

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

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www.dot.ca.gov/hq/esc/oe

*Flex your power!
Be energy efficient!*

November 8, 2013

04-Sol-12,80-2.1/2.8,12.0/13.1

04-0A5344

Project ID 0400021131

ACNHP-X095(025)N

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SOLANO COUNTY IN AND NEAR FAIRFIELD FROM 0.7 MILE WEST ON ROUTE 12 TO ROUTE 12/80 SEPARATION AND ON ROUTE 80 FROM ROUTE 12/80 SEPARATION TO ROUTE 80/680 SEPARATION.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Wednesday, November 20, 2013, instead of the original date of Wednesday, November 13, 2013.

This addendum is being issued to set a new bid opening date as shown herein and revise the project plans, the *Notice to Bidders and Special Provisions*, the *Bid* book, and the Federal Minimum Wages with Modification Number 19 dated 10/04/2013.

Project plan sheets 1, 4, 5, 10, 13-15, 19, 21, 27, 33-36, 39, 40, 44, 71, 72, 87, 99, 102, 111, 115, 117, 118, 123-126, 129, 130, 132, 141, 154, 165, 166, 169, 170, 173, 174, 183-188, 197-200, 202-204, 206-210, 213-215, 219-221, 225, 236, 316, 319, 322, 360, 380-383, 462-464, 467, 478, 491, 492, 494, 495, 498, 499, 501, 502, 513, 516, 517, 521, 524, 525, 528, 530, 531, 556, 558, 559, 586, 588, 589 are replaced and attached for substitution for the like-numbered sheets.

Project plan sheets 97a-97m, 98a, 98b, 110a-110l, 111a, 384a-384t, are added and attached for addition to the project plans.

Project plan sheets 216-218, 222-224, 226, 228 are deleted.

In the *Notice to Bidders*, the twelfth paragraph is replaced as follows:

"Complete the work, excluding plant establishment work, within 500 working days.

Complete the work, including plant establishment work, within 750 working days.

Complete the plant establishment work within 250 working days".

In the *Special Provisions*, Section 1-1.01, "GENERAL," is replaced as attached.

In the *Special Provisions*, Section 5-1.20A is replaced as attached.

In the *Special Provisions*, Section 5-1.20D, "Occupied Improvements within the Right-Of-Way," is replaced as attached.

In the *Special Provisions*, Section 5-1.36D is replaced as attached.

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In the Special Provisions, Section 6-2.04, is added as attached.

In the Special Provisions, Section 8-1.09, "INCENTIVE/DISINCENTIVE FOR EARLY COMPLETION," is replaced as attached.

In the Special Provisions, Section 9-1.16C is replaced as attached.

In the Special Provisions, Section 12-4.02A is replaced as attached.

In the Special Provisions, Section 12-4.05C is replaced as attached.

In the Special Provisions, Section 12-4.05D is replaced as attached.

In the Special Provisions, Section 12-4.05E is replaced as attached.

In the Special Provisions, Section 14-6.02A, "General," the third paragraph is replaced as follows:

"The Department anticipates nesting or attempted nesting by migratory and nongame birds from February 1 to August 31."

In the Special Provisions, Section 14-6.02C(5), "Protection Measures," is replaced as attached.

In the Special Provisions, Section 14-6.06, "SPECIES PROTECTION AREA," is added as attached.

In the Special Provisions, Section 14-10.01, "SOLID WASTE DISPOSAL AND RECYCLING," is edited as follows:

"Replace "at least once a week" in the 2nd paragraph of section 14-10.01 with:

Daily"

In the Special Provisions, Section 19-2.03B, is added as attached.

In the Special Provisions, Section 19-6.03D is replaced as attached.

In the Special Provisions, Section 19-7.01C, is added as attached.

In the Special Provisions, Section 19-7.02C, "Imported Borrow," is replaced as attached.

In the Special Provisions, Section 19-7.03C, "Imported Borrow," is added as attached.

In the Special Provisions, Section 20-1.01B, "Definitions," is added as attached.

In the Special Provisions, Section 20-1.02B, "Pesticides," is added as follows:

"Replace section 20-1.02B with:

20-1.02B Pesticides

Pesticides must not be used."

In the Special Provisions, Section 20-7.02D(1)(d), "Organic Fertilizer," is added as follows:

"Replace "Reserved" in section 20-7.02D(1)(d) with:

Organic fertilizer must be one of the following and comply with the requirements of the following table:

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Organic Fertilizer

Product	Guaranteed chemical analysis (N-P-K) (%)	Company
Biosol Mix®	7-2-3	Rocky Mountain Bio-Products Denver, CO
Fertil-Fibers™	6-4-1	Quattro Environmental, Inc. Coronado, CA
Sustane®	5-2-4	Sustane Natural Fertilizer, Inc. Cannon Falls, MN
Or equal ^a	(N) 5 to 7 (P) 1 to 5 (K) 1 to 10	--

^aOr equal must be pelleted or granular and be within the ranges shown for N-P-K. The cumulative (N) release rate must be no more than 70 percent the first 70 days after incubation (86 degrees F) with 100 percent at 350 days or more."

In the Special Provisions, Section 20-7.03B(2), "Initial Roadside Clearing," is added as follows:

"Add to section 20-7.03B(2):

Weeds must be killed within an area 2 feet in diameter centered at each liner, plug, or seedling plant location where the plants are planted more than 10 feet apart. At locations where liner, plug, or seedling plants are to be planted less than 10 feet apart, weeds must be killed within the entire area.

Replace the 1st paragraph in section 20-7.03B(2) with:

Dispose of weeds killed during the initial roadside clearing."

In the Special Provisions, Section 20-7.03B(3), "After Initial Roadside Clearing," is added as follows:

"Replace the 2nd paragraph in section 20-7.03B(3) with:

Dispose of mowed material and weeds killed during the after initial roadside clearing."

In the Special Provisions, Section 20-8.01A, "Summary," is added as attached.

In the Special Provisions, Section 20-8.02D(1), "Organic Fertilizer," is added as attached.

In the Special Provisions, Section 20-8.03A, "General," is added as attached.

In the Special Provisions, Section 20-8.03D, "Maintenance," is added as attached.

In the Special Provisions, Section 20-9.01A, "Summary," is added as attached.

In the Special Provisions, Section 20-9.03C, "Fertilizer," is added as attached.

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In the Special Provisions, Section 20-9.03D, "Weed Control," is added as attached.

In the Special Provisions, Section 20-9.03F, "Wildflower Seeding Instructions," is added as attached.

In the Special Provisions, Section 20-9.03J, "Miscellaneous Plant Establishment Work," is added as attached.

In the Special Provisions, Section 21-1.01B, "Submittals," is added as follows:

"Replace the 2nd paragraph of section 21-1.01B with:

Submit a certificate of compliance for imported topsoil, straw, fiber, RECP, and fasteners before application."

In the Special Provisions, Section 21-1.01C, "Quality Control and Assurance," is added as follows:

"Add to section 21-1.01C:

Collect a single composite sample composed of 4 subsamples of imported topsoil and analyze for the constituents listed in section 21-1.02D per every 1000 feet of constructed seasonal drainage mitigation ditch. Collect the upper 1 vertical foot of topsoil for subsamples every 250 feet of the constructed ditch and blend them into one single sample for testing. The composite sample must be taken just after the installation of seasonal drainage mitigation ditch.

Samples taken by assigned field personnel must comply with the equipment manufacturer's instructions for collection, analytical methods, and equipment calibration.

Topsoil samples taken must be analyzed by a State-certified laboratory."

In the Special Provisions, Section 21-1.01D, "Topsoil," is added as follows:

"Replace section 21-1.02D with:

Imported topsoil must consist of fertile, friable soil of loamy character that contains organic matter in amounts natural to the region and be capable of sustaining healthy plant life. Imported topsoil must be free from deleterious substances such as litter, refuse, toxic waste, stones larger than 1 inch in size, coarse sand, heavy or stiff clay, brush, sticks, grasses, roots, noxious weed seed, weeds, and other substances detrimental to plant, animal, and human health.

Imported topsoil must comply with the soil horticultural criteria shown in the following table:

Constituent	Minimum	Maximum
clay (0 – 0.002 mm)	5%	50%
silt (0.002 – 0.05 mm)	5%	90%
sand (0.05-2.0 mm)	5%	90%
gravel (2 – 12 mm)	0%	20%
rock (up to 3 inch diameter)	0%	10% by volume
Salinity (ppt; saturated soil paste)	0	2
pH (saturated soil paste)	5.5	8.0
B (ppm; saturation extract concentration per dry weight of soil	0	3.0

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In the Special Provisions, Section 21-1.03D, "Topsoil," is added as follows:

"Add to section 21-1.03D:

Compact the topsoil to a relative compaction between 85 percent and 90 percent.

If needed, add and incorporate soil amendments to achieve required topsoil pH in section 21-1.02D. Furnishing and incorporating soil amendment is change order work."

In the Special Provisions, Section 47-2.01A is added as attached.

In the Special Provisions, Section 47-2.04 is added as attached.

In the Special Provisions, Section 47-6.01A is added as attached.

In the Special Provisions, Section 47-6.01C is added as attached.

In the Special Provisions, Section 48-6, "TEMPORARY MECHANICALLY STABILIZED EMBANKMENT," is replaced as attached.

In the Special Provisions, Section 77-1.01A, "Summary," the following paragraph is added after the second paragraph:

"Before performing local infrastructure work, cut and plug the 24-inch Gordon Waterline at "JW" STA 61+00."

In the Special Provisions, Section 77-1.02, "MATERIALS," the following paragraph is added after the second paragraph:

"Landscape plant groups described but not specified under section 77-7.02 must comply with section 20-7."

In the Special Provisions, Section 77-2, "CITY OF VALLEJO WATER SYSTEM," is replaced as attached.

In the Special Provisions, Section 77-5.01C, "Connections to Existing North Bay Aqueduct Water Main and Schedule of Shutdown," the second paragraph is replaced as follows:

"Notify the city and the Engineer at least 40 days before the intended shutdown. Request that City of Benicia Engineer be present when making connection to existing raw water transmission main in Green Valley Road. One shutdown only, of a maximum duration of 24 hours, is allowed to make the two connections to the existing NBA mains as shown. Do not carry out the similar connections to the City of Vallejo's adjacent 39-inch diameter NBA raw water transmission main within the same 24 hour shutdown period. The signed authorization from the City of Benicia is required before the shutdown."

In the Special Provisions, Section 77-5.01D(1), "Shop Drawings," the following paragraphs are added after the first paragraph:

"Submit engineered design for thrust block for pipe deflection.

Thrust block design plans must be sealed and signed by an engineer who is registered as a civil engineer in the State."

In the Special Provisions, Section 77-5.02E, "Welded Steel Pipe," is added as attached.

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In the Special Provisions, Section 77-5.03A, "General," the following paragraphs are added after the first paragraph:

"Install cathodic protection test station at Sta "PI" 12+11.83 with test leads attached to 39 and 30-inch pipelines.

Locate existing cathodic protection site for 24 inch raw water crossing SR 12 west of Red Top Road. Reconnect existing rectifier leads to the welded steel pipe extension."

In the Special Provisions, Section 77-5.03C, "Connections to Existing Piping," the following paragraph is added after the first paragraph.

"Notify the Engineer and request that City of Benicia Engineer be present when pressure testing the pipeline."

In the Special Provisions, Section 77-7, "CITY OF FAIRFIELD LANDSCAPE," is added as attached.

In the Special Provisions, Section 77-8, "CITY OF FAIRFIELD LANDSCAPE IRRIGATION," is added as attached.

In the Special Provisions, Section 80-7, "TEMPORARY FENCE (TYPE FROG)," is added as attached.

In the *Bid* book, in the "Bid Item List," Items 31, 56, 63, 68, 74, 76-78, 85, 86, 88, 89, 95, 127, 132, 141, 158, 179, 181, 182, 184, 193, 208, 210, 211, 233, 238, and 255 are replaced, Items 288-346 are added and Items 91, 196-201, 203-207, 221, 224, and 287 are deleted as attached.

To *Bid* book holders:

In the *Bid* book, pages 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, and 17 of the "Bid Item List" are replaced as attached. In the *Bid* book, pages 17a, 17b and 17c of the "Bid Item List" are added as attached. The attached Bid Item List is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the *Notice to Bidders* section of the *Notice to Bidders and Special Provisions*.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the *Bid* book.

Submit bids in the *Bid* book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

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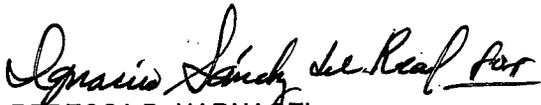
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This addendum, attachments and the modified wage rates are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-0A5344

If you are not a *Bid* book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,



REBECCA D. HARNAGEL
Chief, Office of Plans, Specifications & Estimates
Office Engineer
Division of Engineering Services

Attachments

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
129101A	ALTERNATIVE TEMPORARY CRASH CUSHION SYSTEM	12
130209A	DEWATERING AND NON-STORM WATER DISCHARGE SYSTEM	13
130910A	GEOMEMBRANE LINER	13
150802A	REMOVE TELEPHONE CABLE	15
153143A	REMOVE CONCRETE ISLAND	15
190118A	GROUND IMPROVEMENTS	19
204055A	WILD FLOWER SEEDING	20
208034A	16" SUPPLY LINE (BRIDGE)	20
210110A	IMPORTED TOPSOIL	21
210601A	IMPORTED BIOFILTRATION SOIL	21
477019A	TEMPORARY MECHANICALLY STABILIZED EMBANKMENT	47
512015A	FURNISH PRECAST PRESTRESSED CONCRETE WIDE-FLANGE GIRDER (160'-170')	51
650013A	18" JACKED REINFORCED CONCRETE PIPE	65
680904A	8" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	68
681006A	12" PERFORATED PLASTIC PIPE UNDERDRAIN	68
682009A	CLASS 4 PERMEABLE MATERIAL	68
709999A	12" GATE VALVE	70
770001A	36" WELDED STEEL PIPE CONDUIT (COV / COB - WATER SYSTEM)	77
770002A	REMOVE OLD CORDELIA PRESSURE REDUCING STATION (COV - WATER SYSTEM)	77
770003A	TEMPORARY CONNECTION 16" PVC BYPASS (COF - WATER SYSTEM)	77
770004A	16" DIP WATER (COF - WATER DISTRIBUTION)	77
770005A	16" PVC WATER (COF - WATER DISTRIBUTION)	77
770006A	2" BLOW OFF VALVE (COF - WATER DISTRIBUTION)	77
770007A	2" AIR VACUUM AND RELEASE VALVE (COF - WATER DISTRIBUTION)	77
770008A	16" DIP WATER CONNECTION (COF - WATER DISTRIBUTION)	77
770009A	FIRE HYDRANT (COF - WATER DISTRIBUTION)	77
770010A	8" DIP WATER (COF - WATER DISTRIBUTION)	77
770011A	16" BUTTERFLY VALVE (COF - WATER DISTRIBUTION)	77
770012A	39" NBA WATERLINE (COV)	77
770013A	30" NBA WATERLINE (COB)	77
770014A	ABANDON PIPELINE (39" RAW WATER)(COV)	77
770015A	ABANDON PIPELINE (16" WATER DISTRIBUTION)(COF)	77
770016A	ABANDON PIPELINE (30" RAW WATER)(COB)	77
770017A	REMOVE PIPELINE (39" WATER)(COV)	77
770018A	REMOVE PIPELINE(30" WATER)(COB)	77
770019A	REMOVE FIRE HYDRANT (COF - WATER DISTRIBUTION)	77
770020A	CITY STREET LIGHTING	77
770021A	ABANDON PIPELINE (24" WATER) (COV)	77
770022A	ROADSIDE CLEARING (COF)	77
770023A	WEED GERMINATION (COF)	77
770024A	CULTIVATION (COF)	77
770025A	IRON SULFATE (COF)	77
770026A	SOIL AMENDMENT (COF)	77

770027A	PACKET FERTILIZER (COF)	77
770028A	SLOW-RELEASE FERTILIZER (COF)	77
770029A	PLANT (GROUP K) (COF)	77
770030A	PLANT (GROUP A) (COF)	77
770031A	PLANT (GROUP B) (COF)	77
770032A	PLANT (GROUP U) (COF)	77
770033A	TURF (SOD) (COF)	77
770034A	TREE GUY ASSEMBLY AND STAKING (COF)	77
770035A	PLANT ESTABLISHMENT WORK (COF)	77
770036A	DECOMPOSED GRANITE (COF)	77
770037A	WOOD MULCH (COF)	77
770038A	EDGING - WOOD HEADER BOARD (COF)	77
770039A	EDGING - CONCRETE (COF)	77
770040A	CHECK AND TEST EXISTING IRRIGATION FACILITIES (COF)	77
770041A	CONTROL AND NEUTRAL CONDUCTORS (COF)	77
770042A	1" REMOTE CONTROL VALVE (COF)	77
770043A	1 1/2" REMOTE CONTROL VALVE (COF)	77
770044A	42 STATION IRRIGATION CONTROLLER (PEDESTAL MOUNTED) (COF)	77
770045A	IRRIGATION CONTROLLER ENCLOSURE CABINET (COF)	77
770046A	BUBBLER SPRINKLER (TYPE C) (COF)	77
770047A	POP-UP SPRINKLER (TYPE A) (COF)	77
770048A	1 1/2" GATE VALVE (COF)	77
770049A	2 1/2" GATE VALVE (COF)	77
770050A	3/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	77
770051A	1" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	77
770052A	1 1/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	77
770053A	1 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	77
770054A	2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	77
770055A	2 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	77
770056A	1" 155 MESH FILTER ASSEMBLY UNITS (COF)	77
770057B	1 1/4" 155 MESH FILTER ASSEMBLY UNITS (COF)	77
770058C	1 1/2" 155 MESH FILTER ASSEMBLY UNITS (COF)	77
770059A	3/4" FLUSH VALVE (COF)	77
770060B	1 1/4" FLUSH VALVE (COF)	77
770061A	SUB-SURFACE DRIP IRRIGATION LINE (COF)	77
770062A	QUICK COUPLING VALVE (COF)	77
770063A	BALL VALVE (COF)	77
770064A	CONCRETE UNIT PAVERS (COF)	77
770065A	HYDROSEED (NO MOW GRASS) (COF)	77
770066A	COMPOST (COF)	77
770067A	HYDROMULCH (COF)	77
770068A	RECYCLED WATER WARNING SIGNS (COF)	77
770069A	ELECTRIC SERVICE CONNECTION (LANDSCAPE) (COF)	77
770070A	2" IRRIGATION SLEEVE (COF)	77
770071A	4" IRRIGATION SLEEVE (COF)	77
770072A	6" IRRIGATION SLEEVE (COF)	77
800100A	TEMPORARY FENCE (TYPE FROG)	80

802581A	12' CHAIN LINK GATE (TYPE CL-6, VINYL-CLAD)	80
802621A	16' CHAIN LINK GATE (TYPE CL-6, VINYL-CLAD)	80
802661A	20' CHAIN LINK GATE (TYPE CL-6, VINYL-CLAD)	80
839705A	CONCRETE BARRIER (TYPE 60 MODIFIED)	83
839729A	CONCRETE BARRIER (TYPE 732A MODIFIED)	83
840507A	6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 8-4)	84
840524A	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 34-14)	84
860151A	SIGNAL AND LIGHTING (TEMPORARY) (CITY)	86
860810A	LONG LEAD-IN-CABLE LOOP DETECTOR SENSOR UNITS	86

CONTRACT NO. 04-0A5344
REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 5-1.20A:

During the progress of the work under this Contract, work under the following contracts may be in progress at or near the job site of this Contract:

Coincident or Adjacent Contracts

Contract no.	County–Route–Post Mile	City / County	Type of work
04-0A5354	Sol-80-13.3/15.7	Fairfield	Truck Scale Relocation
04-264144	Sol-12-0.0/R2.6	Solano	Highway Widening
Private Access Road	Sol-12-2.5/2.8	Solano	Private Access Road Construction

Replace section 5-1.20D with:

5-1.20D Occupied Improvements within the Right-of-Way

Do not proceed with any work on the parcels in which the PG&E Gas Valve Lot (APN 0180-110-010 and 0180-110-020) is located between Lopes Road and I-680 until April 1, 2014.

Do not proceed with any work within 20 feet of commercial sign structure located at "GL2" STA 107+20 Lt within the right of way. You must protect and maintain access to this sign until it is removed or relocated by others.

The commercial sign is expected to be removed or relocated by December 1, 2013. Do not take any action that will result in unnecessary inconvenience or disproportionate injury to or that is coercive in nature to the occupants of the improvements.

Add to section 5-1.36D:

During the progress of the work under this Contract, the utility owner will relocate, remove, abandon or install a utility shown in the following table within the corresponding number of days shown. Notify the Engineer before you work near a utility shown. The days start on the notification date.

Utility Action and Department-Arranged Time for the Action

Utility	Location	Days	Action
PG&E joint trench	GL2 116+00, 170' left to GL2 117+50. 320' left. Item 52 on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate
PG&E 12kv overhead electrical	GR1 15+30 to M 116+60, approximately parallel to and southwest of GVR line. Items 23B,&C on sheet U-17	Anticipated completion date: July 15, 2014.	Remove
AT&T telephone manhole	M 115+15, 77' left on sheet U-4.	Anticipated completion date: June 15, 2015.	Abandon
PG&E 10" gas transmission	M 108+70, 200' left to M 112+30, 250' right. Item 12A on sheet U-17	Anticipated completion date: June 1, 2014.	Abandon
PG&E 10" gas transmission	M 112+30, 250' right to M 114+00, 200' right. Item 12B on sheet U-17	Anticipated completion date: June 1, 2014.	Abandon
PG&E 32" gas transmission	Crossing GVR line at 66+20. Item 30 on sheet U-17	Anticipated completion date: June 1, 2014.	Abandon
PG&E 12kv overhead electrical	JW 51+00 approx parallel to and north of SR 12 to JW 67+00. Item 5A on sheet U-17	Anticipated completion date: July 15, 2014.	Relocate
PG&E 12kv overhead electrical	JW 67+00, crossing JW line and to JW 79+50 200' left. Item 5B on sheet U-17	Anticipated completion date: July 15, 2014.	Remove
PG&E 12kv overhead electrical new service to Dittmer	JW 67+00 110' left to JW 79+50 200' left. Item 5C on sheet U-17	Anticipated completion date: July 15, 2014.	Install
PG&E service to eastbound I-80/Green Valley Road ramp terminal ramp terminal intersection signal	I-80 / Green Valley Road	Anticipated completion date: July 15, 2014.	Relocate
PG&E 12kv overhead electrical	Crossing JW 67+00 and out of right of way. Item 9 on sheet U-17	Anticipated completion date: July 15, 2014.	Relocate
PG&E 12kv overhead electrical	JW 79+00 180' right Item 10 on sheet U-17	Anticipated completion date: July 15, 2014.	Remove
PG&E 24" gas transmission	G 65+00 and crossing I-680 Item 16 on sheet U-17	Anticipated completion date: June 1, 2014.	Abandon
PG&E gas valve lot	Item 24A on sheet U-17	Anticipated completion date: June 1, 2014.	Remove

Owner removal, relocation, or installation of the utilities shown in the following table requires coordination with your activities. Make the necessary arrangements with the utility company through the Engineer and submit a schedule:

1. Verified by a representative of the utility company
2. Allowing at least the time shown for the utility owner to complete its work

Utility Action and Contractor-Arranged Time for the Action

Utility	Location	Date	Action
City of Vallejo 24" Gordon Water	JW Line left to G 77+60, 20' right (E0) Old Cordelia PRS. Item 7A on sheet U-17	After the City of Vallejo completes reconnecting water service.	Abandon
AT&T 6 pair underground tel cable	JW 59+50, 50' left to M 113+00, 105' left; M 113+00 across GU line to GU 85+00, 300' right. Item 6 on sheet U-17	--	Protect in place
PG&E 16" gas transmission	(E) M 108+70, 200' left to M 110+00, 350' right. Item 11A on sheet U-17	Anticipated completion date: June 1, 2014	Relocate
PG&E 16" gas transmission	M 110+00, 350' right to existing valve lot. Item 11B on sheet U-17	Anticipated completion date: June 1, 2014	Relocate
PG&E 16" gas transmission	Existing valve lot to G 67+50, 350' right (east side of I-680). Item 29 on sheet U-17	Anticipated completion date: June 1, 2014	Relocate
PG&E 24" gas transmission	M 108+70, 200' left to G 67+50, 350' right. Item 35A on sheet U-17	Anticipated completion date: June 1, 2014	Install
PG&E 2-6 25kv underground electric	G 71+00, 100' left to G 80+50, 60' right. Item 26A on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate
PG&E 2-6 25kv underground electric	G 57+60, 30' left to G 71+00, 100' left. item 26B on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate
PG&E 2-6 25kv underground electric	Item 26C on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate
PG&E 6" gas distribution	G 70+00, approx. parallel and southwest of GVR line. Item 27 on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate and abandon
PG&E 6" gas distribution	G 72+00, approx. parallel and southwest of GVR line. Item 27A on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate and abandon
PG&E 6" gas distribution	Crossing GVR line at G 69+75. Item 31 on sheet U-17	Anticipated completion date: June 1, 2014.	Abandon
PG&E gas district regulating station	G 67+00, 30' right. Item 24B on sheet U-17	Anticipated completion date: June 1, 2014.	Relocate
PG&E 4" gas distribution	Approx. parallel to and southwest of GVR line at G 68+80 Item 28 on sheet U-17	Anticipated completion date: June 1, 2014.	Abandon
PG&E 4" gas distribution	G 67+00, 350' right Item 24C on sheet U-17	Anticipated completion date: June 1, 2014.	Install

Notify the Engineer and MTC SAFE Contact 14 calendar days before performing any excavation or other work close to call boxes.

Regional Notification Center:

MTC SAFE CALL BOX PROGRAM COORDINATOR
METROPOLITAN TRANSPORTATION COMMISSION SAFE
101 EIGHTH STREET
OAKLAND, CA 94607
PHONE: (510) 817-5695

Add to the second paragraph of section 6-2.04:

Submit your test results for imported borrow and obtain authorization under section 19-7 before you request tests for its physical properties.

Replace section 8-1.09 with:

8-1.09 INCENTIVE/DISINCENTIVE FOR EARLY COMPLETION

The Department pays you the incentive for each day you complete the corresponding work part fewer than the working days shown in the following table except as specified for the maximum total incentive and deducts the disincentive for each day you complete the corresponding work part more than the working days shown in the following table except as specified for the maximum total disincentive:

Incentive/Disincentive for Work Part Completion within Specified Times

Work part	Work Duration Allowed	Incentive amount	Disincentive amount
Shut down City of Benicia raw water transmission main	24 hours	\$0 per hour	\$500 per every hour past the shutdown
Completion of Stage 3B	30 working days	\$0 per day	\$1000 per day
Stage 5 Work STA "GL2" 114+00 to 120+00	100 working days	\$0 per day	\$1000 per day

The Department pays a maximum total incentive of \$0.

The Department deducts a maximum total disincentive of \$76,000.

These incentives and disincentives are independent of liquidated damages and other damages specified.

At your request, the Department may accelerate its inspection and testing. The Department deducts any additional expenses incurred as a result of the acceleration.

The time limit specified for the completion of the work is considered insufficient to permit completion of the work by working a normal number of hours per day or week on a single shift basis. Should you fail to maintain the progress of the work in conformance with "Progress Schedule (Critical Path Method)" of these special provisions, additional shifts will be required to the extent necessary to ensure that the progress conforms to the above mentioned schedule and that the work will be completed within the time limit specified.

Actions required by the Engineer to perform normal inspection and testing duties will not be considered as contributing to any delay in awarding incentives or to any delay that will require charging disincentives.

Add to section 9-1.16C:

The following items are eligible for progress payment even if they are not incorporated into the work:

1. Earth Retaining System
2. Piling (except CIDH Piling)
3. Prestressing Steel for Cast-In-Place Members (Sealed Packages Only)
4. Prestressing Ducts and Anchorages
5. Precast MSE Wall Panels
6. Precast Concrete Members
7. PTFE Bearings
8. Bar Reinforcing Steel
9. Welded Steel Pipe
10. Fences and Railings
11. Joint Seals Type B
12. Joint Seal Assemblies
13. Miscellaneous Metal
14. Pavement Dowels
15. Reinforcement
16. Cable Railing
17. Signal and Lighting Standards
18. Luminaires
19. Culvert and Downrain Pipe and Appurtenances
20. Fiber Rolls
21. Sign Structure
22. Rock Slope Protection
23. Miscellaneous Iron and Steel
24. Guard Railing and Terminal Systems
25. Crash Cushions
26. Pavement Markers
27. Precast Inlet
28. Camera Assembly
29. Lighting Fixtures
30. Signal Heads and Mounting Brackets

Add to section 12-4.02A:

If work including installing, maintaining, and removing Type K temporary railing is to be performed within 6 feet of the adjacent traffic lane, close the adjacent traffic lane.

Except as listed above, closure of the adjacent traffic lane is not required for installing, maintaining, and removing traffic control devices.

For grinding and grooving operations, sawcutting concrete slabs, and installing loop detectors with an impact attenuator vehicle as a shadow vehicle, closure of the adjacent traffic lane is not required.

Designated holidays are as shown in the following table:

Designated Holidays

Holiday	Date observed
New Year's Day	January 1st
Washington's Birthday	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4th
Labor Day	1st Monday in September
Veterans Day	November 11th
Thanksgiving Day	4th Thursday in November
Christmas Day	December 25th

If a designated holiday falls on a Sunday, the following Monday is a designated holiday. If November 11th falls on a Saturday, the preceding Friday is a designated holiday.

Special days is: Martin Luther King Day.

Freeway closure charts are for the erection and removal of falsework, placement and removal of overhead sign structures, and other authorized work.

Personal vehicles of your employees must not be parked on the traveled way or shoulders, including sections closed to traffic.

If work vehicles or equipment are parked within 6 feet of a traffic lane, close the shoulder area as shown.

At each location where falsework is constructed over a street or route listed, provide openings through the bridge falsework. The type, minimum width, height, and number of openings at each location, and the location and maximum spacing of the falsework lighting, if required for each opening, must comply with the requirements shown in the table. The width of vehicular openings is the clear width between temporary railings or other protective work. The spacing shown in the table for falsework pavement lighting is the maximum distance from center to center, in feet, between fixtures.

Green Valley Road Overcrossing
(Bridge No. 23-0246)
Eastbound I-80

	Number	Width (feet)	Height (feet)
Vehicle openings	1	73.7	15
	Location	Spacing	
Falsework pavement lighting	R an L	40.0 ft w/C40 staggered ½ space	

NOTE:
 R = Right side of traffic
 L = Left side of traffic
 C = Centered overhead

Green Valley Road Overcrossing
(Bridge No. 23-0247)
Eastbound I-80 to Southbound I-680 On-ramp

	Number	Width	Height
Vehicle Openings	1	25	15
	Location	Spacing	
Falsework Pavement Lighting	R	30.0 ft	

(Width and Height in feet)
 (R = Right side of traffic. L = Left side of traffic)
 (C = Centered overhead)

Green Valley Road Overcrossing
(Bridge No. 23-0246)
Westbound I-80

	Number	Width	Height
Vehicle Openings	1	57	15
	Location	Spacing	
Falsework Pavement Lighting	R and L	30.0 ft	

(Width and Height in feet)
 (R = Right side of traffic. L = Left side of traffic)
 (C = Centered overhead)

The exact location of openings will be determined by the Engineer.

Precast concrete members must not be cast within the right-of-way of Route 680, 80, or 12.

During precast girder erection, traffic in the lanes over which girders are being placed must be detoured or stopped as specified in section 12-4.02A.

Have the necessary materials and equipment on site to erect or remove the precast girders or falsework over any 1 opening before detouring traffic.

Equipment and materials must not remain in a lane unless the lane is closed to traffic and is used for Contract activities.

REPLACE "RESERVED" IN SECTION 12-4.05C

Chart no. 1 Complete Freeway/Expressway Closure Hours																									
County: Solano	Route/Direction: I-80/Eastbound												PM: 12.4 – 13.1												
Closure limits: From the Collector Off-ramp to Green Valley Road/SB I-680 to the Collector On-Ramp from Green Valley Road/NB I-680																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C																						
Fridays	C	C	C																						
Saturdays	C	C	C	C																					
Sundays		C	C	C																					

Legend:

- C Freeway or expressway may be closed completely
- No complete freeway or expressway closure is allowed

REMARKS:

1. Detour traffic in the following Stages as per detour plan sheets::
 - Stage 1B (Falsework Erection and Removal) use detour plan DE-1 (Traffic Handling Note B)
 - Stage 3 (Bridge Removal and Demolition of existing Green Valley Road) use detour plan DE-2 (Traffic Handling Note B)
2. This chart shall be used only for a maximum duration of 5 nights for each item of work as follows:
 - for falsework erection,
 - falsework removal,
 - removal of existing bridge girders, and
 - demolition of existing Green Valley Road
3. Both Eastbound and Westbound I-80 may be closed simultaneously for the erection and removal of false work at the Green Valley Road overcrossing.
4. This chart may be used in conjunction with Chart No. 3 in Section 12-4.05D and Chart No. 4 in Section 12-4.05E.

Chart no. 2
Complete Freeway/Expressway Closure Hours

County: Solano	Route/Direction: I-80/Westbound	PM: 12.6 – 13.1																								
Closure limits: From the Connector Off-Ramp to SB I-680 to the On-Ramp from Green Valley Road																										
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	C	C	C																							
Fridays	C	C	C																							
Saturdays	C	C	C	C																						
Sundays	C	C	C	C	C																					

Legend:

- C Freeway or expressway may be closed completely
- No complete freeway or expressway closure is allowed

REMARKS:

1. Detour traffic in the following Stages as per detour plan sheets:
 - Stage 1B (Falsework Erection and Removal) use detour plan DE-2 (Traffic Handling Note A)
 - Stage 3 (Bridge Removal and Demolition of existing Green Valley Road) use detour plan DE-2 (Traffic Handling Note A)
 - Stage 5 (Sign Bridge Construction) use detour plan DE-6 (Traffic Handling Note A)
2. This chart shall be used only for a maximum duration of 5 nights for each item of work as follows:
 - for falsework erection,
 - falsework removal,
 - removal of existing bridge girders,
 - construction of sign bridge
 - demolition of existing Green Valley Road
3. Both Eastbound and Westbound I-80 may be closed simultaneously for the erection and removal of false work at the Green Valley Road overcrossing.
4. This chart may be used in conjunction with Chart No. 4 in Section 12-4.05D.

CONTRACT NO. 04-0A5344
 REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
 Replace "Reserved" in section 12-4.05D with:

Chart no. 1																										
Complete Connector Closure Hours/Connector Lane Requirements																										
County: Solano					Route/Direction: I-80/Westbound										PM: 12.1											
Closure limits: Connector Off-Ramp to WB SR-12.																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	S	S															S	S	S	S	C
Fridays		C	C	C	C	S	S															S	S	S	S	C
Saturdays		C	C	C	C	C	S	S	S												S	S	S	S	S	C
Sundays		C	C	C	C	C	C	S	S	S											S	S	S	S	S	C

Legend:

C	Connector may be closed completely
S	Shoulder closure allowed
	Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

- Detour traffic as per plan sheet DE-3 (Traffic Handling Note B).
- Closure limits may extend up to the intersection of Red Top Road on westbound SR12.

Chart no. 2																										
Complete Connector Closure Hours/Connector Lane Requirements																										
County: Solano							Route/Direction: SR12/Eastbound										PM: 2.43-R2.79									
Closure limits: Connector Off-Ramp to EB I-80																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	S	S						S	S	S	S							S	S	S	S
Fridays		C	C	C	S	S	S																S	S	S	S
Saturdays		C	C	C	C	S	S	S	S	S	S												S	S	S	S
Sundays		C	C	C	C	S	S	S	S	S	S	S	S	S								S	S	S	S	S

Legend:

C	Connector may be closed completely
S	Shoulder closure allowed
	Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

- Detour traffic as per plan sheet DE-3 (Traffic Handling Note A).
- Closure limits may begin from Red Top Road on eastbound SR12.

Chart no. 3																										
Complete Connector Closure Hours/Connector Lane Requirements																										
County: Solano					Route/Direction: I-80/Eastbound										PM: 13.2											
Closure limits: Connector Off-Ramp to SB I-680																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C																C	C	C	C	C
Fridays		C	C	C	C	C																S	S	S	S	C
Saturdays		C	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C
Sundays		C	C	C	C	C	C	C	C	S	S	S	S	S	S	S						S	S	S	C	C

Legend:

C Connector may be closed completely

S Shoulder closure allowed

Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

1. Detour traffic in the following Stages as per detour plan sheets::
 Stage 1B (Falsework Erection and Removal) use detour plan DE-1 (Traffic Handling Note C.)
 Stage 3 (Bridge Removal) use detour plan DE-2 (Traffic Handling Note C)

2. This chart may be used in conjunction with Chart No. 1 in Section 12-4.05C.

Chart no. 4																										
Complete Connector Closure Hours/Connector Lane Requirements																										
County: Solano					Route/Direction: I-680 / Northbound										PM: 12.98											
Closure limits: Connector Loop Off-Ramp to Westbound I-80																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C	S															S	S	C	C	C
Fridays		C	C	C	C	C	S															S	S	C	C	C
Saturdays		C	C	C	C	C	S	S	S													S	S	C	C	C
Sundays		C	C	C	C	C	C	S	S	S									S	S	S	S	C	C	C	C

Legend:

C Connector may be closed completely

S Shoulder closure allowed

Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

1. This chart may be used in conjunction with Chart no. 2 in Section 12-4.05C.

2. Detour traffic in the following Stages as per detour plan sheets::
 Stage 1B (Falsework Erection and Removal) use detour plan DE-1 (Traffic Handling Note D.)
 Stage 5 (Sign Bridge Construction) use detour plan DE-6 (Traffic Handling Note B)

CONTRACT NO. 04-0A5344
 REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
 Replace "Reserved" in section 12-4.05E with:

Chart no. 1																									
Complete Ramp Closure Hours/Ramp Lane Requirements																									
County: Solano					Route/Direction: I-80/Westbound										PM: 12.6										
Closure limits: On-Ramp from Green Valley Road																									
From hour to hour																									
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	S							S	S	S	S						S	S	S	S	C
Fridays	C	C	C	C	S							S	S	S	S						S	S	S	S	C
Saturdays	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C
Sundays	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C

Legend:

C Ramp may be closed completely

S Shoulder closure allowed

Work allowed within the highway where shoulder or lane closure is not required

REMARKS:
 1. Detour traffic as per plan sheet DE-7 (Traffic Handling Notes A and B).

Chart no. 2																									
Complete Ramp Closure Hours/Ramp Lane Requirements																									
County: Solano					Route/Direction: I-80/Eastbound										PM: 12.4										
Closure limits: Off-Ramp to Green Valley Rd																									
From hour to hour																									
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	S						S	S	S	S	S						S	S	S	C	C
Fridays	C	C	C	C	S						S	S	S	S	S						S	S	S	C	C
Saturdays	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C
Sundays	C	C	C	C	C	C	C	C	S	S	S	S	S	S	S						S	S	C	C	C

Legend:

C Ramp may be closed completely

S Shoulder closure allowed

Work allowed within the highway where shoulder or lane closure is not required

REMARKS:
 1. Detour traffic as per detour plan sheet DE-4

Chart no. 3																									
Complete Ramp Closure Hours/Ramp Lane Requirements																									
County: Solano					Route/Direction: I-80/Eastbound										PM: 12.4 & 12.9										
Closure limits: Off-Ramp to/and from On-Ramp from Green Valley Road.																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays	C	C	C	C	C	C																			
Tuesdays through Thursdays																									
Fridays																									C
Saturdays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Legend:
 C Ramp may be closed completely
 Work allowed within the highway where shoulder or lane closure is not required

REMARKS:
 1. Off-ramp to/and from On-Ramp from Green Valley Road: Detour traffic as per plan sheet DE-4 and DE-5.
 2. During the relocation/construction of the ramp intersection at Eastbound Route I-80 Green Valley Road, the ramps may be closed for 1 weekend from Friday 2300 hours through Monday 0600 hours.
 3. Submit a CMP schedule for Stage 3A and 3B for authorization 3 1/2 weeks before closing the "GR1" ramp for long term closure of 55 hours.

Chart no. 4																									
Complete Ramp Closure Hours/Ramp Lane Requirements																									
County: Solano					Route/Direction: I-80/Eastbound										PM: 12.4										
Closure limits: On-Ramp from Green Valley Road																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	S						S	S	S	S	S						S	S	S	C	C
Fridays	C	C	C	C	S						S	S	S	S	S						S	S	S	C	C
Saturdays	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C
Sundays	C	C	C	C	C	C	C	C	S	S	S	S	S	S	S						S	S	C	C	C

Legend:
 C Ramp may be closed completely
 S Shoulder closure allowed
 Work allowed within the highway where shoulder or lane closure is not required

REMARKS:
 1. Detour traffic in the following Stages as per detour plan sheets:
 Stage 1B and Stage 3B (Falsework Erection and Removal) use detour plan DE-9
 2. This chart may be used in conjunction with Chart No. 1 in Section 12-4.05C.

14-6.02C(5) Protection Measures

Within species protection area 1, implement the following protection measures:

1. All field personnel must complete a maximum 2-hour environmental permit training on the permit requirements and the project area wildlife species information before starting work. Department's biologist will provide the training at the Engineer's field office. Notify the Engineer at least 45 business days before starting work to coordinate the preconstruction training.
2. Notify the Engineer 5 business days in advance when vegetation removal occurs outside of September 1 to January 31. Do not start vegetation removal or ground-disturbing activities until you receive approval.
3. Seasonal work windows apply to the species protection area. Work within jurisdictional waters and wetlands (jurisdictional areas) is restricted to the period April 15 and October 15. Department biologist will determine when seasonal work window restrictions no longer apply for a permanently impacted jurisdictional area. Restore all temporarily impacted jurisdictional areas under section 14-1.04.
4. Temporary fencing (Type Frog) shall be installed around areas of CRLF habitat as shown. Avoid ground-disturbing activities within CRLF habitat as shown between November 1 and March 31. Do not start ground-disturbing activities after November 1 and before March 31 before you receive approval. Use open-top trailer to elevate pipes and conduits stored on-site above ground. At the close of each working day, within or adjacent to CRLF habitat, cover all excavated, steep-walled holes, or trenches more than 1 foot deep with plywood, or place wooden planks within them to allow escape routes. Inspect for trapped animals before holes or trenches are filled.
5. Conduct ground-disturbing activities within CSB habitat as shown between August 1 and April 1. Do not start ground disturbing activities after April 1 and before August 1 until you receive approval
6. Conduct all construction activities within 250 feet of vernal pool fairy shrimp and vernal pool tadpole shrimp habitat as shown between May 1 and November 1. Do not start construction activities after November 1 and before May 1 before you receive approval.
7. Maintain maximum vehicle speed of 20 miles per hour on the construction site.
8. Pets are not allowed in the construction area.
9. Firearms are not allowed in the construction area.

CONTRACT NO. 04-0A5344
REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Replace section 14-6.06 with:

14-6.06 SPECIES PROTECTION AREA

14-6.06A General

14-6.06A(1) Summary

Section 14-6.06 includes specifications for areas that have species protection requirements.

Species protection areas (SPAs) within the project limits are shown:

Species Protection Areas	
Identification	Location
SPA 1	Entire project limits

14-6.06B Materials

Not Used

14-6.06C Construction

Not Used

14-6.06D Payment

Not Used

CONTRACT NO. 04-0A5344

ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Replace the 2nd, 3rd, and 4th paragraphs of section 19-2.03B with:

Dispose of surplus material. Ensure enough material is available to complete the embankments before disposing of it.

CONTRACT NO. 04-0A5344
 ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 19-6.03D:

Settlement periods and surcharges are required for bridge approach embankments as shown in the following table:

Bridge name or number	Abutment number	Bent number	Surcharge height (feet)	Settlement period (days)
Green Valley Road OC	Abut 1		0.0 ^a	30
	Abut 3		0.0 ^a	60
Green Valley Road OC (Over SB 680 On-ramp)	Abut 1		0.0 ^a	60
	Abut 2		0.0 ^a	30
WB 80 to WB 12 Separation (Over WB 80 On-ramp)	Abut 1 & 4		0.0 ^a	90

^aAt this location, the surcharge embankment must be constructed by extending the grading plane (GP) in the "Elevation" view of the "Bridge Embankment Surcharge" detail of Standard Plan A62B horizontally to the centerline of abutment.

Settlement periods and surcharges are required for roadway embankments at the earth retaining structures as shown in the following table:

Earth retaining structure number	Surcharge height (feet)	Settlement period (days)
Retaining Walls No. 1, 2 & 3	0.0 ^a	90
Retaining Walls No. 5 & 10	0.0 ^a	60
Retaining Walls No. 7	0.0 ^a	60
Retaining Walls No. 8 & 9	0.0 ^a	30

CONTRACT NO. 04-0A5344
REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 19-7.01C Submittals:

If sampling is required submit an import borrow plan for each imported borrow site sixty days prior to placement of the import borrow. Allow 15 days for review. If revisions are required, as determined by the Engineer, submit the revised plan within 7 days of receipt of the Engineer's comments. For the revision, allow 7 days for the review. The imported borrow plan must include:

1. Land use history of the borrow location and surrounding property
2. Sampling protocol
3. Number of samples per volume of imported borrow
4. QA/QC requirements and procedures
5. Qualifications of sampling personnel
6. Name and address of the analytical lab that will perform the analyses
7. Analyses that will be performed, based on contaminants of concern determined through site history and adjacent land use and constituents of concern in the ground water basin where the job site is located
8. Signature of the professional geologist or professional civil engineer who prepared the plan

If sampling is required submit analytical test results for each imported borrow site. The analytical test results must include:

1. Sample chain-of-custody
2. Analytical results no older than 6 months
3. Statistical analysis of data using US EPA's ProUCL software
4. Comparison of sample results to hazardous waste concentration thresholds and Regional Water Quality Control Board job site basin plan requirements
5. Verification that the import borrow is suitable for placement on the ground at the job site
6. Signature of a California professional geologist or California professional civil engineer

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 19-7.02C Imported Borrow:

Imported borrow must meet California Environmental Protection Agency requirements for placement on the ground at the job site. Sample and analyze imported borrow before bringing it to the job site if it is from:

1. Locations without a county quarry mining use permit and Department of Conservation-approved reclamation plan
2. Treatment facilities
3. Recycling facilities
4. Construction sites
5. Sources outside California

Sample and analyze imported borrow you've brought to the job site if, in the opinion of the Engineer, it is suspicious in appearance, odor, or texture.

Perform all required sampling and analysis of imported borrow according to the approved import borrow plan to demonstrate that it is not a hazardous waste and that it meets Regional Water Quality Control Board job site basin plan requirements.

Sample collection and analysis methods must comply with US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). Sample collection must be designed to generate a data set representative of the entire volume of proposed imported borrow. The analytical laboratory performing the analyses must be currently certified by the California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

Collect samples at the following frequency from each imported borrow site:

Volume (cubic yards, CY)	Minimum number of samples
<1,000	4
1000-5000	4 for first 1,000 CY plus 1 every additional 500 CY
5,000-10,000	12 for first 5,000 CY plus 1 every additional 1,000 CY
10,000-20,000	17 for first 10,000 CY plus 2 every additional 2,500 CY
over 20,000	25 for first 20,000 CY plus 3 every additional 5,000 CY

CONTRACT NO. 04-0A5344
REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 19-7.03C Imported Borrow:

Do not place imported borrow until authorized.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 20-1.01B:

noxious weeds: Any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, as designated by the county and by section 5004 of the California Food and Agriculture Code and section 4500 of the California Code of Regulations.

Supporting information for field identification purposes including photographic gallery of noxious weeds can be found at the California Department of Food and Agriculture - "Encycloweedia" web site:

http://www.cdfa.ca.gov/plant/ipc/encycloweedia/encycloweedia_hp.htm

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 20-8.01A:

Wildflower seeding materials must not be applied before August 15 and after October 15. If wildflower seeding work cannot be performed before the start of plant establishment and within the above specified time limit, then the work must be performed during the plant establishment period if authorized.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Replace "Reserved" in section 20-8.02D(1) with:

Organic fertilizer must be one of the following and comply with the requirements of the following table:

Organic Fertilizer

Product	Guaranteed chemical analysis (N-P-K) (%)	Company
Biosol Mix®	7-2-3	Rocky Mountain Bio-Products Denver, CO
Fertil-Fibers™	6-4-1	Quattro Environmental, Inc. Coronado, CA
Sustane®	5-2-4	Sustane Natural Fertilizer, Inc. Cannon Falls, MN
Or equal ^a	(N) 5 to 7 (P) 1 to 5 (K) 1 to 10	--

^aOr equal must be pelleted or granular and be within the ranges shown for N-P-K. The cumulative (N) release rate must be no more than 70 percent the first 70 days after incubation (86 degrees F) with 100 percent at 350 days or more.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Replace section 20-8.03A with:

20-8.03A General

Comply with section 20-7.03B.

Before preparing wildflower seeding areas, eradicate noxious weeds by hand pulling and mow other weeds before the weeds reach the seed stage of growth or exceed 6 inches in length, whichever occurs first. Remove trash and debris before noxious weed eradication and mowing. Mow weeds to a height of 3 inches. Dispose of noxious weeds and other weeds removed from initial mowing.

Before removing noxious weeds, cover seed pods or seed heads with clear plastic bags, and secure tightly to prevent seed dispersal. Ensure that the plastic bags remain intact through disposal.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Replace section 20-8.03D with:

20-8.03D Maintenance

Comply with section 20-9.03F.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 20-9.01A:

The plant establishment period must be Type 2.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 20-9.03C:

Apply organic fertilizer to the wildflower seeding areas during the 1st week of April and October of each year.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 20-9.03D:

Control weeds by:

1. Hand pulling:
 - 1.1. Noxious weeds
2. Mowing:
 - 2.1. Wild flower seeding areas

Dispose of mowed weeds.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Replace the 3rd paragraph in section 20-9.03F with:

Mow wildflower seeding areas after seeds have set and the wildflowers have started to die back. Mow weeds and wildflowers to a height of 3 inches. Remove trash and debris before mowing.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 20-9.03J:

After the 125th plant establishment working day, reapply wild flower seeding to bare areas as ordered. Wild flower seeding reapplication is change order work.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013

Add to section 47-2.01A:

You may use an alternative earth retaining system for the mechanically stabilized embankment at Location A, Location B, Location C, Location D, and Location E. The alternative system must comply with section 47-6.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 47-2.04

Payment for installing coping as shown is included in the payment for Mechanically Stabilized Embankment, Location C.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Add to section 47-6.01A:

The alternative earth retaining system must be one of the systems shown in the following table:

Proprietary earth retaining system	Web site/e-mail	Address	Telephone no.
Retained Earth	http://www.reinforcedearth.com	THE REINFORCED EARTH COMPANY 1660 HOTEL CIR N STE 304 SAN DIEGO CA 92108-2803	(619) 688-2400
MSE Plus – 5 ft square	http://www.mseplus.com	SSL 4740 SCOTTS VALLEY DR STE E 209 SCOTTS VALLEY CA 95066-4240	(831) 430-9300

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
Replace the 6th paragraph in section 47-6.01C with:

Allow 60 days for the Department's review

Replace section 48-6 with:

48-6 TEMPORARY MECHANICALLY STABILIZED EMBANKMENT

48-6.01 General

48-6.01A Summary

This section consists of furnishing, installing and maintaining temporary retaining wall of mechanically stabilized earth (MSE) at each location shown . Construct the temporary MSE for the imported fill needed for the MSE walls during staging as shown.

Reinforcement must comply with section 52.

Geogrid reinforcement must comply with section 88.

Earthwork must comply with section 19.

48-6.01B Definitions

Not Used

48-6.01C Submittals

Shop drawings must be 11 by 17 inches in size with the design firm's name, address, and phone number. The shop drawings must contain all information required for the proper construction of the system at each location including existing ground line at face of wall as verified at the site and any required revisions or additions to drainage systems or other facilities. The shop drawings must include "General Notes" which contain design parameters, material notes, and wall construction procedures. The shop drawings and calculations must be stamped and signed by a licensed engineer.

Submit 4 sets of shop drawings of each proposed temporary mechanically stabilized embankment to the Office of Structure Design (OSD) for initial review. Allow the Engineer 10 working days to review each temporary mechanically stabilized embankment. Submit 6 to 12 sets of shop drawing as requested by the Engineer to OSD for final approval and use during construction. Do not proceed with any work on temporary mechanically stabilized embankment until approved by the Engineer.

48-6.01D Quality Control and Assurance

Comply with section 47-2.01D.

48-6.02 Materials

Comply with section 47-2.

You may use wire faced MSE instead of face panels.

48-6.03 Construction

Comply with section 47-2.03.

48-6.04 Payment

Temporary Mechanically Stabilized Embankment will be measured by square feet of vertical wall face between the pay limit lines shown on the plans, regardless of the actual limits of your wall design approved by the Engineer.

CONTRACT NO. 04-0A5344
REPLACED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
77-2 CITY OF VALLEJO WATER SYSTEM

77-2.01 GENERAL

77-2.01A Summary

Section 77-2 includes specifications for City of Vallejo (COV) water system.

The work includes:

1. 36 inch welded steel pipe
2. Old Cordelia pressure reducing station
3. Abandon Pipeline (24" Water) (COV)

77-2.01B Site Conditions

Before installation of the water main, pothole all utility crossings, including storm drains.

Connect the new COV water system to the existing pipelines as shown. Connections of the new pipeline to the existing intersecting pipelines must each be completed within 8 hours of system shutdown. All equipment, materials, tools and labor necessary to complete the connections must be on-site before the shutdowns.

77-2.01C Submittals

77-2.01C(1) General

Submit a work plan describing equipment, labor, and material required to accomplish the work within the permitted time frame.

At least 20 days before the start of work, submit a complete list of materials with manufacturer and model number.

77-2.01C(2) Shop Drawings

Submit shop drawings, catalogs, and engineering data for each water system. Submit the manufacturer's certified working drawings covering the design, manufacture and fabrication of pipe, fittings, special fittings, and joint details, valves, blow off assemblies, and cathodic protection before the start of the fabrication of the material. The shop drawings must indicate the manufacturer/supplier, model number, type, thickness and grade of steel used, coating and lining thickness, flange details, dished heads, outlets, and special fittings.

Show pipeline stations on centerline of pipe. Include in the working drawings detailed engineering layout sheets showing by pipe marking number the order in which the various pieces of the pipe are to be assembled during construction and such other information as may be required by the Engineer to determine compliance with these special provisions.

77-2.01C(3) Cut Sheets

Submit cut sheets. The cut sheets must be prepared by a registered professional Land Surveyor in the State of California. The cut sheets include pipeline stations at a minimum of 50 feet intervals showing all appurtenances, services, tees, valves, meters, horizontal inverts, and such other information as may be required by the Engineer.

77-2.01C(4) Certificates of Compliance

Furnish certificates of compliance for all materials, including pipe, coatings, and linings, where applicable, for each water system.

77-2.01C(5) Notifications

Notify the COV and the Engineer at least 40 days before the intended shutdowns. Keep the duration of shutdowns to a minimum and in no case must the shutdowns be more than 8 hours each. The signed authorization is required before each shutdown.

Do not remove or abandon pipelines until approved.

Notify the Engineer of any conflicts at least 10 days before installation of the water main.

COV will operate all valves. Provide notice to the COV at least 5 business days for required valve operations.

COV staff will place formal shutdown notices at each private property 48 hours before the shutdown.

Notify the Cordelia Fire District at (707) 864-0468 7 days before shutdown.

Test connections to existing facilities as described.

Notify the Engineer at least 20 days before each of the dates proposed to make connections to existing facilities.

77-2.01D Quality Control and Assurance

77-2.01D(1) Disinfection of Pipes and Bacteriological Testing

Conduct bacteriological testing for fecal coli forms and heterotrophic plate count (HPC) before new water pipe is placed in service. The number of bacteriological samples to be taken will be determined by the COV.

Disinfect the water pipes. Bacteriological testing and disinfection is not required for raw water piping systems.

After completion of pressure testing, the water pipes must be chlorinated in accordance with the latest revision of AWWA C 651. Before placing in service, thoroughly flush the mains and take bacteriological samples.

Disinfect all piping materials used for tie-ins by swabbing with chlorine or by other approved methods. Following a tie-in, thoroughly flush the area affected by the tie-in and take bacteriological samples.

77-2.01D(2) Testing Pressure Piping

Test piping by the high head pressure test method.

Test connections, valves, blowoffs, and closure pieces with the piping.

Do not use installed valves for shutoff when the specified test pressure exceeds the valve's maximum allowable seat differential pressure. Provide blinds or other means to isolate test sections.

Do not include valves, equipment or piping specialties in test sections if test pressure exceeds the valve, equipment or piping specialty safe test pressure allowed by the item's manufacturer.

Do not test against closed valves. Valves must be opened and blind flanges or bumped heads must be used on the ends of each test section.

During the performance of the tests, test pressure must not vary more than plus or minus 5 pounds per square inch gauge with respect to the specified test pressure.

Select the limits of testing to sections of piping. Select sections that have the same piping material and test pressure.

When test results indicate failure of selected sections, limit tests to piping:

1. Between valves.
2. Between a valve and the end of the piping.
3. Less than 500 feet long.

Test piping for minimum 4 hours for visible leaks test.

Use the following testing procedures:

1. Fill piping section under test slowly with water while venting air. Use potable water for all potable waterlines and where noted on the piping schedule.
2. Before pressurizing for the tests, retain water in piping under slight pressure for a water absorption period of minimum 24 hours.
3. Raise pressure to the specified test pressure and inspect piping visually for leaks. Consider visible leakage testing complete when no visible leaks are observed.

Leakage allowance is zero for piping systems using flanged, National Pipe Thread threaded and welded joints.

77-2.01D(3) Cathodic Protection Testing

Cathodic protection systems must be tested by a corrosion technician certified by the National Association of Corrosion Engineers (NACE). Tests must include pipeline electrical continuity testing. Test the electrical continuity of all sections of pipe to be monitored between each pair of adjacent corrosion monitoring test stations or between the ends of pipe sections less than 500 feet apart.

Each pipe section must be considered electrically continuous when the measured longitudinal resistance of each pipe section is no greater than 20 percent higher than the theoretical resistance of that section of pipe. If testing indicates inadequate electrical continuity, excavate to investigate and locate improperly bonded pipe joints and make repairs until electrical continuity is accomplished to the satisfaction of the Engineer.

77-2.02 MATERIALS

77-2.02A Concrete Backfill

Use minor concrete or Class 3 concrete complying with section 90, except that minor concrete must contain not less than 525 pounds of cementitious material per cubic yard.

77-2.02B Concrete Protection Slab, Anchor Blocks and Thrust Blocks

The concrete thrust blocks, anchor blocks, and concrete protection slab must comply with section 90-2.

Where non-restrained pipe is used, concrete thrust blocks must be provided at any change in pipe direction of 11.5 degrees or greater, where shown, or as ordered by the Engineer. Thrust blocks must be formed by pouring concrete between the pipe and the undisturbed trench wall.

77-2.02C Valves, General

Where buried, all valves must be provided with valve boxes and covers and valve extensions as required.

All elastomers used in valves must be made of ethylene propylene diene monomer (EPDM) synthetic polymers that are specifically developed for their chemical resistance. Use EPDM elastomers in both the gate valves and butterfly valves.

Except where otherwise specified, coat ferrous surfaces, exclusive of stainless steel surfaces, in the water passages of all valves, and the exterior surfaces of all valves, as specified in "Protective Coating" of these special provisions.

All unburied manual operators must have handwheels.

All buried valves must have operating nuts, valve boxes and other features as shown. Provide stem extensions when valve is more than 8 feet deep.

All interior and exterior ferrous surfaces must have liquid epoxy finish conforming to AWWA C 210. Epoxy-coated valve ends must be uniformly coated and free of runs, blisters, irregularities or chips. Rejection of such valves will be at the sole discretion of the Engineer.

Each valve must have a precast concrete marker post as shown.

77-2.02D Valve Boxes

All traffic valve boxes and covers must be "Traffic Valve Box Type No. G-5" as manufactured by Christy Concrete Products, Inc., or "Valve Box No. 3-RT" as manufactured by Brooks Products, Inc., or equal. Covers must have "WATER" cast on the top.

77-2.02E Buried Warning and Identification Tape

Polyethylene plastic and metallic core or metallic-faced, acid and alkali-resistant, polyethylene plastic warning tape must be manufactured specifically for warning and identification of buried water lines. Provide tape, 3 inches minimum width, coded with a warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED WATER LINE BELOW" or similar wording must be printed on the tape in black letters continuously repeated every 2 feet the entire length of the tape. Color and printing must be permanent and unaffected by moisture or soil.

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The tape must be manufactured with integral wires, foil backing or other means of enabling detection by a metal detector when the tape is buried up to 4 feet deep. Encase the metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

77-2.02F Steel Flanges

Flanges must comply with AWWA C 207. Steel flanges must be flat faced Class D, unless shown otherwise. Slip-on flanges for field welds for pipe greater than 16-inch nominal diameter must be Class E. The flanges must have the same diameter and drilling as Class 150 cast iron flanges. Where flanges must be connected to flanged appurtenance, the flange must match the flange on the appurtenance.

77-2.02G Ductile Iron Mechanical Joints

Install joints in accordance with AWWA C 600 and the manufacturer's recommendations. Joint deflections must not exceed 80 percent of those specified in AWWA C 600, Table 5. Deflection must be made after hand tightening the nuts but before tightening nuts to the required torque.

Top bolt holes must straddle the top centerline of the pipe.

Before the installation of the mechanical joint, the socket and plain end of the pipe must be cleaned. Before placing the gasket on the plain end of the pipe, both the plain end and the gasket must be lubricated with a lubricant listed in the "Approved Material List" as specified in AWWA C 111.

Mechanical joints must be stored so as to protect them from direct sunlight and contamination from petroleum products.

77-2.02H Ductile Iron Water Pipe Fittings

All ductile iron water pipe fittings must be manufactured under AWWA C 100, Pressure Class 350 unless shown otherwise or specified in these special provisions.

All ductile iron fittings must be installed under AWWA C600.

Unless otherwise shown, all fittings must be of the rubber ring type.

77-2.02I Gaskets

Gaskets for non-steam cleaned ductile iron and steel piping must be suitable for pressures equal to and less than 280 pounds per square inch gauge, temperatures equal to or less than 250 degrees F, and raw sewage service.

Gasket Material must comply with the following:

1. Neoprene elastomer with minimum Shore A hardness value of 70
2. Reinforcement: Inserted 13-ounce nylon fabric cloth for pipes 20 inch or larger
3. Thickness: Minimum 3/32-inch thick for less than 0.10-inch pipe; minimum 1/8 inch thick for 10-inch and larger pipe

Gaskets for Flanged Joints in Ductile Iron or Steel Water Piping must be:

1. Suitable for hot or cold water, pressure equal to or less than 280 pounds per square inch gauge, and temperatures equal to or less than 160 degrees F.
2. Material:
 - 2.1. Neoprene elastomer, compressed, with non-asbestos fiber reinforcement.
 - 2.2. Teflon ring; or Teflon envelope with non-asbestos filler.
3. Manufacturers: One of the following or equal:
 - 3.1. Garlock, Bluegard 3300
 - 3.2. John Crane, similar product

Gasket must be one of the following:

Pipe size	Manufacturer
< 20 in. in dia.	Garlock, style 7797 John Crane Equal
≥ 20 in. in dia.	Garlock, style 8798 John Crane Equal

Gaskets for any other fluids or any other pressure or temperature conditions must be suitable for the specific fluids and pressure and temperature conditions.

77-2.02J Bolts and Nuts

Unless otherwise shown, bolts must be of low alloy steel with ANSI regular unfinished square or hexagon heads and the nuts must be of steel with ANSI regular hexagonal dimensions, as specified in ANSI B 18.2 for Wrench Head Bolts and Nuts and Wrench Openings. All bolts and all nuts must be threaded in accordance with ANSI B 1.1 for Screw Threads, Coarse-Thread Series, Class 2A and 2B fit.

77-2.02K Blowoff Assembly

Blowoff assembly must be constructed in accordance with the COV standards, details shown, manufacturer's recommendations, and these special provisions.

Blowoff assembly includes gate valve, valve boxes, couplings, nipples, fittings, and plug as shown

77-2.02L Butterfly Valve

Butterfly valve must be suitable for the following service conditions:

1. Throttling
2. Frequent operation
3. Operation after long periods of inactivity
4. Installation in any position and flow in either direction

General Purpose AWWA Butterfly Valves must comply with AWWA C504 and AWWA 250B in piping systems rated and tested for an operating pressure of 280 psi.

Valve body must be flanged, cast iron, ASTM A 126, Grade B, or ductile iron, ASTM A 536, Grade 65-45-12. Flanges must comply with ASME/ANSI B16.1 class 250 flanges for Class 250B valves.

Disc must be cast iron or ductile iron with Type 316 stainless steel edge that matches seat in valve body.

Shaft must be 2 piece stub design, type 17-4 pH stainless steel. Shaft seal must be Vee type, chevron design. Shaft bearing must be self-lubricating sleeve type, Teflon with stainless steel or fiberglass backing.

Seat material must be Type 316 stainless steel or Monel.

Design valves and actuators for maximum operating torque, in accordance with and using safety factors required in AWWA C 540, using the following values:

1. Maximum water velocity: 16 feet per second with valve fully open.
2. Maximum pressure differential across the closed valve: 280 psi.
3. Coefficient for seating and unseating torque, dynamic torque, and bearing friction in accordance with valve manufacturer's published recommendations.

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Butterfly valve actuators must be manual actuators for buried or submerged valves, all sizes and pressures and meet the following:

1. Provide totally enclosed worm gear actuator mounted on the valve
2. Actuators for buried or submerged valves must be hermetically sealed and grease packed
3. For buried valves, provide 2-inch square AWWA nut on enclosed actuator
4. For buried valves, provide extension stem, valve box and valve box cover
5. A minimum of 30 turns of the operating nut must be required to close the valve from fully opened

Tight shutoff at the pressure rating of the valve with pressure applied in either direction.

Clamping ring, ring locks and adjusting locking screws must be Type 316 stainless steel.

Valve Packing for valves 4–48 inch nominal size must be self-adjusting V-type or chevron-type packing NBR.

Butterfly valve must be of the following manufacturers:

1. Henry Pratt Company, "Triton HP-250"
2. SPX/DeZurik
3. Equal

77-2.02M Protective Coating

Coating material for potable water applications must be coating material from materials accepted by the Food and Drug Administration, Title 21 of the CFR on Food Additives Coating product in contact with potable water must be acceptable under AWWA C 550 or NSF International (NSF) Part 61.

Coating Material for nonpotable water applications must be high solids epoxy not less than 80 percent solids by volume

Surface coatings must be as follows:

1. Interior surfaces, except for valves used in low pressure air service: High solids epoxy.
2. Exterior Surfaces of Valves, Actuators, and Accessories: Buried Valves: High solids epoxy. Other Valves: High solids epoxy.
3. Polished and machined surfaces: Apply rust-preventive compound.

77-2.02N Welded Steel Pipe

Steel pipe must:

1. Comply with section 70-3 and the details shown
2. Be spiral or straight seam welded pipe, seamless pipe, or split conduit where shown
3. Be square cut and have dead-even lengths and be sealed at the end as shown

All steel pipe may be bare inside and out, with the minimum nominal wall thicknesses shown.

Both the interior and exterior surfaces must be coated with a factory applied fusion-bonded epoxy coating under AWWA C 213.

For internal and external wall coatings, breaks or scuffs in the epoxy coating that are less than 36 square inches in area must be repaired by the application of an epoxy material similar to and compatible with the durability, adhesion and appearance of the original epoxy coating, under Section 4.4.4.1.2 of AWWA C 213. Repair coating must be a minimum thickness of 0.010 inches (10 mils) after drying. The Department rejects a pipe section if individual breaks exceed 36 square inches in area or if the total areas of breaks exceed 0.5 percent of the total surface area of the pipe section.

Steel pipe shown as split conduit must be installed on carrier pipe after carrier pipe is installed.

Conduit insulators must be polyethylene or molded plastic. The model number, type of conduit insulator material and spacing of the insulators must be as recommended by the manufacturer for the size steel pipe furnished.

77-2.03 CONSTRUCTION

77-2.03A Trench Excavation and Backfill

Trench excavation and backfill must be as shown and comply with section 19-3.

Initial backfill must be placed on the bedding material, around the pipe, and to a depth of 1 foot over the top of the pipe. Backfill must not be placed until the facility in the trench has been inspected and approved for backfilling. Once approval has been given, proceed as soon as possible with backfilling operations.

77-2.03B Valve Installation

Install valves in accordance with manufacturer's written instructions.

Install valves with valve shafts horizontal, unless a vertical shaft is required to suit a particular installation, and unless a vertical shaft is shown.

Install pipe spools or valve spacers in locations where butterfly valve disc travel may be impaired by adjacent pipe lining, pipe fittings, valves, or other equipment.

77-2.03C Pipe Installation

Thoroughly clean pipe and fittings before placement.

Bury piping with minimum cover shown without air traps, unless otherwise shown. Each pipe must be installed in a separate trench.

Lay piping in finished trenches free from water or debris. Start at the lowest point with bell ends up slope.

The pipe must be laid to the lines and grades shown unless they are amended or supplemented by the manufacturer's tabulated lay schedule and accepted by the Engineer.

Place piping with top or bottom markings with markings in proper position.

Lay piping on an unyielding foundation with uniform bearing under the full length of barrels.

Lower pipe into the trench slowly and gently with slings or properly padded calipers.

The bell end of the pipe must face the direction of laying wherever practicable.

Where joints require external grouting, banding, or pointing, provide space under and immediately in front of the bell end of each section laid with sufficient shape and size for grouting, banding, or pointing of joints.

At the end of each day's construction, plug open ends of piping temporarily to prevent entrance of debris or animals.

The pipe trench must be kept free from water which might impair the bedding or joining and welding operations.

Wrap ductile iron pipe to be buried with polyethylene encasement in accordance with ASTM A 674 and AWWA C 105.

77-2.03D Butterfly valve

Seat valve disc in an angular position of 90 degrees to the pipe axis and rotate an angle of 90 degrees between fully open and fully closed positions

Do not supply valves with stops or lugs cast with or mechanically secured to the body of the valve for limiting the disc travel.

Do not provide valves with thrust bearings exposed to the fluid in the line and consisting of a metal bearing surface in rubbing contact with an opposing metal bearing surface.

Secure valve disc to shaft by means of smooth-sided, taper or dowel pins, Type 316 stainless steel or Monel.

Extend pins through full diameter of shaft and mechanically secure in place.

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Retain seat by a clamping ring with segmented clamping ring locks with adjusting locking screws: Clamping ring, ring locks and adjusting locking screws must be Type 316 stainless steel, provide means to prevent ring locks and screws used to retain seats from loosening due to vibration or cavitation. Do not provide valves with seats retained by snap rings or spring-loaded retainer rings.

77-2.03E Protective coating

Shop coat interior and exterior metal surfaces of valves, except as follows:

1. Interior machined surfaces
2. Surfaces of gaskets and elastomeric seats and stem seals
3. Bearing surfaces
4. Stainless steel surfaces and components

Additional coating of the valve exterior will be required to match the epoxy or epoxy/polyurethane paint system. When shop applied finish coating matches field applied coating on adjacent piping, touch up shop coating in damaged areas in accordance with instructions recommended by the paint manufacturer. When shop applied coating does not match field coating on adjacent piping, or when damage has occurred to the shop applied coating that requires more than touchup, blast clean valve surfaces or utilize other surface preparation recommended by the manufacturer of the coating material and apply the coating system used for coating adjacent piping.

77-2.03F Restraining Piping

Restrain piping at valves and at fittings where piping changes direction, changes sizes, and at ends.

When piping is underground, use concrete thrust block or mechanical restraints.

When piping is aboveground or underwater, use mechanical or structural restraints.

Determine thrust forces by multiplying the nominal cross sectional area of the piping by design test pressure of the piping.

Provide restraints with ample size to withstand thrust forces resulting from test pressures:

During testing, provide suitable temporary restraints where piping does not require permanent restraints.

Place concrete thrust blocks against undisturbed soil. Place concrete so piping joints, fittings, and other appurtenances are accessible for assembly and disassembly.

Provide underground mechanical restraints where required by manufacturer's recommendation.

77-2.03G Joints

For flanges apply cement-mortar lining and coating to the steel pipe section. Buried flanges must be coated with plastic tape wrap coating.

Cut and finish flange bolts to project a maximum of 1/4 inch beyond outside face or nut after assembly. Tap holes for cap screws or stub bolts when used.

Field welded joints must be lap type electric welded joints in accordance with AWWA C 206. Field welding must be made by welders certified by ASME Boiler and Pressure Vessel Code.

Where exterior welds are performed, adequate space must be provided for welding and inspection of the joints.

During installation of welded steel pipe in either straight alignment or on curves, the pipe must be laid so that at any point around the circumference of the joint where is a minimum lap of 1-1/2 inch and a minimum space of 1 inch between the end of the fillet weld or the spigot end of the pipe and the nearest tangent to a bell radius.

Field welded lap joints must be on the outside of the pipe.

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Before the welding procedure, any tack welds used to position the pipe during laying must be removed. Any annular space between the faying surfaces of the bell and spigot must be equally distributed around the circumference of the joint by shimming, jacking, or other suitable means.

The weld must then be made in accordance with ANSI/AWWA C 206. Where more than one pass is required, each pass except the first and final one must be pecked to relieve shrinkage stresses; and all dirt, slag and flux must be removed before the succeeding bead is applied.

Each weld pass must place no more than a 1/8 inch of weld material using a combination of stitch and weave weld.

Butt-strap joints where used or required, must:

1. Be a minimum of 12 inches wide
2. Be the same thickness or greater as the pipe wall
3. Provide for a minimum of 2-inch lap at each pipe joint
4. Provide three 6-inch hand holes on each butt strap, 120 degrees apart
5. Be joint stress analysis is required for restrained joint areas on pipelines 30 inches and larger

77-2.03H Joint Coating

Joints on mortar-coated pipe must be coated with field placed mortar. Mortar must be placed by the following methods:

1. Placing closed-cell polyethylene strips with cloth backing around the pipe joint using plastic bands at least 8 inches in width must be centered and secured over the exterior joint recess. Box strapping or equivalent methods must be utilized to bind the band to the pipe so that it encases the outside joint recess completely and snugly. An opening must be left near the top of the joint.
2. After the band is secure, the joint recess must be moistened with water.
3. Mix mortar grout, consisting of one part Portland cement to two parts of sand mixed with water to the consistency of thick cream.
4. Mortar grout must be poured into the opening to fill the joint recess.
5. The outside annular space between the ends of the adjacent pipes must be filled with the mortar grout for its full circumference.
6. Bedding and backfilling at the joint must not commence until the top opening has been closed and the mortar allowed to take initial set.

77-2.03I Joint Lining

Joints on cement mortar lined pipe must be lined by hand placing field mixed cement mortar in the joint recess to the level to provide a smooth pipe interior across the joint. The joint material must be properly curved before water is placed into the pipeline.

Perform field-testing in accordance with the provisions below. Closure piece between existing pipeline and isolation valve must not be hydro tested. Perform an in-service leak test after pipeline is in service.

77-2.03J Weld testing

As soon as practicable after welding of each joint, all field-welded joints must be tested by the liquid penetrant inspection procedure conforming to the requirements of ANSI/ASTM E 165 under Method "B" and "Leak Testing." All defects must be chipped out, rebelled and retested. Upon retest, the repaired area must show no leaks or other defects. Test per 400 feet and at butt-strap weld joints to existing pipe.

All defects must be chipped out, re-welded, and retested. Upon retest, the repaired area must show no leaks or other defects. Close the threaded openings with pipe plugs or by welding.

Clean pipe after installation.

77-2.03K Connections to Existing Pipe

Expose existing piping to which connections are to be made with sufficient time to permit, where necessary, field adjustments in line, grade, or fittings.

Make connections to existing piping and valves after sections of new piping to be connected have been tested and found satisfactory.

Provide sleeves, flanges, nipples, couplings, adapters, and other fittings needed to install or attach new fittings to existing piping and to make connections to existing piping.

For flanged connections, provide stainless steel bolts with isolation bushings and washers, and full-face flange gaskets.

77-2.03L Exothermic Weld Molds and Weld Charges

Wire-to-pipe connections must be made using exothermic welds. Weld charges and mold sizes for various surface configurations and materials must be in accordance with the manufacturer's recommendations.

Cut cable with a wire cutter to prevent deforming the cable ends. Remove only enough insulation from the cable to allow the weld connection to be made.

The surface of the steel or ductile-iron pipe must be ground or filed to a bright, shiny, clean and dry surface before welding the cable connection. For cement mortar coated pipe, a nominal 3 by 3 inches of cement mortar must be chipped off.

The attachment of the cable to the structure must be made using an exothermic weld. The cable must be held at a 300 degree to 450 degree angle to the surface when welding. Only one cable must be attached with each weld. All cable-to-pipe welds must be a minimum of 3 inches apart. All weld slag must be removed from the weldment with a wire brush.

After the exothermic weld has cooled, test the weld for strength, in the presence of the Engineer, by striking the weldment a sharp blow with a 2 pound hammer while pulling firmly on the cable. All unsound welds must be re-welded and retested.

The area to be repaired must be thoroughly clean and dry. Cement-mortar coating must be repaired or replaced to original condition by hand-placing cement-mortar repair grout.

77-2.03M City of Vallejo Water System Construction Water Supply

Water used during construction of the COV Water System will be provided by the COV at no cost to you. The COV will provide a temporary construction water meter, to monitor the amount of water used for initial filling, pressure testing, flushing, etc. Pay a refundable deposit to the COV for the temporary construction water meter.

77-2.03N Remove Existing Old Cordelia Pressure Reducing Station

Remove Old Cordelia Pressure Reducing Station as shown.

Salvage all exposed pipe, fittings, valves and other water equipment within the vault at the existing Old Cordelia Pressure Reducing Station. All bolted connections must be disconnected. Deliver salvaged material to the COV Water Treatment Plant, 202 Fleming Hill Road, Vallejo, CA 94589-2337.

77-2.03O Abandon pipeline

Comply with section 15-2.05C.

77-2.04 PAYMENT

Pipes and casing are measured along the slope.

Payment for backfilling inside the pipelines is included in the payment for Abandon Pipeline (24" Water) (COV).

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77-5.02E Welded Steel Pipe

Comply with section 77-2.02S.

Install galvanic anode cathodic protection on the proposed welded steel pipe.

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77-7 CITY OF FAIRFIELD LANDSCAPE

77-7.01 GENERAL

77-7.01A Summary

Section 77-7 includes specifications for performing City of Fairfield Landscape.

Comply with section 20-1.01A.

The work includes:

1. Roadside Clearing (COF)
2. Weed Germination
3. Cultivation (COF)
4. Iron Sulfate (COF)
5. Soil Amendment (COF)
6. Packet Fertilizer (COF)
7. Slow-Release Fertilizer (COF)
8. Plant (Group A) (COF)
9. Plant (Group B) (COF)
10. Plant (Group K) (COF)
11. Plant (Group U) (COF)
12. Turf (Sod) (COF)
13. Plant establishment Work (COF)
14. Tree Guy Assembly and Staking (COF)
15. Decomposed Granite (COF)
16. Wood Mulch (COF)
17. Edging Wood Header Board (COF)
18. Edging Concrete (COF)
19. Concrete Unit Pavers (COF)
20. Hydroseed (No Mow Grass) (COF)
21. Compost (COF)
22. Hydromulch (COF)

77-7.01B Submittals

Comply with section 20-1.01C, 20-7.01B, 20-10.01B and 21-1.01B.

At least 30 days before planting the plants, submit a statement from the vendor that the order for the plants required for this Contract, including sample plants used for inspection, has been received and accepted by the vendor. The statement from the vendor must include the names, sizes, and quantities of plants ordered and the anticipated delivery date.

77-7.01C Quality Control and Assurance

Comply with sections 20-1.01C(3), 20-7.01C, 20-10.01C and 21-1.01C.

77-7.01D Definitions

Type 2 plant establishment: Plant establishment period with the number of working days specified for plant establishment beginning after all planting work has been completed except for plant establishment work and other bid items specified to be performed until Contract acceptance, provided that the Contract must not be accepted unless the plant establishment work has been satisfactorily performed for at least the number of working days specified for plant establishment.

77-7.02 MATERIALS

77-7.02A General

Comply with section 20-7.

Water must be of a quality that will promote germination of seeds and growth of plants.

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Pesticides used to control weeds must be limited to the following materials:

Aminopyralid
Diquat
Dithiopyr
Clopyralid MEA
Fluazifop-P-Butyl
Flumioxazin
Glyphosate
Imazapyr
Isoxaben (preemergent)
Oryzalin (preemergent)
Oxyfluorfen (non-odor type)
Pendimethalin (preemergent)
Proflaminate (preemergent)
Sethoxydim

A granular preemergent may be used when applied to areas that will be covered with mulch, excluding plant basins. Granular preemergent must be limited to the following material:

1. Oxadiazon

If requested, other pesticides may be submitted for use.

Do not use oil or pelleted forms of pesticides for weed control.

77-7.02B Delivery, Storage, and Handling

Comply with section 20-7.02B.

Delivery, storage, and handling of seed must comply with section 21-1.02B.

77-7.02C Plants

77-7.02C(1) Turf

Comply with section 20-7.02C(5).

Turf sod must be a mixture of varieties as shown and be healthy field grown sod containing not more than 1/2-inch-thick thatch. The age of turf sod must not be less than 8 months or more than 16 months.

77-7.02C(2) Erosion Control (COF)

77-7.02C(2)(a) Fiber

Fiber must comply with section 21-1.02E.

77-7.02C(2)(b) Seed

Seed must comply with section 21-1.02G.

77-7.02C(2)(c) Compost

Compost must comply with section 21-1.02M.

77-7.02C(2)(d) Tackifier

Tackifier must comply with section 21-1.02F.

77-7.02D Miscellaneous

77-7.02D(1) Fertilizer

77-7.02D(1)(a) General

Comply with section 20-7.02D(1)(a).

77-7.02D(1)(b) Slow-Release Fertilizer

Comply with section 20-7.02D(1)(b).

77-7.02D(1)(c) Packet Fertilizer

Comply with section 20-7.02D(1)(c).

77-7.02D(2) Pesticides

Comply with section 20-1.02B.

A granular preemergent may be used when applied to areas that will be covered with mulch, excluding plant basins. Granular preemergent must be limited to the following material:

1. Oxadiazon

77-7.02D(3) Iron Sulfate

Comply with section 20-7.02D(4).

77-7.02D(4) Edging

Comply with section 20-7.02D(5).

77-7.02D(5) Wood Mulch

Comply with section 20-7.02D(6).

77-7.02D(6) Soil Amendment

Comply with section 20-7.02D(9).

77-7.02D(7) Wood Plant Stakes

Comply with section 20-7.02D(10)

77-7.02D(8) Decomposed Granite System

77-7.02D(8)(a) Decomposed Granite

Decomposed granite must be crushed granite rock screenings graded from 3/8 inch particles to dust and comply with the following grading requirements:

Grading Requirements

Sieve size	Percent passing
3/8 inch	100
No. 4	95-100
No. 8	75-80
No. 16	55-65
No. 30	40-50
No. 50	25-35
No. 100	20-25
No. 200	5-15

Note:

Grading based upon AASHTO T11-82 and T27-82

The decomposed granite must be California Gold and come from the same source. The color must be uniform.

77-7.02D(8)(b) Aggregate Base

Aggregate base must comply with the 3/4-inch maximum, aggregate grading under section 26-1.02B.

77-7.02D(8)(c) Filter Fabric

Filter fabric must be Class A.

77-7.02D(8)(d) Fasteners

Staples for filter fabric must comply with section 21-1.02R.

77-7.02D(8)(e) Solidifying Emulsion

Solidifying emulsion must be either a water-based polymer or nontoxic organic powdered binder specifically manufactured to harden decomposed granite. The solidifying emulsion must not alter the decomposed granite color.

77-7.02D(9) Concrete Unit Pavers

77-7.02D(9)(a) Concrete Pavers

Concrete pavers must comply with ASTM C 90 for solid units. The surface exposed to view must have a split face texture. The nominal size of the concrete pavers must be 8 by 4 by 16 inches.

Concrete pavers must be light brown color.

77-7.02D(9)(b) Sand

Sand must comply with section 90-1.02C(4).

77-7.03 CONSTRUCTION

77-7.03A General

Planting includes: 1. Delivery, storage, and handling
2. Plant stakes, tree guy assemblies and plant ties

77-7.03A(1) Progress Inspections

Progress inspections are performed by the Engineer for completed highway planting and irrigation system work at designated stages during the Contract.

Inspections are performed at the following stages of work:

1. During pressure testing of pipelines on the supply side of control valves
2. During testing of low voltage conductors
3. Before planting begins and after completion of work specified in section 20-7.03C
4. Before plant establishment work begins and after work specified in section 20-7.03I
5. Once a month during the plant establishment period.

Do not progress beyond each stage of work until the inspection has been completed, corrective work has been performed and the work is accepted, unless otherwise authorized.

Allow at least 3 working days for the inspection.

77-7.03A(2) Pesticides

Do not apply pesticides:

1. On Saturdays or holidays unless authorized
2. Whenever weather and wind conditions are unsuitable for application
3. Within the limits of the plant basins, except for transplant tree and transplant palm tree plant basins
4. So that the pesticides come in contact with the foliage and woody parts of the plant

Before mixing a pesticide, submit a copy of the registered label for the pesticide as an informational submittal. If unavailable to copy, allow the Engineer to read the label on the container.

Mix pesticides according to the instructions on the registered label.

Apply pesticides according to the instructions on the registered label.

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Apply pesticides for weed control with a photosensitive dye that produces a contrasting color when sprayed on the ground. The color must disappear between 2 to 3 days after being applied. The dye must not stain surfaces or injure plants or wildlife when applied at the manufacturer's recommended application rate.

Kill stolon-type weeds with glyphosate.

Granular preemergent must be applied before the placement of mulch. The preemergent application and mulch placement must be completed in a single area within the same work day.

Before the application of preemergents, ground cover plants must have been planted a minimum of 3 days and must have been thoroughly watered.

A minimum of 100 days must elapse between applications of preemergents.

Growth regulators must not be used.

77-7.03A(3) Watering

Water available from an existing City-owned facility within the project limits or an irrigation system to be installed under the Contract is furnished at no charge. If water is not available, make arrangements for furnishing and applying water.

If fluctuations of water pressure, water supply or both are encountered during normal working hours, plants must be watered at other times, as often, and in sufficient amounts as conditions may require.

Water new plants and existing plants to be maintained as needed to keep the plants in a healthy growing condition until Contract acceptance.

The remote control valve master, ball valve, or gate valve on the discharge side of backflow preventers must be closed when the irrigation system is not in use.

Take precautions to prevent water from wetting vehicles, pedestrians, and pavement. Do not cause erosion of the soil.

77-7.03A(4) Pruning

Pruning includes removing deadwood, suckers, and broken or bruised branches 1 inch or larger in diameter.

Prune plants under the latest edition of ANSI A300 part 1, *Pruning*, published by the Tree Care Industry Association.

Do not use tree seal compounds to cover pruning cuts.

Dispose of pruned materials or reduce to chips and spread within the job site. Spread chipped material at locations determined by the Engineer. Chipped material must not be substituted for mulch, nor must the chipped material be placed within areas to receive mulch.

77-7.03B Roadside Clearing

77-7.03B(1) General

Comply with section 20-7.03B(1).

77-7.03B(2) Initial Roadside Clearing

Weeds must be killed within planting turf and seeding areas and within the area extending beyond the outer limits of these areas to the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, existing planting, and fences. At those locations where planting turf and seeding areas are 12 feet or more from the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, and fences, the clearing limit must be 6 feet beyond the outer limits of these areas.

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Weeds must be killed within mulch areas and within the area extending beyond the outer limits of the mulch areas to the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, existing planting and fences. At those locations where mulch areas are 12 feet or more from the adjacent edges of shoulders, dikes, curbs, sidewalks, walls, and fences, the clearing limit must be 6 feet beyond the outer limits of the mulch areas.

Weeds must be killed and removed under guard rails, from within areas where asphalt concrete surfacing, concrete surfacing, rock blankets, gravel mulch or decomposed granite areas are to be placed, and from within unpaved gore areas between the edge of pavement and planting areas as shown.

Existing ground cover must be killed and removed from within an area 6 foot in diameter centered at each plant location within existing ground cover areas.

Dispose of weeds killed during the initial roadside clearing.

Dispose of removed existing ground cover.

77-7.03B(3) After Initial Roadside Clearing

Comply with section 20-7.03B(3).

77-7.03C Prepare Planting Area

Comply with section 20-7.03C.

Plants adjacent to drainage ditches must be located so that after construction of the basins, no portion of the basin wall is less than the minimum distance shown for each plant involved.

77-7.03D Prepare Hole

Comply with section 20-7.03D.

77-7.03E Prepare Trench

Comply with section 20-7.03E.

77-7.03F Cultivate

Comply with section 20-7.03F.

77-7.03G Weed Germination

Do not perform planting work in cultivated areas for a period of 21 days after:

1. Cultivation is complete
2. Irrigation systems have been installed

For cultivated areas, keep the soil sufficiently moist to germinate weeds. Weeds that germinate must be killed.

77-7.03H Erosion Control (COF)

Install erosion control measures as shown. Erosion control measures must comply with section 21.

77-7.03I Edging

Comply with section 20-7.03H.

77-7.03J Planting

77-7.03J(1) General

Comply with section 20-7.03I.

Apply granular preemergent to areas to be covered with mulch outside of plant basins.

77-7.03J(2) Fertilizer

Comply with section 20-7.03I(6).

77-7.03J(3) Iron Sulfate

Comply with section 20-7.03I(8).

77-7.03J(4) Ground Cover

Comply with section 20-7.03I(9).

77-7.03J(5) Wood Mulch

Comply with section 20-7.03I(10).

77-7.03J(6) Watering

Comply with section 20-7.03I(11).

77-7.03J(7) Turf Sod

Comply with section 20-7.03I(14).

When the turf sod has reached a height of 3 inches, mow the turf to a height of 2 inches. Trim the turf sod edges adjacent to edging, sidewalks, and other paved borders and surfaced areas, to a uniform edge not extending over those items. Repeat trimming whenever the edge of turf extends 1 inch beyond the edge of the edging, sidewalks, and other paved borders and surfaced areas. Remove mowed and trimmed growth.

77-7.03J(8) Plant Stakes, Tree Guy Assemblies and Ties

Comply with section 20-7.03I(15).

Install tree guy assemblies on specimen trees as shown or as directed by the Engineer.

77-7.03J(9) Replacement Plants

Comply with section 20-7.03I(16).

77-7.03K Decomposed Granite

Comply with section 20-10.03G.

Before performing decomposed granite work, clear areas to receive the decomposed granite under section 77-7.03B.

After satisfactory completion of the decomposed granite work, apply a topcoat of solidifying emulsion annually to the surface per the manufacturer's instructions. Continue the annual application until the plant establishment period is completed or until Contract acceptance.

77-7.03L Concrete Unit Pavers

77-7.03L(1) General

Ensure joints are straight and of uniform and equal width.

Protect surfaces of completed masonry, concrete, and other materials exposed to view from spillage, splatters, and other deposits of cementitious materials from masonry construction. Remove these deposits without damage to the materials or exposed surfaces. Remove stains, efflorescence, laitance, splashes, or spots on the faces of masonry exposed to view.

Cleaning agents must comply with the concrete paver manufacturer's instructions. Apply cleaning agents to a sample area acceptable to the Engineer. Before proceeding with cleaning beyond the sample area, the Engineer must accept the performance of the cleaning agent and the cleaning methods.

77-7.03L(2) Installation on a Sand Bedding

Sand must be placed in an even 1/2 inch thick layer over an 8 inches thick layer of class 2 aggregate base.

Class 2 Aggregate Base must:

1. Comply with section 90-1.02C(4).
2. Be compacted to 95 percent relative density.

77-7.03L(3) Concrete Unit Paver Installation

Concrete unit pavers must be laid in a Herringbone arrangement with tight joints and mechanically tamped into position to form a homogeneous and even surface

Edge pavers must be cut clean and parallel to the adjacent curb or edging. Pavers must be laid without creating a joint greater in width than 1/4 inch with the adjacent curb or edging.

The finished surface must be swept with sand.

Compact subgrade as shown.

77-7.03M Plant Establishment Work (COF)

77-7.03M(1) General

77-7.03M(1)(a) Summary

Comply with section 20-9.01A.

The plant establishment period must be Type 2.

If maintenance and protection relief is granted for a completed portion of the work under section 5-1.38, Type 2 plant establishment period for the completed portion of the work is the time between completion of all planting work except for plant establishment work, and the granting of maintenance and protection relief, provided that the relief must not be granted unless the plant establishment work in the completed portion of the work has been satisfactorily performed for at least the number of working days specified for the plant establishment period.

77-7.03M(1)(c) Submittals

Comply with section 20-9.01C.

77-7.03M(2) Materials

Comply with section 20-9.02.

77-7.03M(3) Construction

77-7.03M(3)(a) General

Comply with section 20-9.03A.

77-7.03M(3)(b) Plant Growth Control

Comply with section 20-9.03B.

77-7.03M(3)(c) Fertilizer

Comply with section 20-9.03C.

Apply slow-release or controlled-release fertilizer to the plants during the 1st week of October and February of each year.

77-7.03M(3)(d) Weed Control

Comply with section 20-9.03D.

If ordered, apply 1 application of a preemergent pesticide between 40 and 50 working days before completion of the plant establishment period. This work is change order work.

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Control weeds by:

1. Killing:
 - 1.1. In mulched areas and ground cover planting areas outside of plant basins
 - 1.2. In planting areas without ground cover plantings or located outside of ground cover areas
 - 1.3. In ground cover planting areas without plant basins
 - 1.4. Within medians, pavement, curbs, sidewalks, and other surfaced areas

77-7.03M(3)(e) Rodent and Pest Control

Comply with section 20-9.03E.

77-7.03M(3)(f) Wildflower Seeding Restrictions

Comply with section 20-9.03F.

77-7.03M(3)(g) Plant Staking

Comply with section 20-9.03G.

77-7.03M(3)(h) Replacement Plants

Comply with section 20-9.03H.

77-7.03M(3)(i) Watering

Comply with section 20-9.03I.

77-7.03M(3)(j) Miscellaneous Plant Establishment Work

Comply with section 20-9.03J.

When the turf sod has reached a height of 2 inches the turf must be mowed to a height of 1 inches. The turf sod edges adjacent to edging, sidewalks, and other paved borders and surfaced areas, must be trimmed to a uniform edge not extending over those items. Trimming must be repeated whenever the edge of turf extends 1 inch beyond the edge of the edging, sidewalks, and other paved borders and surfaced areas. Mowed and trimmed growth must be removed.

77-7.03M(3)(k) Training

Provide training by a qualified person on the use and adjustment of the irrigation controllers installed, 30 working days before completion of the plant establishment period.

77-7.03M(3)(l) Final Inspection

Complete the final inspection not more than 30 working days and not less than 20 working days before the completion of the plant establishment period.

77-7.04 PAYMENT

Items paid by the square yard are calculated by actual or computed slope measurements.

Measurement for slow-release or controlled-release fertilizer, and iron sulfate is determined from marked weight or sack count.

Mulch and soil amendment are measured in the vehicle at the point of delivery.

Cultivation area is measured from areas shown to be planted with plants requiring cultivation, plus the area 12 inches beyond the outer row of plants in each area. Planting areas for plants within the cultivation areas that do not require cultivation will not be deducted from the cultivation payment area.

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Various sizes and types of plants are measured by either the product of the average plant density and the total area planted or by actual count of the living plants in place, determined by the Engineer. The average plant density is the number of living plants per square yard determined from actual count of test areas chosen representing the total planted area. The size and location of the test areas is determined by you and the Engineer, except that the total area tested must be equal to not less than 3 percent nor more than 5 percent of the planted area being determined. The Engineer will make the final determination of the areas to be tested.

CONTRACT NO. 04-0A5344
ADDED PER ADDENDUM NO. 2 DATED NOVEMBER 8, 2013
77-8 CITY OF FAIRFIELD LANDSCAPE IRRIGATION

77-8.01 GENERAL

77-8.01A Summary

Section 77-8 includes specifications for performing City of Fairfield Landscape Irrigation.

The work includes:

1. Check and Test Existing Irrigation Facilities (COF)
2. Control and Neutral Conductors (COF)
3. 1-inch 155 Mesh Filter Assembly Units (COF)
4. 1-1/4-inch 155 Mesh Filter Assembly Units (COF)
5. 1-1/2-inch 155 Mesh Filter Assembly Units (COF)
6. 1-inch Remote Control Valve (COF)
7. 1 1/2-inch Remote Control Valve (COF)
8. 42 Station Irrigation Controller (Pedestal Mounted) (COF)
9. Irrigation Controller Enclosure Cabinet (COF)
10. Bubbler Sprinkler (Type C) (COF)
11. Pop-Up Sprinkler (Type A) (COF)
12. 1-1/2-inch Gate Valve (COF)
13. 2-1/2-inch Gate Valve (COF)
14. 3/4-inch Plastic Pipe (Schedule 40) (Supply Line) (COF)
15. 1-inch Plastic Pipe (Schedule 40) (Supply Line) (COF)
16. 1-1/4-inch Plastic Pipe (Schedule 40) (Supply Line) (COF)
17. 1-1/2-inch Plastic Pipe (Schedule 40) (Supply Line) (COF)
18. 2-inch Plastic Pipe (Schedule 40) (Supply Line) (COF)
19. 2-1/2-inch Plastic Pipe (Schedule 40) (Supply Line) (COF)
20. Subsurface Irrigation Drip Irrigation Line (COF)
21. Quick Coupling Valve (COF)
22. Ball Valve (COF)
23. 3/4-inch Flush Valve (COF)
24. 1-1/4-inch Flush Valve (COF)
25. Recycled Water Warning Signs (COF)
26. Electric Service Connection (Landscape) (COF)
27. 2-inch Irrigation Sleeve (COF)
28. 4-inch Irrigation Sleeve (COF)
29. 6-inch Irrigation Sleeve (COF)

Preserve existing landscape irrigation system must comply with section 5-1.36. Protect all apparatus, equipment and appliances. Prevent obstruction in the pipes and breakage, misuse or disfigurement of the apparatus, equipment and appliance.

77-8.01B Definitions

Not Used

77-8.01C Submittals

77-8.01C(1) General

Thirty days before installation, submit shop drawings for the electrical components of the irrigation system except electrical service. The drawings must:

1. Include schematic wiring diagrams showing wire sizes and routes between electrical components
2. Show conduit sizes
3. Bear the written approval of the controller manufacturer or the manufacturer's authorized agent
4. Be accompanied by:
 - 4.1. Colored wire and splice samples
 - 4.2. Manufacturer's descriptive and technical literature

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After the work shown on the drawing is complete, submit 3 copies of the as-built shop drawings including any wire modifications for each controller installed.

For each controller, laminate and place in an envelope 1 copy of As-built:

1. Schematic wiring diagram including wiring modifications
2. irrigation plan, 11 by 17 inches

The laminate must be clear, matte-finished plastic that is at least 10 mils thick. The envelope must be heavy-duty plastic.

Attach the envelope to the inside of the controller enclosure or cabinet door. If the door is not large enough to secure the envelope, submit the envelope and its contents.

77-8.01C(2) Product Data

Submit manufacturer's descriptive and technical literature for all materials.

77-8.01C(3) Control and Neutral Conductors Schedule of Values

Submit a schedule of values for control and neutral conductors. Submit the schedule after the wiring plans and diagrams for the electrical components of the irrigation system, except electrical service, have been authorized.

The unit descriptions shown in the table are the minimum. You may include additional unit descriptions. Include the quantity, value, and amount for those additional unit descriptions.

Use the authorized wiring plan and diagrams to determine the quantities required to complete the work.

No adjustment in compensation is made in the contract lump sum price paid for control and neutral conductors work due to differences between the quantities shown in the schedule of values for control and neutral conductors work and the quantities required to complete the work.

Schedule of Values for Control and Neutral Conductors

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Unit description	Unit	Approximate quantity	Value	Amount
___ AWG (UF) conductors (provide size)	LF			
___ AWG (UF) conductors	LF			
Splices	EA			
___ Sprinkler control conduit (provide size)	LF			
___ Sprinkler control conduit	LF			
___ Sprinkler control conduit	LF			

Total _____

77-8.01C(4) Wiring Plans and Diagrams

Comply with section 20-3.01C(4).

77-8.01C(5) Manufacturer's Instructions

Comply with section 20-3.01C(5).

77-8.01C(6) Certificate of Compliance

Comply with section 20-3.01C(6).

77-8.01C(7) Notifications

Comply with sections 20-1.01C(2) and 20-3.01C(7).

77-8.01C(8) Maintenance and Operation Manuals

Comply with section 20-3.01C(8).

77-8.01D Quality Control and Assurance

77-8.01D(1) Pressure Testing

77-8.01D(1)(a) General

Perform pressure testing for leakage on irrigation supply lines:

1. In the Engineer's presence
2. On business days between 8 a.m. and 5 p.m., unless authorized
3. Before backfilling supply line trenches
4. With irrigation system gate valves open
5. With open ends of the supply line and fittings plugged or capped

Notify the Engineer at least 48 hours before performing a pressure test.

Choose either Method A or B to test supply lines installed by trenching and backfilling and supply lines that are completely visible after installation.

Use Method A for all other supply lines, including those installed in the ground by methods other than trenching and backfilling

Test irrigation supply line in conduit by Method A with the testing period modified to 0.5 hour and no allowable pressure drop.

77-8.01D(1)(b) Method A

Method A pressure testing procedures for leakage must comply with:

1. Pressure gauge must be calibrated from 0 to 200 psi in 5 psi increments and be accurate to within a tolerance of 2 psi.
2. Supply line must be filled with water and connected to a pressure gauge. Place the pipeline under a pressure of 125 psi. Remove the source of pressure and leave the line under the required pressure.
3. Test the supply line under the required pressure for a period of 1 hour. The pressure gauge must remain in place until each test period is complete.
4. Leaks that develop in the tested portion of the system must be located and repaired after each test period if a drop of more than 5 psi is indicated by the pressure gauge. After the leaks have been repaired, repeat the 1-hour pressure test until the drop in pressure is 5 psi or less.

If a system consists of a new supply line connected to an existing line, the new supply line must be isolated from the existing line and tested.

77-8.01D(1)(c) Method B

Method B pressure testing procedures for leakage must comply with:

1. Before any portion of the supply line on the upstream side of a control valve is backfilled, water must be turned on for that portion of the line and maintained at full pressure from the water source for a period not less than 8 consecutive hours after all air has been expelled from the line. Before any portion of the supply line on the downstream side of the control valve is backfilled, perform the same test for a period not less than 1 hour.
2. Repair leaks that develop in the tested portion of the system. After the leaks have been repaired, repeat the pressure test until no leaks occur as determined by the Engineer.

77-8.01D(2) Sprinkler Coverage Check

After installation of the sprinklers, check and adjust the entire sprinkler system for proper orientation and uniform coverage.

77-8.01D(3) Irrigation System Functional Tests

Functional tests must be satisfactorily completed before:

1. Planting the plants. Upon completion of a satisfactory functional test, the plants to be planted in the areas watered by the irrigation system may be planted, if the planting areas have been prepared as specified.
2. The 2nd test must be performed after the planting of plants and before the start of the plant establishment period.

The functional tests for each irrigation controller or group of controllers and associated irrigation system served by a single electric service point must consist of at least 1 complete cycle of operation. The Engineer determines the length of the cycle.

Notify the Engineer at least 10 days before performing each functional test.

77-8.01D(4) Final Irrigation System Check

Perform the final check of the existing and new irrigation system between 20 and 30 days before Contract acceptance. The Engineer determines the length of the cycle.

Remote control valves connected to existing and new irrigation controllers must be checked for automatic operation when the controllers are in automatic mode.

Unsatisfactory performance of irrigation facilities installed or modified must be repaired and rechecked until satisfactory performance is obtained.

77-8.02 MATERIALS

77-8.02A General

77-8.02A(1) Electrical Material

Electrical material and equipment must comply with section 86-1.02.

77-8.02A(2) Concrete

Concrete must comply with the specifications for minor concrete, except the concrete must not contain less than 463 pounds of cementitious material per cubic yard. Hand mixing of the concrete is allowed.

77-8.02A(3) Recycled Water Identification

Irrigation components used for recycled water must be manufactured or painted purple. Recycled water plastic pipe supply lines and drip irrigation tubing must have a permanent label with the wording "CAUTION RECYCLED WATER" every 24 inches in 2 rows spaced approximately 180 degrees apart in the longitudinal direction of the pipe or tubing.

The recycled water warning sign must be a decal or a decal attached to a 1/16-inch thick aluminum plate or tag.

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Each warning sign decal must:

1. Show the phrase "Recycled Water, Do Not Drink" and the drinking glass graphic symbol
2. Be UV fade and weather resistant and manufactured from flexible vinyl with or without mylar
3. Have a purple background, black text, and self-adhesive backing

Each warning tag must:

1. Show the phrase "RECYCLED WATER" and the drinking glass graphic symbol
2. Be UV fade and weather resistant
3. Be purple, double-sided, and manufactured from polyurethane
4. Have an integral neck attachment and attachment hole capable of withstanding 178 lb of pull-out resistance
5. Have hot-stamped black lettering

Posts and hardware for warning signs must comply with section 56-4.

77-8.02B Conductors

77-8.02B(1) Control and Neutral Conductors

Comply with section 20-3.02E(1).

77-8.02B(2) Armor-Clad Conductors

Comply with section 20-3.02E(2).

77-8.02C Irrigation Controller System

Comply with section 20-3.02H.

77-8.02D Irrigation Controller Enclosure Cabinets

Comply with section 20-3.02I.

Irrigation controller enclosure cabinet dimensions for a single irrigation controller must be 38 inches high by 16 inches wide by 15.5 inches deep.

Door locks for the irrigation controller enclosure cabinets must be a removable-core mortise cam cylinder door lock that receives the Department's lock core. The Department's lock core is a "Best" construction core. Keys must be removable from the locks in the locked position only. Install door locks in conformance with the manufacturer's written instructions and recommendations. Deliver 2 keys for each door lock to the Engineer.

Fabricate mounting panels with stainless steel metal sheets with a minimum thickness of 0.157 inch.

77-8.02E Irrigation Conduits and Crossovers

Comply with section 20-3.02J.

77-8.02F Irrigation Sleeves

Comply with section 20-3.02K.

77-8.02G Pipe

77-8.02G(1) Plastic Pipe Supply Lines

Comply with section 20-3.02M(3)(a).

77-8.02G(2) Subsurface Drip Irrigation Line

77-8.02G(2)(a) General

Section 77-8.02G(2) includes specifications for installing a subsurface dripline irrigation system.

77-8.02G(2)(b) Materials

77-8.02G(2)(b)(i) Tubing

The tubing must:

1. Have a 5/8 inch nominal diameter
2. Be low density polyethylene made from recycled content
3. Be manufactured with integrated pressure compensation and be continuously self-cleaning
4. Have purple color with red stripe on the exterior

77-8.02G(2)(b)(ii) In-Line Emitters

Each emitter must:

1. Be integrally constructed and spaced at 18 inches on center
2. Be individually pressure compensating and welded to the inside wall of the tubing during manufacturing
3. Be self flushing
4. Include a built-in check valve that will hold back a 4.6 foot column of water
5. Have a Treflan impregnated during the molding process to inhibit root intrusion

Each emitter must independently regulate discharge rates under:

1. Inlet pressure range of 15 to 50 pounds per square inch
2. Constant flow

The operating pressure must be within 15 to 50 pounds per square inch. The emitter discharge rate must be 1 gallon per hour.

77-8.02G(2)(b)(iii) Filtration

Filtration must be a 155 mesh as shown.

77-8.02G(2)(b)(iv) Fittings

Fittings must be 5/8 inch in size and be manufactured specifically for use with dripline and be manufactured by the same company as the dripline.

77-8.02G(2)(b)(v) Additional Components

Air/vacuum relief valves, flush valves, and any other items shown or required by the manufacturer shall be included in the construction and installed according to manufacturer's instructions and as shown.

77-8.02H Sprinklers

77-8.02H(1) General

Section 77-8.02H includes specifications for installing sprinklers.

Each sprinkler assembly must meet the characteristics shown in the sprinkler schedule.

Sprinklers include risers, riser supports, swing joints, flow shut-off devices, pressure compensation devices, check valves and fittings as shown.

Where shown, a sprinkler assembly must have a flow shut-off device that automatically stops the flow of water on the downstream side of the device when the assembly is broken. Use a sprinkler assembly with a preinstalled flow shut-off device or install a flow shut-off device under the manufacturer's instructions.

Flexible hose for sprinkler assembly must be leak-free, non-rigid and comply with ASTM D 2287, cell Type 6564500. The hose wall thickness must comply with ASTM D 2122 for the hose diameters shown in the following table:

Hose diameter, nominal (inch)	Minimum wall thickness (inch)
1/2	0.127
3/4	0.154
1	0.179

Solvent cement and fittings for flexible hose must comply with section 20-2.09B(5).

77-8.02H(2) Deep Root Zone Sprinkler Assemblies

Each deep root zone sprinkler assembly must include a body, riser, riser support, perforated drainpipe, and drain cap.

The perforated drainpipe must be commercial grade, rigid, PVC pipe with holes spaced not more than 6 inches on center on 1 side of the pipe.

Drain cap must be commercially available, 1 piece, injection molded drain grate manufactured from structural foam polyolefins with UV light inhibitors. Drain grate must be black.

Gravel for filling the drainpipe must be graded such that 100 percent passes the 3/4-inch sieve and 100 percent is retained on the 1/2-inch sieve. Gravel must be clean, washed, dry, and free from clay or organic material.

77-8.02I Valves

Control valves must be capable of withstanding a cold-water pressure of 150 psi.

77-8.02I(1) Ball Valves

Ball valves must be two-piece brass or bronze body, with full port opening and complies with the requirements shown in the following table:

Property	Requirements
Nonshock cold-water working pressure, min	400 psi
Seats	Teflon
O-ring seals	Teflon

77-8.02I(2) Remote Control Valves

Remote control valves must be brass.

Remote control valves must:

1. Be normally closed type.
2. Be completely serviceable from the top without removing the valve body from the system.
3. Be equipped with a device that regulates and adjusts the flow of water and be provided with a manual shut-off. The manual shut-off for valves larger than 3/4 inch must be operated by a cross handle.
4. Be the same model series and compatible with the model series of the irrigation controller.
5. Have solenoids operate on the low voltage (ac) current supplied from the irrigation controller.
6. Have a manual bleed device.
7. Equipped with internal diaphragms installed in the valve body casting.
8. Be equipped with a self-flushing feature manufactured for with recycled water. Valves must not have external tubing.

Compression discs or diaphragms in valves must be replaceable.

Valve inlets and outlets must have threaded fittings.

Valve must be of the same size as the pipeline that the valve serves, unless otherwise shown.

Valves must be angle pattern or straight pattern as shown.

77-8.02I(3) Gate Valves

Comply with section 20-3.02R(5).

77-8.02I(4) Pressure Release Valve

Pressure relief valves must be preset at the factory for relief at 30 psi.

Pressure gauge must be hermetically sealed with neoprene. The gauge must have watertight polycarbonate case and cover with molded clear polycarbonate windows. Gauge must be 2 inches in diameter calibrated from 0 to 160 psi, and have brass stems and black aluminum pointer that contrasts with gauge face. Internal gauge parts must be brass or bronze.

77-8.02I(5) Quick Coupling Valves

Comply with section 20-3.02R(8).

77-8.02I(6) Pressure Regulating Valves

Comply with section 20-3.02L(6).

77-8.02I(7) Flush Valves

Flush valves must be plastic and automatically flush sediment and debris from driplines within a grid.

Flushing occurs at the beginning of each irrigation cycle and ends as soon as the system operation pressure reaches 10 PSI.

Flush valves must be as shown and withstand a maximum operating pressure of 50 psi.

77-8.02I(8) Combination Air/Vacuum Release Valves

Combination air/vacuum release valves must discharge air at high velocity during filling of the system and admit air during drainage. The valve must prevent premature closing and discharge air.

Combination air/vacuum release valves must be as shown and must withstand a maximum operating pressure of 100 psi.

77-8.02J Valve Boxes and Covers

Comply with section 20-3.02U.

77-8.02K Wye Strainers

Comply with section 20-3.02W.

77-8.02L Filter Assembly Units

Filter assembly units include the filter housing, reusable filter cartridge, pressure reducing valve, pressure gauges, fittings, pipe and valve box with woven wire cloth and gravel as shown.

Filter housing must (1) withstand a cold-water working pressure of 150 psi and (2) be manufactured of reinforced polypropylene plastic.

Filter cartridges must be stainless steel and be capable of 155 mesh filtration.

77-8.02M Unions

Comply with section 20-3.02Q

77-8.03 CONSTRUCTION

77-8.03A General

Comply with section 20-3.03A.

77-8.03B Existing Irrigation Facilities

Remove existing irrigation facilities must comply with section 15-2.02L.

77-8.03C Irrigation Sleeves

Comply with section 20-3.03D.

77-8.03D Trenching and Backfilling

Comply with section 20-3.03E.

77-8.03E Directional Boring

Notify the Engineer 2 days before starting directional bore operations. Perform directional bore operations in the presence of the Engineer.

Conduits installed by the directional bore method must be PVC Schedule 40 and comply with section 20-3.02M(3)(a).

The diameter of the boring tool for directional boring must be only as large as necessary to install conduit. Only use mineral slurry or wetting solution to lubricate the boring tool and to stabilize the soil surrounding the boring path. Mineral slurry or wetting solution must be water based and environmentally safe.

Dispose of residue from directional boring operations.

The direction bore equipment must have directional control of the boring tool and an electronic boring tool location detection system. During operation the directional bore equipment must be able to determine the location of the tool both horizontally and vertically.

You must have direct charge and control of the directional bore operation at all times.

77-8.03F Pipe

Comply with section 20-3.03F.

Install plastic pipe supply line mains not less than 18 inches below finished grade measured to the top of the pipe.

Install plastic pipe supply line laterals not less than 12 inches below finished grade measured to the top of the pipe.

Install plastic pipe irrigation lines not less than 12 inches below finished grade measured to the top of the pipe.

Install plastic pipe irrigation lines used for subsurface drip irrigation lines as described.

Install tubing for the subsurface drip irrigation lines at a depth of 4 inches below finished grade measured to the top of the pipe. The minimum bending radius for tubing is 7 inches. The tubing must be free of kinks. Place the tubing a minimum of 12 inches from the adjacent curb or sidewalk.

Install thrust blocks on the main supply line at all changes in direction and terminus run and as shown.

77-8.03G Electrical Installation for Irrigation Systems

Comply with section 20-3.03H.

77-8.03G(1) Conductors, Electrical Conduit, and Pull Boxes

Comply with section 20-3.03H(2).

77-8.03G(2) Conductor Testing

Comply with section 20-3.03H(3).

77-8.03G(3) Controllers

Comply with section 20-3.03H(4).

77-8.03G(4) Rain Sensor

Comply with section 20-3.03H(6).

77-8.03G(5) Electric Service

Comply with section 20-3.03I.

77-8.03H Sprinklers

Install pop-up and riser sprinklers:

1. 2 feet from curbs, dikes, and sidewalks
2. 10 feet from paved shoulders
3. 3 feet from fences and walls

If sprinklers cannot be installed within these limits, the location will be determined by the Engineer.

Set sprinklers on slopes perpendicular to the plane of the slope.

Locate tree bubblers on the uphill side of plant basins on slopes.

Install deep root zone sprinkler assembly as shown.

Install subsurface drip irrigation lines and components as shown and according to the manufacturer's instructions.

77-8.03I Valves and Valve Boxes

Comply with section 20-3.03L.

77-8.03J Wye Strainers

Comply with section 20-3.03M.

77-8.03K Filter Assembly Units

Comply with section 20-3.03L.

77-8.03L Recycled Water Warning Signs

Install recycled water warning signs on irrigation facilities using recycled water.

Install sign decals directly to clean, smooth surfaces. Clean the surface with alcohol or an equivalent cleaner before applying the decal.

Install a 4 by 4 inch warning sign decal to each irrigation controller enclosure cabinet door

Install a 2 by 2 inch warning tag to the each remote control valve and valve box cover.

Install a 2-1/2 by 3 inch sign decal to each sprinkler riser.

Under local regulations, install a warning sign decal on an aluminum plate and attach to gates, fences, and walls located in the vicinity of a recycled water irrigation system. On gates and fences, install signs with S hooks and C clips or 14-gauge galvanized steel wire. On concrete walls or other rough surfaces, install signs with a silicon-based adhesive.

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77-8.04 PAYMENT

Pipes and conduits are measured along the slope.

Payment for maintain existing water supply is included in payment for the various items of work.

Payment for trenching and backfilling is included in payment for the various types and sizes of pipe supply line.

Payment for checking and cleaning emitters and for checking and adjusting the various types of sprinklers for proper flow and coverage after installation is included in the payment for the various types of sprinklers.

Electrical conduit and pull boxes are measured and paid for as control and neutral conductors.

Armor-clad conductors are measured and paid for as control and neutral conductors.

Payment for PVC manifolds, combination air/vacuum release valves and operation indicators are included in payment for the subsurface irrigation drip line.

Payment for rain sensor is included in payment for the irrigation controller enclosure cabinet.

Payment for recycled water supply lines and UV-resistant plastic pipe will be measured and paid for as plastic pipe supply line.

Payment for functional tests and final irrigation system check are included in payment for the various items of work.

Replace section 80-7 with:

80-7 TEMPORARY FENCE (TYPE FROG)

80-7.01 GENERAL

80-7.01A Summary

Section 80-7 includes specifications for installing, maintaining, and removing temporary fence (Type Frog).

80-7.01B Definitions

Not Used

80-7.01C Submittals

Submit a Certificate of Compliance for fence fabric, and climber barrier and brackets .

80-7.01D Quality Control and Assurance

Not Used

80-7.02 MATERIALS

Provide E-Fence, EF48L, with climber barrier, 48 inches wide, as manufactured by ERTEC Environmental Systems, 1150 Ballena Blvd # 250, Alameda, CA 94501, phone (510) 521-0724, and include items as required by the manufacturer's specifications, updated 7/10/13, for exclusion of California red legged frog. Used materials may be used provided they meet the requirements of these special provisions.

The prices quoted by the manufacturer are:

1. \$2.60 per linear foot for fence fabric
2. \$0.07 per linear foot for 14 gage galvanized guide wire
3. \$0.05 per linear foot for ties
4. \$0.10 per linear foot for climber barrier brackets

The above prices are firm for orders placed until December 31, 2014.

Furnish E-Fence in 100-foot segments with 48-inch width.

80-7.03 CONSTRUCTION

80-7.03A General

Construct and maintain temporary fence (Type Frog) as specified in these special provisions and under the manufacturer's installation instructions, updated 7/10/13, for exclusion of California red legged frog, except for:

1. Install posts to a trench depth (min) of 6 inches.
2. Install posts every 8 feet and at each segment overlap.

Install temporary fence (Type Frog) at the same time you install temporary fence (Type ESA) and fence (Type WM, metal post).

Perform temporary fence (Type Frog) construction activities from outside the environmentally sensitive area (ESA).

80-7.03B Maintenance

Inspect areas of concentrated rainwater run-off following each rainfall event and after each high-wind event. Repair immediately any damage to the temporary fence (Type Frog).

Correct rills, gullies and other evidence of concentrated runoff which has undercut the temporary fence (Type Frog). Repair or replace immediately the locations needing repair after identifying the deficiency.

80-7.04 PAYMENT

Not Used

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BID ITEM LIST

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Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	130330	STORM WATER ANNUAL REPORT	EA	3	2,000.00	6,000.00
22	130505	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	10		
23	130530	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	SQYD	4,320		
24	130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	110		
25	130640	TEMPORARY FIBER ROLL	LF	3,090		
26	130680	TEMPORARY SILT FENCE	LF	6,900		
27	130710	TEMPORARY CONSTRUCTION ENTRANCE	EA	7		
28	130730	STREET SWEEPING	LS		LUMP SUM	LUMP SUM
29	130900	TEMPORARY CONCRETE WASHOUT	LS		LUMP SUM	LUMP SUM
30	025897	GEOMEMBRANE LINER	SQYD	3,080		
31	141000	TEMPORARY FENCE (TYPE ESA)	LF	7,980		
32	141103	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	LF	950		
33	141109	ADL BURIAL LOCATION REPORT	LS		LUMP SUM	LUMP SUM
34	141120	TREATED WOOD WASTE	LB	42,600		
35	150204	ABANDON CULVERT (LF)	LF	300		
36	150221	ABANDON INLET	EA	2		
37	150605	REMOVE FENCE	LF	15,500		
38	150662	REMOVE METAL BEAM GUARD RAILING	LF	4,370		
39	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	43,000		
40	150715	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	510		

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Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	150722	REMOVE PAVEMENT MARKER	EA	3,080		
42	150744	REMOVE ROADSIDE SIGN (WOOD POST)	EA	33		
43	150757	REMOVE SIGN STRUCTURE (EA)	EA	1		
44	150768	REMOVE ASPHALT CONCRETE PAVEMENT (CY)	CY	4,910		
45	025898	REMOVE TELEPHONE CABLE	LF	500		
46	150809	REMOVE CULVERT (LF)	LF	730		
47	150817	REMOVE REINFORCED CONCRETE BOX CULVERT (LF)	LF	130		
48	150820	REMOVE INLET	LF	4		
49	150821	REMOVE HEADWALL	EA	2		
50	150854	REMOVE CONCRETE PAVEMENT (CY)	CY	3,540		
51	150860	REMOVE BASE AND SURFACING	CY	8,040		
52	151512	RECONSTRUCT INLET	EA	2		
53	152381	RELOCATE GATE	EA	1		
54	152388	RELOCATE CRASH CUSHION	EA	1		
55	152390	RELOCATE ROADSIDE SIGN	EA	32		
56	152430	ADJUST INLET	EA	4		
57	152469	ADJUST UTILITY COVER TO GRADE	EA	7		
58	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	27,100		
59	153130	REMOVE CONCRETE CURB (LF)	LF	1,440		
60	153140	REMOVE CONCRETE SIDEWALK (SQYD)	SQYD	840		

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Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	025899	REMOVE CONCRETE ISLAND	SQYD	230		
62	153215	REMOVE CONCRETE (CURB AND GUTTER)	LF	1,240		
63	153221	REMOVE CONCRETE BARRIER	LF	870		
64	153251	REMOVE SOUND WALL (LF)	LF	330		
65	157550	BRIDGE REMOVAL	LS	LUMP SUM	LUMP SUM	
66	160102	CLEARING AND GRUBBING (LS)	LS	LUMP SUM	LUMP SUM	
67	170101	DEVELOP WATER SUPPLY	LS	LUMP SUM	LUMP SUM	
68	190101	ROADWAY EXCAVATION	CY	111,000		
69	190107	ROADWAY EXCAVATION (TYPE Y-1) (AERIALY DEPOSITED LEAD)	CY	1,280		
70	025900	GROUND IMPROVEMENTS	CY	1,700		
71	190161	ROCK EXCAVATION	CY	25,500		
72	190185	SHOULDER BACKING	TON	65		
73 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	CY	4,855		
74 (F)	192037	STRUCTURE EXCAVATION (RETAINING WALL)	CY	3,250		
75 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	CY	5,320		
76 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	CY	5,925		
77 (F)	193031	PERVIOUS BACKFILL MATERIAL (RETAINING WALL)	CY	448		
78 (F)	194001	DITCH EXCAVATION	CY	1,910		
79	198010	IMPORTED BORROW (CY)	CY	464,000		
80	198206	SUBGRADE ENHANCEMENT GEOTEXTILE, CLASS A1	SQYD	4,170		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81 (F)	208033	8" SUPPLY LINE (BRIDGE)	LF	585		
82 (F)	044344	16" SUPPLY LINE (BRIDGE)	LF	585		
83 (F)	208738	8" CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	LF	210		
84	210010	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	6		
85	210270	ROLLED EROSION CONTROL PRODUCT (NETTING)	SQFT	1,290,000		
86	210300	HYDROMULCH	SQFT	1,242,000		
87	210350	FIBER ROLLS	LF	72,100		
88	210430	HYDROSEED	SQFT	1,236,000		
89	210600	COMPOST	SQFT	1,180,000		
90	025901	IMPORTED BIOFILTRATION SOIL	CY	1,290		
91	BLANK					
92	240100	LIME	TON	1,950		
93	240105	LIME STABILIZED SOIL	SQYD	56,600		
94	250401	CLASS 4 AGGREGATE SUBBASE	CY	17,500		
95	260203	CLASS 2 AGGREGATE BASE (CY)	CY	13,900		
96	280000	LEAN CONCRETE BASE	CY	9,360		
97	280010	RAPID STRENGTH CONCRETE BASE	CY	190		
98	280020	ASPHALTIC EMULSION (CONCRETE BASE)	TON	38		
99	390010	PREPAVING PROFILOGRAPH	LS	LUMP SUM	LUMP SUM	
100	390020	PREPAVING GRINDING DAY	EA	10		

BID ITEM LIST

04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121	490782	FURNISH PILING (CLASS 200) (ALTERNATIVE W)	LF	28,440		
122	490783	DRIVE PILE (CLASS 200) (ALTERNATIVE W)	EA	326		
123	498052	60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	140		
124	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
125 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	CY	1,388		
126 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	CY	6,275		
127 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	CY	1,864		
128 (F)	510072	STRUCTURAL CONCRETE, BARRIER SLAB	CY	844		
129 (F)	510085	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	CY	93		
130 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	CY	76		
131	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	280		
132 (F)	511035	ARCHITECTURAL TREATMENT	SQFT	20,450		
133	044345	FURNISH PRECAST PRESTRESSED CONCRETE WIDE-FLANGE GIRDER (160'-170')	EA	5		
134	512500	ERECT PRECAST PRESTRESSED CONCRETE GIRDER	EA	5		
135 (F)	513570	CONCRETE BLOCK WALL	SQFT	221		
136	518050	PTFE BEARING	EA	8		
137	519091	JOINT SEAL (MR 1 1/2")	LF	116		
138	519092	JOINT SEAL ASSEMBLY (MR 2 1/2")	LF	97		
139	519093	JOINT SEAL ASSEMBLY (MR 3")	LF	169		
140 (F)	520102	BAR REINFORCING STEEL (BRIDGE)	LB	1,993,200		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141 (F)	520103	BAR REINFORCING STEEL (RETAINING WALL)	LB	247,600		
142	560208	FURNISH SIGN STRUCTURE (TUBULAR)	LB	86,700		
143	560209	INSTALL SIGN STRUCTURE (TUBULAR)	LB	86,700		
144	560233	FURNISH FORMED PANEL SIGN (OVERHEAD)	SQFT	1,420		
145	560248	FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SQFT	250		
146	560249	FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SQFT	200		
147	560251	FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-FRAMED)	SQFT	22		
148	560252	FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-FRAMED)	SQFT	360		
149	562004	METAL (RAIL MOUNTED SIGN)	LB	120		
150	566011	ROADSIDE SIGN - ONE POST	EA	38		
151	566012	ROADSIDE SIGN - TWO POST	EA	9		
152	568001	INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	2		
153	620060	12" ALTERNATIVE PIPE CULVERT	LF	500		
154	620100	18" ALTERNATIVE PIPE CULVERT	LF	3,290		
155	620140	24" ALTERNATIVE PIPE CULVERT	LF	1,880		
156	620180	30" ALTERNATIVE PIPE CULVERT	LF	1,350		
157	620220	36" ALTERNATIVE PIPE CULVERT	LF	1,820		
158	620300	48" ALTERNATIVE PIPE CULVERT	LF	830		
159 (F)	620800	CONCRETE BACKFILL (PIPE TRENCH)	CY	665		
160	623004	24" TEMPORARY CULVERT	LF	410		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	650010	12" REINFORCED CONCRETE PIPE	LF	200		
162	025903	18" JACKED REINFORCED CONCRETE PIPE	LF	120		
163	650014	18" REINFORCED CONCRETE PIPE	LF	300		
164	665017	18" CORRUGATED STEEL PIPE (.079" THICK)	LF	260		
165	665717	18" SLOTTED CORRUGATED STEEL PIPE (.079" THICK)	LF	19		
166	680902	6" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	3,490		
167	680903	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	LF	980		
168	025904	8" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	LF	390		
169	680905	8" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	1,840		
170	025905	12" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	87		
171	025906	CLASS 4 PERMEABLE MATERIAL	CY	2,150		
172	682049	CLASS 3 PERMEABLE MATERIAL (BLANKET)	CY	660		
173	700617	DRAINAGE INLET MARKER	EA	10		
174	705307	12" ALTERNATIVE FLARED END SECTION	EA	2		
175	705311	18" ALTERNATIVE FLARED END SECTION	EA	5		
176	705315	24" ALTERNATIVE FLARED END SECTION	EA	4		
177	705319	30" ALTERNATIVE FLARED END SECTION	EA	2		
178	705517	18" AUTOMATIC DRAINAGE GATE	EA	1		
179	707117	36" PRECAST CONCRETE PIPE INLET	LF	12		
180	025907	12" GATE VALVE	EA	1		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
181 (F)	721017	ROCK SLOPE PROTECTION (FACING, METHOD B) (CY)	CY	1,070		
182	721420	CONCRETE (DITCH LINING)	CY	160		
183	721810	SLOPE PAVING (CONCRETE)	CY	340		
184	729011	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	SQYD	1,870		
185	730020	MINOR CONCRETE (CURB) (CY)	CY	60		
186	730040	MINOR CONCRETE (GUTTER) (LF)	LF	1,005		
187	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	CY	14		
188	731504	MINOR CONCRETE (CURB AND GUTTER)	CY	160		
189	731516	MINOR CONCRETE (DRIVEWAY)	CY	26		
190	731518	MINOR CONCRETE (BRUSHED CONCRETE)	SQFT	6,820		
191	731521	MINOR CONCRETE (SIDEWALK)	CY	180		
192	731623	MINOR CONCRETE (CURB RAMP)	EA	13		
193 (F)	750001	MISCELLANEOUS IRON AND STEEL	LB	43,024		
194 (F)	750501	MISCELLANEOUS METAL (BRIDGE)	LB	675		
195 (F)	750505	BRIDGE DECK DRAINAGE SYSTEM	LB	2,100		
196	BLANK					
197	BLANK					
198	BLANK					
199	BLANK					
200	BLANK					

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
201	BLANK					
202	025914	36" WELDED STEEL PIPE CONDUIT (COV/COB - WATER SYSTEM)	LF	34		
203	BLANK					
204	BLANK					
205	BLANK					
206	BLANK					
207	BLANK					
208	025920	REMOVE OLD CORDELIA PRESSURE REDUCING STATION (COV - WATER SYSTEM)	LS	LUMP SUM	LUMP SUM	
209	025921	TEMPORARY CONNECTION 16" PVC BYPASS (COF - WATER SYSTEM)	LS	LUMP SUM	LUMP SUM	
210	025922	16" DIP WATER (COF - WATER DISTRIBUTION)	LF	310		
211	025923	16" PVC WATER (COF - WATER DISTRIBUTION)	LF	1,270		
212	025924	2" BLOW OFF VALVE (COF - WATER DISTRIBUTION)	EA	2		
213	025925	2" AIR VACUUM AND RELEASE VALVE (COF - WATER DISTRIBUTION)	EA	1		
214	025926	16" DIP WATER CONNECTION (COF - WATER DISTRIBUTION)	EA	2		
215	025927	FIRE HYDRANT (COF - WATER DISTRIBUTION)	EA	1		
216	025928	8" DIP WATER (COF - WATER DISTRIBUTION)	LF	260		
217	025929	16" BUTTERFLY VALVE (COF - WATER DISTRIBUTION)	EA	2		
218	025930	39" NBA WATERLINE (COV)	LS	LUMP SUM	LUMP SUM	
219	025931	30" NBA WATERLINE (COB)	LS	LUMP SUM	LUMP SUM	
220	025932	ABANDON PIPELINE (39" RAW WATER) (COV)	LF	670		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
221	BLANK					
222	025934	ABANDON PIPELINE (16" WATER DISTRIBUTION) (COF)	LF	1,840		
223	025935	ABANDON PIPELINE (30" RAW WATER) (COB)	LF	690		
224	BLANK					
225	025937	REMOVE PIPELINE (39" WATER) (COV)	LF	310		
226	025938	REMOVE PIPELINE (30" WATER) (COB)	LF	290		
227	025939	REMOVE FIRE HYDRANT (COF - WATER DISTRIBUTION)	EA	1		
228	025940	CITY STREET LIGHTING	LS	LUMP SUM	LUMP SUM	
229	800060	FENCE (TYPE WM AND BW)	LF	2,170		
230	800103	TEMPORARY FENCE (TYPE CL-6)	LF	2,650		
231	800320	CHAIN LINK FENCE (TYPE CL-4)	LF	3,957		
232	800321	CHAIN LINK FENCE (TYPE CL-4, VINYL-CLAD)	LF	380		
233	800360	CHAIN LINK FENCE (TYPE CL-6)	LF	5,560		
234	800361	CHAIN LINK FENCE (TYPE CL-6, VINYL-CLAD)	LF	4,630		
235	025941	12' CHAIN LINK GATE (TYPE CL-6, VINYL-CLAD)	EA	2		
236	025942	16' CHAIN LINK GATE (TYPE CL-6, VINYL-CLAD)	EA	4		
237	025943	20' CHAIN LINK GATE (TYPE CL-6, VINYL-CLAD)	EA	1		
238	802670	24' CHAIN LINK GATE (TYPE CL-6)	EA	2		
239	820107	DELINEATOR (CLASS 1)	EA	43		
240	820118	GUARD RAILING DELINEATOR	EA	38		

BID ITEM LIST

04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
241	820151	OBJECT MARKER (TYPE L-1)	EA	8		
242	832003	METAL BEAM GUARD RAILING (WOOD POST)	LF	1,560		
243	832070	VEGETATION CONTROL (MINOR CONCRETE)	SQYD	1,460		
244 (F)	833033	CHAIN LINK RAILING (TYPE 7 MODIFIED)	LF	2,107		
245 (F)	833142	CONCRETE BARRIER (TYPE 26 MODIFIED)	LF	597		
246 (F)	833143	CONCRETE BARRIER (TYPE 26A MODIFIED)	LF	40		
247	839541	TRANSITION RAILING (TYPE WB)	EA	7		
248	839581	END ANCHOR ASSEMBLY (TYPE SFT)	EA	11		
249	839584	ALTERNATIVE IN-LINE TERMINAL SYSTEM	EA	2		
250	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	12		
251	839601	CRASH CUSHION (TYPE CAT)	EA	2		
252	839699	CONCRETE BARRIER (TYPE 60P)	LF	12		
253	839700	CONCRETE BARRIER (TYPE 60F)	LF	99		
254	839701	CONCRETE BARRIER (TYPE 60)	LF	1,360		
255	839703	CONCRETE BARRIER (TYPE 60C)	LF	5,440		
256	025944	CONCRETE BARRIER (TYPE 60 MODIFIED)	LF	240		
257 (F)	839717	CONCRETE BARRIER (TYPE 732 MODIFIED)	LF	3,278		
258 (F)	839723	CONCRETE BARRIER (TYPE 732B)	LF	508		
259 (F)	044346	CONCRETE BARRIER (TYPE 732A MODIFIED)	LF	697		
260	840504	4" THERMOPLASTIC TRAFFIC STRIPE	LF	47,500		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
281	860555	LIGHTING AND SIGN ILLUMINATION (LOCATION 5)	LS	LUMP SUM	LUMP SUM	
282	025947	LONG LEAD IN CABLE LOOP DETECTOR SENSOR UNITS	EA	2		
283	860931	TRAFFIC MONITORING STATION (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
284	860932	TRAFFIC MONITORING STATION (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
285	860933	TRAFFIC MONITORING STATION (LOCATION 3)	LS	LUMP SUM	LUMP SUM	
286	860934	TRAFFIC MONITORING STATION (LOCATION 4)	LS	LUMP SUM	LUMP SUM	
287	BLANK					
288	152641	MODIFY SIGN STRUCTURE	EA	1		
289	026656	WILD FLOWER SEEDING	SQFT	70,100		
290	204099	PLAN ESTABLISHMENT WORK	LS	LUMP SUM	LUMP SUM	
291	210110	IMPORTED TOP SOIL (CY)	CY	2,530		
292	026657	ABANDON PIPELINE (24" WATER) (COV)	LF	3,670		
293	026658	ROADSIDE CLEARING (COF)	LS	LUMP SUM	LUMP SUM	
294	026659	WEED GERMINATION (COF)	SQYD	11,700		
295	026660	CULTIVATION (COF)	SQYD	11,700		
296	026661	IRON SULFATE (COF)	LB	1,170		
297	026662	SOIL AMENDMENT (COF)	CY	650		
298	026663	PACKET FERTILIZER (COF)	EA	4,000		
299	026664	SLOW-RELEASE FERTILIZER (COF)	LB	790		
300	026665	PLANT (GROUP K) (COF)	EA	66		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
301	026666	PLANT (GROUP A) (COF)	EA	550		
302	026667	PLANT (GROUP B) (COF)	EA	970		
303	026668	PLANT GROUP U (COF)	EA	74		
304	026669	TURF (SOD) (COF)	SQYD	870		
305	026670	TREE GUY ASSEMBLY AND STAKING (COF)	EA	28		
306	026671	PLANT ESTABLISHMENT WORK (COF)	LS	LUMP SUM	LUMP SUM	
307	026672	DECOMPOSED GRANITE (COF)	SQFT	2,090		
308	026673	WOOD MULCH (COF)	CY	90		
309	026674	EDGING - WOOD HEADER BOARD (COF)	LF	1,480		
310	026675	EDGING - CONCRETE (COF)	LF	130		
311	026676	CHECK AND TEST EXISTING IRRIGATION FACILITIES (COF)	LS	LUMP SUM	LUMP SUM	
312	026677	CONTROL AND NETURAL CONDUCTORS (COF)	LF	16,900		
313	026678	1" REMOTE CONTROL VALVE (COF)	EA	14		
314	026679	1 1/2" REMOTE CONTROL VALVE (COF)	EA	22		
315	026680	42 STATION IRRIGATION CONTROLLER (PEDESTAL MOUNTED) (COF)	EA	1		
316	026681	IRRIGATION CONTROLLER ENCLOSURE CABINET (COF)	EA	1		
317	026682	BUBBLER SPRINKLER (TYPE C) (COF)	EA	220		
318	026683	POP-UP SPRINKLER (TYPE A) (COF)	EA	290		
319	026684	1 1/2 " GATE VALVE (COF)	EA	1		
320	026685	2 1/2" GATE VALVE (COF)	EA	4		

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
321	026686	3/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	LF	4,580		
322	026687	1" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	LF	1,820		
323	026688	1 1/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	LF	1,430		
324	026689	1 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	LF	770		
325	026690	2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	LF	2,190		
326	026691	2 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE) (COF)	LF	2,150		
327	026692	1" 155 MESH FILTER ASSEMBLY UNITS (COF)	EA	3		
328	026693	1 1/4" 155 MESH FILTER ASSEMBLY UNITS (COF)	EA	3		
329	026694	1 1/2" 155 MESH FILTER ASSEMBLY UNITS	EA	1		
330	026695	3/4" FLUSH VALVE (COF)	EA	17		
331	026696	1 1/4" FLUSH VALVE (COF)	EA	4		
332	026697	SUBSURFACE IRRIGATION DRIP LINE (COF)	SQFT	14,000		
333	026698	QUICK COUPLING VALVE (COF)	EA	14		
334	026699	BALL VALVE (COF)	EA	12		
335	026700	CONCRETE UNIT PAVERS (COF)	SQFT	380		
336	026701	HYDROSEED (NO MOW GRASS) (COF)	SQFT	75,200		
337	026702	COMPOST (COF)	SQFT	75,200		
338	026703	HYDROMULCH (COF)	SQFT	75,200		
339	026704	RECYCLED WATER WARNING SIGNS (COF)	EA	20		
340	026705	ELECTRIC SERVICE CONNECTION (LANDSCAPE) (COF)	LS	LUMP SUM	LUMP SUM	

BID ITEM LIST
04-0A5344

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
341	026706	2" IRRIGATION SLEEVE (COF)	LF	40		
342	026707	4" IRRIGATION SLEEVE (COF)	LF	20		
343	026708	6" IRRIGATION SLEEVE (COF)	LF	30		
344	026709	TEMPORARY FENCE (TYPE FROG)	LF	5,820		
345	839708	CONCRETE BARRIER (TYPE 60 GC)	LF	390		
346	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID:

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