documents.

- B. Superintendent: Keep on the Work at all times during its progress a competent resident Superintendent satisfactory to the Agency, who shall not be replaced without at least ten (10) days written notice to the Agency except under extraordinary circumstances. The Superintended shall be the Contractor's representative at the site, having the authority to act on behalf of the Contractor. Communications, instructions, and directions given to the Superintendent shall be as binding as if given to the Contractor. Whenever the Contractor or Superintendent is not present on part of the Work where the Agency wishes to give orders or directions, the orders or directions shall be received and obeyed by the foreman in charge of that part of the work the same as if the order or direction had been given to the contractor or Superintendent. Any order or direction given by the Agency not otherwise required to be in writing will be given or confirmed in writing upon request of the Contractor.
1. The Superintendent and foremen on the job site during working hours shall be capable of reading, writing, and conversing fluently in the English language. In addition if a Quality Control (QC) representative is required or provided on the contract, then that individual shall also have fluent English communication skills.

3.02 CONTRACTOR'S DAILY REPORT

- A. Complete a Contractor's daily report and submit a copy to the Agency on a daily basis by the end of the succeeding work day. Include, but do not necessarily limit the information contained in the daily report, to the following:
- Project name and number
 - Contractor's name
 - Date
 - Report #___ (also "page ___ of ___")
 - Weather conditions
 - Staff employed on the project and duties performed (distinguish between field and office staff)
 - Trades on job site, respective number of tradespersons used, and work description
 - Subcontractors on job site, number of respective subcontractor's staff present, and work description

- Equipment on job site, type and number and whether or not used
- Summary of work performed
- Materials delivered to site
- Delays to project
- Visitors to project
- Other comments
- Contractor's signature
- Safety/accident activities

B. The Contractor's standard daily report form may be used provided it furnishes, as a minimum, all the information cited above.

3.03 PUBLIC COMPLAINTS

A. Respond to public complaints when requested by the Agency.

3.04 GUARANTEES AND WARRANTIES

A. Except as required by the Specifications, provide all guarantees and warranties conforming to applicable requirements of Section 6-3.06 of Division 1 of the Standard Specifications, "Guarantee".

3.05 PRECEDENCE OF CONTRACT DOCUMENTS

- A. Should conflicts occur between Contract Documents, or errors exist in the Contract Documents, report the situation to the Agency, who will issue a clarification.
- B. Specifications take precedence over the Drawings.
- C. Detail Drawings take precedence over small-scale Drawings and full-scale (1:1) Drawings shall be followed in preference to both. Full-size Drawings take precedence over reduced-size Drawings.
- D. Change orders and approved revisions to Drawings and Specifications will take precedence over original Contract Documents.

3.06 GENERAL EASEMENTS

A. In the company of the Agency, make a joint field inspection and report of the apparent existence, character, and condition of all buildings, structures, landscaping, and facilities located within the easement, and areas adjacent thereto, on each parcel

of private property upon which construction operations will be executed prior to the actual commencement of operation on such property. This inspection and report shall serve as the principal guide for determining whether or not, upon completion of construction on such property, the disturbed property has been restored in a satisfactory manner.

- B. Upon completion of the Work through such property, restore the surface and all fences or other structures disturbed by the operations of this Contract as nearly as possible to the condition in which the site was found prior to start of Work. Conduct a second joint field inspection with the Agency upon completion of the Work. This inspection shall serve to determine if the property has been properly restored.
- C. Do not use or remove material from private property without the written consent of the owner or responsible party in charge of such property. Save the Agency (of this Work) harmless from any claim or damage arising out of or in connection with the performance of Work across and through private property.
- D. As a condition precedent to the making of final payment for the Work performed under this Contract, secure and submit to the Agency, upon the forms to be furnished by the Agency, a release on each easement stating that the property has been restored in a satisfactory manner.

3.07 CARE AND PROTECTION OF PROPERTY

- A. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect or misconduct in the execution of the Work on the part of the Contractor, restore such property at no additional expense to the Agency to a condition, as determined by the Agency, which is similar or equal to that existing before the damage was done, or make good the damage in another manner acceptable to the Agency. Be responsible for the conditions described herein at no additional expense to the Agency.
- B. Conduct operations for this Work in a manner, which will cause the least amount of damage, inconvenience and interference with the normal use of any public or private property. Confine such operations to the least possible space and accomplish same in a neat and workmanlike manner, taking care not to unnecessarily disturb or damage adjoining property, disturbing only those trees, shrubbery, floral pieces or other landscaping planting, fences, buildings, structures or other facilities of any kind or description in the manner and as directed by the Agency. Remove all transplantable trees, shrubs and bushes that may be damaged or destroyed by construction and reset them after construction. Perform revegetation of disturbed

property in such manner as required to return the property to its prior condition or better.

- C. Store apparatus, materials, supplies, and equipment used or available on site in such orderly fashion at the site of the Work as does not unduly interfere with the progress of the Work or the work of any other contractor.
- D. Provide suitable storage facilities for all materials, which are liable to injury by exposure to weather, theft, breakage, or otherwise. If the Agency determines that suitable storage for certain materials is not being provided, he may direct the Contractor to remove it from the job site, or to store it properly at the job site.
- E. Place upon the Work or any part thereof only such loads as are consistent with the safety of that portion of the Work.
- F. Clean up not less than at the end of each work day, all refuse, rubbish, scrap materials, and debris caused by the operations for this Work, to the end that at all times the site of the Work presents a neat, orderly and workmanlike appearance. Perform more frequent cleanup as required to maintain access to all other Agency facilities, or facilities owned by others, still in operation.
- G. Remove and dispose of off-site in accordance with all Federal, State and local regulations, all surplus material, false-work, temporary structures, including foundations thereof, plants of any description and debris of every nature resulting from the operations of this Work, and put the site in a neat, orderly condition before final payment.
- H. Effect all cutting, fitting or patching of the Work required to make the results conform to the Drawings and Specifications and, except with the consent of the Agency, not to cut or otherwise alter the work of any other contractor.
- I. Close work access during times when active construction work is not ongoing.

3.08 FIELD CHECK OF EXISTING IMPROVEMENTS

- A. Check all dimensions, elevations, and location of existing structures, utilities, pipelines, grades, or other existing items affected by or affecting the Work under this Contract, prior to the start of construction and ordering of materials and equipment affected thereby. Be solely responsible for determining the extent and cost of all removal and salvage operations. Notify the Agency if existing conditions are not as shown on the Drawings.

3.09 PROTECTION OF EXISTING IMPROVEMENTS

- A. In the performance of the Work contemplated under this Contract, take all precautions necessary, including but not limited to those described herein, to ensure that all existing improvements not specifically indicated for removal are not damaged or interfered with in any way. Should activities of this Contract disturb or damage such improvements without authorization, bear all expense for replacement or repair of the existing improvements so disturbed or damaged. The Agency has diligently attempted to correctly locate and show the existing utilities, pipelines and substructures in the vicinity of the Work, but the Agency does not guarantee that there are not improvements other than those shown, nor that the locations shown are entirely correct. Failure of the Agency to show all the existing utilities, pipelines and substructures and their locations shall not be a basis for claim for extra work. Be responsible for all damage to existing utilities, pipelines and substructures whether shown or not.
- B. Notify Underground Service Alert (U.S.A.), telephone 800-642-2444, at least 48 hours prior to performing any excavation for this Work. In coordination with the appropriate authorities probe, pothole, or otherwise ascertain the exact location of all existing underground improvements in advance of excavation such that no damage to these improvements will occur. In the event interferences in construction are encountered with the various existing improvements, the Agency reserves the right to appropriately change the alignment and grade of the facilities. Additional materials required to accommodate such change shall be paid in accordance with Section 9 of Division 1 of the Standard Specifications.
- C. Provide for the flow of water mains, sewers, and drains interrupted during the progress of the Work, in a manner acceptable to the Agency and immediately cart away and remove all offensive matter at no additional cost to the Agency.
- D. Where interruption of existing utilities occurs as the result of the activity for this Work, whether intentional or accidental, perform repairs to the interrupted utility in a manner acceptable to the Agency unless instructed otherwise in these Contract Documents. Perform the repairs, including materials used, in accordance with the requirements of the respective utility as well as the requirements of the Contract Documents for this Project. Where a conflict exists between the requirements of the respective utility and those of the Contract Documents for this Project, the more stringent of the two shall apply unless instructed otherwise by the Agency

3.10 MAINTENANCE OF CONSTANT OPERATION OF EXISTING UTILITY FACILITIES

- A. At all times during all phases of the Contract, conduct Work or perform all necessary operations to maintain the existing wastewater conveyance system facilities owned and operated by the Seaside County Sanitation District and components of any other existing utility encountered in conducting work for this Contract to ensure that they remain in continuous satisfactory operation.
- B. Discuss in full detail with and receive the prior approval of the Agency and the operator of the respective utility for any construction involving any existing facility, which could impair the operation of the utility facilities.
- C. Submit in writing to the Agency at least five (5) working days prior to the scheduled commencement of the proposed work, a description of the proposed construction work, the extent of its impact on any existing facilities, and the procedures to be used to minimize the impact.
- D. Successfully test and place into operation any proposed substitute system used to temporarily replace an existing facility system that is required to be taken out of operation to perform the Work for this Contract.
- E. Obtain written approval of the proposed plan from the Agency, and the respective utility owner if not the same, prior to taking the existing system out of service. Obtain the Agency's approval of the construction steps and procedures before performing the Work. If the proposed procedures, whether approved or unapproved, cause a shutdown of an existing utility system, immediately proceed to perform all work as necessary to promptly reestablish satisfactory operation of the facility in question. Cooperate fully with and permit personnel of the affected utility to maintain the existing utility system in continuous satisfactory operation.

3.11 COOPERATION WITH OTHERS

- A. Be advised that work on other contracts within or adjacent to limits of the work for this Contract may already be in progress. Contracts for construction may also be subsequently awarded to others and because of relocation and construction of various utilities, work for this Contract may not have exclusive occupancy of the territory within or adjacent to the limits of the Contract.
- B. In case of interferences between the operations of different construction contractors, the Agency will determine the work priority of each contractor and the sequence of

work necessary to expedite the completion of the entire project. In all such cases, the decision of the Owner shall be accepted as final. The temporary delay of the Contractor's work due to such circumstances shall not be considered as justification for claims for additional compensation.

- C. Coordinate the activities for this Work with the Agency as they relate to utility shutdowns. Unless otherwise permitted, existing operating utilities must operate 24 hours per day, and only the staff of the respective utility Agency may be permitted to operate valves or other utilities.

3.12 UNFAVORABLE OR HAZARDOUS CONSTRUCTION CONDITIONS

- A. During unfavorable weather, wet ground or other unsuitable construction conditions, confine the operations for this Contract to work which will not be affected adversely thereby. Do not construct any portion of the Work under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by the Contractor to perform the Work in a proper and satisfactory manner as determined by the Agency.
- B. Implement erosion control and mitigation measures as required for the Work.

3.13 SUPPLY OF LUBRICANTS

- A. Provide one year's supply of lubricants based on the respective equipment manufacturer's recommendation, at the time of Substantial Completion of the Work.

3.14 TESTING AND SUBSTANTIAL AND FINAL COMPLETION

- A. Refer to Section 01 70 00, "Execution and Closeout Requirements", of the Technical Specifications.

END OF SECTION 01 30 00

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SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General: This Section covers the requirements for project meetings and is supplementary to any meeting requirements specified in Division 1 of the Standard Specifications and the Supplementary Provisions.
- B. Attendees: Unless otherwise specified or required by the Agency, the meetings shall be attended by the Agency, the Engineer, the Inspector, and the Contractor and his Superintendent. Subcontractors may attend when involved in the matters to be discussed or resolved, but only when requested by the Agency, Engineer, or Contractor.
- C. Meeting Records: The Agency or the Engineer will record minutes of each meeting and will furnish copies to the Contractor within five (5) working days thereafter. If the Contractor does not submit written objection to the contents of such minutes within seven (7) days after presentation to him, it shall be understood and agreed that the Contractor accepts the minutes as a true and complete record of the meeting.
- D. Meeting Schedule: The dates, times and locations for the various meetings shall be agreed upon and recorded at the preconstruction conference. Then after, changes to the schedule shall be by agreement between the Agency and Contractor, with appropriate written notice to all parties involved.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PRECONSTRUCTION CONFERENCE

- A. Prior to issuance of the Notice to Proceed (NTP), a preconstruction conference shall be held at the location, date, and time designated by the Agency. In addition to the attendees named herein, the meeting shall be attended by the representatives of

regulatory agencies having jurisdiction of the Project, if required, and such other persons the Agency may designate.

- B. Execution and Submittal of Documents: At the preconstruction conference, unless otherwise specified or agreed by the Agency and Contractor, the Contract Agreement shall be executed by the parties thereto and the Contractor shall present to the Agency the Bonds, certificates of insurance, progress schedule, schedule of values, written safety program, and all other preconstruction documents required of him by the Contract Documents.
- C. Agenda: In general, the matters to be discussed or resolved and the instructions and information to be furnished to or given by the Contractor at the preconstruction conference include:
 - 1. Project meeting schedule.
 - 2. Progress schedule and schedule of values submitted by Contractor.
 - 3. Communication procedures between the parties.
 - 4. The names and titles of all persons authorized by the Contractor to represent and execute documents for him, with samples of all authorized signatures.
 - 5. The names, addresses, and telephone numbers of all those authorized by the Contractor to act for him in emergencies.
 - 6. Construction permit requirements, procedures, and posting.
 - 7. Public notice of starting Work.
 - 8. Procedures concerning the installation of Work on public or private property not owned by the Agency.
 - 9. Access and rights-of-way furnished by the Agency.
 - 10. Forms and procedures for Contractor's submittals.
 - 11. Change Order forms and procedures.
 - 12. Payment application forms and procedures and the revised progress schedule reports to accompany the applications.
 - 13. Contractor's safety and training program and designation of the Contractor's Safety Officer and his qualifications.
 - 14. First-aid and medical facilities to be furnished by Contractor.
 - 15. Contractor's provisions for barricades, traffic control, utilities, sanitary facilities, and other temporary facilities and controls.
 - 16. Project sign for Agency if required.
 - 17. Inspector and his duties.
 - 18. Construction surveyor and initiation of surveying services.

19. Testing laboratory or agency, and testing procedures.
20. Construction equipment and methods proposed by the Contractor.
21. Procedures for payroll and labor cost reporting by the Contractor.
22. Procedures to ensure nondiscrimination in employment on and for the Work.
23. Issuance of the Notice to Proceed.
24. Other administrative and general matters as needed.

3.02 PROGRESS MEETINGS

- A. The meetings shall be held on a bi-weekly basis in accordance with the mutually agreed schedule. All matters bearing on the progress and performance of the Work since the preceding progress meeting shall be discussed and resolved, including without limitation any previously unresolved matters, deficiencies in the Work or the methods being employed for the Work, and problems, difficulties, or delays which may be encountered.

3.03 SPECIAL MEETINGS

- A. General: Upon appropriate notice to the other parties, special meetings may be called by the Agency, Engineer, or Contractor.

3.04 REGULATORY AGENCIES

- A. When requested, the Contractor shall attend meetings held or required by the governmental regulatory agencies having jurisdiction of the Project.

3.05 POSTCONSTRUCTION CONFERENCE

- A. A post-construction conference shall be held prior to final inspection of the Work to discuss and resolve all unsettled matters. The bonds and insurance to remain in force, and the other documents required to be submitted by the Contractor will be reviewed and any deficiencies determined. Schedules and procedures for the final inspection process, and for the correction of defects and deficiencies, shall be discussed and agreed upon.

END OF SECTION 01 31 19

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SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section covers the specific requirements for the Schedule required by Section 8-1.02 of Division 1 of the Standard Specifications and Section 8-1.02 of the Special Provisions.
- B. Section Includes:
 - 1. Progress Schedule Printouts and Plot
 - 2. Progress Schedule Narrative
- C. Related Sections:
 - 1. Progress Payment Requests, see Section 9-1.16 of the Special Provisions

1.02 SUBMITTALS

- A. Provide three (3) copies of each Progress Schedule, updated schedule and revised narrative for the Agency's review and record purposes.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Submit a bar-chart schedule or comparable flow diagram for construction progress control. Clearly indicate all construction activities and sub-activities on a time-oriented basis. Where possible or applicable identify the critical path for all activities.
- B. Include the following minimum information for each activity and schedule item:
 - 1. Date of initial submittal, as applicable.
 - 2. Ordering dates for long lead-time items.
 - 3. Dates for arrival of materials on site.
 - 4. Start of work on the item.
 - 5. Completion of work on the item.
 - 6. Dates for bypassing or shut down of specific facilities.
 - 7. Resumption of normal operation to bypassed facilities.

8. Testing (hydrostatic and leakage).
 9. Substantial completion, including Agency occupancy of individual facilities.
 10. Final cleanup.
 11. Final completion.
- C. Provide a Progress Schedule demonstrating the plan for fulfilling all Contract requirements; including review time for submittals as prescribed in Section 01 33 00, "Submittal Procedures", of the Technical Specifications.

2.02 FORMAT

- A. Size: Prepare on 11- by 17-inch graph paper or on computer printout paper when computer plotted.
- B. Technique: The diagram technique used shall be a bar chart or other graphic depiction of comparable simplicity.
- C. Activity Descriptions: Select activity descriptions that clearly indicate the work task.
1. Duration Work Days Required: Indicate each trade activity utilizing a standardized workday calendar. Said calendar will be based on a 5-day week. Select activities such that their durations are not less than five (5) days or more than thirty (30) days. Use additional bars or activity symbols as required.
- D. Activity Listing: Provide the following activity listings:
1. Consecutive listing with activity description starting from the earliest activity to be performed to the latest starting and completed activity.
 2. Listing of activities by early start consecutive from first early-start item to last early-start item.
 3. Listing of all activities on the schedule with starting and finishing dates.
- E. Cost Allocation: Assign the cost of work, a sum including allocation for materials, labor, equipment, overhead, and profit, to each activity. Do not exceed cost per activity bar of \$10,000, except in the case of where a single family of performance or material items exceeds this value. Use additional activity bars as required.
- F. Narratives:
1. When requested by the Agency, prepare detailed narrative statements of assumptions and conditions that provide supportive information for conclusions represented in each activity schedule submitted. Submit such narratives in accompaniment with the Progress Schedule submittals.

2. Indicate proposed areas for work and for storage of specific materials, assumptions, and methods that determine durations and sequences represented in specific areas of the schedule. Additionally, submit specific narrative statements relating to control and expediting of submittals, fabrication or procurement, and delivery of specific materials and to supplement progress reports and successive revisions of the Project Schedule.
- G. Progress Payment Printout: Include with the Progress Schedule a computerized monthly Job Progress Report Form. Include in the form all items listed in the cost breakdown provided to the Agency, including the following:
1. Total units required for the Work.
 2. Units completed to-date.
 3. Units completed this month.
 4. Unit cost.
 5. Total cost this month.
 6. Total cost to-date.

Appropriately sum the columns indicating total project cost, total work completed to-date and total work this month. Obtain Agency's approval of the format for the printout.

PART 3 - EXECUTION

3.01 INITIAL SUBMITTAL

- A. Within fifteen (15) workdays after receipt of Notice of Award, submit for review and acceptance the complete Progress Schedule for this Contract work, and be prepared to assign costs to each activity item indicated for such work.

3.02 REVIEW AND ACCEPTANCE

- A. Within five (5) working days after receipt of the initial Progress Schedule, the Agency will meet with the Contractor for joint review, correction or adjustment of the Contractor's proposed approach. Within five (5) days after the joint review, submit a revised program reflecting agreements reached during the joint review. The Agency will review this resubmission, and if he determines that it is as previously agreed, he will accept it in writing. The accepted program will constitute the Contractor's as-planned Project Schedule until it is subsequently revised by the Contractor and accepted by the Agency

- B. Any omission of project work from the progress schedule or activity listing, otherwise required for Contract compliance, will not excuse the Contractor from completing such work within any applicable completion date.

3.03 UPDATE

- A. Every month, on a date mutually agreed upon, a job site meeting will be held to review the Progress Schedule, activity listing, and actual job progress.
- B. The conditions under which a revision of the schedule will be required are as follows:
 - 1. When delay in completion of any work item or sequence of work items results in an estimated extension of project completion by either twenty (20) working days or by five percent (5%) of the remaining duration of time to complete the Contract, whichever is less.
 - 2. When delays in submittals or deliveries or work stoppages are encountered that necessitates re-planning or rescheduling of the work.
 - 3. When the schedule does not represent actual prosecution and progress of the work.
 - 4. When Contract modification necessitates schedule revision, submit a sub-network analysis of all change work with the associated Proposal. If accepted, this sub-network will become a part of the accepted schedule.
- C. As part of this review, prepare a brief narrative (letter) report relating to the status of construction, of submittals, of approvals, and of procurement. Indicate in this report, areas where problems exist and are anticipated as well as prescribe action(s), which needed to be taken by the Agency or by the Contractor.

3.04 CONTRACTOR'S REPRESENTATIVE

- A. Designate an authorized representative having responsibility for production and review of the Progress Schedule and having responsibility for reviewing progress of the work with the Agency. Provide a representative having direct control and complete authority to act on behalf of the Contractor; and do not interrupt such authority throughout the duration of the Contract without approval of the Agency.

3.05 PROGRESS PAYMENT

- A. The Job Progress Report will constitute the basis for monthly payment. Payment will not be made until the Job Progress Report is approved. Updating obsolete progress schedule and acceptance of the updated Progress Schedule by the Agency are conditions precedent for payment.

3.06 PAYMENT FOR PROGRESS SCHEDULE

- A. Include as part of the Lump Sum Bid Amount stated in the Bid Schedule for the Basic Project payment for the work in preparing and updating the Progress Schedule. This cost shall be proportionally distributed throughout the applicable bid items listed in the Bid Schedule.

END OF SECTION 01 32 16

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General: This Section covers requirements for submittals in addition to those stated in the Division 1, Section 5-1.23 of the Standard Specifications and Section 5-1.23 of the Special Provisions and forms a part of all other Specification Sections in which submittals are specified or required. Refer to the specific Sections and Divisions of the Specifications for additional submittal requirements.
- B. Submittal Requirements Included In This Section:
 - 1. Number of submittal copies required.
 - 2. CPM progress schedule.
 - 3. Shop drawings.
 - 4. Samples.
 - 5. Materials lists and data.
 - 6. Installation instructions.
 - 8. Record drawings and specifications.
 - 9. Certificates.
 - 10. Schedule of values.
- C. Submittal Requirements in Special Provisions and Other Sections:
 - 1. Applications for payments.
 - 2. Schedule of testing laboratory services.
 - 3. Written guarantees and warranties.
 - 4. Section 5-1.23 of the Standard Specifications and the Special Provisions.
 - 5. Factory or Material Source test reports.
 - 6. Manufacturers' certified reports.
 - 7. System validation test procedures and results.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SUBMITTAL-GENERAL REQUIREMENTS

- A. General: Refer to Section 5-1.23 of the Standard Specifications and the Special Provisions; furnish all items required to be submitted for review by and at the expense of the Contractor and do not proceed with any work affected by them without such review. Except for record documents and test plans, obtain submittal approval before the material or equipment covered by the submittal is delivered to the site.
- B. Submittal Review Time: Allow no less than fifteen (15) calendar days for the review of the submittals, not including the time necessary for delivery or mailing, and this time shall cause no delay in the Work. Extension of the Contract Time shall not be granted because of the Contractor's failure to make timely and correctly prepared and presented submittals within ninety (90) days after Notice to Proceed by the Agency, unless an alternative schedule of submission of submittals is proposed by the Contractor and is accepted by the Agency. This time provision does not obligate the Agency to approve submittals that may otherwise be deemed not acceptable.
- C. Deviations: At the time of submission, give notice in writing in the submittal, of any deviation from the requirements of the Project Specifications and Plans. Clearly indicate or describe the deviations and reasons therefore, including all other changes required to correlate the Work. State in writing all variations in costs occasioned by the identified deviations and any assumption of the cost of all related changes if the deviation is approved. Requirements stated in Paragraph F below shall also apply.
- D. Number of Submittals:
 - 1. General: Except for manufacturer's instruction manuals and samples, the Agency shall require and retain three (3) copies of all submittals, specified or required in this and all other Sections of these Specifications, for his and his representatives' use, unless otherwise specifically noted in a specific Specification section. Submit such additional number of copies, not to exceed 3, to be reviewed and returned for your use. For submitted drawings 11- by 17-inch and larger, submittal of an electronic format is preferred and encouraged. The electronic set will be returned to the Contractor marked to show the required corrections or approval.

2. Samples: Provide the number of samples for each material or equipment item in accordance with Paragraph 3.04 herein and as required in the respective section of these Specifications.
 3. Manufacturer's Instruction Manuals: Not Used.
- E. Method of Submittal: Do not combine equipment which is specified in one section of the Specifications in a single submittal with equipment specified in other Sections of the Specifications, unless unit responsibility for a package system is required. In each transmittal state the Agency's Project Number and Name, Name and Address of Contractor, Name and Address of Subcontractor, Manufacturer, Supplier or Distributor as applicable, Plan Reference and Specification Section, Articles, and paragraphs to which the submittal pertains; identify accompanying data sheets, catalogs, and brochures in the same manner. Fully index all items submitted in the transmittal for the submittal.
- F. Contractor's Review and Approval:
1. Furnish all submittals as the instruments of the Contractor, and bear full responsibility for their accuracy, completeness, and coordination. Do not delegate such responsibility in whole or part to subcontractors or suppliers. These submittals may be prepared by the Contractor, subcontractors, design professionals, or suppliers, but the Contractor shall ascertain that submittals meet all of the requirements of the Contract Documents. Ensure that there is no conflict with other submittals and notify the Agency in each case where its submittal may affect the work of another contractor or the Agency. Ensure the coordination of submittals among the related crafts and subcontractors.
 2. On every submittal of shop drawings, samples, materials lists, equipment data, and other submittals upon which the proper execution of the Work is dependent, mark with the Contractor's review and approval stamp certifying: (1) the submittal has been reviewed, checked, and approved and the contents have been coordinated with the requirements of the Work and the Technical Specifications and Project Plans, including related Work, (2) all quantities, field measurements, field construction criteria, materials, equipment, catalog numbers, and similar data have been determined and verified, or that it shall be done, and (3) the Work covered by the submittal is recommended by the Contractor and the Contractor's guarantee shall fully apply thereto. The Contractor's stamp shall be dated and signed by the Contractor in every case.
- G. Review and Approval: Submittals will be reviewed only for conformance with the design concept of the Project and with the information given in the Technical Specifications and Project Plans. The approval of a separate item as such shall not

indicate approval of the assembly in which the item functions, nor shall approval be construed as revising, in any way, the requirements for a fully integrated and operable system as specified. The approval of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Technical Specifications and Project Plans or for any revision at the time of submission or resubmission and written approval has been given to the specific deviation or revision. The approval of submittals shall not relieve the Contractor of responsibility for errors or omissions in the submittals, or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, and completion of the Work.

H. Form of Approval:

1. Review of submittals has as its primary objective the completion for the Agency of a project in full conformance with the Contract Drawings, including design drawings prepared by the Contractor, and Specifications, unmarred by field corrections, provided. In addition to this primary objective, submittal review as a secondary objective will assist the Contractor in its procurement of equipment that will meet all requirements of the project Drawings and Specifications, will fit the structures detailed on the Drawings, including design drawings prepared by the Contractor, will be complete with respect to piping connections, will have the proper functional characteristics, and will become an integral part of a complete operating system.
2. Copies of submittals which are returned to the Contractor and which are subject to approval will be marked with notation "A", "B", "B-R", "C", "D", or "E", in which case the action so indicated shall be taken by the Contractor. These notations are defined as follows:
 - "A" No Exceptions Noted (Resubmittal Not Required): Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the Work not covered in this submission. This notation does not constitute approval or deletion of specified or required items not shown in the partial submission.
 - "B" Make Corrections Noted (Resubmittal Not Required): Same as "A", except make minor corrections as noted.
 - "B-R" Make Corrections Noted (Resubmit for Record Purposes): Same as "B", except that resubmittal is required.
 - "C" Amend and Resubmit: Rejected because of major inconsistencies or error. Resolve or correct prior to subsequent review by the Design Consultant.

- “D” Reject – Resubmit: Submitted material does not conform to Drawings and Specifications in major respect, i.e., wrong size, model, capacity, or material.
- “E” Received for Record Purposes Only: Applies to submittals which are required but not reviewed, such as shoring submittals.
3. Returned copies of submittals marked with either notation “A”, “B”, or “B-R” indicate authorization to proceed with the fabrication or procurement, installation or construction, or any combination thereof, covered by such returned drawings, catalog cuts, or other data, provided that such fabrication, procurement, installation or construction shall be subject to the comments, if any, shown on such returned copies and to the Contract requirements whether or not specifically referenced. Although fabrication or procurement may proceed on a notation “B-R”, incorporate the comments, resubmit, and obtain notation “A” before release for shipment can be granted. Failure to satisfactorily address the review comments shall result in designation of the resulting work as being defective.
 4. Correct returned copies of submittals marked with notation “C” or “D” as necessary and provide revised submittals in the same manner as before.
- I. Corrections and Resubmittals: Make all required corrections and resubmit the required number of corrected submittals until approved by the Agency. Direct specific attention in writing to revisions other than the corrections called for by the Agency on previous submittals, and state in writing all variations in costs and your assumption of the cost of related changes. Identify each resubmittal with number of the original submittal followed by consecutive letters starting with “A” for first resubmittals, “B” for second resubmittal, etc. The Agency reserves the right to deduct moneys from the amounts due the Contractor to cover the cost of its review time for any and all resubmittals beyond the second submission.
- J. Check of Returned Submittals: Check returned submittals for correction and ascertain if the corrections result in extra cost above that included under the Technical Specifications and Project Plans, and give written notice to the Agency within five (5) days if, in your opinion, such extra cost results from corrections. By failing to so notify the Agency or by starting any Work covered by a submittal, all claims for extra costs resulting from required corrections are waived.
- K. Conformance: Do not purchase, fabricate, deliver, construct, or commence any Work represented by required submittals until the applicable submittal has been approved. Conform Work to the approved submittals and all other requirements of the Technical Specifications and Project Plans unless subsequently revised by

contract change order, in which case prepare and submit revised submittals as may be required. Do not proceed with any related Work which may be affected by the Work covered under submittals until the applicable submittals have been approved, particularly where piping, machinery, equipment, concrete work and the required arrangements, embedment, and clearances are involved.

- L. Piecemeal Submittals: Except for reinforcing steel submittals, piecemeal submittals will be returned unreviewed. However, for mechanical equipment and the like, separate submittals for embedded items, embedded metal work and anchors will be accepted for review.

3.02 CPM PROGRESS SCHEDULE

- A. Refer to Section 01 32 16, "Construction Progress Schedule", as it concerns Construction Schedule.

3.03 SHOP DRAWINGS

- A. Title Block and Identification: On each shop drawing, provide a space for the Engineer's approval or correction stamp and a title block showing the following:
 - 1. Name and address of Contractor.
 - 2. Name and address of Subcontractor, manufacturer, supplier, or distributor, as applicable.
 - 3. Name and address of Agency.
 - 4. Date, scale of drawings, and identification number.
 - 5. Contractor's review and approval stamp.
 - 6. Agency's Project Number (if applicable).
 - 7. Drawing Reference and Specification Section reference.
 - 8. Project Name.
- B. Preparation and Size: Clearly draw, dimension, note, and cross-reference details and information. Unless otherwise approved, prepare shop drawings of the same size as the Contract Drawings or on 8-½ by 11-inch sheets as applicable. Refer to Paragraph 3.01A above regarding use of a reproducible drawing copy.
- C. Data: Unless the following data is included in instruction manuals or equipment data submitted prior to or with the shop drawings, submit with the shop drawings complete catalog and technical data for all manufactured products, materials, machinery, and equipment covered by the shop drawing submittal. Include data showing for each item, as applicable, the following information:

1. Manufacturer's specifications and details.
 2. Applicable technical data and performance curves.
 3. Preparation, assembly, and installation instruction with allowable tolerances.
 4. Connection requirements.
 5. Pre-start-up servicing and operating methods.
 6. Other data and information necessary to demonstrate that the proposed items conform to the Contract Documents.
- D. Information Required: Submit shop drawings containing details and information fully developing the pertinent Contract Document requirements and such other information as may be specified or required for approval, including but not limited to:
1. Related work with cross-references to applicable portions of the Contract Documents.
 2. Dimensions, including variations between indicated dimensions and actual conditions.
 3. Physical configurations with critical dimensions for clearance, access, and servicing.
 4. List of materials, including fasteners and connectors.
 5. Structural construction and assemblies, welds shown by AWS symbols, and each fastener and connector shown by type and class.
 6. Grouting work, including grouting space and material.
 7. Concrete foundations and bases for machinery and equipment including joints, joint filler and sealer, and reinforcing.
 8. Anchor bolt details showing type and class, sizes, embedment, projections, and locations measured with respect to permanent structural features. Show an anchor bolt template on the Shop Drawings and furnish same unless waived in writing by the Agency.
 9. Protective coatings and factory finishes fully described as to materials, number of coats, plated and metallic coating finishes, treatments, and similar information, all based on specified requirements. The term "as specified" is not acceptable for this purpose.
 10. Machinery and equipment details. Standard catalog items need not be illustrated in detail, but indicate and detail sizes, supports, and connections.
 11. Location of auxiliary items that are parts of machinery and equipment including sight glasses, petcocks, gauges, lubrication fittings and access, and maintenance monitoring devices.

12. Piping systems and piping including layout, fittings, valves, appurtenances, hangers and supports, and sleeves.
 13. Electrical equipment showing plans, elevations, sections, arrangements, materials, anchor bolts, supports, weights, wiring and circuit diagrams, internal connections, busses, grounding, conduit spaces, layout of instruments, gauges, meters, and other components.
 14. Underground duct banks showing typical details of conduits, joints, spacers, and means of securing conduits in place during concrete placement.
 15. Dielectric connections, and materials and methods to be used to isolate dissimilar materials.
 16. Full-size lettering layouts for data plate and nameplate inscriptions.
- E. Details and Connections: Satisfactorily detail all connections required to complete the Work, including details necessary to make indicated or specified additions to existing work or to provide connections for future work. Design connections and parts of strength to withstand, without adverse deflection or stress, all loads or pressures to which they may be subjected and to develop the strength of the members or parts connected. In no case shall the connections, parts, or details be inferior to those required by the Contract Documents.
- F. Related Work: The term “by others” is not acceptable for the description of related work shown in the shop drawings. Clearly note by name or description the contractor, subcontractor, or trade to provide such related Work; where such name or description is missing, it shall be understood and agreed that the Contractor is to furnish and install such related Work.
- G. Clearances: Do not proceed with any related Work that may be affected by piping, machinery, equipment, or other work therein until shop drawings and data showing all components with acceptable clearances have been approved.
- H. Composite Shop Drawings with Installation Layouts: Prepare and submit drawings, wherever specified or required, to resolve tight or conflicting field conditions. Show dimensional plans and elevations of the materials or equipment of all trades in the involved area or space, and include complete information as to arrangements, locations, clearances, avoidance of interferences, access, sizes, supports, connections, services, assembly, disassembly, and installation. Coordinate composite shop drawings and layouts in the field with Subcontractors for proper relationship to the Work of all trades, based on field conditions, and check and approve before submittal. Have competent technical personnel readily available for such coordinating and checking.

3.04 SAMPLES

- A. Identification: Label or tag each sample or set of samples identifying the manufacturer's name and address, brand name, catalog number, intended use and other data specified in Article 3.01C herein.
- B. Colors, Patterns, and Textures: For items required to be of selected and approved colors, patterns, textures, or other finish, submit sufficient samples to show the range of shades, tones, values, patterns, textures, or other features corresponding to the instructions and requirements specified.
- C. Field-Applied Paint and Coatings: Submit samples of finishes at least 60 days prior to start of such finishing operations in conformance with requirements specified in Technical Specification Section 09 90 00, "Painting and Protective Coatings".
- D. Factory Finish Colors: Colors of material specified to be furnished with a factory finish are subject to approval. Submit duplicate samples of factory finishes showing the full range of available colors for selection and approval when requested by the Agency.

3.05 MATERIALS LISTS AND DATA

- A. General: Submit materials lists and data for all items proposed to be incorporated into the Work. In determining acceptability, consideration will be given to the availability of maintenance and materials, the availability of manufacturer's technical representatives, other factors that relate to the maintenance and repair of installed items without excessive inconvenience to the Agency, guarantees and warranties, as well as determination of conformance with the Contract Documents.
- B. Material Lists: Submit copies of Material Lists, number of copies submitted shall be as stated in Paragraph 3.01.D herein.
- C. Equipment Data: Not Used.

3.06 INSTRUCTION (OPERATIONS AND MAINTENANCE) MANUALS – NOT USED

3.07 INSTALLATION INSTRUCTIONS

- A. Where specified in the Project Manual or requested by the Agency, submit two (2) copies of manufacturers' installation instructions for material and equipment incorporated in the Work to the extent specified in other Sections and Divisions of the Specifications or requested by the Agency for its review. Installation

instructions will be reviewed for general adequacy only. After review, distribute copies to all those involved with the installation.

- B. Submit this information sufficiently in advance of the Work to ensure proper coordination of the respective equipment installation into the Work. In no case furnish this information later than delivery of the respective material or equipment. Payment for materials and equipment delivered will not be approved without submittal of the respective manufacturer's installation instructions.

3.08 EARTHQUAKE DESIGN AND RESTRAINT – NOT USED

3.09 OTHER SUBMITTALS

- A. Provide copies of other submittals such as calculations, manufacturer's certified reports, operational demonstration and system validation reports specified in other Sections and Divisions of the Specifications.

3.10 STORAGE INSTRUCTIONS

- A. For each equipment and material item furnished, provide for the Agency's records two (2) copies of the manufacturer's recommended instructions for storage of the respective equipment or material. Address in the instructions conditions both before installation and (for mechanical, electrical and instrumentation equipment) after installation but before placing into continuous operation.
- B. Submit manufacturer's storage instructions either prior to delivery of the material/equipment or with the request for payment of materials delivered. Payment for materials delivered will not be approved without submittal of the manufacturer's storage instructions.

3.11 RECORD DRAWINGS AND SPECIFICATIONS

- A. General: Maintain one (1) record copy of all Drawings, Specifications, Addenda, Modifications, approved submittals, correspondence, and transmittals at the site in good order and readily available to the Agency. Clearly and correctly mark the Record Drawings and annotate the Record Specifications to show all changes made during the construction process at the time the changed Work is installed. Do not make such changes in the Work unless previously authorized by a Modification or by specific approval of deviations or revisions in submittals.
- B. Buried and Concealed Work: Record the precise location of all piping, conduits, ducts, cables, and like Work that is buried, embedded in concrete or masonry, or

concealed in wood or metal framed walls and structures at the time such Work is installed and prior to concealment. Accurately locate each feature of the concealed Work, such as the beginning and end of straight runs, radius center point of curved runs, angles, connections, plugged tees or other fittings for future connections, and like items by not less than 2 dimensions to permanent structures. Note the depth below finish grade, slab, or paving for buried pipe, conduit, or ducts at the beginning and end of straight grade runs and at all grade change points, excepting sewer or drain lines run between manholes. Should such buried or concealed Work fail to be recorded, uncover the unrecorded Work to the extent required by the Agency and satisfactorily restore and reconstruct the removed Work with no change in the Contract Price or the Contract Time.

- C. Delivery: Upon completion and prior to final inspection of the Work and as a condition of final payment, submit the Record Drawings and Specifications to the Agency for review, and make such revisions or corrections as may be necessary for them to be a true, complete, and accurate record of the Work in the opinion of the Agency. When approved, deliver the Record Drawings and Specifications to the Agency.

3.12 CERTIFICATES

- A. Sign each certificate required under the Contract or in any of the following Sections by the individual, office, or agent lawfully authorized to execute the certificate, and cite such authority in the certificate by title, description, or other acceptable evidence. All certificates shall be sworn as to the correctness and validity of the contents. Where specifically required in the respective Section of the Specifications notarize certificates and also notarize duplicate copies of required certificates to be true copies.

3.13 SCHEDULE OF VALUES

- A. Submit to the Agency for acceptance, in the form directed by or acceptable to the Agency, a complete schedule of the values of the various portions of the Work, including quantities and unit prices if required by the Agency, aggregating the Contract Price (except in cases and to the extent that accepted unit prices form the basis for payment). Submit the schedule subdividing the Work into component parts in sufficient detail to serve as the basis for progress payments during construction and to coordinate with the progress schedule required for this Work, and support by such data to substantiate its correctness as the Agency may require. Include in each item in the schedule of values its proper share of overhead and profit. An unbalanced breakdown providing for overpayment to the Contractor on items of

Work which would be performed first will not be approved. The schedule of values, when accepted by the Agency, shall be used only as a basis for the Contractor's applications for payment and not for additions to or deductions from the Contract Price. Submit the initial submittal for the schedule of values at the preconstruction conference as per Section 01 20 00, "Prices and Payment Procedures", or within 10 days of the Notice to Proceed, whichever comes sooner.

END OF SECTION 01 33 00

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section summarizes without limitation the laws and codes by which the Work has been designed and to which the Contractor shall conform in the prosecution of the Work. Make available for use at the site such copies of laws, regulations, or codes applicable to the Work as the Agency or Engineer may request.
- B. Laws and Regulations: As specified in Special Provisions.
- C. Codes:
 - 1. California Building Code (CBC), current edition.
 - 2. California Code of Regulations:
 - a. Title 8, Industrial Relations, Chapter 4 - Division of Industrial Safety;
 - b. Title 19, Public Safety, Subchapter 3;
 - c. Title 22
 - 3. Health and Safety Code, Chapters 6.5 and 6.95, for hazardous waste management.
 - 4. Codes and Standards listed in Division 16 of these Specifications.
 - 5. Local Mechanical Code.
 - 6. Local Plumbing Code.
 - 7. National Fire Protection Association.
 - 8. State and Local Public Health Codes.
- D. Specifications: Standard Specifications, State of California Business and Transportation Agency, Department of Transportation, current edition, referred to in the Contract Documents as "Caltrans Standard Specifications" or "Standard Specifications".

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 41 00

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SECTION 01 42 13

ABBREVIATIONS AND SYMBOLS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section summarizes without limitation the abbreviations and symbols used in the Contract Documents.

1.02 ABBREVIATIONS

- A. Abbreviations used in the Contract Documents shall be interpreted according to their recognized and well-known technical or trade meanings; such abbreviations include but are not limited to the following:

AASHTO	American Association of State Highway and Transportation Officials.
ACI	American Concrete Institute.
AGA	American Gas Association.
AGMA	American Gear Manufacturers Association.
AIMA	Acoustical and Insulating Materials Association.
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute.
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute.
APA	American Plywood Association.
API	American Petroleum Institute.
ASCE	American Society of Civil Engineers.
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers.
ASME	American Society of Mechanical Engineers.
ASTM	American Society for Testing and Materials.
AWI	Architectural Woodwork Institute.
AWPB	American Wood Preservers Bureau.
AWPI	American Wood Preservers Institute.

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Abbreviations and Symbols

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Abbreviations & Symbols.docx

AWS	American Welding Society.
AWWA	American Water Works Association.
CBC	California Building Code.
CLFMI	Chain Link Fencing Manufacturers Institute.
CRSI	Concrete Reinforcing Steel Institute.
CS	Commercial Standard, US Department of Commerce.
DSOD	Division of Safety of Dams, Department of Water Resources (State of California)
ETL	Electrical Testing Laboratories.
Fed Spec	Federal Specification.
HI	Hydraulics Institute.
IBC	International Building Code.
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IPCEA	Insulated Power Cable Engineers Association.
MIL	Military Specification (leading symbol).
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry.
NAPF	National Association of Plastic Fabricators.
NEC	National Electric Code.
NEMA	National Electrical Manufacturers Association.
NFPA	National Fire Protection Association.
NSF	National Sanitation Foundation.
NWMA	National Woodwork Manufacturers Association.
OSHA	Occupational Safety and Health Administration, U.S. Department of Labor, as defined in the General Conditions.
PCA	Portland Cement Association.
PDI	Plumbing and Drainage Institute.
PS	Product Standard, U.S. Department of Commerce.
SDI	Steel Deck Institute.
SJI	Steel Joist Institute.
SMACNA	Sheet Metal and Air-Conditioning Contractors National Association.

SPR	Simplified Practice Recommendations, U.S. Department of Commerce.
UBC	Uniform Building Code.
UL	Underwriters' Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau.
WIC	Woodwork Institute of California.
WWPA	Western Wood Products Association.

PART 2 – PRODUCTS (NOT USED).

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 42 13

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SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section covers quality control requirements supplementary to those of the Division 1 of the Standard Specifications, the Special Provisions and other Sections of the Technical Specifications.

1.02 QUALITY ASSURANCE

- A. Testing Laboratory Qualifications: Whether employed by the Agency or Contractor, the testing laboratory used to monitor the quality of the Work shall be licensed to conduct and perform testing services in the State and jurisdiction where the Work is located. All testing shall be performed under the direct supervision and control of a qualified registered professional engineer employed by the laboratory.
 - 1. Agency will be responsible for retaining the services of the testing laboratory performing quality assurance (Q/A) testing of work performance results, including but not limited to concrete cylinder breaks for compressive strength and soil compaction. Contractor shall coordinate and cooperate in providing access to testing locations for the laboratory services field personnel.
 - 2. The above requirements apply to any laboratory services utilized by the Contractor to gather preliminary information on results or quality of field work. The results of such testing shall not be accepted by the Agency as proof of compliance with the Contract requirements. The Contractor shall also be responsible for laboratory services used for source testing of imported materials proposed to be incorporated in the work and for which the results are submitted for Agency's approval.
- B. Foundation or Soils Engineer: The Agency will employ and pay for the services of a Civil Engineer registered in the State of California specializing in Foundation or Soils Engineering to observe the specified portions of the Work and to supervise or perform testing pertaining to the observed Work.

C. Requirements of Regulatory Agencies:

1. If the laws, ordinances, rules, regulations, or orders of any public body or authority having jurisdiction require any Work to be specifically inspected, tested, or approved by someone other than the Contractor, the Agency, or the Inspector, the Contractor shall give all required notices and make all required arrangements therefore and shall deliver to the Agency certificates of inspection, testing, or approval issued by the applicable public bodies or authorities having jurisdiction. The cost of all such inspections, tests, and approvals shall be borne by the Contractor unless otherwise provided in the Contract Documents.
2. The Testing Laboratory, where retained by the Agency, will perform tests required by the regulatory agencies at no cost to the Contractor, except where retesting is required due to failure to pass the initial test.
3. Furnish all other inspections and approvals required by the agencies at no additional expense to the Agency.

D. Source Quality Control: To the extent specified herein or in other Sections, the Testing Laboratory shall obtain samples of various materials at the source of supply and test the materials for compliance with the Contract Documents. The Testing Laboratory shall tag, seal, label, or otherwise suitably identify the bulk materials so sampled, and no such materials shall be used in the Work until the test reports are submitted to and approved by the Agency. The applicable tests shall be repeated at the specified intervals, whenever the source of supply is changed, or whenever the characteristics of the materials change or vary in the opinion of the Agency.

E. Factory Test Witnessing: To the extent specified or ordered by the Agency, the Agency will witness testing performed at the factory or supplier's test facility. The Agency will pay the cost of factory test witnessing.

F. Inspection:

1. The Agency will furnish inspection of the Work at no cost to the Contractor except for Unauthorized Delays; Claims by Separate Contractors; Uncovering of Work; Inspections, Tests, Approvals Required by Others; Correction of Defective Work; Suspension of Contract Agreement; and except for inspections required to be furnished and paid for by the Contractor elsewhere in the Contract Documents. All Work shall be performed and constructed under the inspection of the Inspector unless waived in writing by the Agency in each case or exempted wholly or in part from inspection elsewhere in the Contract Documents. Any Work requiring such inspection that is performed

or constructed in the absence of the Inspector shall be considered defective and is subject to rejection. Inspection of any material or equipment at the factory or shop will not constitute an acceptance. The Inspector is authorized to suspend any part or all of the Work, by notice to the Contractor confirmed in writing, when a question arises as to whether the materials or equipment being installed or the methods or workmanship being used comply with the Contract Documents until such question is decided by the Agency. The Inspector is not authorized to accept or reject any Work, to modify or change any requirement of the Contract Documents, to advise or instruct the Contractor or his employees as to the prosecution of the Work, to perform any duty or service for the Contractor, or relieve the Contractor of the obligation to fulfill any conditions and requirements of the Contract Documents. The Contractor shall give written notice to the Agency at least ten working days in advance of the performance of any part of the Work requiring special inspection by someone other than the Inspector and shall state the probable duration of the required special inspection. The Special Inspector is authorized to reject work that does not meet the Contract Documents. Such rejection shall be confirmed by the Agency in writing.

2. Provide the Engineer not less than ten (10) working days written notice whenever construction operations require the services of more than one Inspector.
3. To the extent specified, the Agency retained Testing Laboratory will furnish specially qualified inspectors for various field inspections.

1.03 SUBMITTALS

- A. Laboratory Test or Inspection Reports: Have each report signed and certified by the supervising engineer of the Testing Laboratory. Unless otherwise specified, the Testing Laboratory shall submit five (5) copies of each report to the Agency.
- B. Foundation or Soils Engineer's Reports: These reports shall be certified and submitted to the Agency. A copy of each report will be furnished to the Contractor by the Agency.
- C. Schedule of Testing Laboratory Services: Submit a schedule giving the dates and duration that the Testing Laboratory shall perform testing services or furnish special inspections. After this, give the Engineer and Testing Laboratory not less than ten (10) working days written notice of any change in the schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 SAMPLING

- A. Field samples will be selected and obtained by the Testing Laboratory or Inspector unless otherwise specified.

3.02 LABORATORY TEST PROCEDURES

- A. Testing shall conform to the requirements specified. If no procedure or test method is specified, perform testing in compliance with the material specification referenced unless otherwise directed by the Agency.

3.03 CONTRACTOR FURNISHED ASSISTANCE

- A. When requested, furnish access, facilities, and labor assistance at the site as necessary for the duties to be performed by the Testing Laboratory and Inspector, including ladders, hoisting, temporary lighting, temporary water supply, and like services.

3.04 TEST SCHEDULE AND TEST COSTS

- A. The Agency will employ the testing laboratory and pay the cost of testing scheduled in this Article. The Contractor shall perform all other certifying and testing required by the Contract Documents at his expense. The Contractor shall pay the Agency all costs the Agency incurs for tests when the tested material or equipment fails the test and for retesting caused by failure disclosed in previous tests.

TEST COSTS PAID BY AGENCY

<u>Section</u>	<u>Tests</u>
31 00 00	Optimum moisture and compaction tests for fills and backfills. Testing of rock for capillary moisture barrier.
31 23 33	Testing of pipe bedding materials (only as deemed necessary by Agency to verify certificates submitted by supplier). Optimum moisture and compaction tests for backfills.

END OF SECTION 01 45 00

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Quality Control

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Quality Control.docx

SECTION 01 50 00

CONSTRUCTION AND TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General: This Section covers the temporary facilities and controls for the Work and is supplementary to Division 1 of the Standard Specifications and the Special Provisions.
- B. Work Included in This Section:
 - 1. Construction utilities.
 - 2. Construction aids.
 - 3. Barriers.
 - 4. Security provisions.
 - 5. Roads and access.
 - 6. Special controls.
 - 7. Traffic control.
 - 8. Sanitary facilities.
- C. Related Work Specified in Other Sections:
 - 1. Permanent construction and facilities.
 - 2. Permanent utility services.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

- A. Make all necessary arrangements, secure required permits, and pay all fees and charges required by public authorities where temporary facilities or controls are located on public property.

1.03 WORKING AREAS

- A. Drawings indicate the site and related areas furnished or owned by Agency for prosecution of the Work. Keep all areas clean, orderly, and free of hazards, and leave in a clean condition acceptable to Agency, Engineer, and governing public authorities.

1.04 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Technical Specifications Section 01 33 00, "Submittal Procedures". Submit the documents identified below in advance of commencing the respective work in conformance with applicable requirements.
- B. Drawings and Data: Follow procedures for submittal of shop drawings and materials lists. Submit the following:
 - 1. Site barriers and fences showing details and layout. Mark on reproducible prints of site plans provided by Agency.
Layout and sizing of temporary utilities (water, gas, sewer, etc.) installed by Contractor for execution of Work.
 - 2. Layout of temporary access and haul roads, and layout and arrangement of Contractor's storage facilities. Mark on reproducible prints of site plans.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CONSTRUCTION UTILITIES

- A. Furnish the temporary piping, power, lighting, communications, and other services necessary to distribute utilities to the places where Work is performed. Provide construction power (temporary power) and install power circuits separately from lighting and communication circuits. Install construction lighting when Work is performed at night or under deficient daylight conditions to ensure correct performance and to provide for inspection and safe working conditions.

3.02 CONSTRUCTION AIDS

- A. Comply with OSHA requirements and applicable laws, ordinances, rules, regulations, and orders pertaining to construction machinery and equipment, hoists, cranes, scaffolding, staging, materials handling facilities, tools, appliances, and other construction aids. OSHA requirements shall govern where mandatory; otherwise, comply with most stringent requirements. Construct specially designed scaffolding and staging in accordance with drawings prepared by an engineer as specified for submittals.

3.03 BARRIERS

- A. Erect and maintain barriers as required by Code and as required to safeguard the site and Work. Equip gates with holdopens and padlocks; furnish padlock keys to Inspector. Obtain and pay for required permit when barriers are located on public property.
- B. Solid Barricades: Construct of wood or metal framing faced with plywood panels, framing located on side away from adjoining property lines. Use clean, sound materials. Design and erect to withstand not less than 25 psf wind load. Where shown on the Drawings as required, apply 2 coats of paint on barricades. Color to be approved by Agency. Construct barricades not less than 6 feet in height.
- C. Fencing Barricades: Construct of galvanized or aluminum chain link fencing with green fabric acceptable to the Agency; either new materials or used materials that are clean and free of hazards. Install and braced to withstand at least a 150-pound transverse load applied to the top. Secure fencing to posts at maximum 12-inch intervals. Provide doubled posts at gates. Construct barricades not less than 8 feet in height.

3.04 SECURITY

- A. Fire Protection: Provide necessary fire extinguishers and water as necessary to protect Agency's property and private property on which work for this Contract is being conducted.

3.05 ROADS AND ACCESS

- A. Transportation Facilities: Investigate the availability of transportation facilities and make necessary arrangements for delivery of materials to the site. Determine the condition and availability of public roads, access, rights-of-way, and of restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the Work site.
- B. Clean Roads: Clean streets, parking lots and places where construction operations create dirt accumulation at frequent intervals as directed by the Agency or his/her representative. Be responsible for all damage resulting from dirt accumulation and cleaning during construction operations.

3.06 SPECIAL CONTROLS

- A. Noise Control: Comply with OSHA requirements as to allowable noise levels during construction. Equip all internal combustion engines in vehicles and construction equipment with effective mufflers. Prevent noise disturbance to adjoining property owners and the public.
- B. Dust Control: Sprinkle streets and other places where construction operations create a dust nuisance at frequent intervals and not less than twice daily and be responsible for all damage resulting from dust produced by construction operations.
- C. Water Control: Perform grading and other operations to maintain site drainage. Do not allow surface water to accumulate in excavations, under structures, or in ponds on the site. Control surface water by means of ditches, dams, temporary pumps and piping, and other necessary methods. Legally dispose of surface and subsurface water and do not allow mud, silt, or debris to flow on to adjoining or public property.
- D. Air Pollution Control: Comply with all laws, ordinances, rules, regulations, and other restrictions pertaining to air pollution. Do not use any fuel nor perform any operation that emits smoke which is defined as equal to Ringleman No. 2 or darker.
- E. Temporary Heating: Furnish and pay for heat, fuel, and services to protect the Work against injury from dampness and cold until final acceptance. Use only temporary heating equipment that produces no combustion gases or that discharges such gases directly to the exterior atmosphere by ducts, tubes, or similar conduits.
- F. Erosion Control: Comply with Monterey County Ordinance No. 2806.
- G. Floodplain Control: Comply with Monterey County Ordinance No. 3272.
- H. End Dumping: Equipment end dumping in areas where existing tree canopy creates low overhead clearance is prohibited.

3.07 TRAFFIC CONTROL

- A. Comply with the requirements of Section 7.04 of both Division 1 of the Standard Specifications and the Special provisions.

3.08 SANITARY FACILITIES

- A. Toilet and Washing Facilities: Provide temporary chemical toilets and fresh water washing facilities for the use of all workers at the site. Supply paper, soap, and

towels, and maintain the facilities in a clean and sanitary condition. Pit type privies are not permitted.

- B. Drinking Water: Maintain a supply of cool, pure drinking water at the site, readily available to workers, with individual disposal drinking cups.

3.09 REMOVAL OF TEMPORARY FACILITIES

- A. Upon completion of the Work of this Contract, remove construction and temporary facilities used or provided during the performance of the Work from the work areas. Remove rubbish, debris and other material resulting from the construction operations and leave the site(s) in a neat, clean and acceptable condition.

3.10 TEMPORARY FLOW BYPASS FACILITY

- A. Bear responsibility for the design and construction of facilities for flow bypassing, including required connections and pumping between successive manholes in the gravity sewer system in the Work to enable work to be performed as described in the Contract Documents. Bear complete responsibility to provide any and all components required to complete the flow bypass piping and connections and provide adequate bypass pumping capabilities, including primary and back-up power. Make all flow bypass connections as required to satisfactorily perform the work. Submit plans for providing flow bypassing capabilities to the Agency for review and approval prior to making any connections in the field. Also submit an emergency plan in case the proposed flow bypass provisions fail to perform as constructed. Operate each flow bypass facility after it has been assembled and tested until it is no longer required. Disassemble the flow bypass facility when it is no longer required and clean up the site.

END OF SECTION 01 50 00

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SECTION 01 57 23

TEMPORARY EROSION CONTROL

PART 1 – GENERAL

1.01 DESCRIPTION

- A. This Section includes the furnishing, installation, and maintenance of temporary erosion and sedimentation controls for all earthwork, trenching, clearing and grubbing operations.
- B. For projects with soil disturbances of five acres or more, comply with the National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity and requirements included herein.
- C. For projects with soil disturbances under five acres, erosion and sedimentation control measures shall comply with requirements provided herein, local jurisdictional agency requirements, and applicable requirements in local storm water management programs developed to comply with NPDES permits issued by the Regional Water Quality Control Board.

1.02 RELATED WORK

- A. Section 31 10 00 Site Clearing
- B. Section 31 23 00 Excavation and Fill
- C. Section 31 23 19 Dewatering
- D. Section 31 23 33 Trenching, Backfilling and Compaction

1.03 SUBMITTALS

- A. General: Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures" of the Technical Specifications.
- B. Submit work plans, including drawings and other details required for compliance with the Monterey County Ordinance No. 2806 – Erosion Control. A copy of the Monterey County Ordinance No. 2806 – Erosion

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Temporary Erosion Control
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Control is included at the end of this section.

- C. Manufacturers catalog data and samples on materials used for erosion control, including the physical characteristics, application and installation instructions.

PART 2 - MATERIALS

2.01 MATERIALS

- A. Provide sand bags, silt fences, straw bales and other materials to control erosion and sedimentation as shown on the SWPPP and Shop Drawings.

PART 3 – EXECUTION

3.01 GENERAL

- A. All landscaped areas disturbed as a result of temporary erosion control measures or due to any other construction activities shall be restored to its original conditions as directed by the Agency.

3.02 CONSTRUCTION

- A. Construct and implement erosion control measures in accordance with the Monterey County Ordinance No. 2806 – Erosion Control.
- B. Grade disturbed surfaces to provide positive drainage and prevent ponding of water. Surface water shall be controlled to prevent water damage or deposition of sediment to all adjoining and downstream properties.
- C. Install silt fences, sedimentation ponds, sandbag dikes, stabilized construction entrances and any other erosion control measure to minimize sediment escape from the construction site and to maintain runoff quality in compliance with the Monterey County Ordinance No. 2806 – Erosion Control. Prevent construction sediment from entering any streams, ponds or drainage facilities.
- D. At a minimum, provide erosion and sedimentation control measures immediately following clearing and grubbing operations in the following locations:
 - 1. In pipeline rights of way immediately upstream of all natural channels.

2. At the lowest end of areas disturbed by construction before runoff from storms can reach natural streams.
 3. Provide silt fences and other soil erosion measures as required parallel to each side of stream bank for a distance upstream and downstream of the pipeline crossing, on the stream side of construction disturbance limits, to match the disturbance of ground conditions occurring due to construction activities.
 4. At additional locations as required for controlling sedimentation as required by the Monterey County Ordinance No. 2806 – Erosion Control.
- E. Retain erosion and sedimentation control measures in place until such time that the site of work is prepared for permanent drainage and erosion control measures. Remove temporary erosion and sediment control measures so as not to interfere with permanent drainage, erosion control and revegetation.

3.03 MAINTENANCE

- A. Conduct site inspections of the erosion and sedimentation control measures prior to forecasted storm events and after the actual storm to evaluate the adequacy and effectiveness of such measures. Make and implement modifications as necessary to comply with the Monterey County Ordinance No. 2806 – Erosion Control. Submit inspection reports to the Engineer after each storm event. Include in the inspection reports at a minimum, the date of the inspection, the individual(s) who performed the inspection, the observations, and any modifications implemented.
- B. Maintain sedimentation and erosion control measures, ensuring proper operation before, during, and after storm events.
- C. Repair all damaged erosion and sedimentation controls. Reinstate to finished condition any erosion damage with in the construction area for the duration of the Contract.
- D. Certify that the construction activity is in compliance with the requirements of the Monterey County Ordinance No. 2806 – Erosion Control. The certification shall be based upon the site inspections required above. The written notification shall be submitted by the Engineer to the Contractor in writing if it is determined that the construction activity is not or has not been in compliance with any of the Monterey County Ordinance No. 2806 – Erosion Control requirements. The notification shall identify the type of noncompliance and include a time schedule for compliance.

- E. Additional site inspections and/or sampling and analysis may be required at the request of the California Regional Water Quality Control Board, Central Coast, or the Engineer.

3.04 REMOVAL

- A. Remove and dispose of materials used for temporary sedimentation and erosion control measures offsite when permanent erosion control facilities are completed and accepted by the Engineer.

END OF SECTION 01 57 23

MONTEREY COUNTY CODES

CHAPTER 16.12 EROSION CONTROL

ORDINANCE NO. 2806

The Board of Supervisors of the County of Monterey do ordain as follows:

Section 1. Chapter 16.12 is added to the Monterey County Code to read as follows:

CHAPTER 16.12

EROSION CONTROL

Sections:

16.12.010.	Purpose.
16.12.020.	Scope.
16.12.030.	Definitions.
16.12.040.	General Provisions.
16.12.050.	Project Design.
16.12.060.	Erosion Control Plan.
16.12.070.	Runoff Control.
16.12.080.	Land Clearing.
16.12.090.	Winter Operations.
16.12.100.	Overall Responsibility.
16.12.110.	Exemptions.
16.12.120.	Variances.
16.12.130.	Fees.
16.12.140.	Bond Provision.
16.12.150.	Inspection and Compliance.
16.12.160.	Applicable Laws and Regulations
16.12.170.	Violations.
16.12.180.	Notice of Violation Recordation
16.12.190.	Penalties.
16.12.200.	Enforcement.
16.12.210.	Appeals.

16.12.010 PURPOSE

The purpose of this Ordinance is to eliminate and prevent conditions of accelerated erosion that have led to, or could lead to, degradation of water quality, loss of fish habitat, damage to property, loss of topsoil or vegetation cover, disruption of water supply, increased danger from flooding.

16.12.020 SCOPE.

This Ordinance requires control of all existing and potential conditions of accelerated (human-induced) erosion; sets forth required provisions for project planning, preparation of erosion control plans, runoff control, land clearing, and winter operations; and establish procedures for administering those provisions.

16.12.030 DEFINITIONS.

For the purpose of this chapter, the following terms shall have following meanings indicated in this section:

1. "Accelerated Erosion" means erosion of a significant amount - caused by a human-induced alteration of the vegetation, land surface, topography, or runoff pattern. Evidence of accelerated erosion is often indicated by exposed soils, gullies, rills, sediment deposits, or slope failures caused by human activities.
2. "Access Envelope" means an area delineated on the site plan to which all clearing and land disturbance for construction of access must be confined.
3. "Agricultural Grading" means grading on land designated for exclusive agricultural use as specified under Section 16.12.040 of this Ordinance.
4. "Approved Erosion Control Specialist" means a person who has met certain minimum qualifications established by the Director of Building Inspection which demonstrates his/her capability to prepare large scale erosion control plans.
5. "Building Envelope" means an area delineated on the development plans to which all clearing and land disturbance for construction must be confined.
6. "Director of Building Inspection"¹¹ means the Director of the Building Department or his authorized designee charged with the administration and enforcement of this Ordinance. The Public Works Director or authorized designee may administer the provisions of this Ordinance for subdivisions.
7. "Development Permit" means a permit issued by the County for new land use activities: building, grading, land clearing, subdivisions, minor land divisions, planned unit developments, or major planned developments.
8. "Drainage Course" means a natural or man-made channel which conveys runoff either year-round or intermittently.
9. "Earth Material" means rock, natural soil, or combination thereof.
10. "Erosion" means the wearing away of the ground surface as a result of the movement of wind or water.

11. "Erosion Hazard" means the susceptibility of a site to erode, based on condition of slope, rock type, soil, and other site factors. High erosion hazard areas include areas of high and very high -erosion hazard shown on maps prepared by the Planning Department." Hazard may be determined based on a site-specific investigation.
12. "Grading" means excavating, filling, leveling, or smoothing, or combination thereof.
13. "Land Clearing" means the removal of vegetation down to duff or bare soil, by any method.
14. "Land Clearing Permit" means a permit granted by the Director of Building Inspection which authorizes the permittee to carry out land clearing. This is required wherever such clearing will involve more than 2 1/2 acres per year per site, in excess of clearing shown on an approved development plan; except in water supply watersheds, or high erosion hazard areas, where a permit shall be required for any clearing in excess of one acre per year per site.
15. "Land Disturbance" means clearing, excavating, grading, or other manipulation of the terrain.
16. "Watersheds" means watershed areas identified on the General Plan maps. The area drained by a river, other natural stream of water or a lake; drainage area.
17. "Major Grading" means grading in excess of 100 cubic yards.
18. "Major Planned Development" means new commercial, industrial or professional developments; or new residential developments of more than four units.
19. "Minor Development Proposal" means building permits, grading permits for between 100 and 2,000 cubic yards, subdivisions of four or less lots, and any other project not identified as a major development proposal in Section 16.12.060(d).
20. "Minor Grading" means grading less than 100 cubic yards.
21. "Onsite Detention" means temporary storage of runoff on the site.
22. "Onsite Retention" means permanent holding of runoff on the site through percolation to the ground.
23. "Owner" means the person or persons shown in the County

Recorder's Office as beneficial owner of the property.

24. "Permittee" means any person undertaking development activities upon a site pursuant to a permit granted by the County.
25. "Person" means any person, firm, association, corporation, organization, partnership, business, trust company, public agency, school district, the State of California and its political subdivisions or instrumentalities.
26. "Responsible Person" means any person who creates or participates in creating a condition which may lead to accelerated erosion. If a specific person cannot be identified, the owner of the land where such condition exists shall be presumed to be the responsible person.
27. "Road or Roadway" means an open way for vehicular traffic.
28. "Runoff" means the movement of water over the ground surface.
29. "Sediment" means eroded earth material that is carried by wind, gravity, runoff and/or deposited in a stream, drainage course, or other area.
30. "Site" means a parcel of land or contiguous parcels where alterations, including grading, clearing, or construction are performed or proposed.
31. "Soil" means the unconsolidated mineral and organic material on the immediate surface of the earth.
32. "Stream" means any water course designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey map most recently published, or as indicated in the development permit when it has been field determined that a water course either:
 - (a) Supports fish at any time of the year; or

- (b) Has a significant water flow 30 days after the last significant storm; or
 - (c) Has a well-defined channel, free of soil and debris.
33. "Ten-year Storm" means a storm of an intensity that would be exceeded on the average only once every ten years. The intensity for the site shall be determined according to County Design Criteria. The duration of the storm used in runoff calculation shall be equivalent to the concentration time for the area which drains through the project site.
34. "Water Supply Watershed" means watershed areas identified as such on the Monterey County General Plan maps.

16.12.040 GENERAL PROVISIONS.

No person shall cause or allow the continued existence of a conditions on any site that is causing or is likely, to cause accelerated erosion as determined by the Director of Building Inspection in accordance with this ordinance. Such a condition shall be controlled and/or prevented by the responsible person and the property owner by using appropriate measures outlined in subsequent sections of this Ordinance. Additional measures may be necessary, and should be applied by the responsible person and the property owner. Specific additional measures may be required by the Director of Building Inspection. Property owners will be given a reasonable amount of time, as determined by the Director of Building Inspection, to control existing programs depending on the severity of the problem, and the extent of necessary control measures. Where feasible, erosion problems shall be controlled no later than the beginning of the next rainy season (October 15).

16.12.050 PROJECT DESIGN.

The density and design of new development shall be planned to be consistent with the characteristics and constraints of the site:

- (a) Structures on slopes that would normally require major grading shall utilize pole, step, or other foundations that do not require major grading.
- (b) Building and access envelopes or non-buildable areas may be required to be delineated on the development plans so as to keep disturbance out of particularly erodible areas. Envelopes shall be required in areas of high erosion hazard.
- (c) Streams or drainage course shall not be obstructed or

disturbed except for approved road crossings, unless disturbance consistent with the purpose of this Ordinance.

- (d) If the project is for creation of or access to a building site, land disturbance shall not take place until a building permit has been issued. If a permit cannot be issued until a determination of adequate water source and sewage disposal or other required site investigation is made, land disturbance shall be limited to the extent necessary to allow such an investigation. This provision shall not apply to road construction or other grading activities which are specifically required as condition of a minor land division or other permit.
- (e) Erosion control measures specified in, or pursuant to, this Ordinance, shall be in place and maintained at all times between October 15 and April 15.

16.12.060 EROSION CONTROL PLAN.

- (a) Prior to permit issuance for building, grading, or land clearing, an erosion control plan indicating proposed methods for the control of runoff, erosion, and sediment movement shall be submitted and approved to the appropriate director. Erosion control plans may also be required for other types of applications where erosion can reasonably be expected to occur. The erosion control plan may be incorporated into other required plans, provided it is identified as such. Erosion control plans shall include as a minimum the measures required under Sections 16.12.070, 16.12.090 and 16.12.110 of this Ordinance. Additional measures or modification of proposed measures may be required prior to project approval. No grading or clearing may take place on the site prior to approval of an erosion control plan for that activity. Final certification of project completion may be delayed pending proper installation of measures identified in the approved erosion control plan.
- (b) Two sets of plans shall be required for each application; particular specifications may be required by the Director of Building Inspection. Plans shall be drawn to scale upon substantial material, minimum size 18" x 24", and shall be of sufficient clarity to indicate the nature and the extent of the work proposed and show in detail that it will conform to the provisions of this Ordinance and all relevant laws and regulations. The minimum size for plans for land clearing permits shall be 8 1/2" x 11". The plans shall include the following information in writing and/or diagrams:
 1. General location of the proposed site.
 2. Property lines and contours of the site including finish contours to be achieved by grading, details of terrain and area drainage; proposed construction,

proposed drainage channels and other runoff control measures.

3. Detailed plans of all surface and subsurface drainage devices, dams and other erosion control measures to be construction with, or as a part of, the proposed work.

All measures required under this Chapter shall be shown. Function of erosion control measures shall be consistent with the provisions of this Ordinance.

4. Delineation of areas to be cleared during development activities.
 5. Revegetation proposal for all surfaces exposed or expected to be exposed during development activities, including cut and fill slopes.
 6. Name and address of the owner(s),
 7. Assessor's parcel number(s) of the property on which the work is to be done.
 8. North arrow, scale, and name and location of nearest public road intersection.
 9. Name, address and phone number of person who prepared the plan.
- (c) For minor development proposals, the erosion control plan is not required to be prepared by a registered professional (as listed in paragraph (d) below).
- (d) For major development proposals, the erosion control plan shall be prepared by a registered civil engineer, professional forester, landscape architect, registered geologist, certified engineering geologist, or approved erosion control specialist. For these major projects, runoff calculations and other calculations demonstrating adequacy of drainage structures shall be included. Inspection by the person preparing the plan and certification of proper installation of control measures may be required by the Director of Building Inspection. Major proposals include:
1. Subdivisions of more than four lots.
 2. Planned unit developments, major planned developments and major use permits.
 3. Other projects of a similar nature determined by the Planning Director to cause major land disturbance.

(3) Applications for activities where no land disturbance is anticipated may be accompanied by a statement to that effect, which shall be approved by the Director of Building Inspection, in lieu of an erosion control plan.

16.12.070 RUNOFF CONTROL.

Runoff from activities subject to a development permit shall be properly controlled to prevent erosion. The following measures shall be used for runoff control and shall be adequate to control runoff from a ten-year storm:

- (a) On soils having high permeability (more than two inches/hour), all runoff in excess of pre-development levels shall be retained on the site. This may be accomplished through the use of infiltration basins, percolation pits or trenches, or other suitable means. This requirement may be waived where the Director of Building Inspection upon recommendation of the Health Department determines that high groundwater, slope stability problems, or other conditions, would inhibit or be aggravated by onsite retention, or where retention will provide no benefits for groundwater recharge or erosion control.
- (b) On projects where onsite percolation is not feasible, all runoff must be detained or dispersed over non-erodible vegetated surfaces so that the runoff rate does not exceed the pre-development level. Onsite detention may be required where excessive runoff would contribute to downstream erosion or flooding. Any policies and regulations for any drainage zones where the project is located will also apply.
- (c) Any concentrated runoff which cannot be effectively detained or dispersed without causing erosion shall be carried in non-erodible channels or conduits to the nearest drainage course designated for such purpose or to onsite percolation devices. Where water will be discharged to natural ground or channels, appropriate energy dissipaters shall be installed to prevent erosion at the point of discharge.
- (d) Runoff from disturbed areas shall be detained or filtered by berms, vegetated filter strips, catch basins, or other means as necessary to prevent the escape of sediment from the disturbed area.
- (e) no earth or organic material shall be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water.

16.12.080 LAND CLEARING.

Land clearing shall be kept to a minimum. Vegetation removal shall be limited to that amount necessary for building, access and construction as shown on the approved erosion control plan.

The following provisions shall apply:

- (a) No land clearing shall take place prior to approval of the erosion control plan. Vegetation removal between -October 15 and April 15 shall not precede subsequent grading or

construction activities by more than 15 days. During this period, erosion and sediment control measures shall be in place.

- (b) All disturbed surfaces shall be prepared and maintained to control erosion and to establish native or naturalized vegetative growth compatible with the area. This control shall consist of:
 1. Effective temporary planting such as rye grass, some other fast-germinating seed and mulching with straw and/or other slope stabilization material;
 2. Permanent planting of native or naturalized drought resistant species of shrubs, trees, or other vegetation, pursuant to the County's Landscape Criteria, when the project is completed;
 3. Mulching, fertilizing, watering or other methods may be required to establish new vegetation. On slopes less than 20%, topsoil should be stockpiled and reapplied,

The protection required by this section shall be installed prior to calling for final approval of the project and at all times between October 15 and April 15. Such protection shall be maintained for at least one winter until permanent protection is established.

- (c) A land clearing permit shall be required for any land clearing of more than 2 1/2 acres per year per site in excess of that shown on an approved development plan; except in water supply watersheds, or high erosion hazard areas, where a permit shall be required for any clearing in excess of one acre per year per site in excess of that shown on an approved development plan. Application for a permit shall be made on forms for that purpose and shall include submittal of an erosion control plan. A permit may be approved, conditioned, or denied pursuant to procedures established by the Board of Supervisors.
- (d) Land clearing that is not a part of a permitted activity shall not take place on slopes greater than 50%, or on slopes greater than 30% in areas of high erosion hazard.

16.12.090 WINTER OPERATIONS.

- (a) No land clearing operations greater than one acre per year per site or grading operations greater than 100 cubic yards may take place between October 15 and April 15, in water supply watersheds and high erosion hazard areas, unless authorized by the Director of Building Inspection and found to be consistent with the purposes of this Ordinance. Winter operations for other projects may be disallowed if a high potential for erosion exists due to slope, rock or soil type, proximity to a stream or drainage course, magnitude or duration of disturbance, or other characteristics of the project and the site. When

construction will be delayed due to the limitation on winter operations, the date for expiration of the permit shall be extended by that amount of time that work is delayed by this Ordinance.

- (b) When winter operations do take place, the following measures must be taken to prevent accelerated erosion. Additional measures may be required.
 1. Between October 15 and April 15, disturbed surfaces not involved in the immediate operations must be protected by mulching and/or other effective means of soil protection.
 2. All roads and driveways shall have drainage facilities sufficient to prevent erosion on or adjacent to the roadway or on downhill properties. Erosion-proof surfacing may be required in areas of high erosion hazard.
 3. Runoff from a site shall be detailed or filtered by berms, vegetated filter strips and/or catch basins to prevent the escape of sediment from the site. These drainage controls must be maintained by the permittee and/or property owner as necessary to achieve their purpose throughout the life of the project.
 4. Erosion control measures shall be in place at the end of each day's work.
 5. The Director of Building Inspection shall stop operations during periods of inclement weather if he determines that erosion problems are not being controlled adequately.

16.12.100 OVERALL RESPONSIBILITY.

It shall be the responsibility of the owner and the permittee to ensure that erosion does not occur from any activity during or after project construction. Additional measures, beyond those specified, may be required as deemed necessary to control accelerated erosion.

16.12.110 EXEMPTIONS.

Conditions of accelerated erosion existing prior to adoption of this Ordinance are not exempted. The intent of this section is not to invalidate existing discretionary permits, but rather to prevent or mitigate accelerated erosion. The following work is exempted from all provisions of this ordinance except Sections 16.12.040, 16.12.160-16.12.190.

- (a) Agricultural Activities: Permitted agricultural grading routine annual agricultural activities such as plowing, harrowing, disking, ridging, listing, leveling and similar operations to prepare a field for a crop.
- (b) Timber Harvesting: Work done pursuant to a valid use permit.

- (c) Quarrying: Quarrying done pursuant to a valid quarry permit.
- (d) Septic Systems and Wells: Work done pursuant to a valid permit for septic system installation and repair or well drilling; however, Sections 16.12.080(b) and 16.12.090(b) shall apply, and sediment from these activities shall not be allowed to enter any stream or body of water.
- (e) Resource Management: Clearing, fuel management, reforestation, erosion control, or other resource management programs carried out under the auspices of a government agency which include appropriate erosion control measures. Agencies shall notify the Director of Building Inspection of such projects.
- (f) Work done pursuant to a valid grading permit.

16.12.120 VARIANCES.

A request for a variance from the provisions of this Ordinance, the permit conditions, or the plan specifications may be approved, conditionally approved, or denied by the Director of Building Inspection. A request for a variance must state in writing the provisions, when it would apply, and its advantages. In granting a variance, the Director of Building Inspection shall be guided by the following criteria:

- (a) That there are special circumstances or conditions affecting the property.
- (b) That the variance is necessary for the proper design and/or function of a reasonable project for the property.
- (c) That adequate measures will be taken to ensure consistency with the purpose of this Ordinance.

16.12.130 FEES.

Fees for checking, inspection, violations, variance requests, and for land-clearing permits shall be set by resolution of the Board of Supervisors.

16.12.140 BOND PROVISION.

The Director of Building Inspection shall require bonds in such form and amounts as may be deemed necessary to assure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions or to mitigate environmental impact.

In lieu of deposit with the Director of Building Inspection in an amount equal to that which would be required in the surety bond.

16.12.150 INSPECTION AND COMPLIANCE.

The Director of Building Inspection shall conduct inspections

to ensure compliance with this Ordinance.

- (a) Inspection: The following inspections may be performed by the Director of Building Inspection or his designee.
 - 1. Pre-site Inspection: To determine the potential for erosion resulting from the proposed project.
 - 2. Operation Progress Inspections: To determine ongoing compliance.
 - 3. Final Inspection: To determine compliance with approved plans and specifications.
- (b) Notification: The permittee shall notify the Director at least twenty-four (24) hours prior to start of the authorized work, and also twenty-four (24) hours prior to any inspection requested by permittee or permittee's authorized agent.
- (c) Right of Entry: The filing of an application for a development permit constitutes a grant of permission for the County to enter the permit area for the purpose of administering this Ordinance from the date of the application to the termination of the erosion control maintenance period. If necessary, the Director of Building Inspection shall be supplied with a key or lock combination or shall be permitted to install a County lock.

16.12.160 APPLICABLE LAWS AND REGULATIONS.

Any person doing work in conformance with this Ordinance must also abide by all other applicable local, state, and federal laws, orders and regulations. Where there is a conflict with other pre-existing County regulations, this Ordinance shall take priority*

16.12.170 VIOLATIONS.

- (a) Right of Entry: The Director of Building Inspection shall have the right to enter and inspect any site for which a permit has been applied for or issued. In addition, whenever the Director of Building Inspection has reasonable cause to believe that there exists upon any site a violation of this Ordinance, he may enter such site at all reasonable times to inspect the same, to perform any duty imposed upon him by this Ordinance; provided that if such premises are occupied, he shall first pre-sent proper credentials and request entry; and if such premises are unoccupied, he shall first make reasonable effort to locate the owner or other persons having charge or control of the premises and request entry. If such entry is refused, the Director of Building Inspection shall have recourse to every remedy provided by law to secure entry.
- (b) Work Stoppage: If the Director of Building Inspection determines that activities are being carried out in

violation of this Ordinance or an approved variance, he may stop all work until corrective measures have been completed. The site shall be posted with a "Stop Work" notice.

(c) Record of Violation: Any person found to be in violation I of the provisions of this Ordinance shall be required to correct the problem upon written notice from the Director of Building Inspection. Such written notice may require that specific conditions be adhered to in the correction of the erosion problem. These may include/ but are not limited to, the following:

1. Use of specific erosion control techniques.
2. Submittal of an erosion control plan, to be approved by the Director of Building Inspection prior to the commencement of work.
3. Completion of work within a specified time period.

16.12.180 NOTICE OF VIOLATION RECORDATION.

Whenever the Director of Building Inspection determines that there is an existing violation of this Ordinance, that grading has not been completed in accordance with a grading permit or the plans and specifications relating thereto, or whenever the Director of Building Inspection determines that grading has been without the required permit, the Director of Building Inspection may record a Notice of Violation with the office of the County Recorder. The owner(s) of the property, as revealed by the assessment roll, on which the violation is situated and any other person responsible for the violation shall be notified of the recordation, if their address is known to the Director of Building Inspection or is otherwise reasonably available.

If the property owner(s) or authorized agent disagrees with the determination he may submit evidence to the Director of Building Inspection indicating that there is no violation and then shall have a right to appeal an adverse decision of the Director of Building Inspection to the Building Appeals Board and the Board of Supervisors in accordance with the provisions of the Sections 18.04.040 and 18.04.050 of the Monterey County Code as it may be hereafter amended.

16.12.190 PENALTIES.

Any person, whether as principal, agent, employee, or otherwise, violating or causing or permitting the violation of any of the provisions of this Ordinance, shall be deemed guilty of an infraction, and upon conviction thereof shall be punishable by a fine of not more than \$250. Each separate day or portion thereof during which any violation occurs or continues without a good faith effort by the responsible person to correct the violation, shall be deemed to constitute a separate offense, and upon conviction thereof shall be punishable as herein provided.

16.12.200 ENFORCEMENT.

The Director of Building Inspection and his delegated subordinates, pursuant to the provisions of Section 836.5 of the Penal Code of the State of California, are hereby authorized to arrest a person without a warrant whenever they have reasonable cause to believe that the person has committed an infraction in their presence which is a violation of any of the provisions of this Ordinance. Upon making such an arrest, the Director of Building Inspection or his delegated subordinates shall prepare a citation and release the person arrested pursuant to Section 853.6

Erosion Control

of the Penal Code of the State of California, the provisions of which are hereby adopted by reference as part of this Section.

16.12.210 APPEALS.

Any property owner or other person aggrieved or any person whose interests are adversely affected by any act or determination of the Director of Building Inspection under the provisions of this Ordinance, or by any act or determination of any other authorized employee charged with the administration and enforcement of this Ordinance, may appeal the act or determination to the Board of Appeals and subsequently the Board of Supervisors in accordance with the Monterey County Code Sections 18.04.040 and 18.04.050. For this purpose, the procedure therein set forth is incorporated herein and made a part of this Ordinance.

PASSED AND ADOPTED THIS 8th day of DECEMBER, 1981,
by the following vote:

AYES: Supervisors Del Piero, Shipnuck, Petrovic, Moore,
Peters.

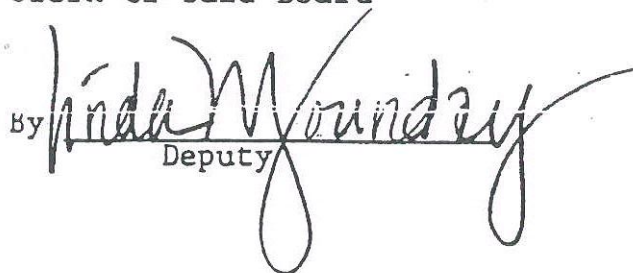
NOES: None.

ABSENT: None.


Chairwoman of the Board of Super-
visors, County of Monterey

ATTEST:

ERNEST A. MAGGINI
Clerk of said Board

By 
Deputy

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section covers the general requirements and procedures for testing and start-up of the various facilities and systems included in this Contract, and also the requirements for attaining the Agency's acceptance of the Work as complete. Specific requirements and procedures are described in individual technical sections of this Project Manual.
- B. Exceptions noted in an individual technical section modify only the individual Article and related topic described in this Section; other topics and Articles in this Section remain in force unless specifically deleted by the technical Section.
- C. Work Included in This Section:
 - 1. System description
 - 2. Submittals
 - 3. Maintenance of new work
 - 4. Testing and commissioning of repaired gravity sewer
 - 5. Substantial completion
 - 6. Final completion
- D. Related Work specified in Other Sections:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 32 16 – Construction Progress Schedule
 - 3. Section 33 08 30 – Commissioning of Wastewater Utilities

1.02 SYSTEM DESCRIPTION

- A. Design Requirements of Testing System:
 - 1. Design temporary connections and utility lines to meet the specified design requirements of the component of the gravity sewer system to which they are connected. This includes providing water and, where required, air for pressure and leakage tests, and the disposal of water used in testing.

2. Do not place structural loads on permanent facility elements beyond their design load capacity.
4. Provide dielectric unions on temporary connections wherever dissimilar metals connect.
5. Provide safety valves and similar safety devices on temporary connections wherever they would be required if the connections were permanent.

1.03 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Technical Specifications Section 01 33 00, "Submittal Procedures". Submit the documents identified below in advance of commencing the respective work in conformance with applicable requirements.
- B. Procedures: Submit to the Agency for review and approval a detailed description of testing and initial start-up procedures that are intended to be used for all piping systems, along with respective test report forms specific for each system being tested and procedures for leakage testing of all piping systems. Submit these procedures and test reports forms a minimum of thirty (30) days prior to the date of these activities as shown on the Contractor's construction schedule and obtain approval prior to initiating testing and start-up. Incorporate into the testing and start-up procedures any specific requirements hereinafter specified for a particular piece of equipment.
 1. The testing and start-up (commissioning) procedure is the responsibility of the Contractor who is solely responsible for its means, methods, techniques, sequences, procedures, coordination, completeness, accuracy, and validity.
 2. Individual sections of the start-up procedure may be accepted by the Agency, with Agency's prior approval, but must be incorporated into the final accepted start-up procedure.
 3. Rejection of individual sections of the start-up procedure by the Agency is not a cause for a claim of delay.
 4. Identify each person or organization that will have a functional part in the start up, and identify their duties and responsibilities.
 5. Provide for corrective actions and other contingencies on validation failure.
 6. Provide complete information on temporary connections in the form of shop drawings or a complete written description or a combination of both.
- C. Test Data: Submit completed test report forms, as described herein, containing data collected during initial and subsequent re-testing, if performed, to the Agency for review and record purposes.

1.04 MAINTENANCE OF NEW WORK

- A. Provide proper maintenance of work furnished and installed as part of this Contract until accepted by the Agency. Consult with Agency prior to conducting maintenance work and coordinate activities with Agency's maintenance staff.

PART 2 - PRODUCTS

2.01 TESTING MATERIALS

- A. Provide power, air, water and fuels if required for testing procedures.

PART 3 - EXECUTION

3.01 TESTING AND START-UP

- A. Test piping system(s) to the satisfaction of the Agency before placing the respective pipe section into service. Satisfactorily complete leakage and mandrel testing of gravity pipelines, unless otherwise specifically waived by the Agency, before placing facilities into operation. Record all data collected during the testing on the approved test report forms. Refer to Paragraph 1.03 above regarding submittal of collected data.
- B. Start-Up and System Validation Testing: Not Required

3.02 PERSONNEL TRAINING – NOT REQUIRED

3.03 RETESTING COSTS

- A. The Agency reserves the right to deduct monies due to Contractor to cover the Agency's additional costs should the Contractor be required to retest the completed facilities.

3.04 SPECIAL REQUIREMENTS AND SEQUENCES FOR FINAL FACILITY TESTING AND ACCEPTANCE - NOT USED.

3.05 SUBSTANTIAL COMPLETION

- A. Substantial Completion shall be defined as the date upon which written acceptance by the Agency has occurred stating that the construction of each facility (gravity pipe section or sections) in the Work is sufficiently completed in accordance with the Contract Documents, such that each facility can be utilized for the purpose for

which it is intended and the Agency thereupon takes beneficial occupancy of each facility.

- B. The following items as they pertain to the Work are included in the requirements which shall be completed prior to Substantial Completion being certified unless described otherwise herein:
 - 1. All requirements of this Section and the General Provisions.
 - 2. Submission of all required shop drawings, guarantees, and warranties.
 - 3. Correction of all Work deficiencies and/or non-compliances which affect the utilization of the facilities. Determination of whether or not any given deficiency or non-compliance affects the utilization of the Contract Work shall be the decision of the Agency and shall be final and binding.
 - 4. Written certification by the Contractor stating that all the above items have been accomplished and a request that the Agency accept the facility (completed Work) as Substantially Complete.

3.06 FINAL COMPLETION

- A. Final Completion shall be defined as the date upon which written acceptance by the Agency has occurred stating that the Construction of all remaining Work as required by the Contract Documents, is completed in accordance with the Contract Documents.
- B. The following items as they pertain to all remaining Work of the Project are included in the requirements, which shall be completed prior to Final Completion being certified:
 - 1. Correction of all work deficiencies and/or non-compliance items. The punch list for the entire Contract shall be resolved to the Agency's satisfaction prior to Final Completion.
 - 2. Removal of all salvageable material to the Agency's designated site, disposal of all non-salvageable materials, and cleanup of the project area.
 - 3. Completion of all landscaping and landscape restoration and restoration of fences fence gates and storage buildings to their original location and condition unless otherwise directed by the Agency.
 - 4. Written certification by the Contractor stating that all the above items have been accomplished and a request that the Agency accept the project as having attained "Final Completion."

END OF SECTION 01 70 00

DIVISION 02

EXISTING CONDITIONS

SECTION 02 41 00

DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section. Perform demolition, complete as indicated, specified and required.
- B. Work Included in This Section:
 - 1. Demolition of designated areas, as shown in the Drawings.
 - 2. Cutting and removal of existing paving to permit excavation and to accommodate Work of this General contract
 - 3. Cutting and removal of existing piping and appurtenances, to accommodate Work of this General Contract.
 - 4. Cutting, demolition and removal of existing gravity sewer pipe and existing improvements obstructing performance of this Work.
 - 5. Removal from site and disposition in a legal manner of debris and all salvageable and demolished materials without on-site accumulation thereof.
 - 6. Obtain necessary permits, licenses and inspections as incidental to work of this Section.
 - 7. Protection of existing and new Work from damage.
- C. Related Work specified in Other Sections:
 - 1. Section 31 10 00 – Site Clearing and other work specified in pertinent Sections of the Specifications.
 - 2. Section 31 23 00 – Excavation and Fill
 - 3. Section 31 23 33 - Trenching, Backfilling, and Compaction
 - 4. Section 32 12 00 – Asphalt Concrete Paving.

1.02 VERIFICATION OF CONDITIONS

- A. Prior to performance of demolition work, inspect the site, and perform the following:
 - 1. Thoroughly investigate on and off-site conditions as they affect work of this Section. Determine type of structures, materials to designate for salvage,

improvements, new construction schedule and priorities and applicable requirements of governing authorities.

2. Obtain and pay for all incidental licenses, permits, and inspections required by governing authorities.
3. Perform work in a fully coordinated manner with Work of other contractors and/or other trades to assure completion without interference or delay to progress of the Work.

1.03 SUBMITTALS.

- A. Comply with the requirements and procedures specified in Section 5-1.23 of the Standard Specifications and section 01 33 00, "Submittal Procedures".
- B. Prepare and submit a detailed demolition plan, including work procedures and safety precautions to be used in the identification, demolition, handling, removal, transportation, and salvaging or disposal of the materials removed. Attend a meeting with Agency's representative to discuss the demolition plan prior to starting demolition work.

1.04 REQUIREMENTS

- A. Methods and Timing: Prior to commencing any particular demolition work, submit in writing to the Agency a detailed proposal including time sequence and the methods, which are proposed to be used for the particular demolition operation. Delay demolition work in particular locations until the Agency has approved, in writing, the methods to be employed and has given notice to proceed. Approvals by the Agency of methods to be used in no way limits the responsibility of the Contractor under any clause in any of the Specifications.
- B. Pipes, Utilities, and Conduits:
 1. The locations where pipes and conduits are to be encountered are generally shown on the Drawings. Where the location for cutting is not specifically shown, cut the pipe or conduit at the limit of demolition or at some other location approved in advance by the Agency.
 2. Inform the Agency in writing at least 72 hours prior to the cutting of any pipes or conduits leading to or from a structure or piping to be demolished. Bring to the attention of the Agency any pipes or conduits which are located and which are not shown on the Drawings.
 3. Where pipes, conduits, utilities, etc., are necessarily to be cut to perform the Work, either carefully or permanently cap the existing improvements as specified by the Contract Documents, or reroute as indicated on the

Drawings. Cap, extend, protect, or rework as necessary for completion of the work as directed by the Owner those utility lines not specifically noted for disposition, but which are encountered in the Work.

- C. Debris Removal: Remove all rubble, debris, and waste materials generated during the demolition procedures for the Work from the site as it accumulates. Keep the whole of the site occupied as a result of the activities for the Work in a clean and orderly state. At no additional expense to the Agency, find suitable dumping grounds for the waste materials and pay any costs whatsoever involved in securing the dumping grounds. Use only the dumping ground sites approved by all relevant authorities. Seek and obtain such approval and file with the Agency copies of all approvals or agreements so obtained.

1.05 PROTECTION

- A. Take care to prevent spread of dust and flying particles. Sprinkle rubbish and debris with water to keep dust to a minimum.
- B. Maintain adequate fire protection, including extinguishers and operative water-hose lines, during demolition of flammable portions of Work.
- C. Provide temporary barricades, fences and safeguards to eliminate hazards to persons and property without interference to use of adjacent property, public rights-of-way, utilities and structures.

1.06 SAFETY RULES AND REGULATIONS

- A. Perform demolition in conformance with applicable requirements of Article 31, Demolition, of the Construction Safety Orders of the California Division of Occupational Health and Safety.
- B. Treat and handle asbestos thermal or sound insulation encountered in performance of the Work in conformance with requirements of Section 5208 of General Industrial Safety Orders of California Division of Occupational Health and Safety.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PERFORMANCE, GENERAL

- A. Upon commencement of the Work, bear responsibility for equipment items taken from service preparatory to demolition and areas which are occupied for the purpose of conducting the demolition work of the Contract, until such work is completed. This responsibility shall extend to the prevention of damage to equipment, buildings and structures which are not designated for demolition but which occur as a result of the activities for the Work.
- B. Perform Work by personnel experienced in this type of work and in such manner as to eliminate hazards to persons and property without interference with new work and with the use of adjacent areas, public rights-of-way, utilities and structures.
- C. Coordinate fully with work of other trades, and perform all work in conformance with applicable requirements Safety Orders hereinbefore specified in Article 1.06, Safety Rules and Regulations.
- D. Utilities:
 - 1. Notify utility firms having company-owned equipment on site.
 - 2. Seal in an approved manner all utility services encountered during work of this Section.
 - 3. Remove and dispose off-site the abandoned piping, conduits and other utilities that are inside the work area and are not designated as "to be salvaged."
- E. During the progress of Work and upon completion, conform in every detail to the Drawings and Specifications. Should any detail or details be omitted from the Drawings, then furnish and execute such detail so that on completion of the proposed construction the site conditions are acceptable to the Agency and fully operative as required.

3.02 EXISTING IN-USE PIPING

- A. When cutting into existing in-use piping, take special care to prevent disturbance of the existing pipe bedding and jointing. Carefully drill and saw-cut openings without the use of impact tools. Employ methods resulting in the prevention of debris

spillage into existing piping. Exercise care in the removal of cut out sections to avoid spillage into existing piping.

3.03 CLEANING

- A. Keep the work area and the adjacent areas affected, free and clear from all debris caused by the work of this Section. During and upon completion of work herein specified, promptly remove from buildings and site all debris, unused materials and equipment caused by the work of this Section, and leave the Work in a clean, acceptable condition.

END OF SECTION 02 41 00

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DIVISION 03

CONCRETE

SECTION 03 11 00
CONCRETE FORMING

PART 1 GENERAL

1.01 DESCRIPTION

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of these Specifications form a part of this Section. Provide formwork for cast-in-place concrete as indicated, specified, and required.

1.02 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies: The requirements of California Division of Occupational Health and Safety Construction Safety Orders Section 1717 and OSHA Part 1926, Section 1926.701 apply to the Work of this Section; prepare and maintain at least one copy of the required drawings at the site. Design of the structures and improvements shown on the Drawings does not include any allowance or consideration for imposed construction loads. Provide adequate forms, shoring and falsework meeting the requirements of Section 51 of Caltrans Standard Specification, most recent edition, for imposed live and dead loads, including equipment, height of concrete drop, concrete and foundation pressures, stresses, lateral stability, and other safety factors during construction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 03 11 00

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SECTION 03 20 00
CONCRETE REINFORCING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of these Technical Specifications form a part of this Section. Provide reinforcing work, complete as indicated, specified and required.

1.02 SUBMITTALS

- A. Comply with general requirements and procedures specified in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures". Submit the following documents in advance of fabrication in conformance with applicable requirements of the referenced Sections.
- B. Shop Drawings: Submit shop drawings for reinforcing steel prepared in accordance with ACI Detailing Manual, Publication SP-66 (04). Show layouts, bending diagrams, assembly diagrams, dimensioned types and locations of all bar laps and splices, and shapes, dimensions, and details of bar reinforcing and accessories. Include layout plans for bar supports and chairs, with typical details. Dimensions and quantities shown on the shop drawings are the responsibility of the Contractor and Agency's approval of shop drawings shall not constitute approval of dimensions and quantities thereon.

1.03 QUALITY ASSURANCE

- A. Requirements: Perform all work specified herein and as shown on the Drawings in conformance with Section 52 of Standard Specifications most recent edition unless otherwise specified.

PART 2 - PRODUCTS

2.01 REINFORCING

- A. Deformed bars conforming to ASTM A615, Grade 60.

2.02 WELDED WIRE MESH

- A. Conform to ASTM A185

PART 3 – EXECUTION - NOT USED

END OF SECTION 03 20 00

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Requirements specified in the Division 1 of the Standard Specifications, the Special Provisions and Division 1 of these Technical Specifications form a part of this section. Provide cast-in-place concrete work, complete as indicated, specified and required.

1.02 REFERENCE STANDARDS

- A. Provide all concrete work conforming to requirements of Sections 51 and 90 of Standard Specifications, most recent edition, unless otherwise indicated.

1.03 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures", of these Technical Specifications.
- B. Submit for the Agency's approval the following information and data sufficiently in advance of, but not less than 30 days prior to, placement of the respective concrete mix. Place no concrete without the Agency's prior approval of all materials and associated accessories to be used.
 - 1. Detailed description of each mix design used in the work identifying the composition and proportions or quantities of all mix ingredients, including entrained air and admixtures used. Include, with the basic mix data, preliminary strength test reports and drying shrinkage test report for each mix design or, as permitted, the alternative of certified test results of previously used concrete mix designs.
 - 2. A letter of certification that the concrete materials, mix properties, and work for each mix design conforms to the requirements indicated and specified herein.

1.04 CONCRETE MIX DESIGNS

- A. Compressive Strength Requirements: Provide normal weight aggregate concrete mixes providing the following minimum compressive strength for use in various locations:
 - 1. Class 1 - 4,000 psi Concrete: Provide throughout except as hereinafter specified.

- B. Water/Cement Ratios: Design mixes for normal weight aggregate concrete for a maximum water/cement ratio at 0.45.
- C. Admixtures: Add to concrete mixes, upon approval prior to use, and modify mix design proportions accordingly.
 - 1. Color Agent: For concrete used to construct roadside drainage ditches or erosion protection on the banks of the creek, add 2 pounds of Mesa Bluff color per sack of cement.

PART 2- PRODUCT

2.01 WATERSTOPS

- A. Preformed Plastic Adhesive Waterstop:
 - 1. Provide waterstop meeting requirements of Federal Specification SS-S-210A, "Sealing Compounds for Expansion Joints".
 - 2. Manufacturer: SF302 Synko-Flex by Henry Company, or approved equal.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Before Placing: Remove excess water from forms, or excavation where earthen slopes are used for forming, before concrete is deposited. Divert any flow of water without washing over freshly deposited concrete. Remove hardened concrete, debris, and foreign materials from interior of forms and from inner surfaces of mixing and conveying equipment.
- B. Reinforcement: Secure under work of Sections 03 11 00, "Concrete Forming", and 03 20 00, "Concrete Reinforcing, and have inspected and approved by Agency. Provide embedded metal free of old mortar, oils, mill scale, and other encrustations or coatings that might reduce bond. Do not allow wheeled concrete-handling equipment to travel over reinforcing nor support runways on reinforcing.
- C. Wetting: Wet wood forms sufficiently to tighten up cracks. Wet other materials sufficiently to reduce suction and maintain concrete workability.
- D. Earth Subgrade: Fine grade subgrades smooth and level. Lightly dampen 24 hours in advance of concrete placing, but do not muddy. Remove all loose materials. Place screeds, where used, accurately at intervals not exceeding 8 feet. Support screeds on adjustable, removable metal screed supports.

- E. Aggregate Fill Base: Prepare same as earth subgrade.

3.02 WATERSTOPS

- A. Preformed Plastic Adhesive Waterstop: Install waterstop in strict compliance with manufacturer's instructions. Construct waterstop continuous in joints completely sealing the structure or other indicated application. Visually inspect all waterstops, splices, joints, and intersections before concrete or adjoining precast structure section or work is placed. Locate waterstops where shown on Drawings, and in water bearing walls and slabs where common to: earth-bearing or earth-support; occupied areas; or above grade exposed surfaces.

3.03 CONVEYING AND PLACING CONCRETE

- A. Do not pour concrete until forms and reinforcing steel have been inspected and approved as specified in Sections 03 11 00 and 03 20 00, respectively. Notify Agency at least 24 hours in advance of readiness for inspection of forms and reinforcing. Do not handle or pump concrete utilizing aluminum equipment.
- B. Weather: Do not place concrete during rain or freezing weather unless approved measures are taken to prevent damage to concrete. When concrete is placed during periods of dry winds, low humidity, high temperatures, and other conditions causing rapid drying, initially cure the concrete surface with a fine fog spray of water applied immediately after finishing and maintained until final curing operations are started. Also, under hot weather conditions, take steps to reduce concrete temperature and water evaporation by proper attention to ingredients, production methods, handling, placing, protection, and curing. Subject to Agency's approval, employ applicable preventative measures for placing concrete during hot and cold weather in conformance with ACI 305 and 306, respectively entitled, "Hot Weather Concreting", and "Cold Weather Concreting".
- C. Conveying: Do not drop concrete from its point of release at mixer, hoppers, tremies, or conveyances more than 3 feet, nor through reinforcing bars in a manner that causes segregation. Provide tremies, elephant trunks, and equivalent devices as required. The use of chutes for conveying or depositing concrete is not allowed except for small isolated portions of the work and only with prior approval of Agency. Deposit concrete directly into conveyances and from conveyances to final points of repose. Deposit concrete so that the surface is kept level throughout, a minimum being permitted to flow from one portion to another.

- D. **Placing Concrete:** Place and compact concrete within 60 minutes after water is first added to the mix, and do not place concrete after there is evidence of initial set. Retempering of concrete is not allowed.
1. **Lifts:** Pour concrete into forms immediately after mixing in a manner that will prevent separation of ingredients. Except as interrupted by joints, place formed concrete in continuous, approximately horizontal layers, the depths of which generally shall not exceed 18 inches. The Agency will require lesser depths where necessary to ensure each new layer being placed while the previous layer is still soft and so the two layers can be made monolithic by penetration of the vibrators.
 2. **Pumping Concrete:** No increase in the specified slumps will be allowed, maintain required water/cement ratios for concrete pumping. Aluminum tubes are not acceptable for conveying concrete. Employ equipment capable of maintaining the specified pour rates. Conform to requirements of ACI 304, except as more stringent requirements are specified herein. Use minimum conduit (tube) diameter of 4 inches.
 3. **Pour Rates:** Place concrete at a rate that ensures all deposits are joined to concrete that is still plastic.
- E. **Compaction:** Obtain effective compaction by vibration, agitation, spading, or rodding until the concrete is free from voids, air bubbles, or rock pockets. Do not use vibrators to transport concrete within the forms. Provide not less than one spare vibrator for each two vibrators in use on a pour, each in good working condition on the job during pours. Assign one experienced worker to the operation of each vibrator as his only duty. Immediately correct operations not deemed by the Agency to be satisfactory.

3.04 WATER TIGHTNESS OF CONCRETE STRUCTURES

- A. The requirements specified below apply also to precast concrete manholes.
- B. Test all concrete structures designed to contain or convey fluid for water-tightness prior to earth backfilling by filling with water to levels approximating what will be attained during operation and measure the drop in level due to leakage, if any. Perform these tests under the direction of the Agency, and if necessary repeat the tests until water tightness is ensured. Perform tests prior to backfilling below grade structures and prior to installation of any coating.
- C. Limit rate of filling to minimize shock-effect to new concrete construction. Hold water under each condition long enough to satisfy the Agency that the structures are watertight. Demonstrate that structures are free of internal or external water leakage.

- D. Do not exceed a total loss of water-level of 1/2 inch depth in any structure, basin or channel over 24 hours. Locate and stop leakage and test the structure again until this requirement is met. If the structure does not meet the test, repair or replace at no expense to the Agency such part of the work as may be necessary to secure the desired results, as approved by the Agency.
- E. Regardless of the rate of leakage, no visible leakage from any concrete structure is permitted.

3.05 QUALITY OF WORK

- A. Concrete work which is found to be in any way defective or out of tolerance may be ordered by the Agency to be removed and replaced. Should this action occur, bear full responsibility for all costs.
- B. Repair or replace concrete containing the following principal defects to the satisfaction of the Agency, at no additional cost to the Agency.
 - 1. Not meeting minimum strength.
 - 2. Not formed properly as indicated.
 - 3. Not true, plumb or level.
 - 4. Cracks detrimental to performance or appearance.
 - 5. Shavings, debris, honeycomb or voids.
- C. Include in the replacement of defective concrete all expenses pertaining to additional testing and inspections required as a result of such defective concrete. Repair of holes from core cutting is also included in this provision.

END OF SECTION 03 30 00

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DIVISION 04

MASONRY

(NOT USED)

DIVISION 05

METALS

(NOT USED)

DIVISION 06

WOOD, PLASTICS, AND COMPOSITES
(NOT USED)

DIVISION 07

THERMAL AND MOISTURE PROTECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section. This Specification is intended to be general in scope as to locations of caulking and sealants.
- B. Section Includes:
 - 1. Submittals.
 - 2. Warranty.
 - 3. Materials.
 - 4. Surface preparation.
 - 5. Application/installation.
- C. Related Sections: Coordinate with the work of this Section additional information pertaining to sealing and/or caulking found in the various specific trade sections of these Specifications.
 - 1. Section 03 30 00 - Cast-in-Place Concrete
 - 2. Section 09 90 00 - Painting and Coating
 - 3. Section 33 05 20 - General Piping Requirements

1.02 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures". Prior to purchase or delivery of materials, submit the following, and obtain Agency's approval.
- B. Samples and Technical Data:
 - 1. Submit technical data by all manufacturers of proposed materials.
 - 2. Submit material manufacturers' printed preparation and application instructions to Agency and furnish copies to all trades concerned.
- C. Shop Drawings and Mock-Ups: When requested, submit the following in accordance with these Specifications:
 - 1. Full-size details indicating all the necessary components for each type of joint to be sealed.

2. Observed field conditions and measurements. Schedule mockup units or test sections after receiving written approval of shop drawings by the Agency.

1.03 QUALITY ASSURANCE

- A. Examine all Drawings and Details thoroughly and be familiar with the extent of the caulking and sealing involved. Only a complete and absolutely watertight and weather-tight job will be accepted.

1.04 WARRANTY

- A. Fully guarantee all materials and workmanship under this Section for a period of 3 years from the date of final acceptance of the work against all defects in both workmanship and materials. Promptly correct and/or replace such faulty work if so notified, at no additional cost to the Agency.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Delivery: Deliver sealant and caulking compounds in unopened factory labeled containers; with labels bearing statement of conformance to standards specified for each material; and bearing manufacturer's name and product designation.
- B. Colors: As selected to match adjoining surfaces. Special colors may be required.
- C. Sealant Compounds: Furnish materials conforming to Fed. Spec. TTS00227E(3) for multi-component sealant, or to Fed. Spec. TTS00230C(2) for single component sealant. Furnish 1-part sealant materials having properties and adhesion equal to 2-part materials. Furnish Type I or Type II sealants, as applicable. Limit sealants to acceptable compound compositions which are polysulfide, polyurethane, and silicone. Use Class "B" sealants each conforming with above referenced Federal Specifications or with ASTM C920 like characteristics. For above grade sealants, use products that are resistant to ultra-violet deterioration.
 1. For joints in waterbearing surfaces, use only polyurethane or polysulfide sealants certified and approved by manufacturer for continuous or intermittent submergence in water or sewage.
 2. Use silicone type sealant only on above grade joints that are not subject to immersion or to vehicular or pedestrian traffic.
 3. For Traffic (Vehicular or Pedestrian) Horizontal Sealant Joints: Furnish MAMECO International's No. 45, or equal. Provide with Shore "A" Hardness Range of 25-35.
- D. Primer: Where required, use as recommended in writing by the sealant manufacturer. Furnish primer that has been tested for non-staining characteristics and durability on samples of actual surfaces to be sealed.

- E. Backup Materials and Preformed Joint Fillers: Use non-staining material, compatible with sealant and primer, and of a resilient nature, such as closed cell polyethylene rod, or elastomeric tubing or rod (neoprene, butyl, or EDPM). Do not use materials impregnated with oil bitumen, or similar. Furnish size and shape compatible with that as indicated by joint details in Drawings and as recommended by sealant manufacturer in writing. Do not use sealant that adheres to backup material.
- F. Bond Breakers: Where required, furnish polyethylene tape, aluminum foil or other material as recommended by sealant manufacturer in writing.

PART 3 - EXECUTION

3.01 GENERAL

- A. Perform work of this Section by material manufacturer's approved applicator in strict conformance with manufacturer's printed instructions, or perform such operations under direct supervision of qualified representative of material manufacturer.
- B. With the assistance of the applicator, examine all surfaces and report to the Agency all conditions not acceptable. Correct all unacceptable conditions and provide a certification of acceptability before proceeding with installation of the sealants and caulking.

3.02 PREPARATION

- A. Thoroughly clean all joints, removing all foreign matter such as dust, oil, grease, water, surface dirt, frost and old caulking materials. Apply sealant to the base surface. Entirely remove existing or previously applied paint or primer.
- B. Clean porous materials such as concrete masonry or stone where necessary by grinding, blast cleaning, mechanical abrading, acid washing or combination of these methods to provide a clean, sound base surface for sealant adhesion.
 - 1. Remove laitance by acid washing, grinding, or mechanical abrading.
 - 2. Remove form oils by blast cleaning.
 - 3. Remove loose particles present or resulting from grinding, abrading or blast cleaning by blowing out joints with oil-free compressed air (or vacuuming) prior to application of primer or sealant.
- C. Clean nonporous surfaces, such as metal and glass, by either mechanical or chemical means. Remove protective coatings such as methacrylate lacquer on metallic surfaces by a solvent that leaves no residue. Use solvent with clean cloths or lintless paper towels. Do not allow solvent to air dry without wiping. Wipe dry with clean, dry cloth, or lintless paper towels.

- D. Clean joint areas to be protected with masking tape or strippable films before application of tape or film.
- E. Ensure all joints to receive sealant are as indicated on shop or Contract Drawings. Do not seal joints until they are in compliance with Drawings or meet with the approval of the Agency.
 - 1. Construct joints to receive sealant a minimum of ¼ inch wide by ¼ inch deep, unless otherwise approved.
 - 2. For joints in concrete, masonry, or stone: provide a depth of the sealant equal to the width of joints up to ½-inch wide. For joints ½-inch to 1 inch wide: provide a depth equal to ½-inch. For expansion and other joints, 1 to 2 inches wide: do not make depth greater than ½ the applied sealant width. For joints exceeding 2 inches in width: provide depth as directed by sealant manufacturer.
 - 3. For joints in metal, glass, and other nonporous surfaces: provide sealant depth a minimum of ½ the applied sealant width, and in no case exceed the applied sealant width.
- F. Clean out joints to receive sealant, backup material or preformed joint filler and rake to full width and depth as required by Applicator.
- G. Construct joints of sufficient width and depth to accommodate specified backup material or preformed joint filler and sealant.

3.03 APPLICATION

- A. Install backup material or joint filler, of type and size specified, at proper depth to provide sealant dimensions as detailed. Provide backup material of suitable size and shape; and compressed 25 to 50 percent to fit joints as required. Do not apply sealant without backup material and/or bond breaker strip. When using backup tube, avoid lengthwise stretching. Do not twist or braid tube or rod.
- B. Apply masking tape, where required, in continuous strips in alignment with joint edge.
- C. Prime surfaces, where required, with primer as recommended by sealant manufacturer.
- D. Follow sealant manufacturer's instruction regarding mixing (if required), surface preparation, priming, and application procedure.
- E. Apply sealant under pressure with hand or power actuated gun or other appropriate means. Employ a gun having a nozzle of proper size and providing sufficient pressure to completely fill joints as designed. Tool all joint surfaces to provide the contour as indicated on Drawings. When tooling joints, use tooling solution

recommended by manufacturer. Remove masking tape immediately after joints have been tooled.

1. For sealant application when air temperature is below 40 degrees Fahrenheit (4 degrees Celsius), consult sealant manufacturer for recommendations.

3.04 CLEANUP AND PROTECTION

- A. Clean adjacent surfaces of sealant as work progresses. Use solvent or cleaning agent as recommended by sealant manufacturer. Leave finished work in a neat, clean condition.

3.05 QUALITY CONTROL

- A. Provide sealant joints that are uniformly smooth, free of wrinkles, flush with adjacent surfaces and absolutely water tight. Wipe clean and leave neat adjacent surfaces that have been soiled by the application of the sealing compound. The work will be judged defective due to the sealant's hardening, cracking, crumbling, melting, wrinkling, shrinking, splitting, leaking, or running.

END OF SECTION 07 92 00

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DIVISION 08

**OPENINGS
(NOT USED)**

DIVISION 09

**FINISHES
(NOT USED)**

DIVISION 10

**SPECIALTIES
(NOT USED)**

DIVISION 11

**EQUIPMENT
(NOT USED)**

DIVISION 12

FURNISHINGS
(NOT USED)

DIVISION 13

**SPECIAL CONSTRUCTION
(NOT USED)**

DIVISION 14

CONVEYING EQUIPMENT
(NOT USED)

DIVISION 21

**FIRE SUPPRESSION
(NOT USED)**

DIVISION 22

**PLUMBING
(NOT USED)**

DIVISION 23

HEATING, VENTILATING AND AIR CONDITIONING
(HVAC)
(NOT USED)

DIVISION 25

INTEGRATED AUTOMATION
(NOT USED)

DIVISION 26

**ELECTRICAL
(NOT USED)**

DIVISION 27

COMMUNICATIONS

(NOT USED)

DIVISION 28

ELECTRONIC SAFETY AND SECURITY
(NOT USED)

DIVISION 31

EARTHWORK

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section.
- B. Work Included in This Section:
 - 1. Submittals.
 - 2. Disposal off site of all debris, stumps, roots, pavement and other objectionable materials.
 - 3. Removal and storage of topsoil.
- C. Related Work specified in Other Sections:
 - 1. Section 02 41 00 - Demolition
 - 2. Section 31 23 00 – Excavation and Fill
 - 3. Section 31 23 33 - Trenching, Backfilling and Compaction

1.02 CODE REQUIREMENTS AND ENVIRONMENTAL SAFEGUARDS

- A. Accomplish disposal of material removed from site in accordance with applicable State and local regulations. At all times, comply with regulations in force to prevent pollution of air and water.

1.03 SITE INVESTIGATIONS

- A. Carefully examine the site to determine the full extent of the Work required to conform to the Drawings and Specifications. Verify the nature and location of the Work, conditions, the formation and condition of the existing ground surface and the character, equipment and facilities needed prior to and during prosecution of the Work. Verify the existence of the obstacles to be encountered, if any. Bring to the Agency's attention any inaccuracies or discrepancies between the Drawings and Specifications discovered, in order to clarify the exact nature of the Work to be performed. Refer to the paragraph 1.02 in Section 31 23 00 of these Specifications.

1.04 SAFETY

- A. Comply with OSHA requirements and with the regulations of the “General Construction Safety Orders” of the State of California, Department of Industrial Relations, Division of Occupational Safety and Health (DOSH).

1.05 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, “Submittal Procedures”.
- B. Furnish for Agency’s review a written description of the proposed work plan for removing and storing topsoil, including location of storage sites and method of protecting topsoil from contamination and erosion (wind and rain). Submit description not less than fourteen (14) days before beginning the work.

1.06 JOB CONDITIONS

- A. Limits of clearing work are identified as follows:
 - 1. Not to exceed the width of the construction easement where shown on the Drawings.
 - 2. Width of pipe trench for pipeline construction in existing street or road right-of-way areas or other paved areas.
- B. Do not clear areas outside the boundaries of the easements, construction areas or property lines shown on the Drawings and specified above.
- C. Protect trees and other landscaping specifically shown on the Drawings or identified in the field as requiring protection from damage resulting from work for this Contract. Restore any protected trees or vegetation damaged as a result of this Work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLEARING AND SITE PREPARATION

- A. Include in the clearing and site preparation the removal from the site of all vegetation, including, but not limited to: weed growth, brush, shrubs, stumps, logs,

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Site Clearing

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roots and boulders within the Project area as well as the foundations, walls, slabs, pavements, walkways, buried drain lines, utilities, pipes indicated on the Drawings to be removed. In off-road and other vegetated areas strip and remove an additional minimum of 6 inches depth of the existing soil after clearing and removing all vegetation growth, such material to be designated topsoil for storage and restoration to the originating site area. Clean holes resulting from the removal of underground structures and roots that extend below the finished grade and backfill with suitable materials compacted in conformance with requirements of Section 31 23 00, "Excavation and Fill".

- B. Procure or provide all permits, lighting, temporary barricades, fencing, etc., required for Work within the construction limits. Bear, and relieve the Agency of, any and all legal responsibility for this phase of the Work.
- C. Remove trees, shrubs, and vegetation only with prior Agency approval. Violation of this provision shall require the Contractor to bear all damages and consequences. Do not damage as a result of the operations under this Section or any other Section the roots of trees to remain. Do not use herbicides for the control of woody plants. Trunks, stumps, limbs, branches and roots within the designated work area may be removed without Agency approval, unless otherwise designated.
- D. Selectively remove, as determined by the Agency, undesirable shrubs and saplings, and surface vegetation within the construction limits. Preserve existing growth on adjacent land and rights-of-way.
- E. Topsoil: Rake the cleared area with a tooth harrow to remove remaining roots and vines. Remove the topsoil to a depth of 15 inches unless otherwise approved by the Agency, to a designated storage site and protect the stored material against contamination and removal by erosion. Stockpile topsoil separately from other fill/backfill material, and restore to within its originating sub-area.
 - 1. Following completion of structure construction or pipe installation, testing and backfill, spread the topsoil to the original depth over the stripped construction area.
- F. Protect from damage existing items not designated to be demolished or removed. Restore or replace immediately any such item damaged as a result of the activities of this Work at no additional expense to the Agency.
- G. Remove from the site and legally dispose of debris and waste material resulting from clearing and grubbing.

END OF SECTION 31 10 00

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SECTION 31 23 00

EXCAVATION AND FILL

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section.
- B. Section Includes:
 - 1. Preparation of fill areas.
 - 2. Excavation and controlled fill construction.
 - 3. Structural excavation, fill and backfill.
 - 4. Compaction of controlled fills and backfills.
 - 5. Disposal of surplus and unsuitable materials.
 - 6. Dust control and drainage control.
 - 7. Cleanup.
- C. Related Sections:
 - 1. Section 31 10 00 – Site Clearing
 - 2. Section 31 23 19 - Dewatering
 - 3. Section 31 23 33 - Trenching, Backfilling and Compaction
 - 4. Section 31 40 00 - Sheet piling, Waling and Shoring
- D. Definitions:
 - 1. Site: The property owned by the Agency within the boundaries shown on the Drawings, easements and rights-of-way (ROW) for roads, drainage facilities, and pipelines, and the Contractor's working and storage areas adjacent to the facilities.
 - 2. Excavation: All excavation, whether in rock or other material, shall be considered unclassified, except as provided for in Section 01 20 00 - Price and Payment Procedures, and in Article 3.05B below in this Section.
 - 3. Controlled Fill: Compacted suitable fill material in all areas of the site requiring filling to grade as shown on the Drawings.
 - 4. Structural Fill: Compacted select fill material, which will support a structure or some part of a structure.

5. Structural Backfill: Compacted suitable fill material placed between the wall of a structure and construction excavation slope up to finished grade and where called for placement in other excavations as indicated on the Drawings.
6. Suitable Material: As specified herein, of any material imported or excavated from the cut areas which, in the opinion of the Soils Engineer, are suitable for use in constructing fills.
7. Waste Excavation: Material from project excavations which is not suitable for use in backfill or compacted fills or is in excess of that required to be used for backfill or to construct fills.
8. Utility Systems: Piping, conduit cables and cableways, electrical conductors, communications facilities, fuel lines, storm drains, potable water distribution piping, signal circuits and the like for transmission of commodities of information in sub-surface systems.

1.02 SITE INVESTIGATION

- A. Soil Investigation: ***No soil investigation was performed in preparation for this Work.*** The Agency makes no statement or warranty regarding the type of soil conditions to be encountered in the performance of this Work.
- B. Contractor's Responsibility: Carefully examine the site and make all inspections necessary in order to determine the full extent of the work required to make the completed Work conform to the Drawings and Specifications. Be thoroughly satisfied as to the nature and location of the Work, conditions, the conformation and condition of the existing ground surface, and the character of equipment and facilities needed prior to and during prosecution of the Work. Also be thoroughly satisfied as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the Drawings, or between the Drawings and Specifications must be brought to the Agency's attention in order to clarify the exact nature of the Work to be performed.

1.03 SAFETY

- A. Be familiar with, and at all times conform to, the regulations of the "General Construction Safety Orders" and "Trench Construction Safety Orders" of the State of California, Department of Industrial Relations, Division of Occupational Health and Safety.

1.04 ENVIRONMENTAL SAFEGUARDS AND REGULATIONS

- A. At all times comply with regulations in force to prevent pollution of air and water.

1.05 QUALITY ASSURANCE

- A. By Contractor: Exercise due care to assure procurement, storage and placement of materials from site or off-site sources which will comply with the requirements, Specifications and standards set out herein. The performance, by qualified personnel or independent testing services, of such tests and inspections as may be desired for guidance and control of the Work is left to the discretion of the Contractor and is to be performed at no additional cost to the Agency.
- B. By Engineer: The Engineer, through his project representative(s) will be the on-site arbiter and judge of the acceptability of the work done, based on such observations and tests he may require or perform.
- C. By Agency (Owner): The Agency may, on the recommendation of the Engineer, provide inspection and testing by his own representatives or by independent testing services, engaged and paid for by the Agency. In this regard, a Soils Engineer will be engaged by the Agency, who shall act as the direct representative of the Agency in soils work, to perform inspection of the removal and replacement of unsuitable materials, all excavations, and the placement and compaction of all fills and backfills within the limits of earthwork on this Contract. Costs for all such inspections and tests will be paid for by the Agency, except that the cost of retest and reinspection of reworked faulty work are borne by the Contractor.
- D. Applicable Criteria, Tests and Standards:
 - 1. For Site Earthwork: Grade rough graded surfaces ready to receive top soil, sod, or seed, crushed rock, or aggregate base to plus or minus 0.2 feet of the Plan elevation, except where meeting curbs, walks, or building entrances grade to plus or minus 0.1 feet of Plan. However, do not construe the acceptance of such irregularities to reduce the thickness of topsoil, sod or pavement. Construct permanent surface water courses to average plan grades and to drain completely throughout their length. Grade finish surfaces to plus or minus 0.1 feet of the Plan elevation and finish all areas so as to drain readily.
 - 2. For Earthwork for Structures: The Agency will provide the services of a qualified Soils Engineer to make tests of prepared subgrade and compacted fill. Testing will be at the discretion of the Soils Engineer. Provide the Soils

Engineer 24 hours notice of the scheduled commencement of sub-grade preparation.

3. For Waste: Dispose of in an area that is acceptable to local authorities material deemed unsuitable by the Soils Engineer from tests or visual inspection, and all material delivered for fill or embankment which cannot be satisfactorily compacted.
4. For Cleanup: Remove all rubbish, debris, junk, temporary materials, and any waste excavated materials from the Contract Site and dispose of it in accordance with all applicable laws, regulations, permits and approvals from Agency and owners of property upon which the material will be disposed. Perform restoration of staging and storage areas and temporary roads to the satisfaction of the Agency and respective property owner(s), as a condition for acceptance and final payment.
5. Standards for Soil Classification, Properties and Tests (current edition):
 - a. Earthwork and Embankment (Excluding Roads):
 - (1) Classification - ASTM D2487.
 - (2) Physical Properties - ASTM D854, D2216.
 - (3) Soil Density - ASTM D1556, D2922.
 - (4) Gradation - ASTM C136.
 - (5) Cleanness Value - California Test 227.
 - (6) L.A. Rattler Test - California Test 211.
 - (7) Compaction - ASTM D1557.
 - b. Backfill for Trench:
 - (1) Classification - ASTM D2487.
 - (2) Sand Equivalent - ASTM D2419.
 - (3) Soil Density - ASTM D1556, D2922.
 - (4) Gradation - ASTM C136.
 - (5) Cleanness Value - California Test 227.
 - (6) L.A. Rattler Test - California Test 211.
 - (7) Compaction - ASTM D1557.
 - c. Structural Fill and Backfill:
 - (1) Classification - ASTM D2487.
 - (2) Liquid Limits (LL), Plastic Limit (PL), and Plasticity Index (PI) of Soils – ASTM D4318.
 - (3) Compaction - ASTM D1557.
 - (4) Physical Properties - ASTM D854, D2216.

- (5) Sand Equivalent - ASTM D2419.
- (6) Particle Size Analysis - ASTM D422.
- (7) Soil Density - ASTM D1556, D2922.
- (8) Gradation - ASTM C136.
- (9) Cleanness Value - California Test 227.
- (10) L.A. Rattler Test - California Test 211.
- d. Controlled Fills:
 - (1) Classification - ASTM D2487.
 - (2) Physical Properties - ASTM D854, D2216.
 - (3) Compaction - ASTM D1557.
 - (4) CBR - ASTM D1883 (R-Value - ASTM 2844).
 - (5) Soil Density - ASTM D1556, D2922.
- e. Borrow:
 - (1) Classification - ASTM D2487.
 - (2) Other Properties - as determined by requirements at point of use.

1.06 SUBMITTALS

- A. General: Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures".
 - 1. Test materials as herein specified and, unless specified otherwise, have all sampling and testing performed by an independent testing laboratory subject to Agency approval. Include costs for material testing as herein specified in the bid price for this Work.
- B. Native Sand: Provide a certified test report on the sand equivalent for a minimum of three samples from each materials source. The Agency retains the right to request, at no additional cost to the Agency, additional sand equivalent tests when in his opinion the source has been substantially changed.
- C. ½-Inch x 1-Inch Drain Rock and ¾-Inch Foundation Rock: Provide a certified test report on the sieve analysis and grading characteristics for a minimum of three samples each of the respective rock sizes to be used for this Work. Test for the grading characteristics as herein below noted.

- D. Imported Granular Material: Submit sand equivalent, sieve analysis, and quality test reports as noted above in items B and C for Agency review and approval for each source.

1.07 COMPACTION

- A. The maximum dry density and optimum moisture content of each soil type used in the controlled compacted fill in accordance with ASTM D1557. Determine field density tests in accordance with ASTM D1556 or ASTM D2922.

1.08 INSPECTION

- A. Observation and compaction tests will be made by the Soils Engineer during the filling and compacting operations so that he can state his opinion that the fill was constructed in accordance with the Specifications.
- B. The Soils Engineer will make field density tests in the compacted materials below the surface where the surface is disturbed. When these tests indicate that the density of any layer of fill or portion thereof is below the specified density, rework the particular layer or portion until the specified density has been obtained. Costs for re-work and re-inspection will be borne by the Contractor.

1.09 JOB CONDITIONS

- A. Protection:
 - 1. Take all measures necessary during grading to protect the work area, both cut and fill, and adjacent properties from storm damage, flood hazard, caving of trenches and embankments and sloughing of material until final acceptance by the Agency. Maintain completed areas until the entire Contract work areas are in satisfactory compliance with the Specifications.
 - 2. Protect excavation and excavated slopes from flooding and erosion due to rainfall and runoff.
- B. Access: Maintain access for construction operations within the roadway easement or construction easement and Contract work site boundaries shown on the Drawings. Coordinate entrance to the easements and site with the Agency and all local agencies prior to commencing Work. Preserve property within and adjacent to the easements in accordance with the Section 5-1.36 of Division 1 of the Standard Specifications and Section 31 10 00, "Site Clearing". Where existing access roads, including fire roads and parking lots, are used for the movement and transportation of equipment and materials, exercise care in the use of these roads, and repair at no additional cost to the Agency any damage caused by the activities and operations

performed in completing the Work for this Contract. Accomplish such repair in a satisfactory manner acceptable to the Agency. Conduct operations for this Work in such manner that the normal use of these roads by the land owner or lessee, or the general public in the cases where such access roads are for the purpose of public conveyance, are not impeded or subject to an unsafe condition resulting from the operations for this Contract.

- C. Utilities: Existing utilities consist of electricity, water, telephone or instrument signal service, sewers, gas lines, and storm drains. Protect existing utilities from any damage as a result of operations for this Contract. Check utility lines and structures indicated on the Drawings, which are to remain in service. Where utility lines or structures not shown on the Drawings are encountered, report them to the Agency before proceeding with the Work. Bear the cost of repair or replacement of any utility lines or structures which are broken or damaged by the operations for this Contract.
- D. Water: Furnish water required for compaction and dust control.
- E. Dust Control: Perform all work required for the alleviation or prevention of any dust nuisance on the site or access roads caused by the operations either during the performance of the earthwork or resulting from the condition in which the site is left by this Work. Assume all liability, including court costs of co-defendants, for all claims related to dust or wind blown materials attributable to the Work for this Contract.
- F. Protection of Trees: Comply with the requirements described herein to protect existing trees in the work area from harm or damage as a result of the activities for this Work.
 - 1. Construct excavations and new pipeline trench required for the Work a minimum distance from existing trees equal to the sum of 4 trunk diameters.
 - 2. Provide protective fencing around any tree located within a distance of 10 feet from the edge of new excavation or trench. Prevent bark injury to any tree from equipment or materials used in the activities for the Work. In the event bark injury does occur, report immediately to the Agency and provide repairs as directed by the Agency. Where the injury results in irreparable damage to the tree, replace the tree with one of same species and similar size, unless otherwise directed by the Agency and at no additional cost to the Agency.
 - 3. Cutting or removal by backhoe operation of tree roots greater than 2 inches in diameter is not permitted.

4. Roots with diameters between 2 inches and 6 inches may be hand cut and removed.
5. Do not disturb roots greater than 6 inches in diameter, allow such roots to remain. Conduct excavation or trenching operations for new pipeline below larger tree roots.

1.10 GUARANTEE

- A. Work done under this section, in all respects, comes under the items of the guarantee stated in Section 6-3.06 of Division 1 of the Standard Specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Use material for controlled fill consisting of any material imported or excavated from the cut areas that, in the opinion of the Soils Engineer, is suitable for use in constructing fills. Use material containing no rocks or hard lumps greater than 4 inches in size, having a plasticity index (PI) between 4 and 12, and a liquid limit of 40 percent or less, and containing at least 40 percent of material smaller than 1/4 inch in size. Nesting of rocks is not permitted. Material of a perishable, spongy, or otherwise of an improper nature is not permitted to be used in filling.
2. Place within 24 inches of rough grade select material containing no rocks or hard lumps greater than 2 inches in size and that swells less than 3 percent when compacted as hereinafter specified for compacted fill and when subjected to an axial pressure of 160 psf.
3. Representative samples of material to be used for fill will be tested in the laboratory by the Soils Engineer in order to determine the maximum dry density, optimum moisture content and classification of the soil. In addition, the Soils Engineer will determine the approximate bearing value of a re-compacted saturated sample by direct shear tests or other tests applicable to the particular soil.
4. During grading operations, soil types other than those analyzed in the report of the soil investigation may be encountered, in which case consult the Soils Engineer to determine the suitability of these soils for reuse as fill.

- B. Structural Fill and/or Backfill Materials: Consist of select granular material, either imported or manufactured from excavated on-site rocky materials.

1. The select granular material can be import coarse sand, import “DG” (decomposed granite) or a processed material derived from the on-site excavation. Use selected granular soil having a gradation within the following limits:

Sieve Size	Percent Finer
¾ inch	100
No. 4	80 - 100
No. 30	46 - 70
No. 100	6 - 40
No. 200	0 - 20

2. Provide material of a quality as specified in Subsection 200-1.1 of Section 200, “Rock Materials,” in the Standard Specification for Public Works Construction, (Green Book) 2012 edition.

- C. 1/2-Inch Drain Rock: Conform to the following grading when determined by California Test Method No. 202:

Sieve Size	Percentage Passing
¾ inch	100
½ inch	95 - 100
3/8 inch	70 - 100
No. 4	0 - 55
No. 8	0 - 10
No. 200	0 - 3

Also conform to the following quality requirements.

Cleanness Value	75 plus
Durability Index	50 plus
Specific Gravity	2.7 (minimum)
L.A. Rattler % loss (500 REV)	40 minus
Unit Weight, pcf, rodded	98 pounds (minimum)

- D. ¾-Inch Foundation Rock: Conform to the following grading when determined by ASTM C131 Test Grading B:

Sieve Size	Percentage Passing
1-inch	100
¾-inch	90 - 100
½ inch	30 - 60

Sieve Size	Percentage Passing
3/8 inch	0 - 20
No. 4	0 - 5

1. Also conform to the following quality requirements:
 - a. Percentage Wear per ASTM C131
 - 100 Revolutions 15 Maximum
 - 500 Revolutions 52 Maximum

E. Gravel: 1/2 inch drain rock as specified above.

F. Geotextile Fabric: Conform to the following requirements:

Property	Test Value	Test Method
Weight	5.4 oz./yd. (min.)	ASTM D4632
Grab Tensile Strength	150 lb. (min.)	ASTM D4833
Elongation at Break	50% (max.)	ASTM D3786
Puncture Strength	80 lb. (min.)	ASTM D4751
Burst Strength	300 psi (min.)	ASTM D3786
Apparent Opening Size	#70 (max.)	ASTM D4751
Permittivity	1.0 sec ⁻¹ (min.)	ASTM D4491
UV Resistance	70% (min.)	ASTM D4355

PART 3 - EXECUTION

3.01 GENERAL

- A. Construct the work performed under this Specification to the lines, grades, elevations, slopes and cross sections indicated on the Drawings, specified herein, and/or directed by the Agency. Construct slopes, graded surfaces, and drainage features presenting a neat uniform appearance upon completion of the Work.
- B. Bear full responsibility to maintain adequate safety measures and working conditions, and take all measures necessary during the performance of the work to protect the entire project area and adjacent properties which would be affected by this Work from storm damage, flood hazard, caving of trenches and embankments, and sloughing of material, until final acceptance by the Agency. Bear responsibility

to maintain completed areas until the entire project area is in satisfactory compliance with the job specifications.

- C. Protect from any damage as a result of the operations for this Contract utility lines and structures indicated on the Drawings, which are to remain in service. Where utility lines or structures not shown on the Drawings are encountered, report them to the Agency before proceeding with the work. Bear the cost of repair or replacement of any utility lines or structures, which are broken or damaged by the operations for this Contract.

3.02 REMOVALS, CLEARING AND GRUBBING

- A. Comply with Section 31 10 00, "Site Clearing", of these Specifications.

3.03 DUST CONTROL

- A. Take all steps possible to prevent and reduce dust arising from the construction activity. Have adequate water trucks on the site at all times and water, as necessary, the areas where dust may arise. Cooperate fully with the Agency and water immediately when told to do so.

3.04 CARE OF DRAINAGE WATER

- A. Take care of drainage water from the construction operations, and of storm water and wastewater reaching the construction area from any source, so that no damage will be done to the excavation, pipe trench, pipe or structures. Bear responsibility for any damages to persons or property on or off the construction site due to such drainage water or to the interruption or diversion of such storm water or wastewater on account of the operations for this Contract.
- B. Perform such grading as may be necessary to prevent surface water from flowing into excavations, and remove by pumping or by other approved methods any water accumulating therein.

3.05 EXCAVATION

- A. General: Perform all excavation necessary or required as shown on the Drawings. Excavation includes the removal and disposal of all earth materials of whatever nature encountered, including both rock excavation and common excavation when both are present, and including the furnishing, placing, and maintaining of shoring and bracing necessary to safely support the sides of the excavations. The work also

includes all pumping, ditching and other required measures for the removal or exclusion of water.

- B. Rock Excavation: The word “rock” shall mean any material that cannot be dug with a Case 780, John Deere 710 backhoe or equal. The Contract includes a unit price for rock excavation, defined as including the removal, hauling, stockpiling, and/or proper disposal of all material required to be excavated which involves barring and wedging of material for removal, boulders or loose rock of one cubic yard or more in volume, or material which cannot be loosened or broken down by ripping with the above-mentioned equipment which is designed to remove rock. No payment will be made for rock removal unless the Contractor gives prompt notice to the Agency upon encountering such material and prior to its removal. The Agency’s determination as to whether the material meets the definition of rock and the Agency’s measurement of the volume of rock removal for which the Contractor is entitled to payment will be final and conclusive.

3.06 STRUCTURAL FILL and BACKFILL

- A. Limits of Structural Fill and Backfill. Unless otherwise shown on the Drawings or directed by the Agency, place structural fill and backfill to the following limits of excavations:
1. to foundation grade where over-excavation for structure foundation was required in accordance with 3.05B above.
 2. A minimum horizontal depth of 3 feet from the exterior face of the structure or face of the wall.
 3. Where sheeting, shoring or other measures used in accordance with Section 31 40 00, “Sheeting, Waling and Shoring”, results in an excavated zone remaining after construction of the structure that is less than 3 feet deep horizontally to the face of either the native material or sheeting and shoring permitted to be left in place, backfill the entire excavated zone.
- B. Placement of Structural Fill/Backfill:
1. Before beginning backfilling, remove from the space to be backfilled all foreign material, including water, and obtain inspection and approval by the Agency of the area to be backfilled. Step sloping sides of the excavated space to prevent wedging action of the backfill against the structure. Do not place backfill around or upon any structure until it is proven that the concrete has attained satisfactory strength in accordance with Section 03 30 00, “Cast-in-Place Concrete”, and that the structure as a whole is adequate to receive backfill.

2. Place backfill in uniform layers not exceeding 18-inches in depth on opposite sides of structures and walls before compaction. Inform the Agency of the sequence of backfilling to be followed around each structure and obtain the Agency's approval of this sequence before placing any backfill.

C. Compaction of Structural Fill/Backfill:

1. Place structural backfill in horizontal layers of such depths compatible to the type of compaction equipment being used, but in no case place lifts exceeding 8 inches in un-compacted thickness. Evenly spread each layer, bring the moisture content to near optimum conditions and then compact to a density that is not less than 95 percent of maximum dry density at optimum moisture.
2. Mechanically compact backfill by equipment of a size and type required to achieve the compaction results specified in this Section. Permission to use specified compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or improvements installed under the Contract.
3. Flooding, jetting or ponding will not be permitted for the compaction of any structural backfill.

3.07 CONTROLLED FILL

- A. General: Unless otherwise specified, compact fill material while at a moisture content near the optimum moisture content and to a density that is not less than 90 percent of the maximum dry density at optimum moisture.
- B. Preparing Areas to be Filled:
 1. Remove all vegetable matter and objectionable material from the surface upon which the fill is to be placed and remove any loose and porous soils or compact same to a depth specified by the Soil Engineer. Then plow or scarify the surface to a minimum depth of 6 inches until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.
 2. Where fills are constructed on hillsides or slopes, step or key the slope of the original ground on which the fill is to be placed as shown on the Drawings. Extend the steps completely through the soil mantle and into the underlying formation materials.
 3. After the foundation for the fill has been cleared, plowed or scarified, disc or blade the foundation material until it is uniform and free from large clods, brought to the proper moisture content and compacted as specified.

C. Placing, Spreading, and Compacting Fill Material:

1. Place the fill material in layers not exceeding 8 inches un-compacted thickness. Spread each layer evenly and thoroughly mix during the spreading to obtain uniformity of material in each layer.
2. When the moisture content of the fill material is below that specified by the Agency, add water until the moisture content is as specified.
3. When the moisture content of the fill material is above that specified by the Agency, aerate the fill material by blading, mixing, or other satisfactory methods until the moisture content is as specified.
4. After each layer has been placed, mixed and spread evenly, thoroughly compact the fill material to the specified density. Accomplish compaction by sheepsfoot rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers or other types of acceptable compacting equipment. Employ equipment of such design that it will be able to compact the fill to the specified density. Perform compaction continuously over the entire area and make sufficient passes with the equipment over the material to ensure that the desired density has been obtained.
5. Compact surface of fill slopes so that the slopes are stable and which results in no excessive loose soil on the slopes.
6. Provide and maintain adequate erosion control facilities during the construction of the fill areas. Maintain the erosion control facilities in optimum condition until the permanent drainage system and vegetation are complete. Inspect the facilities following significant rainfall, perform repairs and remove excess sediment. Prevent the discharge of sediment off-site or to adjacent water courses.

3.08 PAVEMENT SUBGRADE – NOT USED

3.09 CLEANUP

- A. Upon completion of work in this Section, remove all rubbish and debris from the job site. Remove all construction equipment and implements of service and leave the entire area involved in a neat, clean and acceptable condition.

3.10 DISPOSAL OF SURPLUS AND/OR UNSUITABLE MATERIALS

- A. Dispose of away from the site, at no additional cost to the Agency and in accordance with all applicable local codes and regulations, excavated materials which are determined by the Agency to be unsuitable for use in backfill or

compacted fills or excavated material that is in excess of that required to be used for backfill or to construct fills.

END OF SECTION 31 23 00

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SECTION 31 23 19

DEWATERING

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section.
- B. Work Included in this Section:
 - 1. Design, construction, operation and maintenance of effective dewatering and recharging systems.
 - 2. Submittals for dewatering and recharging operations.
 - 3. Disposal of extracted ground water.
 - 4. Removal and relocation of equipment and clean-up of work areas.
- C. Related Work specified in Other Sections:
 - 1. Section 31 10 00 – Site Clearing and Site Preparation
 - 2. Section 31 23 00 – Excavation and Fill
 - 3. Section 31 23 33 - Trenching, Backfilling and Compaction
 - 4. Section 31 40 00 – Sheet piling, Waling and Shoring
 - 5. Section 33 05 20 - General Piping Requirements

1.02 QUALITY ASSURANCE

- A. Qualifications: Furnish the services of an experienced, qualified, and equipped Dewatering Subcontractor to design and operate the dewatering required for the Work. In lieu of the above, the General Contractor may do the dewatering in accordance with a system approved by Agency and designed by a Civil Engineer who is registered in the State of California and who has proven experience in this type of work.
- B. Data Available for Examination: ***No soil investigation was performed in preparation for this Work.*** The Agency makes no statement or warranty regarding the type of soil conditions to be encountered in the performance of this Work. Refer to Section 31 23 00, “Excavation and Fill”, for Contractor’s responsibilities.

- C. Monitoring: When and where directed by Agency, construct observation wells using 4 inch diameter pipe, with well screens and gravel packing. Furnish and install settlement gauges at times and locations selected by the Agency to monitor settlement of new and existing facilities.

1.03 SUBMITTAL

- A. General: Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00 of the Technical Specifications, "Submittal Procedures", pertaining to submittals, including preparation, transmittals, and guarantees.
- B. Submit for record purposes only and not for review or approval, shop drawings and data showing the intended plan for dewatering operations. Include locations and capacities of dewatering wells, well points, pumps, sumps, collection and discharge lines, standby units, water recharge system, water disposal methods, monitoring and settlement measuring equipment, and data collection and dissemination. Indicate parts of dewatering and recharge systems, which are intended to be abandoned in-place upon completion of the work. Abandonment of materials and equipment shall be subject to Agency approval. Submit the referenced intended plan not less than 15 days prior to start of dewatering operations.

1.04 JOB CONDITIONS

- A. The descriptions of job conditions under Section 31 23 00 of the Technical Specifications, "Excavation and Fill", shall form a part of this sub-section.

1.05 ALTERNATIVES

- A. Groundwater may be high and seasonally variable at excavations. Employ dewatering systems that effectively intercept and remove water from the surrounding strata and thus prevent its entry into the excavation. Employ all such available alternatives as required to achieve this objective, including construction of pervious vertical channels. Do not rely solely on sheeting to protect work areas. The alternative use of a system of interlocking sheet piling with braces or anchorage supplemented by dewatering measures, or freezing methods, or other means which may be suitable, will be permitted.

PART 2 - PRODUCTS

2.01 COMPONENTS OF THE DEWATERING SYSTEM

- A. Provide units of standard manufacture and in good working order. Remove from the job site unserviceable parts and equipment. Major equipment for which repair parts are unavailable from local suppliers shall be considered obsolete and therefore not acceptable.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordination: Layout and install dewatering installations beyond the limits of the permanent works. Avoid interference with access or other necessary activities.
- B. Barricades, Shelters, and Safety: Provide protections for vital parts from accidental damage or freezing, and erect signs and barricades to isolate hazardous areas.

3.02 PERFORMANCE

- A. Dewatering: Perform dewatering operations as required so all underground and below-grade work is performed or installed in dry excavations, excepting only that work specified for installation in wet excavations. Maintain dewatering systems in continuous operation until the involved work is completed, including the placing and compaction of backfill materials in the dry.
- B. Protection of Existing Facilities: Provide standby equipment of sufficient size and capacity to ensure continuous operation of the dewatering systems. Where any sloped excavation infringes on or potentially endangers any existing facilities or structures, provide shoring, sheeting, and bracing according to shop drawings and calculations signed and stamped by a Structural or Civil Engineer registered in the State of California. File a copy of such plans and calculations with the Agency for record purposes. At Contractor's expense and to the Agency's satisfaction, repair and make good all damage or settlement to the foundation or other portion of any new or any existing facilities or structures caused by permanent or temporary failure or operation of the dewatering (or recharging systems) or by failure to maintain the existing groundwater level outside the dewatered areas.
- C. Drainage: During the life of this Contract, provide and maintain adequate means to promptly and effectively remove water from all areas of work, to prevent the entry

of harmful quantities of water into the excavations and to dispose of the water removed. Avoid environmental damage and nuisance.

- D. Disposal of Extracted Ground Water: Obtain all required permits from the entity having regulatory jurisdiction over the receiving body to which the extracted ground water is to be discharged. Bear responsibility for all costs in obtaining required permits and complying with imposed conditions.
- E. Removal: Remove equipment when no longer required for dewatering or water controlling operations. Maintain operation of monitoring and settlement measurement systems until their removal is approved. To the extent approved, well points and like items may be abandoned in place. Otherwise, remove all temporary works, dewatering and/or recharging facilities in a manner satisfactory to the Agency.

3.03 CLEANUP

- A. Upon completion of the work in this Section, remove rubbish and debris and leave the entire area affected by the Work in a neat, clean and acceptable condition.

END OF SECTION 31 23 19

SECTION 31 23 33

TRENCHING, BACKFILLING AND COMPACTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section.
- B. Section Includes:
 - 1. Submittals.
 - 2. Backfill materials.
 - 3. Trench excavation.
 - 4. Placement and compaction of trench backfill, including pipe bedding.
- C. Related Sections:
 - 1. Section 31 23 00 – Excavation and Fill
 - 2. Section 31 23 19 - Dewatering
 - 3. Section 31 40 00 – Sheet piling and Sheet Piling
 - 4. Piping and conduit work specified in Division 33.

1.02 GENERAL REQUIREMENTS

- A. Requirements in Part 1 of Section 31 23 00 of the Technical Specifications apply to this Section.

1.03 QUALITY ASSURANCE

- A. General: Construct work performed under this Specification to the lines, grades, elevations, slopes and cross sections indicated on the Drawings, specified herein, and/or required by the Agency in writing. Construct slopes, graded surfaces, and drainage features to present a neat, uniform appearance upon completion of the Work.
- B. Requirements of Jurisdictional Agencies or Entities: Unless otherwise stated, determine and assume responsibility for fees and other costs required to conduct Work in accordance with the permits obtained for the Project and include in the bid price.

- C. Reference Standards:
1. Soil classification - ASTM D-2487
 2. Compaction (where applicable) - ASTM D-1557
- D. Testing: Select and coordinate a testing laboratory approved by the Agency for the purpose of performing testing of imported and select native material to be used for bedding and backfill. Perform the testing specified herein at no additional cost to the Agency to determine conformance with the requirements of these Specifications, and provide one (1) copy of the report to the Agency. Satisfactory test results do not constitute approval of all material from the proposed source and do not relieve the Contractor of his responsibility to use a satisfactory source. The Agency reserves the right to sample and test, at his expense and at any time during the Work, bedding and backfill materials delivered to the site. Bear responsibility for all costs involved in retesting of material found to be not in conformance with the Contract requirements. Promptly remove rejected materials from the site and dispose of the materials in accordance with all applicable laws and regulations, at no cost to the Agency.
1. Perform the following tests on bedding and backfill materials proposed for the Work. Frequency of samples and tests and employ test methods as follows:

Test	Method	Frequency (min.)
Specific gravity	ASTM D-854	Every 500 cy material delivered
Gradation	ASTM C-136	Every 500 cy material delivered
Sand Equivalent	Calif. Test 217 or	Every 500 cy material delivered
(Type A backfill only)	ASTM D-2419	
Cleanness value	Calif. Test 227	Every 750 cy material delivered
L.A. Rattler Test	Calif. Test 211	Every 750 cy material delivered

1.04 JOB CONDITIONS

- A. General:
1. Perform all excavation by open cut unless otherwise specified or shown on the Drawings. Stockpile all excavated and imported material suitable for use as backfill in an orderly manner a sufficient distance from excavated banks to avoid overloading and prevent slides or cave-ins of banks. Remove from the working area in an expeditious manner excavated materials deemed unsuitable for backfill, as specified herein or determined by the Agency from tests or visual inspection, and surplus material, and dispose of these materials at a site approved for such use by relevant authorities. Perform grading as may be necessary to prevent surface water from flowing into trenches. Remove by pumping or other approved means any water accumulating in trenches.

2. Conduct measures necessary during the performance of the Work to protect the entire Contract work area and adjacent properties which would be affected by and as a result of this Work, from storm damage, flood hazard, caving of trenches and embankments, and sloughing of material. Maintain completed areas until the entire Contract work area is in satisfactory compliance with the Specifications.
- B. Safety: Be familiar with, and at all times conform to, all applicable regulations of the “General Industry Safety Orders” and “Construction Safety Orders” of the State of California, Department of Industrial Relations, and Division of Industrial Safety. Before excavating any trench 5 feet in depth or greater and into which a person will be required to descend, submit to the Agency a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for the workers’ protection from the hazard of caving ground during the excavation of such trench. The requirements of Section 31 40 00 of the Technical Specifications, “Sheeting, Waling and Shoring”, apply to this portion of the Work. Obtain a permit from the State Division of Industrial Safety before commencing excavation. Submit a copy of the permit to the Agency. During normal working periods, conduct all reasonable measures to protect public safety around open excavations.
- C. Utility Protection: Protect from any damage as a result of operations from this Contract utility lines and structures indicated on the Drawings which are to remain in service. Where utility lines or structures not shown on the Drawings are encountered, report them to the Agency before proceeding with the work. Bear the cost of repair or replacement of any utility lines or structures which are broken or damaged by operations performed as part of the Work for this Contract.
- D. Protection of Trees: Comply with the requirements described herein to protect existing trees in the work area from harm or damage as result of the activities for this Work.
1. Construct excavations and new pipeline trench required for the Work a minimum distance from existing trees equal to the sum of four (4) trunk diameters.
 2. Provide protective fencing around any tree located within a distance of 10 feet from the edge of new excavation of trench. Prevent bark injury to any tree from equipment or materials used in the activities for the Work. In the event bark injury does occur, report immediately to the Owner and provide repairs as directed by the Owner. Where the injury results in irreparable damage to the tree, replace the tree with one of the same species and similar size, unless otherwise directed by the Owner and at no additional cost to the Owner.
 3. Cutting or removal by backhoe operation of tree root greater than 2 inches in diameter is not permitted.

4. Roots with diameter between 2 inches and 6 inches may be hand cut and removed.
 5. Do not disturb roots greater than 6 inches in diameter, allow such roots to remain. Conduct excavation or trenching operations for new pipeline below larger tree roots.
- E. Existing Conditions: Unless otherwise specifically notified to the Agency prior to the Bid Date, the conditions of the construction sites in existence at the time of bidding are understood to be accepted.

1.05 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00 of the Technical Specifications, "Submittal Procedures".
- B. Prior to shipment of respective materials to the Work site, submit copies of certified test reports demonstrating properties of proposed material are in compliance with the requirements stated herein below. Have the test reports prepared by a testing laboratory approved by the Agency and signed by a responsible party in charge of the testing laboratory.

1.06 INSPECTION AND CONTROL

- A. A Soils Engineer will be engaged by the Agency, who will act as the direct representative of the Agency in soils work, to perform inspection of the removal and replacement of unsuitable materials, and the placement and compaction of all fills and backfills within the limits of earthwork on this project. Perform all work in accordance with these Specifications and as directed and approved by the Agency. Costs for all such inspections and tests will be paid by the Agency. If retesting is required because the Work did not meet the Specifications, all costs for retesting and reinspections will be deducted from the funds due the Contractor.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Fill Soils: Consists of excavated on-site soils except when unsuitable soils are encountered, as determined by the Agency or his representative, in which case use Type A backfill as specified herein and approved by the Agency. Use only backfill that is entirely free of vegetation, trash, lumber, frozen, soft, or organic materials.
- B. Type A Backfill: Material consists of native sand having a minimum sand equivalent of 30 and of a gradation wherein 100 percent of the particles pass the 1/4

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Trenching, Backfilling and Compaction

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inch sieve and less than 8 percent passes the No. 200 sieve. Conduct sand equivalency and gradation tests as required to demonstrate the adequacy of the proposed material at no additional cost to the Agency.

- C. Type B Backfill: Select granular material, either imported or manufactured from excavated on-site rocky materials.

1. The select granular material can be import coarse sand, import “DG” (decomposed granite) or a processed material derived from the on-site excavation. Use selected granular material having a gradation within the following limits:

Sieve Size	Percent Finer
¾ inch	100
No. 4	80 - 100
No. 30	46 - 70
No. 100	6 - 40
No. 200	0 - 20

2. Furnish material of a quality as specified in Subsection 200-1.1 of Section 200, “Rock Materials,” in the Standard Specification for Public Works Construction, (Green Book) 2012 Edition.

- D. Type C Backfill: Material consisting of 1/2 inch drain rock conforming to the following grading when determined by ASTM C-136:

Sieve Size	Percent Passing	
	Minimum	Maximum
¾ inch	100	—
½ inch	95	98
3/8 inch	54	64
No. 4	0	3

1. Also conform to the following quality requirements:

Cleanness value	75 plus
Durability index	50 plus
Specific gravity	2.7 (minimum)
L.A. Rattler percent loss (500 Rev)	40 minus
Unit Weight, pcf, rodded	98 pounds (minimum)

- E. Type D Backfill: Material consisting of rock having the following gradation which meets requirements for Size No. 57 as per ASTM D448 (latest edition). Crushed rock, 1-inch maximum size, of comparable gradation and quality approved by the Owner, may be allowed as an alternative, subject to Owner's approval.

Sieve Size	Percent Passing	
	Minimum	Maximum
1-1/2 inch	100	—
1 inch	95	100
3/4 inch	—	—
1/2 inch	25	60
3/8 inch	—	—
No. 4	0	10
No. 8	0	5
ASTM C-131 Test Grading	A	

- F. Type E Backfill: Material is a slurry cement backfill consisting of a fluid, workable mixture of aggregate, cement and water conforming to the requirements of the Standard Specifications of the California Department of Transportation, Section 19, Paragraph 3.02D.
- G. Concrete: Class 1, 4,000 psi compressive strength, minimum, as specified in Section 03 30 00.
- H. Pipelines: Refer to pertinent Sections of these Specifications.
- I. Geotextile Fabric: See Section 31 23 00, Paragraph 2.01F for requirements.
- J. Rejected Material: Remove from the site and replace rejected backfill material at no additional cost to the Agency.

PART 3 - EXECUTION

3.01 TRENCH EXCAVATION

- A. Excavation for trenches includes the removal of all material of any nature for the installation of the pipe or facility and includes the construction of trench shoring and stabilization measures, timbering and, where required, all necessary installations for dewatering.

- B. Minimum Width of Trench: Construct pipe trenches having a minimum distance, measured at the crown and at the invert of the pipe, of not less than 12 inches on each side of the pipe between the outside diameter of the pipe, exclusive of bells, and the trench wall. The specified minimum trench width shall be exclusive of special structures, connections, or trench supports.
- C. Maximum Width of Trench: Construct trench for all pipelines having a maximum allowable width measured at the top of the pipe of not greater than the outside diameter of the pipe (exclusive of bells or collars) plus 4 feet. Measure the maximum trench width inclusive of all trench timbers or shoring devices. Where the trench width exceeds the maximum specified herein or otherwise shown on the Drawings and special bedding is not used, furnish at no added expense to the Agency pipe of the required strength to carry the additional trench load. Submit to the Agency details of necessary modifications and obtain approval in writing before beginning that phase of the Work. Whenever such maximum allowable width of trench is exceeded for any reason, except as provided for on the Drawings or in the Specifications, or by the written direction of the Agency, the Agency may, at his discretion, require that the Contractor, at his own expense for all labor and materials, cradle the pipe in concrete material specified hereinbefore, or other approved pipe bedding materials.
- D. Maximum Length of Open Trench: Except by special permission by the Agency, only that amount of pipe construction will be permitted, including excavation, construction of pipeline, and backfill in any one location, which can be completed in one day; however, maximum length of open trench permitted is 200 feet. This length includes open-excavation, pipe laying, and appurtenant construction and backfill which have not been temporarily resurfaced.
 - 1. Open trench on private property and not in an area subject to vehicular traffic, may be left open longer subject to review and approval by the Agency. Provide proper security fencing around the open trench to prevent public from walking into the construction area during non-working hours.
- E. Trench Side Slopes:
 - 1. Construct temporary trench excavations conforming at all times to the safety requirements hereinbefore specified in the Paragraph entitled "Safety".
 - 2. Remove loose cobbles or boulders from the sides of the trenches before allowing workers into the excavation, or protect the trench slopes with screening or other methods. Keep trench side slopes moist or protect during construction to prevent local sloughing and raveling. Prevent surcharge loads due to construction equipment that could cause local sloughing and raveling due to their proximity to open excavation.

3. If electing to shore or otherwise stabilize the trench sides, file with the Agency for record purposes copies of plans for intended measures, conforming to the requirements specified in Section 31 40 00 of the Technical Specifications, "Sheeting, Waling and Shoring", before commencing any excavation.
- F. Excess Trench Excavation: If any trench, through neglect, is excavated below the bottom grade required, refill the trench to the bottom grade, at no expense to the Agency for all labor and material, with specified backfill material compacted to a firm stable foundation.
- G. Minimum Cover. Except as otherwise shown on the Drawings, construct trenches of sufficient depth to provide a minimum cover over the top of the wastewater gravity main pipe to finish grade of 4 feet, and for all other pipe a minimum cover of 3 feet.
- H. Changes in Line and Grade. In the event obstructions not shown on the plans are encountered during the progress of the work which will require alterations to the plans, the Agency has the authority to change the plans and order the necessary deviation from the line or grade. Do not make any deviation from the specified line and grade without approval by the Agency. Should any deviations in line and grade be permitted by the Agency in order to reduce the amount of rock excavation or for other similar convenience to the Contractor, bear responsibility for any additional costs for extra pipe footage, concrete, additional manholes or other additional costs.
 1. Include in the submitted bid, provisions to cover any deviation from the invert grade shown on the plans to facilitate extra depth required to eliminate possible conflicts between culverts, sewer mains (gravity and pressure), and other utilities with the water mains constructed as part of this Work.
- I. Protection of Trees: Take special care to avoid damage to trees and their root systems. Do not use machine excavation when, in the opinion of the Agency, it would endanger the tree. In general, where the trench line falls within the limits of the limb canopy, provide headers across the trench to protect the tree. Conduct the operation of equipment (particularly when employing brooms), storage of materials, and the disposition of excavated material in a manner than will not injure the tree, tree trunk, branches, or the roots of the tree, unless the tree is designated for removal as part of this Work.
- J. Rock Excavation: The word "rock" shall mean any material that cannot be dug with a Case 780 or John Deere 710 backhoe, or equal. The Contract includes a unit price for rock excavation, defined as including the removal, hauling, stockpiling, and/or proper disposal of all material required to be excavated which involves barring and wedging of material for removal, boulder or loose rock of one cubic yard or more in volume, or material which cannot be loosened or broken down by ripping with the above-mentioned equipment which is designated to remove rock.

No payment will be made for rock removal unless the Contractor gives prompt notice to the Agency upon encountering such material and prior to its removal. The Agency's determination as to whether the material meets the definition of rock and the Agency's measurement of the volume of rock removal for which the Contractor is entitled to payment will be final and conclusive.

3.02 BRACING TRENCHES

- A. Support the sides of the trenches with plank sheeting and bracing in accordance with Section 31 40 00, "Sheeting, Waling and Shoring", of these Specifications, and in a manner as to prevent caving of the sides of the trench. Completely fill the space left by withdrawal of sheeting or shoring with dry granular material blown or rammed in place. Shore trenches 5 feet and greater in depth unless the sides of the trench are cut to the angle of repose of the excavated soils.

3.03 PIPE BEDDING

- A. Excavate the trench to 6 inches below the pipe grade as shown on the Drawings for the full width of the trench and place 6 inches of Type A or C backfill as specified above upon which the pipe is to be laid.
- B. Where groundwater is encountered, and the native material does not afford a solid foundation for pipe subgrade, suitably dewater the trench and construct a firm, stable base for pipe by excavating any unstable material to 12 inch minimum depth below subgrade base, or as Agency decides is necessary, and construct a stable base placing specified Type C or D backfill or combination of the two as required upon which the subgrade can be prepared.
- C. Where rock is encountered in the trench, excavate to a minimum 12 inch depth below subgrade or as the Agency decides is necessary, and construct a suitable base by placing Type A or C backfill material upon which a subgrade can be prepared.
- D. Before any pipe is lowered in place, prepare the trench bottom or bedding so that each pipe will have a firm and uniform bearing over the entire length of the barrel and a width equal to one half (1/2) of the outside diameter of the pipe. Make adjustments in line and grade by scraping away or filling and tamping in under the barrel of the pipe. Wedging or blocking the pipe is not permitted.

3.04 BACKFILLING PIPE TRENCHES

- A. Backfilling Pipe Zone: Use selected backfill material for the pipe zone consisting of Type A backfill as specified above and approved by the Agency in advance of placement. Place material in the trench simultaneously on each side of the pipe for the full width of the trench and the depth of the pipe zone in layers not to exceed 6

inches in un-compacted depth. Thoroughly compact each layer by tamping. Water settling is not permitted. In all cases, perform backfilling of the pipe zone by hand tools, except that backfilling the pipe zone above the pipe spring-line may be by suitable equipment used in a manner that does not disturb or damage the pipe. Pay particular attention to the underside of the pipe and fittings to provide a firm support along the full length of the pipe. The pipe zone is considered to be that volume of the trench extending from the bottom up to 12 inches above the top of the pipe. Compact backfill material for the pipe zone in the trench in accordance with the Specifications described herein below. Native material is not permitted as backfill in the pipe zone unless it can be shown to comply with Type A backfill material. For PVC pipe installation, ensure that no stones or rocks 1 inch and larger in any dimension are in the pipe zone backfill or area on the trench walls within 4 inches of the pipe wall.

1. In those cases where separation between a new sanitary sewer (force and gravity mains) and an existing water main or recycled water pipeline is found to be less than the minimum acceptable, use Type E backfill or Class 2 concrete for backfilling the pipe zone unless otherwise approved by the Agency. Fully encircle the pipe with at least 6-inch thickness of the special backfill in these cases. Promptly notify the Agency when these sub-minimum separation conditions are encountered.
2. Type E backfill as specified above may be used in the pipe zone in lieu of Type A backfill, at the Contractor's option. When placing Type E backfill, vibrate the material along both sides of the pipe in accordance with the requirements for vibration compaction specified in Part 3 of Section 03 30 00, "Cast-in-Place Concrete" of these Specifications to prevent voids.
3. Do not begin backfilling of the trench until after the pipe installation has been inspected by the Agency. Backfilling of the trench prior to inspection may require re-excavation of the trench, if directed by the Agency, for the purpose of inspecting the pipe. Backfill trenches in a manner that does not disturb the pipe, fittings, or appurtenances, or damage the coating on these materials.

B. Backfilling Remainder of the Pipe Trench: Refer to the preceding paragraph "Requirements of Jurisdictional Agencies or Entities" in this Section regarding all Work and materials used on the project site. Unless otherwise required in the encroachment permits of the respective agencies or entity, the following requirements prevail.

1. After the pipe has been laid in the trench and has been inspected and approved, and backfilling in the pipe zone is complete and compacted, the remainder of the trench may be backfilled. Exercise care to ensure that no voids remain under, around, or near the pipes. Provide backfill material complying with the following:

- a. In existing or proposed future paved areas: Provide Type E backfill in the top 30 inches feet of the trench, measured down from the top of the replaced pavement. Provide Type A, Type B, or Type E backfill in the trench volume between the top of the pipe zone to the beginning of the zone requiring Type E backfill. Vibrate Type E backfill material into place as specified in Paragraph 3.04A above. Do not move concrete slurry after evidence of initial set Close street to traffic or plate trench until such time as the slurry cement backfill has sufficiently stiffened to support vehicular traffic and compacted cold mix asphalt have been brought to grade to provide an even surface for vehicular traffic.
 - b. In easement or other areas not within existing or proposed paved areas: place select native material having a plasticity index (PI) of 15 or less and liquid limit of 40 percent or less, free from all clods, lumps, or stones over 3-inches in greatest dimension, and other deleterious material. Do not use material containing more than 4 percent by volume of organics. Where native materials do not meet these specifications, use Type A, B, or E trench backfill. In road shoulders, place Class 2 aggregate base to finish grade in the last 8-inches, minimum, to finish grade.
 2. Include the expenses of imported material required for backfill and disposal of excess trench excavation in the respective construction payment item for this Work.
- C. Compaction: Determine the maximum dry density and optimum moisture content of each soil type used in the controlled compacted fill by the specified compaction method. Provide minimum relative compaction densities at optimum moisture content in accordance with the following:
1. Pipe Zone (as defined above). 95 percent
 2. Pipe Trench.
 - a. Under paving, structures, and slabs 95 percent
 - b. All other areas 90 percent
- D. Placement and Compaction of Trench Backfill: In placing and compacting trench backfill conform to one of the following methods, subject to the qualifications specified therein:
1. Mechanically Compacted Backfill: Mechanically compact backfill by means of tamping rollers, sheepsfoot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers. Use equipment of size and type necessary to achieve the compaction results specified herein but which, when used, will not result in damage to the pipe or other buried appurtenances. Impact-type pavement breakers (stompers) will not be permitted over any pipe. NOTE:

Vibratory and/or impact type compaction equipment are not permitted in the pipe zone or within 4 feet over installed pipe of any kind. Do not construe Agency's inspection of the use of any specific compaction equipment as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or improvements installed under the Contract. Make determinations in this regard as necessary to ensure compliance. Place mechanically compacted backfill in horizontal layers not exceeding the maximum lift thickness specified below. Evenly spread each layer, bring the moisture content to near optimum condition and then tamp or roll the backfill material until the specified compaction has been attained.

Compaction Equipment	Maximum Uncompacted Lift Thickness (ft)
Vibratory	1.33
Rolling	0.67
Hand-directed mechanical tampers	0.5

2. Water Densified Backfill: Water densified backfill (flooding, jetting, etc.) is not permitted.

3.05 PIPELINE INSTALLATION

- A. See Section 33 05 20, "General Piping Requirements", of these Specifications and other pertinent sections for applicable pipe material.

3.06 PAVEMENT REPLACEMENT – NOT USED

3.07 CLEAN-UP

- A. When working within areas frequented by the public, remove all excess excavated material at the end of each workday and maintain the site in a clean and neat condition. Immediately upon completion of the work of this Section, remove all rubbish and debris from the job site. Remove all construction equipment and implements of service and leave the entire area involved in a neat, clean, and acceptable condition.

END OF SECTION 31 23 33

SECTION 31 40 00

SHEETING, WALING AND SHORING

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in the Division 1 of the Standard Specifications, the Special Provisions and in Division 1 of the Technical Specifications form a part of this Section.
- B. Work Included in This Section:
 - 1. Temporary sheeting and bracing for trenches.
 - 2. Submittals
- C. Related Work specified in Other Sections:
 - 1. Section 31 10 00 – Site Clearing
 - 2. Section 31 23 00 – Excavation and Fill
 - 3. Section 31 23 33 - Trenching, Backfilling, and Compaction

1.02 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, “Submittal Procedures”, of the Technical Specifications. All designs submitted under this section shall be signed by a Civil Engineer duly registered in the State of California.
- B. Prior to the start of any Work involving sheeting and bracing, submit the design drawings and complete calculations of the sheeting system, including but not limited to, sheeting size, wales, rakers, anchor systems, struts, earth anchors, anchor piles, tie rods or any other components pertinent to the design, to the California Division of Occupational Health and Safety for review. Provide such additions and modifications as are required for Division acceptance. When Division acceptance is obtained, file three (3) copies of the final design drawings and data with the Agency for record purposes only and not for review or approval.

1.03 QUALITY ASSURANCE

- A. Material Standards: Furnish lumber for shores, wales, and sheeting of grading required by the American Lumber Standards for the particular application.

- B. Design Criteria: Design and construct temporary sheeting and shoring which are to be used as an aid in construction. Prepare design in conformance with applicable requirements of Article 6, "Excavations, Trenches, Earthwork" of Construction Safety Orders of California State Division of Occupational Health and Safety. In addition, base sheet piling design on the material requirements specified herein. Do not employ sloping of trenches below the groundwater elevation. Open cut excavation will not be permitted in paved areas unless otherwise permitted by the Agency. Employ designs prepared and signed by a Civil Engineer registered in the State of California, and based on the stresses for various materials of construction contained in California Building Code, 2010 Edition.

1.04 JOB CONDITIONS

- A. The description of job conditions under Section 31 10 00, "Site Clearing", forms a part of this subsection.

1.05 SITE INVESTIGATION

- A. The description for site investigation under Section 31 23 00, "Excavation and Fill", forms a part of this subsection.

1.06 ALTERNATIVES

- A. The use or application of alternative methods and materials, and the employment of proprietary systems under lease or franchise in lieu of that specified herein, may be allowed. Demonstration of suitability and compliance with these Specifications and approval of the Agency shall be required.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Lumber:
 - 1. Temporary Shores, Wales, and Sheeting: Furnish structural grade planks, beams, and posts as defined and specified for stress-grade lumber in the American Lumber standards. Lumber may be rough, untreated, in random lengths, and shall be of standard dimensions.
- B. Sheet Piling:
 - 1. Material: Provide sheet pile manufactured from steel conforming to ASTM A-328, or from steel conforming to ASTM A-572, Grade 42.

2. Dimensions and Section Properties: Furnish standard rolled sections PZ, PDA, PSA, or PS for steel sheet piling used for cofferdams or trench sheeting. Use weights, dimensions and section properties that are appropriate for the intended use, as demonstrated by the design (refer to Par. 1.02 and 1.03 of this Section).

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Install sheeting and bracing for trench and structure excavation progressively as the removal of excavated material requires. Butt planks to exclude groundwater and fines, preventing the erosion of voids outside sheeting. In soft, wet ground, drive sheeting to a lower level as excavation progresses so that sheeting is embedded in undisturbed earth. Install wales and struts at close intervals so as to prevent displacement of the surrounding earth and to maintain safe conditions in the work area. Any damage proven to result from improper installations shall be the responsibility of the Contractor. Temporary sheeting for trench and structure excavation may be removed and re-used. Withdraw individual planks alternately as the backfill is raised, maintaining sufficient sheeting and bracing to protect the Work and workers. Remove bracing completely. Where unstable conditions occur in the underlying strata from any cause, and withdrawal of sheeting will endanger the Work, a portion of the sheeting, including bracing, may be left in place with approval of the Agency. Remove all wood within a zone extending 4 feet below finished grade. Leaving such material in place shall not be cause for an increase in Contract price.
- B. Sheet Piling: Using steel sheet piling for temporary protective installations is an acceptable option. Provide continuous piling installations.
 1. Installation of Sheet Piling: Provide sufficient depth of piling to prevent heave when the trench or excavation is dewatered. Drive piles with a hammer with an adequate capacity to complete pile driving without changing hammers. The use of air or water jets to assist in driving the sheet piling will be permitted, providing that the last 5 feet of advance is by driving. Drive piles accurately to the lines and grades shown or required, with each section interlocked with the sheet piles driven previously. To ensure proper alignment of the sheet piles, use a driving template or jig. If any pile is damaged during driving, remove and replace the damaged pile. If piles are driven out of interlock or are not properly plumbed or aligned, pull and redrive the non-conforming piles.

2. Removal and Reuse of Sheet Piling: Upon completion of the Work, remove the temporary sheet piling unless approved by the Agency to be left in place. Salvaged piling may be reused providing the sheet pile is not seriously damaged. The Agency will inspect all salvaged piling and indicate which is suitable for reuse. All salvaged piling shall remain the property of the Contractor. Piling left in place becomes the property of the Agency, at no extra cost.
3. Prevention of Damage: In installing, cutting off, or removing sheet piles, takes every precaution to ensure that damage to structures does not occur. If damage does occur, repair the damage at no additional expense to the Agency.

3.02 PROTECTION OF EXISTING FACILITIES

- A. Protect existing facilities from the consequences of the work for this Section. Where any sloped excavation infringes on or potentially endangers any existing facilities or structures, provide shoring, sheeting, and bracing according to shop drawings and calculations signed and stamped by a Civil Engineer registered in the State of California. For record purposes only, file a copy of such plans and calculations with the Agency.

3.03 CLEANUP

- A. Upon completion of the work in this Section, remove rubbish and debris from the job site. Remove construction equipment and implements of service. Leave the entire area affected by the work in this Section in a neat, clean and acceptable condition.

END OF SECTION 31 40 00

DIVISION 32

EXTERIOR IMPROVEMENTS

(NOT USED)

DIVISION 33

UTILITIES

SECTION 33 05 16
UTILITY STRUCTURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications form a part of this Section.
- B. Section Includes:
 - 1. Precast reinforced concrete manhole vertical sections, cones, grade rings and caps – required only if existing manholes are damaged as a result of the activities for this Work and consequently require replacement.
 - 2. Manhole and Catch basin frames and covers – required only per conditions in 1 above.
 - 3. Installation.
- C. Related Sections:
 - 1. Section 03 30 00 - Cast-in-Place Concrete
 - 2. Section 09 90 00 – Painting and Coating
 - 4. Section 31 23 00 – Excavation and Fill
 - 5. Section 31 23 33 - Trenching, Backfilling and Compaction
 - 7. Section 33 05 20 - General Piping Requirements and other pertinent Sections of Division 33.

1.02 REFERENCES

- A. Standard Specifications of the State of California Department of Transportation, most recent Edition.
- B. ASTM C478, Specification for Precast Reinforced Concrete Manhole Sections.
- C. ASTM A159, Specification for Automotive Gray Iron Castings.
- D. ASTM A48, Specification for Gray Iron Castings.
- E. ASTM A536, Specification for Ductile Iron Castings.

1.03 SUBMITTALS

- A. Provide shop drawings or catalog cuts for work included in this Section in accordance with the applicable requirements of Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00 of the Technical Specifications, "Submittal Procedures".
- B. Submit manufacturer's technical and test data attesting to compliance with these specifications for gasket seals and watertight caulking. Submit printed installation recommendations.

PART 2 - PRODUCTS

2.01 MANHOLES AND WET WELL

- A. General: Conform to the requirements of ASTM C478 and the details shown on the Drawings and the following requirements. Design manhole vertical sections, rings, cones, grade rings and caps for AASHTO HS-20 highway loading. Use Class A, 4,000 psi Portland cement concrete conforming to Section 90 of Caltrans Standard Specifications throughout the work except as otherwise indicated. Design reinforcing steel of single circular cage with a minimum cross-sectional area of 0.20 square inch of steel per foot. Elliptical single line reinforcing is not permitted. Unless otherwise indicated on the Drawings provide corrosion resistant lining system on vertical and cone sections, as specified in Section 09 98 00.
- B. Vertical Sections: Centrifugally spin or compactly vibrate in forms. Furnish sections in lengths and diameters as required to coordinate with the work shown on the Drawings, but not less than 1 foot in length not more than 4 foot in length.
- C. Cones: Provide taper section in maximum 3 foot height unless otherwise indicated on Drawings, concentrically or eccentrically tapered from diameter of vertical section to 24 inch inside diameter at the opposite end unless otherwise indicated on Drawings.
- D. Grade Rings: Provide in sections not greater than 6 inches in height, unless otherwise approved by the Agency, with an inside diameter of 24 inches. Reinforce grade rings to the same standards as for the vertical and taper sections.

2.02 MANHOLE FRAMES AND COVERS

- A. Fabricate manhole frames and covers of superior quality grey iron conforming to the requirements of ASTM A48 or ductile iron conforming to the requirements of ASTM A536 and designed for H20 loading. Provide sets weighing 320 pounds each, minimum. Design and fabricate covers to fit neatly and bear firmly in the frame without rocking and to be easily removable. Provide castings bearing the lettering "S" or "SANITARY SEWER." Provide castings having 24 inch inside diameter clear opening, Alhambra Foundry Company A-1176 or approved equal unless otherwise indicated on Drawings. For castings having 36 inch inside diameter clear opening, Alhambra Foundry Company A-1251B-4 or approved equal.

2.03 PRECAST CONCRETE MANHOLE BASES

- A. Where permitted on the Drawings or by the Agency, provide precast concrete bases on manholes by the same manufacturer as for the precast manhole furnished per Paragraph 2.01 above.
- B. Concrete Mix Design: Class 1, 4,000 psi concrete for manhole base, Class 1, per Section 03 30 00.
- C. Reinforcing: Provide reinforcing steel in each base the same as required for a cast-in-place base as indicated on the Drawing.
- D. Other Requirements:
 - 1. Base diameter to be 12 inches larger than the outside diameter of the joining vertical section (6 inches minimum from outside face of vertical section to outside face of base).
 - 2. Provide base with pipe to manhole connectors of PVC SDR 35, or where indicated SDR 26, style detail.
 - 3. Coat interior exposed surface of precast base as indicated on the Drawings.

2.04 CATCH BASINS

- A. Provide as shown on the Drawings.

2.05 CATCH BASIN FRAMES AND COVERS

- A. Provide the catch basin manufacturer's standard for the type shown on the Drawings.

2.06 GASKET SEALS

- A. Preformed plastic sealing gaskets conforming to Federal Specifications SS-S-00210; Ram-Nek or equal.
- B. Where specifically indicated on the Drawings, provide preformed plastic waterstop per Specification Section 03 33 00, "Cast-in-Place Concrete".

2.06 JOINT SEALING COMPOUND

- A. Compound shall be Quik-Seal by Associated Concrete Products; Ram-Nek by K. T. Snyder Company; or approved equal.

PART 3 - EXECUTION

3.01 EXCAVATION AND BACKFILL

- A. Perform Work in accordance with applicable requirements of pertinent Sections of Division 31 of these Technical Specifications.

3.02 CONCRETE AND GROUT

- A. Use materials in construction of manhole and manhole bases conforming to Section 03 33 00 of these Technical Specifications.

3.03 INSTALLATION

- A. Concrete Manhole Bases: Construct manhole bases using Class 1, 4,000 psi, concrete mix to the form and dimensions indicated. Form and pour-in-place base on 8-inch minimum thickness of Type C backfill specified in Section 31 23 33 of these Technical Specifications. Where possible lay pipe through manhole base, using pipe to form smooth channel. Cut out top of pipe and shape and mortar smooth the flow channel. Alternate method permitted is to provide a smooth channel section using a form reviewed and approved by Agency for accuracy of dimensions and relative smoothness prior to pouring the base. If required, vary channels uniformly in size and shape from inlet to outlet. Construct manhole base in single monolithic pour.

Use approved metal forming ring to form a level groove in the fresh concrete of the manhole base for the purpose of providing a solid joint to later set the first precast section of the manhole. Remove the forming ring once the concrete has set sufficiently to not slump in the joint groove. Where PVC pipe is laid to or through the manhole base, install a manhole adapter ring around the pipe in the base as shown on the Drawings. Construct cast-in-place base for overflow structure in similar manner.

1. Protective Coating System: See Section 09 90 00. Allow cast-in-place concrete to cure sufficiently in accordance with the coating manufacturer's recommendation before applying the specified coating. Place constructed manhole into operation after acceptance by Agency. After recommended concrete cure period has elapsed, clean and prepare concrete surfaces to be coated by power washing to remove foreign material, followed by sand blasting to provide proper surface profile. Allow cleaned surfaces to dry before applying the coating system. Allow applied coating system to cure for a period as recommended by coating manufacturer to validate warranty, but not less than 4 hours, before exposing coated surfaces to wastewater flows.
- B. Catch Basin Bases: Provide precast bases for catch basins.
- C. Catch Basin Walls: Provide precast basins for this Work and install in accordance with the manufacturer's instructions and in good industry practices.
- D. Precast Sections: Handle and install precast sections in a careful, timely manner to prevent damaging materials, especially the factory installed corrosion-resistant lining system, and to coordinate with associated work for this Project to prevent delays to job progress. Apply specified gasket seal at mating surfaces of the precast section in accordance with the material manufacturer's written recommendations to provide a watertight completed installation.
1. Grade Rings: After construction of the manhole is complete and prior to placing into operation, apply the protective coating system specified in Section 09 90 00 to the interior face of grade rings and all other concrete surface not furnished with the corrosion-resistant (PVC) lining system specified in Section 09 98 00. Allow applied coating system to cure for a period as recommended by coating manufacturer to validate warranty, but not less than 4 hours, before exposing coated surfaces to wastewater flows.
- E. Frame and Covers: Conform to the requirements indicated on the Drawings for finished elevation at which manhole frames and covers and catch basin frames and covers and drain pipes are to be set. Set to finish grade manhole frames and covers

located within an area paved or graded as part of this Work whether the manhole was constructed as part of this Work or only affected by the activities of the Work. Comply with the following requirements.

1. For assemblies in unpaved traffic way, set to finish grade as hereinafter specified and shown on the Drawings.
2. Prevent debris from falling into manholes and associated piping. Immediately remove any debris that does fall into a manhole, catch basin or associated pipe.
3. When frames and covers are removed from structures to facilitate paving or road construction, temporarily cover resulting opening with a steel plate. When this procedure is impractical, complete all remodeling or reconstruction to the required finished permanent surface prior to the paving operations or road construction.

3.04 PENETRATIONS

- A. For pipes penetrating precast structures where no opening has been provided in the casting, core drill a hole not more than 3 inches in diameter greater than the outside diameter of the penetrating pipe. Encircle the pipe to be inserted with the specified gasket or wall seal, or in the case of PVC pipe with the specified adapter ring, insert the pipe into the wall so that the gasket seal or adapter ring is centered in the wall and then pack the remaining annular space from both the interior and exterior of the structure with non-shrink grout.
 1. For pipes penetrating cast-in-place structures or where openings have been provided in pre-cast structures, conform to the requirements specified in Section 03 30 00 of these Specifications.

3.05 CONNECTIONS TO EXISTING MANHOLES

- A. Follow details indicated on Drawings. For new connections to existing manholes wherein stubs have not been provided, core drill or chip through the walls and base or use other acceptable method, in the presence of and as directed by the Agency. Complete new connection as described above for penetrations to pre-cast structures with no opening provided. An approved wall seal is required on all penetrations.

END OF SECTION 33 05 16

SECTION 33 05 20
GENERAL PIPING REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 form a part of this Section. Specific requirements in any other pipe, valve, or piping appurtenance Section take precedence over these general requirements.
- B. Section Includes:
 - 1. Submittals.
 - 2. Gaskets.
 - 3. Bolts and nuts.
 - 4. Warning tape.
 - 5. Locating wire.
 - 6. Transition Couplings
 - 7. Casing Spacers
 - 8. Casing End Seals
 - 9. Video DVD
 - 10. Installation of pipe.
 - 11. Flushing and testing piping systems.
 - 12. Clean-up.
- C. Related Sections:
 - 1. Section 03 30 00 - Cast-in-Place Concrete
 - 2. Section 31 23 33 - Trenching, Backfilling and Compaction
 - 3. Section 31 40 00 - Sheet piling, Waling and Shoring
 - 4. Section 33 05 16 - Utility Structures
 - 5. Section 33 05 20.11 – PVC Gravity Sewer Pipe and Fittings
 - 6. Section 33 05 20.14 – Steel Pipe and Fittings
 - 7. Section 33 05 20.16 - High Density Polyethylene (HDPE) Pipe and Fittings

1.02 SUBMITTALS

- A. Provide shop drawings or catalog cuts for work included in this Section in accordance with the applicable requirements of Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00 of the Technical Specifications, "Submittal Procedures".
- B. Inspection and Certification by Contractor:
 - 1. In coordination with the respective pipe manufacturer, establish the necessary quality control and inspection practices to assure compliance with the standards cited herein.
 - 2. Submit a notarized statement that the inspection and all of the specified tests have been made by the manufacturer and that the results thereof comply with requirements of the applicable standards.
 - 3. Submit copies of the statement to the Agency for record purposes. Refer to Section 01 33 00 of these Technical Specifications for the number of copies to be submitted.
- C. Shop Drawings: Submit pipeline and pipe design layouts, specials, and fitting details where required and as specified in the respective pipe Sections for review and approval by the Agency prior to manufacturing.
- D. Submit a copy of all the manufacturer's installation instructions and recommendations to the Agency for his review prior to incorporation of the respective pipe, piping or appurtenance into the Work.

1.03 QUALITY ASSURANCE

- A. Experience Clause: Incorporate in the Work materials and products manufactured by establishments regularly engaged in the production of goods meeting the specifications cited herein and in applicable piping or piping appurtenance Section.
- B. Factory Inspection: NOT USED
- C. General Design Criteria: Furnish piping and accessories of suitable design for the service intended. Furnish products of ample strength for all stresses which may occur during fabrication, transportation, erection, testing, and continuous or intermittent operation, and corrosion resistant to the fluid being conveyed. Piping sizes shown are nominal inside diameter of the finished pipe unless otherwise shown. No additional payment will be made for piping and piping appurtenances, which are not shown on the Drawings but are required to complete the Contract.
- D. Testing:

1. Material Strength Test: Furnish certificates of strength tests, supplied by the manufacturer, to the Agency for all materials, which are incorporated into the finished pipe.
2. Factory Hydrostatic Test: Unless otherwise noted, subject all pipe to a factory hydrostatic test in accordance with the requirements specified for each type of pipe. Furnish certified statements of compliance with the hydrostatic tests for each pipe, supplied by the manufacturer, to the Agency.

1.04 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

- A. Shipment, Receiving, and Inventory: Provide a shipping list, bill of lading, or invoice describing the items comprising the lot with all materials shipments; tag or mark pieces as listed.
- B. Storage and Handling:
 1. Store pipe sections on suitable supports to prevent damage of any kind or rolling. Store fittings on a clean surface such as pavement or gravel. Protect gaskets and machined surfaces from weather and dirt by membrane covers.
 2. Bedding materials may be stockpiled on a designated Contractor storage site or on the job site except as noted herein, or may be arranged for delivery as the need occurs. Only that material which can be used that same day may be stockpiled in public rights-of-way, subject to conditions specified for traffic control and in applicable permits. Leave no material overnight in public rights-of-way. Maintain sufficient materials on the job site to prevent impediment to the Project schedule.
 3. Damaged and unprotected or improperly stored materials will not be accepted for payment as materials on hand.

1.05 JOB CONDITIONS

- A. General: The description of job or permit conditions given in Section 01 14 00, "Work Restrictions," Section 31 23 00, "Excavation and Fill," and Section 31 23 33, "Trenching, Backfilling and Compaction," forms a part of this subsection.
- B. Tools, Supplies, and Services: Provide needed tools, supplies, and services to handle materials and accomplish the Work.
- C. Scheduling: Coordinate the extent of Work and available labor force so that the Work undertaken can be secured in such manner by the end of the work day and before the arrival of adverse weather that it will not pose an endangerment to the safety of other property or to the public.

- D. Safety: Provide and maintain at all times, signs, flag-persons, barricades, warning lights, ladders, railings, and other safety items needed to protect the public, work personnel and Work.

PART 2 - PRODUCTS

2.01 GASKETS

- A. Comply with the requirements of AWWA C207, Section 2.3.

2.02 UTILITY WARNING TAPE

- A. Detectable Type: When required, provide tape conforming to the requirements herein for placement above existing utilities encountered and uncovered during construction. Furnish tape of minimum 5 mil total thickness, minimum 3 inches wide, and containing a solid aluminum foil core of no less than 50 gauge (0.0005") thickness. Design tape specifically for direct burial, with foil visible from both sides of the tape and a protective plastic jacket bonded to both sides of the foil. Apply the bonding adhesive directly to the film and foil layers with no inks or printing extending to the edges of the tape. Encase printing to prevent the ink from rubbing off while handling. Furnish tape in colors conforming to the APWA code for the respective intended service. Imprint tape with a message appropriate for the uncovered service. Provide warning tape for all existing utilities encountered and uncovered during construction. For the new and replaced wastewater force main and new and replaced gravity sewer main imprint on the tape the following message:

CAUTION: SEWER LINE BURIED BELOW

1. When required, furnish tape conforming to the above requirements for placement above existing utilities encountered and uncovered during construction. Imprint tape with a message similar to above appropriate for respective service.
2. Repeat the message at 30-inch intervals, minimum. Furnish product of T. Christy Enterprises, Inc., Terra Tape by Griffolyn Company, Inc. or equal.

2.03 LOCATING WIRE

- A. #10 gage insulated wire.

2.04 MECHANICAL COUPLINGS

- A. Flexible Couplings

1. Transition Type Couplings for use in gravity mains between differing pipe materials: Flexible coupling meeting requirements of ASTM C1173 furnished with 12 mil thick 316 stainless steel shear ring and two (2) 316 stainless steel clamp bands at each end of coupling. Fernco 5000 Series Strong Back coupling or equal.

2.05 CARRIER PIPE SUPPORT

- A. Provide casing spacers to support the HDPE carrier pipe centered within the steel casing pipe to prevent the carrier pipe from floating. Provide spacers designed and spaced to support the carrier pipe when full, with no water in the annular space.
- B. Casing spacers: Bolt-on type bands, twelve (12) inches wide made of at least two (2) segments of injection molded high density polyethylene or polypropylene with at least four (4) integral runners of fabricated from the same material. Runners shall be at least 2-inches wide. Bolts, studs and washers shall be cadmium plated.
- C. Manufacturer: Pipeline Seal and Insulator Company, Advance Products & Systems, Inc., or approved equal.

2.06 CASING END SEALS

- A. Design: Standard wrap around end seal made of synthetic rubber and with self-curing sealing strips. Provide with Type 316 stainless steel bands and clamps, at least two (2) bands at each end to affix the end seal to the carrier pipe and to the casing pipe.
- B. Manufacturer and Product: Pipeline Seal and Insulator Inc. Model W; Advance Products & Systems Inc Model AW; or approved equal.

2.07 DVD

- A. 120 minute duration, high quality color, Type DVD-R, DVD-RW, or DVD+R.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prior Work: Accomplish dewatering, if necessary, in such a manner as to enable pipe installation to be satisfactorily completed in accordance with the requirements specified herein.
- B. Layout of Controls: Establish temporary points (hubs) at the requisite locations for geometric control of pipeline. Install grade boards (or laser control set up) to permit

verification by Agency of pipe alignment and grade by direct measurement as the Work progresses. Independently verify the controls at the start of each shift or separate section. Protect controls from displacement. Establish location and size of all points of service.

3.02 EXCAVATION AND TRENCHING

- A. Perform all excavations for pipelines and appurtenances, of whatever substances encountered, to the depths indicated on the Drawings or otherwise required as specified in Section 31 23 33, "Trenching, Backfilling and Compaction", of the Technical Specifications.

3.03 INSTALLATION

- A. General:

- 1. Install piping and accessories in accordance with the detailed requirements contained herein, and the respective pipe material section and the instructions and recommendations of the manufacturer. Lay pipe in accordance with the approved layout drawings. Reference layout and trenching to the stationing given on the Drawings.
- 2. Except as otherwise shown on the Drawings, install buried piping with minimum cover over the pipe to finish grade as specified in Section 31 23 33 of the Technical Specifications.
- 3. Locating Wire: Attach locating wire to top of pipe with duct tape as shown on the Drawings. Provide looped connections at all valve boxes at ground or pavement surface as shown on the Drawings.
- 4. Warning Tape: Bury in trench directly, but not less than 12-inches, above gravity sewer mains. Refer to respective pipe material specifications for specific instructions regarding depth of burial.
 - a. Provide warning tape above the following existing utility lines uncovered during performance of this Work before backfilling:
 - (1) Potable water pipelines
 - (2) Gas pipelines
 - (3) Telephone or television cable
 - b. Where existing utility pipelines uncovered during performance of this Work have been installed with warning tape, before backfilling replace that section of damaged existing tape exposed in the pipe trench.

- B. Defective Material: If, at any time before the completion of the Contract or guarantee period, in the judgment of the Agency any pipe is irreparably damaged, or any defects are found in the pipelines or in any of their appurtenances, in

accordance with Section 5-1.31 of Division 1 of the Standard Specifications remove and replace same by proper material and workmanship without extra compensation. Carefully examine all materials for defects just before placing and do not place in the line any found defective, but replace with satisfactory material at no additional cost to the Agency.

C. Pipe Laying:

1. Equipment for Handling Material: Use proper and suitable tools and appliances for the safe and convenient handling and laying of pipe.
2. Handling and Alignment of Pipe: Carefully handle and lower pipe into the trench. Install pipe in accordance with the Drawings. The end of the joint bell shall define the station of the joint. In laying pipe, take special care to ensure that each length abuts against the next in such a manner that the manufacturer's recommended joint spacing and the amount of deflection for the type of joint or pipe material being used is not exceeded.
3. Positioning of Pipe: In general, lay pipe up-station, from point to point or structure to point of connection to the existing system. Lay pipe spools other than straight pipe with the field identification marks on top. For bell and spigot pipe, unless otherwise directed or permitted by the Agency, normally face the position or direction of bells in the direction the pipe is being laid.
4. Bedding of Pipe: Before joints are made, bed each pipe well on a solid foundation. Do not bring the next pipe section into position until the preceding length has been checked for proper line and grade. Correct defects due to settlement at no additional expense to the Agency. Dig bell holes sufficiently large to ensure the making of proper joints. Compact and grade fill material or trench subgrade to provide a uniform and continuous support beneath the pipe at all points between the pipe joints.
5. Cleaning Pipes: Thoroughly clean pipe sections and fittings before laying and keep clean at all times. Provide a watertight plug or cap on the open ends of all pipelines, carefully fitted so as to keep water, dirt and other substances from entering. Keep the plug or cap in place on the open end of the pipeline at all times when laying is not in actual progress and when working in the vicinity of other utility piping which, if damaged, could spill their contents into the pipe trench. Conduct Work to prevent pipe flotation should the trench fill with water.
6. Cutting Pipe: Whenever a pipe requires cutting to fit into the line or to bring it to the required location, perform the work in a satisfactory manner so as to leave a smooth, square end. Include the cost of cutting pipe in the Contract Price for pipeline construction; this work will not be paid as a separate or extra payment item.

7. Piping through Walls: On all piping which will pass through walls of precast concrete vaults or boxes, seal the annular space to provide a watertight penetration. Provide sleeve sealant as specified in Section 40 05 23, "Valves and Miscellaneous Piping Appurtenances", of these Technical Specifications or as otherwise specified in the section for the respective pipe material. No pipe joint will be allowed to occur in the wall. Provide wall castings where shown on Drawings. Where pipes pass through walls, make pipe joints adjacent to the wall penetration watertight. Clean pipe sleeves and wall castings of all dirt and grease to secure a tight bond with the concrete.
8. Trench Water: Maintain the excavation in which pipe is being laid free from water and do not assemble pipe joints under water. Do not allow water to rise in the excavation until the joint material has received its set. Perform the work in a manner to secure water-tightness and to prevent damage to, or disturbance of, the joints during the refilling process, or at any other time.

D. Joint Construction:

1. Joint Workmanship Demonstration: Before any joints are actually made in the trench, demonstrate to the Agency, by making a sample joint, that the methods which will be employed to conform to the Specifications and will secure a watertight joint, and that the workers used in this work are familiar with the requirements.
2. Bell and Spigot and Mechanical Joint Pipe: Bring the spigot end of the pipe true to line and grade and insert to the required depth of the socket according to the pipe manufacturer's instructions and recommendations before the joints are made. Ensure the inner surface of adjoining pipe conforms at the joints, except where deflected joints are used. Where applicable, verify the annular space for the gasket element is of uniform width and depth before deflecting the joint, where joint deflection is permitted and used. If any pipe does not allow sufficient space for the gasket element, replace with one of proper dimensions.
3. Transition Joints: Transition joints may be required at Contract interfaces, where Drawings and Specifications permit the option of alternative pipe materials, or where connection of new pipe to existing pipe involves different materials. Apply a coal tar epoxy coating to the bolts and nuts as specified above for buried flange joints.
 - a. Joints between two different non-ferrous pipe materials or between a non-ferrous material and a ferrous pipe material may be made using a flexible transition coupling as specified in Section 40 05 23, "Valves and Miscellaneous Piping Appurtenances," as shown on the Drawings or other means as approved by the Agency.

- E. Piping Appurtenances: Provide all accessories and appurtenances required for the proper installation and operation of the piping and accessories including, but not limited to: guides, inserts, anchor and assembly bolts, washers, nuts, gaskets. For installations in damp or submerged locations, embedded in concrete, or in buried locations, use Type 316 stainless steel bolts and nuts; for damp enclosures, either Type 316 stainless or cadmium-plated steel bolts and nuts; in dry locations, use bolts and nuts of black steel or other materials listed herein.
- F. Protecting and Backfilling Pipes:
 - 1. Protecting Laid Pipe: After pipes have been laid and the joints have been made, carefully remove sheeting and shoring or any other work around the pipe to avoid hitting or dropping heavy, hard objects which may damage the pipe.
 - 2. Backfilling around Pipes: After the joints have been made and checked for gasket position or completion of restraints, backfill the trench in accordance with Section 31 23 33 of these Technical Specifications.

3.04 WELDING (NOT USED)

3.05 PROTECTIVE COATINGS

- A. General: Conform to the applicable requirements of technical Specifications Section 09 90 00, "Painting and Coating", and the schedule submitted with the shop and erection-drawings. Fully coordinate the protective coating requirements with the foregoing color code identification requirements to ensure compatibility of materials used. All aboveground (non-buried, including that in vaults) piping shall be coated.
- B. Buried Service: Shop coat ferrous metal piping appurtenances intended for buried installation in accordance with the following or equal systems.
 - 1. Kop Coat: 893RCP epoxy primer (SP-6 surface preparation), 6 mils min. DFT; Bitumastic No. 300-M finish, 16 mils min. DFT
 - 2. Tnemec: Series 69 primer (SP-6 surface preparation), 6 mils min. DFT; Series 46H413 finish, 16 mils min. DFT
 - 3. Field touch up wrench, handling or other damage to shop coated appurtenances and coat all buried nuts, bolts, tie rods and flanges with Kop-Coat 50, Tnemec Series 46-449 (or Tnemecol 46-450) or equal compatible system, 16 mils minimum DFT. For touch up of damaged shop coating, roughen shop-coated surface to receive overcoating with 80 grit sandpaper before application.

3.06 FLUSHING

- A. General: Flush all piping clean of all dirt and foreign material prior to performing the hydrostatic and leakage test.
- B. Equipment and Supplies: Provide all equipment, and supplies for performing the work, and waste the water at locations or by procedures approved by the Agency. Furnish fittings and all special pipe taps required for injecting any required sterilizing solution.

3.07 TESTING

- A. See Section 33 08 30, "Commissioning of Wastewater Utilities," and Section 33 05 20.11, "PVC Gravity Sewer Pipe and Fittings", of these Specifications.

3.08 CLEAN-UP

- A. Remove tools, equipment, rocks larger than 2 inches in diameter (1 inch and larger for plastic pipe, pipe with a PVC tape coat, and pipe with a polyethylene encasement), and other foreign matter from the pipe trench before beginning backfilling operations. Refer to Section 31 23 33 for general requirements regarding clean-up of the work area.

END OF SECTION 33 05 20

SECTION 33 05 20.11

PVC GRAVITY SEWER PIPE AND FITTINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications and applicable portions of Section 33 05 20 form a part of this Section.
- B. Section Includes:
 - 1. Submittals.
 - 2. Polyvinyl chloride gravity sewer pipe (PVCP) and fittings.
 - 3. Warning tape.
 - 4. Pipe installation.
- C. Related Sections:
 - 1. Section 31 23 19 - Dewatering
 - 2. Section 31 23 33 - Trenching, Backfilling and Compaction
 - 3. Section 31 40 00 - Sheet piling, Waling and Shoring
 - 4. Section 33 05 16 - Utility Structures
 - 5. Section 33 05 20 - General Piping Requirements
 - 6. Section 33 08 30 – Commissioning of Wastewater Utilities

1.02 REFERENCED CODES AND STANDARDS

- A. American Society for Testing and Materials (ASTM), latest edition:
 - 1. D1784 Standard Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (PVCP) Compounds.
 - 2. D2444 Standard Test Method for Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight).
 - 3. D3034 Standard Specification for Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings.
 - 4. F477 Standard Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

5. F679 Standard Specification for Poly Vinyl Chloride (PVC) - Large Diameter Plastic Gravity Sewer Pipe and Fittings.
6. F1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air.
8. F1668 Standard Guide for Construction Procedures for Buried Plastic Pipe.

B. Uni-Bell PVC Pipe Association:

1. Uni-Pub-6: Installation Guide for PVC Sewer Pipe.

1.03 SUBMITTALS

- A. Comply with the general requirements and procedures specified in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures".
- B. Inspection and Certification by Contractor:
 1. In coordination with the respective pipe manufacturer, establish the necessary quality control and inspection practices to assure compliance with standards cited herein.

1.04 QUALITY ASSURANCE

- A. Factory Inspection: No factory inspection will be required except where, in the judgment of the Agency, a substantial portion of the pipe delivered to the job site does not meet the standards specified herein. In this event, factory inspection shall be at the Contractor's expense.
- B. Factory Testing: Provide pipe, fittings and couplings meeting the requirements of the section titled "Requirements" of ASTM D-3034. During production of the pipe, the manufacturer shall perform the specified test for each pipe marking. Deliver, with the pipe, a certificate by the manufacturer indicating compliance with specification requirements. Include the test result data with the certificate. Manufacture pipe of PVC compound conforming to the chemical resistance requirements of Subsection 207-17.5, Standard Specifications for Public Works Construction (Southern California Chapter American Public Works Association).
 1. Pipe shall be subject to a drop impact test using a free falling tup as follows:
 - a. Pipe shall withstand, without failure, at 73 degrees Fahrenheit an impact of a falling 20 pound weight with a 1/2 inch radius nose (Tup A), in accordance with ASTM D-2444. Use the specified pound of weight per pipe size as follows:

Nominal size, inches	Impact energy, ft-lbs
4	150
6	210
8	210
10	210

- b. There shall be no visible evidence of shattering or splitting when the energy is imposed.
 - c. Denting will not be considered a failure.
2. Select one test pipe at random from each 1,000 feet or fraction thereof of each size of pipe delivered to the job site but no less than one test per pipe per lot. A lot shall be defined as pipe having the same identification marking. For each selected pipe use a specimen length that is a minimum of 8 feet.

PART 2 - PRODUCTS

2.01 PIPE

- A. Furnish PVC gravity sewer pipe and fittings designed and manufactured in accordance with ASTM D-3034 for pipe sizes 15-inches and smaller in diameter. Fabricate pipe and fittings of PVC plastic having a cell classification as defined in ASTM D-1784. Furnish pipe and fittings that are homogeneous throughout and free from cracks, holes, foreign inclusions, or other defects. Furnish pipe uniform in density, color, opacity, and other physical properties. Furnish PVC pipe for gravity transmission mains having a maximum standard dimension ration (SDR) of outside diameter to wall thickness of 26, per ASTM D-3034. Furnish pipe in standard laying lengths of 20 feet and 12.5 feet. Use of random pipe lengths is subject to Agency approval. Do not furnish pipe having a maximum offset measured from the concave side of the pipe exceeding 1/16 inch per foot of length.

2.02 JOINTS

- A. Furnish integral bell and spigot type of joint with gasket on pipe to be used on gravity mains. Solvent weld joints are allowed only for laterals 4 inches in diameter and smaller. Provide a reference mark on that spigot end of pipe to ensure proper position of the adjoining bell end. On pipe with gasket joints, manufacture with a socket configuration which will forestall improper installation of the gasket and will ensure the gasket remains in place during the joining operation.

2.03 FITTINGS AND ACCESSORIES

- A. Furnish fittings and accessories manufactured and supplied by the same manufacturer as the pipe and having compatible connections with the pipe.

2.04 SOLVENT CEMENT

- A. Allowed only for use on 4-inch and smaller laterals, which are not part of this Work.

2.05 GASKETS

- A. Conform to the requirements of ASTM F-477.

2.06 COUPLINGS

- A. Repair Couplings: Molded of same material as pipe specified above. Furnish with gaskets at both ends and without a stop.
- B. Flexible Shielded Couplings: Conform to ASTM C564 and ASTM C1173.
 - 1. Fabricate body of synthetic SBR rubber conforming to ASTM C564.
 - 2. Design to use a mechanical compression joint requiring no sealant to make the pipe connection.
 - 3. Shear Ring: 0.012-inch thick, made of Type 316 stainless steel; width of shield to match coupling length.
 - 4. Furnish with at least two (2) Type 316 stainless bands and clamps at each coupling. Spot weld clamps in place on the shield.
 - 5. Manufacturer: Fernco Strong Back Flexible Repair Coupling or equal.

PART 3 - EXECUTION

3.01 HANDLING AND STORAGE OF PIPE

- A. Deliver polyvinyl chloride pipe to the job site from the factory and store at the job site in palletized units or bundles to prevent unnecessary deflection prior to installation. Size each palletized unit to limit the stacking of pipe to not more than 30 inches high or as approved by the Agency.
 - 1. Transport pipe with care to ensure that the binding and tie-down methods do not damage or deflect the pipe in any manner. Pipe bent, deflected, or otherwise damaged during shipping shall be rejected. Ensure that pipe storage at the job site conforms to manufacturer's recommendations regarding protection from long term exposure to the sun's rays.

2. Do not uncover or remove PVC pipe from the pallet or lay out along the ditch until the bedding material is in place and ready to receive pipe.

3.02 PIPE INSTALLATION

- A. General: Install pipe and fittings in strict accordance with the manufacturer's recommendations and instructions, the requirements of ASTM D-2321, the requirements as specified in Section 33 05 20 of these Technical Specifications and as further specified below.
- B. Pipe Laying: Carefully inspect all pipes for defects before placing in the trench. Avoid abrasion or scratching of the pipe exterior surface during installation. Unless otherwise required, lay all pipes straight between changes in grade. Make changes in a grade only at manholes, unless otherwise indicated on the Drawings.
- C. Cutting Pipe: Whenever a standard pipe length requires cutting to fit into the line, provide for a lateral connection or to bring it to the required location, perform work in accordance with the manufacturer's instructions so as to leave a smooth, square end with a beveled lip. Provide a new homing mark on all cut pipes equal to that shown on a standard pipe length. Field welds will not be permitted for gasket joint pipe. Where a plain end to plain end joint occurs as a result of cutting into the pipe, install a solid wall repair couplings as specified above. Flexible couplings are not permitted for this installation, but only when necessary to join pipe of different materials having different outside diameters.
- D. Manhole Connections: Pipe may be laid through a manhole when possible to form a channel. In this case, after construction of the manhole cut out the top of the pipe. On all pipe entering a manhole install a gasket joint within 1 foot maximum of the manhole or structure base and install a standard manhole gasket (water stop) as supplied by the manufacturer firmly clamped around the pipe's exterior and near the structure wall center.
- E. Joint Construction: Wipe all pipe joints clean of dirt, oil, grease, and other foreign material before inserting the spigot end of one pipe section into the bell end of the adjoining piece. Perform solvent welded jointing of lateral pipe in strict accordance with the manufacturer's instructions. Insert the pipe spigot end to the proper depth of the socket as indicated by the home mark.
- F. Service Laterals: None required on Work.
- G. Locating Wire: Install locating wire as specified in Section 33 05 20 on new PVC gravity sewer main. Attach wire to pipe and terminate wires in a precast concrete box as shown on Drawings.

3.03 DAMAGED PIPE

- A. Reject and remove from the job site pipes having cracks, splits, pipe curvature exceeding the offset specified hereinabove or scratches which, in the judgment of the Agency, affect the pipe strength. Repair of damaged PVC pipe will not be permitted.

3.04 TESTING

- A. General: See Section 33 08 30 of the technical Specifications.
- B. Field Leakage Test: See Section 33 08 30.
- C. Mandrel Test: Following the leakage test and not sooner than thirty (30) days following the placement of compaction of backfill and prior final surface restoration, clean all main line pipe and then perform a deflection test using a mandrel to measure for obstructions (deflections, joint offsets, and lateral pipe intrusions). Pull a rigid mandrel through the pipe by hand or by mechanical means approved by the Agency. Use a mandrel having a cross-section equivalent to a circle having a minimum diameter as follows:

Pipe Size, inch	Mandrel Diameter (minimum), inch SDR 26
6	5.512
8	7.188
10	8.968

1. Employ a mandrel composed of two (2) steel circular plates set parallel and joined by 0.50-inch steel flats set on edge around the plates to form points of contact with the pipe being tested and having an odd numbered contact points, but not less than 9 in number. Mandrel testing of service laterals is not required.
2. At the beginning of Work, have pipe manufacturer inspect the proposed mandrel and submit written certification that the mandrel's precision conforms to the permitted deflection specified herein. If during the course of the Work, there is a change in the mandrel, have each new mandrel inspected and certified by the pipe manufacturer and submit certification to the Agency. Remove pipe exceeding the permitted deflection and replace in conformance with the Specifications at no expense to the Agency. Use of a re-rounder to reduce deflection is not permitted.

- D. Video Inspection: Perform a video inspection, or televising, as described in this subparagraph of all gravity sewer mains (not service laterals) installed as part of this Contract for final approval following satisfactory completion of the mandrel test and the leakage test as described above. Prior to performing the video inspection, visually inspect the sewer mains and remove construction debris and other foreign materials from the pipe interior to permit passage and proper functioning of the video equipment. Perform the video inspection in conformance with current National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding conventions. Employ software that is PACP compliant. Video inspection operator shall be NASSCO PACP trained and certified. Furnish the Owner a read-only DVD disc of the type as specified in Section 02500, containing video captured in either MPEG or Windows Media Video (.WMV), with voice-over of each inspected section and a corresponding written log giving interpretation of the conditions found by the inspection.

1. Equipment:

- a. Use cameras meeting Cal-OSHA requirements for operating in the sewer environment.
- b. Employ cameras having Pan-and-Tilt capabilities, having a minimum of 360 x 270 degree rotation and illumination sensitivity of three lux or less and providing a minimum resolution of 460 lines. The focal distance shall be adjustable through a range of 25 mm (1 inch) to infinity. Remotely control light intensity, focus iris and color balance from the operator station to provide the best possible picture.
- c. During the duration of the video inspection, allow or place flow through the section being inspected sufficient to determine the existence and location of any sags or crowns in the pipeline grade. Do not exceed a traverse rate of 30 feet per minute. Provide a cable-footage counter having an accuracy of plus or minus 2 feet per 1,000 feet, or better.
- d. Identify on the inspection DVDs and in the logs, the conditions encountered by station corresponding to the Drawings and by type. Differentiate types of conditions encountered according to categories including but not limited to: cracks, displaced joints, sags and crowns, grade breaks, lateral or service connection, locations and condition, manhole locations, presence of obstructions or other foreign materials left in the pipe interior, buckling or deformation of the pipe and infiltration leaks.

3.05 CORRECTIVE WORK AND CLEAN-UP

- A. Correct, at the direction of the Agency, lateral pipe intrusions, deflected or offset joints, sags or crowns in grade, damaged pipe and all other conditions not

conforming to the requirements of these Specifications found as a result of this inspection. Similarly, remove obstructions and foreign material found in pipe. Perform corrections and removals as required at no additional expense to the Agency. Where, in the opinion of the Agency, major corrective work or replacement is required, re-perform leakage test on the corrected or replaced section of pipe main.

END OF SECTION 33 05 20.11

SECTION 33 05 20.14

STEEL PIPE AND FITTINGS

PART 1 – GENERAL

1.01 SUMMARY

- A. Requirements specified in the Division 1 of the Standard specifications, the Special Provisions and Division 1 of the Technical Specifications and applicable portions of Section 33 05 20 form a part of this Section.
- B. This Section describes materials and fabrication of steel mill pipe in accordance with AWWA C200 as modified herein, and the installation of the pipe to serve as a casing pipe to support the sewer main of HDPE crossing a creek,
- C. This Section Includes:
 - 1. Submittals
 - 2. Fabrication of steel pipe used for a casing pipe.
 - 3. Transportation and delivery of pipe.
 - 4. Installation of steel pipe.
 - 5. Repair of dielectric coating.
 - 6. Field closures.
 - 7. Factory testing and inspection of all steel pipe.

1.02 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work:
 - 1. Section 31 23 00 – Excavation and Fill
 - 3. Section 31 23 33 – Trenching, Backfilling and Compaction
 - 4. Section 33 05 20 – General Piping Requirements

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of other requirements of these Specifications, perform or provide the Work specified herein in conformance with or exceeding the applicable requirements of the referenced portions of the following documents (latest revision) to the extent that the requirements therein are not in conflict with the provisions of this Section.

- B. American National Standards Institute (ANSI)
 - 1. B36.10 Welded and Seamless Wrought Steel Pipe
- C. American Society for Testing and Materials (ASTM)
 - 1. A36 Specification for Structural Steel
 - 2. A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
 - 3. A139 Specification for Electric Fusion Arc- Welded Steel Pipe (Sizes 4-in. and Over)
 - 4. A181 Specification for Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for General Service
 - 5. A283 Specification for Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes, and Bars
 - 6. A285 Specification for Pressure Vessel Plates, carbon steel, Low and Intermediate-Tensile Strength
 - 7. A307 Specification for Carbon Steel Externally and Internally Threaded Standard Fasteners
 - 8. A325 Specification for High Strength Bolts for Structural Steel Joints
 - 9. A370 Test Methods and Definitions for Mechanical Testing of Steel Products
 - 10. A516 Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service.
 - 11. A568 Specification for General Requirements for Steel, Sheet, Carbon, and High Strength, Low-Alloy, Hot Rolled and Cold Rolled
 - 12. A570 Specification for Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality
 - 13. A572 Specification for High Strength Low Alloy Columbium-Vanadium Steels of Structural Quality
 - 14. A1018 Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
 - 15. E165 Methods for Liquid Penetrant Inspection
 - 16. E709 Standard Guide for Magnetic Particle Testing
- D. American Society of Mechanical Engineers (ASME)
 - 1. Boiler and Pressure Vessel Code, Section VIII

- E. American Water Works Association (AWWA)
 - 1. C200 Steel Water Pipe 6-In. and Larger
 - 2. C203 Coal-Tar Protective Coatings and Linings For Steel Water Pipe-Lines – Enamel and Tape – Hot Applied
 - 3. C206 Field Welding of Steel Water Pipe
 - 4. C209 Cold-Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines
 - 5. C214 Tape Coating Systems for the Exterior of Steel Water Pipelines
 - 6. C216 Heat-Shrinkable Cross-Linked Polyolefin Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines
 - 7. M-11, Steel Pipe – A Guide for Design and Installation
- F. American Welding Society (AWS)
 - 1. D1.1 Structural Welding Code-Steel
- G. NSF International
 - 1. 60 Drinking Water Treatment Chemicals – Health Effects
 - 2. 61 Drinking Water System Components – Health Effects

1.04 SUBMITTALS

- A. General: Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, “Submittal Procedures”, of the Technical Specifications pertaining to submittals, including preparation, transmittals and guarantees.
- B. Shop Drawings: Submit details of the pipe required for the Work as shown on the Drawings, and pipeline design calculations, furnished by the manufacturer, to the Agency. Include, but do not limit, information submitted to the following:
 - 1. Name of the manufacturer/supplier and location of the factory.
 - 2. Pipe inside diameter (not less than nominal size indicated, except for mill pipe).
 - 3. Steel wall thickness.
 - 4. ASTM class or grade of steel.
 - 5. Yield point and ultimate strength of pipe (internal pressure).
 - 6. Coating type, materials and thickness, including field applied tape coatings and/or heat shrink sleeves and liquid coating for repair of damaged coatings.
 - 7. Length of each pipe section.

8. Full and complete information regarding location, type size and extent of all welds. Distinguish on the shop/fabrication drawings between shop and field welds
- C. Certifications: Furnish certified affidavit(s) of compliance for all pipe and other products or materials furnished under this Section of the Specifications, as specified in ANSI/AWWA C200, C205, C206, and C214, respectively, and certified copies of the following supplemental data for all pipe, fittings and specials:
1. Certified mill test reports on each heat from which the steel is rolled. Include physical and chemical properties tests.
 2. Hydrostatic test reports.
 3. Results of production shop tests and tests on field welds (if used), including certificates of welding rods used for shop and field welding. Reference each to their specific use.
 4. All quality control check sheets used during the inspection and testing of pipe and fittings produced for this Contract.
 5. The results of all repairs made to the pipe or coating.
 6. Results of shop holiday testing of coatings on all pipe
 7. Welding plan, welding inspection plan and welding test plan for factory welding and for field welding (if used), referenced to pipe piece and joint number.
- D. Markings – Mill Pipe: Legibly mark each length of pipe by paint stenciling, die stamping, or hot-roll marking to show the manufacturer's name or mark, size and weight of the pipe, and the type of steel from which the pipe was made.

1.05 QUALITY ASSURANCE

- A. Factory Inspection: The Agency, or his/her representatives, may inspect pipe production at the manufacturer's plant. The Agency shall have the right to call for and witness the making of production weld tests (including weld-test, reduced-section tension and bend-test specimens), hydrostatic tests, check of permissible weight and dimension variations, and of the pipe coatings to be furnished. Conduct test procedures, number of tests required, requirements for test compliance and retest procedures, in the event of specimen failure, as specified in AWWA C200 and as noted herein. All costs associated with the performance of the tests and in obtaining the test results shall be borne by the Contractor. This shall be exclusive of any cost incurred by the Agency for witnessing the manufacture of the pipe, which shall be borne by the Agency, or any initial test undertaken by the pipe manufacturer, and as otherwise noted below,. Contractor shall bear responsibility for all related cost for witnessing retesting of any material or product.

B. Welding:

1. Test Methods: Where specified, perform the respective weld methods specified below in this Section and conduct testing of the welds in accordance with the following requirements:
 - a. Ultrasonic Test (UT): Conduct shop ultrasonic weld tests in accordance with the requirements of either (1) the ASME Boiler and Pressure Vessel Code, Section V, Pressure Vessels, Article 4, with acceptance criteria per ASME Section VIII, Div. 1, Appendix 12, or (2) per ANSI/AWS D1.1, Section 6, Part F, with acceptance criteria per Part C, 6.13.9.
 - 1.) Field UT shall be conducted as specified with acceptance criteria for field conducted UT per AWWA C206, Section 4.6.7.2 through 4.6.7.4 in addition to that for shop UT.
 - 2.) Repair defects in the welds disclosed by the ultrasonic testing and retest. Repeat procedure until passing test. Furnish copies of the ultrasonic test reports to the Agency in accordance with the submittal procedures described above.
 - b. Radiographic or Radioscopic Test (RT): Conduct shop radiographic weld tests in accordance with the requirements of either (1) the ASME Boiler and Pressure Vessel Code, Section V, Pressure Vessels, Article 2, or (2) ANSI/AWS D1.1, Section 6, Part E,. Radioscopic inspection performed in accordance with ASTM E416 and using the criteria of ASME Section VIII Division 1, Paragraph U-52 may be used in lieu of the radiographic inspection subject to approval by the Agency. Acceptance criteria for RT conducted per ANSI/AWS D1.1 shall be per Part C, 5.12.1.
 - 1.) Field RT shall be conducted as specified above, with acceptance criteria per AWWA C206, Section 4.6.7.2 through 4.6.7.4 in addition to that for shop RT.
 - 2.) Repair defects in the welds disclosed by the radiographic or radiosopic testing and retest. Repeat procedure until passing test. Furnish copies of the radiographs or digitized radiosopic records, as applicable, and test reports to the Agency in accordance with the submittal procedures described above.
 - c. Magnetic Particle Test (MT): Conduct shop magnetic (mag) particle tests in accordance with the requirements of either (1) ASTM E709, using the dry powder technique, with acceptance criteria per ASME Section VIII, Div 1, Appendix B, or (2) per ANSI/AWS D1.1, Section 6,

6.14.5, with acceptance criteria per Part C, 6.10, and Table 6.1, Statically Loaded Nontubular Connections.

- 1.) Field MT shall be conducted as specified above, with acceptance criteria per AWWA C206, Section 4.6.7.2 through 4.6.7.4 in addition to that for shop MT.
 - 2.) Remove defects, reweld, and retest the section affected until all defects are removed.
 - d. Liquid Penetrant Test (PT): Conduct shop liquid penetrant tests in accordance with the requirements of either (1) ASTM E165, with acceptance criteria per ASME Section VII, Div. 1, appendix 6, or (2) per ANSI/AWS D1.1, Section 6, Part D, 6.14.5, with acceptance criteria per Part C, 6.10, and Table 6.1, Statically Loaded Nontubular Connections. Employ either water washable or nonflammable materials. Acceptable products are 'Spotcheck' by the Magnaflux Corporation or 'Met-L-Check Flaw-Findr' by the Met-L-Check Company.
 - 1.) Field PT shall be conducted as specified above, with acceptance criteria per AWWA C206, Section 4.6.7.2 through 4.6.7.4 in addition to that for shop PT.
 - 2.) Remove defects, reweld, and retest the section affected until all defects are removed. Use of dye penetrant on the interior of the pipe is prohibited.
2. Pipe Fabricator - Qualifications of Welders, Welding Operators, and Procedures:
- a. All welders and welding operators shall be qualified in accordance with AWS D1.1, ASME BPVC, Section IX, and Section VIII, Division 2, Paragraph AF210, as applicable. Employ for this work only welders having qualified within the last 12 months prior to start of work for this Project.
 - b. Submit welder performance qualification test records and welding operator performance qualification test records for information to the Agency.
 - c. If the work of a welder or welding operator appears questionable to the Agency, the welder or welding operator shall pass a requalification test as specified in the ASME BPVC. The requalification test plates, edge preparation, and filler materials shall be the same as those used in the Work. The pipe fabricator shall bear all costs for requalification tests.
 - d. Tests of Welds: For full penetration welds, the impact toughness of the weld metal, heat affected zones (HAZ), and base metal adjacent to HAZ of procedure qualification test plates shall be determined as required by

the ASME BPVC, Section IX. Production pipe test plates only require tensile and hardness tests.

- 1.) Straight Pipe Pieces: Perform reduced-section tension tests, bend tests and etching tests in accordance with AWWA C200. Perform production weld tests on at least one set of weld-test specimens taken on pipe to be installed in each of the project sections - tunnel, shaft and buried service, from work performed by each welding machine and each operator.
- e. Test Reports: Submit steel mill mechanical and other requested test reports to the Agency.
3. Field Fabrication (if required) - Qualifications of Welders, Welding Operators, and Procedures:
 - a. All welders and welding operators shall be qualified in accordance with AWS D1.1.
 - b. Submit welder and welding operator performance qualification test records for review and record purposes to the Agency prior to start of welding work.
 - c. If the work of a welder or welding operator appears questionable to the Agency, the welder or welding operator shall pass a requalification test as specified in the ASME BPVC. The requalification test plates, edge preparation, and filler materials shall be the same as those used in the work. The pipe installer shall bear all costs for requalification tests.
 - d. Test Reports: Make available to the Agency all tests specified in this Section.
- C. Factory Hydrostatic Test: Perform a factory hydrostatic test on each length of steel pipe cylinder in accordance with AWWA Standard C200, and as noted herein. Maintain test pressure for a period in accordance with AWWA C200. Allow sufficient time for a thorough examination of the pipe section for defects, but in no case for a time less than 30 seconds. Extend the test period if requested by the Agency to complete visual inspection. Repair defects in welds and hydrostatically retest all repaired sections.
- D. Testing and Inspection of Coating:
 1. Inspect and test tape coatings in accordance with AWWA C214, Section 4, for cold applied tape. Conduct electrical test for flaws (holidays) on 100 percent of the tape coating area on pipe, fittings and specials in accordance with NACE RP-02 (latest edition) prior to shipment from the factory. Submit test results to the Agency.

- E. Certificates: Submit certificates of compliance, obtained from the pipe manufacturer, stating that all pipe and coatings have been manufactured and tested in accordance with these Specifications. Submit certificates for the testing or manufacturing regardless of whether it was witnessed by the Agency, or his/her representative, or not.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Responsibility: The Contractor is responsible for pipe transportation from the place of manufacture to the job site or storage site.
- B. General Protection and Repair: During the entire period from coating application to pipe installation, exercise care and diligence to prevent damage to the coating and to minimize the development of cracks or tears therein. Remove any defective area in the coating to the pipe wall and repair by hand application to the full required thickness. Perform repair of defective or damaged tape coating in accordance with AWWA C214 if discovered prior to shipping from the location of the manufacturer or tape applicator, or, if discovered after arrival at the project site, perform repairs in accordance with the procedures described in Part 3 of this Section. If defective areas occurring in the coating of a pipe section are numerous or of aggregate size to render the piece irreparable or negatively affect the long-term service life of the piece, remove and replace the entire pipe length. Determination of irreparable damage to or unacceptable quality of the lining or coating shall be made by the Agency and his/her decision shall be final.
 - 1. Record and fully describe any and all factory repairs performed in the pipe manufacturer's inspection reports for the respective piece.
 - 2. For repairs made in the field, note such repairs in the Inspector's Daily Reports and in the QC tracking records, referencing the respective piece number assigned by the pipe manufacturer.
- C. Shipping: Load pipe for shipment upon suitable trucks provided with padded bunks equipped with nylon belt tie-down straps or padded banding. In loading and unloading the pipe, exercise care to prevent any damage to pipe ends, coatings, or protuberant steel connections. Perform loading and unloading operations with the pipe under control at all times, and under no condition allow it to be dropped.
- D. Handling: Use pipe handling equipment consisting of wide belt slings, padded cradles, or other devices designed and constructed to prevent damage to the pipe or in particular the coating. Use at least 2 pipe slings or equivalent supports, equally spaced along the pipe to provide uniform weight distribution, in handling of pipe

sections 20 feet or greater in length. The use of chains, hooks, or other equipment that may damage the pipe or coating shall not be allowed.

PART 2 - PRODUCTS

2.01 MILL-TYPE STEEL PIPE

- A. General: For casing pipe used on the creek crossing furnish mill-type steel pipe consisting of furnace-welded, electrically welded, or seamless pipe produced to meet finished pipe specifications in accordance with C200.
- B. Material: Acceptable grades of pipe under this standard shall be:
 - 1. ASTM A53, Grades A and B
 - 2. ASTM A135, all grades
 - 3. ASTM A139, all grades

Submit certified laboratory material test reports stating the type of pipe and the physical and chemical properties for each heat number of the steel used in the manufacturer of the proposed pipe.

- C. Dimensions, weights, and Test Pressure: Furnish mill pipe having inside and outside diameters, wall thickness, weight, test pressures, and weight and dimension tolerance conforming to ANSI B36.10 for Standard Weight or Schedule 40 classification, whichever is a greater wall thickness.
- D. Length: Furnish mill pipe in single cut length as required for the creek crossing detail shown on the Drawings.
 - 1. For specified cut lengths, the actual length shall not vary from the specified length by more than 1/8 inch.
- E. Joints: [Not required]
- F. Coatings: Providing linings and coatings for mill pipe as specified in Paragraphs 2.02 and 2.03, respectively, below.

2.02 LINING (FACTORY APPLIED) – NOT USED

2.03 COATING (FACTORY APPLIED)

- A. Cold-Applied Tape Coating: Coating shall be a polyethylene tape coating in accordance with AWWA C214 for straight pipe pieces and C209 for fittings and specials

1. Machine-Applied Tape Coating:
 - a. Conform to AWWA C214, except as modified herein.
 - b. The tape coating system shall have a minimum total thickness of 80 mils consisting of one inner-layer corrosion protection tape and two outer-layer mechanical protection tapes. Apply weld seam tape to weld seams that restrict the inner layer from being in contact with base material adjacent to the weld toes.
 - c. Compatibility: Use only primers and tapes supplied by the same manufacturer.
 - d. The outer-layer tape shall be resistant to ultraviolet light degradation.
2. Acceptable Products:
 - a. Polyken YG III System:
 - i. Primer, No. 1019 or No. 1033A
 - ii. Innerwrap, No. 989, 20 mils min.
 - iii. Outerwrap, No. 956, 30 mils min.
 - iv. Outerwrap, No. 956, 30 mils min.
 - b. Tapecoat P-TC 80 System:
 - i. Primer, M/A 1000F or M/A 1100NF
 - ii. Innerwrap, No. 1020, 20 mils min.
 - iii. Outerwrap, No. 2030, 30 mils min.
 - iv. Outerwrap, No. 2208, 30 mils min.
 - c. Tek-Rap System:
 - i. Primer, 200 Series
 - ii. Innerwrap, 250 Series, 20 mils min.
 - iii. Outerwrap, 255 Series, 30 mils min.
 - iv. Outerwrap, 255 Series, 30 mils min.

2.04 HEAT SHRINK COATINGS

- A. Furnish heat shrink coating systems conforming to the requirements of AWWA C216 for completing the coating at field welded joints.

PART 3 - EXECUTION

3.01 GENERAL

- A. Notify the Agency not less than 24 hours in advance of the time of unloading or installation of pipe and appurtenances so that arrangements for inspection of the unloading or installation of the pipe and appurtenances may be made.

3.02 UNFIT OR REJECTED MATERIAL

- A. Upon delivery to the job site of steel pipe and prior to lowering into the installation location, perform a visual inspection to discover any damage. For tape wrap coatings on pipe perform an electrical inspection (holiday test) of the coating in the presence of the Agency or his/her representative in accordance with procedures and requirements specified in paragraph 3.03C below.
- B. Repair, as specified hereinafter, or replace, any pipe section or appurtenance which has been damaged during loading, transporting, unloading, or as a result of faulty support while being transported or stored on the site of the Work. Immediately remove from the job site and replace without additional cost to the Contract any pipe or appurtenance, whether installed or not, which is determined by the Agency to not meet the requirements of these Specifications or is otherwise found unfit and is rejected as being unfit. Excessive coating damage in the judgment of the Agency shall be cause for rejection of the pipe as unfit.

3.03 PIPE INSTALLATION

- A. Requirements: Install pipe in accordance with the manufacturer's recommendations and instructions and the requirements as specified in Section 33 05 20, "General Piping Requirements", and herein below.
- B. Laying: Carefully inspect pipe for defects before placing in the trench or on the pipe supports.
 - 1. For buried pipe, bed and backfill pipe as indicated on the Drawings and specified in Section 31 23 33, "Trenching, Backfilling and Compaction", of these Specifications.
- C. Electrical Inspection of Dielectric Pipe Coating: Prior to lowering the pipe into the trench, conduct an electrical inspection of dielectric pipe coatings (includes tape and paint coatings) by means of Tinker-Rasor electrical flaw detector. Apply voltage levels using the flaw detector as follows:

Voltage Level Table

Generic Type	Composition	Test Method	Voltage Level
Tape	Tape wrap	with wand	20,000
Tape	Tape wrap	with garter spring	36,000

1. Repair small areas of the coating which fail the electrical flaw detection inspection as specified hereinafter. Where inspection discovers failure over large areas in any length of pipe, reject subject length of pipe as unfit and immediately remove from the site of the Work.

D. Abrasions: Avoid abrasion of the pipe coating during installation. Repair damaged coating as specified in Paragraph 3.06 herein, unless in the judgment of the Agency the damage is so extensive as to deem the pipe irreparable by this method. In this case, remove the pipe from the work site and return to the factory for recoating or replace by a new length, all without additional cost to the Contract.

3.04 JOINTS [NOT USED]

3.05 LINING [NOT USED]

3.06 COATING

A. Dielectric or Tape Wrap Coating:

1. Tape Wrap Coating – Not permitted for field joints, permitted only for repair of damaged factory tape coating on pipe barrels:
 - a. After the application of an approved and compatible primer, firmly wrap tape circumferentially on the pipe or appurtenance overlapping each previous wrap by not less than 5/8 the width of the tape. Do not permit wrinkles, air pockets, or loose wrap. Remove improper wrapping, clean the pipe and/or re-prime as required by manufacturer's specifications or by the Agency, and rewrap.
 - b. Use following or equivalent approved tapes:

Tape	Primer	Manufacturer
Polyken #900	Polyken #927	Kendall Corp., Polyken Div.
Protecto Wrap #200A	Protecto Wrap #1170	Protecto Wrap Company
Royston Greenline	Roybond #747	Royston Laboratories
Scotchrap Tape #3	Scotchrap Pipe Primer	Minn. Mining & Mfg. Co.

- c. Apply primers and tapes in strict conformance with manufacturer's specifications.
- C. Field Repair of Coatings: When permitted by the Agency, perform minor field repair of damaged coatings using the material and method of application as specified above in this Paragraph. Major damage to the pipe coating shall be cause for rejection.
- D. Testing of Field Coating (tape and dielectric coating). Inspect and test all applied coatings, including painted surfaces and field repairs of coatings, for flaws. The decision of the Agency regarding test results shall be final. Test by means of an electrical flaw detector as specified in Par. 3.03C of this Section. Repair areas of the coating which fail the test until the coating successfully passes the test.

END OF SECTION 33 05 20.14

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SECTION 33 05 20.11

HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications and applicable portions of Section 33 05 20 form a part of this Section.
- B. Section Includes:
 - 1. Submittals.
 - 2. High density polyethylene pipe (HDPE) and fittings.
 - 3. Warning tape.
 - 4. Pipe installation.
- C. Related Sections:
 - 1. Section 31 23 19 - Dewatering
 - 2. Section 31 23 33 - Trenching, Backfilling and Compaction
 - 3. Section 31 40 00 - Sheet piling, Waling and Shoring
 - 4. Section 33 05 16 - Utility Structures
 - 5. Section 33 05 20 - General Piping Requirements
 - 6. Section 33 08 30 – Commissioning of Wastewater Utilities

1.02 REFERENCED CODES AND STANDARDS

- A. American Water Works Association (AWWA):
 - 1. C906 – Polyethylene (PE) Pressure Pipe and Fittings, 4 inches (100 mm) through 63 inches. (1,575 mm), for Water Distribution and Transmission.
 - 2. M55 – Manual of Water supply Practices, PE Pipe-Design and Installation.
- B. American Society of Testing and Materials (ASTM):
 - 1. D2239 – Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Inside Diameter.
 - 2. D2321 – Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 - 3. D2683 – Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.

4. D2737 – Standard Specification for Polyethylene (PE) Plastic Tubing.
5. D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Pipe.
6. D3034 – Standard Specification for Type PSM Polyvinyl chloride (PVC) Sewer Pipe and Fittings.
7. D3261 – Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Fittings.
8. D3350 – Standard Specification for Polyethylene Plastics Pipe and Fittings Material.
9. F714 – Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.
10. F905 – Standard Practice for Qualification of Polyethylene Saddle-Fused Joints.
11. F1055 – Standard Specification for Standard Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Fittings.
12. F1290 – Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings.
13. F1412 – Standard Specifications for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems.
14. F1417 – Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air.
15. F2164 - Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure.
16. F2206 – Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock.
17. F2620 – Standard practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.

C. Plastics Pipe Institute (PPI):

1. PPI Handbook of Polyethylene Pipe – 2009 (2nd Edition).
2. TR-33 – Generic Butt Fusion Joining Procedure for Polyethylene Gas Pipe.
3. TR-41 – Generic Saddle Fusion Joining Procedure for Polyethylene Gas Piping.
4. TN-42 – Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects.

1.03 SUBMITTALS

- A. Comply with the general requirements and procedures specified in Section 5-1.23 of Division 1 of the Standard Specifications and Section 01 33 00, "Submittal Procedures".
- B. Inspection and Certification by Contractor:
 - 1. In coordination with the respective pipe manufacturer, establish the necessary quality control and inspection practices to assure compliance with standards cited herein.

1.03 QUALITY ASSURANCE

- A. Factory Inspection: No factory inspection will be required except where, in the judgment of the Agency, a substantial portion of the pipe delivered to the job site does not meet the standards specified herein. In this event, factory inspection shall be at the Contractor's expense.
- B. Factory Testing: Conduct factory testing on HDPE pipe in accordance with the requirements of AWWA C906, with the frequency on production runs as stated therein.
 - 1. Deliver with the pipe, a certificate by the manufacturer indicating compliance with the specification requirements.
- C. Perform polyethylene (PE) pipe jointing employing only personnel trained in the use of butt-fusion equipment, electrofusion equipment (if required to perform the Work) and recommended methods for new pipe connections. Ensure personnel directly involved with installing the new pipe receive training in the proper methods for handling and installing the PE pipe. Conduct training employing qualified representatives of the polyethylene pipe manufacturer.

1.04 WARRANTY

- A. Warrant that the equipment used in this Work, where covered by patents or license agreements, is furnished in accordance with such agreements and that all applicable royalties and fees applicable to such license agreements have been included in the bid price given for this Work. No additional payment shall be awarded for such costs submitted after receipt of the bids.
- B. Refer to Paragraph 1.04 of Section 01 30 00. "Administrative Requirements", regarding Contractor's responsibility to defend, indemnify, and hold harmless the Agency from any and cost associates to loss, damage or expense arising out of or in any way connected with any claim of infringement of patent, trademark or violation of license agreement.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Transport, handle, and store pipe and fittings as recommended by the manufacturer. Handle pipe in accordance with PPI “Handbook of Polyethylene Pipe, chapter 2” using approved strapping and equipment rated for the loads encountered. Do not use chains, wire rope, forklifts or other methods or equipment that may gouge or damage the pipe or endanger persons or property. Conduct field storage in compliance with AWWA Manual of Practice M55, Chapter 7.
- B. If new pipe and fittings become damaged before or during installation, make repairs as recommended by the manufacturer, or, where directed by the Agency, replace the damaged materials at no additional expense to the Agency before proceeding with the Work.
 - 1. If any gouges, scrapes, or other damage to the pipe results in loss of 10% of the pipe wall thickness at any point, cut out and remove that length containing the damage or do not use that that piece of pipe.
- C. Deliver, store and handle other materials as required to prevent damage.

1.06 SITE CONDITIONS

- A. Contractor is cautioned that sewer lines designated for replacement may in most part be located in easements occurring in back or side yards of private properties. In most of these cases there may be existing dwellings or structures on these properties and the property fenced.
- B. Access to the existing terminations of these lines and to any service lateral connections to the mains is available, but is limited. It may be necessary to gain access to the specific sewer lines only through driveways or narrow walkways along the sides of the existing residential dwelling. Coordinate schedule with the Agency, who will assist in arranging for access and communicating the schedule and duration of activities with the property owner or residents.
- C. Exercise extreme care in accessing private property and in the conduct of the Work to minimize disruption and damage to the property. Obtain Agency’s approval for the removal of any trees or landscape vegetation required to perform the work for this Section.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Furnish high-density polyethylene (HDPE) plastic pipe and fittings meeting the applicable requirements of ASTM F714 PE plastic pipe (SDR-PR) based on outside diameter, ASTM D4976 and ASTM D3350.
 - 1. Provide polyethylene pipe made of HDPE material having a minimum material designation of PE 3408 or greater.
 - 2. HDPE material shall have a minimum cell classification of PE345464C, 345444E or 345464E.
- B. Provide pipe sizes as indicated on the Drawings.
- C. Provide only pipe and fittings made of virgin material. No rework, except that obtained from the manufacturer's own production of the same formulation, shall be permitted.
- D. Furnish pipe and fittings that are homogenous throughout and free of visible cracks, holes, foreign material, blisters, or other deleterious faults.
- E. Dimension Ratios: The minimum wall thickness of the HDPE pipe and fittings shall meet the requirements for SDR 17.
- F. Material color may be either white or light grey, with the interior of the furnished pipe having a light reflective color to allow for the best viewing for television inspection.
- G. Fittings: Provide fittings, where required, conforming to the requirements specified below and fabricated in the pipe manufacturer's factory or other approved manufacturer of high density polyethylene fittings (elbows and laterals). Remove the interior joint beads in the finished fittings prior to shipment by grinding or cutting to produce a smooth interior surface (maximum 1/16-inch protrusion, with no rough or jagged edges or undercuts). Provide elbows, where required, of the long radius design. Lateral fittings may use fiberglass wrap to provide the necessary reinforcement.
 - 1. Butt Fusion Fittings: Make fittings from HDPE material having a minimum material designation code of PE 3608, with a minimum cell classification as noted in Paragraph 2.01A above. Provide butt fusion fittings meeting the requirements of ASTM D3261. Molded and fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified or shown on the Drawings.

- a. Provide markings on molded fittings in compliance with the requirements of ASTM D3261.
 - b. Mark fabricated fittings in accordance with ASTM F2206.
 - c. Socket fittings shall meet ASTM D2683.
- 2. Electrofusion Fittings: Make fittings from HDPE material having a minimum material designation code of PE 3608, with a minimum cell classification as noted in Paragraph 2.01A above.
 - a. Electrofusion fittings shall have a manufacturing standard of ASTM F1055.
 - b. Fittings shall have a pressure rating equal to the pipe unless otherwise specified or shown on the Drawings.
- 3. Service Connections: Electrofusion saddles or sidewall fusion branch saddles.
 - a. Electrofusion Saddles: Make from materials required in Paragraph 2.01G.2. Provide outlet size 4-inch unless otherwise shown on the Drawings or as required to match the existing service lateral size.
 - b. Sidewall Fusion Saddles: Make in accordance with ASTM D3261 or ASTM F2206. Provide outlet size 4-inch unless otherwise shown on the Drawings or as required to match the existing service lateral size. After installation, approximately ¼-inch of the PE pipe shall be visible beyond the saddle to confirm that proper surface preparation occurred. Saddle faces not providing ¼-inch beyond the saddle are not acceptable.

2.02 COUPLINGS

- A. Flexible Shielded Couplings: Conform to ASTM C564 and ASTM C1173.
 - 1. Fabricate body of synthetic SBR rubber conforming to ASTM C564.
 - 2. Design to use a mechanical compression joint requiring no sealant to make the pipe connection.
 - 3. Shear Ring: 0.012-inch thick, made of Type 316 stainless steel; width of shield to match coupling length.
 - 4. Furnish with at least two (2) Type 316 stainless bands and clamps at each coupling. Spot weld clamps in place on the shield.
 - 5. Manufacturer: Fernco Strong Back Flexible Repair Coupling or equal.

PART 3 - EXECUTION

3.01 PIPE INSTALLATION

- A. General: Install pipe and fittings in strict accordance with the manufacturer's recommendations and instructions, the requirements of ASTM D-2321, the requirements as specified in Section 33 05 20 of these Technical Specifications and as further specified below.
- B. Pipe Laying: Carefully inspect all pipes for defects before placing in the trench. Avoid abrasion or scratching of the pipe exterior surface during installation. Unless otherwise required, lay all pipes straight between changes in grade. Make changes in a grade only at manholes, unless otherwise indicated on the Drawings.
- C. Cutting Pipe: Whenever a standard pipe length requires cutting to fit into the line, provide for a lateral connection or to bring it to the required location, perform work in accordance with the manufacturer's instructions so as to leave a smooth, square end with a beveled lip. Provide a new homing mark on all cut pipes equal to that shown on a standard pipe length. Field welds will not be permitted for gasket joint pipe. Where a plain end to plain end joint occurs as a result of cutting into the pipe, install a solid wall repair couplings as specified above. Flexible couplings are not permitted for this installation, but only when necessary to join pipe of different materials having different outside diameters.
- D. Manhole Connections: Pipe may be laid through a manhole when possible to form a channel. In this case, after construction of the manhole cut out the top of the pipe. On all pipe entering a manhole install a gasket joint within 1 foot maximum of the manhole or structure base and install a standard manhole gasket (water stop) as supplied by the manufacturer firmly clamped around the pipe's exterior and near the structure wall center.
- E. Joint Construction: Comply with the requirements in Paragraph 3.02 below.
- F. Service Laterals: None required on Work.
- G. Locating Wire: Install locating wire as specified in Section 33 05 20 on all new plastic gravity sewer main. Attach wire to pipe and terminate wires in a precast concrete box as shown on Drawings.

3.02 PIPE JOINING

- A. Assemble and join the polyethylene pipe at the site using the butt-fusion method to provide a leak-proof joint. Threaded or solvent-cement joints and connections are not permitted. Employ and operate equipment and follow procedures for joining pipe in strict compliance with the manufacturer's recommendations and in

accordance with ASTM F2620 or PPI TR-33. Use only personnel certified as fusion technicians per PPI TN-42 by a manufacturer of polyethylene pipe and/or fusing equipment to make the joints.

- B. Make butt-fused joints that are in true alignment and have uniform interior and exterior rollback beads resulting from the use of proper temperature and pressure. Allow the joint adequate cooling time before removal of pressure from the fusion machine. Provide a completed fused joint that is watertight and has tensile strength equal to that of the pipe. Prior to making the subsequent joint, grind the interior joint beads smooth (maximum 1/16-inch protrusion, with no rough or jagged edges or undercuts). Subject all joints to acceptance by the Agency prior to insertion.
- C. Cut out defective joints and replace at no additional cost to the Agency. Do not use any section of HDPE pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than 10 percent of the wall thickness. Remove defective pipe from the site. However, a defective area of the pipe may be cut out and the resulting section ends fusion jointed in accordance with the procedures stated above. In addition, discard and remove from the site any section of the pipe having other defects, such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness, or any other defect of manufacturing or handling as determined by the Owner.
- D. Where terminal sections of pipe are joined within the pipe trench, make the connection using electrofusion couplings or connectors as manufactured by Central Plastics Electrofusion, or equal and as specified below. Provide couplings or connectors having tensile strength equivalent to or greater than that of the pipe being joined.
- E. Where the new HDPE pipe is to be joined to existing buried pipe, make the connection using a transition coupling complying with the requirements in Paragraph 2.02 above by Fernco or approved equal. Verify the outside diameter of the existing pipe prior to commencing work on the respective section.
- F. Where fittings, including laterals, are shown on the Drawings as a required part of the installed replacement main, field join the fittings to the already installed adjoining sections of HDPE pipe using an appropriate fusion machine designed for in-trench joining, or by means of electro fusion couplings as specified above. Prior to making the closing field joint on a fitting installation, grind or cut the interior beads resulting from preceding field made joints on the fitting to the standard specified above.

- G. Electrofusion: Perform electrofusion joining in accordance with the manufacturer's commended procedure. Other acceptable electrofusion joining shall be as described in ASTM F1290 and PPI TN-34.
1. The process of electrofusion requires an electric source, a transformer (commonly called an electrofusion box) that has wire leads, a method to read electronically by laser or otherwise input the barcode of the fitting, and a fitting that is compatible with the type of electrofusion box used.
 2. The electrofusion box shall be capable of reading and storing the input parameters and the fusion results for later download to a record file that is to be submitted to the owner for his records.
 3. Demonstrate qualification of the fusion technician by submitting documentation of his/her electrofusion training within the past year on the same equipment proposed to be utilized for this Work.

3.03 DAMAGED PIPE

- A. Reject and remove from the job site pipes having cracks, splits, pipe curvature exceeding the offset specified hereinabove or scratches which, in the judgment of the Agency, affect the pipe strength. Repair damaged HDPE pipe as described in Paragraph 3.02 above.

3.04 TESTING

- A. General: See Section 33 08 30 of the Technical Specifications.
- B. Field Leakage Test: See Section 33 08 30.
- C. Video Inspection: Perform a video inspection, or televising, as described in this subparagraph of all gravity sewer mains (not service laterals) installed as part of this Contract for final approval following satisfactory completion of the mandrel test and the leakage test as described above. Prior to performing the video inspection, visually inspect the sewer mains and remove construction debris and other foreign materials from the pipe interior to permit passage and proper functioning of the video equipment. Perform the video inspection in conformance with current National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding conventions. Employ software that is PACP compliant. Video inspection operator shall be NASSCO PACP trained and certified. Furnish the Owner a read-only DVD disc of the type as specified in Section 02500, containing video captured in either MPEG or Windows Media Video (.WMV), with voice-over of each inspected section and a corresponding written log giving interpretation of the conditions found by the inspection.
1. Equipment:

- a. Use cameras meeting Cal-OSHA requirements for operating in the sewer environment.
 - b. Employ cameras having Pan-and-Tilt capabilities, having a minimum of 360 x 270 degree rotation and illumination sensitivity of three lux or less and providing a minimum resolution of 460 lines. The focal distance shall be adjustable through a range of 25 mm (1 inch) to infinity. Remotely control light intensity, focus iris and color balance from the operator station to provide the best possible picture.
2. During the duration of the video inspection, allow or place flow through the section being inspected sufficient to determine the existence and location of any sags or crowns in the pipeline grade. Do not exceed a traverse rate of 30 feet per minute. Provide a cable-footage counter having an accuracy of plus or minus 2 feet per 1,000 feet, or better.
3. Identify on the inspection DVDs and in the logs, the conditions encountered by station corresponding to the Drawings and by type. Differentiate types of conditions encountered according to categories including but not limited to: cracks, displaced joints, sags and crowns, grade breaks, lateral or service connection, locations and condition, manhole locations, presence of obstructions or other foreign materials left in the pipe interior, buckling or deformation of the pipe and infiltration leaks.

3.05 CORRECTIVE WORK AND CLEAN-UP

- A. Correct, at the direction of the Agency, lateral pipe intrusions, deflected or offset joints, sags or crowns in grade, damaged pipe and all other conditions not conforming to the requirements of these Specifications found as a result of this inspection. Similarly, remove obstructions and foreign material found in pipe. Perform corrections and removals as required at no additional expense to the Agency. Where, in the opinion of the Agency, major corrective work or replacement is required, re-perform leakage test on the corrected or replaced section of pipe main.

END OF SECTION 33 05 20.16

SECTION 33 08 30

COMMISSIONING OF WASTEWATER UTILITIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Requirements specified in Division 1 of the Standard Specifications, the Special Provisions and Division 1 of the Technical Specifications, in particular Section 01 70 00; and applicable portions of Section 33 05 20 form a part of this Section.
- B. Section Includes:
 - 1. Submittals.
 - 2. Piping testing,
 - 3. Leakage tests of gravity flow mains.
- C. Related Sections:
 - 1. Section 31 23 00 – Excavation and Fill
 - 2. Section 31 23 19 - Dewatering
 - 3. Section 31 23 33 - Trenching, Backfilling, and Compaction
 - 4. Section 33 05 16 - Utility Structures
 - 5. Section 33 05 20.11 – PVC Gravity Sewer Pipe and Fittings
 - 6. Section 33 05 20.16 – High Density Polyethylene (HDPE) Pipe and Fittings
 - 7. Section 40 05 23 – Miscellaneous Piping Appurtenances

1.02 SUBMITTALS

- A. Comply with the general requirements and procedures described in Section 5-1.23 of Division 1 of the Standard Specifications and Sections 01 33 00, “Submittal Procedures”, pertaining to submittals, including preparation, transmittals, and guarantees.
- B. Work Plan: Prior to or in conjunction with submittal of the pipe fabrication drawings, submit for Agency’s review and approval a detailed work plan outlining the proposed procedures and schedule for leakage testing. Include, but do not limit the details provided in the work plan to the following:
 - 1. Stationing or location of the pipeline segments to be tested and the sequence of testing various segments of the same pipeline.
 - 2. Details of equipment and connections used in conducting the testing.

3. Details of the jumper connection used to fill the pipeline being tested with water.
4. Source (include location) of water, air, or other gas to be used for testing.
5. Method and location for disposing of water used for testing.

1.03 QUALITY ASSURANCE

- A. Test all piping and associated appurtenances installed as part of this Contract for holding leakage, except where noted otherwise herein. Test pipe installed or replaced as a result of the Work for this Contract as specified herein.
- B. Pressure and leakage test other pipelines damaged and subsequently repaired as a result of the activity for this Contract, if required, in accordance with the applicable requirements of the respective utility entity.
- C. Leakage test gravity flow pipelines, including manholes and appurtenances, installed as part of this Work in accordance with the requirements specified herein. Also comply with such additional testing requirements as are specified in the respective pipe materials Sections.
- D. Perform testing of pipelines, piping systems, appurtenances, and if required, other pipe systems installed or replaced as part of the Work for this Contract, in the presence of the Inspector. Notify the Agency not less than two (2) working days in advance of the actual time of testing so that the Agency or Inspector may observe the procedure.

1.04 JOB CONDITIONS

- A. General:
 1. Connecting to Existing Potable Water Lines: No permanent connection between any gravity sewer main to any existing potable water main is permitted.
 2. Water required for initial filling and leakage testing of gravity sewer main or manholes may be obtained from Cal-Am Water Company or the use of reclaimed water, obtained from the Monterey Regional Wastewater Pollution Control Agency, may be permitted. Include in the Contract Price the cost of the connection, all water used, and the means of delivering the water.
- B. Testing: Conduct all tests for which acceptance are sought in the presence of the Contractor and the Agency, or his representatives.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PRIOR WORK

- A. Accomplish and complete backfill and compaction in accordance with the requirements of Sections 31 23 00 and 31 23 33 of these Technical Specifications.

3.02 LEAKAGE TESTS

A. Sanitary Gravity Systems:

1. General: Perform leakage test in the field on all portions of the sanitary gravity sewers constructed under this Contract; using the air or hydrostatic test as described herein, the method being at the Contractor's option. See Section 33 05 20.11, "PVC Gravity Sewer Pipe and Fittings", for mandrel test required in addition to the leakage test specified herein for acceptance of completed work. The leakage test is waived for those sewers where live service connections are made as part of the Work. For those lines in which the leakage test is not required, the mandrel test is still required as specified. Conduct hydrostatic tests on gravity sewers in accordance with the requirements specified for each type of pipe. Provide all materials and labor required for the leakage test, including compressed air supply (or water, for hydrostatic testing), gages, corporation stops and temporary plugs. Use laboratory calibrated test gages and have the gages recalibrate by a certified laboratory at no additional expense to the Agency prior to the leakage test if required by the Agency. Perform the tests in the presence of an Agency representative. Perform tests only after the line has been properly installed, including any necessary test fittings, and backfilled. Allow a minimum of 24 hours to elapse between completion of backfilling and applying the test pressure. Carefully place test plugs at each end of line to be tested.
2. Air Test: When all necessary test equipment is in place, attach a compressed air supply to the air fitting on the test equipment and increase the air pressure within the line to 4 pounds per square inch (psig). After the air supply is securely turned off or disconnected, permit a 2-minute waiting period to allow stabilization of air within the sewer line before beginning the actual test period. Air may be added only to maintain a pressure of 4.0 psig.
 - a. When the internal pressure decreases to 3.5 psig, start the test period and count the seconds until the pressure decreased to 2.5 psig. Minimum permissible pressure holding times for PVC pipe gravity sewer mains are listed in Uni-Bell PVC Pipe Association Practice UNI-B-6, "Practice for Low-Pressure Air Testing of Installed Sewer Pipe". For vitrified clay

pipe gravity sewer mains, the minimum permissible holding times are listed in Table 1 of ASTM C-828, "Standard Practice for Low Pressure Air Test of Vitrified Clay Pipelines."

- b. The maximum length of a line that may be tested at one time shall be 350 feet or the length between two (2) adjacent manholes, except where shown otherwise. After completion of a test, release the air pressure slowly through the valve, which is incorporated in the test equipment. Do not remove air test plugs until the air pressure is no longer measurable.
 3. Hydrostatic Test: At the Contractor's option, gravity lines may be tested by the hydrostatic ex-filtration method. The allowable rate of leakage shall not exceed 100 gallons per inch of diameter per mile of pipe per day. Measure ex-filtration as the leakage out of the pipeline when the lower end is plugged at a manhole and the upper end is filled at a manhole so as to create a minimum hydrostatic head of 4 feet above the invert of the pipe at the center of the upper manhole; or, if groundwater is present, 4 feet above the average groundwater level adjacent to the upper manhole. Calculate the leakage rate as the amount of water necessary to maintain the level in the upper manhole during the 3-hour testing period.
- C. Leakage Test Failure: Should the test of any section of pipe or piping system result in leakage greater than the specified limit, perform any excavation necessary to locate and repair leaks or other defects which may develop under test, including removal of backfill already placed, replace such excavated material, and perform all repairs necessary until this section is retested at a leakage within the specified allowance. If, in the judgment of the Agency, the backfill over any section of the pipeline has been substantially disturbed in repairing a leak, compact the backfill and subject the material to a compaction test at no additional cost to the Agency.
- D. Storm Drains, Culverts: No leakage test is required on any storm drain or culvert installed new or as a replacement of existing as a consequence of activities for this Work.

3.03 DISINFECTION – NOT USED

3.04 BACTERIOLOGICAL TEST – NOT USED

3.05 CONTRACTOR'S RESPONSIBILITY FOR TESTING

- A. Notwithstanding anything contained herein, bear sole and full responsibility to construct piping systems capable of passing the leakage tests as required herein. The fact that the Agency provides inspection during the construction and testing of

the water facilities shall not be cause for the Contractor to abrogate his responsibility in this regard.

- B. Prevent the consumption of water for any and all uses from unsterile piping systems whether by their workers, subcontractors, or any other person who may come in contact with the water from an unsterile piping system.
- C. Indemnify and save the Agency harmless from any suits, claims, or actions brought by any person or persons for or on account of any sickness or death sustained or arising out of the consumption of water from an unsterile piping system.
- D. Dispose of water following completion of any test, successful or otherwise, in a manner in accordance with all local and state laws, in particular with all requirements of the California Regional Water Quality Control Board. In disposing of water, do not cause erosion of the receiving flow channel or damage to property, private or public.

END OF SECTION 33 08 30

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DIVISION 34

**TRANSPORTATION
(NOT USED)**

DIVISION 35

WATERWAY AND MARINE CONSTRUCTION
(NOT USED)

DIVISION 40

PROCESS INTEGRATION
(NOT USED)

DIVISION 41

MATERIAL PROCESSING AND HANDLING
(NOT USED)

DIVISION 42

**PROCESS HEATING, COOLING AND DRYING
(NOT USED)**

DIVISION 43

**PROCESS GAS AND LIQUID HANDLING,
PURIFICATION AND STORAGE EQUIPMENT
(NOT USED)**

DIVISION 44

POLLUTION AND WASTE CONTROL EQUIPMENT

(NOT USED)

DIVISION 45

**INDUSTRY SPECIFIC MANUFACTURING
EQUIPMENT
(NOT USED)**

DIVISION 46

WATER AND WASTEWATER EQUIPMENT
(NOT USED)

DIVISION 48

ELECTRICAL POWER GENERATION
(NOT USED)

CONTRACT DOCUMENTS VOLUME II
FOR THE CONSTRUCTION OF:

942 ANGELUS WAY SEWER LINE UPGRADE

PREPARED FOR

SEASIDE COUNTY SANITATION DISTRICT

SEASIDE, CALIFORNIA

DRAWING INDEX

GENERAL

- G-1 COVER SHEET AND DRAWING INDEX
- G-2 GENERAL CONSTRUCTION NOTES AND SYMBOLS AND ABBREVIATIONS

TYPICAL DETAILS

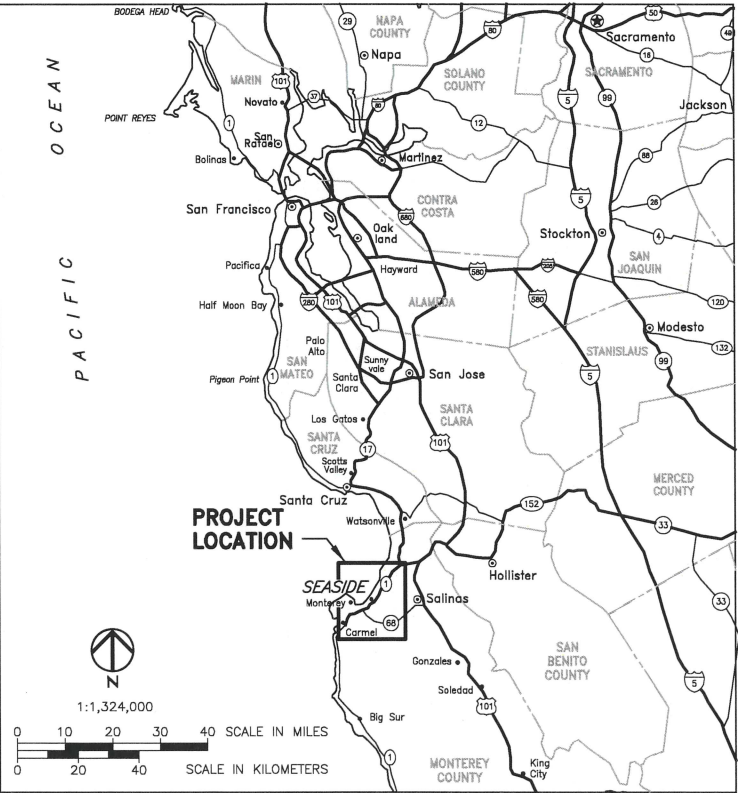
- C-0.1 TYPICAL TRENCH SECTIONS, MISCELLANEOUS SECTIONS AND DETAILS
- C-1 SITE PLAN
- C-2 SEWER LINE PROFILE
- C-3 CREEK CROSSING AND EROSION CONTROL DETAILS

APPROVED BY:

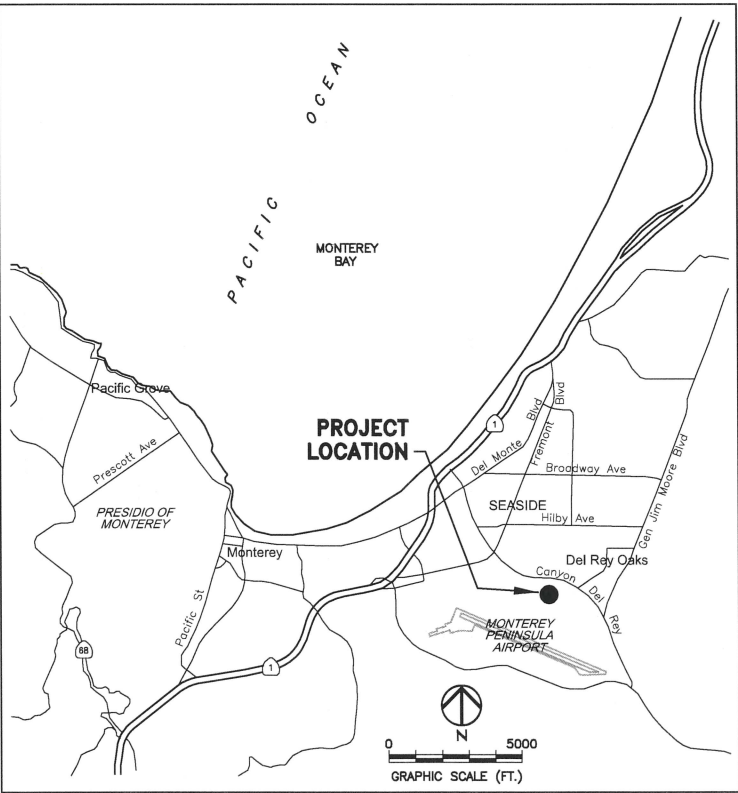
SEASIDE COUNTY SANITATION DISTRICT

DISTRICT ENGINEER - RICHARD RIEDL, PE

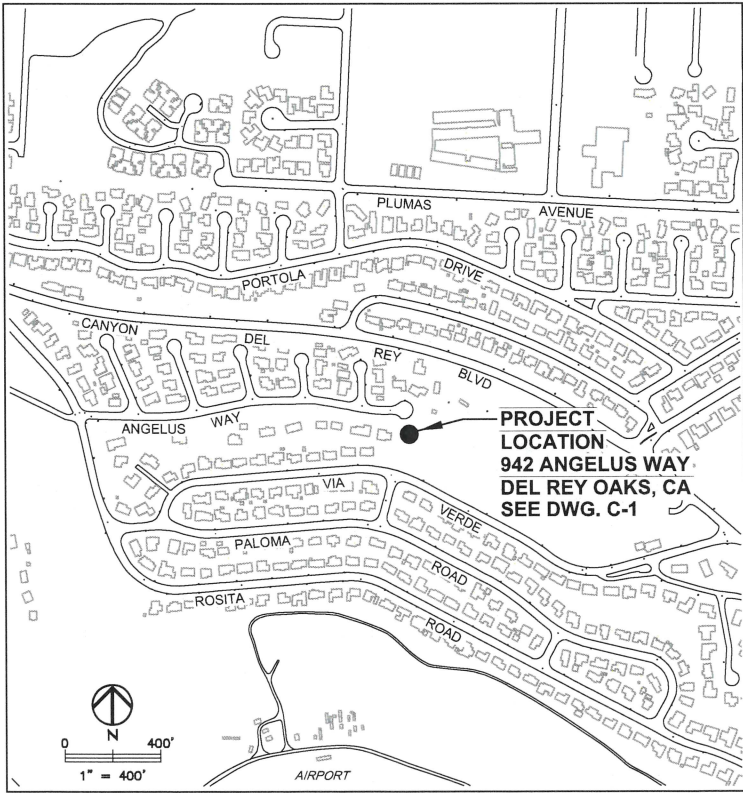
Nov. 16, 2017
DATE



VICINITY MAP



LOCATION MAP



PROJECT LOCATION MAP

Job No. WH-SEA-2307	Designed by LLW	Drawn by WTH/FFB	Checked by LLW	Approved by VMB
11/16/17	11/16/17	11/16/17	11/16/17	11/16/17
ISSUED FOR CONSTRUCTION	ISSUED FOR CONSTRUCTION	ISSUED FOR CONSTRUCTION	ISSUED FOR CONSTRUCTION	ISSUED FOR CONSTRUCTION
By	By	By	By	By



942 ANGELUS WAY SEWER LINE UPGRADE	COVER SHEET AND DRAWING INDEX
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DRAWING NO.	G-1
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GENERAL CONSTRUCTION NOTES

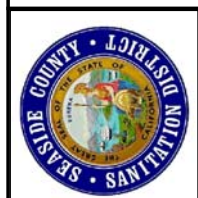
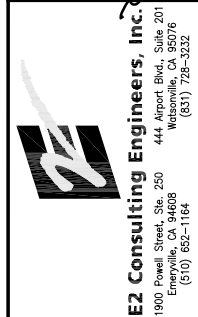
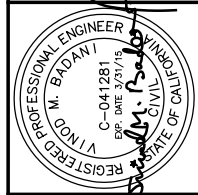
1. NEW GRAVITY SEWER PIPE MATERIAL SHALL BE AS SHOWN ON DRAWINGS.
2. ALLOW NO INTERRUPTION IN SERVICE DURING THE CONSTRUCTION OF ANY SEWER LINE. THE CONTRACTOR SHALL PROVIDE FLOW BYPASS FACILITIES AS REQUIRED. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE SCSD STAFF AND SUBMIT HIS PROPOSED PLAN 2 WEEKS PRIOR TO PERFORMING ANY EXCAVATIONS OR CRITICAL CONNECTIONS.
3. THE CONTRACTOR SHALL PERFORM A PRE-BID SITE INSPECTION. COORDINATION OF INSPECTION WILL BE PROVIDED BY THE SCSD STAFF. THE CONTRACTOR SHALL CALL (831) 899-6884 FOR AN APPOINTMENT. SITE IS ON PRIVATE PROPERTY, BUT LARGELY IN SEWER EASEMENT. ANY COSTS ASSOCIATED WITH SITE ACCESS, VEHICULAR OR OTHERWISE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN BID PRICE.
4. STORAGE OF PIPE OR OTHER MATERIALS ON PUBLIC RIGHTS-OF-WAY DURING NON-WORKING HOURS WILL NOT BE PERMITTED.
5. ANY DAMAGE TO EXISTING PIPELINES NOT SCHEDULED FOR REPLACEMENT AS PART OF THIS PROJECT, DUE TO CONSTRUCTION ACTIVITIES, SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE AGENCY.
6. NO EXCAVATED MATERIAL SHALL BE STORED ON SITE.
7. DISPOSE OF UNUSABLE EXCAVATED MATERIAL AT NO ADDITIONAL COST TO THE AGENCY.
8. THE CONTRACTOR SHALL CONTACT THE FOLLOWING UTILITIES FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS BEFORE EXCAVATION:
 - A. UNDERGROUND SERVICE ALERT (USA) - ALL (800) 227-2600
 - B. PACIFIC GAS AND ELECTRIC - GAS AND ELECTRIC (800) 743-5000
 - C. SEASIDE COUNTY SANITATION DISTRICT - SEWER (831) 899-6884
 - D. AT&T - TELEPHONE (888) 723-2624
 - E. COMCAST - CABLE TELEVISION (800) 945-2288
 - F. CITY OF DEL REY OAKS - FIBER OPTIC, STORM DRAINS & ROADS (831) 625-8515
 - G. CALIFORNIA AMERICAN WATER COMPANY - WATER (831) 373-3051
9. LOCATION OF UTILITIES, WHERE SHOWN, HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. HOWEVER, ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN IS NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
10. POT-HOLE IN ADVANCE OF WORK PROGRESS TO VERIFY EXISTENCE AND LOCATION OF UTILITIES AND UTILITY CROSSINGS. PERFORM POT-HOLING UNDER THE PRESENCE AND SUPERVISION OF THE AGENCY'S REPRESENTATIVE AND RESPECTIVE UTILITY REPRESENTATIVES. SEE SPEC. SEC. 13 30 00.
11. WHERE TEMPORARY OR PERMANENT RELOCATION OF EXISTING UNDERGROUND OR OVERHEAD UTILITIES IS REQUIRED, TAKE NECESSARY STEPS TO ENSURE THAT CONTINUOUS SERVICE IS MAINTAINED IN A MANNER APPROVED BY THE AFFECTED UTILITY AND IN ACCORDANCE WITH APPLICABLE COUNTY AND STATE PUBLIC HEALTH REGULATIONS. BEAR ALL COSTS ASSOCIATED WITH RELOCATION AND MAINTENANCE OF SERVICE, EXCEPT AS OTHERWISE NOTED ON THE DRAWINGS OR SPECIFICATIONS.
12. PLACE EROSION AND SILTATION CONTROL MEASURES PRIOR TO OR AS FIRST STEP IN GRADING.
13. DURING CONSTRUCTION, INSTALL SILT TRAPS TO PROTECT THE CREEK, EXISTING STORM SEWER AND DRAIN INLETS, SANITARY SEWER MANHOLES AND UNDERGROUND VAULTS. MAINTAIN AND MODIFY PROTECTIVE MEASURES AS CONSTRUCTION PROGRESSES.
14. RESTORE EXISTING NATURAL DRAINAGE DITCHES AND STREAM BANKS DISTURBED DURING CONSTRUCTION TO ORIGINAL ALIGNMENT, GRADE AND INVERT, EXCEPT WHERE OTHERWISE INDICATED. EMPLOY EROSION CONTROL MEASURES AS SPECIFIED.
15. WHERE CROSSING OF STREAM OR DRAINAGE COURSE IS REQUIRED FOR THE WORK, PROVIDE TEMPORARY CULVERTS OR BRIDGES.

16. PROVIDE 3 FEET MINIMUM COVER OVER TOP OF PIPE UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE PIPELINE DRAWINGS OR APPROVED BY THE OWNER.
17. WHERE PIPELINE CROSSES WATER MAINS, AVOID IF POSSIBLE INSTALLING PIPE JOINT WITHIN 10 FOOT DISTANCE OF EACH SIDE OF CROSSING WATER MAIN. IF A JOINT IN THIS ZONE IS UNAVOIDABLE, SLURRY ENCASE PIPE IN THIS SECTION MIN. 6" ALL AROUND. REPLACE ALL SEVERED OR DAMAGED MAIN SEWER AND BUILDING SEWER PIPES CROSSING CONSTRUCTION TRENCHES UNDER INSPECTION OF THE AGENCY. PERFORM EXCAVATION, PIPE INSTALLATION, BACKFILL, COMPACTION AND RESTORATION WORK NECESSARY FOR REPLACEMENT AT NO ADDITIONAL EXPENSE TO THE AGENCY. REFERENCE SPEC. SECT. 01 30 00.
18. ELEVATIONS WHERE SHOWN ON MANHOLE AND LIFT STATION SITE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM (NAVD) 1988. ACTUAL ELEVATION 0.0' MSL DATUM = 0.0'.
19. REPLACE ALL PAVEMENT, CURB AND GUTTER, BERMS AND FENCING DAMAGED DURING CONSTRUCTION AS PER SPECIFICATIONS AND DRAWINGS.
20. MAINTAIN ONE WAY TRAFFIC ON PUBLIC STREETS WHENEVER POSSIBLE DURING WORKING HOURS. MAINTAIN TWO WAY TRAFFIC AT ALL TIMES DURING NON-WORKING HOURS. REFER TO ENCROACHMENT PERMITS AND TRAFFIC PLANS IN SPECIFICATION SECTION 01 55 26 FOR SPECIFIC REQUIREMENTS.
21. EXISTING CONCRETE THRUST BLOCKS AND ANCHORS AT VALVES AND FITTINGS ON EXISTING UTILITIES ARE NOT SHOWN. REMOVE OR WORK AROUND, AS DETERMINED BY THE OWNER OF RESPECTIVE UTILITY, THRUST BLOCKS AND ANCHORS WHICH INTERFERE WITH THE WORK. REPLACE DISTURBED THRUST BLOCKS.
22. TEMPORARILY RELOCATE PRIVATE PROPERTY IMPROVEMENTS AS REQUIRED TO PERFORM WORK. USE CAUTION IN MOVING TO PREVENT DAMAGE. UPON COMPLETION OF WORK, RESTORE SITE TO ORIGINAL CONDITION.
23. NOTIFY AFFECTED PROPERTY OWNERS AND RESIDENCES IN WRITING AT LEAST 5 WORKING DAYS, AND VERBALLY, IF POSSIBLE, AT LEAST 48 HOURS PRIOR TO TAKING PHYSICAL OCCUPANCY OF PERMANENT AND/OR TEMPORARY EASEMENTS. COORDINATE WITH AGENCY.

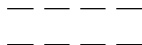
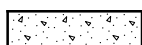
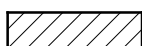
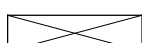
ABBREVIATIONS

A.B.	ANCHOR BOLT, AGGREGATE BASE	FLEX.	FLEXIBLE	RCP	REINFORCED CONCRETE PIPE
ABAN.	ABANDONED	FLG.	FLANGE	RED.	REDUCER
A.C.	ASPHALT CONCRETE	FL	FLOW LINE	REL.	RELATIVE
A.C.P.	ASBESTOS CEMENT PIPE	FM	FORCE MAIN	REQ'D.	REQUIRED
B/B	BACK TO BACK	F.R.P.	FIBERGLASS REINFORCED PLASTIC	RW	RECLAIMED WATER
B.C.	BEGINNING OF CURVE	FT.	FOOT	RWD.	REDWOOD
BLDG.	BUILDING	G	GAS	S	SLOPE OR SEWER
B.O.S.	BOTTOM OF STEEL	GAL.	GALLONS	SCHED.	SCHEDULE
BOTT.	BOTTOM	GALV.	GALVANIZED	SCSD	SEASIDE COUNTY SANITATION DISTRICT
BM	BENCH MARK	GB	GRADE BREAK	S.D., SD	STORM DRAIN
C.B.	CATCH BASIN	GM	GRAVITY MAIN	SECT.	SECTION
C/C	CENTER TO CENTER	GR.	GRADE	SHT.	SHEET
C.I.	CAST IRON	G.S.P.	GALVANIZED STEEL PIPE	SIM.	SIMILAR
C.I.P.	CAST IRON PIPE	HORIZ.	HORIZONTAL	SPEC.	SPECIFICATIONS OR SPECIAL
CL	CLASS OR CENTERLINE	HDPE	HIGH DENSITY POLYETHYLENE	SQ.	SQUARE
CMA	CONCRETE MANHOLE ADAPTER	I.D.	INSIDE DIAMETER	S.R.	SHORT RADIUS
CMP	CORRUGATED METAL PIPE	IN.	INCHES	S.S.	STAINLESS STEEL
C.O.	CLEAN OUT	INV.	INVERT	SS	SANITARY SEWAGE
CON.	CONCENTRIC	IRR	IRRIGATION	ST. LT.	STREET LIGHT
CONC.	CONCRETE	JT.	JOINT	STA.	STATION
CONT.	CONTINUOUS	J.P.	JOINT UTILITY POLE	STD. DWG.	STANDARD DRAWING
CONST.	CONSTRUCTION	M.H.	MANHOLE	STL.	STEEL
CPG.	COUPLING	MIN.	MINIMUM	STRUCT.	STRUCTURAL
CU.	CUBIC	MFR'S.	MANUFACTURER'S	SUP.	SUPPORT
DBD	DEFERRED BOLTING DEVICE	MTL.	MATERIAL	SYM.	SYMMETRICAL
DET.	DETAIL	NO.	NUMBER	TEL, T	TELEPHONE
D.G.	DECOMPOSED GRANITE	N.T.S.	NOT TO SCALE	THK.	THICK
DIA.	DIAMETER	O.C.	ON CENTER	T.O.S.	TOP OF STEEL
D.I.P.	DUCTILE IRON PIPE	O.D.	OUTSIDE DIAMETER	TOC	TOP OF CONCRETE
DISCH.	DISCHARGE	OPER.	OPERATED OR OPERATOR	TYP.	TYPICAL
DN.	DOWN	P.B.	PULL BOX	U.B.	UTILITY BOX
DWG.	DRAWING	PC	POINT OF CURVATURE	V	VALVE
EA.	EACH	PL	PLATE	VL	VAULT
E.C.	END OF CURVE	P.I.	POINT OF INTERSECTION	V.C.P.	VITRIFIED CLAY PIPE
ECC.	ECCENTRIC	P.O.C.	POINT OF CONNECTION	VERT.	VERTICAL
E.F.E.W.	EACH FACE EACH WAY	P.P.	POWER POLE	W	WATER
EG	EXISTING GRADE	P.S.	PUMP STATION	W/	WITH (PREFIX)
EL., ELEV.	ELEVATION	PT	POINT OF TANGENCY	W/O	WITH OUT (PREFIX)
ELEC	ELECTRICAL	PVC	POLYVINYL CHLORIDE	W.L.	WATER LEVEL
ELL	ELBOW	PVCP	POLYVINYL CHLORIDE PRESSURE PIPE	W.M.	WATER METER
E.P., EP	EDGE OF PAVEMENT	P.V.I.	POINT OF VERTICAL INTERSECTION	WSP	WELDED STEEL PIPE
E.W.	EACH WAY	P.W.	POTABLE WATER	W.V.	WATER VALVE
EXIST.	EXISTING	RAD. (R.)	RADIUS	YD.	YARD
FG	FINISHED GRADE				
F.H.	FIRE HYDRANT				

Job No. <u>WM-SEA-2307</u>					
Designed by <u>LLW</u>					
Drawn by <u>WTH/FFB</u>					
Checked by <u>LLW</u>					
Approved <u>VMB</u>	Rev	Date	11/16/17	ISSUED FOR CONSTRUCTION	VMB
				Description	By

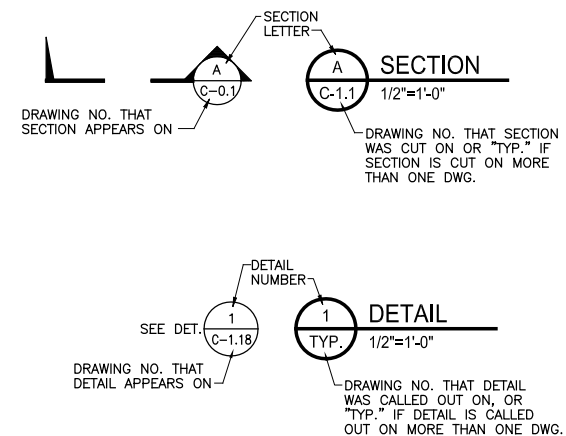


GENERAL SYMBOLS

	1095 5.46 EG	SURVEYED POINT NUMBER ELEVATION DESCRIPTION
	DIRT ROAD	
	AGGREGATE BASE	× 5.46 FG FINISH GRADE SPOT ELEVATION
	ASPHALTIC CONCRETE PAVING	— 5 — EXISTING CONTOUR
	NEW CONCRETE	 BUSHES, HEDGE OR TREE LINE
	MASONRY OR CONCRETE BLOCK	● 26" TREE WITH TRUNK DIA.
	GRATING	⌀ 12" TREE TO BE REMOVED
	CHECKER PLATE	 DEMOLITION - FENCE SHOWN AS EXAMPLE
	STEEL	⊕ SB-1 TEST BORINGS (SB OR B), DRILL HOLE (DH)
	OPENING OR DEPRESSION IN SLAB OR WALL	△ B.M. PAVEMENT BENCH MARK OR SURVEY MONUMENT
	GROUND LINE	

-----E-----	EXISTING ELECTRIC (UG)	□ WM	WATER METER
-----T-----	EXISTING TELEPHONE LINE	□ G.M.	GAS METER
-----G-----	EXISTING GAS LINE	-----T----- □ WM	WATER SERVICE
-----W-----	EXISTING WATER LINE	-----○ SSC○	CLEAN OUT
-----SD-----	EXISTING STORM DRAIN	-----WV----- ○	VALVES (EXIST. UTILITIES)
-----S"S-----	EXISTING SEWER LINE	● JP	TELEPHONE, POWER OR LIGHT POLE
-----○ SSMH	EXISTING MANHOLE	---⇒ GUY	GUY WIRE
-----● NEW MH	NEW MANHOLE	⊥	CENTER LINE
← NEW 10"S	NEW SEWER LINE	∅	DIAMETER
← NEW 12"W	NEW WATER LINE	∠	ANGLE
-----⊥-----	PROPERTY LINE	@	AT
---X---X---	EXISTING FENCE	#	NUMBER
---X---X---	NEW FENCE		

DRAWING CROSS REFERENCE

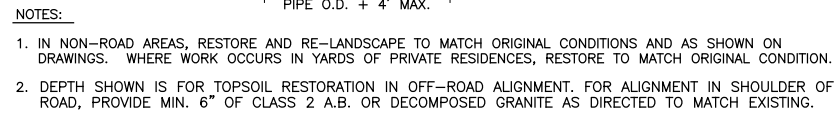


**942 ANGELUS WAY
SEWER LINE UPGRADE**

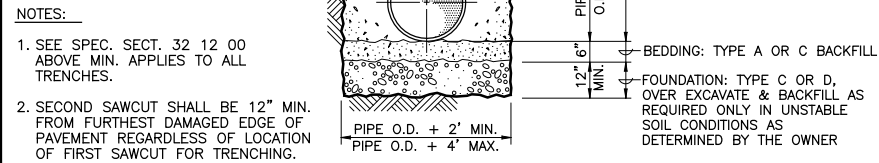
GENERAL CONSTRUCTION NOTES AND SYMBOLS AND ABBREVIATIONS

DRAWING NO.

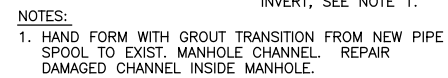
G-2



 TYP. TRENCH SECTION IN UNPAVED AREAS
TYP. N.T.S.

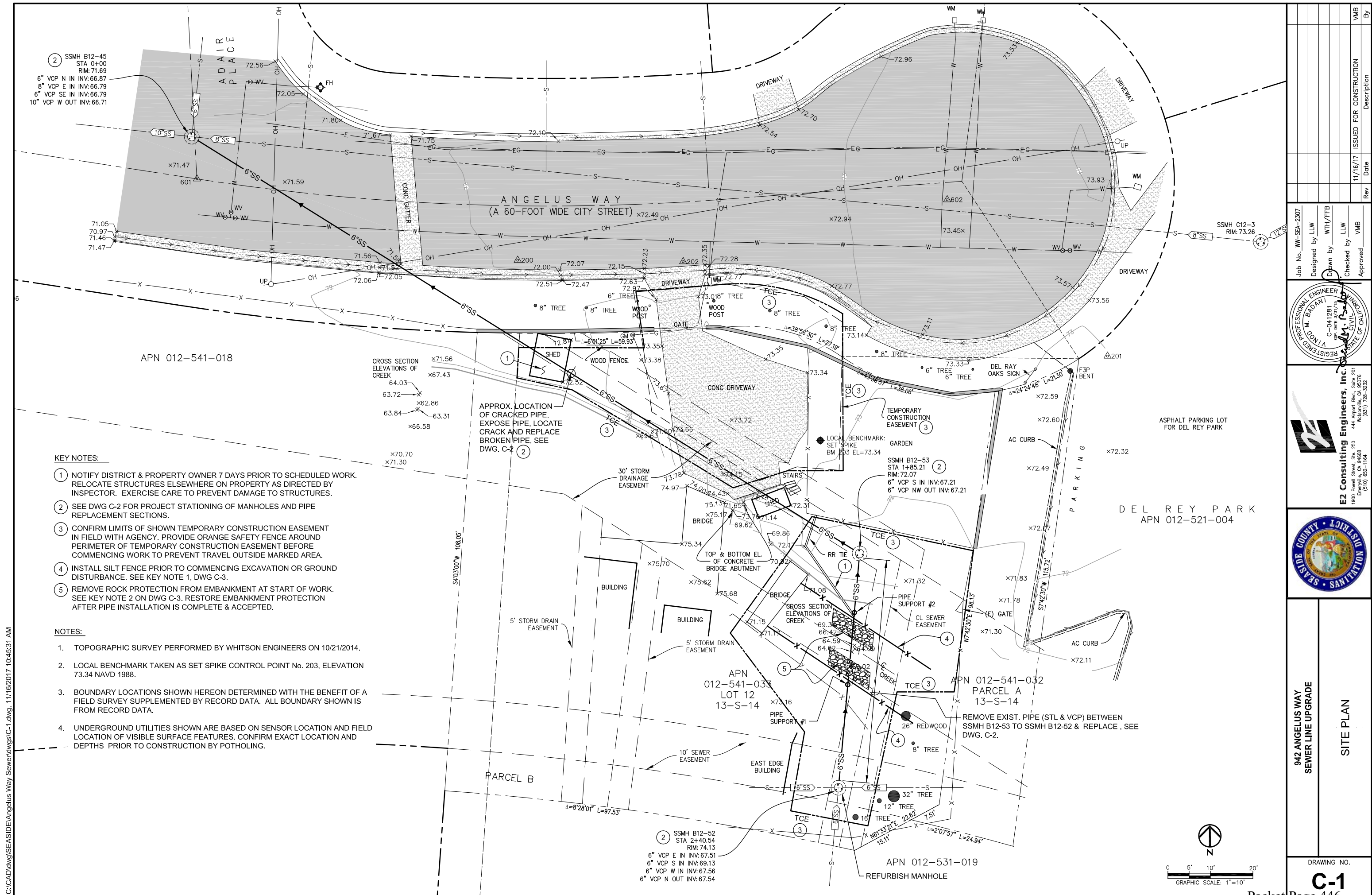


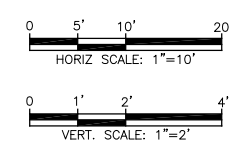
B TYP. TRENCH SECTION IN PAVED AREAS
TYP. N.T.S.



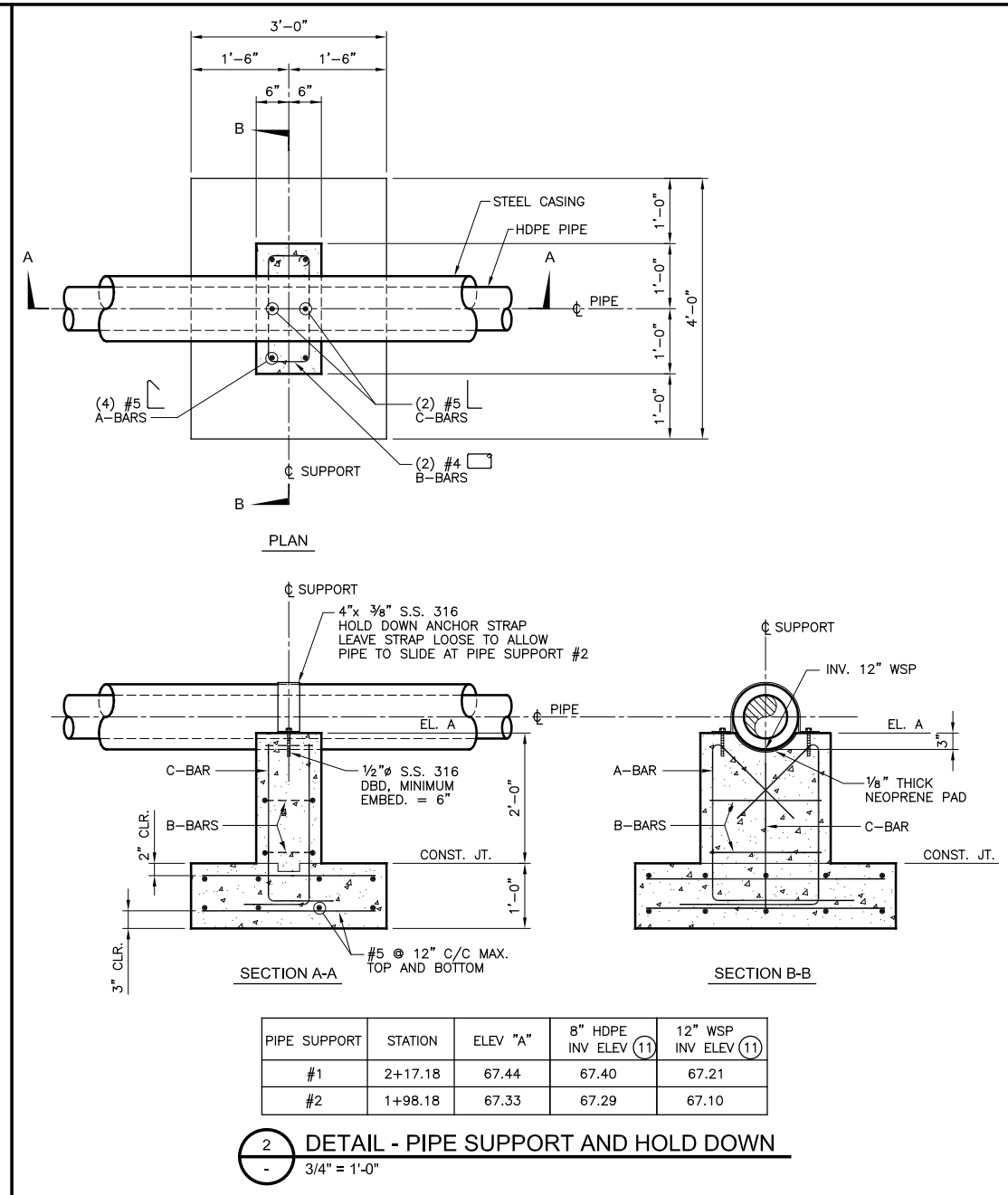
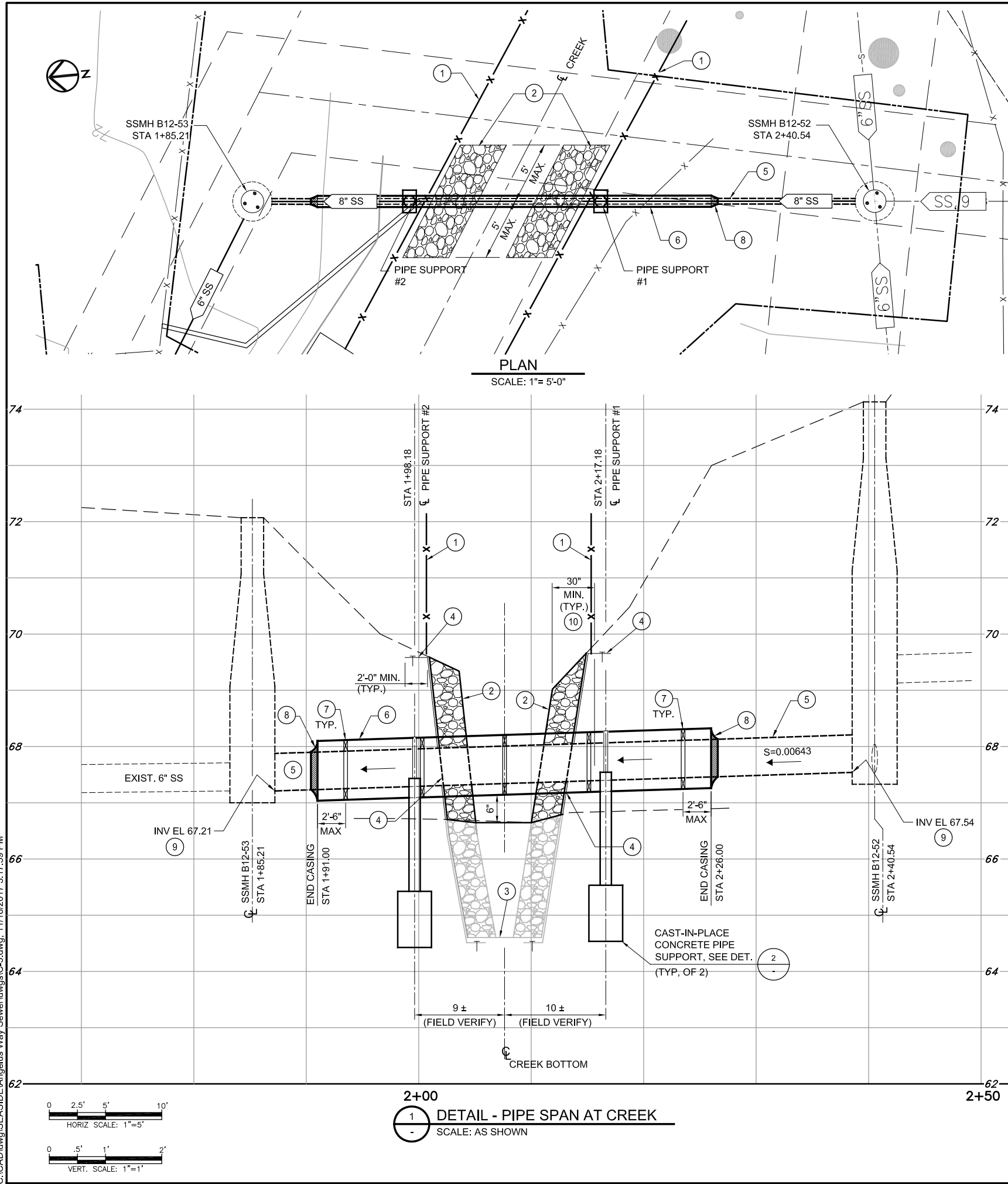
5 NEW MAIN CONNECTION TO EXISTING MANHOLE BASE
TYP. N.T.S.

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C:\CAD\dwg\SEASIDE\Angelus Way Sewer\dwgs\C-3.dwg, 11/16/2017 3:17:59 PM



Job No.	WW-SEA-2307
Designed by	LLW
Drawn by	WTH/FFB
Checked by	LLW
Approved	VMB
Rev	Date
Description	ISSUED FOR CONSTRUCTION
VMB	11/16/17
By	

PROFESSIONAL ENGINEER
M. BADAWY
C-041281
EXP. DATE 3/31/19
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
E2 Consulting Engineers, Inc.
1902 Powell Street, Ste. 250
Emeryville, CA 94608
(510) 652-1164

SEAL OF THE COUNTY OF SAN DIEGO

942 ANGELUS WAY
SEWER LINE UPGRADE

CREEK CROSSING AND
EROSION CONTROL DETAILS

DRAWING NO.
C-3



SEASIDE COUNTY SANITATION DISTRICT

440 HARCOURT AVENUE * SEASIDE, CALIFORNIA 93955

Telephone (831) 899-6825 Fax (831) 899-6211

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Chair

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First Vice Chair
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(831) 899-6707

December 1, 2017

Honorable Howard Gustafson
President
Marina Coast Water District
11 Reservation Road
Marina, CA 93933

Subject: Response to Comments Provided by MCWD in a letter dated January 23, 2015 title "Sewer Service to the Ord Community" and a Memorandum dated September 15, 2015 titled "Evaluation of SCSD Proposed Annexation"

Dear President Gustafson,

On January 30, 2015 and April 20, 2016, Seaside County Sewer District (SCSD) staff received the subject letter and memorandum, respectively, from Marina Coast Water District (MCWD). The subject letter and memorandum, attached, are evaluations of the draft Engineering Study prepared by Wallace Group for the SCSD in support of a potential application to the Local Agency Formation Commission of Monterey County (LAFCO). The following responses *in italicized text* are replies to comments in said letter from MCWD.

1. (Items 2 and 3, 1st and 4th sentences) The analysis ... assumed that all required capital improvements for the system have been completed. ...These costs should be considered in your analysis.

The analysis does not assume that the capital improvements are complete and considers these costs as future liabilities.

The following responses *in italicized text* are replies to comments in said memo from MCWD.

2. (Page 1, paragraph 1, 3rd sentence) MCWD also has Franchise Agreements with the Cities of Marina and Seaside for the provision of services outside the District boundaries.

MCWD provides services in the former Fort Ord pursuant to the Water/Wastewater Facilities Agreement (the Facilities Agreement) dated March 13, 1998 between MCWD and the Fort Ord Reuse Authority (FORA). SCSD is unaware of a franchise agreement between the City of Seaside and MCWD.

3. (Page 2, paragraph 4, 3rd sentence) The Ord Community Wastewater System Master Plan assumed that MCWD would serve all of the development parcels in the Ord Community.

It is unclear, but the Ord Community Wastewater System Master Plan referred to above may be a document prepared by a consultant for MCWD. However, the Fort Ord Base Reuse Plan adopted by FORA on June 13, 1997 addresses the proposed sewer collection services within the former Fort Ord. The Public Facilities Implementation Plan within the Fort Ord Base Reuse Plan anticipated that the southern portion of Fort Ord would eventually be annexed to SCSD respecting city boundaries and existing sewer service agencies.

4. (Page 4, paragraph 3, 6th sentence) It would be reasonable for the [MCWD] to be compensated for the current value of the [sewer] system if SCSD were to annex it.

It would not be reasonable to compensate MCWD for the correct value of the system. The memorandum notes the value of the collection system assets that would be transferred to SCSD and suggests that SCSD should compensate MCWD for the transfer. No basis is offered for this suggestion, and there is no basis in the law that would require compensation. Those facilities were conveyed to MCWD for the purposes of providing services to the area served by the facilities, which is how SCSD would use the facilities if they were transferred. It would be inequitable to require SCSD's ratepayers to compensate MCWD's ratepayers for assets that MCWD received for free.

5. (Page 4, paragraph 4, 2nd sentence) Revenue from these accounts pays for a portion of the District operating budget, and was used to secure loans (capital improvement financing bonds).

The SCSD acknowledges the need to allocate existing debt that was used to construct capital improvements related to the wastewater collection system in the Ord Community and the City of Seaside city limits. The District is interested in working with the MCWD to evaluate the potential liability for assuming that portion of the expenses accrued to rate payers for all bonds currently held by the MCWD.

6. (Page 4, paragraph 5, 1st sentence) MCWD has added staff and equipment to facilitate the management, operation and maintenance of the Ord Community water and sewer systems. ... Removing a portion of the existing service area may trigger a reevaluation of staffing levels.

The staffing levels would likely decrease for MCWD, and would likely increase in approximately equal numbers for SCSD. An employee transfer agreement is proposed for affected MCWD employees. The proposed Fort Ord amendment area represents a smaller proportion of the MCWD system than of the SCSD system. The relative sizes of the three service areas affected are summarized in the following table.

Parameter	MCWD Central Marina CSUMB and North Ord	SCSD Fort Ord SOI Amendment Area	SCSD
Miles of Sewer Main	81.5	22.0	73.2
Man Holes	1,770	633	1,035

Lift Stations	18	3	4
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7. (Page 4, paragraph 6, 2nd sentence) The proposed annexation by SCSD [of Area 1 (i.e. Regions ‘E’ and ‘F’ in the SCSD Study)] would potentially change the governance model, but would not make any physical system changes for the benefit of the current or future customers. ... There is no operational or engineering reason why this area should be managed by a different district than the existing wastewater collection system in Marina, so we therefore recommend that Area 1 [Regions ‘E’ and ‘F’ in the SCSD Study] be annexed into MCWD, along with the rest of the Ord Community currently receiving water and sewer service.

While there may be no engineering reasons that support the annexation proposal, SCSD believes that annexation would improve the governance structure and operations within Regions ‘E’ and ‘F.’ Annexation by the SCSD would result in a governance that is similar to the governance structure in the rest of Seaside. The proposed annexation would be more cost effective for the rate payers without any decrease in level of service. Therefore, the transfer of this area to the SCSD would be a benefit to the rate payers.

8. (Page 5, paragraph 2, 2nd sentence) There is no operational or engineering reason why [Area 3 (i.e. an area adjacent to Region ‘F’)] should be managed by a different district than Area 1, so we therefore recommend that Area 3 be annexed into MCWD when development occurs.

The SCSD concurs that Area 3 (i.e. an area adjacent to Region ‘F’) should be managed by the same district that manages Regions ‘E’ and ‘F.’ Since it would be most beneficial to the sewer rate payers for the SCSD to annex Regions ‘E’ and ‘F,’ the SCSD should, therefore, also annex Area 3.

Both the Marina Coast Water District (MCWD) and the Seaside County Sanitation District (SCSD) desire to provide sanitary sewer collection service to portions of the cities of Del Rey Oaks and Seaside that are within the former Fort Ord area. The former Fort Ord area is administered by the Fort Ord Reuse Authority (FORA). Under an agreement with FORA, the MCWD is currently obligated to provide water and sanitary sewer service in the former Fort Ord area. The agreement does not provide MCWD the right to service areas outside of their current sphere of influence after the possible dissolution of FORA in 2020. Therefore, it is imperative to establish which utility districts would provide sewer service to those areas within the former Fort Ord outside of the service boundaries currently recognized by the Local Agency Formation Commission of Monterey County (LAFCO).

The SCSD has been working with the MCWD to resolve the issues of sewer collection services within the Ord Community. On May 14, 2014, the SCSD submitted to MCWD a draft engineering study in support of an application by SCSD to LAFCO for sewer collection service area annexation (the draft Engineering Study). On January 23, 2015, the MCWD submitted review comments on the draft Engineering Study. On March 25, 2015, staff from both agencies met to discuss MCWD’s review comments on the draft Engineering Study. In June 2015, MCWD submitted additional information requested for inclusion by MCWD in the draft Engineering Study. On September 8, 2015 and December 8, 2015, SCSD submitted

letters stating our understanding of the agreed approach to proceeding with the proposed applications to LAFCO. To wit:

1. Both agencies would work together prior to submitting an application to the Local Agency Formation Commission of Monterey County (LAFCO).
2. Both agencies would prepare engineering studies to support their potential applications to LAFCO and share this information with the other agency prior to submitting an application.

The SCSD has postponed finalizing the draft Engineering Study pending receipt of MCWD's engineering study. However, the MCWD has not provided an engineering study as promised. It is understood that staff from both agencies have been working independently on defining scopes for their proposed LAFCO applications. However, the SCSD is requesting clarification on how the MCWD is proposing to proceed. Does the MCWD want to work with the SCSD to negotiate on an acceptable sewer service area boundary between our agencies?

Please feel free to contact Rick Riedl, District Engineer at (831) 899-6825 to discuss any questions or comments.

Sincerely,



Ralph Rubio
District Chair
Seaside County Sanitation District

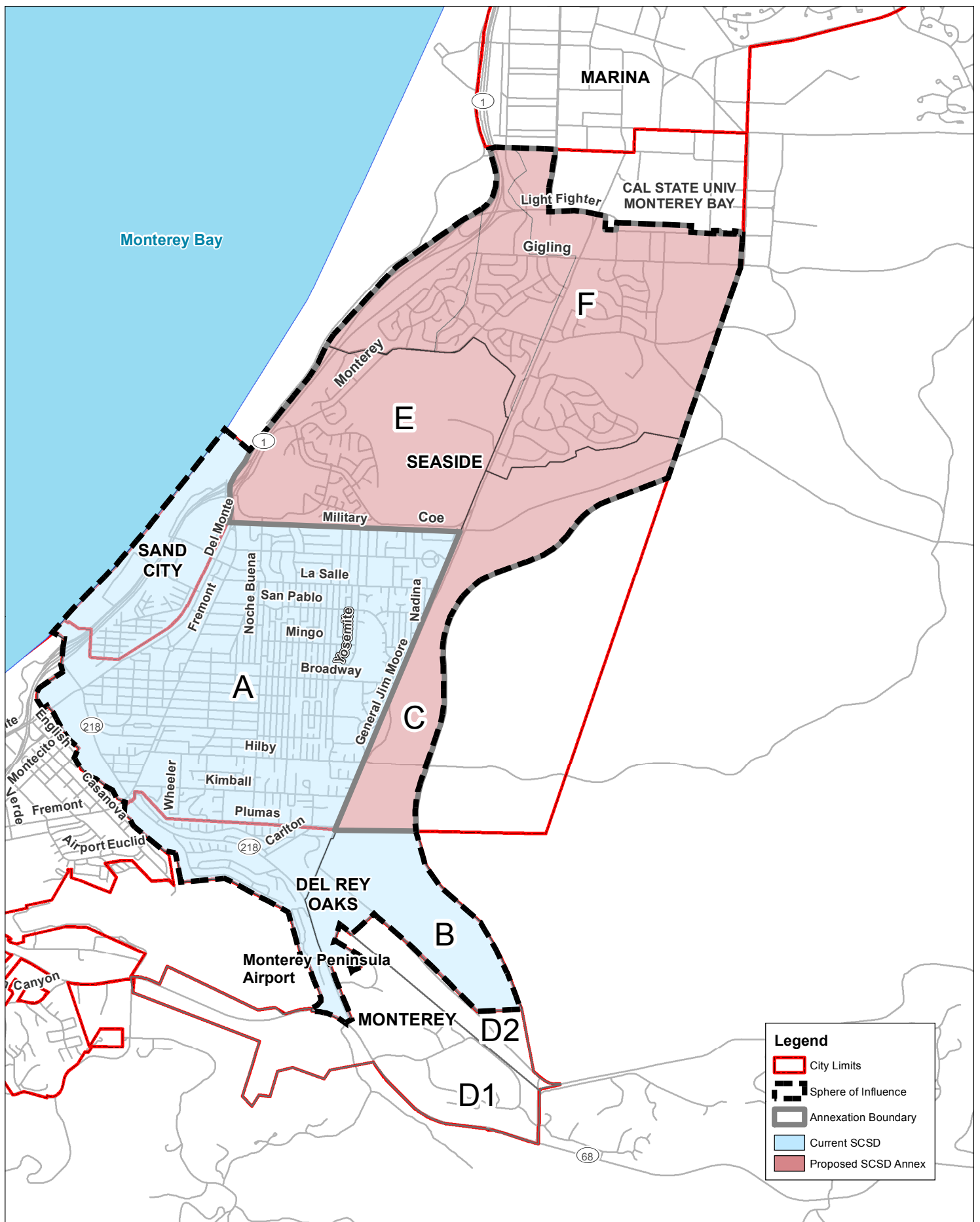
Attachments

Figure 1; Proposed Annexation Boundary by SCSD

Letter from MCWD to SCSD dated January 23, 2015

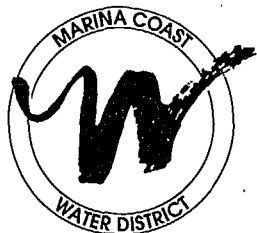
Memo from Schaaf & Wheeler to MCWD dated September 15, 2015

Copy Kate McKenna, Executive Director, LAFCO
Keith van der Maaten, District Manager, MCWD
SCSD Board Members
Craig Malin, District Manager
Rick Riedl, District Engineer
John Bakker, Special Legal Counsel
Jesse Avila, District Legal Counsel
Lesley Milton-Rerig, District Clerk



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cc DIANA, Tim, Rick R, JD



MARINA COAST WATER DISTRICT

11 RESERVATION ROAD, MARINA, CA 93933-2099

Home Page: www.mcwd.org

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DIRECTORS

HOWARD GUSTAFSON
President

PETER LE
Vice President

THOMAS P. MOORE
WILLIAM Y. LEE
JAN SHRINER

RECEIVED

JAN 30 2015

CITY MANAGER'S OFFICE

January 23, 2015

Mr. Ralph Rubio, Chair
Seaside County Sanitation District
440 Harcourt Avenue
Seaside, CA 93955

Re: Sewer Service to the Ord Community

Dear Chairman Rubio:

This is in response to your letter of May 14, 2014 concerning Sewer Service to the Ord Community. Your letter included an engineer's report which found that it would be feasible for Seaside County Sanitation District (SCSD) to serve a large portion of the Ord Community, including portions within the Cities of Monterey, Del Rey Oaks and Seaside.

Staff has reviewed the Engineers Report and offers the following comments:

1. Staff concurs that the undeveloped areas east of the current SCSD service area may be served by gravity connections to the existing SCSD collection system. This would be preferable to using sewer pump stations to move the wastewater north into the existing Ord Community collection system.
2. The analysis for Area E in the report, which is tributary to the Ord Village Lift Station, assumed that all required capital improvements for the system have been completed. This assumption is incorrect. There are remaining capital projects to be performed for this lift station, when infill development triggers the need for larger gravity mains. These costs should be considered in your analysis.
3. The analysis for Area F in the report, which included the rest of the City of Seaside portion of the Ord Community, assumed that all required capital improvements for the Gigling Lift Station have been completed. This assumption is incorrect. The Gigling Lift Station is in need of one pump and a new force main to maintain the current service, and will need larger pumps in the future if full build-out under the Base Reuse Plan occurs. These costs should be considered in your analysis.

4. The analysis assumed that wastewater flows would generally follow the existing pipeline routes to the Ord Community connection point to the MRWPCA Interceptor System. This would require flow metering at the proposed jurisdictional boundary (near 1st Avenue and 1st Street) and a wheeling agreement between MCWD and SCSD for conveyance of flows. The report does not address the value of the existing system, or what benefit the existing wastewater customers would see if the system changed ownership.

We would like to discuss this with you and your staff. Please contact our Interim General Manager, Bill Kocher, at 831.883.5938, or at bkocher@mcwd.org to set up a meeting.

Very truly yours,



Howard Gustafson
Board President

Copy to:

Kate McKenna, Executive Officer, LAFCO of Monterey County
Peter Le, MCWD Board
Bill Lee, MCWD Board
Thomas Moore, MCWD Board
Jan Shriner, MCWD Board

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

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FAX 831-758-6328

M. Eliza McNulty, PE
Benjamin L. Shick, PE
Leif M. Coponen, PE
Principal Emeritus
David A. Foote, PE

March 17, 2016

Mr. Keith Van Der Maaten, PE
General Manager
Marina Coast Water District
11 Reservation Road
Marina, CA 93933

Subject: Evaluation of Proposed Annexation by Seaside County Sanitation District

Dear Keith:

Enclosed please find our technical evaluation of the proposed annexation of the City of Seaside portion of the Ord Community by Seaside County Sanitation District. This assessment looked at the required changes to the existing wastewater infrastructure and the existing capital improvements program. As you are aware, a significant portion of the Seaside-Ord Community is developed and currently served by existing infrastructure. The planned capital improvements address infill development and future development of current open-space areas.

This evaluation does not include a cost analysis of the current vs. proposed capital improvements list, nor does it assess the financial impact of transferring existing customer accounts to SCSD. We understand that a portion of the customer rates for this area are committed to paying down bonded debt, and therefore that cost commitment should be identified and discussed during inter-agency negotiations.

Please contact me with any questions at (831) 883-4848, or asterbenz@swwsv.com.

Sincerely,
Schaaf & Wheeler



Andrew A. Sterbenz, PE
Project Engineer

TO: Mike Wegley, MCWD **DATE:** September 15, 2015
FROM: Andrew Sterbenz, PE **JOB#:** MCWD.43.12.001
SUBJECT: Evaluation of SCSD Proposed Annexation

Packet Page 458

MRWPCA and connected to the interceptor system at two locations: (1) to the Fort Ord Interceptor at the Main Garrison wastewater treatment plant, and (2) to the Salinas Interceptor at Fritzsche Army Airfield. Provisions were made for a future connection to the Seaside Interceptor at Ord Village, which currently connects to the Main Garrison system via a lift station and force main. The East Garrison wastewater treatment plant continued to operate until the base closed in 1995, and has since been replaced with a pump station and force main connecting East Garrison with the Main Garrison portion of the Ord Community.

Figure 4 of the 2005 Ord Community Wastewater System Master Plan (attached) identifies the sewer drainage basins. Within the City of Seaside, wastewater is conveyed north to the Main Garrison connection to the Fort Ord interceptor. The southwest portion of the existing system flows to the Ord Village Lift Station. This area includes existing customers along Coe Avenue, including Bayonet/Blackhorse Golf Course, Sun Bay Apartments, Bay View Mobile Home Park, Seaside Highlands and Hayes Park. The Ord Village Lift Station moves flows to the Gigling Lift Station, which also collects gravity flows from a portion of Stilwell Park. The Gigling Lift Station moves flows north across Light Fighter Drive. The majority of the remaining portion of the City below Light Fighter Drive flows northwest by gravity, into a trunk sewer located in 1st Avenue. The sewers in 6th and 7th Avenues (within Seaside) flow north (downhill) and then west through existing sewer pipelines in CSUMB. The CSUMB campus straddles the boundary between Marina and Seaside. The campus sewer collection system crosses the city boundary at multiple points, so the SCSD has proposed leaving this portion of the City as part of MCWD's system.

There are no current capacity issues within the City of Seaside portion of the wastewater collection system. The Hatten Lift Station at the southwest corner of Fitch Park is scheduled for a life-cycle replacement in FY 15/16. The Gigling Force Main has similarly reached the end of its service life and is scheduled for replacement in FY 15/16. Several gravity mains and the Ord Village and Gigling Lift Stations are scheduled for capacity upgrades when planned infill development occurs within Seaside Resort (B/B Golf Course).

Topic 2, Capital Improvements

Under the Fort Ord Base Reuse Plan, undeveloped portions of Marina, Seaside, Del Rey Oaks, the City of Monterey and unincorporated Monterey County will be developed for residential, visitor serving and other purposes (see attached Figure 3.3-1 from the BRP). Additional infill and replacement development was also anticipated. The Ord Community Wastewater System Master Plan assumed that MCWD would serve all of the development parcels in the Ord Community, and that all new sewer flows would be conveyed to the MRWPCA Fort Ord Interceptor at the former Main Garrison WWTP. A schedule of 31 Capital Improvement Projects was developed to address existing deficiencies and future capacity limitations (Table 1, attached). Of these, 14 projects are located within the City of Seaside.

If the new wastewater flows from areas south of Eucalyptus Road (from Seaside, Monterey and Del Rey Oaks) are added to the existing collection system as studied in the Ord Community Wastewater Master Plan, one or more lift stations along General Jim Moore Blvd south of Eucalyptus Road would be required, with approximately 12,600 LF of associated gravity and force main piping. In addition, 5,300 LF of existing gravity sewers in General Jim Moore Blvd, and 2,160 LF of existing gravity sewers in 1st Avenue would require replacement with larger pipes to accommodate the additional flow. Wastewater flow from these areas was projected to be 1.03 mgd ADWF.

In the 2011 SCSD Sewer Master Plan and Rate Study, it was assumed that wastewater from these areas would flow into the existing SCSD collection system, rather than pumping to the north. When General Jim Moore Blvd was widened, gravity sewers crossing east-to-west were included at the major intersections. The projected flow from these areas was 0.76 mgd ADWF (the 2011 study used 65 gallons/person/day for residential flows, while the 2005 study used 90 gallons/person/day). To accommodate these flows (and flows from other in-fill development), thirteen projects within the existing Seaside collection system totaling 35,000 LF of new or replacement sewer mains, plus two lift station upgrades, would be required. Although the SCSD Master Plan requires significantly more pipeline construction, it avoids the need to pump wastewater from 160-ft of elevation (Gen. Jim Moore Blvd at South Boundary Road) to 380-ft (Gen. Jim Moore Blvd north of Eucalyptus Road), which is a significant energy savings.

Neither master plan analyzed the proposed Monterey Downs development, which would be located east of Marshall Park, roughly between Gigling Road and Eucalyptus Road. The Draft Specific Plan for the development identifies two points of connection to the existing wastewater collection system, at Gigling Road at 7th Avenue, and at Normandy Road at Parker Flats Cut-Off. Schaaf & Wheeler updated the 2005 master plan model to evaluate the Monterey Downs flows, and found that wastewater CIPs No. 28, 1st Avenue Pipeline Replacements, and No. 30, Gen. Jim Moore Blvd Pipeline Replacement III, would still be required, as well as a new 10 inch gravity sewer in Gigling Road from 7th Avenue to Gen. Jim Moore Blvd.

The Wallace Group prepared an Engineering Analysis in support of the SCSD LAFCO Application (May 2014). That report recommended that CSUMB be served by MCWD, and that SCSD service reach to the CSUMB southern boundary. To address existing wastewater pipelines in 6th and 7th Avenues running north into CSUMB, they proposed installing a new gravity sewer running west in Col. Durham Road, intercepting these existing pipelines. To connect to the MRWPCA Ord Interceptor, they considered constructing a new gravity sewer on the west side of State Highway 1, or continuing shared use of the existing gravity main in 1st Avenue. Shared use of the existing pipeline was the recommended alternative.

The redevelopment areas between State Highway 1 and 2nd Avenue along the Marina-Seaside City Boundary are covered by two approved specific plans: the City of Marina University Villages Specific Plan (now called the Dunes on Monterey Bay), and the City of Seaside Projects at Main Gate Specific Plan. The trunk sewer system in this area consists of two parallel gravity mains flowing north, one serving the areas west of Gen. Jim Moore Blvd, and the other serving the areas to the east. One pipeline is approximately 3-ft shallower than the other. The Dunes project proposes replacing the two parallel sanitary sewers in 1st Avenue with a single, larger gravity pipeline. The timing of this improvement is unknown, since it is within the final phase of the development. The Projects at Main Gate proposes to reroute a portion of the two existing gravity pipelines. The timing of this development is also unknown. Close coordination during the final design and installation of these pipelines will be important for preventing spills and service interruptions. If this becomes a service boundary between MCWD and SCSD, a formal Capital Improvement Project to replace the trunk sewer should be considered.

Topic 3, Wastewater Capacity Allocation

When Fort Ord annexed into the MRWPCA service area, the U.S. Army purchased 3.3 mgd (average dry weather flow) of wastewater treatment capacity rights in the Regional Treatment Plant. When the base closed, the U.S. Army retained 1.08 mgd of prepaid wastewater treatment capacity for the Presidio Annex (Ord Military Community), which includes military housing areas, the PX complex and various offices.

The remaining 2.22 mgd of capacity was assigned to FORA, but FORA has not formally sub-allocated wastewater capacity among the jurisdictions.

Wastewater flows from the Ord Community are currently less than 1 mgd. Approximately 30% of the current water use is in the Presidio Annex, but that demand is not projected to significantly increase, as opposed to the remainder of the Ord Community. Within the next twenty years, the 2.22 mgd of prepaid capacity assigned to FORA is projected to be used, and later developments will need to purchase additional capacity in the Regional Treatment Plant. The capacity has been informally allocated to redevelopment as it occurs. If the land use jurisdictions wish to formally allocate wastewater plant capacity, that action should occur before FORA sunsets in 2020.

Topic 4, Existing System Value/Investment

The replacement cost of the Ord Community sewer system was estimated in 2013 as a supporting study for the Rate Study. The estimated replacement cost was \$62 million for the 17 lift stations and approximately 77 miles of pipes. Assuming 40% of that total is located within Seaside, the replacement value would be \$25M. MCWD received ownership of the system in a public benefit conveyance from the United States through FORA, but still incurred certain costs during the application process leading up to the conveyance. New water and wastewater pipelines were installed within the Seaside Highlands Development and conveyed in fee to MCWD. It would be reasonable for the District to be compensated for the current value of the system if SCSD were to annex it. We have not attempted to estimate what level of depreciation would be appropriate for this.

The greater value to MCWD is the current and future customer base within the Ord Community. There are over 1,400 customer accounts within the Seaside portion of the Ord Community. Revenue from these accounts (and from the rest of the Ord Community) pays for a portion of the District operating budget, and was used to secure loans (capital improvement financing bonds). If SCSD were to take these existing customers from MCWD, then MCWD would need to receive monetary compensation for the portion of the existing capital debt which was secured by this customer base.

MCWD has added staff and equipment to facilitate the management, operation and maintenance of the Ord Community water and sewer systems. Most notably they have purchased a new sewer cleaning (Vactor) truck and sewer camera van within the last eight years. Removing a portion of the existing service area may trigger a reevaluation of staffing levels.

Recommendations

The existing Ord Community wastewater collection system (Area 1) has been operated by MCWD since 1998, and owned by MCWD since 2001. The proposed annexation by SCSD would potentially change the governance model, but would not make any physical system changes for the benefit of the current or future customers. Adding a second sanitary sewer district up-stream of the planned redevelopment with the City of Marina (Dunes on Monterey Bay between 1st and 2nd Avenues) adds another agency which must be coordinated with for future in-tract improvements. There is no operational or engineering reason why this area should be managed by a different district than the existing wastewater collection system in Marina, so we therefore recommend that Area 1 be annexed into MCWD, along with the rest of the Ord Community currently receiving water and sewer service.

The undeveloped Area 2, immediately east of and adjacent to the SCSD Service Area, has no existing wastewater infrastructure, and in previous studies it was shown that connecting this area to the existing

SCSD wastewater collection system would require less energy (fewer pump stations) than connecting to the existing MCWD collection system. We recommend that Area 2 be annexed into SCSD.

The undeveloped Area 3, immediately east of and adjacent to the existing Ord Community wastewater collection system, has no existing wastewater infrastructure, but it is planned to connect into Area 1 at two locations. There is no operational or engineering reason why this area should be managed by a different district than Area 1, so we therefore recommend that Area 3 be annexed into MCWD when development occurs.

Attachments:

Figure 4, Sewer Basins Map, from the 2005 Ord Community Wastewater System Master Plan

Figure 3.3-1, Land Use Concept, Ultimate Development, from the Fort Ord Base Reuse Plan, 1997

Table 1, Ord Community Wastewater System Capital Improvement Projects

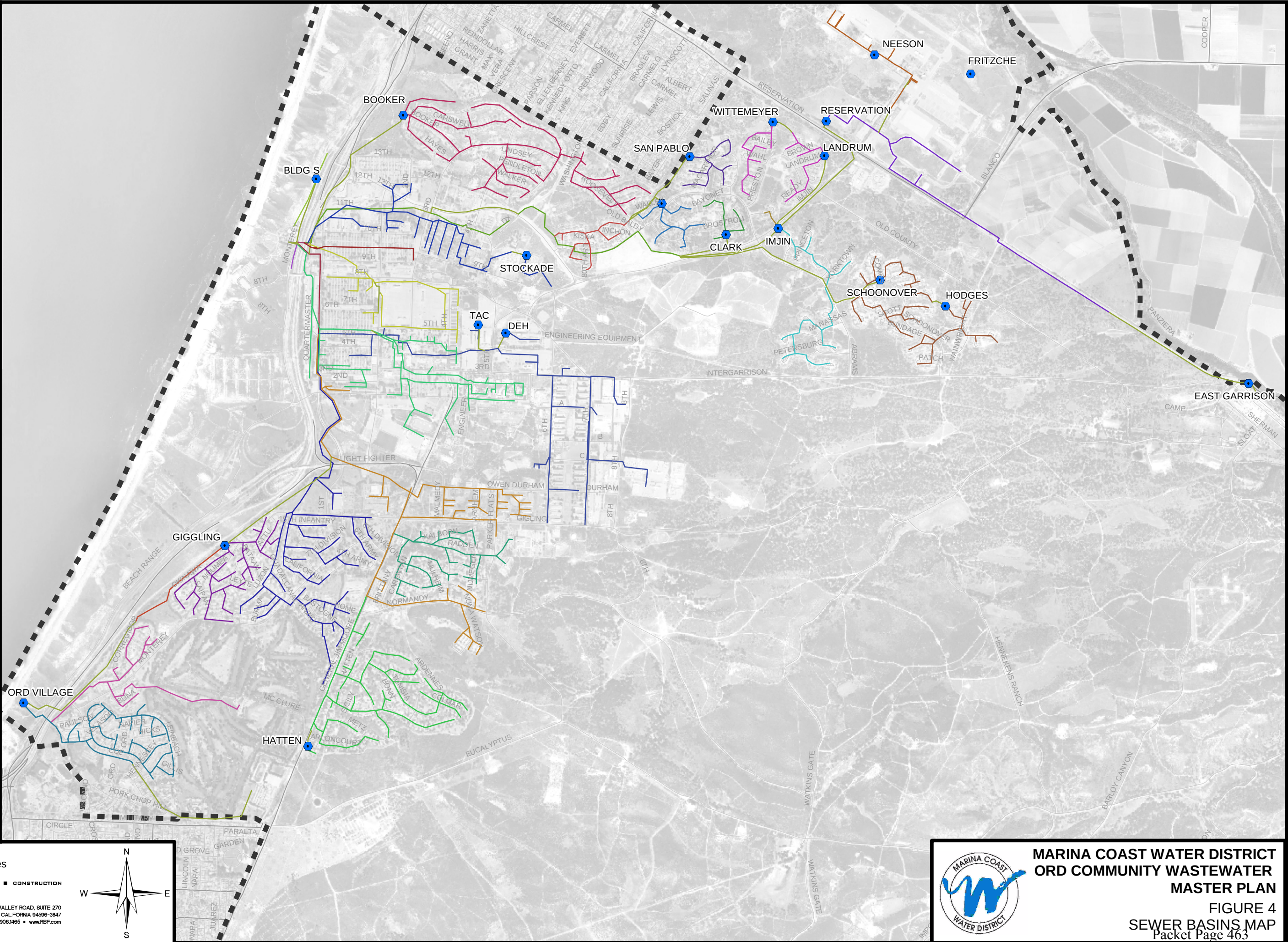
Memorandum: MCWD Sewer Model Update Scenarios, June 22, 2015, Schaaf & Wheeler

Memorandum: MCWD Sewer Model Update Results, August 6, 2015, Schaaf & Wheeler

Legend

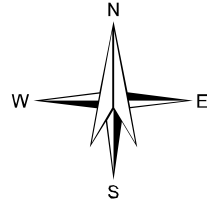
-  Lift Stations
-  Ord Boundary
-  Roads
- DRAINAGE BASINS**

- AA
- B
- C
- D
- E
- F
- G
- H
- J
- J 800
- K
- KZ
- L
- L#C
- L#J
- L#P
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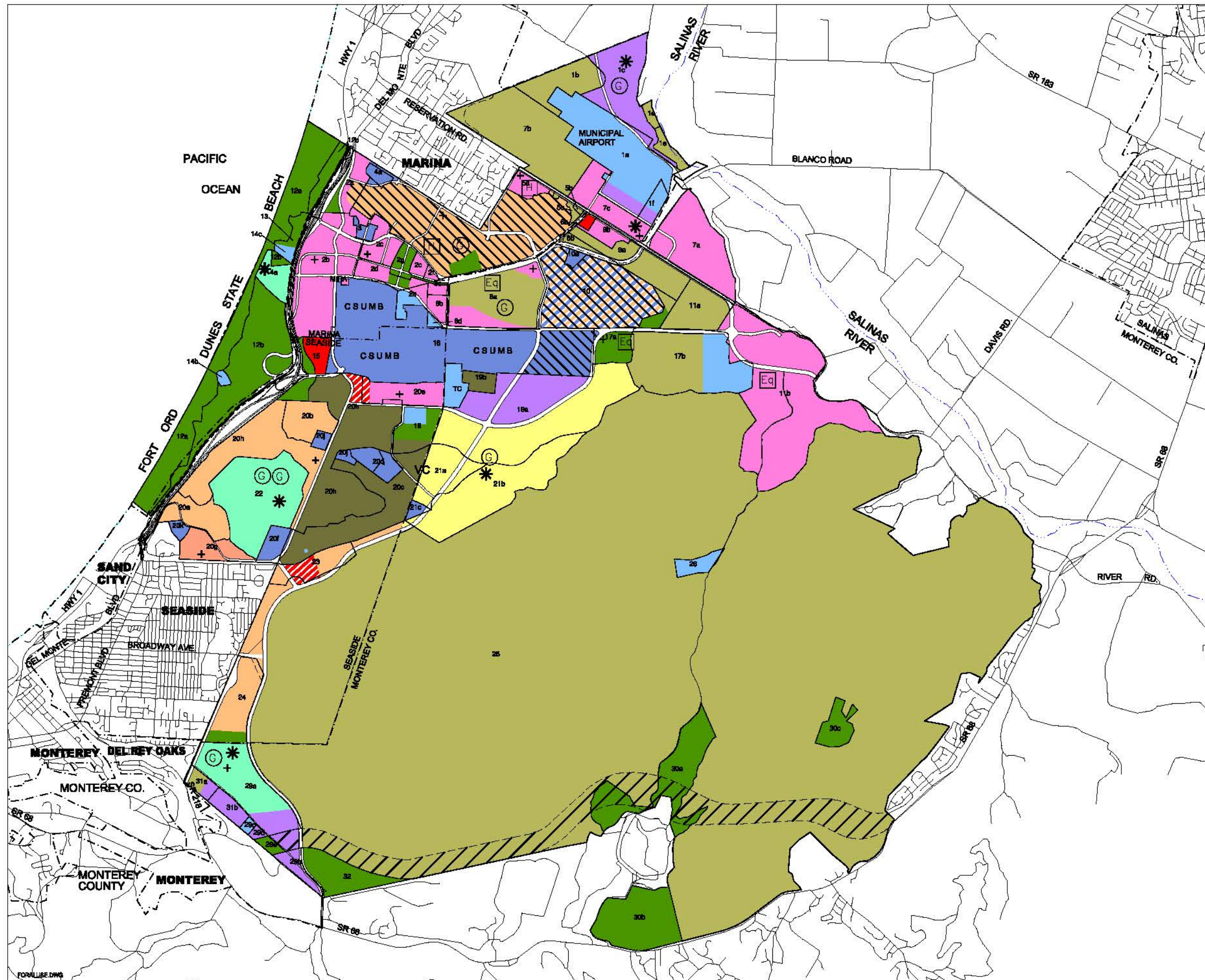
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**MARINA COAST WATER DISTRICT
ORD COMMUNITY WASTEWATER
MASTER PLAN**

**FIGURE 4
SEWER BASINS MAP**
Packet Page 463



FORT ORD REUSE PLAN

Fort Ord Reuse Authority (FORA)

Land Planning	EDAW, Inc.
Market Analysis	EMC Planning Group, Inc.
Transportation Engineering	Sadway Kottin Mouchly Group
Civil Engineering	JHK and Associates
Fiscal Analysis	Reimer Associates
Habitat Planning	Angus McDonald Associates
Public Communications	Zander Associates
Community Development	The Ingram Group
	Resource Corps International

LEGEND:

- SFD Low Density Residential
- SFD Medium Density Residential
- MFD High Density Residential
- Residential Infill Opportunities
- Hwy 68 Bypass ROW; Development with Restrictions
- Planned Development Mixed Use District
- Business Park/Light Industrial Office/R & D
- + Convenience Retail
- Neighborhood Retail
- Regional Retail
- Visitor Serving
- G Golf Course Opportunity Site
- * Hotel Opportunity Site
- Eq Equestrian Center Opportunity Site
- Open Space/Recreation
- Habitat Management
- School/University
- University Medium Density Residential
- H Alternative High School Sites
- Public Facility/Institutional
- Military Enclave
- VC Veterans Cemetery

SHEET TITLE:

LAND USE CONCEPT ULTIMATE DEVELOPMENT



SOURCE:
Jones & Dickson, 1990
Reimer Associates
(Re-projection), 1995
Monterey County, 1995
EDAW, Inc., 1996

FIGURE:

3.3-1

Table 1, Ord Community Wastewater System Capital Improvement Projects

CIP	Name	Jurisdiction	Status
1	Aleutian and Monterey Road Pipeline Replacement Project	Seaside	Not started
2	Okinawa Road Pipeline Replacement Project	Seaside	Not started
3	California Street Pipeline Replacement Project	Seaside	Complete
4	4th St and 2nd Ave Pipeline Replacement Project	Marina	Not started
5	Imjin Pkwy Pipeline Replacement Project I	Marina	Complete
6	Imjin Pkwy Pipeline Replacement Project II	Marina	Complete
7	11th Street Pipeline Replacement Project	Marina	Complete
8	Hayes Circle Pipeline Replacement Project	Marina	Not Started
9	3rd St Pipeline Replacement Project	Marina	Not started
10	Ord Village Pipeline Replacement Project	Seaside	Not started
11	Imjin Pkwy Pipeline Replacement Project III	Marina	Complete
12	4th Avenue Pipeline Replacement Project	Marina	Dev. in-tract
13	Mulheim Road Pipeline Replacement Project	Seaside	Reevaluate need
14	4th St Pipeline Replacement Project I	Marina	Complete
15	4th St Pipeline Replacement Project II	Marina	Not started
16	Ardennes Circle Pipeline Replacement Project	Seaside	Not started (verify)
17	Metz Road Pipeline Replacement Project	Seaside	Not started (verify)
18	Trenton Road Pipeline Replacement Project	County	Reevaluate need
19	Reservation Road Pipeline Replacement Project	Marina	Not started
20	Imjin Lift Station and Force Main Improvements	Marina	In Progress
21	Jefferson Lift Station Improvement	Marina	Complete
22	Neeson Lift Station Improvements	Marina	Reevaluate need
23	Giggling Lift Station and Force Main Improvements	Seaside	FY 15-16, 16-17
24	East Garrison Lift Station and Force Main Improvements	County	Complete
25	Schoonover Lift Station and Force Main Improvements	CSUMB	Complete
26	Miscellaneous Lift Station Improvements Booker Clark DEH East Garrison Gigling Hatten Hodges Jefferson Neeson Reservation Rd TAC Wittmeyer	Multiple Marina Marina Marina County Seaside Seaside CSUMB Marina Marina Marina CSUMB Marina	Not started FY 14-15 Not started Complete FY 16-17 FY 15-16 Complete Complete Reevaluate need Not started Not started Complete
27	General Jim Moore Pipeline Replacement Project I	Seaside	Reevaluate need
28	1st Avenue Pipeline Replacement Project	Marina/Seaside	Not started
29	General Jim Moore Pipeline Replacement Project II	Seaside	Reevaluate need
30	General Jim Moore Pipeline Replacement Project III	Seaside	Reevaluate need
31	Seaside East Lift Station and Force Main Project	Seaside	Not started

MEMORANDUM

TO: Andy Sterbenz, PE DATE: August 6, 2015
FROM: Emily Straley, PE JOB#: MCWD.43.12-001
SUBJECT: MCWD Sewer Model Update Results

The Marina Coast Water District's (MCWD) sewer model, developed by RBF as part of the Sewer System Master Plan, was updated to analyze two scenarios: the proposed Seaside County Sanitation District (SCSD) annexation of the currently undeveloped portion of the Ord Community within the City of Seaside, and the addition of flows from the Monterey Downs specific plan area. The 2020 peak wet weather flow (PWWF) capital improvement project (CIP) condition model was updated to determine the impact of the scenarios. This memo summarizes the modeling methodology and results.

Scenario 1 – SCSD Annexation

SCSD has proposed annexing all of the City of Seaside into their LAFCO service area, including currently undeveloped parcels within the former Fort Ord, and the portion of the former Fort Ord currently served by MCWD, but excluding the portion of the CSUMB campus within Seaside. The proposed system would connect the areas located in the Ord Community south of Eucalyptus Road and west of General Jim Moore Blvd (GJMB) with the existing SCSD collection system (includes flows from Seaside, Del Rey Oaks, and the City of Monterey). Wastewater flows from the currently developed areas served by MCWD would continue to flow north to MCWD collection system and ultimately to the MRWPCA regional interceptor system.

The original sewer model assumed that flows from the areas south of Eucalyptus Road would be pumped north by the proposed Seaside East Lift Station, discharging to the existing system in GJMB near Arloncourt Road. This flow triggered the need for Capital Improvement Projects (CIPs) downstream of the discharge location, identified in the Sewer System Master Plan as CIP 27 – GJMB gravity sewer, Phase 1, McClure Way to Normandy Rd.; CIP 28 – 1st Ave. gravity sewer, Light Fighter Dr. to 4th St.; CIP29 – GJMB gravity sewer, Phase 2, segment behind Post Exchange; and CIP 30 – GJMB gravity sewer, Phase 3, chapel to Gigling Rd. Figure 11, System Deficiencies, from the 2005 Ord Community Wastewater System Master Plan, is attached. These CIPs are the projects indicated in Yellow.

The proposed SCSD annexation was modeled by turning off the Seaside East Lift Station and resetting those pipes identified as requiring upsizing to their existing diameters. The flow depth over diameter (d/D) results in those pipelines indicate that the existing pipe diameters are sufficiently sized for the year 2020 (build-out condition) once the Seaside East Lift Station is no longer discharging to the system in GJMB. Therefore, CIPs 27, 28, 29, and 30 are not required under Scenario 1.

Scenario 2 – Monterey Downs Specific Plan Area

The flows from the Monterey Downs specific plan area were added to the Scenario 1 model at two locations: POC #1 at the corner of Gigling Rd. and 7th Ave, and POC#2 at the corner of Normandy Road and Parker Flats Cut-Off. See the attached memorandum "MCWD Sewer Model Update Scenarios" for the

basis of flow rates used. Pipe was added along Gigling Rd. between POC #1 the existing sewer at GJMB. The model was run to analyze the impact of the additional flow on the system and determine the size of the new sewer pipe in Gigling Rd. The d/D results indicate that a 10-inch diameter pipe is sufficient to carry flow from POC #1 to GJMB. No upsizing of pipe is required immediately downstream of POC #2. The additional flow did trigger the need for CIP 28 – 1st Ave. gravity sewer, Light Fighter Dr. to 4th St.; and CIP 29 – GJMB gravity sewer, Phase 2, segment behind Post Exchange.

Conclusion

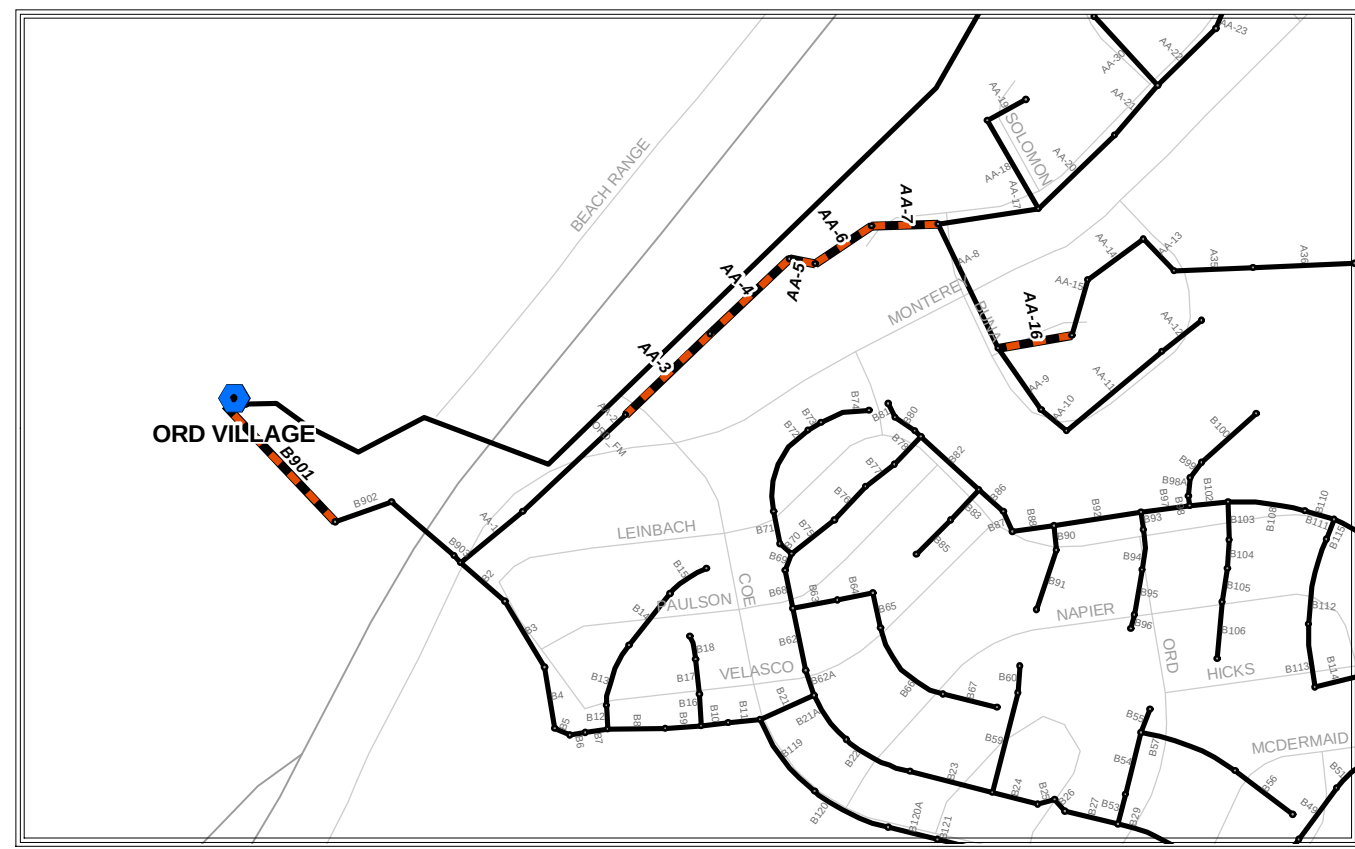
The proposed SCSD annexation eliminates the need for CIPs located downstream of the Seaside East Lift Station discharge point which includes CIP 27, 28, 29, and 30. Adding the flow that will be generated by implementation of the Monterey Downs specific plan triggers the need for CIP 28 – 1st Ave. gravity sewer, Light Fighter Dr. to 4th St.; CIP 29 – GJMB gravity sewer, Phase 2, segment behind Post Exchange; and also requires the addition of approximately 5,000 LF of new 10-inch diameter pipe in Gigling Rd. between 7th Ave. and GJMB.

Attachments:

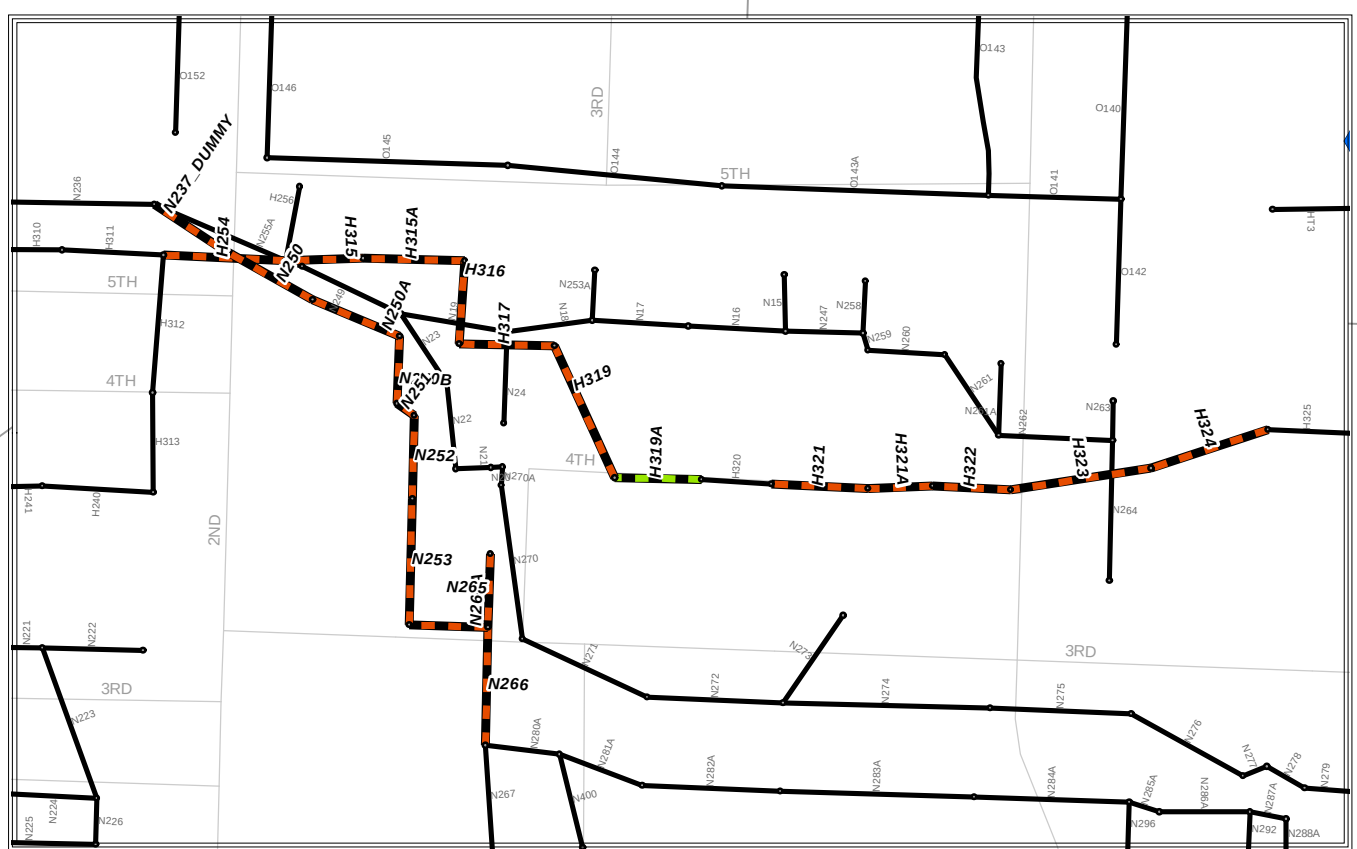
Figure 11, System Deficiencies, from the Ord Community Wastewater System Master Plan, RBF, 2005

CIP 28 and CIP 29 figures and explanations from the Ord Community Wastewater System Master Plan, RBF, 2005

Memorandum: MCWD Sewer Model Update Scenarios, Schaaf & Wheeler, 2015



DETAIL AREA 1
1 inch equals 600 feet



DETAIL AREA 2
1 inch equals 450 feet



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CIP # 29 – General Jim Moore Pipeline Replacement Project II

Year Planned for Construction: 2020
 Capacity Scenario: 2020 PWWF

Reason for Project: Existing gravity sewer pipelines have insufficient capacity to accommodate new wastewater flows from Navy Housing, Surplus Area II, Southside of Lightfighter, Monterey College of Law, Marshall Park, Fitch Park, Marshall Elementary School, First Tee, Seaside East, Chartwell School developments. Wastewater flow from those developments require the gravity sewer pipelines to flow at 53-69% of full capacity, beyond the allowable flow capacities outlined for this Master Plan.

Project Type: Pipeline Replacement Project

Engineering Opinion of Probable Cost:

Pipe ID	Location	Upstream Manhole	Downstream Manhole	Length (feet)	d/D	Pipeline Diameter		Unit Cost (\$/LF)	Facility Cost (\$)
						Existing (in)	Replacement (in)		
G437	General Jim Moore Blvd	G437	G437A	148	0.53	12	15	\$ 62	\$ 15,000
G437A	General Jim Moore Blvd	G437A	G438	242	0.69	12	15	\$ 62	\$ 9,200
TOTAL LENGTH				390					
CONSTRUCTION COST								\$	24,000
20% CONTINGENCY								\$	4,800
25% MCWD Soft Costs ^[1]								\$	6,000
TOTAL PROJECT								\$	34,800
[1] Soft Costs = 10% of construction cost for Engineering Design, 10% of construction cost for construction management and inspection, 5% of construction cost for legal and administrative fees.									

Project Description:

Replace existing 12 -inch diameter gravity sewer pipeline with appropriate 15-inch diameter gravity sewer pipeline to provide required capacities for wastewater flow and to conform to District requirements for minimum slope. Pipeline segments are continuous pipeline segments that should be constructed as one project.

Upstream Flow Sources at Build-out: Navy Housing, Surplus Area II, Southside of Lightfighter, Monterey College of Law, Marshall Park, Fitch Park, Marshall Elementary School, First Tee, Seaside East, Chartwell School

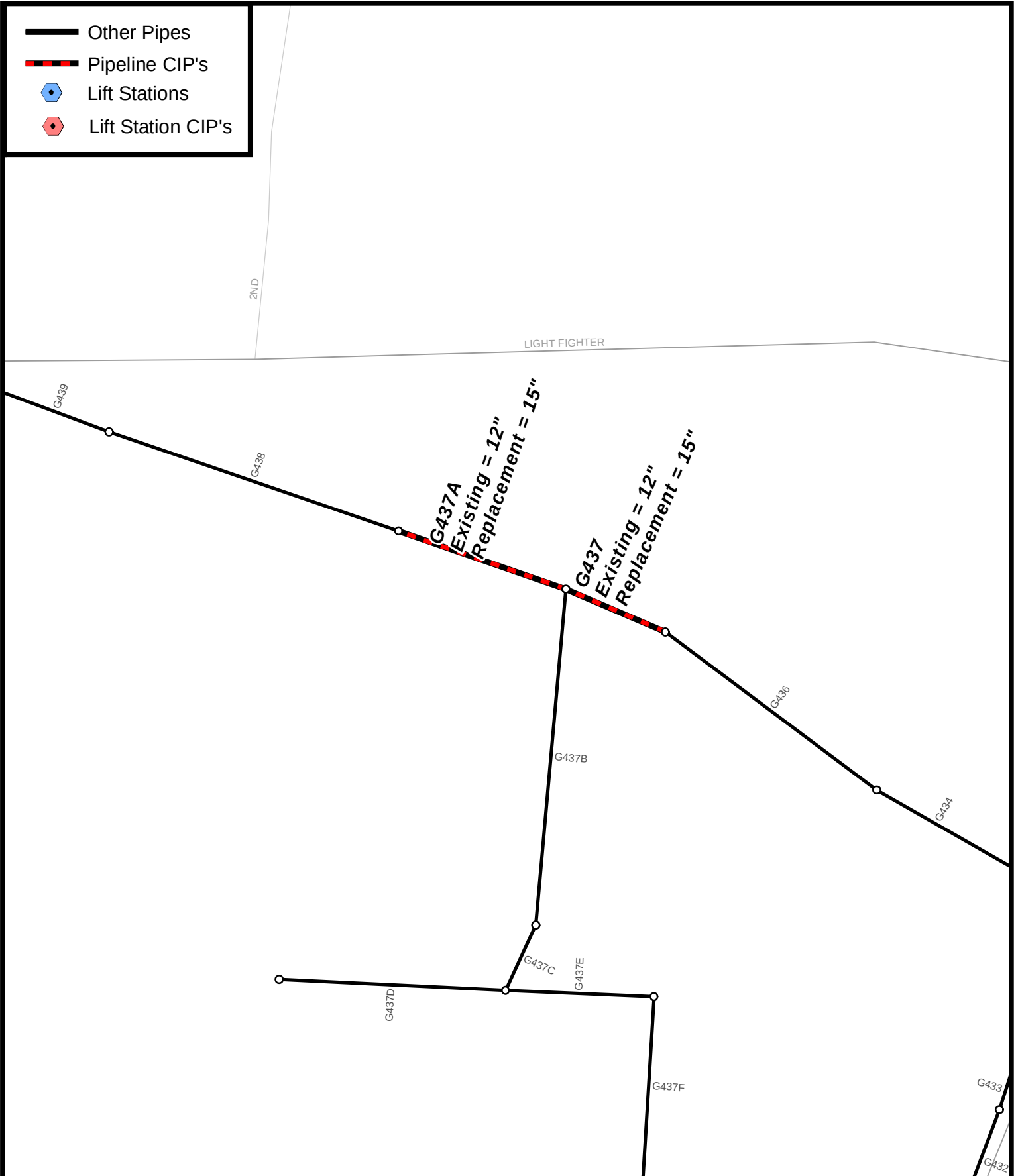
Upstream Lift Stations: Hatten

CIP # 29 – General Jim Moore Pipeline Replacement Project II

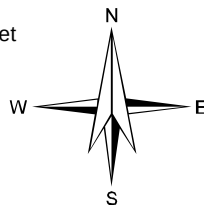
Year Planned for Construction: 2020
Capacity Scenario: 2020 PWWF

Project Location Map: Attached on next page. Proposed CIP facilities are colored in red.

- Other Pipes
- Pipeline CIP's
- Lift Stations
- Lift Station CIP's



0 70 140 280 420 Feet



PLANNING ■ DESIGN ■ CONSTRUCTION

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MARINA COAST WATER DISTRICT
ORD COMMUNITY
WASTEWATER MASTER PLAN

CIP 29: Gen. Jim Moore Pipeline
Replacement Project II

Packet Page 473

CIP # 30 – General Jim Moore Pipeline Replacement Project III

Year Planned for Construction: 2020
 Capacity Scenario: 2020 PWWF

Reason for Project: Existing gravity sewer pipelines have insufficient capacity to accommodate new wastewater flows from Marshall Park, Fitch Park, Marshall Elementary School, First Tee, Seaside East, Chartwell School developments. Wastewater flow from those developments require the gravity sewer pipelines to flow at 79-100% of full capacity, beyond the allowable flow capacities outlined for this Master Plan.

Project Type: Pipeline Replacement Project

Engineering Opinion of Probable Cost:

Pipe ID	Location	Upstream Manhole	Downstream Manhole	Length (feet)	d/D	Pipeline Diameter		Unit Cost (\$/LF)	Facility Cost (\$)
						Existing (in)	Replacement (in)		
G501	General Jim Moore Blvd	G501	G500	84	0.61	15	18	\$ 74	\$ 6,200
G561	General Jim Moore Blvd	G561	G560	417	0.62	15	18	\$ 74	\$ 30,800
G560	General Jim Moore Blvd	G560	G559	370	0.60	15	18	\$ 74	\$ 27,400
G559	General Jim Moore Blvd	G559	G501	91	0.66	15	18	\$ 74	\$ 6,700
G565	General Jim Moore Blvd	G565	G562	309	0.47	12	15	\$ 62	\$ 19,200
TOTAL LENGTH				1271					
CONSTRUCTION COST								\$	90,300
20% CONTINGENCY								\$	18,100
25% MCWD Soft Costs ^[1]								\$	22,600
TOTAL PROJECT								\$	131,000
[1] Soft Costs = 10% of construction cost for Engineering Design, 10% of construction cost for construction management and inspection, 5% of construction cost for legal and administrative fees.									

Project Description:

Replace existing 12 and 15-inch diameter gravity sewer pipeline with appropriate 15 and 18-inch diameter gravity sewer pipeline to provide required capacities for wastewater flow and to conform to District requirements for minimum slope. Pipeline segments are connecting pipeline segments that should be constructed as one project or are within the geographic vicinity.

CIP # 30 – General Jim Moore Pipeline Replacement Project III

Year Planned for Construction: 2020
Capacity Scenario: 2020 PWWF

Upstream Flow Sources at Build-out: Marshall Park, Fitch Park, Marshall Elementary School, First Tee, Seaside East, Chartwell School

Upstream Lift Stations: Hatten

Project Location Map: Attached on next page. Proposed CIP facilities are colored in red.

MEMORANDUM

TO: File DATE: June 22, 2015

FROM: Andy Sterbenz JOB #: MCWD.43.12.001

SUBJECT: MCWD Sewer Model Update Scenarios

Seaside County Sanitation District (SCSD) has proposed annexing the portion of the Ord Community within the City of Seaside, including the portions currently served by MCWD. The proposed means of service would be to direct flows from Seaside East, Del Rey Oaks and Monterey west across General Jim Moore Blvd into the existing SCSD collection system. Flows from the existing system and new developments north of Coe/Eucalyptus Avenue would continue to flow through the existing system into Marina, with a potential metering flume installed at the southern end of 1st Avenue. The District has requested an engineering evaluation of the SCSD proposal.

The Ord Community Sewer System was modeled in 2005 by RBF, as part of the Sewer System Master Plan. The model at that time assumed that all flows from the southern portion of the Ord Community would be pumped north in General Jim Moore Blvd to the existing collection system. The model did not include the proposed Monterey Downs development and California Central Coast Veterans Cemetery, located east of the Fitch Park Housing Area. The rest of the master plan build-out flows appear to be correct.

Two modeling scenarios will be run to account for the changes proposed by SCSD.

Scenario 1: Remove flows from areas south of Eucalyptus Avenue. The 2005 model included the following average dry weather flows (ADWF) from proposed developments:

<u>Area</u>	<u>ADWF (gpd)</u>
Seaside east of Gen. Jim Moore Blvd	713,000
Del Rey Oaks	285,000
City of Monterey	33,000
Total	1,031,000

The addition of these flows contributed to the need for these Pipeline CIPs:

CIP 27: Gen. Jim Moore Blvd gravity sewer, Phase 1, McClure Way to Normandy Rd
CIP 28: 1st Ave gravity sewer, Light Fighter Drive to 4th Street
CIP 29: Gen. Jim Moore Blvd gravity sewer, Phase 2, segment behind Post Exchange
CIP 30: Gen. Jim Moore Blvd gravity sewer, Phase 3, chapel to Gigling Rd.

We will remove these inflows from the buildout (2020) model scenario and evaluate the effects on the listed CIPs. Turning off the proposed Seaside East Lift Station should be all that is required.

Scenario 2: Add flows from the Monterey Downs specific plan area. The Monterey Downs specific plan area is east of Parker Flats Cut-Off/Parker Flats Road and south of Gigling Road. Two sewer points of connection are proposed, one at the corner of Gigling Rd and 7th Ave (POC #1), and the other at the corner of Normandy Road and Parker Flats Cut-Off (POC #2). Based upon the 2012 Water Supply Assessment prepared for the project, wastewater flows are estimated as:

Area	ADWF (gpd)	PWWF (gpd)
POC #1	327,000	928,600
POC #2	168,800	479,300

Peak wet weather flow (PWWF) assumes a peaking factor of 2.4 (population of 2500 persons in each area) and an infiltration and inflow factor of 0.44, per the MCWD PGDR, Section 500. Projected indoor water demands are lower than the 90 gallons/person/day planning factor in the PGDR, so instead, this assumes 100% of indoor water use returns as wastewater.

The addition of these flows may contribute to the need for these Pipeline CIPs:

CIP 28: 1st Ave gravity sewer, Light Fighter Drive to 4th Street

CIP 29: Gen. Jim Moore Blvd gravity sewer, Phase 2, segment behind Post Exchange

CIP 30: Gen. Jim Moore Blvd gravity sewer, Phase 3, chapel to Gigling Rd.

New CIP: Normandy Road gravity sewer, Parker Flats Cut-Off to Gen. Jim Moore Blvd

New CIP: Gigling Road gravity sewer, 7th Ave to Gen. Jim Moore Blvd

We will add these inflows to the Scenario 1 (2020) model and evaluate the effects on the listed CIPs.