

INVITATION FOR BIDS



FOR CONSTRUCTING

CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT

CONTRACT NUMBER
C01931

ISSUED BY
CAPITAL PROJECTS ENGINEERING DIVISION
CITY OF SANTA ROSA, CALIFORNIA

2016

ATTENTION
Prebid Conference
See Page 1



STATE OF CALIFORNIA

INVITATION FOR BIDS

CONTAINING:

NOTICE TO BIDDERS

SPECIAL PROVISIONS

BID FORMS

CONTRACT

FOR

CITY HALL PLAZA DEMONSTRATION
GARDEN AND LID RETROFIT

Contract No. C01931

CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT

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CITY OF SANTA ROSA
STATE OF CALIFORNIA

NOTICE TO BIDDERS

➤	For technical questions regarding this project, contact Deb Lane at (707) 543-4506.
➤	For direct access to plans, specifications and planholders' lists, go to www.srcity.org/bids and click on <u>Bid/Proposal Opportunities</u> or call (707) 543-3800.
➤	For direct access to bid results, go to www.srcity.org/bids . Under Link to Capital Projects, click on <u>Capital Projects Contracts</u> or call (707) 543-3835.

- IMPORTANT -

Bid Acceptance Deadline

Sealed bids will be accepted at the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California 95401 until 2:00 p.m., May 23, 2016, for City Hall Plaza Demonstration Garden and LID Retrofit, Contract No. C01931. (Engineer's Estimate: \$939,809.00).

Bids tendered after this deadline will not be accepted. The official time clock for accepting bids will be an electric date and time stamping clock, located in the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California. In order to be accepted, bids must be received prior to 2:00 p.m. Therefore, a bid stamped in at 1:59 p.m. will be accepted, but one delivered at or after 2:00 p.m. is late and will not be accepted.

Pre-Bid Meeting

Prospective bidders, subcontractors, and material suppliers are invited to attend a pre-bid meeting scheduled to be held at 2:00 p.m., May 16, 2016, in Room 5 at City Hall, 100 Santa Rosa Avenue, Santa Rosa, California. **A site visit will follow this meeting.**

Subcontractor Information; Department of Industrial Relations Registration

Bidders shall provide the names, business addresses and license numbers of all subcontractors listed on bidder's List of Subcontractors. No contractor or subcontractor may be listed on a bid for this public works project unless registered with City of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for this public works project unless registered with the DIR pursuant to Labor Code section 1725.5. This public works project is subject to compliance monitoring and enforcement by the DIR.

Contract #: **C01931**

Project Title: **CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT**

Item #	Description	Units	Quantity
1	EARLY COMPLETION INCENTIVE (I)	DAY	2
2	LATE COMPLETION DISINCENTIVE	DAY(S)	1
3	TRAFFIC CONTROL	LS	1
4	WATER POLLUTION CONTROL	LS	1
5	REMOVE WALKWAY CURB	LF	12
6	UTILITY CLEARANCES	LS	1
7	STUMP GRINDING/REMOVAL 2"	EA	5
8	STUMP GRINDING/REMOVAL 4" - 6"	EA	6
9	STUMP GRINDING/REMOVAL 7" - 12"	EA	16
10	STUMP GRINDING/REMOVAL 20" - 36"	EA	3
11	SITE GRADING (F)	CY	275
12	TREE PLANTING - 15 GALLON	EA	28
13	TREE PLANTING - 3" CALIPER SIZE	EA	7
14	ROOT BARRIER	LF	332
15	BIORETENTION - 1 GALLON SHRUBS	EA	696
16	5 GALLON SHRUBS	EA	190
17	1 GALLON SHRUBS	EA	1220
18	BARK MULCH AND SHEET MULCHING	LS	1
19	90 CALENDAR DAYS LANDSCAPE MAINTENANCE	LS	1
20	IRRIGATION FOR PLANTING AREAS	LS	1
21	TREE BUBBLERS	EA	35
22	SLEEVES	LF	436
23	4" DIRECTIONAL BORING	LF	165
24	DECODERS	EA	12
25	2-WIRE CABLE WITHIN 1" PVC CONDUIT	LF	1130
26	1-1/2" MAIN LINE	LF	270
27	SPLICE BOX	EA	3
28	BALL VALVE	EA	11
29	1" REMOTE CONTROL VALVES	EA	23
30	FILTER	EA	14
31	QUICK COUPLER VALVE	EA	5
32	IRRIGATION MASTER VALVE AND FLOW SENSOR	EA	2
33	IRRIGATION CONTROLLER	EA	1
34	TANK	LS	1
35	BOOSTER PUMP SYSTEM ASSEMBLY AND HOUSING INSTALLATION	LS	1
36	AIR GAP MANIFOLD	LS	1
37	PIPE ROOF DRAINS TO TANK	LS	1
38	STAINLESS STEEL U-CHANNEL	LS	1
39	PIPING FOR TANK, BOOSTER PUMP AND AIR GAP MANIFOLD	LS	1
40	FLOAT SWITCHES	LS	1
41	BOOSTER PUMP ASSEMBLY ELECTRICAL SERVICES	LS	1
42	PRECAST CONCRETE PICNIC TABLES	EA	3
43	HYDRATION STATION	LS	1
44	COBBLES AT SWALES	SF	1900
45	COBBLE APRON	SF	1801

46	TREE GRATE AND FRAME	EA	1
47	METAL HEADER	LF	895
48	BOULDERS	EA	102
49	GRANITE WEIR INSTALLATION	EA	4
50	STRUCTURAL SOIL	CY	330
51	STRUCTURAL SOIL MOISTURE BARRIER	SY	1005
52	PERMANENT TRENCH AND CONFORM PAVING	TON	17
53	PERVIOUS CONCRETE	SF	4100
54	CONCRETE FOOTING FOR TANK	LS	1
55	CONCRETE DIVIDER	LF	73
56	CONCRETE WALL	LF	39
57	PARKING LOT LIGHT FOUNDATION	EA	5
58	ADA DIRECTIONAL SIGNS	EA	3
59	NON-POTABLE WATER SIGN	EA	1
60	RELOCATE SIGN	EA	1
61	LOCATION SIGN INSTALLATION	EA	2
62	KIOSK SIGN INSTALLATION	EA	1
63	INFORMATION KIOSK SIGN INSTALLATION	EA	4
64	BEST PRACTICE SIGN INSTALLATION	EA	9
65	PLANT ID SIGN INSTALLATION	EA	40
66	12" HDPE STORM DRAIN PIPE	LF	24
67	6" PERFORATED PIPE	LF	25
68	6" STORM DRAIN	LF	15
69	REMOVE AND REPLACE EXISTING 8" STORM DRAIN	LF	8
70	REDIRECT EXISTING STORM DRAIN TO DROP INLET	EA	2
71	14" X 23" ELLIPTICAL REINFORCED CONCRETE PIPE	LF	8
72	PERMEABLE TRENCH	LF	134
73	PERMEABLE MATERIAL AROUND EXISTING DROP INLETS	EA	4
74	12" X 12" DROP INLET	EA	4
75	18" X 18" DROP INLET	EA	1
76	18" X 18" JUNCTION BOX	EA	2
77	CONCRETE PLANTER CURB	LF	16
78	CONCRETE WARNING CURB	LF	67
79	6" CONCRETE SAFETY CURB	LF	13
80	REMOVE AND REPLACE SIDEWALK	SF	330
81	PARKING LOT SIDEWALK	SF	528
82	ACCESSIBLE PARKING SPACE AND ACCESS AISLE	SF	275
83	STAIRS	SF	124
84	TREE GRATE SUPPORT CLUB	LS	1
85	EQUIPMENT PAD	SF	72
86	HAND RAIL	LF	35
87	CONCRETE PATH AT SWALE CROSSING	SF	75
88	CONCRETE FENCE STRIP	LF	121
89	SET GRANITE CURB BLOCKS	LS	1
90	42" GALVANIZED METAL FENCE	LF	121
91	TRAFFIC STRIPES AND PAVEMENT MARKINGS	LS	1
92	#3.5 PULL BOX	EA	9
93	#5 PULL BOX	EA	2
94	PARKING LOT LIGHT CONDUIT	LS	1
95	REMOVE, PRESERVE AND REINSTALL PARKING LOT LIGHT	EA	5
96	PARKING LOT LIGHT WIRING	LS	1

The foregoing quantities are approximate only, being given as a basis for the comparison of bids, and the City of Santa Rosa does not expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, as may be deemed necessary or expedient by the Engineer.

Bids shall be made in accordance with the prevailing hourly rate of per diem wages for this locality and project as determined by the Director of the DIR pursuant to Labor Code sections 1770 *et seq.*

Contractor shall be responsible for compliance with the Immigration Reform Control Act of 1986.

If the project requires the employment of workers in any apprenticeable craft or trade, once awarded, Contractor and subcontractors must apply to the Joint Apprenticeship Council unless already covered by local apprentice standards (see Labor Code section 1777.5).

All bids are to be compared on the basis of the Engineer's estimate of the quantities of work to be performed. No bid will be awarded to a contractor who is not licensed in accordance with the provisions of Chapter 9 of Division 3 of the Business and Professions Code. Contractor must hold a Class A General Engineering Contractor license for this project. The contractor performing the landscape and irrigation system installation shall hold a C-27 California Landscape Contractor license. The contractor performing the permeable concrete work shall be a Certified National Ready Mixed Concrete Association Pervious Concrete Craftsman. The contractor performing the electrical work shall hold a C-10 Electrical Contractor license.

Project plans, bid and contract forms for C01931 City Hall Plaza Demonstration Garden and LID Retrofit may be obtained through PlanetBids at www.srcity.org/bids. These documents can no longer be obtained at the Transportation and Public Works Department.

No bid will be accepted unless it is made on the contract bid forms furnished by the Transportation and Public Works Department through PlanetBids. The original of the completed bid forms bearing original signatures must be submitted. A bid will not be accepted unless the bidder registers as a vendor through PlanetBids at www.srcity.org/bids, downloads documents/attachments, and is added to the prospective bidders list for this project.

The successful bidder will be required to hold a current City of Santa Rosa business tax certificate issued pursuant to Chapter 6.04 of the Santa Rosa City Code before commencing work on this project. For information regarding the business tax, contact Revenue and Collections at (707) 543-3170.

For any moneys earned by Contractor and withheld by the City of Santa Rosa to ensure the performance of the Contract, Contractor may, at its request and expense, substitute securities equivalent to the amount withheld in the form and manner and subject to the conditions provided in Section 22300 of the California Public Contract Code.

The City of Santa Rosa reserves the right to reject any or all bids and the right to waive minor irregularities or informalities in any bid or bonds.



HEAVEN MOORE
Supervising Engineer

5/6/2016

Date

SPECIAL PROVISIONS

General Specifications

CITY OF SANTA ROSA, CALIFORNIA

CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT

1 GENERAL

The work described herein shall be done in accordance with the "Contract Documents," which are the:

1. Special Provisions
2. Project Plans, consisting of 39 sheets entitled City Hall Plaza Demonstration Garden and LID Retrofit, 2016-0008
3. City of Santa Rosa Design and Construction Standards (City Standards)
4. City of Santa Rosa Construction Specifications for Public improvements (City Specifications)
5. State of California Department of Transportation Standard Specifications 2010 (Standard Specifications), and
6. State of California Department of Transportation Standard Plans 2010 (Standard Plans).

In the event of a conflict in any of these documents, the order of precedence shall be determined by Section 5-1.02 of these Special Provisions.

Whenever the Standard Specifications use the terms State of California, Department of Transportation, Director, Engineer, or Laboratory, the following terms shall be substituted therefor, and any reference to any of the foregoing terms shall be understood and interpreted to mean and refer to such substituted terms as follows:

For State of California - the City of Santa Rosa;

For Department - the City of Santa Rosa Department of Transportation and Public Works or Santa Rosa Water;

For Director - the City Engineer of the City of Santa Rosa;

For Engineer - the City Engineer of the City of Santa Rosa or the City Engineer's authorized agents;

For Laboratory – Materials Engineering of the City of Santa Rosa Water, or such other laboratory as may be authorized by the City.

Unless otherwise provided, whenever in these Special Provisions attention is directed to specific provisions in the Standard Specifications, such direction shall not be interpreted as excluding other applicable provisions of the Standard Specifications.

Unless otherwise provided, when sections and subsections of the Standard Specifications are used in these Special Provisions, such use is not exclusive and shall not be interpreted as excluding other applicable provisions of said sections and subsections, but is only intended to add to or modify such sections or subsections.

Unless otherwise provided, full compensation for compliance with these Special Provisions is included in the contract price and no additional allowance will be made to Contractor therefor.

The Standard Specifications are hereby modified to delete any reference or incorporation of provisions providing for or requiring arbitration of any and all claims and disputes arising under this contract.

Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board, agreement number 14-430-550. The contents of this document do not necessarily reflect the views and policies of the State Water Resources Control Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. The requirements of agreement number 14-430-550 are expressly incorporated into this Contract by this reference.

Contractor shall, at all times during the course of performance of this Contract, comply with and require its subcontractors to comply with all applicable federal and state laws, rules, guidelines, regulations, and requirements.

Contractor and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave. Contractor and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.

Contractor and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code, § 12990) and the applicable regulations promulgated thereunder (Cal. Code Regs., tit. 2, § 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Contract by reference and made a part hereof as if set forth in full. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement, if any.

2 BIDDING

2-1.06 Bid Documents: Prospective bidders will be furnished with an Invitation for Bids which will state the location and description of the contemplated public works project and will show the approximate estimate of the various quantities and kinds of work to be performed and materials to be furnished with a schedule of items for which unit prices are requested.

2-1.07 Approximate Estimate: The quantities given in the Contract Documents are approximate only, being given as a basis for the comparison of bids, and the City does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or part of the work or to omit parts of the work, as may be deemed necessary or advisable by the Engineer.

2-1.31 Examination of Project Plans, Specifications, City Standards, Invitation for Bids and Work Site: Prior to submitting a bid, the bidder shall carefully examine the Project Plans, Invitation for Bids, Project Specifications, City Standards and the proposed work site. If any person contemplating submitting a bid for this public works project is in doubt as to the meaning of any part of the Contract Documents, or finds discrepancies in or omissions from the Contract Documents, he or she may submit a written request for interpretation or correction to the Engineer. The written request must be received by the Engineer a minimum of 96 hours prior to bid opening. Any interpretation or correction of the Contract Documents prior to bid opening will be made only by written addendum issued by the City. A copy of such addendum will be mailed or faxed to each Planholder. The City will not be bound by any other explanations or interpretations of the Contract Documents.

2-1.33A Bid Forms: All bids shall be made on bid forms obtained from PlanetBids at www.srcity.org/bids. The bidder shall submit its bid on the original bid forms furnished by the City. Bids submitted on forms other than the forms furnished to the bidder by the City will not be considered.

The bid forms to be submitted at the time of and with the bid are:

1. Unit Price Schedule
2. List of Subcontractors
3. List of Previous Similar Jobs
4. Noncollusion Declaration
5. Bid Guaranty Information and Bidder's Information and Signature
6. Bid Guaranty (Bid Bond or alternate security)

All bids shall give the proposed prices and must bear the original signature of the bidder. Bidders shall fill in all blanks on the bid forms where required. A bid will not be accepted unless the bidder registers as a vendor through PlanetBids at www.srcity.org/bids, downloads documents/attachments, and is added to the prospective bidders list for this project.

2-1.33B Registration with DIR: No contractor or subcontractor may be listed on a bid for this public works project unless registered with City of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for this public works project unless registered with the DIR pursuant to Labor Code section 1725.5. This public works project is subject to compliance monitoring and enforcement by the DIR.

2-1.33C Subcontractors: The Subletting and Subcontracting Fair Practices Act, Public Contract Code sections 4100-4113, inclusive (the "Act") shall apply to all subcontracts in excess of one-half of one percent of the total amount of a bid. The Act requires subcontractors, if used for such work, to be listed in the contractor's bid and prohibits the substitution of subcontractors, except as authorized by the Act. Each bidder shall, with respect to the work of any subcontractor in excess of one-half of one percent of the total amount of the bid, include as part of the bid on the bid form provided:

1. The name, business address and DIR registration number of each subcontractor who will perform work or labor or render services to the Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Project Plans or other Contract Documents in an amount in excess of one-half of one percent of the Contractor's total bid; and
2. The portion of the work that will be done by each subcontractor. Only one subcontractor shall be listed for each portion.

The purchase of sand, gravel, crushed rock, batched concrete, aggregate, ready-mixed concrete, and/or any other materials produced and furnished by established and recognized commercial plants, together with the delivery of such materials to the work site by the source of the materials or by recognized commercial hauling companies, is not considered as subcontracting under this section.

2-1.33E Rejection of Bids Containing Alterations, Erasures or Irregularities: Bids may be rejected if they show any alterations of forms, additions not called for, conditional bids, incomplete bids, erasures or irregularities of any kind.

2-1.34 Bid Guaranty: All bids shall be presented under sealed cover and shall be accompanied by cash, cashier's or certified check, or by a bidder's bond made payable to the City of Santa Rosa and executed as surety by a corporate surety authorized and admitted to transact a surety business in the State of California in an amount equal to ten percent of the amount of the bid. No bid shall be considered unless such cash, cashiers or certified check, or bidder's bond is enclosed with the bid. Any bidder's bond shall contain provisions for forfeiture consistent with California Public Contract Code section 20172.

2-1.40 Withdrawal of Bid: A bid may be withdrawn prior to, but not after, the hour fixed in the public notice for the opening of bids, provided that a written request to withdraw the bid, executed by the bidder or the bidder's authorized representative, is filed with the Engineer before this deadline. The withdrawal of a bid shall not prejudice the right of a bidder to submit a new bid.

2-1.43 Public Opening of Bids: Bids will be opened and read publicly at the time and place indicated in the Notice to Bidders. Bidders or their authorized agents are invited to be present.

2-1.46 Disqualification of Bidders: Serial bids from the same bidder will not be accepted. This section shall not be interpreted to mean that the same contractor may not be the contractor in one bid and listed as a subcontractor in another bid, provided that no collusion exists.

Contractor and its subcontractors may not be debarred or suspended or otherwise excluded from or ineligible for participation in federal assistance programs under Executive Order 12549, "Debarment and Suspension" or listed on USEPA's List of Violating Facilities. (40 CFR, Part 31.35; Gov. Code, § 4477) www.echo.epa.gov.

2-1.48 Competency of Bidders: No bid will be accepted from or contract awarded to a contractor that is not licensed in accordance with the law, that does not hold a license qualifying it to perform work under this contract, to whom a bid form has not been issued by the Engineer, or that has not successfully completed projects of similar character, scope and cost to the proposed project. Bidders will be required to provide a list of previous similar jobs with their bids.

3 CONTRACT AWARD AND EXECUTION

3-1.04 Contract Award: The City reserves the right to reject any or all bids. Bids are required for the entire work described herein. All bids will be compared with the Engineer's estimate of the quantities of work to be completed. Contract award, if any, will be made to the lowest responsible bidder within sixty days from the date bids are opened.

3-1.05 Contract Bonds:

Within ten days after receipt of the Notice of Award, the successful bidder shall provide the following bonds to the City:

- a. Performance Bond: A performance bond to guarantee the faithful performance of the terms and conditions of the Contract by Contractor, which shall be executed in a sum of not less than 100% of the Contract price;
- b. Labor and Materials Bond: A labor and materials bond (payment bond) in accordance with Part 6 of Division 4, sections 8000 *et seq.* of the California Civil Code, to guarantee against any and all claims of subcontractors or other third parties furnishing labor, materials, or supplies for the Contract, which shall be executed in a sum of 100% of the Contract price; and
- c. Material Guaranty Bond: A material guaranty bond (warranty bond) to serve as surety for the guarantee requirements outlined in Section 6-3.01B, which shall be executed in a sum of not less than one-half of the Contract price.

The bond(s) shall be provided in a form acceptable to the City and issued by a corporate surety in good financial standing and authorized and admitted to transact a surety business in the state of California for the purposes and in the amount(s) stated above.

Whenever the financial or legal status of any surety on any such bond(s) is/are unacceptable to the City, it may make a demand to Contractor for further bond(s) or additional surety, not exceeding the sums originally required. Thereafter, no payment shall be made upon the Contract to Contractor or any assignees of Contractor until such bond(s) or additional surety has/have been provided to the City.

3-1.07 Indemnification and Insurance: Indemnification: Contractor shall defend, hold harmless and indemnify City, its officers, agents and employees, and each and every one of them, from and against any and all actions, damages, costs, liabilities, claims, demands, losses, judgments, penalties, costs and expenses of every type and description, including, but not limited to, any fees and/or costs reasonably incurred by City's staff attorneys or outside attorneys and any fees and expenses incurred in enforcing this provision (hereafter collectively referred to as "Liabilities"), including but not limited to Liabilities arising from personal injury or death; damage to personal, real or intellectual property or the environment; contractual or other economic damages, or regulatory penalties, arising out of or in any way connected with the performance of or the failure to perform the Contract by Contractor, any subcontractor or agent, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, whether or not such Liabilities are caused in part by a party indemnified hereunder, or such Liabilities are litigated, settled or reduced to judgment; provided, that the foregoing indemnity does not apply to liability for any damage or expense for death or bodily injury to persons or damage to property to the extent arising from (i) the sole negligence, or willful misconduct of, or defects in design furnished by City, its agents, servants, or independent contractors who are directly responsible to City (excluding Contractor), or (ii) the active negligence of City.

The existence of any of the insurance policies or coverages described in this Contract shall not affect or limit any of City's rights hereunder, nor shall the limits of such insurance limit Contractor's liability to the City hereunder. The provisions of this section shall survive any expiration or termination of the Contract.

Insurance: Contractor shall maintain in full force and effect all of the insurance coverage described in and in accordance with the insurance requirements set forth below. Maintenance of such insurance coverage during the entire performance of the Contract is a material element of the Contract. Failure by Contractor to (i) maintain or renew coverage, (ii) provide notice of any changes, modifications, or reductions in coverage, or (iii) provide evidence of renewal, if necessary, may be deemed a material breach of the Contract by Contractor, whereas the City shall be entitled to all rights and remedies at law or in equity. Notwithstanding the foregoing, any failure by Contractor to maintain required insurance coverage shall not excuse or alleviate Contractor from any of its other duties or obligations under the Contract. In the event Contractor retains or utilizes any subcontractors or sub-consultants in performance of the work, Contractor shall assure that any such subcontractor has first obtained, and shall maintain, all of the insurance coverage requirements herein set forth below.

Insurance Requirements:

A. Insurance Policies: Contractor shall maintain and keep in full force and effect, the following policies of insurance with minimum coverage as indicated below and issued by insurers with an AM Best rating of no less than A-:VI or a rating otherwise acceptable to the City.

Insurance	Minimum Coverage Limits	Additional Coverage Requirements
1. Commercial general liability	\$5 million per occurrence \$5 million aggregate	Coverage must be at least as broad as ISO CG 00 01 and must include products liability and completed operations coverage which shall continue for a period of three years after acceptance of the work by the City. If insurance applies separately to a project/location, aggregate may be equal to per occurrence amount. Coverage may be met by a combination of primary and umbrella or excess insurance but umbrella and excess shall provide coverage at least as broad as specified for underlying coverage. Completed Operations Coverage can be provided in the form of an endorsement to Contractor's insurance (at least as broad as ISO Form CG 20 37 04 13. See endorsements below for other Additional Insured Requirements. Coverage shall not exclude subsidence.
2. Business auto coverage	\$3 million	Coverage at least as broad as ISO Form Number CA 00 01 covering any auto (Code 1). Insurance shall cover owned, non-owned and hired autos.
3. Workers' compensation and Employer's Liability	\$1 million	As required by the State of California, with Statutory Limits and Employer's Liability Insurance with limit of no less than \$1 million per accident for bodily injury or disease. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City for all work performed by Contractor, its employees, agents and subcontractors.
4. Course of construction/builders' risk	Amount of completed value of project without co-insurance provisions	Required for construction projects over \$3 million. The City shall be named as loss payee.

B. Endorsements:

1. All policies shall provide or be endorsed to provide that coverage shall not be canceled by either party, except after prior written notice has been provided to the City in accordance with the policy provisions.
2. Liability policies shall provide or be endorsed to provide the following:
 - a. For any claims related to this Contract, Contractor's insurance coverage shall be primary and any insurance or self-insurance maintained by City shall be in excess of Contractor's insurance and shall not contribute with it. Endorsements at least as broad as 20 01 04 13 or evidence of policy language will be required in non ISO CGL policies.
 - b. **The City of Santa Rosa, its officers, agents and employees are to be covered as additional insureds on the CGL policy.** Additional Insured Endorsements at least as broad as 20 10 04 13 or 20 38 04 13 are required.

C. Verification of Coverage and Certificates of Insurance: Contractor shall furnish City with original certificates and endorsements effecting coverage required above. Certificates and endorsements shall make reference to policy numbers. All certificates and endorsements are to be received and approved by the City before work commences and must be in effect for the duration of the Contract. The City reserves the right to require complete copies of all required policies and endorsements during the duration of the Contract and for a period of three years following City's acceptance of the work.

D. Other Insurance Provisions:

1. No policy required by this Contract shall prohibit Contractor from waiving any right of recovery prior to loss. Contractor hereby waives such right with regard to the indemnitees.
2. All insurance coverage amounts provided by Contractor and available or applicable to this Contract are intended to apply to the full extent of the policies. Nothing contained in this Contract limits the application of such insurance coverage. Coverage for an additional insured shall NOT be limited to the insured's vicarious liability. Defense costs must be paid in addition to coverage amounts.
3. Self-insured retentions above \$10,000 must be approved by the City. At the City's option, Contractor may be required to provide financial guarantees.
4. City reserves the right to modify these insurance requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

3-1.18 Contract Execution: The fully executed Contract, original bonds and insurance certificates and endorsements required under the Contract shall be delivered to the City within ten calendar days of Contractor's receipt of the Notice of Award.

The Engineer will supply Contractor with up to ten sets of the Invitation for Bids and Project Plans. At least one complete set of the Invitation for Bids and Project Plans shall be kept at the construction site in good condition and made available to the Engineer at all times. Additional copies of the Invitation for Bids and Project Plans will be provided by the Engineer at Contractor's cost.

3-1.20 Failure to Execute Contract: Contractor's failure to deliver to the City the fully executed Contract within ten calendar days of Contractor's receipt of the Notice of Award shall be cause for the cancellation of the award and the forfeiture of the bid guaranty to the City. If the successful bidder refuses or fails to execute the Contract, the City may award the Contract to the second lowest responsible bidder. If the second lowest responsible bidder refuses or fails to execute the Contract, the City may award the Contract to the third lowest responsible bidder. The refusal or failure by the second or third lowest responsible bidder to deliver to the City the fully executed

Contract within ten calendar days of receipt of the Notice of Award to the respective bidder shall likewise be cause for the cancellation of the award and the forfeiture of the bid guaranty of the respective bidder. In its discretion, the City may then re-advertise the project or construct it by day labor.

3-1.21 Return of Bid Guarantees: Within ten days after the opening of bids, the City will return the bid guarantees to all bidders except the three lowest responsible bidders. The bid guarantees of the three lowest responsible bidders will be retained until the Contract has been fully executed. In the event all bids are rejected, all bid guarantees will be returned to the respective bidders.

3-1.22 Subcontractors: The successful bidder shall furnish a list of all subcontractors as required under Sections 2-1.33C & D. The list shall include the name, business address, DIR registration number and the state contractor's license number of each subcontractor on the list and the names of the responsible managing employees whose names appear on the subcontractors' licenses.

4 SCOPE OF WORK

4-1.05 Changes and Extra Work: All changes to the Contract shall be made by written change order only.

All extra work shall be recorded by Contractor on a daily report signed by both the City and Contractor. The “daily reports” shall thereafter be considered the true record of extra work performed. A copy of the daily reports will be furnished to Contractor. Contractor is directed to Section 9-1.04 of this Invitation for Bids.

4-1.05C Compensation for Altered Quantities: Payment and compensation for altered quantities shall conform to the provisions of Section 9-1.06 of the Standard Specifications, except as modified herein.

5 CONTROL OF WORK

5-1.02 Contractor's Copies of Contract Documents: In the event of a conflict in any of the Contract Documents, the order of precedence from highest to lowest shall be as follows:

1. Special Provisions
2. Project Plans, consisting of 39 sheets entitled City Hall Plaza Demonstration Garden and LID Retrofit, 2016-0008
3. City Standards
4. City Specifications
5. Standard Specifications
6. Standard Plans

5-1.05 Order of Work: The work as shown on the Project Plans and as specified in the Invitation for Bids shall be constructed in a sequence that is satisfactory to and approved by the Engineer.

Contractor shall prepare a work schedule per Section 8-1.02 of the Standard Specifications.

With the exception of trenching, all existing street, street light base, curb and gutter, storm drain, water line, and sewer line work shall be completed before any existing street paving is removed.

Full compensation for the conformance to the requirements of this section is included in the Contract price and no additional allowance will be made to Contractor for this work.

5-1.17 Character of Workers: Contractor is directed to Section 5-1.17 of the Standard Specifications which states:

"If any subcontractor or person employed by the Contractor shall appear to the Engineer to be incompetent or to act in a disorderly or improper manner, he shall be discharged immediately on the request of the Engineer, and such person shall not again be employed on the work."

No additional compensation shall be granted to Contractor in the event City exercises any part of its rights under this section and any and all costs related to such exercise shall be borne by Contractor.

5-1.20 Cooperation with Other Entities: Attention is directed to Section 5-1.20 of the Standard Specifications.

Other construction including but not limited to utility, power, and pipe line relocation, may be in progress by other forces within and adjacent to the project area at the same time work is being performed under this Contract by Contractor.

Contractor shall cooperate with the forces performing other work, to the end that such forces may conduct their operations with as little inconvenience and delay as possible. Contractor shall grant such forces access to the project area as is reasonable and necessary to transport materials and equipment to the site of operations by the other forces.

5-1.20B(4)(a) Offsite Staging Areas and Construction Yards: Attention is directed to Santa Rosa City Code section 20-52.040, Temporary Use Permit.

A Temporary Use Permit shall be obtained for any offsite construction yard on private property to be used for any of the following:

- a. Stockpiling of equipment and/or materials;
- b. Staging of construction;
- c. Placement of work trailers or mobile offices;
- d. Storage of trench spoils; or
- e. Other construction related activities not specifically enumerated above.

5-1.26 Lines and Grades: Contractor shall carefully preserve all bench marks, grade stakes, and all other survey markers. In the case of willful or careless destruction, Contractor shall bear the cost of replacing the markers.

Contractor shall contact the Engineer directly for coordination of survey staking. Written staking requests must be submitted at least two working days in advance of the date and time stakes are needed.

5-1.27B Examination and Audit: Pursuant to California Government Code section 8546.7, any contract with the City involving expenditures in excess of \$10,000 shall be subject to the examination and audit of the California State Auditor for a period of three years after final payment is made to Contractor by City under this Contract. Any such examination and audit will be confined to those matters connected with the performance of this Contract.

5-1.30A Inspection: Contractor shall bear all costs associated with the re-inspection of any defective, rejected or unauthorized work as determined by the Engineer in Engineer's sole discretion. Such costs of re-inspection, including any costs incurred by the City for additional staff time or fees for third-party consultant inspectors, will be deducted from one or more progress payments hereunder.

5-1.36A Property and Facility Preservation: Attention is directed to Section 5-1.36 of the Standard Specifications.

At Contractor's sole expense, all fences, gates, landscaping, drainage ditches, sidewalks, irrigation systems, and any other improvements that are damaged, removed or destroyed because of Contractor's operations, shall be replaced in accordance with City Standards at a minimum and restored to the same or better condition. Concrete surface treatment and score marks shall match adjacent existing concrete improvements.

5-1.36E Obstructions: Attention is directed to Section 5-1.36 of the Standard Specifications and to the possible existence of underground gas mains, high voltage lines, fiber optic and Ethernet lines, telephone ducts, storm drains and water and sewers systems, the locations of which are not shown on the Project Plans. The determination of the location of these facilities and the cost of repair or replacement in the event of damage to such facilities are the sole responsibility of Contractor.

Should Contractor alter any public utility or private improvements to facilitate its operations or for its sole benefit, which alteration would not be otherwise required, Contractor shall make whatever arrangements are necessary with the owner or controlling authorities, and shall bear all expenses in connection therewith. Any damages to any public utility or private improvement caused by Contractor shall be repaired by Contractor at its sole expense and to the full satisfaction of the Engineer or the controlling authority.

Any subsurface information and data furnished under any part of this Contract are not intended as a representation or warranty but are furnished for information only. It is expressly understood that the City will not be responsible for the accuracy thereof or for any deduction, interpretation or conclusion drawn therefrom by Contractor. The information is made available so that Contractor may have ready access to the same information available to the City and is not part of this Contract.

PRIOR TO STARTING ANY EXCAVATION, CONTRACTOR SHALL (AT LEAST TWO WORKING DAYS IN ADVANCE) CALL UNDERGROUND SERVICE ALERT (USA) toll free at (800) 227-2600 and provide USA with all necessary data relative to the proposed excavation. USA will accept calls and process information to participating agencies who have underground facilities in the area between the hours of 7:30 a.m. and 5:00 p.m. daily, except Saturdays, Sundays, and holidays. Between the hours of 5:00 p.m. and 7:30 a.m., calls will be recorded and then processed after 7:30 a.m. For emergency situations, after hours, and on Saturdays, Sundays and holidays, Contractor shall contact the owner of the affected facility.

Contractor shall coordinate all work with the appropriate City field personnel. When City work forces are required at the job site to perform Contract items of work, Contractor shall give a minimum of two working days advanced notification to the appropriate field office:

Water Division:	(707) 543-4200
Sewer Division:	(707) 543-4200
Street Division:	(707) 543-3880
Survey Division:	(707) 543-3834
Recreation & Parks Division:	(707) 543-3770

5-1.43 Arbitration: Any references to Arbitration in the Standard Specifications are deleted in their entirety.

6 CONTROL OF MATERIALS

6-2.01 Source of Supply and Quality of Materials: All materials required to complete the work under the Contract shall be furnished by Contractor and shall be free of hazardous substances.

6-3.01 General: Statistical means will not be used by the City for determination of Standard Specification compliance. Whenever both operating range test results and Contract compliance requirements are specified in these special provisions, the operating range requirements shall apply to the individual test results.

6-3.01A Material Submittals: Upon award of the Contract by City, Contractor shall submit to the Engineer a list of all materials proposed to be used on this project and any supporting documentation and/or samples required and source of supply.

For material listed on the “Engineer’s List of Approved Items” which is located in the Sewer and Water sections only of the City Standards, the Engineer shall be provided with the name of the manufacturer and model/part number for all material proposed for this project, unless that item has been replaced as shown on the Project Plans or in the Invitation for Bids.

For all other materials used on this project, regardless of the type of work, Contractor shall provide to the Engineer the name of the manufacturer and model/part number along with supporting documentation and/or samples that will allow the Engineer to determine the material’s acceptability.

The Engineer reserves the right to reject any proposed material, whether on the City’s “Engineer’s List of Approved Items” or not. If the City obtains information indicating that a listed item is not performing satisfactorily or is found to be defective, that item will be rejected and Contractor shall submit a replacement for review at no additional cost to the City.

6-3.01B Material Guarantee: Before any contract is awarded, the bidder may be required to furnish samples of materials and detailed descriptions of equipment to be used in the construction of the project. The materials samples may be subjected to the tests provided for in the Standard Specifications or in this Invitation for Bids to determine their quality and fitness for the project. The successful bidder shall unconditionally guarantee project materials and workmanship for a period of one year from the date of recording of the Notice of Completion. The guarantee shall cover 100% of all costs of repairs within the one year period, including all costs of labor, materials, equipment, and incidentals. Except as may be otherwise provided in Section 3-1.05, the successful bidder shall provide a surety bond executed by a corporate surety authorized and admitted to transact a surety business in the state of California in the minimum amount of one-half of the Contract price to cover this guarantee.

6-3.05 Quality Assurance: California Test 216 (Relative Compaction) testing will be modified as follows: A mechanical compactor (Ploog Engineering Co. Model M 100 or equivalent) with 10-pound hammer and split compaction molds shall be used in lieu of the specified manual compaction equipment.

California Test 231 (Nuclear Gage Determination of In-Place Density) will be modified as follows, except where otherwise noted in the project specifications: In-place density and relative compaction may be determined on the basis of individual test sites in lieu of the area concept, at the discretion of the Engineer.

6-4 Water Utility

6-4.01A Construction Water: All water required for the performance of the work shall be provided by Contractor. Prior to obtaining water from the City's water system, Contractor shall obtain a Water Use Permit from Santa Rosa Water and rent a hydrant or bridge meter. Contractor is responsible for the cost of all water and the cost of all deposits, permits and fees.

Contractor is prohibited from operating gate valves or fire hydrants on the City system.

The acquisition of water from the City's water system through un-metered hydrants or other facilities is a violation of City ordinance and State law. The use of water from sources other than the City's water system must be approved by the Engineer in advance of the use.

Citations and fines will be levied for violation of these and other utility regulations and deductions will be made from payments consistent with Section 7-1.02A(1) of the Standard Specifications.

6-4.01B Water Utility Notification: Contractors or parties requiring work of any kind by Santa Rosa Water forces shall request such services a minimum of 48 hours in advance of the time such services are desired. Work requests which will involve Santa Rosa Water forces for more than eight hours or an extensive number of City parts shall be requested a minimum of seven calendar days in advance.

If it is necessary to terminate or disrupt utility service to any customer, Contractor shall make the request for such work by City forces an additional 72 hours (three additional working days for a total of five working days advance notice) in advance of the time such services are desired to allow affected customers a minimum of 72 hours' notice. Contractors who fail to keep field appointments will be billed for scheduled Santa Rosa Water crew standby time which was used and the Contractor shall bear the costs incurred by Santa Rosa Water for re-notification of customers.

Santa Rosa Water crews work a 9/80 schedule. This schedule may prohibit shutdowns for tie-ins on alternating Fridays. After hours work or weekend work may be performed if prior authorization from the Engineer is obtained.

Other than the hours specified in this Invitation for Bids, requests by Contractor for after hours or weekend work is to be avoided whenever possible, unless directed by the Engineer. Any overtime costs incurred by City for such work shall be borne by Contractor.

Interruption of utilities service to commercial customers shall be coordinated with the customer to minimize disruption to the enterprise to the greatest extent practicable. After notification by the Contractor of the need, Santa Rosa Water will contact all commercial customers and inform Contractor accordingly.

6-4.01C Water Facility Damage: All damage caused to the City's water system shall be immediately reported to the Engineer.

Damage caused to the City's water system by Contractor's operations shall be repaired by the Contractor at Contractor's sole expense in a manner satisfactory to Santa Rosa Water. Such repairs shall not be charged to the City or any City project. All repair work shall be witnessed and approved by Santa Rosa Water prior to backfilling the excavation. The City will require re-excavation if backfilling occurs prior to inspection, which costs shall be borne by Contractor.

Contractor is responsible for, at its sole cost and expense, the repair and remediation of damage to property and facilities caused by any of the following circumstances:

- a. Contractor fails to make a written request for a markout or begins excavation without providing Santa Rosa Water a reasonable opportunity to mark facilities;

- b. Contractor destroys markouts;
- c. Contractor fails to perform hand digging or probing for utilities near markouts; or
- d. Contractor fails to use reasonable caution, regardless of whether markouts are present or clear. Reasonable caution includes any efforts to avoid damaging existing facilities, such as when excavating in the vicinity of water mains.

City may, in its discretion, opt to make the repairs for which Contractor is responsible with its own forces. In such cases, the repairs will be made at Contractor's expense in accordance with the emergency repair rate schedule of Santa Rosa Water. The City may make repairs whenever restoration of service requires extraordinary speed or special equipment. Contractor will be billed accordingly and City shall have the right and option to withhold payment hereunder, or a portion thereof, for any such costs billed but not promptly paid by Contractor.

6-4.02 Salvage: All valves, hydrants, and other appurtenances of the water system that are the property of City and removed by Contractor shall be delivered to the City's Municipal Services Center (55 Stony Point Road) unless Contractor has obtained specific written approval from Santa Rosa Water to otherwise dispose of the materials.

6-4.03 Trade Names and Alternatives: Unless otherwise specified, material and equipment specifications that identify a particular patent, trade name or manufacturer, may be satisfied through substitute materials and equipment accepted by the City. Contractor may offer substitute materials and equipment of equal or better quality to the City. Any such offer shall be made in writing to the Engineer at least four weeks in advance of the time Contractor wishes to order the materials or equipment. Contractor shall include sufficient data which, together with any other information the Engineer may require, will enable the Engineer to determine the acceptability of the materials and equipment. When the substitute materials or equipment necessitate changes to any part of the work, the information shall include drawings and details showing all such changes and Contractor shall perform these changes as a part of any acceptance of substitute materials or equipment. The use of substituted materials and equipment will be permitted only after written acceptance of the materials and equipment by the Engineer. Such acceptance shall not relieve the Contractor from full responsibility for the sufficiency, quality and performance of the substitute materials and equipment.

The City will not, under any circumstances, acknowledge or consider any offers to accept substitute materials or equipment between the dates of public notice of advertisement and the bid opening.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

7-1.02A(1) Forfeitures for Health and Safety Violations: Contractor shall comply with all applicable provisions of the Santa Rosa City Code and any failure to do so shall constitute a breach of the Contract. In the event of any violation of the Santa Rosa City Code that may impact public health and safety, including, but not limited to Chapter 17-12, "Storm Water" and Chapter 13-04, "Street Encroachments," City shall have the right to impose a charge against Contractor in an amount equal to \$500.00 per violation per day. Prior to the imposition of any charge hereunder, City shall first provide a written notice to Contractor of the violation and setting forth a reasonable period of time for Contractor to cure the violation(s). In the event Contractor fails to cure any such violation within the time provided, City shall have the right, in addition to all other rights and remedies available to City, to deduct and withhold as a permanent forfeiture by Contractor the appropriate amounts from any payment otherwise due Contractor under this Contract.

7-1.02K(2) Wages: Pursuant to Labor Code sections 1770 *et seq.*, each laborer or mechanic of Contractor or any subcontractor engaged in work on the project under this contract shall be paid not less than the hourly wage rate of per diem wages set forth in the prevailing wage rate schedule published by the Director of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any subcontractor and such laborers and mechanics. A copy of the schedule of prevailing wage rates can be obtained online at www.dir.ca.gov or from City of Transportation and Public Works at 69 Stony Circle, Santa Rosa.

Any laborer or mechanic employed to perform work on the public works project under this Contract, which work is not covered by any of the foregoing classifications, shall be paid not less than the prevailing wage rate of per diem wages specified herein for the classification which most nearly corresponds to the work to be performed by the worker.

The foregoing specified prevailing wage rates are minimum rates only, and Contractor may pay any wage rate in excess of the applicable rate.

Pursuant to Labor Code Section 1775, Contractor as a penalty to the owner shall forfeit not more than \$200.00 for each calendar day, or a portion thereof, for each worker paid less than the prevailing wage rate established by City of Industrial Relations for such work or craft in which such worker is employed. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which the worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

Contractor shall only provide prevailing wage reports upon written request from City.

7-1.02K(4) Apprentices: Contractor agrees to comply with Chapter 1, Part 7, Division 2, sections 1777.5 *et seq.* of the California Labor Code. These sections require contractors and subcontractors to employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice work for each five hours of journeyman work (unless an exception is granted in accordance with Section 1777.5), and the contractors and subcontractors shall not discriminate among otherwise qualified employees as apprentices solely on the ground of sex, race, religion, creed, national origin, ancestry, or color. Only apprentices as defined in Labor Code section 3077, who are in training under apprenticeship standards and who have written apprentice agreements will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions is fixed with the prime contractor for all apprenticeable occupations.

7-1.02K(6)(a)(1) Notice to Vendors: Attention is directed to the current OSHA Standards. All equipment, tools and materials which are furnished and/or installed as part of this Contract shall meet or exceed the aforementioned standards in order to be considered acceptable.

7-1.02K(6)(b) Excavation Safety: When the digging or excavation occurs during project construction, Contractor shall:

- a. Promptly notify City in writing of the following conditions before any such conditions are disturbed:
 1. Material that the Contractor believes may be hazardous waste as defined in Health and Safety Code section 25117 that is required to be removed to a Class I, Class II or Class III disposal site in accordance with provisions of existing law;
 2. Subsurface or latent physical conditions at the site differing from those indicated in the Invitation for Bids; and
 3. Physical conditions at the site of any unusual nature, materially different from those ordinarily encountered and generally recognized as inherent in the type of work under the Contract.
- b. The City will investigate the conditions and will issue a change order under the terms of the Contract if it finds that the conditions warrant it.
- c. If a dispute arises between City and Contractor as to whether a change order is warranted, Contractor shall not be excused from any scheduled completion date provided for in the Contract, but shall proceed with all work to be performed under the Contract.

7-1.02K(6)(b)(1) Trench Excavation Safety Plans: When the estimated cost for the excavation of any trench or trenches five feet or more in depth will exceed \$25,000.00, Contractor shall submit to the Engineer in advance of excavation a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the construction safety orders, or if the trench is anticipated to be greater than 20 feet, the plan shall be prepared by a registered civil or structural engineer.

A permit to do the above described work shall be obtained from the State of California, Division of Industrial Safety. Proof of such permit shall be submitted to the Engineer prior to starting the trench work.

Full compensation for complying with the provisions of this section shall be considered as included in the Contract price and no additional allowance will be made for the work.

7-1.02K(6)(d) Confined Space Safety: Any confined space entry for this project, including but not limited to manhole or water storage tank entry, will require a confined space entry permit pursuant to Cal/OSHA regulations as set forth in title 8 California Code of Regulations (CCR) sections 5157 or 5158. Confined space entry shall have the meaning ascribed in title 8 CCR sections 5157 and 5158. For any confined space entry for construction operations regulated by title 8 CCR section 1502, Contractor shall comply with title 8 CCR section 5158, "Other Confined Space Operations." For any other confined space operations, Contractor shall comply with title 8 CCR section 5157, "Permit-Required Confined Spaces."

Attention is directed to the technical specifications in the Special Provisions for information regarding entry to any City maintained confined space. Pursuant to title 8 CCR section 5157, Contractor is required to obtain any available information regarding hazards and operations for any City maintained confined spaces. The City maintained Confined Space Entry Manual is available for viewing at City of Utilities or Transportation and Public Works office at 69 Stony Circle, Santa Rosa.

Contractor shall immediately inform the Engineer of any previously unidentified hazards confronted or created during confined space entry.

7-1.02L(2)(a) Patents and Royalties: All fees, royalties, or claims for any patented invention, article, process or method that may be used upon or in any manner connected with the work under this Contract shall be paid by Contractor. Contractor and its sureties shall protect and hold harmless City and its officers, agents, and employees from any and all demands made for such fees royalties or claims brought or made by any third party, and before the final payment is made on the account of the Contract, Contractor shall, if requested by City, furnish acceptable proof of a proper release from all such claims and liabilities.

Should Contractor, its officers, agents, or employees, or any one of them be enjoined from furnishing or using any invention, article, material, or plans supplied or required to be supplied or used under the Contract, Contractor shall promptly substitute other articles, materials, or appliances in lieu thereof of equal efficiency, quality, finish, suitability, and market value, and satisfactory in all respects to the Engineer. In the event that the Engineer elects, in lieu of such substitution, to have supplied and to retain and use any such invention, article, materials, or plans as may be required to be supplied by the Contract, Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for City, its officers, agents, and employees, or any one of them to use such invention, article, materials, or appliance without being disturbed or in any way interfered with by any proceeding in law of equity on account thereof. Should Contractor neglect or refuse to make the substitution promptly or to pay such royalties and secure such licenses as may be necessary, then in that event the Engineer shall have the right to make such substitutions or City may pay such royalties and secure such licenses and charge Contractor even though final payment under the Contract may have been made.

7-1.02M(3) Mined Materials: California Public Contract Code section 20676 prohibits surface mining operators which are subject to the Surface Mining and Reclamation Act of 1975 (SMARA) from selling California mined construction material to the City unless the operator is identified in a list referred as the **3098 List**. The List, which is maintained by City of Conservation's Office of Mine Reclamation (OMR), changes throughout the year and can be viewed at the OMR website: http://www.consrv.ca.gov/OMR/ab_3098_list/index.htm. To confirm whether or not a specific operator is on the List at any given time, Contractor shall call the OMR at (916)323-9198.

7-1.03A Maintaining Traffic: Attention is directed to Sections 7-1.04 of the Standard Specifications and to the following modifications thereof.

If construction is within City owned right-of-way, provisions shall be made for the safe passage of public traffic through the work site at all times consistent with the requirements of Santa Rosa City Code Chapter 13-04.

Except for projects to be performed under a minor contract, Contractor shall install and maintain project identification signs at each end of the project or as directed by the Engineer two weeks prior to any construction activity. City shall furnish the appropriate sign panels upon request from Contractor. To mount the sign panels, Contractor shall furnish and install 4" X 4" posts or mount by other appropriate methods as approved by the Engineer. These sign panels shall be returned to the City Corporation Yard at 55 Stony Point Road after completion of the project.

Two weeks prior to any construction activity, advance notice signs for road closures shall be furnished and installed by Contractor at each end of the project and shall remain in place throughout the duration of the subject closure. Details of panel construction and lettering shall be approved by the Engineer.

Contractor shall furnish, install, and maintain at its expense all barricades, signs, lights, and other devices necessary to adequately warn of any obstructions to the traveled and pedestrian way and provide flaggers as necessary for the safety of public traffic and pedestrians and to provide access to property adjacent to the work site and Contractor shall comply with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101, *et seq.*) (ADA) and any regulations and guidelines issued pursuant to the ADA.

Contractor shall comply with the current edition of the California Manual of Uniform Traffic Control Devices (CA MUTCD) for all items related to traffic within the work site.

Rain and other occurrences that may cause the suspension or delay of the work shall in no way relieve Contractor of its responsibility to provide traffic control and public access through the work site as specified herein. At all times, Contractor shall keep at the work site such materials, forces and equipment as may be necessary to keep roads, streets, and driveways within the work site open to traffic and in good repair and shall expedite the passage of such traffic, using such forces and equipment as may be necessary.

Should Contractor fail, in the opinion of the Engineer, to provide all the materials, forces and equipment necessary to maintain traffic through the work site as set forth herein, City may take steps necessary to remedy any such failure, including but not limited to causing such work to be performed and/or suspending any further work under the Contract. Any such remedial cost and expense incurred by the City, plus an administrative charge of 15%, shall be immediately due and payable by Contractor and may be deducted from any amounts owed to Contractor hereunder. In the event there are insufficient sums owed to Contractor hereunder to cover the foregoing costs and charges, City shall have the right to pursue any other remedy to recover the same, including but not limited to, proceeding against any surety or bond in favor of City. City's rights under Section 7-1.02 are intended to be in addition to and not in lieu of any charges imposed by City against Contractor under Section 7-1.02A(1) above for violations of the Santa Rosa City Code.

Contractor shall be responsible for informing emergency response agencies operating within the area of the work of obstructions to either public or private roads caused by reason of Contractor's operations hereunder.

Contractor shall make provisions for the safe passage of pedestrians around the project work site at all times.

8 PROSECUTION AND PROGRESS

8-1.01A Assignments: Once awarded, this Contract shall not be transferred, assigned, or sub-contracted, except as herein expressly provided without the prior written consent of the City in the City's sole and absolute discretion. See Section 5-1.12 of the Standard Specifications.

8-1.04B Standard Start: Contractor shall begin work within ten calendar days after the date authorized in the Notice to Proceed and shall diligently prosecute the Contract to completion before the expiration of:

90 WORKING DAYS (Not including 90 additional Calendar Days for Landscape Maintenance)

8-1.05 Time: Working days will be counted beginning on the day Contractor begins work or on the tenth day after the date authorized to begin work in the Notice to Proceed, whichever occurs first.

Unless otherwise directed by Engineer, Contractor shall not conduct any activities that generate noise earlier than 7:00 a.m. or later than 7:00 p.m.

Some City offices may be closed every other Friday. However, materials testing, survey, water system and inspection services will be provided on those days (except holidays). Any additional costs that may be associated with office closure on every other Friday shall be the sole responsibility of Contractor and no additional compensation shall be allowed therefor.

Early Completion Incentive: Contractor shall have access to the City Hall parking lot adjacent to D Street, as shown on the ADA plan sheet ("Parking Area"), for thirty (30) consecutive Working Days for the purpose of construction, staging and equipment storage. City shall pay Contractor **Five Hundred Dollars (\$500.00)** for every Working Day remaining in the thirty Working Day period during which parking in the parking lot has been fully restored. Upon approval of the Engineer, and as specified in the Contractor's traffic control plan, Contractor will be allowed to use the metered parking area adjacent to City Hall on 1st Street for staging and equipment storage.

Late Completion Disincentive: All work impacting parking in the Parking Area shall be completed within 30 consecutive Working Days. In the event that such work is not completed in the Parking Area or parking is not made fully available for City use after 30 consecutive Working Days, or as otherwise approved by the Engineer, the City shall deduct **One Thousand Dollars (\$1,000.00)** per Working Day from payments due under the Contract. This amount is in addition to any Liquidated Damages specified in section 8-1.10.

8-1.10 Liquidated Damages: Contractor hereby agrees that Contractor shall pay to the City liquidated damages for each and every calendar day delay over and above the number of working days prescribed above for finishing the work in the amount shown in Section 8-1.10 of the Standard Specifications.

8-1.14 Contract Termination

8-1.14A General: The Engineer may terminate the Contract upon written notice of termination to Contractor if it serves the City's best interests.

8-1.14B Relief from Responsibility for Work: Upon receiving a termination notice:

1. Stop work
2. Notify subcontractors and suppliers of the Contract termination and stop Contract-related work
3. Perform the Engineer-ordered work to secure the job site for termination

4. Remove equipment
5. Subject to the Engineer's authorization, settle termination-related claims and liabilities involving subcontractors and suppliers; assign to City the rights, titles, or interests held by you with respect to these parties.

8-1.14C Responsibility for Materials: Upon receiving a termination notice, protect unused material until:

1. Contractor submits an inventory of materials already produced, purchased, or ordered but not yet used; include the location of the material.
2. The Engineer identifies materials that will be retained by City. Submit bills of sales or other records of material title.
3. The Engineer confirms that unused materials paid by progress payment and materials furnished by City have been delivered and stored as ordered.
4. The titles are transferred for materials purchased by City.

Dispose of materials that will not be retained by City.

8-1.14D Contract Acceptance after Termination: The Engineer recommends Contract acceptance after determining completion of:

1. Work ordered to be completed before termination
2. Other work ordered to secure the project before termination
3. Material delivery and title transfer

City pays Contractor under section 9-1.17.

8-1.14E Payment Adjustment for Termination: If the Engineer issues a termination notice, the Engineer determines payment for termination based on the following:

1. Direct cost for the work:
 - 1.1. Including:
 - 1.1.1. Mobilization.
 - 1.1.2. Demobilization.
 - 1.1.3. Securing the job site for termination.
 - 1.1.4. Losses from the sale of materials.
 - 1.2. Not including:
 - 1.2.1. Cost of materials Contractor keeps.
 - 1.2.2. Profit realized from the sale of materials.
 - 1.2.3. Cost of material damaged by:
 - 1.2.3.1. Act of God.
 - 1.2.3.2. Act of a public enemy.
 - 1.2.3.3. Fire.
 - 1.2.3.4. Flood.
 - 1.2.3.5. Governor-declared state of emergency.
 - 1.2.3.6. Landslide.
 - 1.2.3.7. Tsunami.
 - 1.2.4. Other credits.
2. Cost of remedial work, as estimated by the Engineer, is not reimbursed.
3. Allowance for profit not to exceed 4 percent of the cost of the work. Prove a likelihood of having made a profit had the Contract not been terminated.
4. Material handling costs for material returned to the vendor or disposed of as ordered.
5. Costs in determining the payment adjustment due to the termination, excluding attorneys fees and litigation costs.

Termination of the Contract does not relieve the surety of its obligation for any just claims arising out of the work performed.

9 MEASUREMENT AND PAYMENT

9-1.04 Force Account Work: All work done on a force account basis shall be recorded daily on report sheets prepared by Contractor and signed by both the Engineer and Contractor. Such reports shall thereafter be considered the true record of force account work performed during the project. Such reports shall be furnished to the Engineer and a copy retained by Contractor.

All extensions of labor, equipment, and material costs shall be completed by Contractor and submitted to the Engineer within 30 days of the completion of the extra work. Completed and extended extra work reports received later than the times herein prescribed may be deemed invalid and rejected without payment at the discretion of the Engineer.

9-1.16 Progress Payments – Major Contracts: Once each month for progress pay purposes for “major contracts” as defined in Santa Rosa City Code section 3.44-020, the City will prepare a written estimate of the total amount of completed work and accepted materials purchased by Contractor but not installed. The City shall retain five percent of such estimated value of the completed work and the unused materials and pay Contractor the balance after deducting all previous payments and all sums to be retained under the provisions of the Contract. No such estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract or when, in the Engineer’s judgment, the total value of the completed work since the last estimate is less than \$500.00. No such estimate or payment shall be construed to be an acceptance of any defective work or improper materials.

Within 15 days after the completion of the work, the Engineer will prepare a written semi-final estimate of the proposed final quantities of work completed under the Contract and the value of such work and will submit such estimate to Contractor. The City shall retain five percent of such estimated value of the work done and shall pay to Contractor the balance after deducting all amounts to be retained under the provisions of the Contract.

The City may, at its option and at any time, retain out of any amounts due Contractor sums sufficient to cover any unpaid claims of City or others, provided that sworn statements of all non-City claims shall have been filed with the Director of Finance.

The City shall not make payments under this section for “minor contracts” as defined in Santa Rosa City Code section 3.44-020.

9-1.16E(6) Substitution of Securities for Withheld Amounts: Pursuant to Public Contract Code section 22300, securities may be substituted for any moneys withheld by City to ensure performance under this Contract, provided that substitution of securities provisions shall not be required in contracts in which there will be financing provided by the Farmer’s Home Administration of the United States Department of Agriculture pursuant to the Consolidated Farm and Rural Development Act (7 USC sections 1921 *et seq.*), and where federal regulations or policies or both do not allow the substitution of securities. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with the City, or with a state or federally chartered bank as the escrow agent, which shall then pay such moneys to Contractor. The Director of Finance is authorized to execute substitution of securities agreements on behalf of the City. The City will return the securities to Contractor upon satisfactory completion of the Contract as determined by City in its sole discretion and the resolution of all outstanding claims against the securities. Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

Securities eligible for investment under this section shall include those listed in Government Code section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit

accounts, standby letters of credit or any other security mutually agreed to by Contractor and the City, provided that the substituted security is equal to or not less than five percent of the Contract amount.

Security substitutions must be submitted by Contractor and approved by City prior to the time of the first progress payment to be made under the Contract. No other method of substituting securities for retention will be accepted. The security substitution shall be done only upon execution of an agreement satisfactory to City which includes the following provisions:

- a. The amount of securities to be deposited;
- b. The terms and conditions of conversion to cash in case of the default of Contractor;
and
- c. The procedure for return of securities upon completion of the Contract.

9-1.17D Final Payment and Claims: The processing of payment of the final estimate shall not be commenced less than 35 days after the date of recording of the Notice of Completion with the County Recorder's Office. Contractor is advised that it takes approximately ten days for a check to be issued following a request for payment.

Contractor shall submit its written statement of all claims for additional compensation under the Contract to the Engineer within 15 days after submission to Contractor of the semi-final estimate.

If Contractor does not file a claim within the 15 day period, or upon Contractor's approval, the Engineer will issue a final written estimate and the City shall pay to Contractor the entire sum due after deducting all previous payments, if any, and all amounts to be retained under the provisions of the Contract.

If Contractor files a claim within the 15 day period, the Engineer shall then consider and investigate such claim, and shall make such revision in the final quantities as the Engineer may find to be due, and shall then make and issue a final written estimate. The City will pay the amount due, after deducting all previous payments, if any, and amounts to be retained under the provisions of the Contract.

Any and all prior partial estimates and payments shall be subject to correction in the final estimate and payment.

The final estimate shall be conclusive and binding against both parties to the Contract on all questions relating to the performance of the Contract and the amount of work done thereunder and compensation therefor, except in the case of gross error.

9-1.17D(3) Final Determination of Claims: Claims filed by Contractor shall be in sufficient detail to enable the Engineer to determine the basis and amount of the claims. If additional information is required by the Engineer, Contractor shall provide such information to the Engineer no later than the 15th day after receipt of the written request from the Engineer. If the 15th day falls on a weekend, holiday, or day City offices are closed, then the information shall be provided to the Engineer no later than close of the next business day. Failure to submit the requested information to the Engineer within the time specified will be sufficient cause for denying the claim.

Contractor shall keep full and complete records of the costs and additional time incurred for any work for which a claim for additional compensation is made. The Engineer or any designated claim investigator or auditor shall have access to those records and any other records as may be required by the Engineer to determine the facts or contentions in the claims. Failure to grant access to such records shall be sufficient cause for denying the claims.

Claims submitted by Contractor shall be accompanied by a notarized certificate containing the following language:

Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code sections 12650 *et seq.*, the undersigned,

_____,
(Name)

_____ of
(Title)

(Contractor)

hereby certifies that the claim for additional compensation made herein is supported by a true statement of the actual costs incurred and time expended on this project, and is fully documented by records maintained by Contractor.

Dated _____

/s/ _____

Subscribed and sworn before me this _____ day of

Notary Public

My Commission Expires _____

Failure to submit the notarized certificate will be sufficient cause for denying the claim.

Any claim for overhead expenses, in addition to being certified as stated above, shall be supported by an audit report of an independent Certified Public Accountant. Any such overhead claim shall also be subject to audit by the City at its discretion.

Any costs or expenses incurred by the City in reviewing or auditing any claims that are not supported by Contractor's cost accounting or other records shall be deemed to be damages incurred by the City within the meaning of the California False Claims Act.



TECHNICAL SPECIFICATIONS

FOR

CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT

CONTRACT NO. C01931



2016

SECTION 12

TEMPORARY TRAFFIC CONTROL

12-1 General

12-1.01 General: Construction area traffic control devices shall be installed and maintained in accordance with the applicable sections of these Special Provisions, the Standard Specifications, the current Edition of the California Manual on Uniform Traffic Control Devices (CA MUTCD), the Americans with Disabilities Act (ADA) and as directed by the Engineer.

12-1.03 Flagging Costs: The first paragraph of Section 12-1.03, "Flagging Costs" is amended to read:

The cost of furnishing all flaggers, including transporting flaggers, to provide for passage of public traffic through the work under the provisions in Section 7-1.08, "Public Convenience", and Section 7-1.09, "Public Safety", shall be considered as included in the contract lump sum price paid for traffic control and no additional allowance will be made therefor.

12-3 Traffic-Handling Equipment and Devices

12-3.01 General: Prior to commencing construction which will affect existing vehicular and pedestrian traffic, the Contractor shall submit for review by the Engineer, Traffic Control Plans on 11" x 17" sheets of paper which contains only information specifically related to work zone vehicular and pedestrian traffic control. If the Contractor proposes to use the current edition of the CA MUTCD published by Caltrans in lieu of a traffic control plan, in specific work operations, they shall submit in writing for consideration which Typical Application Diagram will be used and how it will be applied for each work operation. Traffic Control Plans or proposals shall be submitted for review at least two weeks prior to implementation.

Traffic Control Plans shall contain a title block which contains the Contractor's name, address, phone number, project superintendent's name, contract name, dates and hours traffic control will be in effect, and a space for review acknowledgment.

The content of the Traffic Control Plan shall include, but is not limited to, the following:

1. Show location and limits of the work zone.
2. Give dimensions of lanes and parking affected by traffic control that will be open to traffic.
3. Indicate signing, cone placement, and other methods of delineation and reference to appropriate City or Caltrans Standards.
4. Dimension location of signs and cone tapers.
5. Identify streets, parking, and driveways affected by construction and show how they will be handled. Public and employee access to underground parking and the parking areas designated on the Plans must be maintained during construction. The driveway access off of 1st Street may be utilized by the Contractor.
6. Provide a schedule of work showing when the parking lots will be impacted and when they will be again be made available for City use.
7. Show how pedestrian traffic will be handled through the construction site. Pedestrian access must be maintained to the two main entrances to City Hall during business hours. Pedestrian pathways through the work zone shall be in compliance with the requirements of ADA during and after work hours.
8. Demonstrate how two-way street traffic will be maintained.

No work except for installation of project identification signs will be allowed to commence prior to approval of the Work Zone Traffic Control Plans.

12-4 Maintaining Traffic

12-4.01 Maintaining Traffic:

1. The full width of the traveled way shall be open for use by public traffic on Saturday, Sundays and designated legal holiday(s), after 4:00 p.m. on Fridays and the day preceding designated legal holidays, and when construction operations are not actively in progress; unless work has specifically been authorized by the Engineer.
2. The location of traffic control signing, barricades, and other facilities shall be monitored frequently (four to five times per day) by the Contractor to verify their proper location. All traffic signal and other traffic control devices shall be maintained at all times.
3. The Contractor shall conduct his operations so as to cause the minimum obstruction and inconvenience to traffic, maintenance access to the City Hall parking lots as shown on the Plans, and to places of business, multiple dwelling units and residences adjacent to the work. The Contractor shall notify the Engineer of his planned work and utility service interruption at least five working days in advance to allow time to notify residents and businesses.
4. When construction activities will prevent vehicle access to individual driveways the Contractor shall notify the affected businesses and residents per Section 12-1.03, "Traffic Control", of these Special Provisions. **Full access shall be provided to all driveways during non-working hours.**
5. At locations where traffic is routed perpendicular to trench excavation, the excavation shall be conducted in a manner to provide a surface reasonably satisfactory for traffic at all times. Substructure installation or construction shall be conducted on only one-half the width of the roadway at a time, and that portion of the roadway being used by traffic shall be kept open and unobstructed until the opposite side of the roadway is ready for use. Upon completion of the rough grading, the surface of the roadbed shall be brought to a smooth, even condition free from humps and depressions and made satisfactory for traffic.

12-4.01A Construction Traffic: The Contractor shall submit a trucking route along with the traffic controls plans for approval by the Engineer. The route must minimize traffic on residential streets that are not part of the project.

Existing pavement, including curb, gutter, and sidewalk, as well as any fixtures damaged by the Contractor's operations and not shown to be replaced shall be replaced at the Contractor's expense, per City Standards, and to the satisfaction of the Engineer.

12-4.02 Closure Requirements: Attention is directed to Section 7-1.08, "Maintaining Traffic", to Section 5-1.05, "Order of Work," of these Special Provisions.

Exact locations of Project Identification signs and Advance Notice signs (Section 7-1.08 "Maintaining Traffic") shall be determined in the field by the Engineer.

Lane closures will be permitted between the hours of 8:30 a.m. and 4:00 p.m. only. Only one lane at a time may be closed and no lanes shall be closed at any other hours unless specifically approved by the Engineer. The Contractor shall maintain vehicle access to homes, the portion of the parking shown on the plans, the underground parking area, and other properties at all times while work is in progress.

The Contractor shall not park construction vehicles contractor employee vehicles, stage materials or stockpiles in front of any business or driveway access and the Contractor shall maintain access to private parking lots within the block where work is in progress. Construction vehicles shall not be left running for any length of time if parked in front of a business or residential unit.

The Contractor shall keep the City of Santa Rosa Fire Department informed regarding the closure of any traveled way. At a minimum, the Contractor shall call the Fire Department at 543-3535 **and** the Communications Center at 543-3666 **daily** to report any traveled way closure. This means immediately upon closure for that day and again immediately after removal of the closure.

For closures over multiple days, the daily notification still applies. This requirement does not apply for single lane closures on multiple lane streets.

The Contractor shall notify Sonoma County Transit at (707) 585-7516, Superintendent of Golden Gate Transit at (415) 257-4442, Santa Rosa City Bus at (707) 543-3922, Sonoma County Airport Express at (707) 837-8700, the local Postal Service at (707) 526-0113 and Santa Rosa Recycling and Collection at (707) 586-8234 5 calendar days prior to any lane closures or restrictions in turning movements.

If the Contractor has been given an approved Traffic Control Plan that includes road closures, they shall maintain vehicular access to homes and other properties where work is in progress within the closure area.

Where necessary, and only after receiving written approval from the Engineer, the Contractor may temporarily suspend curb side parking in their immediate work zone. Notification to businesses and residents shall be hand delivered at least 72 hours prior to construction in the affected areas.

Notification shall be as follows:

1. A notice placed on the front door of each home or business where curb side parking will be suspended and attempt made to notify each business or resident verbally that work will be underway within the block and that curb side parking will be suspended during stated working hours and request that vehicles be parked out of the roadway by 8:00 a.m. Service of notice shall not bar use of cars within the block, as individual plans change and emergencies arise.
2. Type 1 barricades every 50 feet adjacent to the curb where parking will be suspended with a notice posted on the barricade stating specific dates and times that curb side parking will be temporarily suspended. If work will not take place in the posted area, then Contractor shall remove "No Parking" notices.
3. The Contractor must keep the Traffic Control Plan schedule up to date and provide the Engineer at least 5 working days' notice related parking impacts.

Cross streets will require maintenance of at least one-half (1/2) width of each street for traffic purposes, unless a parallel route is approved by the Engineer. Flagging will only be allowed between the hours of 8:30 am and 4:00 pm.

Barricades and flaggers shall be positioned to allow safe turns at intersections and curves.

12-7 Temporary Pedestrian Walkways

12-7.01 Pedestrian Traffic Control: The Contractor is directed to Chapter 6D, Pedestrian and Worker Safety, in the CA MUTCD, the improvement plans and these Special Provisions.

Pedestrians shall be provided with a safe convenient and accessible path that, at a minimum, replicates the most desirable characteristics of the existing sidewalk, path or footpath. At no point along the road shall the sidewalks on both sides of the road be closed at the same time.

The Contractor shall construct and maintain temporary pedestrian pathways through the work zone, where required, that shall be in compliance with the requirements of the Americans with Disabilities Act (ADA), and the CA MUTCD.

Pedestrian routes shall not be impacted for the purposes of any non-construction activities such as parking of vehicles or equipment, or stock piling of materials. Pedestrians shall not be led into conflicts with work site vehicles, equipment or operations.

Pedestrian routes shall be open and accessible at the end of the work day unless an alternate ADA compliant route has been approved by the Engineer. The construction of curb ramps and/or long sections of sidewalk do not alleviate the Contractor from this requirement.

12-9 Measurement and Payment

12-9.01 Payment: **Traffic Control** shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved in **vehicular and pedestrian** traffic control, including but not limited to, providing, placing, maintaining, and removal of temporary paths and/or ramps, temporary relocation of regulatory signs, changeable message boards, project and public notification signs, flagging, excavation, compaction, furnishing, and placement of asphalt concrete and/or PCC, barricades, toe-rails, hand rails, complying with CA MUTCD Standards for Pedestrian Safety, coordination efforts and any other items necessary for vehicle and pedestrian traffic control not specifically enumerated in the plans or these specifications, and no additional allowance will be made therefor.

SECTION 13

WATER POLLUTION CONTROL

13-1 General: This project is exempt from the State Water Resources Control Board General NPDES Permit for the Discharge of Storm Water related to Construction Activities (Construction General Permit), and not required to have a Storm Water Pollution Prevention Plan (SWPPP), therefore Section 13-3, Storm Water Pollution Prevention Plan, of the Standard Specifications does not apply to this project.

13-2 Water Pollution Control Program: Water Pollution Control shall be performed in accordance with Section 13, Water Pollution Control, of the Standard Specifications and these technical specifications. In addition, construction activities shall comply with:

1. The California Water Quality Control Board, North Coast Region Order No. R1-2009-0050, National Pollutant Discharge Elimination System Municipal Storm Water Permit, Part 8 – Development Construction Program, Sections 1 through 5, commonly referred to as the “Storm Water Permit”. A copy of the Storm Water Permit is available for review at the City of Santa Rosa Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, CA, and at www.srcity.org/stormwaterpermit.
2. The California Stormwater Quality Association Storm Water BMP Handbook for Construction (CASQA Handbook). BMPs shall be selected, installed and maintained in accordance with the latest edition. A copy of the handbook can be viewed at the City of Santa Rosa Department of Transportation and Public Works office at 69 Stony Circle or downloaded from CASQA, <http://www.casqa.org/>.

In this technical specification the CASQA Handbook BMP numbers are appended to the associated Standard Specification sections. If a conflict occurs the CASQA Handbook BMP's shall govern.

13-2.01B Submittals: The Water Pollution Control Program requires a Water Pollution Control Plan to be submitted under this section of the Standard Specifications that shall include a spill contingency plan that establishes clean-up and notification procedures that will be followed in the event of a spill of potentially hazardous, toxic, or polluting materials.

The following contacts shall be listed in the water pollution control plan:

1. Santa Rosa Police Dept. (707) 543-3666;
2. REDCOM (707) 565-2121 for Fire, medical and hazardous waste emergencies;
3. City of Santa Rosa Department of Transportation and Public Works (707) 543-3800 (after hours 707-543-3805) for Spill or discharge of non-storm water;
4. Regional Water Quality Control Board (707) 576-2220 for discharges to storm drains or creeks;
5. Contractor emergency and after hour phone numbers.

13-2.01C Training: The Contractor's employees and all Subcontractors shall receive storm water pollution prevention training on site that cover all applicable required Best Management Practices specific to this project including spill prevention, notification, spill cleanup, the BMPs listed and the State Municipal and Construction storm water permit regulations in general. If requested the Contractor shall provide documentation of the training that includes the date, topic covered and the attendees.

13-4 Job Site Management

13-4.03B: Spill Prevention and Control/CASQA Spill Prevention and Control (BMP WM-4):

If a spill occurs at the construction site and the contractor does not take immediate and adequate steps to contain and clean up the spill, especially if rain is threatening or if a discharge to a storm drain or creek occurs or could occur, the City shall have the right, in its sole and absolute discretion, to clean up the spill using City forces or an independent contractor. The cost of any such cleanup, in addition to recovery of any penalty or fine imposed upon the City, plus an administrative charge of fifteen percent (15%) of the costs incurred by the City, shall be deducted from any amounts owed to Contractor hereunder.

In the event there are insufficient amounts owed to Contractor hereunder to cover the foregoing costs and charges, the City shall have the right to pursue any other remedy to recover same, including, but not limited to, proceeding against any surety or bond in favor of the City. The City's rights under this section are intended to be in addition to and not in lieu of any imposed by the City against Contractor for violations of City Code Chapter 17-12, "Storm Water".

13-4.03C(2): Material Storage/CASQA Material Delivery and Storage (BMP WM-1): All stockpiles must be covered and protected from rain and prevented from contributing pollutants.

13-4.03C(3): Stockpile Management/CASQA Stockpile Management (BMP WM-3): Do not block storm water flows.

13-4.03D(1): Waste Management/CASQA Solid Waste Management (BMP WM-5): The Contractor shall dispose of all trash, rubbish, and waste materials of any kind generated by the contractor, subcontractor, or any company hired by the Contractor on a daily basis. All trash receptacles must be covered.

13-4.03D(3): Concrete Waste/CASQA Concrete Waste Management (BMP WM-8): Ensure the containment of concrete washout areas and other washout areas that may contain pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

13-4.03D(4): Sanitary and Septic Waste/CASQA Sanitary and Septic Waste Management (BMP WM-9): Sanitation facilities must be maintained periodically by a licensed service to keep them in good working order and prevent overflows. Portable toilets are required to have secondary containment. Sanitation facilities must be located away from storm drain inlets.

13-4.03D(5): Liquid Waste: Liquid waste includes water generated from excavation dewatering. Minimize transfer piping by locating containers near the excavation to be dewatered while protecting the containers from moving vehicles and equipment.

13-4.03E(1): Water Control and Conservation/CASQA Water Conservation Practices (BMP NS-1 and NS-2)

13-4.03E(3): Vehicle and Equipment Cleaning/CASQA Vehicle and Equipment Cleaning (BMP NS-8)

13-4.03E(4): Vehicle and Equipment Fueling and Maintenance/CASQA Vehicle and Equipment Fueling (BMP NS-9), and CASQA Vehicle and Equipment Maintenance (BMP NS-10)

13-4.03E(7): Paving, Sealing, Sawcutting, Grooving, and Grinding Activities: As listed in Part 9, sections 4 and 5 of the Storm Water Permit, the following additional BMPs shall be implemented for street paving, repaving, reconstruction, patching, digouts or resurfacing.

1. Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions;
2. Install gravel bags and filter fabric or other appropriate inlet protection at all susceptible storm drain inlets and manholes to prevent paving products and tack coat from entering the storm drain;

3. Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or watercourses;
4. Minimize non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt;
5. Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly
6. Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled, or disposed of properly **13-4.03D(5)**;
7. Collect solid waste by shoveling and vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled, or disposed of properly **13-4.03D(5)**;
8. Cover “cold-mix” asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm **13-4.03C(3)**;
9. Cover loads with tarp before haul-off to a storage site, ensuring that trucks are not overloaded;
10. Minimize airborne dust by using water spray during grinding **14-9.03** and;
11. Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or watercourses **13-4.03C(1)**,

13-4.03F: Sweeping/CASQA Street Sweeping and Vacuuming (BMP SE-7)

13-6.03C: Temporary Drainage Inlet Protection/CASQA Storm Drain Inlet Protection (BMP SE-10): All impacted inlets must be protected from pollutant contribution. All BMPs must be inspected and maintained prior to predicted rain.

13-7 Temporary Tracking Control

13-7.01A: Temporary Tracking Control/Stabilized Construction Entrance and Exit (BMP TC-1), Entrance Outlet Tire Wash (BMP TC-3)

13-7.03 Construction/CASQA Stabilized Construction Site Entrance / Exit (BMP TC-1)

13-10 Temporary Linear Sediment Barrier

13-10 Temporary/CASQA Silt Fence and Sand Bag Barrier (BMP SE-1 and SE-8)

13-10.04 Payment: Water Pollution Control program shall be paid for at the **lump sum** price. Which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved in Water Pollution Control Program, including preparing the plan, job site management, compliance to State and local storm water regulations, implementing and maintaining applicable BMPs listed herein and no additional allowance will be made therefor.

SECTION 14

ENVIRONMENTAL STEWARDSHIP

14-9.03A General: Sweeping per section 14-9.03C shall also be performed to prevent and alleviate dust.

Sweeping, covering stockpiles, applying water, and/or dust palliative, to control dust caused by public traffic is not change order work.

14-9.03C Construction: All dust-producing work and unpaved construction sites shall require a minimum watering in the middle and ending of each workday. The frequency of watering shall increase if dust is airborne. Watering shall not produce runoff.

Contractor shall maintain dust control to the satisfaction of the Engineer, 7 days a week, 24 hours per day.

At the end of each work day the Contractor shall thoroughly sweep all streets in the work zone to minimize airborne dust.

At the end of each work week the Contractor shall sweep all streets in the work zone with a commercial street sweeping truck equipped with a rear pick up broom.

At the Engineer's discretion additional sweeping or watering may be required, including the use of a commercial street sweeping truck equipped with a rear pick up broom, at any time or place.

14-9.03D Payment: Full compensation for conforming to this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed.

14-10.01 General: The Contractor shall dispose of all portland cement concrete and asphalt concrete, generated from removal or demolition activities on the project, at a recycler for these materials. The Contractor shall provide receipts verifying delivery and approximate quantity (in tons) of the material delivered to a material recycler.

All other excess materials from the project shall become the property of the Contractor and shall be disposed of by him, at his expense.

14-10.02A(1) Submittals: Submit a Solid Waste Disposal and Recycling Report prior to final acceptance of work performed under the Contract. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project.

14-10.02D Payment: Full compensation for material recycling as specified herein shall be considered as included in the contract prices paid for various items of work, and no additional compensation will be allowed therefor.

SECTION 15

EXISTING FACILITIES

15-1.03A General: Existing facilities disturbed by construction shall conform to the applicable provisions of Section 5-1.36. All existing active utilities, including gas, electrical, and fiber optic lines found to reside in excavated areas shall be supported in place with service maintained during construction.

The Contractor shall be responsible for any damage caused by their operations and any needed repairs shall be completed to the Engineer's satisfaction.

Existing utility trenches and/or structures that are in close proximity to proposed trenches shall be safeguarded in an appropriate manner from damage.

15-1.04 Payment: Full compensation for supporting, removal and disposal of existing utilities and their appurtenances is considered as included in the contract prices paid for various contract items of work and no additional allowance will be made therefor.

15-2.02B Traffic Stripes and Pavement Markings: All traffic stripes, pavement markings or any other traffic markings damaged by the Contractor and not designated on the plans to be removed or replaced shall be replaced to the satisfaction of the Engineer at the expense of the Contractor.

15-2.02C Parking Lot Lighting: All parking lot lights shown on the plans to be removed, preserved and reinstalled must be done in such a manner to prevent any damage. Prior to removal, the Contractor shall inspect each light before removal, document all existing damages and submit a copy to the Engineer. See Section 86 of these Special Provisions.

15-2.02D Parking Lot Light Foundation: All parking lot light foundations shown on the plans to be removed, shall become the property of the Contractor and shall be immediately off-hauled. The Contractor shall dispose of all removed concrete and reinforcement material at a recycler. Burying of broken concrete or asphalt within the limits of the project will not be allowed.

15-2.10B Remove Existing Irrigation Valves, Boxes and Pipes: All existing irrigation valve boxes, valves and pipes shown on the plans to be removed shall become the property of the Contractor and not stored on site. All existing irrigation equipment shown on the plans to be salvaged shall be carefully removed, stored and reinstalled as shown on the plans.

15-2.10C Remove Walkway Curb: Sawcut and remove walkway curb at the locations designated on the project plans and as directed by the Engineer. The sawcut line shall parallel the direction of the proposed path.

15-3.03 Construction: All concrete and asphalt to be removed shall become the property of the Contractor and shall be immediately off-hauled. The Contractor shall dispose of all removed paving material at a recycler for this material. Burying of broken concrete or asphalt within the limits of the project will not be allowed.

All concrete and asphalt which is to be removed from sidewalk, curb, gutter and driveway areas shall be removed to the nearest score mark, construction joint or as directed by the Engineer unless otherwise noted on Project Plans. The edge of existing concrete to remain shall be neat and free of defects. Saw cutting shall be required to achieve this.

Reinforcing steel may be encountered in portions of concrete to be removed and no additional allowance will be made for the removal of such steel.

Irrigation facilities may be encountered during concrete and asphalt removal and replacement. The Contractor shall exercise care in this area and repair any damage done by their operations at no additional cost to the City.

Landscaping and other surfaces or structures shall be restored to original condition at no additional cost to the City.

15-3.04 Payment: Payment for saw cutting, removal and disposal of concrete and asphalt sidewalk, parking lot, walkways, planter areas, driveway areas and parking lot light and foundations shall be included in the contract prices paid for various contract items of work and no additional allowance will be made therefor.

Remove Walkway Curb shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in removing walkway curb as specified herein, and no additional allowance will be made therefor.

Asbestos Cement Pipe: The Contractor is advised that asbestos cement pipe (ACP) will likely be encountered on the project and must be cut, handled, and disposed of according to the Contractor's State Licensing Law and all other applicable laws and regulations. Full compensation for the cutting, removal and disposal of asbestos cement pipe shall be considered as included in the prices paid for various contract items of work and no additional allowance will be made therefor.

15-7 Utility Clearances: *All items noted in this Section shall take place prior to any other construction activities.*

Pothole information provided on the Project Plans shall be for reference use only and shall not be considered as accurate information for any other areas within the project limits.

Contractor shall investigate, confirm and/or determine the exact locations of existing utilities, and verify clearances between existing and proposed utilities and hardscape at crossings and/or known potential conflicts. The Contractor shall determine elevations and alignments of existing utilities at connection points.

The Contractor shall provide all relevant information in writing to the Engineer immediately upon discovery of any conflict. Any delay in notification to the Engineer may delay direction and/or corrective action and a delay claim due to this reason shall not be considered by the City. The Contractor shall not proceed with any work that is in conflict until direction is provided by the Engineer and shall redirect crews to other contract work. All the information required to be obtained per this Section and any other information not noted but relative to the project shall be provided to the Engineer on a set of Plans when the investigative effort is complete.

15-7.01 Payment: Utility Clearances shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in verifying utility clearances, including but not limited to: potholing to verify potential conflicts, grades and alignments of existing facilities to be connected to; excavation; backfill; notification; and coordination and redirection of crews to other contract work *if required*, as specified herein, and no additional allowance will be made therefor.

15-8 Tree Root Pruning: All tree roots two inches and greater on trees to remain which are encountered during excavation must be pruned by hand. The root shall be cut cleanly with a saw to avoid splits.

When digging within the drip line of trees, Contractor shall exercise extreme caution to avoid pulling on roots with excavation equipment. Hand dig around all roots greater than one inch in diameter. The Contractor shall notify the Engineer when encountering roots within the drip line of trees which are greater than one inch. If the Engineer elects to get direction from an arborist the Contractor shall redirect crews to other contract work after safeguarding the area.

15-8.01 Payment: Full compensation for removing and pruning tree roots, hand digging to avoid root damaging roots, and excavating cautiously with respect to tree roots is considered as included in the prices paid for various contract items of work and no additional allowance will be made therefor.

SECTION 16

CLEARING AND GRUBBING

16-1.01 General: Clearing, grubbing, and access shall be confined to the limits shown on the plans and shall not exceed the minimum necessary to complete operations.

The Contractor shall not remove any trees, brush, shrubs, or other natural objects outside the limits of construction as shown on the plans, unless directed by the Engineer.

Any trees, brush, shrubs, or other natural objects not ordered removed by the Engineer which have been removed, altered, or damaged shall be replaced in kind by the Contractor before completion of the project.

All unsuitable material shall be disposed of away from the site by the Contractor. The Contractor shall make all necessary arrangements for disposal of material.

16-1.03 Stump Grinding/Removal: The stumps to be removal shall be shown on the plans, unless otherwise specified in the Special Provisions.

Stump grinding/removal in the planter boxes shall be done in such a manner as to not undermine or damage the planter curbs or existing utilities designated to remain.

All stumps, large roots and other objectionable material shall be removed to a depth of three feet below finished grade or as designated on the plans. The resulting spaces shall be backfilled with material suitable for the planned use.

16-1.06 Payment: **Stump Grinding/Removal** shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in stump removal as specified herein, and no additional allowance will be made therefor.

SECTION 19

EARTHWORK

19-1 General

19-1.01 General: Non-contaminated site: See section 19-2.03B, Surplus Material, of these Special Provisions.

19-1.01A Grading: Grading shall include excavating for swales, path, gathering area, stairs, equipment pad, sidewalk and concrete walls as shown on the project plans and in accordance with these Special Provisions. Grading includes backfill to establish fill slopes as shown on the plans. All cuts and fills to finish grade shall be 2:1 unless otherwise indicated on the plans. The Engineer shall provide reference points and cut sheets for the grading of the site.

19-1.03C Grade Tolerance: When aggregate sub-base or aggregate base are to be placed on the grading plane, the grading plane shall not vary more than 0.05' above or 0.1' below the grade established by the Engineer.

19-2.03B Surplus Material: Surplus soil from this project has been approved for disposal at the City's Pond 2 Decommissioning and Grading Project at 35 Stony Point Road Santa Rosa, CA.

The following Pond 2 surplus soil transport and placement conditions shall be adhered to:

1. Material must be free of Portland cement concrete, asphalt concrete; asphalt and soil grindings associated with roadway excavation and reconstruction;
2. Soil beneath asphalt that was previously oiled for paving is not allowed;
3. Sewer, water or storm drain pipe of any kind or type are not allowed;
4. Concrete; metal; rock greater than 6" in size; vegetation; and other deleterious materials are not allowed;
5. The quantity of trucks and the volume of soil deposited in Pond 2 from this project will be tracked. Truck drivers will be required to sign a log and be subject to periodic inspections to insure that only soil from this project is deposited in Pond 2
6. The Contractor shall spread and compact all project soils deposited into Pond 2 to 85% relative compaction and testing will be provided and performed by the City's materials Engineering Laboratory. The cost of compaction testing will be borne by the City.
7. Contractor shall comply with all disposal regulations such as City, County, and/or State permits and licenses, as may be required.
8. Soil disposal shall be limited to Monday through Friday between the hours of 7:00 am and 4:30 pm. Advanced, 48 hour notice is required to the City inspector prior to starting.
9. Pond 2 site access is directly affected by weather conditions. You should anticipate no access during and for some time after rain events, unless wet weather site conditions are met at your expense.
10. The haul route shall be through the City Municipal Service Yard. A 15 MPH speed limit shall be observed at all times with stopping at all crosswalks and stop signs. No trucks shall access the site via any other route.
11. Tracking of material from the disposal location onto any and all paved surfaces near the pond is not allowed. Should tracking become evident sweeping will be required at your cost no later than the end of day. Dust control shall be provided at all times in accordance with Section 10.
12. The Idling limits on In-Use Off-Road Diesel Vehicles in section 2449 (d) (3) in Title 13, article 4.8, chapter 9, California Code of Regulations (CCR) shall be effective and enforceable.
The City shall reserve the right to unconditionally suspend or revoke disposal at any time at no cost to the City.

19-2.04 Payment: Site Grading shall be a **final pay quantity (F)** paid for at the contract price per **cubic yard**, which price shall include full compensation for all work as specified herein and no additional allowance will be made therefor.

19-5 Compaction: Soil beneath all swales, bioretention and permeable concrete shall not be compacted.

SECTION 20-1

LANDSCAPE PLANTING

20-1.01 General

20-1.01A Related Documents: The General and Supplementary Conditions and General Requirements apply to the work herein specified.

20-1.01B Description:

1. Work to be Included:
 - a. Furnish and place topsoil, import soil, mulch, fertilizer, organic materials, and all other materials incidental to planting work.
 - b. Furnish all plant materials (trees, shrubs, seed, ground covers, and plant labels).
 - c. Furnish all labor, equipment and materials necessary for the installation of plant materials according to these Specifications and the Plans
2. Related Work Described Elsewhere:
 - a. Section 20-2 Irrigation: Irrigation system shall be installed, automated, and operative before beginning planting operation. Some exceptions may apply per approval of the engineer.
 - b. Section 15 Existing Facilities: Contractor shall fully acquaint himself with the existing conditions particularly in reference to underground piping. Any damage caused by the Contractor to work of other trades shall be repaired by him at no cost to the City.
 - c. Section 19 Earthwork: Close coordination shall be maintained with those Contractors performing rough grading operations and installing utilities and pavement to insure proper timing of the work.

20-1.01C Requirements of Regulatory Agencies: Perform work in accordance with all applicable laws, codes, and regulations required by the City of Santa Rosa and any other authorities having jurisdiction over such work. Provide for all inspections and permits required by Federal, State, and local authorities in furnishing, transporting, and installing materials.

Certificates of inspection required by law for transportation shall accompany invoice for each shipment of plants. File copies of certificates with Engineer after acceptance of material. Inspection by Federal or State Governments at place of growth does not preclude rejection of plants at project site.

20-1.01D Quality Assurance: Personnel: All planting work shall be performed by personnel familiar with planting procedures under the supervision of a qualified foreman with 5 years of landscape installation experiences on projects of equal size and scope.

Installing contractor shall have successfully completed within the last 3 years at least 3 planting applications similar in type and size to that of this project and who will assign mechanics from these earlier applications to this project, of which one will serve as lead mechanic.

Codes and Standards: Nursery stock shall meet the standards of the current edition of the "Agricultural Code of California" and the "Regulations of the Director of Agriculture Pertaining to Nursery Stock" as to grading and quality. They shall be true to type and name in accordance with "Standardized Plant Names", Second Edition.

Substitutions: Substitutions of plant materials will not be permitted unless authorized in writing by the Engineer. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of Contract price: Such proof shall be substantiated and submitted in writing to Engineer. A maximum of 15 days after Notice to Proceed, the Contractor shall submit a list of available plants with a list of all nurseries and plant brokers contacted. These provisions shall not relieve Contractor of the responsibility of obtaining specified materials in advance if special growing conditions or other arrangements must be made in order to supply specified materials. Contractor shall secure all plant materials within 20 days after Notice to Proceed in order to guarantee plant availability.

The Engineer reserves the right to require the Contractor to replace at the Contractor's cost any plants which the Contractor has installed without the Engineer's approval.

Plants shall be subject to inspection and approval of the Engineer at place of growth or upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during progress of the work. Wherever the terms "approve", "approval" or "approved" are used herein they mean approval of the Engineer in writing. Plants which are contract grown shall meet or exceed all nursery standards for health and size. Plants which do not meet standards shall be rejected and the Contractor shall provide nursery grown stock as required at no additional cost to the contract.

Plant Certification: All plants must meet specifications of Federal, State, and County laws requiring inspection for plant disease and insect infestations. Inspection certifications required by law shall accompany each shipment, invoice and order for stock.

20-1.01E Submittals:

Furnish 6 copies of manufacturers' literature for the following items:

- a. Organic Fertilizer
- b. Mulch
- c. Certificates of Inspection
- d. Aluminum
- e. Root Barrier
- f. Tree Stakes
- g. Rubber Tree Ties
- h. Plant supplier list
- i. Delivery tags for all soil amendment, soils compost and mulch which are delivered to the site
- j. Fertilizer Tablets

Provide analysis from an approved testing laboratory for:

- a. Existing topsoil
- b. Topsoil
- c. Organic Compost
- d. Provide 4 preliminary soils tests for review of percolation rates
- e. Provide soil analysis report from an approved testing laboratory per Planting Notes: Soils-1-a, sheet L0.2

Submit one (1) quart sample each of all soils, mulches and organic compost.

Foreman's Qualification Statement

Contractor Planting Qualification Statement

All submittal data shall be forwarded in a single package to the Engineer within 60 days of award of the contract.

Contractor shall select and tag all plant material within 20 days of Notice to Proceed. Plant material which is not available, or not possible to contract grow shall be noted to the Engineer within 14 days of award of contract so substitutions may be selected. Contractor shall source material from out of state or through a plant broker if not locally available. Contractor shall submit lists of all nurseries and plant brokers contacted for availability.

20-1.01F Samples and Tests: Engineer reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request by Engineer. Rejected materials shall be immediately removed from the site at Contractor's expense. Landscape soils which do not meet the recommendations of the original soils tests, shall be re-amended as required at no additional cost to the contract. Cost of testing of materials not meeting specifications shall be paid by Contractor.

20-1.01G Selection and Tagging of Plant Material: Plants shall be subject to inspection and approval by Engineer at place of growth if the Engineer so chooses, and upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during progress of the work. Submit written request for inspection of plant material at place of growth to Engineer. Written request shall state the place of growth and quantity of plants to be inspected. Engineer reserves right to refuse inspection at this time if, in his judgment, a sufficient quantity of plants is not available for inspection.

20-1.01H Job Conditions:

1. Delivery:
 - a. Deliver standard products to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade mark and conformance to state law.
 - b. Deliver plants with identification labels.
 - Labels should state correct name and size.
 - Use durable, water-proof labels with water resistant ink that will remain legible for at least 60 days.
 - c. Protect plant materials during transport to prevent damage to rootball or desiccation of leaves.
 - d. Remove unacceptable plant materials immediately from job site.
 - e. Contractor shall endeavor to coordinate delivery with installation schedule so that plant material is installed on the same day.
2. Storage:
 - a. Contractor shall maintain the plant material properly between delivery and planting. This includes protection from animals and vandals, proper watering, and feeding if necessary.
 - b. Shade plants shall be stored in the shade, and sun plants shall be stored in the sun.
3. Timing: Under no circumstances shall any work be performed if the temperature exceeds 90 degrees or is below 40 degrees. No planting shall be done with the soil saturated with water.

20-1.01I Protection of Existing Plants to Remain:

1. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of any existing plant to remain except as actually required for construction in those areas.
2. Provide barricades, fences or other barriers as necessary at the drip line to protect existing plants to remain from damage during construction.
3. Notify Engineer in any case where Contractor feels grading or other construction called for by Contract Documents may damage existing plants to remain.
4. If existing plants to remain are damaged during construction, Contractor shall replace such plants of the same species and size as those damaged at no cost to the contract. Determination of extent of damage and value of damaged plant shall rest solely with Engineer.

20-1.02 - Products

20-1.02A – Soil Amendments:

1. The organic amendments, imported soils, and fertilizer rates and quantities listed in 20-1.03 are to be used for bid basis only. Contractor shall arrange and pay for testing by an accredited soils laboratory approved by Engineer. Test the existing site soil after demolition and rough grading operations are completed. Take samples from multiple site locations to be selected by Engineer. Mark location of each sample on field set plan for reference and label each sample. Adjust the quantities of soil amendments and fertilizer per soil lab written report recommendation. After review and written approval by the Engineer, amend the soils according to said laboratory's recommendations. The approved soils laboratory recommendations shall be considered a part of this specification.

The base bid shall include cost of all testing site soils and organic amendments noted in this spec section.

Within 20 days of Notice to Proceed, the landscape Contractor shall submit 4 preliminary soils tests for review of percolation rates, PH, Boron, salinity, and all other standard nutrients. The Engineer reserves the right to adjust plant material specified if the site soil is deemed detrimental to those specified.

Contractor shall submit a second soil analysis report as required per plan sheet L0.2.

2. Topsoil: Provide topsoil as required to complete landscape work. Topsoil to be furnished shall be fertile and friable, possessing characteristics of representative productive soils on the site. It shall not contain toxic substances which may be harmful to plant growth. If herbicide contamination is suspected then a radish/rye grass growth trial must be performed. Consult with Engineer prior to decision to test. It shall be uniformly textured and free of all objectionable foreign materials, oil, or chemicals which may be injurious to plant growth. Natural topsoil shall possess a pH factor between 5.5 and 7.5, a sodium adsorption ratio (SAR) of less than 8, a boron concentration of the saturation extract of less than 1 ppm, and salinity of the saturation extract at 25 degrees C. of less than 4.0 milliohms per centimeter. Obtain topsoil from naturally well- drained sites where topsoil occurs in a depth of not less than 4 inches; do not obtain from bogs or marshes. Topsoil from the project stockpile which meets the requirements is acceptable.
3. Imported Topsoil: Topsoil shall be tested by an approved soils laboratory for compatibility with existing on-site soils and fertility. Contractor shall submit soil laboratory's analysis and amendment recommendations. Imported topsoil shall be subject to inspection by Engineer at the project site. Remove rejected topsoil immediately at Contractor's expense. The imported topsoil shall be blended on site with the following ratio:
1 part of compost blended with 2 parts of imported soil.
4. Organic Compost:
Compost: Feedstock shall be no longer recognizable. Compost shall contain fairly uniform particle size, no weed sprouts. Submit a nutrient analysis and testing data from a third party or soil lab, such as the STA Seal of Testing Assurance by the US Composting Council; or OMRI, Organic Materials Review Institute. Compost shall be Super Humus Compost, available from BFI Organics: 408-945-2836, or approved equal. Compost shall be purchased from local, organic materials such as plant or wood waste.
Compost shall meet the following criteria:
 - a. Particle size: 100% passing a 1" screen or smaller
 - b. Salt Concentration: Must be reported; may vary but < 4.0 mmhos/cm preferred. Soil should be test. <2.5 mmhos/cm preferred for soil/compost blend.
 - c. Feedstock Materials shall be specified and include at one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
 - d. Nutrient Content: provide analysis detailing nutrient content including N-P-K; Ca; Mg; S; and Bo. Nitrogen content 1% or above preferred.
 - e. Trace Contaminants Metals (Lead, Mercury, etc.). Product must meet US EPA, 40 CFR 503 regulations.
 - f. pH: pH shall be between 5.5 and 8.
 - g. Visible Contaminants: compost shall be relatively free of inert ingredients, including glass, plastic and paper, < 0.1 % by weight or volume.
 - h. Moisture Content shall be between 35% - 55% of dry solids.
 - i. Organic Matter Content: 50% - 60% by dry wt. preferred, 30-70% acceptable.
 - j. Carbon and Nitrogen Ratio: C:N < 20:1
 - k. Stability/Maturity: shall have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120F) upon delivery or rewetting is not acceptable.
 - l. Weed seed/pathogen destruction: provide proof of process to further reduce pathogens (PFRP). For example, turned windrows must reach min. 55C for 15 days with at least 5 turnings during that period.
5. Fertilizer: Synthetic, quick-release fertilizers shall not be permitted. Fertilizers prohibited by OMRI are prohibited in the project. Organic fertilizers as recommended by the soils report. Manufacturer: Growpower or approved equal.
6. Pesticides: Prohibit the use of pesticides that are prohibited by Organic Materials Research Institute in its generic materials list. Pesticides are prohibited in the bio retention areas and swales.
7. Mycorrhizae: MycoApply Soluble MAXX (fine powder/drench) by MycoApply or approved equal.

20-1.02B Recycled Top Mulch: Medium Decorative Mulch (2 inch grind – all product passes 2 inch screen) or approved equal. Available from: BFI Organics 408-945-2836. Recycled mulch shall be purchased from local, organic materials such as plant or wood waste. 4" layer, Color: Brown

20-1.02C Groundcovers, Trees and Shrubs:

1. All plant materials shall be nursery grown in accordance with the best known horticulture practices and under climatic conditions similar to those in the locality of the project. Container stock shall have grown in the containers in which delivered for at least six (6) months, but not over two years. No container plants that have cracked or broken balls of earth when taken from container shall be planted except upon special approval by Engineer.
2. Plants shall be vigorous and shall have a normal habit of growth. Plants shall be free of damage by insects, pests, diseases or wind; burns from insecticides or fertilizer; and stunted growth due to lack of water, lack of food, diseases, or other causes. Plants shall be in conformity with the sizes shown on the drawings.
3. Trees: Unless otherwise specified, tree trunks shall be straight with leader intact, undamaged, and uncut. All old abrasions and cuts are acceptable only if completely callused over.
4. Quantities: Quantities necessary to complete the work as shown on the drawings shall be furnished.
5. Root Systems: All shrubs and trees shall have a normal root system. No plants with roots that have encircled themselves will be accepted. In case of any unsatisfactory root system, a total group of plants may be rejected.

20-1.02E Root Guards: Deep Root Model UB 24-2 shall be used on all trees 5' or closer to pavement, utilities, curbs, etc. Deep Root (415) 344-1464. As shown on plan.

20-1.02F Headers: Per plan.

20-1.02G Tree Stakes: Per plan.

20-1.02H Tree Ties: Per plan.

20-1.02I Weed Barrier: 100% recycled B-Flute Bio-degradable cardboard

20-1.03 – Execution

20-1.03A Surface Conditions:

Inspections by the Landscape Contractor:

- a. Prior to all work in this section, verify grades and carefully inspect the installed work of all other trades for work related to landscape and irrigation system installation. Verify that all such work is complete to the point where the installation may properly commence.
- b. In the event of discrepancy, immediately notify the Engineer. Do not proceed with this installation in areas of discrepancies until all such discrepancies have been fully resolved.
- c. Inspect trees, shrubs and ground cover plants for injury, insect infestations, and proper pruning.
- d. General contractor shall coordinate rough grading of site to ensure the Landscape Contractor receive all planting areas graded to ± 0.10 ft. of finish grades shown on the Drawings. Allow for depth of imported soils, soil amendments, and mulch in determining the difference between finished subgrade in groundcover and shrub beds. Verify that subgrades are not compacted. Do not proceed until detrimental conditions are corrected. Contractors shall take precaution during the excavation of all planting areas to not undermine or damage all adjacent pavements, footings and their associated subgrades.

20-1.03B Soil Preparation:

1. The Contractor shall prepare the site for landscaping. In the areas designated for landscaping on the plans, he shall, prior to placing imported material, replacing existing topsoil, amending soils, or doing any planting, clear the areas of weeds, roots, debris, rocks, and underground obstructions, and construction debris to a depth acceptable for planting. Scarify the subgrade to a 12" minimum depth prior to spreading topsoil.

2. The Contractor shall alleviate compacted soils before planting, for all landscaped areas that cannot be protected during construction.
 - a. Scarification: Scarify all planting areas prior to fine grading in order to ensure relative compaction of 85% or less. Any planting areas which become compacted in excess of 85% due to construction activities shall be thoroughly cross-ripped to the maximum depth feasible to alleviate that condition, taking care to avoid all existing drainage and subsurface utility lines. See plans.
3. Cultivation and Placement of Amendment:
 - a. In areas to be planted with shrubs cultivate to a depth of 12".
 - b. In groundcover and lawn areas, cultivate soil to a depth of 8".
 - c. Incorporate 6.25 cubic yards per 1000 square feet of organic compost. Prior to planting incorporate to a depth of 6" the following fertilizers:

Per 1000 square feet of shrubs and groundcovers areas:

150 lbs Pure n Natural fertilizer

1 lb per 200 gallons of potable water, drench at rate of 24 oz per gallon size plant material or 2.5 gallons per caliper inch per manufacturer
 - d. Areas within the driplines of existing trees shall be hand cultivated.
4. Soil Mix for Backfill of Shrubs and Trees: The following ingredients shall be tumbled to achieve a homogeneous mix:

Organic compost	1 cubic yard
Imported Soil/Topsoil	2 cubic yards
Organic Fertilizer	30 lbs
5. Finish Grading:
 - a. Finely finish surfaces by raking smoothly and evenly. Remove all exposed, extraneous matter one inch or larger in size to facilitate natural runoff. Drag to smooth surface.
 - b. Finish grades will slope to drain, without water pockets or irregularities (humps or hollows). Finish grades will meet all existing controls and shall be 1 ½ inches below adjacent top of paving, curbs, sidewalks and planters, unless otherwise noted on plans. Grades will be of uniform slope between points of fixed elevation. Establish vertical curves or rounding at abrupt changes in slope.
 - c. All finish grades will be approved by the engineer prior to commencing the planning operations.
6. Soil within swale areas shall not be compacted.

20-1.03C Sheet Mulching:

1. Prepare the site.
2. Plant the 5-gallon and larger plants.
3. Apply a minimum of two layers of cardboard Weed Barrier to the applicable planting area as identified in plans, completely covering all existing soil and vegetation.
 - a. Wet cardboard while applying to prevent it from blowing away
 - b. Sheets of cardboard shall overlap a minimum of 8"
 - c. Cardboard shall abut directly against edge of pavement, curbs and boulders
 - d. Cardboard shall be applied to the edge of installed plant root balls without covering any part of the top of the root ball / root crown area
 - e. Excess cardboard shall be folded under itself when abutting against hardscape objects or root crown areas, as opposed to being cut, to avoid excessive cardboard scraps. This folding under process is greatly aided when the cardboard is wet.
4. Layer compost and mulch.
5. Plant.

20-1.03D Shrubs and Trees:

1. Preparation:
 - a. Stake out location for plants and outline of planting beds on ground and obtain the approval of Engineer before digging.
 - b. The Contractor shall protect all utilities, vegetation, and structures during work.
 - c. Trees shall be located a minimum of 3' from walls, overheads, walks, headers, and other trees within the project. If conflicts arise between size of areas and plans, Contractor shall

contact Engineer for resolution. Failure to make such conflicts known to the Engineer will result in Contractor's liability to relocate the materials.

- d. Set out only quantity that can be reasonably planted in one work day. Plant pits shall not be excavated until the approval of plant locations by the Engineer.
2. Excavation:
 - a. All plant pits shall be dug with vertical walls. The sides and bottoms of all planting pits shall be thoroughly scarified.
 - b. Holes for one (1) gallon size plants: Twelve (12) inches wider than the can and six (6) inches minimum deeper.
 - c. Holes for (5) gallon size plants: eighteen (18) inches wider than the can or root ball, and eight (8) inches deeper than can or root ball.
 - d. Holes for fifteen (15) gallon size plants or larger: Twenty-four (24) inches wider than the can or root ball, and twelve (12) inches deeper than the can or root ball.
3. Plants in Containers:
 - a. Plants shall be removed carefully from their containers after the containers have been cut on two sides minimum; fifteen-gallon containers shall be opened in three places. In the case of boxed plant specimens, the wood shall be removed at the sides and at the bottom of the box.
 - b. After removing plant material from its container, stimulate root growth by making four or five vertical cuts 1" deep around the circumference of the root ball.
 - c. Do not lift or handle plants by the top, stems, or trunk at any time. All plants shall be lifted in such a manner that the root ball is supported from the underside.
 - d. The Contractor shall check all plants for adequate root systems. If the root system is defective, he shall remove deficient plants from the site and replace them with new ones.
4. Planting:
 - a. Center plant in pit or trench over tamped mound.
 - b. Face for best effect.
 - c. Set plant plumb and hold rigidly in position.
 - d. All plants shall be set in the ground so that the root ball will be flush with the finish grade. All plants that settle below the finish grade within 30 days of acceptance of the work shall be replanted in the proper position. In case a total section of planting area settles, the Contractor shall lift the plants, import additional soil mix, regrade and replant, at no additional cost to the Contract.
 - e. Use soil mix only for backfill. Backfill pit with soil mix in 9" layers and water each layer thoroughly to settle soil. The filled pit shall be flush with surrounding grade when complete.
 - f. When the plant pit has been approximately one half filled, place planting tablets according to the manufacturer's schedule.
 - g. Apply post-planting organic fertilizer, per soils report.
 - h. In shrub mass areas, mulch area between plant pits with 3" layer of Pro-Chip manufactured by BFI Organics or equivalent recycled wood chip mulch.
 - i. Planting operation for plants in raised concrete planters is same as above except that finish grade of soil mix shall be 1 1/2" below top of planter walls. Planters may be backfilled with excess topsoil up to the depth specified for plant pits above which backfill shall be soil mix.
 - j. Planting operations for plants in precast planters is the same as stated in paragraph 9 above. Fill entire planter with soil mix. Place planters as shown on planting plans.

20-1.03E Groundcover Areas:

1. Planting:
 - a. Space plants equally and uniformly at spacings indicated on the Drawings, which are the maximum and in a triangular pattern.
 - b. Plant pits shall be sufficiently large so that the root can be freely suspended in the pit. After backfilling the pit, firm the soil so that there will be no air space around the roots.
 - c. Apply post-planting organic fertilizer, per soils report.
 - d. Mulch all ground cover areas with 3" layer of Pro-Chip manufactured by BFI Organics or equivalent recycled wood chip mulch.

20-1.03F Mycorrhizae: For zones where mycorrhizae is not uniformly blended into the soils, provide drench to all plants material per manufacturer application rates.

20-1.03G Tree Staking and Rootball Guying:

1. Stake trees as indicated on the Drawings.
2. Tying: Find the proper support height by holding the trunk in one hand and pulling the top to one side and releasing it. The lowest height, at which the trunk will return to the upright position when the top is released, is the height at which to attach tree ties.
3. Rootball Guying: Guy trees per manufacturer's specifications and details. All trees 36" box and larger shall be guyed.

20-1.03H Pruning:

1. Tree and Shrub: Pruning shall be performed as required to maintain a natural appearance, promote healthy and vigorous growth, and eliminate diseased or damaged growth.
2. Trees shall be pruned to thin crown and avoid wind damage, eliminate narrow V-shaped branch forks that lack strength, eliminate sucker growth, and maintain a radial branching pattern to avoid crossing branches.
3. Under no circumstances will stripping of lower branches ("raising-up") of young trees be permitted. Lower branches shall be retained in a "tipped back" or pinched condition with as much foliage as possible to promote caliper trunk growth (tapered trunk).
4. Major pruning of trees to compensate for root loss or for aesthetic reasons shall be done only with approval of the Landscape Architect.
5. Shrubs shall not be clipped into balled or boxed forms, unless such is required by the design and directed by the Landscape Architect.
6. All pruning shall be made flush to lateral branches, buds, or trunk. "Stubbing" will not be permitted.
7. Damage: All cuts over 1" resulting from pruning or wind breakage shall be inspected periodically for insect infestation or disease.

20-1.03I Cleanup:

1. Keep all areas of work clean and neat at all times. Upon completion of planting, all cans, boxes, and other debris that is a part of the planting operation shall be removed from the site.
2. All pavements shall be washed off, and site shall be left in an absolutely clean condition. All planting areas shall be cultivated and weed free before final inspection. Clean-up operations shall take place throughout the course of work so that walks and drives are clean at all times.

20-1.03J Inspection:

1. Notification: The Contractor shall notify Engineer a minimum of 72 hours and set appointment for all inspections.
2. Check Points: The following shall be considered check points and the Contractor shall only proceed with the work after Engineer has visited the site and determined that the work is proceeding satisfactorily.
 - a. Completion of placement of soil mix and fine grading.
 - b. When plant material is placed in the configuration shown on the Drawings before planting.
 - c. A check visit shall be made to begin the maintenance period. At this time the Contractor shall have completed all phases of the Plans and Specifications. Any discrepancies shall be noted at that time and the Contractor shall make appropriate corrections before the acceptance of the work.
 - d. A conference including the Engineer shall be held at the completion of the work, provided that all deficiencies brought out in the check visit which began the maintenance period have been corrected by this time. The Contractor shall continue to maintain the project at his own expense until all deficiencies have been corrected, at which time the Contractor shall request the Engineer to visit the site and approve the project as complete. The Engineer will accept the landscape project in writing. The date of the acceptance letter shall be the first day of the guarantee period.
 - e. In the event the Contractor requests inspection of work, and said work is substantially incomplete, the Contractor shall be responsible for inspection costs.

3. Should it be determined at the Final Inspection or Final Acceptance visit that any punchlist item is incomplete, any further review of the site will be terminated until all items are guaranteed, in writing, to be complete by the Contractor. The cost of additional site visits by the Engineer to verify completion of work shall be paid for by the Contractor.

20-1.03K 90 Calendar Days Landscape Maintenance:

1. Contractor shall furnish all labor, material, equipment, and services required to maintain the landscape in a healthy and attractive condition for a period of 90 days.
2. Landscape Maintenance shall include fertilization, watering, insect and disease control (IPM), and weed control using IPM, weekly trash removal, mulching, restaking trees, tightening of guys, resetting plants to proper grades or upright position, and restoration of watering basins. Refer to Model Bay-Friendly Landscape Maintenance Specifications, by Stopwaste.org.
3. Landscape Maintenance period shall not start until all elements of construction, planting, and irrigation for the entire project are complete. Project will not be segmented into maintenance phases, unless specifically authorized in writing by Engineer.
4. The Contractor shall request an inspection to begin the Landscape Maintenance period after all planting and related work has been completed in accordance with the Contract documents. A prime requirement is that all tree, shrub and groundcover areas are planted. If such criterion is met to the satisfaction of Engineer, a field notification will be issued to the Contractor to establish the effective beginning date of the period.
5. The Contractor's Landscape Maintenance period will be extended if the provisions required within the plans and specifications are not filled.
6. Watering:
 - a. All plants shall be kept watered as often as it is necessary to keep them in optimum, vigorous growth. Watering shall be done preferably during the early morning hours. Check soil moisture levels with a soil probe before watering and adjust watering schedule to match weather conditions.
 - b. Water shall be controlled so that there will be no excessive run-off, ponding, or overwatering. Check and adjust irrigation system on a weekly basis. Replace broken equipment immediately with equal or superior materials.
 - c. Root Growth: Periodically the Contractor shall check the progress of the root growth within the back fill area. As the root growth increases beyond the root ball, the frequency of watering shall be reduced so that the roots are encouraged to grow to a lower soil depth. Watering then shall be less frequent, but applications shall be very slow and the Contractor shall assure himself that water does penetrate to the depth of the former plant pit.
7. Spraying:
 - a. Utilize IPM practices for plant care, as outlined in the City's Recreation and Parks Department IPM Policy and subsequent revisions. All spraying shall only be performed with prior approval by the Engineer.
 - b. All shrubs and trees shall be inspected at least twice a month during the growing period to determine the need for spraying to control insect damage, fungus development or any other disease that might be attacking the plants.
 - c. Operators of spray equipment shall take all reasonable precautions to protect themselves, other people and buildings from spray. The Contractor shall have all permits and licenses required for such an operation. Where applicable, dormant spray shall be applied to shrubs and trees during the winter period.
 - d. All equipment shall be properly washed before and after use.
 - e. No spraying shall take place during windy or gusty days.
 - f. Spraying is prohibited in all swales and parking lot planters.
8. Staking and Guying: Stakes and guys shall be inspected a minimum of two times a month to assure that the wires and ties are tight and no damage has occurred to the tree trunk or branches.
9. Weed Control:
 - a. All planting areas shall be kept weed free either by hand or by Integrated Pest Management (IPM) methods as outlined in the City's Recreation and Parks Department IPM Policy and subsequent revisions. The application of herbicides shall be only used as a last resort with the approval of the Engineer.

- b. All equipment used for herbicides, if utilized, shall be properly cleaned before it is used on this project. Herbicides shall be applied at temperatures recommended by the manufacturers. Herbicides shall not be used during windy or gusty days. All possible precautions shall be taken to protect vegetation which is susceptible to damage from the particular herbicides to be used.
 - c. The bases of all plants shall be kept completely free of weeds. Periodically, the base of the trees and shrubs shall be cultivated in order to allow better penetration of water, but such cultivation shall be carefully done in order not to destroy surface roots.
10. Fertilization: Contractor shall provide eight additional soils tests prior to the end of the 90 calendar day maintenance period for final fertilization requirements. Contractor shall fertilize all areas as recommended by soils test. Top dress all areas at 45 day intervals from time of planting with organic fertilizer or compost tea as recommended by soils report. 20lbs fertilizer per 1000 sf.
 11. Litter: The Contractor shall remove promptly after pruning, trimming, and weeding or other work required under the contract, all debris generated by his performance of the work. Immediately after working in the areas of public walks, driveways or paved areas, they shall be vacuumed clean with suitable equipment. All areas covered by this contract shall be kept free of the following items: bottles, cans, paper cardboard or metallic items. Common debris and litter shall be disposed of in an appropriate manner.
 12. Pruning: Prune as necessary to remove injured twigs and branches, dead wood, and suckers.
 13. All green waste shall be taken to a certified green waste facility for utilization in organic compost or mulch.
 14. Soil shall not be worked when wet, generally between October and April for on-going maintenance.
 15. Re-apply organic mulch to a minimum depth of 3 inches for on-going maintenance.
 16. Pest Management Operations: Contractor shall furnish all labor, materials, equipment, and services required to control all landscape pests including, but not limited to, weeds, insects and other invertebrates, plant pathogens, rodents, etc. The Contractor shall utilize Integrated Pest Management (IPM) methods as outlined in the City's Recreation and Parks Department IPM Policy and subsequent revisions. The application of all products and methods used for pest control operations including, but not limited to, herbicides, pesticides, insecticides, fungicides and mechanical control methods shall be only used with the approval of the Engineer.
 17. The use of pesticides that are prohibited by Organic Materials Research Institute in its generic material list is not allowed.

20-1.03L Guarantee and Replacement:

1. Guarantee period shall be extended for a period of one year from the date of written acceptance and once a warranty walk has been completed with Engineer. The Contractor shall schedule a one year walk with Engineer for review of all plant material. Failure to schedule a one year maintenance walk will not relieve the Contractor of the guarantee.
2. All plants shall be guaranteed to be alive and healthy as determined by Engineer at the end of the guarantee period.
3. Plant materials supplied by City shall be under similar warranty against defective workmanship during the planting operations. Plant material exhibiting conditions which are determined by Engineer as being unacceptable, due to workmanship by the Contractor, shall be replaced at no additional cost to the Contract.
4. The Contractor shall replace, in accordance with the Drawings and Specifications throughout the guarantee period, any plants that die, or in opinion of the Engineer, are in an unhealthy or unsightly condition, and or have lost their natural shape due to dead branches, excessive pruning, inadequate or improper maintenance, or any other causes due to the Contractor's negligence. The Contractor shall not be held responsible for acts of vandalism occurring after the beginning of the guarantee period.

20-1.04 Payment: Full compensation for soil analysis reports as specified herein shall be considered as included in the contract prices paid for various items of work and no additional compensation will be allowed therefor.

Tree Planting – 15 Gallon shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in Tree Planting - 15 Gallon as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for tree planting, including 15-gallon trees, fine grading, soil preparation, soil amendment, imported organic topsoil, organic fertilizer, and tree staking.

Tree Planting – 3” Caliper Size shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in Tree Planting – 3” Caliper Size as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for tree planting, including 3-inch caliper trees, fine grading, soil preparation, soil amendment, imported organic topsoil, organic fertilizer, and tree staking.

Root Barrier shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in installing Root Barrier as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing linear root barrier.

Bioretention 1-Gallon Shrubs shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in planting Bioretention 1-Gallon Shrubs as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for bioretention 1-gallon shrub planting, including 1-gallon shrubs, fine grading, soil preparation, soil amendment, imported organic topsoil, organic fertilizer, and mulch.

5-Gallon Shrubs shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in planting 5-Gallon Shrubs as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for 5-gallon shrub planting, including 5-gallon shrubs and groundcovers, fine grading, soil preparation, soil amendment, imported organic topsoil, organic fertilizer, and mulch.

1-Gallon Shrubs shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in planting 1-Gallon Shrubs as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for 1-gallon shrub planting, including 1-gallon shrubs and groundcovers, fine grading, soil preparation, soil amendment, imported organic topsoil, organic fertilizer, and mulch.

Bark Mulch and Sheet Mulching shall be paid for at the contract **lump sum**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in installing Bark Mulch and Sheet Mulching as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for bark mulch and sheet mulching, including recycled organic mulch and recycled cardboard.

90 Calendar Days Landscape Maintenance shall be paid for at the contract **lump sum**, which price shall include full compensation for furnishing all labor, materials tools and equipment, and doing all the work involved in 90 Calendar Days Landscape Maintenance as specified herein, and no additional allowance will be made therefor. The work shall consist of conforming to the requirements of Section 20-1.03K “90 Calendar Days Landscape Maintenance” of these Specifications. The landscape maintenance period shall be for 90 calendar days.

SECTION 20-2 IRRIGATION SYSTEM

20-2.01 General

20-2.01A Related Documents: The General and Supplementary Conditions and General Requirements apply to the work herein specified.

20-2.01B Description:

1. Contractor shall furnish all labor, tools, equipment, product, materials and transportation and perform all operations necessary to properly execute and complete all work in accordance with the Drawings and these Specifications. The intent is to accomplish the work of installing an irrigation system, which will operate in an optimum manner. This intention is to be met foregoing any deficiency in setting a complete detailed description of the work to be done.
2. Related Work Specified Elsewhere:
 - Section 19: Earthwork
 - Section 20-1: Landscape Planting
 - Section 20-3: Rainwater Harvesting System and Installation Standards
 - Section 86: Electrical Systems
 - Section 112: Tree Protection

20-2.01C Quality Assurance:

1. All work and material shall be in full accordance with the latest rules and regulations of safety orders of Division of Industrial Safety, the Uniform Plumbing Code published by the Western Plumbing Officials' Association, City of Santa Rosa Standards, and other applicable laws or regulations. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes. Should the Construction Documents, or instructions, be at variance with the aforementioned rules and regulations, notify the Engineer and get instructions before proceeding with the work affected.
2. The Contractor shall furnish any additional material and labor required to comply with these rules and regulations, though the work is not mentioned in these specifications or shown in the Drawings.
3. Reference Standards:
 - a. City of Santa Rosa Construction Standards
 - b. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the general designation only.
 1. American Society for Testing and Materials (ASTM)
 2. Publications: D - 1785 Pipe, Polyvinyl chloride (PVC) Plastic Schedules 40, 80 and 120.
4. Drawings:
 - a. For purposes of clarity and legibility, drawings are essentially diagrammatic to the extent that many offsets, bend, unions, special fittings, and exact locations of items are not indicated, unless specifically dimensioned.
 - b. Exact routing of piping, etc., shall be governed by structural conditions, obstructions. Contractor shall make use of data in Contract Documents.
 - c. The contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that unknown obstructions, grade difference or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences shall be brought to the attention of the Engineer. In the event this notification is not performed, the contractor shall assume full responsibility for any revision necessary.

20-2.01D Visit to the Site: The contractor shall visit the construction site and shall take all measurements and obtain any other information as may be necessary for a complete and conclusive bid.

20-2.01E Submittals:

1. Substitutions: Prior to installation, any proposed substitution from the plans or these specifications is to be forwarded, in writing, to Engineer for approval.
2. Record Drawings: Provide record drawings to the City as follows:
 - a. The contractor shall maintain in good order in the field office one complete set of prints of all irrigation drawings, which form a part of this contract. In the event any work is not installed as indicated on the drawings, such work shall be indicated and dimensioned accurately on record drawings as changes occur. Dimension from two permanent points of reference, building corner, sidewalk, road intersections, etc., the location of the following items.
 - Connection to existing mainline
 - Connection of existing electrical power
 - Routing of pressure lines (dimension max. 100 feet line along routing)
 - Location of Electrical control valves, flow sensors, quick coupling valves, decoders and underground stubouts
 - Routing of control and sensor wires
 - Location of sleeves under paving
 - All fittings, pipe, solvent and primer
 - Other related equipment as directed by the Engineer
 - b. Submit as-built drawings to Engineer for review and approval. When the drawings are approved, provide one copy to the Engineer.
 - c. As-built drawings must be completed and approved before commencement of the maintenance period.
 - d. Contractor shall prepare a copy of the irrigation plans reduced to 11"x17" to fit within the controller enclosure door and shall be laminated between two sheets of clear plastic. The plan shall be legible and shall clearly describe control station numbers and associated lateral piping and distribution devices. Contractor may add color coding or notes. This reduced plan shall be provided for each enclosure, and shall be in place prior to the commencement of the maintenance period.
3. Operation and Maintenance Manuals:
 - a. Prior to the final inspection of the irrigation system, furnish two (2) individually bound Service Manuals to the owner. The manuals shall contain the following:
 - Index sheet indicating the contractor's name, address, and phone number.
 - A copy of the completed guarantee-following the form in these specifications.
 - Certificate of insurance verifying coverage for completed operations.
 - List of equipment with names, addresses and telephone numbers of all local manufacturers' representatives.
 - Copies of equipment warranties and certificates.
 - Complete operating and maintenance instructions of all equipment including exploded drawings and spare parts list.
 - b. Provide instruction in operation of system to owner's personnel.
4. Hardware Items:
 - a. Two (2) sets of matching Q.C.V. keys and hose swivels.
 - b. Two (2) keys to each controller box.
 - c. Two (2) sets of any special tool required for the maintenance of each type of component used in the sprinkler system.
 - d. Two (2) copies of instruction manual for irrigation controller

20-2.01F Project Coordination:

1. Sequencing and Scheduling: Coordinate irrigation installation work with the installation of other site improvements, including utility installation work and landscape installation.

General Contractor shall be responsible for providing all coordination and field meetings between General Contractor, sub-contractor, manufacturers, suppliers, and City as required for full implementation of the project.

2. Environmental Conditions: Site work such as trenching and backfilling shall not be performed during wet, muddy or frozen conditions.
3. Inspection of Condition: Examine related work and surfaces before starting work of this Section. The contract includes maintenance, and re-connection of pre-existing irrigation systems, piping, and controls. Contractor shall be completely familiar with these conditions, the work involved, and shall perform to the satisfaction of the Engineer. Plans of existing systems are available from the City.

Report to the Engineer conditions which will prevent the proper installation of this work. Beginning the work of this Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor. Any required removal, repair, or replacement of this work caused by unsuitable conditions shall be done at no additional cost.

4. Rules and Regulations: All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code; the Uniform Plumbing Code and other applicable state or local laws or regulations. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes.
 - a. The contractor shall furnish any additional material and labor required to comply with these rules and regulations, though the work is not mentioned in these particular specifications or shown on the drawings.
 - b. When the specifications call for materials or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provision of the specifications shall take precedence over the requirements of the said rules and regulations.
5. Safety:
 - a. The contractor shall erect and maintain barricades, guards, warning signs, and lights as required for the protection of the public and workmen.
 - b. All work shall be performed in a safe manner. All regulations, all OSHA requirements and other authoritative agencies shall be followed.
 - c. Prior to commencement of work, locate all underground utilities so that proper precautions may be taken not to damage such improvements.
6. Maintaining Traffic: It is the responsibility of the contractor to ensure adequate protection and controls for pedestrian and vehicular traffic in the vicinity of the project areas. The contractor shall provide all signs, barricades, flagmen, etc., necessary to meet all traffic requirements for this project at his own expense.
7. Permits and Fees: The contractor shall obtain all permits and pay all required fees to any governmental agency having jurisdiction over the work and arrange for inspections specified by local ordinances during the course of construction as necessary unless otherwise directed by the Engineer.

20-2.02 Products

20-2.02A Product Delivery, Storage and Handling: Handling of pipe and fittings: The contractor is cautioned to exercise care in handling, loading, unloading, and storing of pipe and fittings. Cracks can occur from sudden impact. Protect all plastic products from excessive exposure to sunlight. Any section of pipe that has been dented or damaged shall be removed from the site and, if installed, shall be replaced with new undamaged piping.

20-2.02B Materials

1. PVC Pressure main line piping and fittings:
 - a. Pressure main line piping: 1120-Schedule 40 PVC plastic pipe. Fittings shall be Schedule 40 PVC solvent weld.
 - b. Pipe shall be made from NSF approved, Type 1, Grade 1 PVC compound conforming ASTM D1784. All pipe shall meet requirements set forth in ASTM D2441 with an appropriate standard dimension ratio.
 - c. All PVC pipe shall bear the following markings:

Manufacturer's name
Nominal pipe size
Schedule or class
Pressure rating in PSI
NSF

Date of extrusion

- d. All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.D. schedule and NSF seal of approval.
2. PVC non-pressure lateral line piping and fittings:
 - a. Non-pressure buried lateral line piping shall be PVC 1120 Schedule 40 with Schedule 40 PVC solvent-weld fittings.
 - b. Pipe shall be made from NSF approved, Type 1, Grade 1 PVC compound conforming to ASTM D1784. All pipe shall meet requirements set forth in ASTM D2441 with an appropriate standard dimension ratio.
 - c. Except as heretofore specified, all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent-weld pressure main line pipe and fittings as specified.
3. Sleeving and Conduit: Material shall be polyvinyl chloride (PVC) Schedule 40, type 1120/1220 with solvent weld.
4. Galvanized steel pipe shall be Schedule 40; ASTM (A120) and steel fittings shall be Schedule 40 hot dipped, double banded malleable steel.
5. PVC Schedule 80 nipples shall be used with molded threads. Machined threaded nipples will not be allowed.
6. Connections between supply line and R.C.V.'s shall be as specified or detailed on the drawings.
7. Riser assemblies shall be as specified or detailed on the drawings.
8. Controller, valves, backflow preventer, filters, decoders, bubblers and drip line shall be specified and/or detailed on the drawings.
9. Control wires shall be UL approved copper single strand type UF direct burial double jacket Rainbird Maxi-Cable 14-2UF 2-wire cable.
10. Miscellaneous installation materials:
 - a. Solvent weld joints shall be of make and type approved by manufacturer (s) of pipe and fittings. Solvent cement shall be a proper consistency throughout use. Mixing thinner with solvent will not be allowed.
 - b. Pipe joint compound shall be PVC compatible non-hardening, non- toxic materials designed specifically for use on threaded connections in water carrying pipe.
 - c. Wire connections shall be 3M DBR/Y-6 Seal Packs or approved equal.
11. Control or Valve Boxes:
 - a. For remote control valves: Provide Carson 1419 14 x 19 inch plastic rectangular control valve box with bolt down plastic lid for each electrical control valve or approved equal.
 - b. For remote control valves with drip manifold: Provide Carson 1730 17 x 30 inch plastic rectangular control valve box with bolt down plastic lid for each electrical control valve or approved equal.
 - c. For ball valves and quick coupling valves: Provide Carson 1419 14 x 19 inch plastic rectangular box with bolt down plastic lid for each electrical control valve or approved equal.

20-2.03 Execution

20-2.03A General:

1. Irrigation system shall be installed in accordance with all applicable local and state codes and ordinances by a licensed landscape contractor.
2. Follow manufacturer's direction except as shown or specified.

20-2.03B Inspection of Site Conditions:

1. All scaled dimensions are approximate. The contractor shall check and verify all size dimensions prior to proceeding with work under this Section.
2. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities, which are caused by his operations or neglect. Check existing utilities drawings for existing utility locations.
3. Coordinate installation of irrigation materials, including pipe, so there shall be no interference with utilities or other construction or difficulty in planting trees, shrubs, and groundcover.
4. Avoid trenching within drip line of trees where possible. When not possible, all damaged roots over 1-1/2" in diameter shall be cut leaving clean face, seal cuts with tree seal, then immediately install pipe, wire, etc., refill trench and soak.
5. The Contractor shall carefully check all grades to satisfy himself that he may safely proceed before starting work on the irrigation installation.
6. Coordinate the work of this Section with that of other Sections for the location of pipe sleeves through walls, paving, etc.
7. The Landscape Contractor shall verify water pressure and available gallonage prior to construction. If deficiencies are noted that will hinder the system's performance, notify Engineer for directions to correct deficiencies.
8. The design is diagrammatic. All piping, valves, etc., shown within paved areas is design clarification only. Install piping, valves, etc., in planting areas.

20-2.03C Preparation – Layout of Work: Prior to installation, stake out all pressure supply lines and notify Engineer for reviewing layout when area or grade differences or obstructions are not as indicated on the plans.

20-2.03D Installation:

1. Trenching:
 - a. Dig trench straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow layout shown on drawings.
 - b. Provide for a minimum of 18 inches cover for all pressure supply lines.
 - c. Provide for a minimum cover of 12 inches for all non-pressure lines to spray heads.
 - d. Provide for a minimum cover of 18 inches for all control wiring.
 - e. Provide a minimum cover of 24 inches over pipe and wiring under asphalt pavement.
2. Backfilling:
 - a. Do not allow nor cause any work to be covered or enclosed until it has been inspected, tested and approved by the Engineer. Should any work be enclosed or covered before inspection and test, the work shall be uncovered at the Contractor's expense, and after it has been inspected, tested and approved, the work shall be recovered.
 - b. Carefully backfill trenches with specified excavated materials for backfilling, consisting of earth, loam, sandy clay, sand, or other acceptable materials, free from large clods of earth or stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill shall conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.
 - c. Main line and lateral line backfill to be a 4-inch minimum sand bed on all sides of the pipe. The remaining backfill material shall be native soil excavated from the trenches.
 - d. Backfill in proposed asphalt paved areas shall have sand covering pipe with a 6" minimum depth. Remaining backfill to be per Std 215.
 - e. If settlement occurs along trenches, and adjustments in pipes, valves and sprinkler heads, soil, sod, or paving are necessary to bring the system, soil, sod, or paving to the proper level of the permanent grade, the Contractor, as part of the work under this Contract, shall make all adjustments without extra cost to the Contract.
3. Pipe and Fitting Installation and Connections:
 - a. Provide each bubbler and drip line assembly with its own outlet.
 - b. Install all assemblies specified herein in accordance with details shown on drawings.

- c. Thoroughly clean PVC pipe and fittings of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
 - d. On PVC to metal connections, the contractor shall work the metal connections first; use only male PVC threads and female metal threads. Use Teflon tape, or equal, on all threaded PVC to PVC, and on all treaded PVC to metal joints.
 - e. Install piping under existing walks by directional boring as shown on plans. Where any cutting or breaking of sidewalks and/or concrete is necessary, it shall be done and replaced at no increase in contract sum. Obtain permission to cut or break sidewalks and/or concrete from the Engineer before proceeding. No hydraulic driving will be permitted under concrete paving.
 - f. Plastic pipe shall be installed in a manner so as to provide for expansion and contraction as recommended by the manufacturer. Plastic pipe shall be cut with a pipe cutter or hack saw with the assistance of a squared-in sawing vice, or in a manner so as to insure a square cut. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained. PVC pipe primer shall be used on all solvent weld PVC pipe before PVC solvent is applied.
 - g. Assembly of Solvent Joint Pipelines
 - Prepare joint by first making sure the pipe end is square, then reaming and deburring the pipe end. Clean pipe fitting of all dirt, dust, and moisture.
 - When assembling all pipe, first apply primer per manufacturer's instructions.
 - Pipe shall be assembled in a neat and workmanlike manner per manufacturer's instructions. Pipe shall be aligned to avoid strains on joints. Allow cemented joints to cure a minimum of five minutes before handling, and a minimum of four hours before pressurizing with water.
 - PVC pipe shall be made up on the surface and then laid in the trench. Pipe shall have a firm, uniform bearing on minimum 4" layer of sand for the entire length to prevent uneven settlement.
 - Cap or plug openings as pipelines are assembled to prevent entrance of dirt or obstruction. Remove caps or plugs only when necessary to continue assembly.
 - Pipe shall be installed no closer than 4 inches to walkways and curbs.
 - h. Threaded Joints
 - Field threading of PVC pipe is not permitted. Factory formed threads only will be allowed.
 - All threaded metal pipe joints shall be made up with specified pipe joint compound. Apply compound to male threads only.
 - Where assembling threaded plastic fittings, use only Teflon tape and take up joint no more than one full turn beyond hand tight.
 - Where assembling soft metal (brass or copper) or plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.
 - i. Cap open pipe ends as pipe line is assembled to prevent entrance of dirt or obstruction. Remove caps or plugs only when necessary to continue assembly.
 - j. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.
4. Line clearance:
 - a. All lines shall have a minimum clearance of 6 inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another. Where storm drains or other utilities interfere with irrigation trenching and pipe work, adjust the trench depth or alignment as instructed by Engineer.
 5. Irrigation Controller:
 - a. Locate controller within existing enclosure as detailed in general location shown with exact placement to be determined at job site by Engineer.
 - b. Connect control wires to the controller per manufacturer's specifications for two-wire system.

- c. The flow sensor, master valve, and rain switch shall be connected to appropriate terminals. Full functionality of each shall be tested and verified. Confirm controller is programmed for "normally closed" master valve.
 - d. Program decoders and controller in sequential arrangement according to assigned identification number and irrigation notes on plans.
 - e. Controller shall be properly grounded per Article 250 of the National Electric Code and conform to local regulations.
 - f. Connection to data line and 120 VAC electrical service from service point shown on the plans to the controller shall be provided by the irrigation contractor. Install in conduit with Brooks 3½ pull boxes as required. Concrete pull boxes shall have locking covers marked "electrical".
6. Remote Control Valves:
- a. Prior to installing any remote control valves in the irrigation system, the Contractor shall assemble a mock-up of a typical remote control valve assembly. The mock-up shall include: mainline fitting, riser, reducing fittings, 1½" valve, nipples, reducing fittings as required to connect to a 1½" lateral. Mock-up shall be approved by the Engineer before any valves are installed in system.
 - b. Install where shown on drawings. When grouped together, allow at least 12" between valves. Install each remote control valve in a separate valve box. Locate boxes in groundcover areas whenever possible, and a minimum of 12" from paving or curbs.
 - c. Thoroughly flush mainline before installing valves.
7. Ball Valves: Install in valve box as detailed on drawings or in specifications.
8. Remote Control Valve Boxes: Install valve box as detailed on drawings or in specifications.
- a. Install four common bricks (one at each corner of box) under base of box for support.
 - b. Install ¾" clean rounded drain rock 6" deep under valve and inside box for drainage
 - c. No soil will be permitted inside box. Use box extensions as necessary.
 - d. Install label plate on valve box lid as shown on the drawings.
 - e. Provide coil of slack wire as described on the drawings.
9. Ball Valve and Quick Coupling Valve Boxes: Install valve box as detailed on drawings or in specifications.
- a. Install four common bricks (one at each corner of box) under base of box for support.
 - b. Install ¾" clean rounded drain rock 6" deep under valve and inside box for drainage as detailed.
 - c. No soil permitted inside box.
10. Splice Boxes: Install two common bricks (one on each side) under base of box for support.
- a. Install ¾ inch diameter clean drain rock 6" deep inside box.
 - b. No soil permitted inside box.
 - c. Spliced wire shall be coiled (1 inch dia.) with 2 feet of extra wire and each wire end weatherproofed with a splice seal assembly.
 - d. All splice box locations shall be indicated on as-built drawings and the origin of the wires shall be noted.
11. Decoders: Install as detailed on drawings or in specifications.
12. Master Valves and Flow Sensors: Install as detailed on drawings or in specifications
13. Control Wiring:
- a. Make connections between existing automatic controls and electrical control valves with direct burial 2-wire cable. Make connections between existing automatic controls and electrical control valves with direct burial 2-wire cable. Install in accordance with valve manufacturer's specifications and wire charts
 - b. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible. When not possible, house wiring in PVC conduit as described in "Sleeving and Conduit" section.
 - c. Provide 2-foot expansion coil at each wire connection and at least every 100 feet of wire length on runs more than 100 feet in length. Form expansion coils by wrapping at least five turns of wire around a 1-inch diameter pipe, then withdrawing the pipe.

- d. The wire splice assembly shall splice and effectively moisture seal two or more conductors. The device shall be installed per manufacturer's instructions and all applicable electrical codes.
 - e. Splicing on runs shall be placed in junction boxes. All splice box locations shall be indicated on as-built drawings and the origin of the wires shall be noted.
14. Sleeving and Conduit:
- a. Control wiring passing under proposed concrete and paving shall pass through Schedule 40 PVC conduit-size as required per plans.
 - b. Sleeving and conduit shall extend six (6") beyond farthest edge of pavement or curb.
 - c. Provide removable non-decaying plug at ends of sleeves and conduits to prevent entrance of earth.
15. Flushing of System:
- a. After all new pipelines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of bubblers and drip lines, open control valves and use a full head of water to flush out the system.
 - b. Install bubblers and drip line only after flushing of system has been accomplished.
16. Bubblers, Tree Bubblers, Filters and Drip Line:
- a. Install all bubblers, tree bubblers, filters and drip line as shown and detailed on Drawings.
 - b. Spacing of drip line shall not exceed maximum shown on Drawings. In no case shall spacing exceed maximum recommended by manufacturer. In addition to the irrigation plans and this specification set, Contractor shall refer to Netafim standard installation guidelines for dripline installation.

20-2.03E Field Quality Control:

- 1. Adjustment of the System:
 - a. If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage, the contractor shall make such adjustments prior to planting.
- 2. Testing of Irrigation System:
 - a. Contractor shall notify the Engineer at least three (3) days in advance of testing.
 - b. Test to be done at no extra cost to the Contract.
 - c. Center load piping with sufficient amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered.
 - d. Testing of pressure main lines shall occur prior to installation of electrical control valves.
 - e. Pressure Test for Solvent Weld Pipes:
 - Apply test for solvent welded plastic pipe after joints have cured at least 24 hours or more it manufacturer of solvent cement requires.
 - Test supply lines per ASTM-F690 as follows: (1) add water slowly to pipe to avoid water hammer damage, (2) bleed system to insure all air is out of pipes, (3) pressurize system to 125 psi for six (4) hours. Visually inspect for leaks while system is holding pressure constant. Note – use hydraulic pump or other safe method – do not use air compressor.
 - Test irrigation distribution lines at line pressure and visually inspect for leaks.
 - f. When the irrigation system is completed, perform a coverage test to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviation from drawings.
 - g. In the presence of the Engineer, the Contractor shall activate each valve by the automatic controller. All sprinkler, drip and bubbler systems must be confirmed as operating correctly prior to beginning planting operations.
 - h. Upon completion of each phase of work, test and adjust entire system to meet site requirements.

20-2.03F Clean-up: Clean-up shall be made as each portion of work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained on the work of others shall be repaired to original conditions. Washing down of walks and paving must be approved by the Engineer and cannot go to storm drain.

20-2.03G Final Review Prior to Acceptance:

1. Operate each system in its entirety at time of final review. Any items deemed not acceptable shall be reworked to the satisfaction of the Engineer.
2. Final review shall take place after submission of all specified lists, record drawings, and manuals.

20-2.03H Inspections

1. The contractor shall be subject to inspections at any and all times by Engineer.
2. Inspections will be required for:
 - a. Booster pump installation and testing if applicable.
 - b. Verification of adequate supply and pressure as described on the drawings.
 - c. Pressure test of irrigation main lines. Test at 150 P.S.I. for 6 hours. Contractor shall provide all required test pumps and gauges. The Engineer shall observe this test.
 - d. Pipe depth.
 - e. Final inspection/start of maintenance. Final inspection shall be performed by the Engineer.
 - f. Final acceptance and compliance with city standards, to be performed by city forces, with the engineer.
3. Inspection requests:
 - a. Contractor shall notify the Engineer in advance for requesting all inspections as follows:
 - Coverage Tests - 72 hours (3 working days)
 - Final Inspection - 72 hours (3 working days)
 - Final Acceptance - 72 hours (3 working days)
 - b. Do not allow or cause the above items to be buried prior to inspection and approval by the Engineer.
 - c. No inspection will commence without completing previously noted corrections, or without preparing the system for inspection, the inspection will be canceled and the Contractor back charged for the direct costs of all personnel time and consultant time lost.
4. Closing In Uninspected Work:
 - a. Do not allow or cause any of the work of this section to be covered up or enclosed until it has been inspected, tested, and approved by the Engineer.
 - b. Day and night barricades shall be provided as needed for all open trenches.

20-2.03I Maintenance: The contractor is to make all repairs and maintain the entire irrigation system from the time of installation through the landscape maintenance period.

20-2.03J Guarantees:

1. The contractor shall repair or replace any irrigation found to be defective in material or workmanship within the entire irrigation system from the time of installation through the warranty period, as outlined in the Guarantee form provided in these specifications
2. The Contractor shall guarantee all work defects and malfunctions due to faulty workmanship or defective material for a period of one year from the date of final acceptance by the Engineer. Upon being informed by the Engineer of any defects or malfunctions, the Contractor shall provide necessary repairs and/or replacements according to specifications in a reasonably expedient manner at no additional cost to the City.
3. It shall be the responsibility of the Contractor to fill and repair all depressions and replace all necessary plant loss due to the settlement of irrigation trenches for one year following completion and acceptance of the job.
4. Any existing material, equipment, paving, planting, etc., damaged by the Contractor during the course of his work shall be replaced or repaired by the Contractor in a manner satisfactory to the Engineer at the Contractor's own expense before the final approval of project.
5. Damage by Leaks: The Contractor shall be responsible for damages to any property or work caused by leaks in the piping systems being installed, and shall repair, at his own expense and in a manner satisfactory to the Engineer, all damage caused.
6. Any damage due to any irrigation failures which may occur during a one (1) year period after final acceptance shall be repaired by the Contractor to the Engineer's satisfaction without expense to the City. Such repair shall include, but not be limited to the complete restoration of all damaged planting, paving, and other improvements of any kind

7. Emergency repairs, when necessary, may be made by the City without relieving the Contractor of his guarantee obligation. .

20-2.03K Payment: **Irrigation for Planting Areas** shall be paid for at the contract **lump sum**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Irrigation for Planting Areas as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing irrigation in planting areas, including lateral lines, pressure regulators, filters, shrub bubblers, drip line, sub-surface drip irrigation, trenching and backfill as per these Specifications.

Tree Bubblers shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Tree Bubblers as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing tree bubblers as per these Specifications.

Sleeves shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Sleeves as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing sleeves as per these Specifications.

4" Directional Boring shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing 4" Directional Boring as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing 4" directional boring as per these Specifications.

Decoders shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Decoders as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing irrigation decoders including decoders, ground rods, ground plates and wire connectors as per these Specifications.

2-Wire Cable Within 1" PVC Conduit shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing 2-Wire Cable Within 1" PVC Conduit as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing 2-wire cable within 1" PVC conduit as per these Specifications.

1-1/2" Main Line shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing 1-1/2" Main Line specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing 1-1/2" main line as per these Specifications.

Splice Box shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing Splice Box as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing splice box as per these Specifications.

Ball Valve shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Ball Valve as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing ball valve as per these Specifications.

1" Remote Control Valves shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing 1" Remote Control Valves as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing 1" remote control valves as per these Specifications.

Filter shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Filter as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing filter as per these Specifications.

Quick Coupler Valve shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Quick Coupler Valve as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing quick coupler valve as per these Specifications.

Irrigation Master Valve and Flow Sensor shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Irrigation Master Valve and Flow Sensor as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for installing master valve and flow sensor as per these Specifications.

Irrigation Controller shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing Irrigation Controller as specified herein, and no additional allowance will be made therefor. Work for this bid item shall include all the work necessary for relocating and installing enclosure and installing irrigation controller including two wire cable, decoders, ground rods, ground plates, rain switch and all wire connections as per these Specifications.

SECTION 20-3

RAINWATER HARVESTING SYSTEM AND INSTALLATION STANDARDS

20-3.01A Summary: Work specified in this section includes furnishing all items including but not limited to all labor, materials, appliances, equipment, rentals, facilities, transportation, excavations, submittals, footing, incidentals, and services necessary for performing all operations in connection with the Rainwater Harvesting System work, as indicated on the Drawings and specified herein. Work includes but is not necessarily limited to the following:

Connect to the existing roof drain system in the building fascia and divert the roof runoff to the cistern as shown on the plans. Work includes constructing drainage system from first flush device to swale. **City will supply “leaf eater” and first flush devices.**

Construct cistern (tank) footing.

Provide and install cistern (tank). Includes installing overflow piping to swale.

Install booster pump assembly. **City will supply booster pump assembly and enclosure.**

Construct air gap manifold. **City will supply air gap manifold enclosure.**

Irrigation piping for tank, booster pump and air gap manifold.

Install electrical system from panel on exterior of building to booster pump assembly.

Provide and install float switches (2).

Install electrical system from cistern float switches to booster pump assembly.

Construct concrete equipment pad.

Work shall include all miscellaneous work necessary to construct the rain water harvesting system as shown on the plans and specified herein including final testing of the rain water harvesting system.

20-3.01C Codes and Standards: Reference to codes, standards, specifications and recommendations of technical societies, trade organizations and governmental agencies shall mean the latest edition of such publications adopted and published prior to submittal of the bid proposed. Such codes or standards shall be considered as part of this specification as though fully repeated herein.

When codes, standards, regulations, etc., allow work of lesser quality or extent than is specified under this division, nothing in said codes shall be construed or inferred as reducing the quality, requirements, or extent of the Drawings and Specifications.

The standards mentioned herein are intended to be consistent with, and complimentary to, the requirements of the Uniform Plumbing Code, International Plumbing Code, National Institute of Health, and local Board of Health. Contractor shall consult with the plumbing authority regarding local conditions, requirements and restrictions.

Perform work and install materials in full accordance with the following minimum standards, whether statutory or not.

CBC	California Building Code
CPC	California Plumbing Code
CMC	California Mechanical Code
CEC	California Electrical Code

Equipment and material specified under this division shall conform to the following standards where applicable.

ANSI	American National Standards Institute
NEMA	National Electrical Manufacturer's Association
ASTM	American Society for Testing Materials
UL	Underwriter's Laboratories

Concrete work shall conform to ACI Standard Specifications for structural concrete.

20-3.01D Requirement and Site Conditions:

1. Sequencing and Scheduling: Coordinate Rainwater Harvesting System installation work with the installation of other site improvements, including utility installation work, irrigation and landscape installation.
2. Environmental Conditions: Site work such as trenching and backfilling shall not be performed during wet, muddy or frozen conditions.
3. Rules and Regulations: All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code; the Uniform Plumbing Code and other applicable state or local laws or regulations. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes.
 - a. The contractor shall furnish any additional material and labor required to comply with these rules and regulations, though the work is not mentioned in these particular specifications or shown on the drawings.
 - b. When the specifications call for materials or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provision of the specifications shall take precedence over the requirements of the said rules and regulations.
4. Safety: The contractor shall erect and maintain barricades, guards, warning signs, and lights as required for the protection of the public and workmen.
All work shall be performed in a safe manner. All regulations, all OSHA requirements and other authoritative agencies shall be followed.
Prior to commencement of work, locate all underground utilities so that proper precautions may be taken not to damage such improvements.
5. Maintaining Traffic: It is the responsibility of the contractor to ensure adequate protection and controls for pedestrian and vehicular traffic in the vicinity of the project areas. The contractor shall provide all signs, barricades, flagmen, etc., necessary to meet all traffic requirements for this project at his own expense.
6. Coordination: General Contractor shall be responsible for providing all on-site coordination and field meetings between General Contractor, sub-contractor, manufacturers, suppliers, and City as required for full implementation of the project.

20-3.02 – Products

20-3.02A Tank Per Plan and Detail:

1. Tank shall be 3000 gallon Cor Gal/EcoCor TM CG-0604-WT-FS Water Storage Tank. 8-year manufacturer's warranty. PVC liners are NSF1 certified. NFGPA22 compliant and BPA free.
 - a. Tank coating shall be G115 Dipped Galvanized finish.
2. Fittings
 - a. Tank shall be supplied with a 2" PVC Sch 80 WM penetration flange set standard wall mount. (Inlet, drain)
 - b. Tank shall be provided with a custom manufactured Galvanized coated overflow. Detail 1/L3.43.
 - c. Tank shall be provided with a 1" FPT fitting for float controls.
 - d. Tank shall be provide with a Liquid level indicator.
 - e. Tank shall be provided with a Structural Design Package.
 - f. Tank shall be provided with a means for draining and cleaning.

- g. All tank openings shall be protected from unintentional entry by humans or vermin. Manhole covers shall be provided and shall be secured to prevent tampering.
 - Where an opening is provided that could allow the entry of personnel, the opening shall be marked, "**DANGER - CONFINED SPACE**"
- 3. Anchoring - Per Plan and Detail
 - a. Above grade tanks shall be installed on a sturdy and level, foundation or platform, adequately secured with adequate drainage.
 - b. Tank shall be anchored to the concrete foundation with heavy duty Hilti 3/4" x 9" seismic anchors HAS all thread with nut and washer Standard strength steel
 - c. Hilti HY200 Max Epoxy Adhesive anchoring shall be used on each anchoring bolt.
 - d. Tanks/Cisterns shall be supplied by Barrett Engineered Pumps, San Diego, CA, Tel: 619-232-7867
- 4. Overflow
 - a. Overflow outlet shall be sized in accordance with prevailing gutter and down spout requirements and custom built by tank manufacturer.
 - b. Water from the tank overflow shall be discharged in a manner consistent with local storm water runoff requirements and as approved by the local authority having jurisdiction.

20-3.02B Booster Pump – Per Plan and Detail. Booster Pump Assembly and Enclosure Supplied by City:

1. Pump

A simplex water pressure booster system as designed and fabricated by Barrett Engineered Pumps (619) 232-7867. The system shall be a completely prefabricated system with pump, piping, electrical and structural elements. The entire booster pump assembly shall be UL Listed and Approved.

Booster Pump Installation shall include installing a 1" PVC conduit from the booster pump installation to the irrigation controller cabinet and installing flow sensor control wire.

Pump system shall be mounted on a structural aluminum skid with mounting flanges on front and back to allow for mounting of skid to concrete pad. Skid equipped with pipe support on suction and discharge piping. All nuts and bolts and washers shall be stainless steel on skid and piping. Skid shall include mounting hardware for integral aluminum enclosure. The pump system includes aluminum enclosure.

20-3.02C Air Gap Manifold – Per Plan and Detail. Air Gap Manifold Enclosure Supplied by City: Contractor shall construct the air gap manifold system as shown on the plans. City will supply the VIT SBBC-60ALPH enclosure. Contractor shall supply all necessary hardware to construct the air gap manifold and to attach the enclosure to the equipment pad.

20-3.02D Leaf Eater and First Flush Device. Leaf Eater and First Flush Supplied by City: Contractor shall install a "leaf eater" leaf filter device and a first flush device in the pipe system between the downstream roof drain connection and the tank as shown on the plans. City will supply the Leaf Eater and first flush devices. Contractor shall install a drain from the first flush device to the swale, as shown on the plans.

20-3.02E Piping:

- 1. All piping and plumbing component materials used in the installation of a rainwater harvesting system shall be as approved for the specific use per local plumbing code, or be listed by an ANSI accredited product certification program as available.
 - a. Conveyance piping from roof drain to tank shall be 3" SCH 80 pvc.
 - b. Potable Water Back up piping where above grade shall be 2" SCH 80 PVC and painted to match tank.
 - c. Pipe shall be made from NSF approved, Type 1, Grade 1 PVC compound conforming ASTM D1784. All pipe shall meet requirements set forth in ASTM D2441 with an appropriate standard dimension ratio.
 - d. All PVC pipe shall bear the following markings:
 - Manufacturer's name

- Nominal pipe size
 - Schedule or class
 - Pressure rating in PSI
 - NSF
 - Date of extrusion
- e. All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.D. schedule and NSF seal of approval.

20-3.02F Stainless U channel – Per Plan and Detail: A 4" stainless steel U channel cover shall be supplied by tank manufacturer and installed as per plan detail.

20-3.03 Execution

20-3.03A General:

1. Rainwater Harvesting System shall be installed in accordance with all applicable local and state codes and ordinances by a licensed landscape contractor.
2. Follow manufacturer's direction except as shown or specified.

20-3.03B Inspection of Site Conditions:

1. All scaled dimensions are approximate. The contractor shall check and verify all size dimensions prior to proceeding with work under this Section.
2. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities, which are caused by his operations or neglect. Check existing utilities drawings for existing utility locations.
3. Coordinate installation of rainwater harvesting system materials, including pipe, so there shall be no interference with utilities or other construction or difficulty in installing the system.
4. The contractor shall carefully check all grades to satisfy himself that he may safely proceed before starting work on the rainwater harvesting system installation.
5. Coordinate the work of this Section with that of other Sections for the location of pipe sleeves through concrete slabs, paving, etc.
6. The design is diagrammatic. All piping, valves, etc., shown within paved areas is design clarification only. Install piping, valves, etc., in planting areas.

20-3.03C Preparation – Layout of Work: Prior to installation, stake out all pressure supply lines and notify Rainwater Harvesting System consultant for reviewing layout when area or grade differences or obstructions are not as indicated on the plans.

20-3.03D Installation:

1. Tank Installation:
 - a. Contractor to coordinate tank installation with tank manufacturer and other related trades.
 - b. Install all piping as laid out per plan.
 - c. Install leaf eater at outlet of roof.
 - d. Connect 3" rain water drain pipe to leaf eaters.
 - e. Install First Flush and tie into swale drain line.
 - f. Install roof drain pipe at tank connection.
 - g. Install potable back up line to tank from irrigation main line.
2. Trenching:
 - a. Dig trench straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow layout shown on drawings.
 - b. Provide for a minimum of 18 inches cover for all pressure supply lines.
 - c. Provide for a minimum cover of 12 inches for all non-pressure lines.
 - d. Provide for a minimum cover of 18 inches for all wiring.
 - e. Provide a minimum cover of 24 inches over pipe and wiring under asphalt pavement.
3. Backfilling:
 - a. Do not backfill trenches until all required tests are performed. Carefully backfill trenches with specified excavated materials for backfilling, consisting of earth, loam, sandy clay, sand, or other acceptable materials, free from large clods of earth or stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent

- undisturbed soil in planting areas. Backfill shall conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.
- b. All water lines backfill to be a 4-inch minimum sand bed on all sides of the pipe. The remaining backfill material shall be native soil excavated from the trenches.
 - c. Backfill in proposed asphalt paved areas shall have sand covering pipe with a 6" minimum depth.
 - d. Place backfill materials in 6-inch layers and compact by tamping to a relative compaction of 90 percent.
 - e. If settlement occurs along trenches, and adjustments in pipes, valves in soil, or paving are necessary to bring the system, soil, or paving to the proper level of the permanent grade, the Contractor, as part of the work under this Contract, shall make all adjustments without extra cost to the Contract.
4. Pipe and Fitting Installation and Connections:
- a. Install all assemblies specified herein in accordance with details shown on drawings.
 - b. Thoroughly clean PVC pipe and fittings of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
 - c. On PVC to metal connections, the contractor shall work the metal connections first. Use only male PVC threads and female metal threads. Use Teflon tape, or equal, on all threaded PVC to PVC, and on all treaded PVC to metal joints.
5. Line clearance: All lines shall have a minimum clearance of 6 inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.
6. Pump Station:
- a. Locate pump station at location shown with exact placement to be determined at job site.
 - b. Connection of 460 and 120 VAC electrical service from service point shown on the plans to the pump station shall be provided by the irrigation contractor.
 - c. Contractor shall schedule a pre-construction meeting with manufacturer's representative and rain water harvesting consultant prior to installation, and schedule a start-up post installation meeting.
 - d. The services of a factory representative or trained service professional shall be made available on the job site to check installation and perform the startup and instruct the operating personnel. A startup report containing voltage and amperage readings, suction and discharge pressure readings, estimated flow conditions, and general operating characteristics shall be submitted to Engineer.
 - e. One electronic set of operating and maintenance manual shall be provided to Engineer after startup and shall include parts manuals for major components, performance curve for pump, general sequence of operation, and electrical schematic for control panel.
 - f. The warranty period shall be a non-prorated period of 36 months from date of purchase.
 - g. Coordinate tank installation with all trades on the project.
 - h. Contractor to coordinate all traffic control with the City prior to delivery.
7. Master Control Valves: Install where shown on drawings. When grouped together, allow at least 12 inches between valves. Install each remote control valve in a separate valve box. Locate boxes in groundcover areas whenever possible, and a minimum of 12 inches from paving or curbs.
8. Control Wiring:
- a. Make connections between existing automatic controls and electrical control valves with direct burial 2-wire cable. Install in accordance with valve manufacturer's specifications and wire charts.
 - b. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible. When not possible, house wiring in PVC conduit as described in "Sleeving and Conduit" section.
 - c. Provide 2-foot expansion coil at each wire connection and at least every 100 feet of wire length on runs more than 100 feet in length. Form expansion coils by wrapping at least five turns of wire around a 1-inch diameter pipe, then withdrawing the pipe.
 - d. Splicing on runs shall be placed in junction boxes. Indicate all splices on the As-Built Plan.

9. Sleeving and Conduit:
 - a. Control wiring passing under proposed concrete and paving shall pass through Schedule 40 PVC conduit-size as required.
 - b. Sleeving and conduit shall extend six (6") beyond farthest edge of pavement or curb.
 - c. Provide removable non-decaying plug at ends of sleeves and conduits to prevent entrance of earth.
10. Flushing of system: After all new pipelines and irrigation are in place and connected, all necessary diversion work has been completed, and prior to installation of irrigation, open control valves and use a full head of water to flush out the Rainwater Harvesting System.

20-3.03E Field Quality Control:

1. Testing Adjustment of Rainwater Harvesting System:
 - a. If it is determined that adjustments are needed to the pumping system and potable backup system for proper operation, the contractor shall make the adjustments with the manufacturer's representative present on site.
2. Testing of Rainwater Harvesting System once above is complete:
 - a. Notify the Rainwater Harvesting System consultant at least three (3) days in advance of testing.
 - b. Test to be done at no extra cost to the Contract.
 - c. Coordinate irrigation testing with irrigation consultant and follow specifications as outlined in section 02810-3.05.

20-3.03F Final Review Prior to Acceptance:

1. Operate the system in its entirety at time of final review. Any items deemed not acceptable shall be reworked to the satisfaction of Engineer.
2. Final review shall take place after submission of all specified lists, record drawings, and manuals.

20-3.03G Inspections:

1. Rainwater Harvesting Systems shall be minimally inspected according to the following schedule:
 - a. Inspection of all elements before they are covered (rough-in inspection)
 - b. Final inspection including testing.
 - c. In addition to testing required by the code for plumbing systems, the following also apply:
 - Testing and Commissioning
 - Piping: A flow test shall be performed through the system to the point of water distribution and disposal. In addition, the water distribution system shall be tested and proved tight at the operating pressure. Where the manufacturer permits, a 50-psi hydrostatic test may substitute for the test above. All lines and components shall be watertight.
 - d. Other inspections as needed to assure proper system operation.

20-3.03H Payment: Tank shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and installing Tank complete, in place as specified herein and no additional compensation will be made therefor.

Booster Pump System Assembly And Housing Installation shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in installing Booster Pump System Assembly and Housing complete, in place, as specified, including picking up from City Corporation Yard, installing flow sensor conduit and wire, anchoring into concrete pad and no additional compensation will be made therefor.

Air Gap Manifold shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing the Air Gap Manifold complete, in place, as specified, including all pipe,

hardware, picking up enclosure from City Corporation Yard, installing enclosure and anchoring into concrete pad and no additional compensation will be made therefor.

Pipe Roof Drains to Tank shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in Pipe Roof Drains to Tank complete, in place, as specified, including connecting to existing roof drains, connecting to tank, supplying and installing all pipe and hardware, installing the cleanout, "leaf eater" and first flush devices, and no additional compensation will be made therefor.

Stainless Steel U-Channel shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in supplying and installing Stainless Steel U-Channel complete, in place, as specified, including all fabrication and hardware, and no additional compensation will be made therefor.

Piping For Tank, Booster Pump and Air Gap Manifold shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Piping for Tank, booster Pump and Air Gap Manifold including providing and installing pipes, fittings and hardware, accurately locating connection points, trenching, installing sleeves through concrete slabs, and back filling, complete, in place, as specified and no additional compensation will be made therefor.

Float Switches shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in supplying and installing (2) Float Switches, including conduit, wire, connecting to booster pump assembly control panel, trenching and backfill, as specified herein and no additional compensation will be made therefor.

Booster Pump Assembly Electrical Service shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in supplying and installing Booster Pump Assembly Electrical Service including installing electrical conduit from the panel to the pump assembly, pulling wire, connecting to the existing panel and the pump assembly control panel, trenching and backfill, as specified herein, and no additional compensation will be made therefor.

20-3.04A Concrete Tank Footing: See Section 51 of these Special Provisions.

SECTION 20-4 SITE FURNISHINGS AND ACCESSORIES

20-4.01 General

20-4.01A Summary:

1. The General Conditions and all other Contract Documents for this project are complementary and applicable to this Section of the Specifications.
2. Work Included: Furnish all labor, materials, equipment and services necessary to provide and construct, repair, or install the site elements, complete in place, as shown and specified, including, but not limited to:
 - a. Precast Concrete Picnic Tables
 - b. Hydration Station
 - c. Tree Grate and Frame
 - d. Metal header
 - e. Noiyo Cobbles
 - f. Boulders
 - g. Granite Weir installation
3. Related Work: Section 20-1: Landscape Planting

20-4.01B Submittals:

1. Submit catalog cuts, samples and manufacturers literature (specifications and installation details) of all manufactured items in this section to Engineer for approval before installation.
 - d. Provide color samples, brushouts, or charts for all items. Final colors to be selected by Engineer and a sample submitted for approval.

20-4.01C Delivery, Storage and Handling: Deliver, store, and handle furnishings to prevent damage and deterioration. Stack assembled items off the ground.

20-4.01D Project Conditions: Provide sleeves, anchors, inserts, bolts, clips, and other items furnished under this Section and built in with work of other trades.

No work shall be installed until finish, color samples and shop drawings for the work have been reviewed and approved in writing by Engineer and final grading and surfacing is completed.

20-4.02 Products

20-4.02A Manufactured Items:

1. Precast Concrete Picnic Tables: per plans. Installation includes the application of TSW4 Acryli-Master Graffiti Resistant Coating, Semi-Gloss Finish, Non-Sacrificial, Low VOC or approved equal. Apply per manufacturer's specifications. Apply a minimum of 4 coats.
2. Hydration Station: per plans. Installation includes installing 3/8" O.D. copper water service from water supply connection point shown on plans to hydration station. Installation includes installing drain to swale, as shown on plans.
3. Tree Grate and Frame: per plans.
4. Metal Header: per plans.
5. Noiyo Cobbles: per plans.

20-4.02B Non-Manufactured Items:

1. Boulders: boulder schedule per plans.
2. Granite Weir: per plans. Granite weirs supplied by City. Contractor shall coordinate with the City for pickup of Granite Weirs from City Corporation Yard (35 Stony Circle, Santa Rosa, CA 95401), prior to the commencement of work.

20-4.02C Miscellaneous Materials: All other materials for site elements shall be as specified on the plans and these specifications.

20-4.03 Execution

20-4.03A Installation:

1. Examination: Verify that conditions are satisfactory for installation of each item of site elements. If unsatisfactory conditions exist, do not begin installation until such conditions have been corrected.
 - a. Assemble and install site furnishings in accordance with approved shop drawings and manufacturer's printed instructions.
 - b. Perform fitting required for installation. Set the work accurately in location, alignment, and elevation free of rack, measured from established lines and levels. Assembled furnishings shall be firm, rigid, free of rattle, and provide maximum protection against tampering and vandalism.
 - c. Precast Concrete Tables, Hydration Station and Tree Grate & Frame
 - Install to concrete slab. Utilize galvanized expansion anchors and appropriate grouts as required
 - d. Boulders: boulder schedule and installation per plans.
 - e. Granite Weir: per plans.
 - f. Metal Headers: per plans.

20-4.03B Guarantee:

1. At completion of project, Contractor shall provide City with written guarantee from each manufacturer identifying the nature of warranty for each product component.
 - a. Provide warranty manuals in accordance with Section 01 77 00, "Closeout Procedures".
2. Contractor shall provide City with two (2) bound maintenance manuals identifying each piece of equipment and manufacturer's cut sheets, installation details, and manufacturer specifications.
 - a. Provide maintenance manuals in accordance with Section 01 77 00, "Closeout Procedures".
3. Contractor to provide City with minimum of two (2) gallons each type and color of paint used on apparatus with recommended surface preparation and application guidelines.

20-4.03C Payment: **Precast Concrete Picnic Tables** shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and installing Precast Concrete Picnic Tables complete, in place as specified herein, and no additional compensation will be made therefor.

Hydration Station shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and installing Hydration Station, including installing water service and drain lines, complete, in place as specified herein, and no additional compensation will be made therefor.

Cobbles at Swales shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and placing Cobbles at Swales complete, in place, as specified herein, and no additional compensation will be made therefor.

Cobble Apron shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and placing Cobble Apron complete, in place, as specified herein, and no additional compensation will be made therefor.

Tree Grate and Frame shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and installing Tree Grate and Frame complete, in place as specified herein, and no additional compensation will be made therefor.

Metal Header shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and installing Metal Header complete, in place as specified herein, and no additional compensation will be made therefor.

Boulders shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in providing and installing Boulders complete, in place as specified herein, and no additional compensation will be made therefor.

Granite Weir shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in installing Granite Weir complete, in place, as specified herein, and no additional compensation will be made therefor.

SECTION 26

AGGREGATE BASE

26-1.01 Aggregate Base: Aggregate base shall be Class 2 conforming to and placed in accordance with the requirements of Section 26 of the City Specifications, with the following modifications and additional requirements.

26-1.02B Quality Requirements: The minimum sand equivalent shall be 31 for any individual test.

26-1.03D Compaction: Class 2 aggregate base shall be compacted to 95% relative compaction. The material shall be placed in 6" lifts. Compaction shall commence immediately after placing of the damp material and before the material has dried sufficiently to allow separation between the fine and coarse particles. The surface of the finished aggregate base shall be firm and unyielding. Any visible movement vertically or horizontally of the aggregate base under the action of construction equipment or other maximum legal axle loads shall be considered as evidence that the aggregate base does not meet this requirement.

26-1.04 Payment: Class 2 Aggregate Base shall be considered as included in the prices paid for various contract items of work., which price shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in furnishing and placing the base material as specified, including furnishing, hauling and applying water as specified and directed by the Engineer and no additional allowance will be made therefor.

SECTION 30

STRUCTURAL SOIL

30-1.01 General:

SUBMITTED SAMPLES

At least 30 days prior to ordering materials, the contractor shall submit to the Engineer representative samples, certificates, manufacturer's literature and test results for materials specified below, unless the supplier has already been approved by the City to provide Structural Soil. No materials shall be ordered until approved by the Engineer. The Engineer reserves the right to reject any material that does not meet these specifications. Delivered materials shall closely match the approved material.

Submit from licensed producer, 1/2 cubic foot representative sample of clay loam, one cubic foot representative sample of crushed stone, and one cubic foot representative sample of Structural Soil mix for approval. In the event of multiple source fields for clay loam, submit a minimum of one set of samples per source field or stockpile. The samples of all clay loam, crushed stone, and Structural Soil shall be submitted to the engineer as a record of the soil color and texture.

1. Submit a mechanical analysis of the clay loam sample and particle size analysis including the following gradient of mineral content:
 - USDA Designation Size in mm.
 - Gravel +2 mm
 - Sand 0.05 – 2 mm
 - Silt 0.002-0.05 mm
 - Clay minus 0.002 mmSieve analysis shall be performed and compared to USDA Soil Classification System. Sieve analysis shall be done by a combined hydrometer and wet sieving using sodium hexametaphosphate as a dispersant in compliance with ASTM D422 after destruction of organic matter by hydrogen peroxide.
2. Submit a chemical analysis, performed in accordance with current AOAC Standards, including the following:
 - a. pH and buffer pH.
 - b. Percent organic matter as determined by the loss of ignition of oven dried samples. Test samples shall be oven dried to a constant weight at a temperature of 230 degrees F, plus or minus 9 degrees.
 - c. Analysis for nutrient levels by parts per million.
 - d. Soluble salt by electrical conductivity of a 1:2 soil/water sample measured in Millimho per cm.
 - e. Cation Exchange Capacity (CEC).
 - f. Carbon/Nitrogen Ratio.

Submit one cubic foot sample of crushed stone which will be used in production of Structural Soil.

3. Provide particle size analysis:
 - USDA Designation Size in mm.
 - 3" +76 mm
 - 2 1/2" 63-76 mm
 - 2" 50-63 mm
 - 1 1/2" 37-50 mm
 - 1" 25-37 mm
 - 3/4" 19-25 mm
 - Fine gravel 2-19 mm
4. Provide the manufacturers analysis of the loose and rodded unit weight
5. Losses from LA Abrasion tests- not to exceed 40%

6. Minimum 90% with 2 or more fractured faces
7. Percent pore space analysis

New testing must be provided by the Structural Soil supplier any time a change in production occurs that may effect the mix, quality, or performance of the Structural Soil or its components. New testing must also be provided for every 2,500 cubic yard of Structural Soil produced or whenever requested by the Engineer.

30-2.01 Delivery, Storage and Handling: Delivered Structural Soil shall be at or near optimum compaction moisture content as determined by AASHTO T 99 (ASTM D 698) and should not be placed in frozen, wet or muddy sites.

Protect Structural Soil from exposure to excess water and from erosion at all times. Do not store unprotected. Do not allow excess water to enter site prior to compaction. If water is introduced into the after grading, allow water to drain to optimum compaction moisture content.

All areas to receive Structural Soil shall be inspected by the installing contractor before starting work and all defects such as incorrect grading, compaction, and inadequate drainage shall be reported to the engineer prior to beginning this work.

30-2.02 Materials:

CLAY LOAM

1. Soil shall be a "loam" with a minimum clay content of 20% or a "clay loam" based on the "USDA classification system" as determined by mechanical analysis (ASTM D-422) and it shall be of uniform composition, without admixture of subsoil. It shall be free of stones, lumps, plants and their roots, debris and other extraneous matter. It shall not contain toxic substances harmful to plant growth. Clay loam shall contain not less than 2% or more than 5% organic matter as determined by the loss on ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 degrees F., plus or minus 9 degrees.
2. Mechanical analysis for the loam or clay loam shall be as follows:
Textural Class % of Total Weight
Gravel less than 5%
Sand 20-45%
Silt 20-50%
Clay 20-40%
3. Chemical analysis: Meet, or be amended to meet the following criteria:
 - a. pH between 5.5 to 6.5
 - b. Percent organic matter 2% - 5% by dry weight
 - c. Adequate nutrient levels
 - d. Soluble salt less than 1.0 mmho/cm
 - e. Cation Exchange Capacity (CEC) greater than 10
 - f. Carbon/Nitrogen ratio less than 33:1
4. Loam or clay loam shall not come from USDA - classified prime farmland.

SULFUR (if needed)

1. Sulfur shall be a commercial granular, 96% pure sulfur, with material and analysis appearing on the labeled container.
2. Sulfur used to lower pH shall be a ferrous sulfate formulation.
3. Application rates shall be dependent on soil test results.

CRUSHED STONE

1. The size of the crushed stone shall be 0.75 inches to 1.5 inches allowing for up to 10% being greater than 1.5 inches, and up to 10% less than 0.75 inches.
2. Acceptable aggregate dimensions will not exceed 2.5:1.0 for any two dimensions.
3. Minimum 90% with two or more fractured faces.

4. Results of Aggregate Soundness Loss test shall not exceed 18%.
5. Losses from LA Abrasion tests shall not exceed 40%.

HYDROGEL

1. Hydrogel shall be a coated potassium propenoate-propenamide copolymer.

STRUCTURAL SOIL MIX

1. Uniformly blended urban tree mixture of crushed stone, clay loam and a Hydrogel Tackifier, mixed in the following proportion:
Material Unit of Weight
Specified crushed Stone 100 units dry weight
Specified clay loam 20 – 25 units (to achieve minimum CBR of 50)
Hydrogel Tackifier 0.035 units dry weight
Moisture ASTM D698/AASHTO T-99 optimum moisture

PRODUCTION AND INSTALLATION GUIDELINES

MIXING AND QUALITY CONTROL TESTING

1. All Structural Soil mixing shall be performed at the approved producer's yard using appropriate soil measuring, mixing and shredding equipment of sufficient capacity and capability to assure proper quality control and consistent mix ratios. No mixing of Structural Soil at the project site shall be permitted.
Maintain adequate moisture content during the mixing process. Soils and mix components shall easily shred and break down without clumping. Soil clods shall easily break down into a fine crumbly texture. Soils shall not be overly wet or dry. The licensed producer shall measure and monitor the amount of soil moisture at the mixing site periodically during the mixing process.
2. Raw materials shall be mixed off-site, only at the approved producer's facility, on a flat asphalt or concrete paved surface to avoid soil contamination.

30-2.03 Site Preparation: Do not proceed with the installation of the Structural Soil material until all walls, curb footings and utility work in the area have been installed. For site elements dependent on Structural Soil for foundation support, postpone installation of such elements until immediately after the installation of Structural Soil.

Install subsurface drain lines as shown on the plan drawings prior to installation of Structural Soil material.

Excavate and compact the proposed subgrade to depths, slopes and widths as shown on the drawings. Maintain all required angles of repose of the adjacent materials as shown on the drawings. Do not over excavate compacted subgrades of adjacent pavement or structures.

Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations shall slope parallel to the finished grade and/or toward the subsurface drain lines as shown on the drawings.

Clear the excavation of all construction debris, trash, rubble and any foreign material. In the event that fuels, oils, concrete washout silts or other material harmful to plants have been spilled into the subgrade material, excavate the soil sufficiently to remove the harmful material. Fill any over excavation with approved fill and compact to the required subgrade compaction.

Protect adjacent walls, walks and utilities from damage. Use ½" plywood and/or plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work.

Clean up all trash and any soil or dirt spilled on any paved surface at the end of each working day.

30-2.04 Construction: Contractor shall pothole all utilities within the area to be excavated. Excavation shall be in accordance with these Special Provisions, plans, and the City Standards. Excavation operations shall be conducted in such a manner as to not disturb the existing planter curb or existing utilities.

All excavation material shall become the property of the Contractor and shall be removed as it is generated, at no time shall the Contractor place excavated material at the work site. Prior to disposal of any material, the Contractor shall submit to the Engineer written authorization for such disposal of material and entry permission signed by the owners of the disposal site, and shall comply with all other requirements of disposal, such as City and County permits, as may be required. See Section 19-2.03B of these Special Provisions.

For areas large enough to support a motor-driven compactor, Structural Soil shall be compacted in 8" lifts, using a vibratory steel drum roller weighing less than 12 tons. The minimum number of passes is two, however, additional passes may be required and should be determined during placement by the Engineer to insure stability of the layer. For smaller areas, a portable vibratory plate is recommended. Use a minimum of two passes, of not less than ten seconds per pass, before moving the vibratory plate to the next adjacent location. Additional passes may be required and should be determined during placement by the Engineer to insure stability of the layer.

Bring Structural Soil to finished grades as shown on the drawings. Immediately protect the Structural Soil from contamination by toxic materials, trash, debris, water containing cement, clay, silt or materials that will alter the particle size distribution of the mix with plastic or plywood as directed by the engineer.

The Engineer may periodically check the material being delivered, prior to installation for color and texture consistency with the approved sample provided by the installing contractor as part of the submittal for Structural Soil. If the engineer determines that the delivered material varies significantly from the approved samples, the engineer shall contact the producer.

Engineer shall ensure that the delivered structural soil was produced by the approved supplier by inspecting weight tickets showing source of material.

Structural Soil should not be stockpiled long-term. Any Structural Soil not installed immediately should be protected by a tarp or other waterproof covering.

30-2.05 Measurement: The quantity of Structural Soil to be paid for shall be the volume measured in-place and compacted.

30-3.01 Payment: **Structural Soil** shall be paid for at the contract price per **cubic yard**, which price shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in furnishing and placing Structural Soil as specified, including excavation, furnishing, hauling and applying water as shown on the plans and as specified in these Special Provisions and no additional allowance will be made therefor.

Structural Soil Moisture Barrier shall be paid for at the contract price per **square yard**, which price shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in furnishing and installing the Moisture Barrier as specified, including supporting while backfilling and seam taping, as shown on the plans and as specified in these Special Provisions.

SECTION 39A

ASPHALT CONCRETE TRENCH AND CONFORM PAVING

39A-1.01 Description: Asphalt concrete surfacing and the placing thereof shall conform to the requirements of the Standard Specifications, Section 39 of the City Specifications and these Special Provisions.

39A-2.01 Asphalts: Temporary paving on all utility trenches and any other excavated areas shall be ½-inch maximum, medium grade aggregate hot mix asphalt concrete installed a minimum of two inches thick **placed each day** over the work.

Temporary paving around edges of steel plates shall be a hot mix ½-inch maximum, medium graded aggregate and SC 3000 asphalt binder for use the same day or SC 250 asphalt binder for use over a one week period.

The amount of asphalt binder to be mixed with the aggregate will be specified by the Engineer at the time of paving. Different asphalt binder content may be specified for each lift and each location.

Cutback shall not be stockpiled or used anywhere on the job site.

39A-5.01 Spreading Equipment: When trench width is three feet or less, the asphalt concrete used for trench paving may be deposited directly from the haul vehicle into the trench. The asphalt shall then be raked smooth prior to compaction.

39A-6.01 General Requirements: Areas outside of reconstruction or overlay limits shall receive permanent trench paving per City STD-215, the modified detail on the Plans or as specified herein. The Engineer may require additional paving beyond the minimum dimensions shown in STD-215.

Areas requiring permanent trench paving per City STD-215 shall have a minimum A.C. thickness of 0.25 feet.

The Contractor shall provide compaction of backfill and base material as the job progresses. Temporary paving, as specified in Section 39A-2.01, shall be placed over the work each day, leaving not more than 25 feet unpaved. This temporary paving shall be removed for final street reconstruction and/or trench paving. The 25 feet of unpaved trench shall be covered with skid resistant steel plates (with a coefficient of friction of 0.35 or greater per CTM342), capable of sustaining normal (H20) traffic loads without shifting or bouncing and shall be secured per Caltrans requirements. Plates that have areas where the skid resistant material is missing shall not be used and must be removed from the job site. Hot mix asphalt concrete shall be placed and compacted around all edges of steel plates with a sufficient width and gradual slope in order to provide a smooth transition to existing pavement.

Temporary and permanent asphalt trench paving shall be even and smooth riding.

The Contractor shall monitor and maintain all temporary paving to the satisfaction of the Engineer.

Asphalt concrete used for temporary trench paving shall be removed and disposed of in accordance with the Standard Specifications, Section 7-1.13 "Disposal of Materials Outside the Highway Right-of-Way".

Any existing manholes or valves that are encountered within the trench paving limits must be adjusted to grade per the requirements of Section 15 of these Special Provisions. The Contractor is responsible for all coordination with the various utility company owners and their representatives, as well as the cost to adjust the various utilities to grade.

39A-6.03 Compacting: Compaction shall be in accordance with Section 39-6.03 of the City Specifications, reprinted here for clarity.

The basis for approval shall be the attainment of 97% relative compaction and satisfactory surface condition following final rolling. The number of coverages required shall be the minimum number required to obtain 97% relative compaction.

39A-8.02 Payment: Full compensation for furnishing and installing temporary paving asphalt shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefor.

Permanent Trench and Conform Paving shall be paid for at the contract price per **ton**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in constructing Permanent Trench and Conform Paving, including but not limited to: saw cutting, tack coat, compaction and any other work required for permanent trench paving not specifically enumerated in the City Standards, these Special Provisions or on the Project Plans and no additional allowance will be made therefor.

40-8 PERVIOUS CONCRETE PAVEMENT

40-8.01 General

40-8.01A Summary: Section 40-8 includes specifications for constructing pervious concrete pavement.

Section 40-1 does not apply.

40-8.01C Submittals: Submit test data supporting your minimum cementitious material determination.

Before starting pervious concrete work, submit:

1. Test results for the void content of hardened concrete. Use core specimens obtained from a previous project that used the same mix design. Calculate void content under 90-7.01D(3).
2. Test results for the void content of fresh concrete under ASTM C 1688/C 1688M.
3. Submit documentation of certifications of pervious concrete placement crew members.

40-8.01D Quality Control and Assurance:

40-8.01D(1) General

Not Used

40-8.01D(3) Prepaving Conference: Schedule a prepaving conference at a mutually agreed upon time and place to meet with the Engineer. Make the arrangements for the conference facility. Discuss methods of performing each item of the work.

Prepaving conference attendees must sign an attendance sheet provided by the Engineer. The prepaving conference must be attended by your:

1. Project superintendent
2. Pervious concrete construction foreman and your National Ready Mix Concrete Association (NRMCA) certified pervious concrete craftsman. If you do not employ a craftsman, your NRMCA certified pervious concrete installer must attend.
3. Earthwork construction foreman
4. Base construction foreman
5. Concrete quality control or technical services manager

Do not start paving work until the listed personnel have attended the prepaving conference.

40-8.01D(4) Personnel Qualifications: Crew must employ 1 or more NRMCA certified pervious concrete Craftsman who must be onsite actively working with and guiding the placement crew during pervious concrete placement.

40-8.01D(7) Void Content: The City tests void content under section 90-7. The void content must be 22 percent or less.

40-8.01D(8) Infiltration Rate: The infiltration rate must be at least 100 inches/hour.

40-8.02 Materials: Comply with the specifications for pervious concrete in section 90-7 of these Special Provisions.

The maximum size aggregate for the pavement surface must not exceed 1/2 inch. If the pavement is constructed in 2 or more layers, layers below the surface layer may have a larger maximum size aggregate.

Determine the minimum cementitious material content. The cementitious material content must not exceed 590 lbs/cu yd.

Joint filler for isolation joints must (1) be preformed expansion joint filler for concrete, bituminous type, and (2) comply with ASTM D 994.

The aggregate shall meet the requirements of ASTM C33 and the following grading:

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2"	100
3/8"	85-100
#4	10-30
#8	0-10
#16	0-5

40-8.02A Quality Control and Assurance

40-8.02B Penetration: The specifications for penetration in section 90-1.02G(6) do not apply to pervious concrete.

40-8.02C Void Content: The Engineer calculates void content of a core specimen using the following equation:

$$V = 100 - [(Ws - Wi) \times 4 \times F / (H \times D^2 \times Pi)] \times 100$$

where:

V = void content, percent

Ws = saturated weight of the core under ASTM C 140, lb or g

Wi = immersed weight of the core under ASTM C 140, lb or g

F = 27.69 if measurements are in pounds and inches, 1000 if measurements are in grams and mm

H = height of the core, inches or mm

D = diameter of the core, inches or mm

Pi = 3.14159

Dimensions D and H are measured with calipers to the nearest 0.02 inch or 0.5 mm.

40-8.03 Construction

40-8.03A General:

Not Used

40-8.03B Subgrade Preparation

40-8.03B(1) Permeable Material Base: Pervious Concrete shall be placed on a base of Class 2 Permeable material as shown on the plans. Permeable material shall be Class 2 Permeable Material conforming to Section 68-2.02F of the State Standards.

Immediately before placing pavement, grade and finish the subgrade. The subgrade must:

1. Comply with the specified compaction and grading
2. Be free of loose and extraneous material
3. Be uniformly moist and free of standing or flowing water

The finished subgrade surface must not project into the pavement cross-section at any point. Verify the finished subgrade surface by:

1. Means of a template supported on the side forms for fixed form method
2. Measuring from the offset guide line or survey marks for extruded or slip form methods

Fill areas of subgrade lower than the required grade with pervious concrete pavement. No payment is made for pavement used to fill these low areas.

40-8.03C Paving: Place pervious concrete pavement under section 40-1.03H(1) except the 3rd paragraph does not apply.

Spread, compact, and shape pervious concrete pavement under section 40-1.03H(4) or under section 40-1.03H(5). Vibrators must not be used. You may use wood side forms.

Discharge pervious concrete from the truck mixer within 60 minutes of batching. If you use a hydration stabilizer, an additional 60 minutes is allowed.

Compact pervious concrete to the required cross section. If you construct pervious concrete pavement in 2 or more layers, compact the lower layer before placing the next layer. Do not allow cold joints between layers. Compact within 30 minutes after spreading the pervious concrete. Do not disturb placed plastic concrete. Do not allow foot traffic on the un-compacted surface.

Use hand tampers to compact the concrete along the formed edges. After compaction and repair of surface flaws no further finishing is required.

If you delay placing 2 consecutive loads of pervious concrete by 20 minutes or more, form a construction joint. The joint must comply with section 40-1.03E(2) except you must remove the bulkhead and dampen the face with an atomized spray when placement continues.

40-8.03D Joints: Construct contraction joints where shown by scoring concrete with a grooving tool and rounding corners with an edger tool or by saw-cutting hardened concrete to a depth of at least 1/4 of the pavement depth.

Construct an isolation joint at standard concrete structures that abut or penetrate the pervious concrete area using 1/4" thick joint material. The isolation joint must extend the full depth of the pervious concrete. Place and secure the isolation joint material before placing concrete.

40-8.03E Finishing: The finished surface must not vary more than 0.02 foot from a 12 foot straightedge except at grade changes.

40-8.03F Curing: If placing pavement around or adjacent to miscellaneous structures such as manholes or pipe inlets, do not finish the miscellaneous structures to final grade until the pavement is finished beyond the miscellaneous structure. Curing procedures shall begin within 20 minutes after final placement operations. The pavement surface shall be covered with a minimum six (6) mil thick polyethylene sheet or other approved covering material. Prior to covering, a fog or light mist shall be sprayed above the surface. The cover shall overlap all exposed edges and shall be secured (without using dirt or stone) to prevent dislocation due to winds or adjacent traffic conditions. Pervious concrete shall be cured for seven (7) days minimum. No traffic shall be allowed for 10 days.

40-8.04 Payment: Class 2 Permeable Material Base shall be considered as included in the prices paid for Pervious Concrete, which price shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in furnishing and placing the base material as specified, including furnishing, hauling and applying water as specified and directed by the Engineer and no additional allowance will be made therefor.

Pervious Concrete shall be paid for at the contract price per **square foot**, which price shall include furnishing all labor, materials, tools and equipment, and doing all work described herein including, but not limited to, forming, placing, curing and jointing of the Pervious Concrete, and no additional allowance will be made therefor.

SECTION 51

CONCRETE STRUCTURES

51-7.01A Description: Minor Structures shall be constructed in accordance with the applicable sections of the City Standards, Section 51-7 of the Standard Specifications, the details shown on the plans, and these Special Provisions.

Minor Concrete shall conform to the provisions of Section 90-2 of the Standard Specifications.

Concrete shall be cured in accordance with Section 90-1.03B of the Standard Specifications.

Reinforcement shall in accordance with Section 52 of the Standard Specifications, the project plans and these Special Provisions. Reinforcement shall be sized and spaced as shown on the project plans. All reinforcement will be imbedded a minimum of 3 inches.

Expansion material shall be installed to the locations shown on the plans. Expansion material shall be 3/8" felt trimmed neatly at the edge of concrete. Reinforcement shall terminate 3" from expansion joints.

51-7.01B Concrete Footing for Tank: Work for this bid item shall include all the work necessary for installing Concrete Footing for Tank as per project plans and these Special Provisions.

51-7.01C Parking Lot Light Foundation: The Contractor shall construct foundations for the parking lot light fixtures per project plans.

Contractor shall determine anchor bolt pattern from existing light fixtures.

Minor portland cement concrete shall be produced from commercial quality aggregates and cement and shall contain not less than six sacks of cement per cubic yard and with a minimum 28 day compressive strength of 3000 psi.

51-7.01D Measurement: The amount of Concrete Divider to be paid shall be the length measured along the center of the Concrete Divider and the Concrete end block.

51-7.01E Payment: **Concrete Footing for Tank** shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Concrete Footing for Tank complete, in place as specified, including excavation, placing and compacting base rock, reinforcement, installing cistern anchor bolts and backfilling and no additional compensation will be made therefor.

Concrete Divider shall be paid for at the contract price per **linear foot**. The contract price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Concrete Divider, complete, in place, as specified, including excavation, placing and compacting base rock, setting and removing forms, providing and installing reinforcement, expansion joints, skate stops, reveals, and backfilling and no additional compensation will be made therefor.

Concrete Wall shall be paid for at the contract price per **linear foot** which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Concrete Wall, complete, in place as specified, including excavation, placing and compacting base rock, setting and removing forms, providing and installing reinforcement, expansion joints, skate stops, reveals and backfilling and no additional compensation will be made therefor.

Parking Lot Light Foundation shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment to construct Parking Lot Light Foundation as shown on the plans, as specified, including all excavation, backfill, reinforcement, and no additional allowance will be made therefor.

SECTION 56

SIGNS

56-1.0 General: All ADA directional signs to be installed under this contract shall be provided by the City. The contractor shall provide posts and mounting hardware as specified on the plans and in these Special Provisions. The signs shall be installed at the locations shown on the plans or as directed by the Engineer.

Non-potable water sign shall be provided by the City. The contractor shall provide posts and mounting hardware as specified on the plans and in these Special Provisions. The signs shall be installed at the locations shown on the plans or as directed by the Engineer.

All signs as designated below shall be provided by the City and shall include the posts. The Contractor shall provide all necessary hardware and materials to install them as shown on the plans or as directed by the Engineer:

- Location Sign
- Kiosk
- Information Kiosk
- Best Practice Sign
- Plant Tag (placements TBD)

Signs provided by the City under this contract shall be available at the City's Corporation Yard at 55 Stony Point Rd. Contractor shall schedule pick up with the Engineer.

56-4.03 Construction: All sign shall be installed as specified on the plans. All sign placement shall comply with ADA requirements.

56-4.04 Payment: **ADA Directional Signs** shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing ADA Directional Signs, including but not limited to: providing posts and hardware, excavating holes, placing concrete, backfilling and any other work required to install signs not specifically enumerated in these Special Provisions or on the Project Plans and no additional allowance will be made therefor.

Non-Potable Water Sign shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing Non-Potable Water Sign, including but not limited to: providing posts and hardware, excavating holes, placing concrete, backfilling and any other work required to relocate signs not specifically enumerated in these Special Provisions or on the Project Plans and no additional allowance will be made therefor.

Relocate Sign shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in Relocate Sign, including but not limited to: providing posts and hardware, excavating holes, placing concrete, backfilling and any other work required to relocate signs not specifically enumerated in these Special Provisions or on the Project Plans and no additional allowance will be made therefor.

Location Sign Installation shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing Location Signs, including but not limited to: excavating holes, placing concrete, backfilling and any other work required to install signs not specifically enumerated in these special provisions or on the project plans and no additional allowance will be made therefor.

Kiosk Sign Installation shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing Kiosk Sign, including but not limited to: excavating holes, placing concrete, backfilling and any other work required to install signs not specifically enumerated in these special provisions or on the project plans and no additional allowance will be made therefor.

Information Kiosk Sign Installation shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing Information Kiosk Signs, including but not limited to: excavating holes, placing concrete, backfilling and any other work required to install signs not specifically enumerated in these special provisions or on the project plans and no additional allowance will be made therefor.

Best Practice Sign Installation shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing Best Practice Signs, including but not limited to: excavating holes, placing concrete, backfilling and any other work required to install signs not specifically enumerated in these special provisions or on the project plans and no additional allowance will be made therefor.

Plant ID Sign Installation shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in installing Plant ID Signs, including but not limited to: excavating holes, placing concrete, backfilling and any other work required to install signs not specifically enumerated in these special provisions or on the project plans and no additional allowance will be made therefor.

SECTION 64

PLASTIC STORM DRAIN PIPE

64-1.01 Description: All plastic storm drain pipes and associated appurtenances shall be constructed in accordance with the City Specifications and these special provisions.

64-1.02 Materials: Plastic pipe for use in public storm drain systems shall be 12" Type S, smooth interior wall, corrugated exterior wall, high density polyethylene pipe (HDPE) as specified in AASHTO designation M294, 6" corrugated, perforated polyethylene conforming to Section 68-2.02D of the Standard Specifications, 4", 6" and 8" SDR 26 PVC per Section 71 of the City Specifications or 3" Schedule 80 PVC; as designated on the project plans.
Perforated HDPE pipe with one end capped by a manufacture recommended fitting.

64-1.02E Joints and Fittings: will conform to the requirements and specifications of the pipe manufacture. Connections to dissimilar, existing pipes will be with a flexible coupling, Fernco or approved equal.

64-1.03 Excavation and Backfill: Excavation and backfill shall be in accordance with City Standard 215, Standard Trench Detail or as shown on the plans. All trench excavation material from trenches, including any removed portions of the existing storm drain pipe, shall be the property of the Contractor. Excavated material shall not be disposed of on the work site. Prior to disposal of any material, the Contractor shall submit to the Engineer written authorization for such disposal of material and entry permission signed by the owners of the disposal site, and shall comply with any other requirements of disposal, such as City and County permits, as may be required.

Pipe bedding will be placed in 6-inch (maximum) lifts to six inches above the top of pipe with each lift hand or mechanically tamped. The final lift can be compacted with a plate type vibrating compactor.

64-1.03C Laying Pipe: Laying Pipe shall be in accordance with Section 64-1.07 of the City Standards. Plastic storm drain pipe shall be installed in accordance with the Standard Specifications, generally accepted practice and on the alignment and grade as shown on the plans.

Unless otherwise specifically permitted by the Engineer, all pipe shall be laid upgrade.

Where ground water or surface drainage occurs, pumping shall continue until backfilling has progressed to a sufficient height to prevent floatation of the pipe.

64-1.03D Redirect Existing Storm Drain to Drop Inlet: Contractor shall expose existing storm drain pipes at point of proposed connection before beginning work on this item. Contractor shall connect to the existing storm drain pipe using approved coupling. Abandoned drainage pipes to remain shall be capped. Horizontal and vertical changes will be through 45° or less elbows and not by bending pipe or adjustment at joints. Storm drain pipe shall be either 3" or 4" PVC pipe, as noted on the plans.

64-1.03F Remove and Replace 8" Storm Drain Pipe: Contractor shall remove and replace damaged existing 8" asbestos cement pipe with 8" SDR 26 PVC at the location shown on the project plans. The existing pipe shall be neatly cut and an approved coupling used to connect to the new pipe. The existing pipe shall be removed from the drop inlet, properly disposed of and the new pipe inserted. All voids around the connection shall be filled with grout.

64-1.03G Connect Existing 6" Storm Drain to Drop Inlet #2: Contractor shall connect the existing 6" storm drain pipe to drop inlet #2 with 6" PVC and an approved coupling. The existing downstream storm drain pipe shall be capped.

64-1.04 Payment: Full compensation for removing and disposing of existing storm drain pipes encountered during trenching shall be considered as included in the price paid for Storm Drain Pipe.

12" HDPE Storm Drain Pipe shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment, including all couplings and fittings, and for doing all the work involved in constructing 12" HDPE Storm Drain Pipe including excavation, connecting to the existing catch basin, placing backfill, complete in place and as shown on the plans, as specified in these Special Provisions in accordance with City Standards and no additional compensation will be made therefor.

6" Perforated Pipe shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment, including all couplings and fittings, and for doing all the work involved in constructing 6" Perforated Pipe including filter fabric, connecting to structures, complete in place and as shown on the plans, as specified in these Special Provisions as directed by the Engineer and no additional compensation will be made therefor.

6" Storm Drain shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment, including all couplings and fittings, connecting to structures, and for doing all the work involved in constructing 6" Storm Drain, complete in place and as shown on the plans, as specified in these Special Provisions, as directed by the Engineer and no additional compensation will be made therefor.

Remove and Replace Existing 8" Storm Drain shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment, including all couplings and fittings, and for doing all the work involved in Remove and Replace Existing 8" Storm Drain, including connecting to existing structure and existing pipe, complete in place and as shown on the plans, as specified in these Special Provisions, as directed by the Engineer and no additional compensation will be made therefor.

Redirect Existing Storm Drain to Drop Inlet shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment, including all pipe, couplings and fittings, and for doing all the work involved in Redirecting Existing Storm Drain to Drop Inlet, including connecting to new and existing structures and existing pipe, complete in place and as shown on the plans, as specified in these Special Provisions, as directed by the Engineer and no additional compensation will be made therefor.

64-1.05 Trench Shoring and Bracing - Storm Drain: All bracing and shoring shall conform to Section 7-1.02K(6)(b) of the Standard Specifications and the Division of Industrial Safety Construction Safety Orders which are currently in use.

The Contractor shall take all necessary measures to protect the workmen and adjacent areas and structures from the hazards of the trenching or excavation operations.

64-1.06 Payment: Full compensation for Trench Bracing and Shoring - Storm Drain shall be considered as included in the price paid for Storm Drain Pipe.

SECTION 65

REINFORCED CONCRETE PIPE

65-1.01 Description: Reinforced concrete pipe shall be installed on the alignment and grade as shown on the plans and in accordance with the applicable provisions of Section 65 of the City Standards and the Standard Specifications.

65-1.10 Payment: 14" x 23" Elliptical Reinforced Concrete Pipe shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing the pipe complete in place as shown on the plans, as specified herein, and no additional allowance will be made therefor.

SECTION 68

PERMEABLE MATERIAL

68-2.02F Description: Permeable material shall be Class 2 conforming to and placed in accordance with the requirements of Section 68 of the Standard Specifications.

68-2.03D Compaction: Permeable material shall be installed in 6" lifts and compacted with a vibratory roller or 13,500 lbf plate compactor.

68-2.03E Permeable Trenches: Permeable trenches shall be constructed at the locations and grades shown on the project plans and in accordance with these Special Provisions. All trench excavation material shall be the property of the Contractor. Excavated material shall not be disposed of on the work site. Prior to disposal of any material, the Contractor shall submit to the Engineer written authorization for such disposal of material and entry permission signed by the owners of the disposal site, and shall comply with any other requirements of disposal, such as City and County permits, as may be required. See Section 19-2.03B of these Special Provisions.

Permeable trenches shall be lined with an approved 10 mil plastic moisture barrier as shown on the plans. All seams shall be overlapped a minimum of 6" and sealed with an approved 4" wide compatible tape.

Permeable trenches shall be backfilled with Class 2 permeable material conforming to Section 68 of the Standard Specification.

68-2.04 Payment: Asphalt concrete surface shall be paid for under Section 39 of these Special Provisions.

Pervious concrete surface shall be paid for under Section 40 of these Special Provisions.

Class 2 Permeable Material shall be considered as included in the prices paid for various contract items of work., which price shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in furnishing and placing permeable material as specified, including furnishing, hauling and applying water as specified and directed by the Engineer and no additional allowance will be made therefor.

Permeable Trench shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment, and doing all the work involved in constructing Permeable Trench, including furnishing and placing moisture barrier, placing and compacting backfill, complete in place, as shown on the plans, as specified in these Special Provisions and as directed by the Engineer and no additional allowance will be made therefor.

Permeable Material Around Existing Drop Inlets shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, tools, materials, and equipment and doing all the work involved in constructing Permeable Material Around Existing Drop Inlets, including moisture barrier, placing and compacting backfill, complete in place and as shown on the plans, as specified in these Special Provisions and as directed by the Engineer and no additional allowance will be made therefor.

SECTION 70

MISCELLANEOUS DRAINAGE FACILITIES

70-1.01 Structures: Storm drain drop inlets shall be as specified on the plans and in accordance with City Standards and these Special Provisions.

Top of drop inlet grate or cover shall be set accurately to the final finished grade as shown on the plans or as directed by the Engineer.

Drop inlet grates shall have a bolt down, hot dipped galvanized grate.

Side opening drop inlets shall have a bolt down, hot dipped galvanized checker plate cover per City Std 408.

In lieu of the inspection of reinforcing steel as provided under Section 52-1.04 of the Standard Specifications, upon request the Contractor shall furnish the Engineer with a certificate from the supplier of the reinforcing steel stating that the steel delivered complies with the requirements of Section 52-1.02 of the Standard Specifications.

Bar reinforcing shall conform to and be placed in accordance with Section 52 of the Standard Specifications.

All pipe penetrations into drop inlets shall be sealed with a non-shrink grout.

70-1.02 Payment: **12" x 12" Drop Inlet** shall be paid for at the contract price **each**, which shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing 12" x 12" Drop Inlet complete in place as shown on the plans including excavation, backfill, connecting to new and existing storm drain pipe, extending existing pipes, sealing around storm drain pipes and no additional allowance will be made therefor.

18" x 18" Drop Inlet shall be paid for at the contract price **each**, which shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing 18" x 18" Drop Inlet complete in place as shown on the plans including excavation, backfill, connecting to new and existing storm drain pipe, extending existing pipes, sealing around storm drain pipes and no additional allowance will be made therefor.

18" x 18" Junction Box shall be paid for at the contract price **each**, which shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing 18" x 18" Junction Box complete in place as shown on the plans including excavation, backfill, connecting to new and existing storm drain pipe, extending existing pipes, sealing around storm drain pipes and no additional allowance will be made therefor.

SECTION 73

MINOR CONCRETE ITEMS

73-1.01A Summary: This work shall consist of constructing curbs, sidewalks, path, stairs, Accessible parking areas, and equipment pad and shall be constructed in accordance with the details and at the location shown on the project plans and in conformance to the requirements of Section 73 of the City Specifications, and Standard Specifications.

73-2.02 Material: Concrete used in this section shall be in accordance with Section 90 of the City Standards.

73-2.03 Construction: Concrete path at swale crossing shall be constructed in accordance with the details and at the locations shown on the project plans and these special Provisions. The concrete path shall be notched 1" below the path's finished grade, on each side, to accommodate granite curbs.

Granite curb blocks will be provided by the City and available for pick-up by the Contractor at the City's Corporation Yard, 55 Stony Point Rd. Contractor shall schedule pick-up with the Project Engineer. Each granite block is approximately 8"x15" with lengths between 4' and 6'.

Contractor shall field verify the size of the granite blocks and provide concrete footing conforming to the size of the granite blocks prior to the commencement of work.

Per direction of the Engineer, the Contractor shall neatly trim one end of each granite piece to final size so they closely join to form a continuous 10' length. Granite curb blocks shall be set in a bed of mortar, Laticrete 254 or approved equal.

Concrete stairs shall be constructed in accordance with the details and at the locations shown on the project plans and these special Provisions. Each tread shall have a 1% slope away from the riser, as shown on the plans, to prevent ponding.

Accessible Parking Space and Access Aisle shall be constructed in accordance with the details and at the locations shown on the project plans and these special Provisions. The grade across the parking space will not vary.

Sidewalks shall be constructed in accordance with the details and at the location shown on the plans and in conformance to the requirements of Section 73 of the City Specifications with the following modifications and additional requirements.

Concrete fence strip shall be constructed in accordance with the details and at the locations shown on the project plans and these special Provisions. The Contractor shall set form boards flush to the existing grade and follow the slope and grade breaks.

All concrete which is to be removed from sidewalk shall be removed to the nearest transverse score mark across the full width of sidewalk or construction joint as directed by the Engineer.

Soft or spongy material shall be removed and replaced with suitable material as required by the Engineer.

Sidewalk will have score marks and expansion joints per City Std 235, matching existing or as directed by the Engineer.

Concrete under this section shall be cured in accordance with the requirements of Section 90-1.03B of the Standard Specifications except that the Contractor may substitute other than pigmented sealer upon approval in writing of such substituted sealer by the Engineer.

All oil, paint, tire marks, and other discoloring shall be removed by sandblasting prior to acceptance by the Engineer. Cement mortar will not be an acceptable substitute for sandblasting. Vandalism to uncured concrete surface shall be removed. If it cannot be removed from the surface, then the vandalized concrete shall be removed and replaced to the nearest score mark.

Reinforcement shall in be accordance with Section 52 of the Standard Specifications, the project plans and these Special Provisions. Reinforcement shall be sized and spaced as shown on the project plans. All reinforcement will be imbedded a minimum of 3 inches.

73-2.03 Measurement: The amount of Concrete steps to be paid shall be the area calculated from the width and length measured horizontally, including the landings and curbs.

The amount of Hand Rail to be paid for shall be the length measured horizontally of each handrail after installation.

73-2.04 Payment: **Concrete Planter Curb** shall be paid for at the contract price per **linear foot**, which price shall include full compensation for sawcutting and removing existing, furnishing and applying curing materials, forming and constructing Concrete Planter Curb complete in place as specified, including dowelling to existing curb, excavating, and backfilling as specified herein and no additional compensation will be made therefor.

Concrete Warning Curb shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing Concrete Warning Curb including excavation, reinforcement and expansion joints, placing and compacting base rock, complete in place as specified herein and no additional compensation will be made therefor. .

6" Concrete Safety Curb shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing 6" Concrete Safety Curb, including doweling, forming, placing and curing, complete in place as shown on the plans and specified herein and no additional compensation will be made therefor. .

Remove and Replace Sidewalk shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in Remove and Replace Sidewalk complete in place as specified, including sawcutting, excavating, furnishing and placing base rock, expansion joint filler, constructing weakened plane joints, applying curing material and backfilling as shown on the plans and specified herein and no additional compensation will be made therefor.

Parking Lot Sidewalk shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Parking Lot Sidewalk complete in place as specified, including sawcutting, excavating, furnishing and placing base rock, setting forms, expansion joint filler, constructing weakened plane joints, applying curing material and backfilling as shown on the plans and specified herein and no additional compensation will be made therefor.

Accessible Parking Space and Access Aisle shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Accessible parking Space and Access Aisle complete, in place as specified, including excavation, placing and compacting base rock, , forming, placing and curing concrete, constructing weakened plane joints, and backfilling and no additional compensation will be made therefor

Stairs shall be paid for at the contract price per **square foot** which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Stairs complete, in place as specified, including excavation, placing and compacting base rock, providing and installing reinforcement, expansion joints and backfilling and no additional compensation will be made therefor.

Tree Grate Support Curb shall be paid for at the contract **lump sum** price which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Tree Grate Support Curb complete, in place as specified, including excavation, forming, imbedding grate frame in concrete and backfilling and no additional compensation will be made therefor.

Equipment Pad shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Equipment Pad complete, in place, as specified, including excavation, placing and compacting base rock, forming, placing and curing concrete, and backfilling and no additional compensation will be made therefor.

Hand Rail shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in constructing Hand Rail, including fabrication, installing, complete in place as shown on the plans and specified herein and no additional compensation will be made therefor.

Concrete Path at Swale Crossing shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing the Concrete Path at Swale Crossing complete, in place, as specified, including excavation, placing and compacting base rock, forming, placing and curing concrete, and backfilling and no additional compensation will be made therefor.

Concrete Fence Strip shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in constructing Concrete Fence Strip, in place, as specified, including excavation, forming, placing and curing concrete, and backfilling and no additional compensation will be made therefor.

Set Granite Curb Blocks shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in Set Granite Curb Blocks complete, in place, as specified, including picking up from the City Corporation Yard, cutting, placing and no additional compensation will be made therefor.

SECTION 80

FENCES

80-1.01 Description: All fence shall be constructed in accordance with Section 80 of the Standard Specifications, the details as shown on the project plans, these Special Provisions, and as directed by the Engineer.

Work included: Furnish materials and perform labor required to execute this work as indicated on the drawings, as specified, and as necessary to complete the Contract, including, but not limited to, these major items:

1. Shapes, sleeves, anchors, connectors, plates, rails, edges, items embedded in concrete required, but which are not specified in other sections.
2. Metal posts.
3. Stainless cables
4. Welding.
5. Finishing

Examine all drawings and specifications and include all miscellaneous metal which is specified in other sections. Provide all connections, anchors, bolts, and other fastenings as required. Do all cutting, punching, drilling and tapping required for proper assembly of the work.

80-1.02 References:

1. ASTM A123 - Zinc (Hot Galvanized) coatings on Products fabricated from rolled, pressed and forged shapes, plates, bars, and strip.
 - a. ASTM A153 - Zinc coating (Hot Dip) on iron and steel hardware.
 - b. ASTM A386 - Zinc coating (Hot Dip) on assembled steel products.
 - c. ANSI B 18.22.1 – Plane Washers.
 - d. ANSI B 18.23.1 – Beveled Washers.
 - e. ASTM A36 – Structural Steel.
 - f. ASTM A53 - Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
 - g. ASTM A108 - Steel Bars, Carbon, Cold-Finished, Standard Quality.
 - h. ASTM A307 - Carbon Steel Externally Threaded Standard Fasteners.
 - i. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
 - j. ASTM A563 – Carbon and Alloy Steel Nuts.
 - k. AWS A2.0 – Standard Welding Symbols.
 - l. AWS D1.1 – Standard Welding code.
 - m. CCR - California Code of Regulations: Title 8, General Safety Order.
 - n. CCR – California Code of Regulations – Title 24.
 - o. SSPC – Steel Structure Painting Council.

80-1.03 Submittals: Shop Drawings: Indicate profiles, edge and joint conditions, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

80-1.04 Field Measurements: Welder's Certifications: Submit under provisions of Division 1, certifying welders employed on the Work, verifying AWS qualification within the previous 12 months.

- a. Manufacturer's Certificate: Certify that size and type of anchor bolts, expansion anchors, and studs for connection to concrete and concrete block are suitable for the type of substrate and intended purpose.
- b. Verify that field measurements are as indicated on shop drawings.

80-1.05 Quality Assurance:

1. References:
 - American Society of Testing and Materials (ASTM)
 - American Welding Society (AWS)

- American Institute of Steel Construction (AISC)
2. Field measurement: Verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to Engineer all conditions, which prevent proper execution of this work.
 3. Shop assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordination of installation.

80-1.06 Products:

80-1.06A Materials: Steel shapes: conform to ASTM A36.

- a. Steel tubing: ASTM A500, Grade B.
- b. Steel pipe: conform to ASTM A53, Grade B. Schedule 40.
- c. Welding rods: conform to requirements of AWS for intended use.
- d. Steel plate: conform to ASTM A283, Grade A.
- e. Steel tubing: conform to ASTM A501.
- f. Bolts, Nuts, and Washers: ASTM A325 and A307, galvanized as follows:

For A307 items: Zinc electroplated per ASTM B633.

- g. Touch-up for galvanized surfaces: All State #321 Galvanizing Powder (30% tin, 30% zinc, 40% lead and flux).
- h. Miscellaneous material: as indicated or specified.
- i. Welding Materials: AWS D1.1; type required for materials being welded.
- j. Shop and Touch-Up Primer
 1. Tnemec Co., "No.P10-99 Metal Primer".
 2. Rust-Oleum Co., "No 769 Demo-Proof Red Primer".
 3. Porter International "260FD".
 4. Or equal. The Contractor will comply with applicable portions of the General Conditions and Special Conditions, including but not limited to GC-41 Product Options, Supplier Approval, and Substitutions and SC-6 Contract Data Requirements.
- k. Touch-Up Primer for Galvanized Surfaces: MS DOD-P21035, high zinc dust content paint.
- l. Temporary Supports, Staying and Spacing: As required by project conditions.
- m. Shims and Leveling Devices: As required by project conditions.
- n. Stainless steel cables

80-1.07 Fabrication: Fit and shop assemble in largest practical sections, for delivery to site.

- a. Fabricate items with joints tightly fitted and secured. On finished surfaces, grind all welds smooth and flush with base metal
- b. Exposed Mechanical Fastenings: Flush countersunk stainless steel screws or bolts; concealed where possible; consistent with design of component, except where specifically noted otherwise.
- c. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise. Where items are to be embedded in concrete or masonry, provide welded-on anchors or lugs as indicated or required
- d. Assemble to give ample strength and stiffness.
- e. Scribe and fit for best appearance where exposed.

80-1.08 Finishes:

Surface Preparation:

1. Grind weld spatter and sharp edges smooth prior to cleaning.
2. Prior to application of primer, clean surfaces as follows:
 - a. Steel to be encased in masonry or concrete: Hand tool cleaning per SSPC SP-2.
 - b. Steel to remain exposed in the completed work: Brush off blast cleaning per SSPC SP-7.
3. Shop Primer:
 - a. Apply shop primer within 4 hours of surface cleaning.
 - b. Apply minimum 3 mils dry film thickness of primer to steel, unless otherwise specified.

- c. Do not apply primer within two inches of steel assemblies, which are embedded in concrete.
 - d. Apply two coats of primer to steel assemblies, which are concealed in the finish work.
 - e. Touch-up shop primer of poor quality or insufficient thickness to a condition acceptable to Valley Transportation Authority Representative.
4. Galvanized Finish: Minimum 2 oz/sq. ft zinc coating in accordance with ASTM A386.

80-1.09 Execution

80-1.09A Examination: Verify that field conditions are acceptable and are ready to receive work. Beginning of installation means erector accepts existing conditions.

80-1.09B Fabrication: Shop Assembly: Preassemble items in shop to greatest possible extent to minimize splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordination of installation.

- a. Fabricate items with joints tightly fitted and secured.
- b. Weld all shop connections. Welds shall be smooth, continuous beads, free to excessive roughness and spatter. Grind surface welds smooth and flush to match and blend with parent metal surfaces.
- c. Exposed Mechanical Fastenings: Flush countersunk stainless steel screws or bolts; concealed where possible; consistent with design of component, except where specifically noted otherwise.
- d. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabricated, except where specifically noted otherwise.
- e. Assemble to give ample strength and stiffness.
- f. Scribe and fit for best appearance where exposed.

80-1.09C Installation: Install items plumb and level, accurately fitted, free from distortion or defects and securely and rigidly attached to supporting construction and as detailed.

- a. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- b. All welding shall conform to requirements of the Committee for Standard Tests for Welds of the American Welding Society. All welding shall be electric arc process. Welds exposed in finish work shall be filled out flush, ground and dressed. Welders for structural shall be certified.
- c. Verify that field conditions are acceptable and are ready to receive work.
- d. Install items plumb and level, accurately fitted, free from distortion or defects.
- e. Connections and anchors shall be adequate to sustain normal loads which may be imposed, securely welded or bolted, conforming to AISC standards. Excess length of bolts where exposed to view to be cut off and ground smooth. Use spacer washers when fastening through finish materials.
- f. Field welding shall not be permitted.

80-1.10 Warranty:

Warranty: 1 year including against rust.

80-2.01B Payment: 42" Galvanized Metal Fence shall be paid for at the contract price per linear foot, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved in constructing 42" Galvanized Metal Fence, complete as shown on the project plans, and as herein specified including all necessary concrete and no additional allowance will be made therefor.

SECTION 84

TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-1 General

84-1.01 General: Attention is directed to Section 12 “Temporary Traffic Control” and Section 15 “Existing Facilities” of these Special Provisions. Traffic stripes and pavement markings shall conform to the applicable provisions of Section 84 of the Standard Specifications, The City Traffic Standards, and these Special Provisions and shall be placed at the locations shown on the Plans.

Temporary striping on all ground surfaces shall be paint (white and/or yellow) with retro-reflective glass beads or an approved equivalent and shall be installed the same day as the existing permanent striping is removed, or as directed by the Engineer. Temporary striping shall be maintained until new permanent striping is in place.

Existing pavement markings, including crosswalks, disturbed by construction activities shall be replaced in their entirety or replaced with new striping as shown on the plans.

All striping to be replaced shall match existing sections in kind unless approved by the Engineer.

The Contractor shall remove all existing traffic striping and pavement marking in conflict with proposed improvements, as shown on the Plans, and as directed by the Engineer, and shall be responsible for the proper disposal of their grindings away from site work.

Existing stripes and pavement markings to remain, which are damaged by the work shall be replaced at the Contractor’s expense. This includes areas outside the immediate project limits.

Painted curbs which are damaged or replaced as part of the work shall be repainted to match existing conditions.

84-1.04 Payment: **Traffic Stripes and Pavement Markings** shall be paid for at the contract **lump sum** price, which price shall include furnishing all paint and glass beads, thermoplastic pavement marking material weather white or yellow, tape, and furnishing all equipment, tools, and labor, and doing all the work involved as herein specified, including but not limited to, eradication of existing traffic stripes and pavement markings, surface preparation, replacement of damaged stripes, temporary traffic stripes and pavement markings, all temporary traffic measures, new striping as shown on the plans, and any other work required to install traffic stripes and pavement markings not specifically enumerated in the City Standards, these Special Provisions or on the Project Plans, and no additional allowance will be made therefor.

SECTION 86

ELECTRICAL SYSTEMS

86-1 General

86-1.01 Description: The Contractor shall remove, preserve, and replace the existing parking lighting system(s) at the location(s) shown on the plans in conformance with the applicable provisions of Section 86, "Electrical Systems", of the Standard Specifications, Standard Plans, the City Traffic Standards, these special provisions, and as directed by the Engineer.

86-2.05 Conduit: Parking lot light conduit shall be 2" schedule 40 electrical PVC.

86-2.06 Pull Boxes: Pull boxes shall be concrete #3-1/2 or #5 with a galvanized, checker plate cover, as shown on the plans, per Std Plans and these Special Provisions. Each pull box shall have a lockable vandal proof insert manufactured by McCain, Madruga Iron Works or approved equal. Pull boxes shall be surrounded by 2' wide by 4" thick concrete pad set to finish grade.

86-2.09 Wiring: Wiring shall be 3 wire, #8, stranded THHN AWG copper wire. All splices shall use an approved solderless waterproof connector.

86-2.11A General: Existing electrical service to the parking lot lights at each planter box shall be reconnected to the satisfaction of the Engineer. Contractor shall not damage the electrical service wiring during construction. #5 pull box shall be installed in each planter box at the service connection.

The Contractor shall determine the mounting hardware size and bolt pattern needed to reinstall the existing parking lot lights. All mounting hardware shall be new..

86-6 Lighting

86-6.01A Remove and Replace Existing Parking Lot Lighting Fixtures: The Contractor shall remove the parking lot light fixture as shown on the project plans, store in a secure location and reinstalled after the planters have been backfilled and foundations constructed. Prior to removing the lighting the City and Contractor shall verify the lights are in working order.

The Contractor shall remove and dispose of the existing foundations and conduit in a manner that will allow them to connect the existing electrical service to and from the planter areas to the new conduits.

86-7 Payment: **Pull Boxes** shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment to install Pull Boxes as shown on the plans, as specified, including all excavation, backfill, disposal of spoils, concrete, and no additional allowance will be made therefor.

Parking Lot Light Conduit shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment to install Parking Lot Light Conduit as shown on the plans, as specified, including all excavation, backfill, conduits, pull rope, disposal of spoils, and no additional allowance will be made therefor.

Remove, Preserve and Reinstall Parking Lot Light shall be paid for at the contract unit price **each**, which price shall include full compensation for furnishing all labor, material, tools, equipment and doing all work involved in Removing, Preserving and Reinstalling Parking Lot Light as shown on the plans and as specified herein and no additional allowance will be made therefor.

Parking Lot Light Wiring shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment to install Parking Lot Light Wiring as shown on the plans, as specified, including connecting to existing electrical service, and no additional allowance will be made therefor.

Parking Lot Light Foundation shall be paid for under Section 51

SECTION 112

TREE PROTECTION

112-1.01 General: The following requirements shall apply to any contractor who works on any property upon which a protected tree is located.

Protected tree means any tree, including a Heritage tree, designated to be preserved on the plans, or as directed by the Engineer. Heritage tree is any of the trees listed under Section 17-24.010 of the City of Santa Rosa Tree Ordinance.

112-1.02 Scope: Before the start of any clearing, excavation, construction or other work on the site, every protected tree shall be securely fenced off at the protected perimeter. Protected perimeter shall be either the root zone or other limit as directed by the Engineer. Such fences shall remain continuously in place for the duration of all work undertaken in connection with this project. The area so fenced off shall not be used as a storage area, altered, or disturbed except as may be permitted under this section.

If any of the site work encroaches upon the protected perimeter of a protected tree, special measures shall be utilized as approved by the Engineer to ensure that the roots obtain oxygen, water, and nutrients as needed. Any excavation, cutting, filling, or compaction of the existing ground surface within the protected perimeter, if authorized by the Engineer, shall be minimized and subject to such conditions as may be imposed by the Engineer. No significant change in existing ground level shall be made within the drip line of the protected tree except as directed by the Engineer and as shown on the plans. No burning or use of equipment with an open flame shall occur near or within the protected perimeter. All brush, earth, and other debris shall be removed in a manner which prevents injury to the protected tree.

No oil, gas, chemicals, or other substances that may be harmful to trees shall be stored or dumped within the protected perimeter or any other location on the site from which such substances might enter the protected perimeter.

Underground trenching for utilities shall avoid major support and absorbing tree roots of protected trees. If avoidance is impracticable, tunnels shall be made below the roots. Trenches shall be consolidated to serve as many units as possible. Trench within the drip line of the tree shall be avoided and only be done at the approval and direction of the Engineer.

No concrete or asphalt paving shall be placed over the root zones of protected trees. No artificial irrigation shall occur within the root zone of oaks.

No compaction of the soil within the root zones of protected trees shall occur.

112-1.03 Payment: Full compensation for work in this section shall be considered as included in the prices paid for the various contract items of work and no additional allowances will be made therefor.

SECTION 121

NOTIFICATION

121-1.01: The Contractor shall notify the Engineer of any work to be performed on any given work day either on the afternoon of the prior working day or before 8:30 a.m. on the given working day. Any work completed for which the Engineer has not received prior notification of its scheduling MAY NOT BE ACCEPTED FOR PAYMENT.

121-3.01 Payment: Full compensation for conforming to the provisions of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

SECTION 124

MATERIAL RECYCLING

124-1.01 Description: The Contractor shall dispose of all portland cement concrete and asphalt concrete, generated from removal or demolition activities on the project, at a recycler for these materials. The Contractor shall provide receipts verifying delivery and approximate quantity (in tons) of the material delivered to a material recycler.

All other excess materials from the project shall become the property of the Contractor and shall be disposed of by him, at his expense.

124-1.02 Payment: Full compensation for material recycling as specified herein shall be considered as included in the contract prices paid for various items of work, and no additional compensation will be allowed therefor.

SECTION A

FEES, PERMITS AND GRANTS

The Contractor shall obtain all necessary and required permits for the project. All permits issued by the City Building Department will be issued at no cost to the Contractor; these fees will be paid by an appropriate City department. All other required permits shall be obtained at the Contractor's expense.

The City has entered into a grant agreement with the State Water Resources Control Board as part of this project. Grant agreement number 14-430-550 is included as part of these provisions. This executed grant agreement and any subsequent revisions apply to this project.

PROPOSITIONS 40 AND 84 STORMWATER GRANT PROGRAM
GRANT AGREEMENT
BETWEEN THE
STATE WATER RESOURCES CONTROL BOARD, hereinafter called "State" or "State Water Board"
AND

CITY OF SANTA ROSA, hereinafter called "Grantee"

CITY HALL PLAZA DEMONSTRATION GARDEN AND LOW IMPACT DEVELOPMENT (LID)
RETROFIT, hereinafter called "Project"

AGREEMENT NO. 14-430-550

The State and Grantee hereby agree as follows:

PROVISION(S). The following provision(s) authorize the State Water Board to enter into this type of Grant Agreement:

Pub. Resources Code, § 75050(m) (Prop. 84 Stormwater Contamination Reduction and Prevention)
Pub. Resources Code, § 30930 (Prop. 40 Urban Stormwater Program)

PURPOSE. The State shall provide a grant to and for the benefit of Grantee for the purpose of creating a water efficient urban landscape and a hardscape LID retrofit project at the Santa Rosa City Hall that reflects the development standards in the City's Storm Water LID Technical Design Manual (LID Manual) and its Water Efficient Landscape Ordinance.

GRANT AMOUNT. The maximum amount payable under this Agreement shall not exceed \$806,174.

TERM OF AGREEMENT. The term of the Agreement shall begin on AUGUST 1, 2014 and continue through final payment plus thirty-five (35) years unless otherwise terminated or amended as provided in the Agreement. HOWEVER, ALL WORK SHALL BE COMPLETED BY MARCH 31, 2017. ABSOLUTELY NO FUNDS MAY BE REQUESTED AFTER APRIL 30, 2017.

PROJECT REPRESENTATIVES. The Project Representatives during the term of this Agreement will be:

State Water Board	Grantee: City of Santa Rosa
Name: Jeffrey Albrecht, Grant Manager	Name: David Guhin, Project Director
Address: 1001 I Street, 16 th Floor	Address: 69 Stony Circle
City, Zip: Sacramento, CA 95814	City, Zip: Santa Rosa, CA 95401
Phone: (916) 341-5717	Phone: (707) 543-4299
Fax: (916) 341-5707	Fax: (707) 543-3937
e-mail: Jeffrey.Albrecht@waterboards.ca.gov	e-mail: dguhin@srcity.org

Direct all inquiries to:

State Water Board	Grantee: City of Santa Rosa
Section: Division of Financial Assistance	Section:
Attention: Michele Stebbins, Program Analyst	Name: Debra Lane, Grant Contact
Address: 1001 I Street, 17 th Floor	Address: 69 Stony Circle
City, Zip: Sacramento, CA 95814	City, Zip: Santa Rosa, CA 95401
Phone: (916) 341-5665	Phone: (707) 543-4506
Fax: (916) 341-5296	Fax: (707) 543-3937
e-mail: Michele.Stebbins@waterboards.ca.gov	e-mail: dlane@srcity.org

Either party may change its Project Representative upon written notice to the other party.

STANDARD PROVISIONS. The following exhibits are attached and made a part of this Agreement by this reference:

Exhibit A	SCOPE OF WORK – WORK TO BE PERFORMED BY THE GRANTEE
Exhibit B	INVOICING, BUDGET DETAIL AND REPORTING PROVISIONS
Exhibit C	GENERAL TERMS & CONDITIONS
Exhibit D	SPECIAL CONDITIONS

GRANTEE REPRESENTATIONS. The Grantee accepts and agrees to comply with all terms, provisions, conditions, and commitments of this Agreement, including all incorporated documents, and to fulfill all assurances, declarations, representations, and commitments made by the Grantee in its application, accompanying documents, and communications filed in support of its request for grant funding. Grantee shall comply with and require its contractors and subcontractors to comply with all applicable laws, policies and regulations.

IN WITNESS THEREOF, the parties have executed this Agreement on the dates set forth below.

By: _____

Grantee Signature

David M. Guhin

Grantee Typed/Printed Name

Director of Utilities

Title

September 26, 2014

Date

APPROVED AS TO FORM

CITY ATTORNEY

By: _____

9/17/14

By: _____

Darrin Polhemus, Deputy Director
State Water Resources Control Board,
Division of Financial Assistance

Date

Reviewed by: 91
Office of Chief Counsel
Date: 10-7-14

EXHIBIT A
SCOPE OF WORK – WORK TO BE PERFORMED BY THE GRANTEE

A. PLANS AND GENERAL COMPLIANCE REQUIREMENTS

1. In order for the State Water Board and Regional Water Quality Control Board (Regional Water Board) staff to verify work was adequately performed or conducted, Global Positioning System (GPS) information for project site and monitoring locations must be identified for this Project. Submittal requirements for GPS data are available at:
http://www.waterboards.ca.gov/water_issues/programs/grants_loans/grant_info/docs/gps.pdf.
2. The Grantee shall prepare and submit a Monitoring and Reporting Plan (MRP) that does all of the following: 1) identifies the nonpoint source(s) of pollution to be prevented or reduced by the Project; 2) describes the baseline water quality or quality of the environment to be addressed; 3) describes the manner in which the Project will be effective in preventing or reducing pollution and in demonstrating the desired environmental results; and 4) describes the monitoring program, including, but not limited to, the methodology, frequency, and duration of monitoring.

The MRP shall be organized as follows, and may be submitted as separate documents or in one report.

2.1 Project Assessment and Evaluation

Project Assessment and Evaluation Plan (PAEP) describes the manner in which the Project will be effective in preventing or reducing pollution and in demonstrating the desired environmental results. PAEP details the methods of measuring Project benefits and reporting them in accordance with a PAEP. Grantee shall not implement monitoring and performance assessment and/or evaluation actions prior to PAEP approval by the Grant Manager. Guidance for preparing the PAEP is available at http://www.waterboards.ca.gov/water_issues/programs/grants_loans/paep/index.shtml.

2.2 Monitoring Plan

All projects that include water quality or environmental monitoring must prepare a Monitoring Plan (MP). At a minimum, all MPs must: 1) describe the baseline water quality or quality of the environment to be addressed; 2) identify the non-point source(s) of pollution to be prevented or reduced by the Project; and 3) provide GPS information for all sampling locations. The MP must include a description of the monitoring program and objectives, types of constituents to be monitored, methodology, the frequency and duration of monitoring, and the sampling location for the monitoring activities.

Any costs related to monitoring data collected prior to and not supported by the approved MP will not be reimbursed. Changes to the MP must be submitted to the Grant Manager for review and a decision regarding approval prior to implementation. Guidance for preparing an MP is available at: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/grant_info/index.shtml#plans.

2.3 Quality Assurance and Project Plan

If water quality monitoring is undertaken, the Grantee shall also prepare, maintain, and implement a Quality Assurance Project Plan (QAPP) in accordance with the State Water Board's Surface Water Ambient Monitoring Program's (SWAMP) QAPP and data reporting requirements, and the USEPA QAPP, EPA AQ/R5, 3/01. Water quality monitoring data includes physical, chemical, and biological monitoring of any surface water. The QAPP shall be submitted to the State Water Board's Quality Assurance Officer for review and a decision regarding approval. Any costs related to monitoring data collected prior to and not supported by the approved QAPP will not be reimbursed. Guidance for preparing the QAPP is available at:
http://www.waterboards.ca.gov/water_issues/programs/grants_loans/grant_info/index.shtml.

The Grantee shall upload a pdf version of the final approved document(s) to the Financial Assistance Application Submittal Tool (FAAST) system.

2.4 Data Management

The Grantee shall upload all water quality data obtained through its implementation of the MP to the California Environmental Data Exchange Network (CEDEN). The Grantee shall also provide a receipt of successful data submission, which is generated by CEDEN, to the Grant Manager prior to submitting a final invoice. Guidance for submitting data, including required minimum data elements and data formats, is available at <http://www.ceden.org> or the Regional Data Centers (RDCs) (Moss Landing Marine Lab, San Francisco Estuary Institute, Southern California Coastal Water Research Project, or Central Valley RDC). Contact information for the RDCs is included in the CEDEN web link.

3. Activities supported by grant funds are projects under the California Environmental Quality Act (CEQA) and must comply with CEQA requirements. Work on the Project cannot begin until the State Water Board has reviewed the CEQA documentation submitted by the Grantee and given environmental clearance. If the work is conducted on federal land, the Grantee must also comply with the National Environmental Policy Act (NEPA). Proceeding with work subject to CEQA and/or NEPA without environmental clearance by the State Water Board shall constitute a breach of a material provision of this Agreement.
4. If public agency approvals, entitlements, or permits are required, such approvals, entitlements or permits must be obtained and signed copies submitted to the Grant Manager before work begins. If the Project is carried out on lands not owned by the Grantee, the Grantee must obtain adequate rights of way for the useful life of the Project.
5. State Disclosure Requirements – Include the following disclosure statement in any document, written report, or brochure prepared in whole or in part pursuant to this Agreement:

"Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the State Water Resources Control Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use."

Signage shall be posted in a prominent location at Project site (if applicable) or at the Grantee's headquarters and shall include the State Water Board color logo (available from the Program Analyst):



and the following disclosure statement:

"Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board."

6. The Grantee shall also include in each of its contracts for work under this Agreement a provision that incorporates the requirements stated within this grant agreement.
- B. PROJECT-SPECIFIC REQUIREMENTS
1. Project Management
 - 1.1 Provide all technical and administrative services as needed for Agreement completion; monitor, supervise, and review all work performed; and coordinate budgeting and scheduling to ensure the

Agreement is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.

- 1.2 Notify the Grant Manager at least fifteen (15) working days in advance of upcoming meetings, workshops, and trainings.
- 1.3 Conduct pre-, during, and post-construction photo monitoring and submit to the Grant Manager.
- 1.4 Conduct periodic and final site visits with the Grant Manager.
2. Planning, Design, and Engineering
 - 2.1 Complete the one hundred percent (100%) engineered design plans and specifications to include the installation of:
 - 2.1.1 Parking lot bioretention areas for the main east parking lot, capable of capturing one hundred percent (100%) of the eighty-fifth (85th) percentile twenty-four (24) hour rain event.
 - 2.1.2 Two (2) vegetated swales to treat a minimum of three thousand, four hundred (3,400) square feet of roof rainwater runoff from two (2) buildings in the north and west demonstration areas.
 - 2.1.3 A rainwater harvesting system with a one thousand five hundred (1,500) gallon capacity to be used for irrigation.
 - 2.1.4 A minimum of one thousand, one hundred (1,100) square feet of pervious concrete and a minimum of nine hundred (900) square feet of pervious concrete walkways in the main gathering area at the north end of the Project area..
 - 2.1.5 A high efficiency drip irrigation system retrofit with a weather-based irrigation controller serving the planted area within the Project.
 - 2.1.6 A minimum of thirty-four thousand (34,000) square feet of drought tolerant, low water-use landscape and LID features to replace existing turf and ivy areas.
 - 2.2 Submit the one hundred percent (100%) design plans and specifications to the Grant Manager for review and approval.
 - 2.3 Complete the bid documents and advertise the Project for bid. Submit the bid documents to the Grant Manager in an electronic format.
3. Construction and Implementation
 - 3.1 Submit the construction Notice to Proceed to the Grant Manager in an electronic format.
 - 3.2 Complete construction activities in accordance with the approved one hundred percent (100%) design plans and specifications.
 - 3.3 Submit as-built drawings to the Grant Manager in an electronic format.
 - 3.4 Prepare and submit an Operations and Maintenance Plan to the Grant Manager for review and approval.

4. Monitoring and Performance

4.1 Monitor in accordance with the approved MP.

4.2 Analyze monitoring results and submit a summary of the results to the Grant Manager.

5. Education and Outreach

5.1 Create a brochure describing the benefits of the Project and submit a copy to the Grant Manager.

5.2 Install signage in locations approved in the design plans and specifications and submit photos of installed signs to the Grant Manager, including:

5.2.1 A minimum of two (2) signs identifying the City Hall landscape as a sustainable landscape demonstration garden.

5.2.2 A minimum of one (1) covered kiosk with a map indicating the locations of all features.

5.2.3 A minimum of four (4) educational kiosks to describe LID features and water-use efficiency topics.

5.2.4 A minimum of nine (9) signs describing the Russian River-Friendly landscape practices and principles.

5.2.5 A minimum of forty (40) plant tags indicating plant name and other pertinent information.

5.3 Create a webpage dedicated to the Project to include Project information, a Project How-To video, a copy of the Project brochure in Item 5.1, and links to the LID Manual and associated design tools, the City of Santa Rosa Water-Use Efficiency home page, the City of Santa Rosa Storm Water and Creeks home page, and the Russian River-Friendly Landscape Guidelines Manual. Submit the web links and screenshots of the webpage to the Grant Manager.

5.4 Host workshops and submit workshop materials to the Grant Manager, including:

5.4.1 One (1) workshop for public agencies and one (1) workshop for landscape designers and developers on the LID Manual implementation.

5.4.2 One (1) workshop for homeowners on low water-use landscape.

5.4.3 One (1) workshop for landscape professionals on the convergence of landscape water-use efficiency and storm water management.

5.5 Present the Project at two (2) professional conferences to storm water and water-use efficiency professionals and submit a copy of the agenda and presentation materials to the Grant Manager.

TABLE OF ITEMS FOR REVIEW

ITEM	DESCRIPTION	CRITICAL DUE DATE	ESTIMATED DUE DATE
EXHIBIT A – SCOPE OF WORK – WORK TO BE PERFORMED BY THE GRANTEE			
A.	PLANS AND GENERAL COMPLIANCE REQUIREMENTS		
1.	GPS information for Project site and monitoring locations	Day 90	
2.	Monitoring and Reporting Plan		
2.1	Project Assessment and Evaluation Plan (PAEP)	Day 90	
2.2	Monitoring Plan (MP)	Day 90	
2.3	Quality Assurance Project Plan (QAPP)	Day 90	
2.4	Proof of Water Quality Data Submission to CEDEN	Before Final Invoice	
3.	Copy of Final CEQA/NEPA Documentation	March 31, 2015	
4.	Public Agency Approvals, Entitlements, or Permits		As Needed
B.	PROJECT-SPECIFIC REQUIREMENTS		
1.	Project Management		
1.2	Notification of Upcoming Meetings, Workshops, and Trainings		Ongoing
1.3	Pre-, During, and Post-Construction Photos		Ongoing
1.4	Periodic and Final Site Visits		Ongoing
2.	Planning, Design, and Engineering		
2.2	100% Design Plans and Specifications		October 2015
2.3	Bid Documents		December 2015
3.	Construction and Implementation		
3.1	Notice to Proceed	March 31, 2016	
3.3	As-Built Drawings		October 2016
3.4	Operations and Maintenance Plan		December 2016
4.	Monitoring and Performance		
4.2	Summary of the Monitoring Results	January 31, 2017	
5.	Education and Outreach		
5.1	Brochure		December 2016
5.2	Photo documentation of Installed Signs		October 2016
5.3	Webpage Link and Screenshots		December 2016
5.4	Workshop Materials		December 2016
5.5	Agenda and Presentation Materials		December 2016
EXHIBIT B – INVOICING, BUDGET DETAIL, AND REPORTING PROVISIONS			
A.	INVOICING		Quarterly
G.	REPORTS		
1.	Progress Reports within forty-five (45) days following the end of the calendar quarter (March, June, September, and December)		Quarterly

ITEM	DESCRIPTION	CRITICAL DUE DATE	ESTIMATED DUE DATE
EXHIBIT B – INVOICING, BUDGET DETAIL, AND REPORTING PROVISIONS			
2.	Annual Progress Summaries		Annually by 9/30
3.	Natural Resource Projects Inventory (NRPI) Survey Form	Before Final Invoice	
4.	Draft Final Project Report	January 31, 2017	
5.	Final Project Report	February 28, 2017	
6.	Final Project Summary	Before Final Invoice	
7.	Final Project Inspection and Certification	Before Final Invoice	

EXHIBIT B
INVOICING, BUDGET DETAIL, AND REPORTING PROVISIONS

A. INVOICING

1. Invoices shall be submitted using the invoice template provided by the State Water Board. The invoice must be itemized based on the line items specified in the Budget. The original invoice shall be submitted to the State Water Board's Grant Manager on a quarterly basis consistent with the reporting schedule in Section G.1 of this exhibit. The address for submittal is:

Jeffrey Albrecht, Grant Manager
State Water Resources Control Board
1001 I Street, 16th Floor
Sacramento, CA 95814

2. Invoices submitted in any other format than the one provided by the State Water Board will cause an invoice to be disputed. In the event of an invoice dispute, the State Water Board's Grant Manager will notify the Grantee by initiating an "Invoice Dispute Notification" form. Payment will not be made until the dispute is resolved and a corrected invoice submitted. Failure to use the address exactly as provided above may result in return of the invoice to the Grantee. Payment shall be deemed complete upon deposit of the payment, properly addressed, postage prepaid, in the United States mail. The State Water Board Grant Manager has the responsibility for approving invoices.
3. Supporting documentation (e.g., receipts) must be submitted with each invoice to request reimbursement for grant funds as well as to support Match Funds invoiced. The amount claimed for the Personnel Services line item and Professional and Consultant Services line item must include a calculation formula (i.e., hours or days worked times the hourly or daily rate = total amount claimed). Invoice payment shall be made only after receipt of a complete, adequately supported, properly documented and accurately addressed invoice.
4. The Grantee shall not request disbursement for any cost until such cost has been incurred and has been paid by or is due and payable by the Grantee. Although it is agreed that actual payment of such cost by the Grantee is not required as a condition of the grant disbursement, all grant disbursements received by the Grantee shall be paid to contractors and vendors within thirty (30) days from receipt of the funds. In the event that the Grantee fails to disburse grant funds to contractors or vendors within thirty (30) days from receipt of the funds, the Grantee shall immediately return such funds to the State Water Board. Interest shall accrue on such funds from the date of disbursement through the date of mailing of funds to the State Water Board. If the Grantee held such funds in interest-bearing accounts, any interest earned on the funds shall also be due to the State Water Board.
5. Notwithstanding any other provision of this Agreement, no disbursement shall be required at any time or in any manner which is in violation of, or in conflict with, federal or state laws, rules, or regulations, or which may require any rebates to the Federal Government, or any loss of tax-free status on state bonds, pursuant to any Federal statute or regulation.
6. Notwithstanding any other provision of this Agreement, the Grantee agrees that the State Water Board may retain an amount equal to ten percent (10%) of the grant amount specified in this Agreement until completion of the Project to the reasonable satisfaction of the State Water Board. Any retained amounts due to the Grantee will be promptly disbursed to the Grantee, without interest, upon completion of the Project.
7. The invoice shall contain the following information:
 - a. The date of the invoice;
 - b. The time period covered by the invoice, i.e., the term "from" and "to";
 - c. The total amount due; and
 - d. Original signature and date (in ink) of Grantee or its authorized representative.

- e. Final invoice shall be clearly marked "FINAL INVOICE" and submitted NO LATER THAN APRIL 30, 2017.

B. PROHIBITION OF INDIRECT COSTS

The grant funds for this Agreement are the proceeds from the sale of general obligation bonds. As such, grant funds may not be used for any indirect costs. "Indirect Costs" means those costs that are incurred for a common or joint purpose benefiting more than one cost objective and are not readily assignable to the Project (i.e., costs that are not directly related to the Project). Examples of Indirect Costs include, but are not limited to: central service costs; general administration of the Grantee; non-project-specific accounting and personnel services performed within the Grantee organization; depreciation or use allowances on buildings and equipment; the costs of operating and maintaining non-project-specific facilities; tuition and conference fees; and, generic overhead or markup. Any invoice submitted including Indirect Costs will cause that invoice, in its entirety, to be disputed and will not be paid until the dispute is resolved. This prohibition applies to the Grantee and any subcontract or sub-agreement for work on the Project that will be reimbursed with grant funds pursuant to this Agreement. (Gov. Code, § 16727.)

C. BUDGET CONTINGENCY CLAUSE

The maximum amount to be encumbered under this Agreement for the 2014-15 fiscal year ending June 30, 2015 shall not exceed EIGHT HUNDRED SIX THOUSAND, ONE HUNDRED SEVENTY-FOUR DOLLARS (\$806,174).

If the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no force and effect. This provision shall be construed as a condition precedent to the obligation of the State Water Board to make any payments under this Agreement. In this event, the State shall have no liability to pay any funds whatsoever to Grantee or to furnish any other considerations under this Agreement and Grantee shall not be obligated to perform any provisions of this Agreement. Nothing in this Agreement shall be construed to provide the Grantee with a right of priority for payment over any other Grantee.

If this Agreement's funding for any fiscal year is reduced or deleted by the Budget Act, by Executive Order, or by order of the Department of Finance, the State shall have the option to either cancel this Agreement with no liability occurring to the State, or offer an Agreement amendment to the Grantee to reflect the reduced amount.

D. LINE ITEM BUDGET

	PROP 40	PROP 84	MATCH	TOTAL
Direct Project Administration Costs	\$ 0	\$ 0	\$ 39,900	\$ 39,900
Planning/Design/Engineering/Environmental	\$ 3,942	\$106,058	\$ 44,350	\$ 154,350
Equipment (\$5,000 or more per item)	\$ 0	\$ 0	\$ 0	\$ 0
Construction/Implementation	\$647,399	\$ 0	\$102,600	\$ 749,999
Monitoring/Performance	\$ 0	\$ 0	\$ 6,080	\$ 6,080
Education/Outreach	\$ 48,775	\$ 0	\$ 33,326	\$ 82,101
TOTAL	\$700,116	\$106,058	\$226,256	\$1,032,430

E. BUDGET LINE ITEM FLEXIBILITY

1. Line Item Adjustment(s). Subject to the prior review and approval of the Grant Manager, adjustments between existing line item(s) may be used to defray allowable direct costs up to fifteen percent (15%) of the total grant amount (excluding Match Funds), including any amendment(s) thereto. Line item adjustments in excess of fifteen percent (15%) shall require a formal Agreement amendment. If the Line Item Budget includes an amount for Personnel Services, that amount is based on the hours,

classifications, and rates submitted by the Grantee in its application. Any changes to the hours, classifications, and rates must be approved, in advance and in writing, by the Grant Manager.

2. **Procedure to Request an Adjustment.** Grantee may submit a request for an adjustment in writing to the State Water Board. Such adjustment may not increase or decrease the total grant amount allocated per fiscal year. The Grantee shall submit a copy of the original Agreement Budget sheet reflecting the requested changes. Changes shall be noted by striking the original amount(s) followed with revised change(s) in bold and underlined. Budget adjustments deleting a budget line item or adding a new budget line item requires a formal amendment and are not permissible under this provision. The State Water Board may also propose adjustments to the budget.
3. **Remaining Balance.** In the event the Grantee does not submit invoices requesting all of the funds encumbered under this Grant Agreement, any remaining funds revert to the State. The State Water Board will mail a Notice of Project Completion letter to the Grantee stating that the project file is closed, the final invoice is being processed for payment, and any remaining balance will be disencumbered and unavailable for further use under the Grant Agreement.

F. MATCH FUNDS

1. The Grantee agrees to provide match funds in the amount of TWO HUNDRED TWENTY-SIX THOUSAND, TWO HUNDRED FIFTY-SIX DOLLARS (\$226,256) (Match Funds) for this Project. This Match Funds amount is based on Line Item Budget categories, funding sources, and amounts submitted by the Grantee in its application and during the negotiation of this Agreement. Any Match Funds line item changes or adjustments in Match Funds classifications or sources requested by Grantee must be approved, in advance and in writing, by the Grant Manager.
2. If, upon completion of the Project, the Grantee has provided match funds in an amount that is less than the Match Funds amount set forth in paragraph F.1 above, then the State Water Board may proportionately reduce the grant amount and/or Grantee's Match Funds amount, provided the reduced amount(s) satisfy statutory requirements and State Water Board Guidelines.

G. REPORTS

1. **PROGRESS REPORT.** Grantee shall submit quarterly progress reports to the State Water Board's Grant Manager within forty-five (45) days following the end of the calendar quarter (March, June, September, and December).
 - a. The progress reports shall provide a brief description of the work performed, accomplishments during the quarter, milestones achieved, monitoring results (if applicable), and any problems encountered in the performance of the work under this Agreement. Grantee shall document all contractor activities and expenditures in progress reports.
 - b. The invoice should accompany the progress report. The invoice should reflect charges for the work completed during the reporting period covered by progress report. The invoice cannot be paid prior to submission of a progress report covering the invoice reporting period.
2. **ANNUAL PROGRESS SUMMARIES.** Prepare and provide an Annual Progress Summary annually by September 30. The summary must be no more than two (2) pages, and shall include pictures as appropriate. Upload an electronic copy of the Annual Progress Summary in pdf format to the FFAST system. The summary shall include the following:
 - a. A summary of the conditions the Project is meant to alleviate, the Project's objective, the scope of the Project, and a description of the approach used to achieve the Project's objective.
 - b. A summary of the progress made to date, significant milestones achieved, and the current schedule of completing the Project.
 - c. An evaluation of the effectiveness of the Project to date in preventing or reducing pollution and alleviating the Project's original conditions.

3. **NATURAL RESOURCE PROJECTS INVENTORY (NRPI) SURVEY FORM.** At the completion of this Project, the Grantee shall complete and submit electronically a NRPI Project Survey Form found at <http://www.ice.ucdavis.edu/nrpi>.
4. **DRAFT FINAL PROJECT REPORT.** Prepare and submit to the Grant Manager, for review and comment, a Draft Final Project Report in a format provided by the Grant Manager.
5. **FINAL PROJECT REPORT.** Prepare a Final Project Report that addresses, to the extent feasible, comments made by the Grant Manager on the Draft Final Project Report. Submit one (1) reproducible master and an electronic copy of the final. Upload an electronic copy of the final report in pdf format to the FFAST system.
6. **FINAL PROJECT SUMMARY.** Prepare a brief summary of the information contained in the Final Project Report, including before and after pictures, as appropriate. Upload an electronic copy of the Final Project Summary in pdf format to the FFAST system.
7. **FINAL PROJECT INSPECTION AND CERTIFICATION.** Upon completion of the Project, the Grantee shall provide for a final inspection and shall certify that the Project has been completed in accordance with this Agreement, any final plans and specifications submitted to the State Water Board, and any amendments or modifications thereto. If the Project involved the planning, investigation, evaluation, design, or other work requiring interpretation and proper application of engineering, or other professionals, the final inspection and certification shall be conducted by a California Registered Civil Engineer or other appropriate California registered professional. The results of the final inspection and certification shall be provided to the Grant Manager.
8. The Grantee agrees to expeditiously provide, during work on the Project and throughout the term of this Agreement, such reports, data, information, and certifications that may be reasonably required by the State Water Board.

H. PAYMENT OF PROJECT COSTS

The Grantee agrees that it will provide for payment of its full share of Project costs and that all costs connected with the Project will be paid by the Grantee on a timely basis.

I. AUDIT DISALLOWANCES

The Grantee agrees it shall return any audit disallowances to the State Water Board.

J. FRAUD AND MISUSE OF PUBLIC FUNDS

All invoices submitted shall be accurate and signed under penalty of perjury. Any and all costs submitted pursuant to this Agreement shall only be for the tasks set forth herein. The Grantee shall not submit any invoice containing costs that are ineligible or have been reimbursed from other funding sources unless required and specifically noted as such (i.e., match costs). Any eligible costs for which the Grantee is seeking reimbursement shall not be reimbursed from any other source. Double or multiple billing for time, services, or any other eligible cost is illegal and constitutes fraud. Any suspected occurrences of fraud, forgery, embezzlement, theft, or any other misuse of public funds may result in suspension of disbursements of grant funds and/or termination of this Agreement requiring the repayment of all funds disbursed hereunder. Additionally, the Deputy Director of the Division of Financial Assistance may request an audit pursuant to Exhibit C, paragraph 4 and refer the matter to the Attorney General's Office or the appropriate district attorney's office for criminal prosecution or the imposition of civil liability. (Civ. Code, §§ 1572-1573; Pen. Code, §§ 470, 489-490.)

EXHIBIT C
GENERAL TERMS & CONDITIONS

1. **AMENDMENT:** No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or agreement not incorporated in the Agreement is binding on any of the parties.
2. **APPROVAL:** The Grantee will not proceed with any work on the Project until authorized in writing by the State Water Board.
3. **ASSIGNMENT:** This grant is not assignable by the Grantee, either in whole or in part, without the written consent of the State Water Board.
4. **AUDIT:** The Grantee agrees the State Water Board, the Bureau of State Audits, the Governor of the State, the Internal Revenue Service, or any authorized representative of the foregoing shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement. The Division of Financial Assistance (Division), at its option, may call for an audit of financial information relative to the Project, where the Deputy Director of the Division determines that an audit is desirable to assure program integrity or where such an audit becomes necessary because of federal requirements. Where such an audit is called for, the audit shall be performed by a certified public accountant independent of the Grantee and at the cost of the Grantee. The audit shall be in the form required by the Division. The Grantee agrees to maintain such records for a possible audit for a minimum of thirty-five (35) years after final payment, unless a longer period of records retention is stipulated. The Grantee agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Further, the Grantee agrees to include a similar right of the State to audit records and interview staff in any contract related to performance of this Agreement. (Gov. Code, § 8546.7; Pub. Contract Code, § 10115 et seq.)
5. **BONDING:** Where contractors are used, the Grantee shall not authorize construction to begin until each contractor has furnished a performance bond in favor of the Grantee in the following amounts: faithful performance (100%) of contract value; labor and materials (100%) of contract value. This requirement shall not apply to any contract for less than \$25,000.00. (Civ. Code, § 9550; Pub. Contract Code, § 7103.)
6. **COMPLIANCE WITH LAW, REGULATIONS, ETC.:** The Grantee agrees that it will, at all times, comply with and require its contractors and subcontractors to comply with all applicable federal and state laws, rules, guidelines, regulations, and requirements. Without limitation of the foregoing, the Grantee agrees that, to the extent applicable, the Grantee will comply with the provisions of the adopted environmental mitigation plan for the term of this Agreement, or the useful life of the Project, whichever is longer.
7. **COMPUTER SOFTWARE:** The Grantee certifies that it has appropriate systems and controls in place to ensure that state funds will not be used in the performance of this Agreement for the acquisition, operation or maintenance of computer software in violation of copyright laws.
8. **CONFLICT OF INTEREST:** The Grantee certifies that it is in compliance with applicable state and/or federal conflict of interest laws.
9. **CONTINUOUS USE OF PROJECT; LEASE OR DISPOSAL OF PROJECT:** The Grantee agrees that, except as provided in the Agreement, it will not abandon, substantially discontinue use of, lease, or dispose of the Project or any significant part or portion thereof during the useful life of the Project without prior written approval of the Deputy Director of the Division. Such approval may be conditioned as determined to be appropriate by the Deputy Director of the Division, including a condition requiring repayment of all grant funds or any portion of all remaining grant funds covered by this Agreement together with accrued interest and any penalty assessments which may be due.
10. **DAMAGES FOR BREACH AFFECTING TAX EXEMPT STATUS:** In the event that any breach of any of the provisions of this Agreement by the Grantee shall result in the loss of tax exempt status for any state bonds, or if such breach shall result in an obligation on the part of the State to reimburse the federal government by

reason of any arbitrage profits, the Grantee shall immediately reimburse the State in an amount equal to any damages paid by or loss incurred by the State due to such breach.

11. **DATA MANAGEMENT:** This Project includes appropriate data management activities so that Project data can be incorporated into appropriate statewide data systems.
12. **DISPUTES:** The Grantee shall continue with its responsibilities under this Agreement during any dispute. Any dispute arising under this Agreement which is not otherwise disposed of by agreement shall be decided by the Deputy Director of the Division, or his or her authorized representative. The decision shall be reduced to writing and a copy thereof furnished to the Grantee and to the State Water Board's Executive Director. The decision of the Division shall be final and conclusive unless, within thirty (30) calendar days after mailing of the Division decision to the Grantee, the Grantee mails or otherwise furnishes a written appeal of the decision to the State Water Board's Executive Director. The decision of the State Water Board's Executive Director shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal under this clause, the Grantee shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Grantee shall continue to fulfill and comply with all the terms, provisions, commitments, and requirements of this Agreement. This clause does not preclude consideration of legal questions, provided that nothing herein shall be construed to make final the decision of the State Water Board, or any official or representative thereof, on any question of law.
13. **ENVIRONMENTAL CLEARANCE (CEQA/NEPA/STREAMBED ALTERATION):**
 - a. No work that is subject to the California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA) may proceed under this Agreement until documents that satisfy the CEQA/NEPA process are received by the Grant Manager and the State Water Board has given environmental clearance. No work that is subject to an Environmental Impact Report or a Mitigated Negative Declaration may proceed until and unless approved by the Deputy Director of the Division. Such approval is fully discretionary and shall constitute a condition precedent to any work for which it is required. Proceeding with work subject to CEQA and/or NEPA without environmental clearance by the State Water Board shall constitute a breach of a material provision of this Agreement.
 - b. If this Project includes modification of a river or stream channel, it must fully mitigate environmental impacts resulting from the modification. The Grantee must provide documentation that the environmental impacts resulting from such modification will be fully mitigated considering all of the impacts of the modification and any mitigation, environmental enhancement, and environmental benefit resulting from the Project, and whether, on balance, any environmental enhancement or benefit equals or exceeds any negative environmental impacts of the Project.
14. **FISCAL MANAGEMENT SYSTEMS AND ACCOUNTING STANDARDS:** The Grantee agrees that, at a minimum, its fiscal control and accounting procedures will be sufficient to permit tracing of grant funds to a level of expenditure adequate to establish that such funds have not been used in violation of state law or this Agreement. The Grantee further agrees that it will maintain separate Project accounts in accordance with generally accepted accounting principles.
15. **GOVERNING LAW:** This grant is governed by and shall be interpreted in accordance with the laws of the State of California.
16. **GRANTEE'S RESPONSIBILITY FOR WORK:** The Grantee shall be responsible for all work and for persons or entities engaged in work performed pursuant to this Agreement, including, but not limited to, contractors, subcontractors, suppliers, and providers of services. The Grantee shall be responsible for any and all disputes arising out of its contracts for work on the Project, including but not limited to payment disputes with contractors and subcontractors. The State will not mediate disputes between the Grantee and any other entity concerning responsibility for performance of work.

17. **INCOME RESTRICTIONS:** The Grantee agrees that any refunds, rebates, credits, or other amounts (including any interest thereon) accruing to or received by the Grantee under this Agreement shall be paid by the Grantee to the State, to the extent that they are properly allocable to costs for which the Grantee has been reimbursed by the State under this Agreement.
18. **INDEPENDENT ACTOR:** The Grantee, and its agents and employees, if any, in the performance of this Agreement, shall act in an independent capacity and not as officers, employees or agents of the State Water Board.
19. **INSPECTION:** The State Water Board, the Bureau of State Audits, or any authorized representative of the foregoing, shall have suitable access to the Project site at all reasonable times during Project implementation and thereafter for the useful life of the Project to ascertain compliance with this Agreement and its goals. The Grantee acknowledges that the Project records and location are public records.
20. **INSURANCE:** Throughout the useful life of the Project, the Grantee shall maintain a self-insurance program against fire, vandalism and other loss, damage, or destruction of the facilities or structures constructed pursuant to this Agreement, if any. Proof of such a program must be provided by the Grantee to the State Water Board. The Grantee shall notify the State Water Board in writing of any material amendment to the self-insurer's articles, charter, or agreement of incorporation, association or co-partnership which alters its coverage of the Project. In the event of any damage to or destruction of the Project or any larger system of which it is a part, the net proceeds of insurance shall be applied to the reconstruction, repair or replacement of the damaged or destroyed parts of the Project or its larger system. The Grantee shall begin such reconstruction, repair, or replacement as expeditiously as possible and shall pay out of such net proceeds all costs and expenses in connection with such reconstruction, repair or replacement so that the same shall be completed and the larger system shall be free of all claims and liens.
21. **NONDISCRIMINATION:**
 - a. During the performance of this Agreement, the Grantee and its consultants and contractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave.
 - b. The Grantee, its consultants, and contractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.
 - c. The Grantee, its consultants, and contractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code, § 12990) and the applicable regulations promulgated thereunder (Cal. Code Regs., tit. 2, § 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full.
 - d. The Grantee, its consultants, and contractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement, if any.
 - e. The Grantee shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the Agreement. Failure by the Grantee to carry out these requirements and applicable requirements of 40 C.F.R. part 33 is a breach of a material provision of this Agreement which may result in its termination.
22. **NO THIRD PARTY RIGHTS:** The parties to this grant Agreement do not create rights in, or grant remedies to, any third party as a beneficiary of this grant Agreement, or of any duty, covenant, obligation or undertaking established herein.

23. NOTICE:

- a. The Grantee shall notify the State Water Board prior to conducting construction, monitoring, demonstration, or other implementation activities such that State Water Board and/or Regional Water Board staff may observe and document such activities.
- b. The Grantee shall promptly notify the State Water Board of events or proposed changes that could affect the scope, budget, or work performed under this Agreement. The Grantee agrees that no substantial change in the scope of the Project will be undertaken until written notice of the proposed change has been provided to the State Water Board, and the State Water Board has given written approval for such change.
- c. Discovery of any potential archeological or historical resource. Should a potential archeological or historical resource be discovered during implementation of the Project, the Grantee agrees that all work in the area of the find will cease until a qualified archeologist has evaluated the situation and made recommendations regarding preservation of the resource, and the Deputy Director of the Division has determined what actions should be taken to protect and preserve the resource. The Grantee agrees to implement appropriate actions as directed by the Division.
- d. Discovery of any unexpected endangered or threatened species, as defined in the federal or California Endangered Species Acts. Should a federal or state protected species be unexpectedly encountered during implementation of the Project, the Grantee agrees to promptly notify the Deputy Director of the Division. This notification is in addition to the Grantee's obligations under the federal or state Endangered Species Acts.
- e. The Grantee shall notify the State Water Board at least ten (10) working days prior to any public or media event publicizing the accomplishments and/or results of this Agreement and provide the opportunity for attendance and participation by State Water Board's representatives.
- f. The Grantee shall promptly notify the State Water Board in writing of completion of work on the Project.
- g. The Grantee shall promptly notify the State Water Board in writing of any cessation of all major construction work on the Project where such cessation of work is expected to or does extend for a period of thirty (30) days or more and of any circumstance, combination of circumstances, or condition, which is expected to or does delay completion of construction for a period of ninety (90) days or more beyond the estimated date of completion of construction previously provided.

24. OPERATIONS & MAINTENANCE: The Grantee shall maintain and operate the facility and structures constructed or improved as part of the Project throughout the useful life of the Project, consistent with the purposes for which this Grant was made. The Grantee assumes all operations and maintenance costs of the facilities and structures; the State Water Board shall not be liable for any cost of such maintenance, management or operation. The Grantee may be excused from operations and maintenance only upon the written approval of the Deputy Director of the Division. For purposes of this Agreement, "operation costs" include direct costs incurred for material and labor needed for operations, utilities, insurance, and similar expenses. "Maintenance costs" include ordinary repairs and replacements of a recurring nature necessary to prolong the life of capital assets and basic structures, and the expenditure of funds necessary to replace or reconstruct capital assets or basic structures.

25. PERMITS, CONTRACTING, AND DEBARMENT: The Grantee shall procure all permits and licenses necessary to accomplish the work contemplated in this Agreement, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. Any contractors, outside associates, or consultants required by the Grantee in connection with the services covered by this Agreement shall be limited to such individuals or firms as were specifically identified and agreed to during negotiations for this Agreement, if any, or as are specifically authorized by the State Water Board's Grant Manager during the performance of this Agreement. Any substitutions in, or additions to, such contractors, associates, or consultants, shall be subject to the prior written approval of the State Water Board's Grant Manager. The Grantee shall not contract with any party who is debarred or suspended or otherwise excluded from or ineligible for participation in federal assistance programs under Executive Order 12549, "Debarment and

Suspension". The Grantee shall not contract with any individual or organization on USEPA's List of Violating Facilities. (40 CFR, Part 31.35; Gov. Code, § 4477) www.echo.epa.gov. The Grantee certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any federal department or Grantee;
- b. Have not within a three (3)-year period preceding this Agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and,
- d. Have not within a three (3)-year period preceding this application/proposal had one or more public transactions (federal, state or local) terminated for cause or default.

26. **PREVAILING WAGES AND LABOR COMPLIANCE:** If applicable, the Grantee agrees to be bound by all the provisions of the Labor Code regarding prevailing wages and shall monitor all contracts subject to reimbursement from this Agreement to assure that the prevailing wage provisions of the Labor Code are being met. The Grantee certifies that it will reimburse the Department of Industrial Relations (DIR) for DIR's reasonable and directly-related costs of labor compliance monitoring and enforcement pursuant to: Labor Code, sections 1771.3 or 1771.5; and, sections 16450 through 16452, or section 16454 of title 8 of the California Code of Regulations. Current DIR requirements may be found at <http://www.dir.ca.gov/lcp.asp>.

27. **PROFESSIONALS:** The Grantee agrees that only licensed professionals will be used to perform services under this Agreement where such services are called for. All technical reports required pursuant to this Agreement that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with California Code of Regulations, title 16, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

28. **RECORDS:** Without limitation of the requirement to maintain Project accounts in accordance with generally accepted accounting principles, the Grantee agrees to:

- a. Establish an official file for the Project which shall adequately document all significant actions relative to the Project;
- b. Establish separate accounts which will adequately and accurately depict all amounts received and expended on this Project, including all grant funds received under this Agreement;
- c. Establish separate accounts which will adequately depict all income received which is attributable to the Project, especially including any income attributable to grant funds disbursed under this Agreement;
- d. Establish an accounting system which will adequately depict final total costs of the Project, including both direct and indirect costs;
- e. Establish such accounts and maintain such records as may be necessary for the state to fulfill federal reporting requirements, including any and all reporting requirements under federal tax statutes or regulations; and,

- f. If a Force Account is used by the Grantee for any phase of the Project, establish an account that documents all employee hours, and associated tasks charged to the Project per employee.
29. **RELATED LITIGATION:** Under no circumstances may a Grantee use funds from any disbursement under this Grant Agreement to pay costs associated with any litigation the Grantee pursues against the State Water Board or any Regional Water Board. Regardless of the outcome of any such litigation, and notwithstanding any conflicting language in this Agreement, the Grantee agrees to complete the Project funded by this Agreement or to repay all of the grant funds plus interest.
30. **RIGHTS IN DATA:** The Grantee agrees that all data, plans, drawings, specifications, reports, computer programs, operating manuals, audio and video recordings, notes, and other written or graphic work produced in the performance of this Agreement shall be in the public domain. The Grantee may disclose, disseminate and use in whole or in part, any final form data and information received, collected, and developed under this Agreement, subject to appropriate acknowledgement of credit to the State Water Board for financial support. The Grantee shall not utilize the materials for any profit-making venture or sell or grant rights to a third party who intends to do so.
31. **STATE REVIEWS AND INDEMNIFICATION:** The parties agree that review or approval of Project applications, documents, permits, plans and specifications or other Project information by the State Water Board is for administrative purposes only and does not relieve the Grantee of its responsibility to properly plan, design, construct, operate, maintain, implement, or otherwise carry out the Project. To the extent permitted by law, the Grantee agrees to indemnify, defend and hold harmless the State Water Board and the State against any loss or liability arising out of any claim or action brought against the State Water Board and/or the State from and against any and all losses, claims, damages, liabilities or expenses, of every conceivable kind, character and nature whatsoever arising out of, resulting from, or in any way connected with (1) the Project or the conditions, occupancy, use, possession, conduct or management of, work done in or about, or the planning, design, acquisition, installation or construction, of the Project or any part thereof; (2) the carrying out of any of the transactions contemplated by this Agreement or any related document; (3) any violation of any applicable law, rule or regulation, any environmental law (including, without limitation, the Federal Comprehensive Environmental Response, Compensation and Liability Act, the Resource Conservation and Recovery Act, the California Hazardous Substance Account Act, the Federal Water Pollution Control Act, the Clean Air Act, the California Hazardous Waste Control Law and California Water Code, section 13304, and any successors to said laws), rule or regulation or the release of any toxic substance on or near the System; or, (4) any untrue statement or alleged untrue statement of any material fact or omission or alleged omission to state a material fact necessary to make the statements required to be stated therein, in light of the circumstances under which they were made, not misleading with respect to any information provided by the Grantee for use in any disclosure document utilized in connection with any of the transactions contemplated by this Agreement. To the fullest extent permitted by law, the Grantee agrees to pay and discharge any judgment or award entered or made against the State Water Board and/or the State with respect to any such claim or action, and any settlement, compromise or other voluntary resolution. The provisions of this section shall survive the term of this Agreement.
32. **STATE WATER BOARD ACTION, COSTS, AND ATTORNEY FEES:** The Grantee agrees that any remedy provided in this Agreement is in addition to and not in derogation of any other legal or equitable remedy available to the State Water Board as a result of breach of this Agreement by the Grantee, whether such breach occurs before or after completion of the Project, and exercise of any remedy provided by this Agreement by the State Water Board shall not preclude the State Water Board from pursuing any legal remedy or right which would otherwise be available. In the event of litigation between the parties hereto arising from this Agreement, it is agreed that each party shall bear its own filing costs and attorney fees.
33. **SUPPLEMENTAL ENVIRONMENTAL PROJECTS:** Grant Funds shall not be used for supplemental environmental projects required by Regional Water Boards.
34. **TERMINATION, IMMEDIATE REPAYMENT, INTEREST:** This Grant Agreement may be terminated by written notice at any time prior to completion of the Project, at the option of the State Water Board, upon violation by the Grantee of any material provision after such violation has been called to the attention of the Grantee and after failure of the Grantee to bring itself into compliance with the provisions of this Agreement within a reasonable time as established by the State Water Board. In the event of termination, the Grantee agrees, upon demand, to immediately repay to the State Water Board an amount equal to the amount of grant

funds disbursed to the Grantee prior to such termination. In the event of termination, interest shall accrue on all amounts due at the highest legal rate of interest from the date that notice of termination is mailed to the Grantee to the date of full repayment by the Grantee.

35. **TIMELINESS:** Time is of the essence in this Agreement. The Grantee shall proceed with and complete the Project in an expeditious manner.
36. **TRAVEL AND PER DIEM:** Any reimbursement for necessary travel and per diem shall be at rates not to exceed those set by the California Department of Human Resources. These rates may be found at <http://www.calhr.ca.gov/employees/Pages/travel-reimbursements.aspx>. Reimbursement will be at the State travel and per diem amounts that are current as of the date costs are incurred by the Grantee. No travel outside the State of California shall be reimbursed unless prior written authorization is obtained from the Grant Manager.
37. **UNENFORCEABLE PROVISION:** In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement shall continue to have full force and effect and shall not be affected thereby.
38. **URBAN WATER MANAGEMENT:** The Grantee certifies that this Project complies with the Urban Water Management Planning Act (Water Code, § 10610 et seq.). This shall constitute a condition precedent to this Agreement.
39. **USEFUL LIFE OF PROJECT:** For the purpose of this Agreement, the useful life of any constructed portions of this Project begins upon completion of construction and continues until fifty (50) years thereafter for pipelines and structures and twenty (20) years for all else.
40. **VENUE:** The State Water Board and the Grantee hereby agree that any action arising out of this Agreement shall be filed and maintained in the Superior Court in and for the County of Sacramento, California, or in the United States District Court in and for the Eastern District of California. The Grantee hereby waives any existing sovereign immunity for the purposes of this Agreement.
41. **WAIVER AND RIGHTS OF THE STATE WATER BOARD:** Any waiver of rights with respect to a default or other matter arising under the Agreement at any time by either party shall not be considered a waiver of rights with respect to any other default or matter. Any rights and remedies of the State provided for in this Agreement are in addition to any other rights and remedies provided by law.
42. **WATER CONSERVATION AND EFFICIENCY PROGRAMS:** The Grantee acknowledges that it has appropriate water conservation and efficiency programs in place, and that this provision constitutes a condition of the grant award. A web link with examples of water conservation and efficiency programs is available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/conservation.shtml.
43. **WATER RIGHTS:** The Grantee acknowledges that its eligibility for this Grant award is conditioned on its compliance with Water Code section 5103(e), if applicable. The Grantee further certifies that it has filed and will continue to file its required Statements of Diversion with State Water Board in accordance with Water Code sections 5101 and 5103.
44. **WATERSHED MANAGEMENT PLAN CONSISTENCY:** The Grantee certifies that any watershed protection activity undertaken as part of this Project will be consistent with the applicable, adopted, local watershed management plans and the applicable Water Quality Control Plan (Basin Plan and/or Statewide) adopted by a Regional Water Board or the State Water Board, where such plans exist. Any such activity occurring in the San Gabriel and Los Angeles watersheds shall be consistent with the San Gabriel and Los Angeles River Watershed and Open Space Plan as adopted by the San Gabriel and Lower Los Angeles Rivers and Mountain Conservancy and the Santa Monica Mountains Conservancy.
45. **WITHHOLDING OF GRANT DISBURSEMENTS:** The State Water Board may withhold all or any portion of the grant funds provided for by this Agreement in the event that the Grantee has materially violated, or threatens to materially violate, any term, provision, condition, or commitment of this Agreement; or the Grantee fails to maintain reasonable progress toward completion of the Project.

EXHIBIT D
SPECIAL CONDITIONS

Propositions 40 and 84 Stormwater Grant Program

1. The Grantee certifies that it is a local public agency (i.e., one of the following: a city, county, city and county, district, or a joint powers authority comprised entirely of local public agencies).
2. The Grantee certifies that this Project is intended to achieve one of the purposes set forth in Public Resources Code section 75050.2(a).
3. The Grantee certifies that any real property or interests in real property acquired for this Project shall be acquired from a willing seller.
4. The Grantee certifies that it is providing a match in the amount of at least 20% of the total Project cost (see Round 2 Guidelines, page 3). Disadvantaged communities may request a reduced funding match as outlined in Round 2 Guidelines, Table 1, page 4.
5. The Grantee certifies that in no event will it complete this Project later than MARCH 31, 2017. It acknowledges that this condition is a material condition of this Agreement.

BID FORMS

CITY OF SANTA ROSA

STATE OF CALIFORNIA

CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT

The work to be performed and referred to herein is in the City of Santa Rosa, California and consists of improvements to be constructed in accordance with the provisions of the Invitation for Bids, containing the Notice to Bidders, the Special Provisions, the Project Plan(s), the Bid Forms and the Contract, all of which are by reference incorporated herein, and each Addendum, if any is issued, to any of the above which is also incorporated by reference herein.

TO THE AWARD AUTHORITY OF THE CITY OF SANTA ROSA

The undersigned, as bidder, declares that the only person or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any other person, firm, or corporation; that Contractor has carefully examined the Project Plans, Invitation for Bids and conditions therefor, and is familiar with all bid requirements, that Contractor has examined this Contract and the provisions incorporated by reference herein, and Contractor hereby proposes, and agrees that if its bid is accepted by the City, Contractor will provide all necessary machinery, tools, apparatuses, and other means of construction, and to do all the work and furnish all the materials and services required to complete the construction in accordance with the Contract, the Special Provisions, the Project Plan(s), and Addenda to any of the above as incorporated by reference, in the time stated herein, for the unit prices and/or lump sum prices as follows:

NAME OF BIDDER: _____

Contract #: **C01931**Project Title: **CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT**

Line #	Description	Units	Quantity	Unit Price	Total Price
1	EARLY COMPLETION INCENTIVE (I)	DAY	2	\$ <u>500.00</u>	\$ <u>1,000.00</u>
2	LATE COMPLETION DISINCENTIVE	DAY(S)	1	\$ <u>(1,000.00)</u>	\$ <u>(1,000.00)</u>
3	TRAFFIC CONTROL	LS	1	\$ _____	\$ _____
4	WATER POLLUTION CONTROL	LS	1	\$ _____	\$ _____
5	REMOVE WALKWAY CURB	LF	12	\$ _____	\$ _____
6	UTILITY CLEARANCES	LS	1	\$ _____	\$ _____
7	STUMP GRINDING/REMOVAL 2"	EA	5	\$ _____	\$ _____
8	STUMP GRINDING/REMOVAL 4" - 6"	EA	6	\$ _____	\$ _____
9	STUMP GRINDING/REMOVAL 7" - 12"	EA	16	\$ _____	\$ _____
10	STUMP GRINDING/REMOVAL 20" - 36"	EA	3	\$ _____	\$ _____
11	SITE GRADING (F)	CY	275	\$ _____	\$ _____
12	TREE PLANTING - 15 GALLON	EA	28	\$ _____	\$ _____
13	TREE PLANTING - 3" CALIPER SIZE	EA	7	\$ _____	\$ _____
14	ROOT BARRIER	LF	332	\$ _____	\$ _____
15	BIORETENTION - 1 GALLON SHRUBS	EA	696	\$ _____	\$ _____
16	5 GALLON SHRUBS	EA	190	\$ _____	\$ _____
17	1 GALLON SHRUBS	EA	1220	\$ _____	\$ _____
18	BARK MULCH AND SHEET MULCHING	LS	1	\$ _____	\$ _____
19	90 CALENDAR DAYS LANDSCAPE MAINTENANCE	LS	1	\$ _____	\$ _____
20	IRRIGATION FOR PLANTING AREAS	LS	1	\$ _____	\$ _____
21	TREE BUBBLERS	EA	35	\$ _____	\$ _____
22	SLEEVES	LF	436	\$ _____	\$ _____
23	4" DIRECTIONAL BORING	LF	165	\$ _____	\$ _____
24	DECODERS	EA	12	\$ _____	\$ _____
25	2-WIRE CABLE WITHIN 1" PVC CONDUIT	LF	1130	\$ _____	\$ _____
26	1-1/2" MAIN LINE	LF	270	\$ _____	\$ _____
27	SPLICE BOX	EA	3	\$ _____	\$ _____
28	BALL VALVE	EA	11	\$ _____	\$ _____
29	1" REMOTE CONTROL VALVES	EA	23	\$ _____	\$ _____
30	FILTER	EA	14	\$ _____	\$ _____
31	QUICK COUPLER VALVE	EA	5	\$ _____	\$ _____
32	IRRIGATION MASTER VALVE AND FLOW SENSOR	EA	2	\$ _____	\$ _____
33	IRRIGATION CONTROLLER	EA	1	\$ _____	\$ _____
34	TANK	LS	1	\$ _____	\$ _____
35	BOOSTER PUMP SYSTEM ASSEMBLY AND HOUSING INSTALLATION	LS	1	\$ _____	\$ _____
36	AIR GAP MANIFOLD	LS	1	\$ _____	\$ _____

Line #	Description	Units	Quantity	Unit Price	Total Price
37	PIPE ROOF DRAINS TO TANK	LS	1	\$ _____	\$ _____
38	STAINLESS STEEL U-CHANNEL	LS	1	\$ _____	\$ _____
39	PIPING FOR TANK, BOOSTER PUMP AND AIR GAP MANIFOLD	LS	1	\$ _____	\$ _____
40	FLOAT SWITCHES	LS	1	\$ _____	\$ _____
41	BOOSTER PUMP ASSEMBLY ELECTRICAL SERVICES	LS	1	\$ _____	\$ _____
42	PRECAST CONCRETE PICNIC TABLES	EA	3	\$ _____	\$ _____
43	HYDRATION STATION	LS	1	\$ _____	\$ _____
44	COBBLES AT SWALES	SF	1900	\$ _____	\$ _____
45	COBBLE APRON	SF	1801	\$ _____	\$ _____
46	TREE GRATE AND FRAME	EA	1	\$ _____	\$ _____
47	METAL HEADER	LF	895	\$ _____	\$ _____
48	BOULDERS	EA	102	\$ _____	\$ _____
49	GRANITE WEIR INSTALLATION	EA	4	\$ _____	\$ _____
50	STRUCTURAL SOIL	CY	330	\$ _____	\$ _____
51	STRUCTURAL SOIL MOISTURE BARRIER	SY	1005	\$ _____	\$ _____
52	PERMANENT TRENCH AND CONFORM PAVING	TON	17	\$ _____	\$ _____
53	PERVIOUS CONCRETE	SF	4100	\$ _____	\$ _____
54	CONCRETE FOOTING FOR TANK	LS	1	\$ _____	\$ _____
55	CONCRETE DIVIDER	LF	73	\$ _____	\$ _____
56	CONCRETE WALL	LF	39	\$ _____	\$ _____
57	PARKING LOT LIGHT FOUNDATION	EA	5	\$ _____	\$ _____
58	ADA DIRECTIONAL SIGNS	EA	3	\$ _____	\$ _____
59	NON-POTABLE WATER SIGN	EA	1	\$ _____	\$ _____
60	RELOCATE SIGN	EA	1	\$ _____	\$ _____
61	LOCATION SIGN INSTALLATION	EA	2	\$ _____	\$ _____
62	KIOSK SIGN INSTALLATION	EA	1	\$ _____	\$ _____
63	INFORMATION KIOSK SIGN INSTALLATION	EA	4	\$ _____	\$ _____
64	BEST PRACTICE SIGN INSTALLATION	EA	9	\$ _____	\$ _____
65	PLANT ID SIGN INSTALLATION	EA	40	\$ _____	\$ _____
66	12" HDPE STORM DRAIN PIPE	LF	24	\$ _____	\$ _____
67	6" PERFORATED PIPE	LF	25	\$ _____	\$ _____
68	6" STORM DRAIN	LF	15	\$ _____	\$ _____
69	REMOVE AND REPLACE EXISTING 8" STORM DRAIN	LF	8	\$ _____	\$ _____
70	REDIRECT EXISTING STORM DRAIN TO DROP INLET	EA	2	\$ _____	\$ _____
71	14" X 23" ELLIPTICAL REINFORCED CONCRETE PIPE	LF	8	\$ _____	\$ _____
72	PERMEABLE TRENCH	LF	133.5	\$ _____	\$ _____
73	PERMEABLE MATERIAL AROUND EXISTING DROP INLETS	EA	4	\$ _____	\$ _____
74	12" X 12" DROP INLET	EA	4	\$ _____	\$ _____
75	18" X 18" DROP INLET	EA	1	\$ _____	\$ _____
76	18" X 18" JUNCTION BOX	EA	2	\$ _____	\$ _____

Line #	Description	Units	Quantity	Unit Price	Total Price
77	CONCRETE PLANTER CURB	LF	16	\$ _____	\$ _____
78	CONCRETE WARNING CURB	LF	67	\$ _____	\$ _____
79	6" CONCRETE SAFETY CURB	LF	13	\$ _____	\$ _____
80	REMOVE AND REPLACE SIDEWALK	SF	330	\$ _____	\$ _____
81	PARKING LOT SIDEWALK	SF	528	\$ _____	\$ _____
82	ACCESSIBLE PARKING SPACE AND ACCESS AISLE	SF	275	\$ _____	\$ _____
83	STAIRS	SF	124	\$ _____	\$ _____
84	TREE GRATE SUPPORT CLUB	LS	1	\$ _____	\$ _____
85	EQUIPMENT PAD	SF	72	\$ _____	\$ _____
86	HAND RAIL	LF	35	\$ _____	\$ _____
87	CONCRETE PATH AT SWALE CROSSING	SF	75	\$ _____	\$ _____
88	CONCRETE FENCE STRIP	LF	121	\$ _____	\$ _____
89	SET GRANITE CURB BLOCKS	LS	1	\$ _____	\$ _____
90	42" GALVANIZED METAL FENCE	LF	121	\$ _____	\$ _____
91	TRAFFIC STRIPES AND PAVEMENT MARKINGS	LS	1	\$ _____	\$ _____
92	#3.5 PULL BOX	EA	9	\$ _____	\$ _____
93	#5 PULL BOX	EA	2	\$ _____	\$ _____
94	PARKING LOT LIGHT CONDUIT	LS	1	\$ _____	\$ _____
95	REMOVE, PRESERVE AND REINSTALL PARKING LOT LIGHT	EA	5	\$ _____	\$ _____
96	PARKING LOT LIGHT WIRING	LS	1	\$ _____	\$ _____
					Total: \$ _____

In the case of any discrepancy between the unit price and the total set forth for the item, the unit price shall prevail; provided, however, that if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any reason, or is omitted, or in the case of lump sum items, is not the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

1. As to lump sum items, the amount set forth in the "Total" column shall be the unit price;
2. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The Total Base Bid shall be the sum of the "Total" column. In case of discrepancy between the sum of the "Total" column and the amount entered as Total Base Bid, the sum of the "Total" column shall prevail. The bid comparison will be based on the sum of the "Total" column for each bidder.

If this Contract Bid is accepted by the City and the undersigned fails to execute the Contract and to give all the bonds required under the Contract, with a surety satisfactory to the Award Authority of the City of Santa Rosa, within ten calendar days after bidder has received the Notice of Award from the Engineer, then the Award Authority may, at its option, determine that the bidder has abandoned the Contract, and thereupon this bid and the acceptance thereof shall be null and void, and the forfeiture of the security accompanying this bid shall be in accordance with California Public Contract Code section 20172.

The undersigned understands and agrees that the City is not responsible for any error or omissions on the part of the undersigned in making this bid.

The bidder to whom the Contract is awarded agrees to execute the Contract in favor of the City, in the form attached, and to deliver any and all required bond(s) and insurance certificates within ten calendar days from the date of Contractor's receipt of the Notice of Award. Following the award of the Contract, Contractor shall commence work within ten calendar days from the day authorized in the Notice to Proceed and diligently prosecute the same to completion in accordance with Section 8-1.04.

LIST OF SUBCONTRACTORS

NAME OF BIDDER: _____

The following is a list of each subcontractor who will perform work or labor or render services to the undersigned for the construction of the project in an amount in excess of ½ of 1% of the total amount of this bid.

The undersigned agrees that any portion of the work in excess of ½ of 1% of the total amount of this bid and for which no subcontractor is designated herein will be performed by the undersigned.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK (ITEM NO.)

LIST OF PREVIOUS SIMILAR JOBS

NAME OF BIDDER: _____

[illegible]

NONCOLLUSION DECLARATION
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid. The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

NOTE: The above Noncollusion Declaration is part of the Contract Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Noncollusion Declaration.

BID BOND AFFIDAVIT AND BIDDER'S SIGNATURE PAGE

Accompanying this bid is a guaranty in the form of (Notice: Insert the words "cash \$," "Cashier's Check," "Certified Check," or "Bidder's Bond" as the case may be):

in an amount equal to at least ten percent of the total of this bid.

The undersigned further agrees that if Contractor does not execute the Contract and deliver the necessary bonds to the City within the period of time specified in this Invitation for Bids, the proceeds of the security accompanying this bid shall become the property of the City of Santa Rosa, California, and this bid and the acceptance thereof may, at the option of the City, be considered null and void.

The undersigned is licensed in accordance with an act providing for the registration of Contractors, License No. _____, Class _____, expiration date _____.

The undersigned is registered with City of Industrial Relations, Registration No. _____.

IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager of the corporation; if a partnership, state true name of partnership, also the names of all partners in the partnership; if the bidder is a sole proprietor, state the business name and the proprietor's name in full.

Secretary of State Business Entity Number: _____.

Business Address

Telephone Number

I declare under penalty of perjury that the foregoing is true and correct.

BIDDER'S SIGNATURE: _____

TITLE: _____

DATE: _____

CONTRACTOR DEBARMENT CERTIFICATION

Contractor certifies that it and all of its subcontractors:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any federal department or the City of Santa Rosa;
- b. Have not within a three (3)-year period preceding this Contract been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and,
- d. Have not within a three (3)-year period preceding this bid had one or more public transactions (federal, state or local) terminated for cause or default.

IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager of the corporation; if a partnership, state true name of partnership, also the names of all partners in the partnership; if the bidder is a sole proprietor, state the business name and the proprietor's name in full.

Business Address

Telephone Number

I declare under penalty of perjury that the foregoing is true and correct.

BIDDER'S SIGNATURE: _____

TITLE: _____

DATE: _____

CONTRACT

CITY OF SANTA ROSA

CALIFORNIA

CONTRACT NO. C01931

CITY HALL PLAZA DEMONSTRATION GARDEN AND LID RETROFIT

This Contract is made and entered into as of date to be added upon award at Santa Rosa, California, between the City of Santa Rosa ("City") and _____ of _____ ("Contractor").

ARTICLE I - For and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by City, and under the conditions expressed in the required bonds hereunto annexed, Contractor agrees that for the benefit of City, at its own cost and expense, to do all the work and furnish all the materials, except such as are mentioned in the Special Provisions to be furnished by City, necessary to construct and complete the work herein described in a good, workmanlike, and substantial manner. The work embraced herein shall be done in accordance with the Standard Specifications of the State of California Department of Transportation, dated 2010, insofar as the same may apply (Standard Specifications); in accordance with the City of Santa Rosa Construction Specifications for Public Improvements (City Specifications); in accordance with the City of Santa Rosa Design and Construction Standards, (City Standards); in accordance with the State of California Department of Transportation Standard Plans, dated 2010 (Standard Plans), (collectively, "Contract Documents") and in accordance with the Special Provisions hereinabove set forth, all of which are hereby incorporated into and made part of this Contract.

The work to be performed is further shown upon a plan consisting of 39 sheets entitled, City Hall Plaza Demonstration Garden and LID Retrofit, File Number 2016-0008, approved by the Deputy Director of Transportation and Public Works, hereinafter referred to as the Project Plan(s).

ARTICLE II - Contractor agrees to receive and accept the following prices as full compensation for furnishing all materials and doing all the work contemplated and embraced in this Contract; also for all loss or damages arising out of the nature of the work aforesaid, or from the acts of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by City and for all expenses incurred by or in consequence of the suspension or discontinuance of work, and for well and faithfully completing the work, and the whole thereof in the manner and according to the Project Plans and Invitation for Bids therefor, and the requirements of the Engineer under them to wit:

ITEM NUMBER	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
			\$ _____	\$ _____
TOTAL BASE BID (SUM OF "TOTAL" COLUMN)			\$ _____	

**BID ITEMS IN THIS SECTION WILL BE INSERTED
UPON AWARD OF THE CONTRACT AND SHALL BE
THE SAME AS THOSE BID UPON.**

ARTICLE III - City and Contractor hereby promise and agree that Contractor shall provide the materials and do the work according to the terms and conditions herein contained and referred to, for the prices aforesaid, and City hereby agrees to pay for the same at the time, in the manner, and upon the conditions set forth; and the parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to full performance of the covenants herein stated.

ARTICLE IV - By execution of this Contract, Contractor hereby represents and certifies that Contractor is aware of the provisions of Labor Code section 3700 which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor hereby agrees to comply with such provisions before commencing the performance of the work of this Contract.

ARTICLE V - It is further expressly agreed by and between the parties hereto that the Invitation for Bids, containing the Notice to Bidders including any required Bonds, the Contract Documents, and any Addenda are all essential parts of this Contract and are specially referred to and by such reference made a part hereof. In the event of any conflict in the provisions thereof, the terms of said documents shall control each over the other, in the following order:

1. Special Provisions
2. Project Plans
3. City Standards
4. City Specifications
5. Standard Specifications
6. Standard Plans

ARTICLE VI - Contractor agrees to commence work pursuant to this Contract within ten calendar days from the date authorized in the Notice to Proceed and to diligently prosecute the same to completion in accordance with Section 8-1.04C of the Special Provisions.

This Contract shall not be transferred or assigned without the prior written consent of City, which may be withheld by City in its sole and absolute discretion.

If Contractor is a corporation, two corporate officers of Contractor, one from each of the following two groups shall execute this Contract: a) the chairman of the board, president or any vice-president; b) the secretary, any assistant secretary, chief financial officer, or any assistant treasurer. The name and title of the corporate officers shall be printed under the signature.

In witness whereof, the parties hereto have executed this Contract as of the date first written above.

City:

City of Santa Rosa,
a Municipal corporation

By: _____

Title: _____

ATTEST:

By: _____

Title: _____

Approved as to form:

By: _____

Office of City Attorney

Contractor:

Name of Contractor,
Type of entity

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____