

PROJECT MANUAL

4th STREET PUBLIC AREA ENHANCEMENT PROJECT
BETWEEN “D” AND “C” STREET

SPECIFICATIONS AND INFORMATION FOR BIDDERS
SPECIFICATION NO. #CIP S-007-2023-24

PREPARED BY:

City of Perris
Public Works Department-Engineering Administration
101 North “D” Street
Perris, CA 92570
(951) 657-3280

IMA Design Group
5281 California Ave, Suite 350
Irvine, CA 92617
(949) 954-7500

Tk1sc Collaborative
11870 Pierce St. Suite 160
Riverside, CA 92505
(951) 299-4160

Tri-Lake (Interwest) Engineering
24 South D Street, Suite 101
Perris, CA 92570

BID OPENING - 4:00 PM (PST), July 7, 2023

5:00 PM (PST), August 9, 2023

5:00 PM (PST), September 13, 2023

Perris City Hall (via Active Bidder)

101 North “D” Street

Perris, CA 92570

Expected Award of Contract – September 26, 2023

Mandatory Start Construction – October 30, 2023

Project Information Sheet

Project: 4th STREET PUBLIC AREA ENHANCEMENT PROJECT BETWEEN “D” and “C” STREET (Specification No. #CIP S-007-2023-24)

Bid Opening Date: Wednesday, September 13, 2023 @5:00pm (PST) (Via Active Bidder Website)

Expected Bid Award Date: September 26, 2023

Mandatory Start Date: October 30, 2023

Construction Time: 160 Calendar Days

Liquidated Damages: \$1000 per calendar day.

Project Description:

Furnish all tools, equipment, services, apparatus, facilities, transportation, labor, building/encroachment permits, disposal, agency right-of-entry agreements, and materials necessary and reasonably incidental to: construction of new planting, irrigation, landscaping, monument signs, thematic lighting, street furnishings and other associated public improvements within the City of Perris and RCTC/Metrolink rights-of-way along 4th Street within Historic Downtown Perris, CA 92570 in strict accordance with the Specifications and Information for Bidders, Specification No. #CIP S-007-2023-24.

Contact Person for RFI and Purchasing Bid Package: (1) Michael A. Morales,
Capital Improvements Project Manager
City of Perris
(951) 956-2120

Contact Person for Technical Inquiries: Michael Morales (see Section #01370 For RFI Process, and all RFI shall be submitted via Active Bidder Website)

Note: See specifications for details regarding the above information.

BID DOCUMENTS CHECKLIST

Please insure that you have completed the following documents and have submitted originals with your proposal, as only responsive bids will be considered.

- Part I Procedural Documents - Bid pages BF-1 to BF-16
 - Bid pages BF-1 to BF-7
 - Bid Schedule of Values (submitted via Active Bidder)
 - Equal Employment Opportunity Certification
 - Non-Collusion Affidavit
 - Debarment and Suspension Certification
 - Non-Lobbying Certification
 - Addenda and Signature Page
 - Bid Bond BF 8A to BF 8C
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1 SET PLANS – 24" x 36"

Civil, Electrical, Landscape

SECTION 1 – NOTICE OF SEALED ELECTRONIC BIDS

The CITY OF PERRIS will receive electronic bid proposals (bids), via the City's Active Bidder website <http://www.cityofperris.org/city-hall/bids.html>, at Perris City Hall, 101 North "D" Street, Perris, CA 92570, until 4:00 P.M. (PST) July 7, 2023, 5:00 P.M. (PST) August 9, 2023, 5:00 P.M. (PST) September 13, 2023 for the "4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24)." Bid Closing date and time shall be simultaneous with the Bid Opening. The Project includes furnishing all tools, equipment, services, apparatus, facilities, transportation, labor, building/encroachment permits, disposal, agency right-of-entry agreements, and materials necessary and reasonably incidental to: construction of new planting, irrigation, landscaping, monument signs, thematic lighting, street furnishings and other associated public improvements within the City of Perris and RCTC/Metrolink rights-of-way along 4th Street within Historic Downtown Perris, CA 92570 in strict accordance with the Specifications and Information for Bidders, Specification No. #CIP S-007-2023-24.

Contract Documents and additional information for bidders will be available beginning August 16, 2023, on the City of Perris website at <http://www.cityofperris.org/city-hall/bids.html>. **Contractors must be registered with ACTIVE BIDDER to bid on City projects.**

The successful bidder will have 160 calendar days from the mandatory start date of October 30, 2023 to fully complete all work. Award of Contract is expected on September 26, 2023. All Bidders will be required to hold their original bid prices, without change, for a period of forty-five (45) days from the date bids are opened, except to the extent relief is available pursuant to Public Contract Code, Section 5100 et. seq.

The City reserves the right to reject any and all bids and waive any formality in the bidding. All contractors will be required to comply with all applicable Equal Opportunity laws and regulations.

DEPARTMENT OF INDUSTRIAL LABOR RELATIONS CONTRACTOR REGISTRATION.

Contractors must be registered and qualified with the California Department of Industrial Relations, in accordance with Labor Code 1771.1(b). All bids must include proof of current, valid registration and qualification status with the Department of Industrial Relations.

The City hereby notifies all bidders that it will affirmatively ensure that, in regard to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. Moreover, the City will not discriminate against any person or firm interested in providing goods or services to the City on the basis of race, color, religion, sex, marital status, national origin, age, veterans' status or handicap.

MINIMUM AND PREVAILING WAGES. Notice is hereby given that the Contractor must comply with the State's latest established prevailing wage decision.

SECTION 2 - INFORMATION FOR BIDDERS

1. Electronic Sealed Bids will be received by THE CITY OF PERRIS, herein called the "Agency", via the City Of Perris Active Bidder website at <http://www.cityofperris.org/city-hall/bids.html> for the "4th Street Public Area Enhancement Project Between "D" and "C" Street (Specification No. #CIP S-007-2023-24)" until 4:00 p.m. (PST) on July 7, 2023 5:00 P.M. (PST) August 9, 2023 5:00 P.M. (PST) **September 13, 2023**.
2. Each Bid must be submitted electronically through the City of Perris Active Bidder Website. **Contractors must be registered with Active Bidder to bid on city projects.** Only sealed electronic bids will be received and evaluated for bid award.
3. Each Electronic Bid must be accompanied by a **Bid Bond** (on the required form) payable to the Agency for ten (10) percent of the total amount of the Bid. As soon as the Bid prices have been compared, the Agency will return the Bonds of all except the three lowest responsible Bidders. When the Contract is executed, the bonds of the two remaining unsuccessful Bidders will be returned. The Bid Bond of the successful Bidder will be retained until all Contract Documents have been executed and approved, after which it will be returned. A cashier's check, made payable to the City or cash may be used in lieu of a Bid Bond.
4. The Agency may waive informalities, irregularities or defects or reject any and all Bids. Any Bid may be withdrawn by written request prior to the above-scheduled time for the opening of Bids or authorized postponement thereof with right of resubmitting. The request for withdrawal shall be executed in writing by the Bidder or his duly authorized representative. Any Bid received after the bid time shall not be considered.
5. Bidders must satisfy themselves of the character of the Work to be performed by **Examination of the site** and review of the Drawings and Specifications, including Addenda, if any. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the nature of the Work to be done.
6. The Contract Documents contain the provisions required for the construction of the Project. Information obtained from an officer, agent, or employee of the Agency or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the Contract.
7. Bonds and Insurance Certificates must be in the form required by the Agency (substitutions may be permitted at the Agency's discretion). The Bond Company must be authorized to do business in the State of California.
8. The Contractor will be required to submit a certificate of insurance and additionally insured endorsement and waiver of subrogation forms which indemnifies the Agency, and waives all rights of recovery from the Agency for any damage to any of the work resulting from fire, explosion, vandalism, water, malicious mischief, collapse, riot, aircraft, smoke, or any acts of God, and other occurrences and forms of insurance as required by the Agency's Risk Management Department.

9. A Payment Bond and a Contract Performance Bond (on the required form), each in the amount of one hundred percent (100%) of the Contract Price, with a corporate surety approved by the Agency, will be required for the faithful performance of the Contract.
10. Attorneys-in-fact who sign Bid Bonds or Payment Bonds and Contract Performance Bonds must file with each Bond a certified and effective dated copy of their power of attorney.
11. Progress Payments will be made to the Contractor in accordance with the provisions of the Specifications and on itemized estimates duly certified and approved by the Agency submitted in accordance therewith, based on labor and materials incorporated into said work during the preceding month by the Contractor, unless otherwise specified by the Labor Compliance Officer.
12. The party to whom the Contract is awarded will be required to execute the Contract and submit the Payment Bond, Contract Performance Bond, Insurance Certificates and Insurance Endorsements on the required forms within ten (10) calendar days from the date of the Notice of Award. If Bidder fails to execute said Contract and to furnish said Payment Bond, Contract Performance Bond, Insurance Certificates and Insurance Endorsements within ten (10) days from the date of this Notice, said agency will be entitled to consider all your rights arising out of the Agency's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The Agency will be entitled to such other rights as may be granted by law.
13. Pursuant to Government Code §4590, the Contractor may substitute equivalent securities for retention amounts, which this Contract requires. However, the Agency reserves the right to solely determine the adequacy of the securities being proposed by the Contractor and the value of those securities.
14. The Notice of Award shall be accompanied by the necessary Contract, Bond, and Insurance Certificate forms. In case of failure of the Bidder to execute the Contract, the Agency may, at his option, consider the Bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Agency. Forfeiture of the bid bond, or any deposit in lieu thereof, does not preclude the Agency from seeking all other remedies provided by law to recover losses sustained as a result of the Contractor's failure to execute a written contract to perform the work at his bid price.
15. The Agency, within ten (10) days of receipt of acceptable Labor and Material Payment Bond, Contract Performance Bond, Insurance Certificates, insurance endorsements and waivers of subrogation, and Contract signed by the party to whom the Contract was awarded, shall sign the Contract and return to such party an executed duplicate of the Contract.
16. Notice to Proceed to start construction (mandatory) is for **October 30, 2023**. Should there be reasons why the Notice to Start cannot be issued for this date by City, the time may be extended by the Agency. If the Notice to Proceed has not been issued within the forty-five (45) day period or within the period mutually agreed upon, the Contractor may terminate the Contract without further liability on the party.
17. The Agency may make such investigations as it deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Agency all such information and data for this purpose as the Agency may request. A conditional or qualified Bid will not be accepted.

18. Award of contract, if made, will be made to the lowest responsive, and responsible Bidder (all schedules) is expected on **September 26, 2023**.
19. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout.
20. Each Bidder is responsible for **inspecting the site** and for reading and being thoroughly familiar with the Contract Documents. Failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder for any obligation in respect to his bid.
21. Further, the Bidder agrees to abide by the requirements under Executive Order No. 11246 (Equal Employment Opportunity Clause), as amended, California Labor Code 1410 et. Seq., California Labor Code 1777.6, and implement Agency regulations concerning equal opportunity for apprentices.
22. All Bidders shall supply the names and address of Subcontractors as set forth in the Bid.
23. Successful Bidder and Subcontractors shall obtain a City Business License prior to commencing any work within City limits. License can be obtained at 135 North "D" Street, Perris, CA 92570.
24. The Director of the Department of Industrial Relations has ascertained the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which the work is to be performed for each craft or type of workman needed to execute the contract or work as hereinafter set forth (see Labor Code 1770 et. seq.). Copies of rates are on file at the offices of the City Clerk of the City of Perris. Copies shall be made available to any interested party upon request. The successful Bidder shall post a copy of such determination at each job site. Attention is called to the fact that not less than the minimum salaries and wages shall be paid on this project by all Contractors and Subcontractors. All contractors and subcontractors who perform work on this project must furnish electronic certified payroll reports directly to the Labor Commissioner (aka Division of Labor Standards Enforcement). Additionally, the successful Bidder shall provide the Agency with original and copies of certified payroll on forms provided by the Division of Labor Standards Enforcement (213) 897-2905 or other forms approved at the agency's discretion.
25. Pursuant to Section 1740 of the California Labor Code, Bidders are notified that the said wage rates shall be subject to modification to comply with revisions in Federal Minimum Wage schedules without necessity of republication.
26. Bidder understands and agrees to hold his original bid prices, without change, for a period of forty-five (45) days from the date bids are opened except to the extent relief is available pursuant to Public Contract Code, Section 5100 et. seq.
27. If the Contract cannot be awarded within a forty-five (45) day period for any reason, Bidder understands and agrees that the time to award may be extended by mutual agreement between the Agency and each Bidder. Bidder understand and agrees that Bidders electing not to extend their original bids more than forty-five (45) days following a request for extension by the Agency shall be treated as withdrawing their bid and will not be considered in the final award. The Bidder may withdraw his bid without further liability on the part of either party.

28. To the extent permissible under Federal policy or regulation applicable to this project, the Contractor shall be permitted to substitute securities for any monies withheld by the public agency, pursuant to the provisions of California Public Contracts Code Section 22300.
29. Since time is of the essence, Bidder agrees to commence work under this Contract on or before the mandatory construction start date of **October 30, 2023** and to fully complete all work on or before the 160th calendar day after this date. Bidder agrees with the Agency that if the project is not fully completed within said time, he shall pay as liquidated damages the sum of \$1,000.00 (one thousand dollars) for each consecutive calendar day thereafter until such completion and that this amount shall be presumed to be the amount of damages sustained by Agency in the event of such a breach by Bidder, as it would be impracticable or extremely difficult to fix the actual damage.
30. Request For Information. Bidders' communication will not receive consideration unless they are on the prescribed forms, and received by the Agency at least **seven (7) working days** prior to the day bids are due; the Agency will endeavor to not issue addenda later than **three (3) working days** preceding the day bids are due.
31. Pursuant to Senate Bill 293 the City Council has determined that this project is substantially complex, and shall require the withholding of more than five-percent 5% from Progress Payments issued upon successful completion of items listed on the bid schedule of values, and inspection made by the City. A retention of ten percent (10%), unless otherwise directed by the project manager shall be withheld from this payment.
32. Bidder understands and agrees that the Contract Work described in **the Plans and Specifications No. #CIP S-007-2023-24 "4th Street Public Area Enhancement Project Between "D" and "C" Street"** requires the Contractor to perform, with its own organization, Contract Work amounting to at least 50% of the Contract Price as provided in Section 2-3.2 Additional Responsibility of the current edition of the "Standard Specifications for Public Works Construction" prepared and promulgated by the Southern California Chapters of the American Public Works Association and Associated General Contractors of California ("Greenbook").
33. Pursuant to Section 1771.1 of the Labor Code, no contractor or subcontractor shall be qualified to bid on, be listed in a bid proposal (submitted on or after March 1, 2015), or engage in the performance of any contract for public work unless currently registered with the Department of Industrial Relations to perform public work pursuant to Section 1725.5 of the Labor Code. It shall not be a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Sections 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.
34. No Contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. Public Works Contractor Registration website: <https://efiling.dir.ca.gov/pwcr/search>.
35. BIDDERS AND THEIR SUBCONTRACTORS (listed on Perris Designation of Subcontractors form BF-9) shall provide verification at the time of bid showing, indicating active registration from the Public Works Contractor online registration at <https://efiling.dir.ca.gov/pwcr/search> site.

NOTICE TO ALL BIDDERS

Completion and submittal of all enclosed forms including, but not limited to sheets BF-9 & BF-10 is required and must be included with original bid. Failure to submit the required documents shall be deemed as an incomplete bid and shall not be considered by City as a valid bid.

BID FORM

Bid Date: ~~July 7, 2023 August 9, 2023~~ **September 13, 2023**
Time: ~~4:00 p.m. (PST)~~ **5:00 P.M. (PST)**
Place: Active Bidder <http://www.cityofperris.org/city-hall/bids.html>
Project: 4th Street Public Area Enhancement Project Between "D" and "C" Street
(Specification No. #CIP S-007-2023-24)

TO THE CITY OF PERRIS, hereinafter called the Agency, the undersigned, as Bidder, declares that he has carefully examined the location of the project, that he has examined the plans and specifications and addenda (if any), and has read the Information for Bidders, and hereby proposes and agrees, if this bid is accepted, to furnish all materials to do all work required to complete the said plans and specifications in the time and manner herein prescribed for the Bid Price set forth in the Schedule of Bid Items.

Proposal of _____, hereinafter called "Bidder", organized and existing under the laws of the State of _____, doing business as _____. Insert "a corporation", "a partnership", "a joint venture", or "an individual", as applicable.

No separate payment will be made for any item that is not specifically set forth in the Schedule of Bid Items. All costs, therefore, shall be included in the prices named in the Schedule of Bid Items for the various appurtenant items of work. In case of discrepancy between words and figures, words shall prevail.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies, as to his own organization that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor. Since time is of the essence, Bidder hereby agrees to commence work under this Contract on **October 30, 2023** and to fully complete all work on or before the **160th calendar day** after receiving the Notice to Proceed. Bidder agrees with the Agency that if the project is not fully completed within said time, he shall pay as liquidated damages the sum of \$1,000.00 (one thousand dollars) for each calendar day thereafter until such completion and that this amount shall be presumed to be the amount of damages sustained by Agency in the event of such a breach by Bidder, as it would be impracticable or extremely difficult to fix the actual damage. The undersigned, as Bidder proposes and agrees, if the proposal is accepted, that he will execute a Contract with the Agency in the form set forth in the Contract Documents and that he will accept in full payment thereof the following prices, to wit:

**4th Street Public Area Enhancements Between "D and "C" Street
(SPEC. NO. # CIP S-007-2023-24)**

Bidder (Company Name): _____

Bid Schedule

BID ITE M NO.	(A) ESTIMATE D QUANTITY AND UNIT	ITEM DESCRIPTION	(B) UNIT PRICE (FIGURES)	(C) TOTAL (FIGURES) (A x B=C)
1.) BID SCHEDULE GENERAL PROVISIONS, SPECIAL PROVISIONS, CIVIL WORK:				
1.	L.S.	Mobilization/Remobilization Per Plans and Specifications	\$ _____ /L.S.	\$ _____
2.	L.S.	Roadway Excavation, Demolition, Earthwork, Clear and Grub, Subgrade Preparation, removals per Plans and Specifications	\$ _____ /L.S.	\$ _____
3.	L.S.	Water Pollution Control Per Plans and Specifications	\$ _____ /L.S.	\$ _____
4.	L.S.	Protect in place, remove and replace, relocate, adjust to grade signs, trees, plants, utility boxes, irrigation lines and appurtenances, controllers, hand holes, bollards, electrical pedestals, light poles, electrical lines, RR signal equipment, backflows, decorative fencing, guard rails, meters, hydrants, blowoffs, etc. not specifically defined elsewhere in bid.	\$ _____ /L.S.	\$ _____
5.	L.S.	Remove/Replace/Adjust/Install protect in Place Traffic Signal/light pull boxes in conflict with drainage structures, Traffic Signal Loops, wires, conduits, conductors, pull boxes, etc., shown on plan, not specifically defined elsewhere in bid, to provide a complete functional traffic signal system	\$ _____ /L.S.	\$ _____
6.	L.S.	As required, provide all services necessary to obtain and deliver an executed/approved RCTC right-of-entry to the City per Plans and Specifications	\$ _____ /L.S.	\$ _____
7.	L.S.	Construction Staking (Surveying)	\$ _____ /L.S.	\$ _____

8.	L.S.	As required, provide all services necessary to obtain and deliver an executed/approved SCRRA (Metrolink) right-of-entry permit to the City per Plans and Specifications	\$ /L.S.	\$
9.	L.S.	Traffic Control and Engineered Traffic Control Plan Per Plans and Specifications	\$ /L.S.	\$
10.	2 EA	Construct integral color access ramp "Case A" per R.C.T.D. 2023 Standard No. 403. Per Plans and Specifications	\$ /EA	\$
11.	412 S.F.	Construct 4" P.C.C. integral color sidewalk per R.C.T.D. 2023 Standard No. 401. Per Plans and Specifications	\$ /S.F.	\$
12.	17 L.F.	Construct Type "D" Curb per R.C.T.D. 2023 Standard No. 204 Per Plans and Specifications	\$ /L.F.	\$
13.	L.S.	Construct a modified parkway drain per SPPWC Std. Plan 151-3 (Approx length=49 L.F.) Per Plans and Specifications	\$ /L.S.	\$
14.	590 S.F.	Install decomposed granite (DG) path. Compacted minimum 4" thick, with reinforced mow curb per Plans and Specifications.	\$ /S.F.	\$
15.	L.S.	Saw-cut existing concrete or A.C. pavement to provide a smooth joint.	\$ /L.S.	\$
16.	L.S.	Contractor to pothole to verify any potential underground utilities before construction.	\$ /L.S.	\$
17.	320 S.F.	Construct riprap. Install Arizona river rock cobble (6"-12") Per Plans and Specifications	\$ /S.F.	\$
18.	1 EA	Remove and replace water meter box per E.M.W.D. standards.	\$ /EA	\$

19.	1 EA	Construct an 18" curb opening. Saw-cut existing curb face and drain to existing swale.	_____ /EA	\$ _____
20.	L.S.	Install a 1.5" diameter copper water service pipe per EMWD Std. B-342a. Connect to existing 8" C.I. water line.	\$ _____ /L.S.	\$ _____
21.	1 EA	Contractor to furnish and install new City of Perris 1" water meter and service per EMWD Std. B-591	\$ _____ /EA	\$ _____
22.	10 L.F.	Provide and install A.C. trench repair per City of Perris Standard	_____ /L.F.	\$ _____

2.) BID SCHEDULE- LANDSCAPING WORK:

1.	L.S.	Provide and install new/reinstall undamaged pavers for trenching, sleeving, conduit intersection at 2 nd and D St., per corner plaza paver detail and paver specifications, and match existing paver pattern and color per Plans and Specifications	\$ _____ /L.S.	\$ _____
2.	3 EA	Provide and install 36" box trees per Plans and Specifications	\$ _____ /EA	\$ _____
3.	50 L.F.	Provide and install Deep Root barrier per Plans and Specifications	\$ _____ /L.F.	\$ _____
4.	944 EA	Provide and install one (1) gallon shrubs per Plans and Specifications	\$ _____ /EA	\$ _____
5.	L.S.	Review existing irrigation system at Historic Bank and at So. Hotel and provide all materials and services necessary to extend complete, fully automatic irrigation system with 100% coverage to new landscape	\$ _____ /L.S.	\$ _____
6.	L.S.	Remove existing 3/4" valve at station A2 from existing irrigation system from So. Hotel and replace with new 1" ECV control valve assembly provide all materials, fittings, services etc. necessary to replace valve.	\$ _____ /L.S.	\$ _____

7.	L.S.	Expose and intercept existing 1 ½" irrigation mainline from So. Hotel and replace existing ¾" lateral at mainline with new 1" lateral, and extend to new 1" valve. Provide all materials, fittings, services etc. to replace lateral.	\$ /L.S.	
8.	4315 S.F.	Provide and install 3" minimum thickness of wood mulch per Plans and Specifications	\$ /S.F.	\$
9.	4315 S.F.	Provide and install soil preparation, amendments per soils report and fine grading per Plans and Specifications	\$ /S.F.	\$
10.	L.S.	Furnish and install Weather-Trak ET-Pro (SBT) Controller, 5-year data service contract, and Enclosure Assembly, per Plans and Specifications	\$ /L.S.	\$
11.	L.S.	Provide point-of-connection to irrigation mainline to new water meter, furnish, and install all materials and services necessary to complete connections, per Plans and Specifications	\$ /L.S.	\$
12.	1 EA	Provide and install Master Valve and Flow Sensor w/ Signal Cable per Plans and Specifications	\$ /EA	\$
13.	3 EA	Furnish and Install Quick Coupler per Plans and Specifications	\$ /EA	\$
14.	3 EA	Furnish and Install Ball Valve per plans, details, and specifications.	\$ /EA	\$
15.	L.S.	Furnish and Install all irrigation system pipe sleeving, sleeving for Control Wire, and Pull Boxes per Plans and Specifications, Contractor to verify required quantities. Install pull boxes at the termination of sleeved control wire crossings and at locations described in the Specifications	\$ /L.S.	\$
16.	L.S.	Provide and Install Irrigation Control Valve Wiring per Plans and Specifications.	\$ /L.S.	\$

17.	L.S.	Furnish and Install New Backflow Device with Steel Cage Enclosure, Sentry Cable, and Security Union Guard Covers, per Plans and Specifications.	\$ _____ /L.S.	\$ _____
18.	2 EA	Provide and install drip control valves per Plans and Specifications	\$ _____ /EA	\$ _____
19.	265 L.F.	Provide and install 2"x4" redwood header and staking per Plans and Specifications	\$ _____ /L.F.	\$ _____
20.	150 L.F.	Furnish and install primary irrigation lateral lines for tree and shrubs under pavement and in planting areas per Plans and Specifications	\$ _____ /L.F.	\$ _____
21.	944 EA	Furnish and install 1 gph drip emitters and risers, and secondary lateral system including flush-outs per Plans and Specifications. Cost to include installation of required secondary lateral system as shown on drip zone installation detail.	\$ _____ /EA	\$ _____
22.	420 L.F.	Provide and install pressure mainline piping under pavement per Plans and Specifications.	\$ _____ /L.F.	\$ _____
23.	2 EA	Provide and install control valve assemblies for trees per Plans and Specifications.	\$ _____ /EA	\$ _____
24.	L.S.	Provide maintenance for 90 days per Plans and Specifications	\$ _____ /L.S.	\$ _____
25.	L.S.	Provide and Install monument pilaster w/conc footing per Plans and Specifications (see bid item #35 for finish)	\$ _____ /L.S.	\$ _____
26.	L.S.	Provide and Install monument low CMU wall w/concrete footing per Plans and Specifications (see bid item #49 for finish)	\$ _____ /L.S.	\$ _____

27.	L.S.	Provide building permit and install monument sign for Downtown District and finish all complete with stone veneer, mitered concrete Napa Monticello grey sill, pre-cast signage, faux bronze seal, graffiti coating, etc. per Plans and Specifications and Building and Safety Permit	\$ /L.S.	\$
28.	L.S.	Provide and install monument pre-cast concrete cap with light panels per Plans and Specifications (see bid Item #35 for finish)	\$ /L.S.	\$

3.) BID SCHEDULE- ELECTRICAL/LIGHTING WORK FOR CLOCK TOWER:

1.	L.S.	Provide and install clock tower assembly Type "C" per Plans and Specifications – Sheets E-100A, 101A, 102A	\$ /L.S.	\$
2.	L.S.	Provide and install clock tower assembly structural footing, stamped engineering calculations, inspections, and documentation, per Plans and Specifications	\$ /L.S.	\$
3.	20A,2P Total 1 EA	Provide and install circuit breakers in existing street light panel SLA and connect existing 2 #6 wire labeled "save" (circuit 22) for clock tower per Plans & Specifications(Sheet E-101A)	\$ /EA	\$
4.	15 L.F.	Trench (6" W x 24" D) for installation of underground conduit for clock tower assembly.	\$ /L.F.	\$
5.	18 L.F.	Provide and install 1" conduit to clock tower assembly	\$ /L.F.	\$
6.	76 L.F.	Intercept 2#6 CU wires at existing pull box and provide and install new #6 CU wires per Plans and Specifications for clock tower – Sheet E-102A	\$ /L.F.	\$

7.	9 L.F.	Intercept 1#8 CU wires at existing pull box and provide and install new #8 CU wire per Plans and Specifications for clock tower – Sheet E-102A	\$ _____ /L.F.	\$ _____
8.	2-5A Fuses Total 1 EA	Provide and install fuse kit per Plans and Specification for clock tower – Sheet E-100A	\$ _____ /EA	\$ _____
9.	L.S.	Provide new and install or reinstall undamaged pavers for trenching, sleeving, conduit at 2 nd St., including compaction, base, sand, pavers, joint sand, and sealer and match existing 'Plaza' paver pattern and color per Plans and Specifications	\$ _____ /L.S.	\$ _____

4.) BID SCHEDULE- ELECTRICAL/LIGHTING WORK ALONG 4TH STREET:

1.	110 L.F.	Provide and install 1" conduit to irrigation controller from existing pedestal per Plans and Specifications - Sheet E-205.	\$ _____ /L.F.	\$ _____
2.	L.S.	Provide electrical connection of new controller from existing electrical service (LS-3), furnish, and install all materials and services necessary to complete connections from existing pedestal - Sheet E-205.	\$ _____ /L.S.	\$ _____
3.	110 L.F.	Provide and install trenching (6" W x 24" D) for underground conduits for irrigation controller per Plans and Specifications	\$ _____ /L.F.	\$ _____
4.	20 LF	Provide and install 1" conduit to monument lights from new pull box per Plans and Specifications(Sheet E-205)	\$ _____ /L.F.	\$ _____
5.	160 LF	Provide and install 1" conduit to bollards from existing streetlight pull box per Plans and Specifications - Sheet E-205.	\$ _____ /L.F.	\$ _____
6.	180 L.F.	Provide and install trenching (6" x 24" D) for underground conduits for monument lights and decorative light bollards per Plans and Specifications – Sheet E-205	\$ _____ /L.F.	\$ _____

7.	4 EA	Provide and install handholes with traffic rated bolt-down cover and cover reading per Plans and Specifications – Sheet E-100.	\$ /EA	\$
8.	3 EA	Provide and install ground mounted monument lights (Type E) per Plans and Specifications – Detail 2, sheet E104, and E205	\$ /EA	\$
9.	1 EA	Provide and install LED sign light (Type F) per Plans and Specifications – Detail 2, sheet E104, and E205	\$ /EA	\$
10.	4 EA	Provide and install ground rod in handholes per Plans and Specifications – Detail A, Sheet E-100.	\$ /EA	\$
11.	14 EA	Provide and install decorative lighted bollard Type “C”, with steel sleeve per Plans and Specifications	\$ /EA	\$
12.	4 EA	Provide and install decorative lighted bollard structural footing, stamped engineering calculations, inspections and documentation and structural steel sleeve at N/E and S/E corners C and 4 th Streets per Plans and Specifications	\$ /EA	\$
13.	24 EA	Provide and install fuse kits per Plans and Specifications – Sheet E-100	\$ /EA	\$
14.	915 L.F.	Provide and install #10 CU wires per Plans and Specifications	\$ /L.F.	\$

5.) BID SCHEDULE- DECORATIVE FURNISHINGS WORK:

1.	6 EA	Provide and install 12’ Decorative Pole Type 1 combination signs and frames per Plans and Specifications	\$ /EA	\$
2.	4 EA	Provide and install 12’ Decorative Pole Type 2 ninety-degree traffic and parking combination signs and frames per Plans and Specifications	\$ /EA	\$

3.	6 EA	Provide and install 12' Decorative Pole Type 1 footings, per Plans and Specifications	\$ _____ /EA	\$ _____
4.	4 EA	Provide and install 12' Decorative Pole Type 2 Footings, per Plans and Specifications	\$ _____ /EA	\$ _____

TOTAL ALL BID SCHEDULES #1-#5 ALL ITEMS: _____
(In Figures)

TOTAL ALL BID SCHEDULES #1-#5 ALL ITEMS: _____

(In Words)

Please note the following regarding bids:

- A. Award, if made, will be made to one lowest responsive, and responsible bidder, based upon lowest total of all Base Bid Schedules combined (Bid Schedules #1 through #5). The City reserves the right to reject any or all bids received.
- B. Bid shall include all sales tax, and all other taxes and all other fees and permits.
- C. Bid is for a project complete-in-place.
- D. Quantities above are for the purpose of comparison only and payments will be made on the basis of actual measurement of work completed. Measurements which vary from estimated quantities shall require verification by City, and a written change order will be required prior to payment. For quantities indicated as lump sum, Contractor shall be paid at the Contract per lump sum price indicated, and shall include full compensation for all work and no additional compensation will be allowed thereof.
- E. When discrepancies occur between words and figures, the words shall govern.
- F. The work described in the bid sections above are provided for tracking of funding ratios only, and DO NOT imply that work is mutually exclusive to any certain bid section. For example, several civil bid items cover all sections of project work for landscaping, electrical, etc. (i.e., mobilization, survey, clear and grub, protect in place etc.). The bid is for a project complete in place, and full compensation for completing all work described in the Bid Document, Contract Document, Plans and Specifications shall be considered to be included in other items of work and no additional compensation will be allowed.

The undersigned, as Bidder, proposes and agrees, if the proposal is accepted, that he will execute a Contract with the Agency in the form set forth in the Contract Documents and that he will accept in full payment thereof the preceding prices as set forth in Bid Schedules.

Quantities above are for the purpose of comparison only and payments will be made on the basis of actual measurement of work completed. Measurements which vary from estimated quantities, shall require verification by City, and a written change order will be required prior to payment. For quantities indicated as lump sum, Contractor shall be paid at the Contract per lump sum price indicated, and shall include full compensation for all work and no additional compensation will be allowed thereof. Where discrepancies occur between words and figures, the words shall govern. Upon receipt of the Notice of Award, Contractor shall submit to the Agency for approval, a detailed breakdown of the Contractor's cost estimate into the various elements of materials and construction operations. When approved, this breakdown will serve as a basis for the Agency to determine partial payments.

If awarded this contract, the Bidder agrees to execute the Contract and submit the Labor and Materials Payment Bond, Contract Performance Bond, and Insurance Certificates on the required forms within ten (10) calendar days from the date of the Notice of Award. The Notice of Award shall be accompanied by the necessary Contract, Bond, and Insurance Certificate forms. In case of failure of the Bidder to execute the Contract, the Agency may at his option consider the Bidder in default, in which case the Bid Bond, or any deposit in lieu thereof, accompanying the proposal shall become the property of the Agency. Forfeiture of the Bid Bond, or any deposit in lieu thereof, does not preclude the Agency from seeking all other remedies provided by law to recover losses sustained as a result of the Contractor's failure to execute a written agreement to perform the work at his Bid Price.

The Bidder's execution on the signature portion of this proposal shall also constitute an endorsement and execution of those certifications which are a part of this Proposal.

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder _____, proposed subcontractor _____, hereby certifies that he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41CFR 60-1.7(b)(1)), and must be submitted by Bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are

exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt). Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract, subject to the Executive Orders, and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

Noncollusion Affidavit

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

In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

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

DEBARMENT AND SUSPENSION CERTIFICATION

(Title 49, Code of Federal Regulations, Part 29)

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any person associated therewith in the capacity of owner, partner, director, office manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any manner involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining Bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Note: Providing false information may result in criminal prosecution or administrative sanctions.

The above certification is part of the Proposal. Signing this proposal on the signature portion thereof shall also constitute signature of this Certification.

NON LOBBYING CERTIFICATION FOR FEDERAL AID CONTRACTS

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form – LLL, “Disclosure of Lobbying Activities”, in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, and U.S. Code. Any person who fails to file the required certifications shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such sub-recipients shall certify and disclose accordingly.

Person who inspected site of the proposed work as a representative of your firm:

Name (please print)

Date of Inspection

Bidder acknowledges receipt of the following Addenda:

_____	Dated _____
_____	Dated _____
_____	Dated _____
_____	Dated _____

NAME OF BIDDER: _____

NAME AND TITLE OF SIGNING PARTY: _____

SIGNATURE OF BIDDER: _____

Contractor's California License No.

(CORPORATE SEAL)

Name of License Holder

Type of License

Expiration Date

Contact Information:

Company Name: _____

Contact Person: _____

Title: _____

Company Address: _____

Phone Number: _____

Fax Number: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,
_____ as Principal,
and _____ as Surety, are
hereby held and firmly bound unto the CITY OF PERRIS as Agency in the penal sum
of _____

_____ for the payment
of which, well and truly to be made, we hereby jointly and severally bind ourselves,
successors and assigns. (Note: City of Perris requires bid bond to be at least equal
to 10% of bid amount).

Signed, this _____ day of _____, 2023.

The Condition of the above obligation is such that whereas the Principal has
submitted to the Agency a certain Bid, attached hereto and hereby made a part
hereof, to enter into a contract in writing for the

4th Street Public Area Enhancement Project Between “D” and “C” Street
(Specification No. #CIP S-007-2023-24)

NOW, THEREFORE,

- A. If said Bid shall be rejected, or
- B. If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish Bonds for his faithful performance of said Contract and for the payment of all persons performing labor or furnishing materials in connection therewith, the required Insurance Certificates, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligation of said Surety and its Bond shall be in no way impaired or affected by any extension of the time within which the Agency may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

**Two Witnesses
(If Individual):**

PRINCIPAL: _____

By: _____

Title: _____

ATTEST (If Corporation):

By: _____

Title: _____

(Corporate Seal)

ATTEST:

By: _____

Title: _____

(Corporate Seal)

SURETY:

By: _____

Title: _____

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety)

**(Name and Address of Agent
or Representative for
service of process in
California, if different
from above)**

**(Telephone Number of Surety
and Agent or Representative
for service of process in
California)**

DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of section 2.3 of the Standard Specifications, the Bidder shall set forth below the name and location of the mill, shop or office of each Subcontractor and the portions of the work, which will be done by that Subcontractor.

In compliance with the provisions of Section 2-3.2 of said “Standard Specifications” Bidder understands and agrees that the Contract Work described in the Plans and Specifications No. # CIP S-007-2023-24 for the 4th Street Public Area Enhancement Project Between “D” and “C” Street requires the Contractor to perform, with its own organization, Contract Work amounting to at least 50% of the Contract Price as provided in Section 2-3.2 Additional Responsibility of the current edition of the “Standard Specifications for Public Works Construction” prepared and promulgated by the Southern California Chapters of the American Public Works Association and Associated General Contractors of California (“Greenbook”).

In compliance with the provisions of the Government Code, Section 4100-4108, the undersigned Bidder herewith sets forth the name and location of the place of business of each Subcontractor who will perform work or labor or render service to the Contractor on or about the construction site of the work or improvements in an amount in excess of one-half of one percent (½%) of the Contractor's total bid and the portion of the work which will be done by each Subcontractor as follows:

<u>Trade</u>	<u>% Of Work To Be Done</u>	<u>Name</u>	<u>License No.</u>	<u>Address</u>

* Identify any DBE subcontractors

LISTING OF MANUFACTURERS

The Contractor shall submit this sheet with his Bid to list the manufacturers of materials he intends to use. It shall be understood that where the Contractor elects not to use the material manufacturers called for in the Specifications, he will indicate the name of the Manufacturer he plans to substitute in the form below. Bidder further understands he will substitute only items of equal quality, durability, functional character and efficiency as determined by the City Of Perris. See Section 01631 of these Specifications for substitution procedures and requirements. The Contractor should ascertain prior to bidding the acceptability of substitutes. Only one manufacturer shall be listed for each item.

<u>Specified Item or Material</u>	<u>Name of Proposed Substitute Product Manufacturer or Name of Supplier</u>	<u>Indicate DBE (*)</u>
Asphalt Concrete		()
Class II Aggregate Base		()
PCC Concrete		()
Shrubs		()
Trees		()
(ORCO) Paver Joint Sand		()
(ORCO or BP) Paver Sealer		()
(South Coast) Decorative Bollards (Lit)		()
(South Coast) Decorative Sign Poles		()
(South Coast) Decorative Clock and Pole		()
(Weather-Track) Smart Irrigation Controller		()
(Deep Root Corp) Root Barriers		()
(Hunter) Deep Root Watering System		()
(Flomec) Flow Sensor		()
(Rainbird) Master Valve		()
(Sentry) Backflow Anti-Theft Hardware		()
(Rainbird) Quick Couplers		()
(Casco-Colonial) Ball Valves		()
(Wonder Tree-Tie) Tree Anchoring System		()
(GPH Riser) Salco Flexible Risers		()
(Orga Tech Lighting) Sign Lights		()
(RAB Lighting) LED Sign Light		()
(Storyland) Pre-Cast Monument Cap		()
(Napa CA Stone Craft) Pre-Cast Concrete Sill		()
(Quickcrete) Pre-Cast Concrete Sign		()
(Lexan) Wave Glass		()
(Cultured Stone Owens-Corning) Stone Veneer		()
(Arizona River Roak Cobble) Rip-Rap 6"-12" Stone		()
(Southwest Stone) Stabilized Decomposed Granite		()

No change shall be allowed of any material manufacturer listed after receipt of Bids unless the manufacturer so listed cannot furnish materials meeting the Specifications. Any manufacturer, which is not deemed to be equal-to or better in every significant respect to that required by the Contract Documents, shall be rejected at the sole discretion of the Agency. Should such change be allowed by the Agency, bidder shall provide materials meeting the specification, as determined by the Agency, and there shall be no increase in the amount of the Bid originally submitted.

*** Identify if Supplier is a DBE.**

ANTI-TRUST CLAIM

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or Subcontractor offers and agrees to assign to the Agency all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter [commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Public Works Contract or the Contract or the Subcontract. This assignment shall be made and become effective at the time the Agency tenders final payment to the Contractor, without further acknowledgment by the parties.

RESPECTFULLY SUBMITTED:

Signature	Please Print
Title	Address
Date	Address
Contractor's California License No.	Type of License
Name of License Holder	Expiration Date

THE REPRESENTATIONS MADE HEREIN ARE MADE UNDER PENALTY OF PERJURY.

Federal I.D. No.

(SEAL-if Bid is by a Corporation)

ATTEST _____

CERTIFICATION - LABOR CODE SECTION 1861

I, the undersigned Contractor, am aware of the provisions of section 3700 et. seq. of the Labor Code which requires every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I, the undersigned Contractor, agree to and will comply with such provisions before commencing the performance of the Work of this Contract.

CONTRACTOR:

Firm Name

Signature

Print Name

Contractor's California License No.

Expiration Date

Federal I.D. No.

(SEAL-if Bid is by a Corporation)

ATTEST _____

CERTIFICATION OF NON-DISCRIMINATION

On behalf of the Bidder making this proposal, the undersigned certifies that there will be no discrimination in employment with regard to ethnic group identification, color, religion, sex, age, physical or mental disability, or national origin; that all Federal, State, and local directives and executive orders regarding nondiscrimination in employment will be complied with; and that the principle of equal opportunity in employment will be demonstrated positively and aggressively.

DATED: _____
(Name of Bidder)

(Signature)

(Typed Name and Title)

California
License No.

Type of License

Name of License Holder

Expiration Date

Federal I.D. No.

(SEAL-if Bid is by a Corporation)

ATTEST _____

EXPERIENCE STATEMENT

Bidder submits, as part of his bid, the following statements as to his experience qualifications. Bidder certifies that all statements and information set forth below are true and accurate. Bidder hereby authorizes the agency to make inquiry as appropriate regarding his experience.

Bidder has been engaged in the contracting business under his present business name for _____ years.

Bidder's experience in work of a nature similar in type and magnitude to that set forth in the Specification extends over a period of _____ years.

Bidder, as Contractor, has satisfactorily completed all Contracts awarded to him, except as follows:

(Name any/all exceptions and reasons and attach and designate additional pages if necessary.)

Within the last three years, Bidder has satisfactorily completed the following contracts covering work similar in type and magnitude to that set forth in these Specifications for the following owners (name person, firms, or authorities):

<u>Name & Address of Owner/Agency</u>	<u>Representative and Telephone</u>	<u>Type of Work, Year Completed & \$ Amount</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Bidder shall attach and properly designate additional pages, if necessary.)

PUBLIC WORKS CONTRACTOR REGISTRATION DOCUMENTATION

Pursuant to Section 1771.1 of the Labor Code, Bidder submits, as part of his bid, the following information verifying his and his listed subcontractors active registration with the Department of Industrial Relations and eligibility to perform public work pursuant to Section 1725.5 of the Labor Code. Bidder certifies that all statements and information set forth below are true and accurate. Bidder hereby authorizes the agency to make inquiry as appropriate regarding his and his subcontractors registration status.

Name & Address of Contractor and Subcontractor <u>License Type & Number</u>	Registration <u>Number</u>	Registration <u>Date</u>	Registration <u>Expiration</u>
--	---------------------------------------	-------------------------------------	---

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Bidder to attach Public Works Contractor Web Search Extracts for him and his subcontractors).

<u>MATERIAL</u>	<u>TEST REQUIRED</u>	<u>CALIFORNIA TEST</u>
Permeable Material	Grading	202
	Sand Equivalent	217
	Durability Index	229
Imported Material (Shoulder Backing)	Grading	202
	Sand Equivalent	217
	Durability Index	229
Aggregate Subbase	Grading	202
	Sand Equivalent	217
	Resistance (R-Value)	301
Aggregate Base	Grading	202
	Sand Equivalent	217
	Resistance (R-Value)	301
	Durability Index	229
	Percentage of crushed particles	205
Screenings	Grading	202
	Loss in Los Angeles Rattler	211
	Crushed Particles	205
	Film Striping	302
	Cleanness valve	227
Asphalt Concrete (Except Open Graded)	Grading	202
	Specific Gravity	206
	(coarse & fine aggregate)	208
	Percentage of crushed particles	205
	Loss in Los Angeles Rattler	211
	Sand Equivalent	217
	Film Striping	302
	Kc Factor (CKE)	303
	Kf Factor (CKE)	303
	Stabilometer	366
	Swell	305
Moisture Vapor Susceptibility	307	
Optimum Bitumen Content*	367	
Open Graded AC, Asphalt Treated Permeable Material, Asphalt Treated Permeable Base	Grading	202
	Crushed Particles	205
	Loss in Los Angeles Rattler (500 revolutions)	211
	Durability Index	229
	Firm Striping	310 or 362 or 379
**Soils Test	See Landscape Plans Agronomic Test Percolation Test	

*(Not shown in Construction Manual, use CDE frequency.)

Note: Should any potential source sampling and testing be waived by reason of previous acceptance of material from the source, there will be no reduction in contract prices by reason of such waiver.

**See landscape Plans, if applicable, for information regarding these required tests

FOREIGN MATERIALS – The requirements of the fifth paragraph in Section 6-1-08, “Foreign Materials,” of the Standard Specifications shall not apply.

NOTICE OF AWARD

CITY OF PERRIS

**4th Street Public Area Enhancement Project
Between "D" and "C" Street (Specification No. #CIP S-007-2023-24)**

The Agency has considered the Bid submitted by you for the above described work in response to its Notice Inviting Sealed Proposals (Bids) dated _____ and Information for Bidders.

You are hereby notified that your Bid has been accepted in the amount of \$ _____ and the Extract of Public Works contract Award has been forwarded to the California Department of Industrial Relations and the Division of Apprenticeship Standards.

You are required by the Information for Bidders to execute the Contract and furnish the required Contractor's Labor and Material Payment Bond, Contract Performance Bond, and Certificates of Insurance and endorsements within ten (10) calendar days from the date of this Notice. Mandatory construction start date is October 30, 2023.

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

A mandatory pre-construction meeting for the contractor and all of his subs will be required prior to start of work and will be scheduled upon receipt of all contract documents.

You are required to return an acknowledged copy of this Notice of Award to the Agency.

Dated this _____ day of _____, 2023.

City of Perris
Agency

By: _____
Michael A. Morales

Title: Capital Improvements Project Manager

ACCEPTANCE OF NOTICE OF AWARD

Receipt of the above Notice of Award is hereby acknowledged

by _____ this

_____ day of _____, 2023.

Contractor

By _____

Title _____

Contractor's California License No.

Expiration Date

**CITY OF PERRIS
PUBLIC WORKS CONTRACT FOR
4th Street Public Area Enhancement Project Between “D” and “C”
Street (Specification No. #CIP S-007-2023-24)**

THIS PUBLIC WORKS CONTRACT (herein “Agreement”) is made and entered into this _____ day of _____, 2023, by between the CITY OF PERRIS, a municipal corporation, (herein “City”) and _____ (herein “Contractor”).

NOW, THEREFORE, the parties hereto agree as follows:

1.0 SERVICE OF CONTRACTOR

1.1 Contract.

The complete contract includes all contract documents, to wit: _____ (Specification #CIP _____), which are incorporated by this reference as though set forth in full herein.

1.2 Scope of Services.

In compliance with all of the terms and conditions of this Agreement, the Contractor shall furnishing all tools, equipment, services, apparatus, facilities, transportation, labor, building/encroachment permits, disposal, agency right-of-entry agreements, and materials necessary and reasonably incidental to: construction of new planting, irrigation, landscaping, monument signs, thematic lighting, street furnishings and other associated public improvements within the City of Perris and RCTC/Metrolink rights-of-way along 4th Street within Historic Downtown Perris, CA 92570 in strict accordance with the Specifications and Information for Bidders, Specification No. #CIP S-007-2023-24. Contractor warrants that all work and services set forth in the Scope of Service will be performed in a competent, professional and satisfactory manner.

1.3 Incorporation of and Compliance With State, Federal and Local Law.

All applicable State of California, Federal, and local laws, statutes, rules, regulations, orders, determinations, and resolutions required to be contained in public works contracts which are not specifically referenced in the Agreement are incorporated herein by this reference. The Contractor is responsible for and has an independent duty to be familiar with all State of California, Federal, and local laws, statutes, rules, regulations, orders, determinations, and resolutions related to, pertaining to, and/or associated with the work and services to be provided under the Agreement. All work and services rendered hereunder shall be provided in accordance with all laws, statutes, rules, regulations, orders, determinations, and

resolutions of the City and any Federal, State or local governmental agency of competent jurisdiction.

1.4 Licenses, Permits, Fees and Assessments.

If applicable, Contractor shall obtain at its sole cost and expense such licenses, permits and approvals as may be required by law for the performance of the services required by this Agreement.

1.5 Additional Services

City shall have the right at any time during the performance of the work and services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to or deducting from said work. No such extra work may be undertaken unless a signed and authorized written order is first given by the Contract Officer to the Contractor, incorporating therein any adjustment in (i) the Contract Sum, and/or (ii) the time to perform this Agreement, which said adjustments are subject to the written approval of the Contractor. City and Contractor agree to negotiate the cost for additional services based on the unit pricing proposed by the Contractor in the original Bid Schedule of Values found in Section BF, "Bid Form," of Specification No. #CIP _____. City and Contractor agree that City may seek additional cost estimates from third party contractor's to perform additional services. In no event shall Contractor be entitled to recover damages against the City for any delay in the performance of this Agreement, while City seeks estimates from third party contractor's to perform additional services. Written orders shall be made on forms prescribed by the Contract Officer in accordance with Part I "Procedural Documents," Section CO of Specification No. #CIP _____. Any increase in compensation of up to ten percent (10%) of the Contract Sum; or in the time to perform of up to one hundred eighty (180) days may be approved by the Contract Officer. Any greater increases, taken either separately or cumulatively must be approved by the City Council. It is expressly understood by Contractor that the provisions of this Section shall not apply to services and work specifically set forth in the Scope of Services or reasonably contemplated therein. Contractor hereby acknowledges that it accepts the risk that the work and services to be provided pursuant to the Scope of Services may be more costly or time consuming than the Contractor anticipates and that the Contractor shall not be entitled to additional compensation therefore.

2.0 COMPENSATION

2.1 Contract Sum.

For the services rendered pursuant to this Agreement, the Contractor shall be compensated, except as provided in Section 1.5, the sum of _____ and _____/100 dollars (\$ _____), in accordance with Section GP and

Section SP, "General Provisions" and "Special Provisions," respectively, of Specification No.# _____ and Section BF, "Bid Form," "Bid Schedule of Values" of Specification No. # _____.

2.2 Method of Payment.

Contractor shall submit to the City, an invoice for services rendered prior to the date of the invoice. In accordance with Section GP and Section SP, "General Provisions" and Specification No. # _____; and upon receipt and approval of invoice by the City, City shall pay Contractor within a reasonably prompt manner consistent with City's normal procedures for payable accounts, but not to exceed thirty (30) days from date received by City, unless otherwise directed by the labor compliance officer. Progress payments shall be issued upon successful completion of items listed on the bid schedule of values, and inspection made by the City, unless otherwise directed by the project manager or labor compliance officer. A retention of ten percent (10%), unless otherwise directed by the project manager shall be withheld from this payment. Upon completion of the work by the contractor, a final inspection shall be made by the City. Unless otherwise directed by the project manager or labor compliance officer, upon approval, the City shall file a Notice of Completion and a final payment will be issued (minus ten (10%) percent retention). The final retention payment shall be issued following 45 days from the filing of the Notice of Completion, unless otherwise directed by the labor compliance officer. The City must pay interest at the legal rate on any Contractor payment request not paid within 30 days of its submission when the validity of the request is not disputed and the request has been properly submitted. (Public Contract Code § 20104.50).

2.3 Retention of Funds.

Contractor hereby authorized City to deduct from any amount payable to Contractor (whether or not arising out of this Agreement) (i) any amounts the payment of which may be in dispute hereunder or which are necessary to compensate City for any losses, costs, liabilities, or damages suffered by City, and (ii) all amounts for which City may be liable to third parties, by reason of Contractor's acts or omission in performing or failing to perform Contractor's obligation under this Agreement. In the event that any claim is made by a third party, the amount or validity of which is disputed by Contractor, or any indebtedness shall exist which shall appear to be the basis of such withholding, an amount sufficient to cover such claim. The failure of City to exercise such right to deduct or to withhold shall not, however, affect the obligations of the Contractor to insure, indemnify, and protect City as elsewhere provided herein.

3.0 **COORDINATION OF WORK**

3.1 Representative of Contractor.

_____, designated as being the principal and

representative of Contractor authorized to act in its behalf with respect to the work and services specified herein and make all decisions in connection therewith.

3.2 Contract Officer.

_____ is hereby designated as being the representative the City authorized to act in its behalf with respect to the work and services specified herein and make all decisions in connection therewith ("Contract Officer"). The City Manager of City shall have the right to designate another Contract Officer at any time.

3.3 Prohibition Against Subcontracting or Assignment.

Contractor shall not contract with any entity to perform in whole or in part the work or services required hereunder without the express written approval of the City. Neither this Agreement nor any interest herein may be assigned or transferred, voluntarily or by operation of law, without the prior written approval of City. Any such prohibited assignment or transfer shall be void.

3.4 Independent Contractor.

Neither the City nor any of its employees shall have any control over the manner, mode or means by which Contractor, its agents or employees, perform the services required herein, except as otherwise set forth. Contractor shall perform all services required herein as an independent contractor of City and shall remain under only such obligations as are consistent with that role. Contractor shall not at any time or in any manner represent that it or any of its agents or employees are agents or employees of City. City shall not in any way for any purpose become or deemed to be a partner of Contractor in its business or otherwise or a joint venture or a member of any joint enterprise of Contractor.

4.0 INSURANCE, INDEMNIFICATION AND BONDS

4.1 Insurance.

The Contractor shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to City, during the entire term of this Agreement including any extension thereof, the following policies of insurance.

(a) Commercial General Liability Insurance. A policy of commercial general liability insurance written on a per occurrence basis with a combined single limit of at least \$2,000,000 bodily injury and property damage including coverage for contractual liability, personal injury, independent contractors, broad form property damage, products and completed operations. The Commercial General Liability Policy shall name the City of Perris, California, its officers, employees and agents as additional insured in accordance with standard ISO additional insured

endorsement form CG2010(1185) or equivalent language.

(b) Worker's Compensation Insurance. A policy of worker's compensation insurance in such amount as will fully comply with the laws of the State of California and which shall indemnify, insure and provide legal defense for both the Contractor and the City against any loss, claim or damage arising from any injuries or occupational diseases carrying out the work or service contemplated in this Agreement.

(c) Business Automobile Insurance. A policy of business automobile liability insurance written on a per occurrence basis with a single limit liability in the amount of \$1,000,000 bodily injury and property damage. Said policy shall include coverage for owned, non-owned, lease and hired cars.

All of the above policies of insurance shall be primary insurance. The insurer shall waive all rights of subrogation and contribution it may have against the City of Perris, California, its officers, employees and agents, and its insurers. In the event any of said policies of insurance are canceled, the Contractor shall, prior to the cancellation date, submit new evidence of insurance in conformance with this Section 4.1 to the Contract Officer. No work or services under this Agreement shall commence until the Contractor has provided the City with Certificates of Insurance or appropriate insurance binders evidencing the above insurance coverages and said Certificates of Insurance or binders are approved by the City.

Contractor agrees that the provisions of this Section 4.1 shall not be construed as limiting in any way the extent to which the Contractor may be held responsible for the payment of damages to any persons or property resulting from the Contractor's activities or the activities of any person or person for which the Contractor is otherwise responsible.

In the event the Contractor subcontracts any portion of the work in compliance with Section 3.3 of this Agreement, the contract between the Contractor and such subcontractor shall require the subcontractor to maintain the same policies of insurance that the Contractor is required to maintain pursuant to this Section.

4.2 Indemnification.

(a) To the fullest extent permitted by law, Contractor hereby agrees, at its sole cost and expense, to defend, protect, indemnify, and hold harmless the City of Perris, California, its elected and appointed officials and members, officers, attorneys, agents, representatives, consultants, employees, directors, shareholders, successors, and assigns (individually as "Indemnitee" and collectively, "Indemnitees") from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, expenses, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, expert witnesses, consultants, or other professionals and all costs associated therewith (collectively,

“Claims”), to the extent arising or claimed to arise out of, in connection with, resulting from, or related to any negligent act, error, omission or failure to act of Contractor or any of its subcontractors and their respective officers, agents, servants, employees, subcontractors, materialmen, suppliers or Contractor’s failure to perform or negligent performance of any term, provision, covenant or condition of the Agreement or the Scope of Services, including this indemnity provision. This indemnity also applies to any Claims of any type or nature asserted on behalf of any of Contractor’s subcontractors. This indemnity provision shall survive the termination of the Agreement and is in addition to any other rights or remedies which Indemnitees may have under the law. Payment is not required as a condition precedent to an Indemnitee’s right to recover under this indemnity provision. An Indemnitee shall have the right to select the attorneys to represent it in the event of a Claim and at Contractor’s expense. Contractor shall pay Indemnitees for any attorneys' fees, consultant and expert witness fees and costs incurred in enforcing this indemnification provision. This indemnity is effective without reference to the existence or applicability of any insurance coverages which may have been required under the Agreement or any additional insured endorsements, which may extend to Indemnitees.

(b) Contractor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against any Indemnitee with respect to those Claims as to which such Indemnitee is indemnified under Section 4.2(a) above, except for such Claims which are the result of such Indemnitee’s willful misconduct.

(c) In the event the City of Perris, California, its officers, agents or employees are made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising out of or in connection with the negligent performance of or failure to perform the work, operations or activities of Contractor hereunder, Contractor agrees to pay to the City of Perris, California, officers, agents or employees, any and all costs and expenses incurred by the City of Perris, California, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys’ fees

4.3 Sufficiency of Insurer or Surety.

Insurance or bonds required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated “A” or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category Class VII or better, unless such requirements are waived by the City's Risk Manager or designee of the City due to unique circumstances. In the event the City's Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to the City, the Contractor agrees that the minimum limits of the insurance policies required by this Section 5 may be changed accordingly upon receipt of written notice from the City's Risk Manager or designee; provided that the Contractor shall have the right to appeal a determination of increased coverage by the City's Risk Manager to the City Council within ten (10) days of receipt of notice

from the City's Risk Manager.

4.4 Labor and Materials Bond.

Concurrently with the execution of this Agreement, Contractor shall deliver to City a labor and materials bond in a sum not less than one hundred percent of the total amount payable by terms of the Agreement, in the form provided by the City Clerk, which secures payments to subcontractors and suppliers in the event of default by Contractor. The labor and materials bond shall contain the original notarized signature of an authorized officer of the surety and affixed thereto shall be a certified and current copy of his power of attorney. The labor and materials bond shall be unconditional and remain in force during the entire term of the Agreement and shall be null and void only if the Contractor completely and faithfully pays all subcontractors and suppliers that have been approved in writing to perform in whole or part the services required herein. If Contractor is the provider of architectural, engineering, and land surveying services pursuant to an existing contract with City for a public work, Contractor shall not be required to post or deliver a labor and materials bond.

4.5 Performance Bond.

Concurrently with execution of this Agreement, Contractor shall deliver to City a performance bond in the sum of the amount of this Agreement, in the form provided by the City Clerk, which secures the faithful performance of this Agreement, unless such requirement is waived by the Contract Officer. The bond shall contain the original notarized signature of an authorized officer of the surety and affixed thereto shall be a certified and current copy of his power of attorney. The bond shall be unconditional and remain in force during the entire term of the Agreement and shall be null and void only if the Contractor promptly and faithfully performs all terms and conditions of this Agreement.

5.0 TERM

5.1 Time for Completion and Liquidated Damages.

Contractor shall commence the services pursuant to this Agreement upon receipt of a written notice to proceed and shall perform all services within the time period(s) established in Specification No. #CIP_____. It is expressly agreed that, except for extensions of time duly granted in writing by the City Manager and for reasons authorized in this Agreement, time shall be of the essence, and contractor shall be held responsible for liquidated damages in a sum equal to \$1000.00 (one thousand and 00/100 dollars) for each and every day after permitted time if the work is not completed to the city's satisfaction.

5.2 Force Majeure.

The time period(s) specified in this Agreement for performance of the services rendered pursuant to this Agreement shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, litigation, and/or acts of any governmental agency, including the City, if the Contractor shall within ten (10) days of the commencement of such delay notify the Contract Officer in writing of the causes of the delay. The Contract Officer shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the judgment of the Contract Officer such delay is justified. The Contract Officer's determination shall be final and conclusive upon the parties to this Agreement. In no event shall Contractor be entitled to recover damages against the City for any delay in the performance of this Agreement, however caused, Contractor's sole remedy being extension of the Agreement pursuant to this Section.

5.3 Termination for Default of Contractor.

If the Contract Officer determines that the Contractor is in default due to the Contractor's failure to fulfill its obligations under this Agreement, City will give Contractor a written Notice of Default which will be served personally on the Contractor's representative or sent via U.S. First Class Mail to the Contractor at the address set forth in Section 8.1. The Contractor shall continue performing its obligations hereunder so long as the Contractor commences to cure such default within five (5) calendar days of service of such notice and completes the cure of such default within forty-five (45) calendar days after service of the notice, or such longer period as may be permitted by the City; provided that if the default is an immediate danger to the health, safety and general welfare, the City reserves the right to not notify the Contractor of the default and to take any and all action that may be necessary to cure the default.

If a Notice of Default is issued and the Contractor fails to cure the default within the time periods set forth in this Section, the City may take over the work and prosecute the same to completion by contract or otherwise. The City may use any portion or all of the Contract Sum to pay for said work. The Contractor shall be liable to the extent that the total cost for completion of the services required hereunder exceeds the compensation herein stipulated (provided that the City shall use reasonable efforts to mitigate such damages).

Contractor agrees that if the default is an immediate danger to the health, safety, and general welfare, the City may take immediate action to cure the default and the Contractor shall be liable for all costs and expenses associated with curing the default.

Compliance with the provisions of this Section shall only be a condition

precedent to termination of this Agreement for cause. Such compliance shall not be a waiver of the City's right to take legal action in the event that the dispute is not cured. Further, compliance with this Section shall not be a waiver of the City's right to seek liquidated damages or other damages from the Contractor caused by the Contractor's failure to comply with any term of the Agreement.

5.4 Resolution of Contractor Construction Claims.

Public Contracts Code section 20104 et. seq. sets forth detailed procedures for resolving disputes of \$375,000 or less. In the event that a dispute, valued at \$375,000 or less, arises as a result of the work described in this Agreement, the Contractor shall notify the City in writing of its contentions by submitting a claim therefore. Contractor and City shall comply with the detailed procedures stipulated in Public Contract Code Section 20104-20104.6, for resolving claims of \$375,000 or less.

In the event of any dispute valued at more than \$375,000 arises as a result of the work described in this Agreement, the Contractor shall notify the City in writing of its contentions by submitting a detailed claim that sets forth the amount of damages, the basis and/or cause of the damages and all supporting documents which support the claim within ten (10) calendar days after the claim arose. Contractor agrees to submit any additional information or documents requested by the City so it can fully analyze the claim.

In the event of any dispute, the Contractor shall not be relieved of its obligations under this Agreement and shall continue performing its obligations hereunder unless the City agrees in writing to release the Contractor from its obligations under the Agreement. Compliance with the provisions of this Section shall be a condition precedent to any legal action.

6.0 CITY OFFICERS, EMPLOYEES, AND U.S. MEMBERS OF CONGRESS

6.1 Non-liability of City Officers and Employees

No officer or employee of the City shall be personally liable to the Contractor, or any successor in interest, in the event of any default or breach by the City or for any amount which may become due to the Contractor or to its successor, or for breach of any obligation of the terms of this Agreement.

6.2 Conflict of Interest

No officer or employee of the City shall have any financial interest, direct or indirect, in this Agreement nor shall any such officer or employee participate in any decision relating to the Agreement which effects his financial interest or the financial interest of any corporation, partnership or association in which he is, directly or indirectly, interested, in violation of any State statute or regulation. The Contractor warrants that it has not paid or given and will not pay or give any third party any money or other consideration for obtaining this Agreement.

7.0 NON-DISCRIMINATION AND EQUAL OPPORTUNITY

7.1 Covenants Against Discrimination

Contractor covenants that, by and for itself, its heirs, executors, assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of race, color, creed, religion, sex, marital status, national origin, or ancestry in the performance of this Agreement. Contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, color, creed, religion, sex, marital status, national origin, or ancestry.

Statement of Equal Opportunity Clause

- (a) Contractor will not discriminate against any employee or applicant for employment because of race, color religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in a conspicuous place, available to employees and applicants for employment, notices to be provided by the County setting forth the provisions of this non-discriminating clause.
- (b) Contractor will ensure that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

8.0 MISCELLANEOUS PROVISIONS

8.1 Notice

Any notice, demand, request, document, consent, approval, or communication either party desires or is required to give to the other party or any other person shall be in writing and either served personally or sent by prepaid, first-class mail addressed as follows:

City

City of Perris
Public Works Department, Engineering Administration Division
101 N. "D" Street
Perris, CA 92570
ATTN: Michael A. Morales, Capital Improvements Project Manager

Contractor

XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX
ATTN: XXXXXXXXXXXXXXXXXXXX

8.2 Handicap Accessibility Certification.

Contractor certifies that with respect to the public facilities or parts thereof that are altered by the work in this contract, the altered portions of the facilities are readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs, and meet the laws established by the Americans With Disabilities Act of 1990, Public Law 101-336, and applicable portions of Title 24 of the California Code of Regulations (Access Code).

8.3 Records Retention Clause Examination and Audit

Contractor shall maintain and keep books and records on a current basis, recording all transactions pertaining to this Agreement in a form in accordance with generally acceptable accounting principles. Said books and records shall be made available to the City of Perris, the State Auditor of California, the Federal Government and to any authorized representatives thereof for purposes of audit at all reasonable times and places. All such books and records shall be retained for such periods of time as required by law, provided, however, notwithstanding any shorter periods of retention, all books, records, and supporting detail shall be retained for a period of at least four (4) years after expiration of any agreement.

8.4 Payroll Records

Contractor shall comply with State Labor Code section 1776, and shall maintain and keep accurate payroll records of employees, and shall certify these records upon request by the City. Said payroll records shall be made available to the City, the State Division of Labor Standards Enforcement, and the State Division of Apprenticeship Standards. If the Contractor fails to comply with State Labor Code Section 1776, Contractor shall be held responsible for penalties as set forth in said section.

Contractor or Subcontractors shall be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. All Contractors and Subcontractors who perform work on this project must furnish electronic certified payroll reports directly to the Labor Commissioner (aka Division of Labor Standards Enforcement).

8.5 Prevailing Wages

Under the State Labor Code, Contractor shall not pay less than the general

prevailing rate of per diem wages for work of a similar character in the locality in which the public work is performed, and not less than the general prevailing rate per diem wages for holiday, overtime, health and welfare, pension, vacation and similar purposes to all workers employed on the work described in this Agreement. The City has obtained from the Director of the Department of Industrial Relations, State of California, the determination of general prevailing rates of per diem wages believed to be applicable to the work described in this Agreement, including employer payments for health and welfare, pension, vacation and similar purposes. Contractor shall obtain from the City Clerk said General Prevailing Wage Determination, and post it in a conspicuous place at the site of the work described in this Agreement (Lab. Code § 1773.2.). The statutory provisions for penalties for failure to pay prevailing wages (Lab. Code § 1775) and for penalties for failure to comply with state's wage and hour laws shall be enforced. (Lab. Code § 1813.).

8.6 Working Hours Restriction and Penalties For Non-Compliance

Contractor agrees that eight (8) hours is a legal days work for all employees hired by the Contractor, and that any worker's time of service is restricted to eight (8) hours during any calendar day, and forty (40) hours during any calendar week, unless overtime compensation is paid at not less than one and one half times the basic rate of pay. Contractor shall comply with said working hours restrictions and overtime compensation provisions, and shall pay a penalty of \$50.00 (fifty and 00/100 dollars) for each and every day a worker is employed in violation of said working hours restrictions and overtime compensation provisions.

8.7 Interpretation

The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply.

8.8 Employment of Apprentices

Contractor shall comply with State Labor Code § 1777.5, and shall maintain and keep accurate records of apprentices who are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency; and shall certify these records upon request by the City.

8.9 Integration; Amendment

It is understood that there are no oral agreements between the parties hereto affecting this Agreement and this Agreement supersedes and cancels any and all previous negotiations, arrangements, agreements and understandings, if any, between

the parties, and none shall be used to interpret this Agreement. This Agreement may be amended at any time by the mutual consent of the parties by an instrument in writing.

8.10 Severability

In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement which are hereby declared as severable and shall be interpreted to carry out the intent of the parties hereunder unless the invalid provision is so material that its invalidity deprives either party of the basic benefit of their bargain or renders this Agreement meaningless.

8.11 Corporate Authority

The persons executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound.

[End – Signature Page Follows]

IN WITNESS WHEREOF, the parties have executed and entered into this Agreement as of the date first written above.

CITY:
CITY OF PERRIS,
a municipal corporation

ATTEST:

Nancy Salazar, City Clerk

Clara Miramontes,
City Manager

APPROVED AS TO FORM:
ALESHIRE & WYNDER, LLP

Robert Khuu, City Attorney

CONTRACTOR:

By: _____
Signature

Print Name and Title

By: _____
Signature

Print Name and Title

(Corporations require two signatures; one from each of the following: A. Chairman of the Board, President, and Vice President; and B. Secretary, Assistant Secretary, Treasurer, or Chief Financial Officer.)

(CORPORATE SEAL)

ATTEST

CERTIFICATE OF CONTRACTOR

I, _____, certify that I am a/the

_____ (designate sole proprietor, partner in partnership, or specify corporate office, e.g., secretary) in the entity named as CONTRACTOR in the foregoing contract.

I hereby expressly certify that the name of the entity to which I am

associated is _____; that this entity is in good standing and has complied with all applicable laws and regulations, and that I have been expressly authorized by the proper parties in this entity to execute this Contract on behalf of the above-named entity.

SIGNATURE OF CONTRCATOR: _____

Contractor's California License No.

Name of License Holder

Type of License

Expiration Date

(CORPORATE SEAL)

ATTEST:

PAYMENT BOND
(CALIFORNIA PUBLIC WORK)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, CITY OF PERRIS (referred to hereinafter as "obligee") has awarded to _____ (hereinafter designated as the "Contractor") an agreement dated _____, for work described as follows:

4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24) (hereinafter referred to as the "Public Work Contract"); and

WHEREAS said Contractor is required to furnish a bond in connection with said Public Works Contract, providing that if said Contractor, or any of his or its Subcontractors, shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code, or for any amounts required to be deducted, withheld, and paid over to the Contractor and his Subcontractors pursuant to Section 18806 of the Revenue and Taxation Code with respect to such work or labor, that the Surety on this bond will pay the same together with a reasonable attorney's fee (to be fixed by the court) in case suit is brought on the bond;

NOW, THEREFORE, we, _____, the undersigned Contractor, as Principal, and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the _____ and to any and all material, men, persons, companies or corporations furnishing materials, provisions, provender or other supplies used in, upon, for or about the performance of the said Public Work, and all persons, companies, or corporations renting or hiring teams, or implements or machinery, for or contributing to said Public Work to be done, and all persons performing work or labor upon the same and all persons supplying both work and materials as aforesaid, excepting the said Contractor, in the sum of _____ (words) Dollars (\$ _____), said sum being not less than 100 percent of the total amount payable by the said Obligee under the terms of the said Public Work Contract, for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that, if said Contractor, his or its heirs, executors, administrators, successors or assigns, or Subcontractors, shall fail to pay for any materials, provisions, implements or machinery used in, upon, for or about the performance of the Public Work contracted to be done, or to pay for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such work or labor, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of said employees of said Contractor and his Subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor as required by the provisions of Section 3247 through 3252 of the Civil Code, the Surety or Sureties hereon will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the said Surety or Sureties will pay a reasonable attorney fee to be fixed by the Court. In addition to the provisions herein above, it is agreed that this bond will insure to the benefit of any and all persons, companies, and corporations entitled to serve stop notices under Section 3181 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or additions to the terms of the said Public work Contract or to the work to be performed hereunder or the Specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

No final settlement between the Obligee and the Contractor hereunder shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Principal and Surety agree that if the Agency is required to engage the services of an attorney in connection with the enforcement of this bond, the Principal and Surety shall be jointly and severally liable for all of the Agency's costs and reasonable attorney fees, whether or not litigation or arbitration is actually commenced to enforce the bond.

Principal and Surety agree that after completion and acceptance of the work by Agency, 10% value of the bond shall remain in effect for a 12 month period to warranty the work.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this

_____ day of _____, 2023.

PRINCIPAL:

By _____

SURETY:

By _____

Attorney-in-Fact

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

Any claims under this bond may be addressed to:

(Name and Address of Surety) _____

(Name and Address of Agent or Representative for service of process in California, if different from above) _____

(Telephone Number of Surety and Agent or Representative for service of process in California) _____

THIS IS A REQUIRED FORM

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On this ____ day of _____, in the year _____, before me,
_____, a Notary Public in and for said state,

personally appeared _____, known to me, or proved to me on the basis of satisfactory evidence, to be the person whose name is subscribed to the within instrument as the

Attorney-in-Fact of the _____
(Surety) and acknowledged to me that he subscribed the name of the
_____ (Surety) thereto and his
own name as Attorney-in Fact.

Notary Public in and for said State

(SEAL)

Commission expires _____

NOTE: **A copy of the Power of Attorney to local representatives of the bonding company must be attached hereto.**

THIS IS A REQUIRED FORM

PAYMENT BOND
CERTIFICATE OF CONTRACTOR

I, _____, certify that I am a/the

_____ (specify either partner or specific corporate office) of the Contractor names as Principal on the above-referenced bond. I further certify that the Principal is an entity in good standing having complied with all applicable laws and regulations and that I have been given the express power on behalf of the Principal to execute this bond.

NAME OF ENTITY: _____

NAME AND TITLE OF SIGNING PARTY: _____

SIGNATURE: _____

Contractor's California License No.

Name of License Holder

Type of License

Expiration Date

(CORPORATE SEAL)

ATTEST:

THIS IS A REQUIRED FORM

CONTRACT PERFORMANCE BOND
(CALIFORNIA PUBLIC WORK)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, THE CITY OF PERRIS, (sometimes referred to hereinafter as "Obligee" has awarded to _____ (hereinafter designated as the "Contractor"), a contract for the work described as follows:

4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24) (hereinafter referred to as the "Public Work Contract"); and

WHEREAS, the work to be performed by the Contractor is more particularly set forth in that certain contract for the said Public Work dated _____, (hereinafter referred to as the "Public Work Contract"), which Public Work Contract is incorporated herein by this reference; and

WHEREAS, The Contractor is required by said Public Work Contract to perform the terms thereof and to provide a bond both for the performance and guaranty thereof:

NOW, THEREFORE, we, _____, the undersigned _____ Contractor, as Principal, and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the _____ in the sum of _____ Dollars (\$ _____), said sum being not less than 100 percent of the total amount payable by the said Obligee under the terms of the said Public Work Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the bounden Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said Public Work Contract and any alteration thereof made as therein provided, on his or its part, to be kept and performed at the time in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill the guarantee of all materials and workmanship; and indemnify and save harmless the Obligee, its officers and agents, as stipulated in said Public Work Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect. In case suit is brought upon this bond, the said Surety will pay to Obligee a reasonable attorney's fee to be fixed by the Court.

The said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Public Work Contract or to the work to be performed hereunder or the Specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

No final settlement between the Obligee and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Principal and Surety agree that if the Agency is required to engage the services of an attorney in connection with the enforcement of this bond, the Principal and Surety shall be jointly and severally liable for all of the Agency's costs and reasonable attorney fees, whether or not litigation or arbitration is actually commenced to enforce the bond.

Principal and Surety agree that after completion and acceptance of the work by Agency, 10% value of the bond shall remain in effect for a 12 month period to warranty the work.

IN WITNESS WHEREOF, this document has been executed this ____ day of _____, 2023.

PRINCIPAL:

By _____

SURETY:

BY _____

Attorney-in-Fact

The rate of premium on this bond is _____ per thousand.

The total amount of premium charged: \$ _____. (The above must be filled in by corporate surety.)

IMPORTANT:

Surety companies executing Bonds must appear on the Treasury Departments most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety) _____

(Name and Address of Agent or Representative for service of process in California, if different from above) _____

(Telephone Number of Surety and Agent or Representative for service of process in California) _____

THIS IS A REQUIRED FORM

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On this ____ day of _____, in the year _____, before me,
_____, a Notary Public in and for said state,

personally _____ appeared
_____, known to me,
or proved to me on the basis of satisfactory evidence, to be the person
whose name is subscribed to the within instrument as the

Attorney-in-Fact _____ of _____ the

(Surety) and acknowledged to me that he subscribed the name of the

_____(Surety) thereto and his
own name as Attorney-in Fact.

Notary Public in and for said
State

(SEAL)

Commission expires _____

NOTE: A copy of the Power of Attorney to local representatives of the
bonding company must be attached hereto.

CONTRACT PERFORMANCE BONDS
CERTIFICATE OF CONTRACTOR

I, _____, certify that I am a/the _____ (specify either partner or specific corporate office) of the Contractor names as Principal on the above-referenced bond. I further certify that the Principal is an entity in good standing having complied with all applicable laws and regulations and that I have been given the express power on behalf of the Principal to execute this bond.

NAME OF ENTITY: _____

NAME AND TITLE OF SIGNING PARTY: _____

SIGNATURE: _____

Contractor's California License No.

Name of License Holder

Type of License

Expiration Date

(CORPORATE SEAL)

ATTEST:

THIS IS A REQUIRED FORM

CERTIFICATION OF INSURANCE AND ENDORSEMENTS

The Contractor shall not commence any work under the Contract Documents until he obtains, at his own expense, all required insurance. The required insurance shall be provided by the Contractor in conformance with the requirements of Sections 6 and 7 of the General Provisions of these Contract Documents:

The insurance company or companies utilized by the Contractor shall be authorized to transact business in the State of California and to issue policies in the amounts required in said Sections 6 and 7 of the General Provisions of these Contract Documents.

No substitutions or revisions to the certificates and endorsements which follow will be accepted. If the insurance called for is provided by more than one company, a separate certificate, using the format presented, shall be provided for each company.

Contractor shall include the City of Perris, its elected and appointed officials, employees, agents, Agency, Consultants as additional insured under Contractor's General Liability Policy.

ADDITIONAL INSURED AND WAIVER OF SUBROGATION- The Certificate of Insurance supplied to the City of Perris shall name the City of Perris, its officers, employees, agents, consultants, and independent contractors as additional insured and shall specify that the City of Perris be given thirty (30) days prior written notice of any modification, decrease or termination of the Contractor's Insurance coverage. The insurer shall waive all rights of subrogation and contribution it may have against the City, its officers, employees and agents and their respective insurers. Such insurance shall be subject to approval by the City Attorney.

CERTIFICATE OF INSURANCE

AGENCY: CITY OF PERRIS

**DESCRIPTION: 4TH Street Public Area Enhancement Project Between “D” and “C” Streets
(Specification No. #CIP S-007-2023-24)**

TYPE OF INSURANCE: WORKERS’ COMPENSATION INSURANCE

THIS IS TO CERTIFY that the policies of insurance listed below have been issued by the company named below in conformance with the requirements set forth in the Agency's Contract Documents, and that said policies are now in force.

Said company will give at least 30 days advance written notice by registered mail to the agency and City Public Works Director prior to any material change or cancellation of said policies.

Nothing contained in this Certificate of Insurance shall be construed as an amendment to an existing insurance coverage.

Policy Number

Effective Date

Expiration Date

The insurance provided by said policies complies in all respects as to coverage and limits of liability with the requirements of the Workers’ Compensation Insurance Laws of the State of California.

EFFECTIVE: _____

Named Insured

Insurance Company

Street Number

Street Number

City and State

City and State

**Insurance Company Agent for
Service of process in California**

**(Authorized Representative)
(Attach Acknowledgement)**

(Name)

(Company)

(Street Number)

(Street Number)

(City)

(City and State)

(Telephone Number)

(Telephone Number)

NOTICE: No Substitution or revision to this certificate will be accepted. If the insurance called for is provided by more than one company, a separate certificate, using this format, shall be provided for each company.

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On this ____ day of _____, 202__ before me personally came

_____ known to me or proved to me on the basis

of satisfactory evidence, who being duly sworn, did depose and say

that _____ is an authorized representative of the _____ and

acknowledged to me that _____ executed the within instrument on behalf of said insurance company.

IN WITNESS WHEREOF, I have signed and affixed my Official Seal on the date in this certificate first above written.

Notary Public in and for said County and State

CERTIFICATE OF INSURANCE

AGENCY: CITY OF PERRIS

DESCRIPTION: 4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24)

TYPE OF INSURANCE: COMPREHENSIVE GENERAL LIABILITY INSURANCE

THIS IS TO CERTIFY that the policies of insurance listed below have been issued by the company named below in conformance with the requirements set forth in the Agency's Contract Documents, and that said policies are now in force.

Said company will give at least 30 days advance written notice by registered mail to the Agency and City Public works Director prior to any material change or cancellation of said policies.

Nothing contained in this Certificate of Insurance shall be construed as an amendment to an existing insurance coverage.

<u>Policy Number</u>	<u>Date Effective</u>	<u>Expiration</u>	<u>Limits of Liability Bodily Injury</u>	<u>Property Damage</u>
----------------------	-----------------------	-------------------	--	------------------------

The following types of coverage are included in this policy (indicated by "X" in space):

Manufacturers' and Contractors'	Yes ___ No ___
Owners' and Contractors' Protective	Yes ___ No ___
Blanket Contractual	Yes ___ No ___
Completed Operations	Yes ___ No ___
Owned Automobiles	Yes ___ No ___
Hired Automobiles	Yes ___ No ___
Non-Owned Automobiles	Yes ___ No ___
Broad Form Property Damage	Yes ___ No ___
"XCU" Exposure	Yes ___ No ___

ENDORSEMENT:

The City of Perris, and each of his officers, agents, and employees are named as additional insured under these policies but only while acting in their capacity as such and only as respects operations of the original named insured, his subcontractors, agents, and employees in the performance of the above-referenced contract.

This endorsement shall not operate to increase the Company's total limits of liability under the above-listed policies.

All of the above policies of insurance shall be primary insurance and shall name the City of Perris, its officers, employees and agents as additional insureds. The insurer shall waive all rights of subrogation and contribution it may have against the City, and its officers, employees and agents and their respective insurers. All of said policies of insurance shall provide that said insurance may not be amended or canceled without providing thirty (30) days prior written notice by registered mail to the City. In the event any of said policies of insurance are canceled, the Contractor shall, prior to the cancellation date, submit new evidence of insurance to the City.

EFFECTIVE: _____

Named Insured

Insurance Company

Street Number

Street Number

City and State

City and State

Insurance Company agent for
service of process in California

By _____
(Authorized Representative)
(Attach Acknowledgment)

(Name)

(Company)

(Street Number)

(Street Number)

(Telephone Number)

(Telephone Number)

NOTICE: No substitution or revision to this certificate will be accepted. If the insurance called for is provided by more than one company, a separate certificate, using this format, shall be provided for each company.

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On this ____ day of _____, 202__ before me personally came
_____ known to me or proved to me on the
basis of satisfactory evidence, who being duly sworn, did depose and say
that _____ is an authorized
representative of the _____ and
acknowledged to me that _____ executed
the within instrument on behalf of said insurance company.

IN WITNESS WHEREOF, I have signed and affixed my Official Seal on the
date in this certificate first above written.

Notary Public in and for said
County and State

(SEAL)

Commission expires _____

NOTICE TO PROCEED
(FULL PROJECT) AND/OR (PHASE SPECIFIC)

TO: _____

Project Description: **4TH Street Public Area Enhancement Project Between “D” and “C” Streets (Specification No. #CIP S-007-2023-24)**

You are hereby notified to commence Work (Full Project) and/or (Phase Specific) in accordance with the Contract dated _____, on or before _____, and you are to complete all work within 160 calendar days (or Phase Specific calendar days) after the date _____. The date of completion of all work (or Phase Specific Work) is therefore _____.

You are required to return an acknowledged copy of this Notice to Proceed to the Agency.

Dated this ____ day of _____.

City of Perris
Agency

By: _____
Michael A. Morales

Title: Capital Improvements Project Manager

ACCEPTANCE OF NOTICE

Receipt of the Notice to Proceed is hereby acknowledged by
_____, this the ____ day of
_____, 202_.

Contractor By _____

Title _____

Contractor's California License No.

Name of License Holder

Type of License

Expiration Date



Home Create Project Project Information

Project Information

Options	
Help	Update Account
	Logout

FORM

Form Type: PWC-100 Project Award Date: 07/25/2023 (MM/DD/YYYY)

AWARDING BODY INFORMATION

Awarding Body:

Name: City of Perris Primary Contact: Darren Madkin
 Address: 101 N D Street Primary Email: DMadkin@cityofperris.org
 Perris, CA 92570 Work Phone: 9519436100

PROJECT INFORMATION

Project Name: Project #:
 Brief Description: Contract #:
 Contract Amount: Total Project Cost: 1.00 Number of Prime Contractors: 1
 Alternative Model: None Apply Design/Build Job Order/Task Lease/Lease Back

Physical Address Address Location

Address Line 1:
 Address Line 2:
 City: State: Zip Code: Mail Stop:
 County:

Billing Address

Same as Billing Address on file
 Address Line 1:
 Address Line 2:
 City: State: Zip Code: Mail Stop:
[Help](#) [Update Account](#) [Logout](#)

Project Information 2

Please complete the fields below

PWC-100

Project Name: Example Project #: Example Contract #: Example Status: New Submission

PROJECT INFORMATION

Project Dates

First Advertised Bid: Estimated or Actual Start: Estimated or Actual Completion:

Propositions*:

- Yes No Will this project receive (or has it received) any funding from Proposition 84 (The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006)?
- Yes No Will this project receive (or has it received) any funding from Proposition 39 (California Clean Energy Jobs Act of 2012)?

Compliance and Agreements*:

- Yes No Is language included in the Contract Award to effectuate the requirements of Section 1771, 1774 - 1776, 1777.5, 1813 and 1815 of the Labor Code?
- Yes No Will you operate a DIR-Approved Labor Compliance Program (LCP) for this project?
- Yes No Is there a Project Labor Agreement (PLA) associated with this project?

If the answer is yes, Please email a copy of the PLA to publicworks@dir.ca.gov. If the same PLA has previously been transmitted, send an email indicating that the PLA was previously transmitted and include any additional information or evidence needed to establish that the PLA covers a contractors in the current project

Help	Update Account	Logout
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Contractor Information

Please enter all the information for the award

Project Manager

Email Address: First Name: MI: Last Name: Title: Work Phone: - - Ex:

General Contractor 1

Primary PWC#	Name	Address	Email	Classification
-- No Contractor found --				

[Add Contractor](#)



CITY OF PERRIS
Public Works Department

CHANGE ORDER

Order No. _____

Date _____

Contract Date _____

Project: **4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24)**

This Change Order # _____ changes the Agreement between the City of Perris and _____, for the **4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24)**, please read it carefully.

JUSTIFICATION:

CHANGE TO CONTRACT PRICE:

Original Contract Price \$ _____

Current Contract Price (Adjusted by Previous Change Order(s)): \$ _____

Contract Price due to this Change Order will be increased: \$ _____

New Contract Price including this Change Order: \$ _____

CHANGE TO CONTRACT TIME

Contract Time will be increased:

As per Paragraph 5.1 "Time For Completion and Liquidated Damages," of the original Agreement, and a total of _____ (____) additional calendar days, from the completion date specified on the original Notice To Proceed. The new completion date is _____.

Date for completion of all work:

(Date)

APPROVALS REQUIRED

To be effective, this change order must be approved by the City of Perris and _____.

CITY OF PERRIS:

Approved by: _____
**Capital Improvements
Project Manager**

Date _____

_____:

Approved by: _____
Contractor

Date _____

End of Change Order# _____
Nothing Follow

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT: **4TH Street Public Area Enhancement Project Between "D" and "C" Streets (Specification No. #CIP S-007-2023-24) (hereinafter referred to as the "Work")**

CONTRACTOR: _____

CONTRACT DATE: _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To: **City of Perris**
(OWNER)

And To: _____
(CONTRACTOR)

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER and CONTRACTOR and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

Date of Substantial Completion

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above dated of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance, and warranties shall be as follows:

OWNER:

CONTRACTOR:

The following documents are attached to and made a part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

CONTRACTOR accepts this Certificate of Substantial Completion on _____,
201__

Contractor

By _____

California Contractor License No.

OWNER accepts this Certificate of Substantial Completion on _____,
201__

CITY OF PERRIS

By _____

RELEASE FORM

NAME OF CONTRACTOR: _____

PROJECT DESCRIPTION: **4TH Street Public Area Enhancement Project Between
“D” and “C” Streets (Specification No. #CIP S-007-
2023-24)**

PERIOD WORK PERFORMED: _____

Above named Contractor hereby acknowledges payment in full for all compensation of whatever nature due the Contractor for all labor and materials furnished and for all work performed on the above-referenced project for the period specified above with the exception of contract retention amounts and disputed claims specifically shown below.

RETENTION AMOUNT FOR THIS PERIOD:

\$ _____
(words)

DISPUTED CLAIMS

DESCRIPTION OF CLAIM

AMOUNT CLAIMED

The Contractor further expressly waives and releases any claim the Contractor may have of whatever type of nature for the period specified which is not shown as a retention amount or a disputed claim on this form. This release and waiver have been made voluntarily by Contractor without any fraud, duress, or undue influence by any person or entity.

Contractor further certifies, warrants, and represents that all bills for labor, materials, and work due Subcontractors for the specified period have been paid in full and that the parties signing below on behalf of Contractor have express authority to execute this release.

_____ Date _____ Printed
Name of Contractor

Describe Entity (Partnership, Corporation, etc.)

California Contractor's License No.

By: _____ By: _____

GENERAL PROVISIONS

The work embraced herein shall be done in accordance with the applicable portions of the current edition of the “Standard Specifications for Public Works Construction” prepared and promulgated by the Southern California Chapters of the American Public Works Association and Associated General Contractors of California, except when said “Standard Specifications” are in conflict with other contract documents.

The “General Provisions” contained in said “Standard Specifications” are by this reference incorporated herein as the General Provisions of these contract documents, subject to the following modifications and additions.

1. Section 2-3, “Subcontracts” Section 2-3 of said “Standard Specifications” is amended to read:

Unless otherwise provided in Section 4100.5 of the Government Code, each bidder shall file with his bid the name and address of each subcontractor who will perform the work or labor or render service to the prime Contractor in or about the construction of the work or improvement and of each subcontractor, licensed by the State of California, who specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the prime Contractor’s total bid. Only one subcontractor shall be listed for each portion of the work, which portion shall be defined in the bid. In each instance, the nature and extent of the work to be sublet shall be described. The failure of the Contractor to specify a subcontractor, or the listing of more than one subcontractor for the same portion of the work, constitutes an agreement by the Contractor that he is fully qualified to perform that portion himself, and that he shall perform that portion himself.

Section 2-3.2 of said “Standard Specifications” is amended to read:

The Contract Work described in the Plans and Specifications for the **4TH Street Public Area Enhancement Project Between “D” and “C” Streets (Specification No. #CIP S-007-2023-24)** requires the Contractor to perform, with its own organization, Contract Work amounting to at least 50% of the Contract Price as provided in Section 2-3.2 Additional Responsibility as provided in said “Standard Specifications” as follows:

The Contractor shall give personal attention to the fulfillment of the Contract and shall keep the Work under its control. The Contractor shall perform, with its own organization, Contract work amounting to at least 50 percent of the Contract Price except that any designated “Specialty Items” may be performed by subcontract and the amount of any such “Specialty Items” so performed may be deducted from the Contract Price before computing the

amount required to be performed by the Contractor with its own organization. "Specialty Items" will be identified by the agency in the Bid or Proposal. Where an entire item is subcontracted, the value of the work subcontracted will be based on the Contract Unit Price. When a portion of an item is subcontracted, the value of the work subcontracted will be based on the estimated percentage of the Contract Unit Price. This will be determined from information submitted by the Contractor, and subject to approval by the Engineer. Before the work of any Subcontractor is started, the Contractor shall submit to the Engineer for approval a written statement showing the work to be subcontracted giving the name and business of each Subcontractor and description and value of each portion of the work to be so subcontracted.

2. Section 3-4, "Changed Conditions" Section 3-4 of said "Standard Specifications" is amended to read:

All loss or damage arising out of the nature of the work to be done under the contract, or from any unforeseen obstructions or difficulties which may be encountered during the progress of the work and in the prosecution of the same, or from the action of the elements (except as otherwise provided in Section 6-6 hereof) or from encumbrances on the line of the work, shall be sustained by the Contractor.

3. Section 4-1.1, "General" Section 4-1.1 of said "Standard Specifications" is amended to read:

No materials, supplies or equipment for the work under this contract shall be purchased subject to any chattel, mortgage or under a conditional sale contract or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants clear and good title to all materials, supplies and equipment installed and incorporated in the work, and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by him, to the City free from any claims, liens, encumbrances or charges, and further agrees that neither he nor any person, firm, or corporation furnishing any material or labor for any work covered by the contract shall have any right to a lien upon the premises or any improvement or appurtenances thereon, provided that this shall not preclude the Contractor from installing metering devices or other equipment of utility companies the title of which is commonly retained by the utility company. Nothing contained in this article, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection of any right under any law permitting such persons to look to funds due the Contractor, in the hands of the City. The provisions of this article shall be inserted in all subcontracts and material contracts, and notices of its provisions and material contracts, and notices

of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

4. Section 6-9, "Liquidated Damages" Section 6-9 of said "Standard Specifications" is amended to read:

It is agreed by the parties to the contract that in case all the work called for under the contract in all parts and requirements is not finished or completed within the number of calendar days as set forth in the contract, damage will be sustained by the City. Because it is impracticable and extremely difficult to ascertain and determine the actual damage which the City will sustain, in the event of and by reason of such delay, it is therefore agreed that the Contractor will pay to the City \$1,000 for each and every calendar day's delay in finishing the work in excess of the number of days prescribed.

The Contractor agrees to pay said liquidated damages herein provided for, and further agrees that the City may deduct the amount thereof from any monies due or that may become due the Contractor under the contract.

5. Section 7-2.2, "Laws" Section 7-2.2 of said "Standard Specifications" is amended to read:

The Contractor, his agents and employees, shall be bound by and comply with all applicable provisions of the Labor Code and with Federal, State and local laws related to labor. Particular attention is directed to:

A. Hours of Labor: Eight hours labor constitutes a legal day's work. The Contractor shall forfeit, as a penalty to the City, \$50.00 for each worker employed in the execution of the contract by the Contractor or any subcontractor under him for each calendar day during which such worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of the Labor Code, and in particular, Section 1810 to Section 1815, thereof, inclusive, except that work performed by employees shall be permitted upon compensation for all hours worked in excess of 8 hours per day and/or 40 hours per week at not less than one and one-half times the basic rate of pay, as provided in said Section 1815.

B. Labor Discrimination: Attention is directed to Section 1735 of the Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, color, national origin or ancestry, or religion of such persons and ever Contractor for public works violating this section is subject to all the penalties imposed for a

violation of this chapter”.

- C. **Prevailing Wage:** The Contractor shall comply with Labor Code Section 1775. In accordance with said Section 1775 the Contractor shall forfeit as a penalty to the City, \$50.00 for each calendar day or portion thereof, for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed for any work done under the contract by him or by any subcontractor under him in violation of the provisions of the Labor Code and in particular, Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

Pursuant to State and Federal statutes, rules, orders, resolutions, and regulations, the Contractor is required to pay the higher of the State of California or Federal prevailing wages. The Contractor is required to be fully familiar with and comply with all State of California and Federal statutes, rules, regulations, orders, resolutions, and determinations which govern the payment of wages for the work and services provided for in this Agreement.

Pursuant to the provisions of Section 1770 of the Labor Code of the State of California, the City has ascertained the general prevailing rate of wages (Which rate includes employer payments for health and welfare, vacation, pension and similar purposes) applicable to the work to be done, for straight time, overtime, Saturday, Sunday and holiday work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification, or type of worker concerned. The Contractor shall pay travel and subsistence payment to each worker as such payments are defined and required in applicable collective bargaining agreements filled in connection with Labor Code Section 1773.8.

The City will not recognize any claim for additional compensation because of the payment by the Contractor of any wage in excess of the prevailing wage rate set forth in the contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his bid, and will not under any circumstances be considered as the basis of a claim against the City on the contract.

- D. **Contractor's Licensing Laws:** Attention is directed to the provisions of Chapter 9 of Division 3 of the Business and Professions Code

concerning the licensing of Contractors.

- E. Pursuant to Section 1771.1 of the Labor Code, no contractor or subcontractor shall be qualified to bid on, be listed in a bid proposal (submitted on or after March 1, 2015), or engage in the performance of any contract for public work unless currently registered with the Department of Industrial Relations to perform public work pursuant to Section 1725.5 of the Labor Code. It shall not be a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Sections 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

- F. Apprentices: In the awarding of any contract or written order for any public work or improvement, the Director of Public Works/City Engineer, or his/her designee, shall require all contractors and subcontractors offering or agreeing to perform any work on said public improvement to provide proof of participation as a signatory to a recognized apprenticeship and/or training program under Chapter 4 (commencing at Section 3070), Division 3, of the Labor Code of the State of California and certified by the State of California Division of Apprenticeship Standards, where such programs exist for the work to be performed.

They shall also provide information concerning their experience, financial qualifications and ability to perform said contract or subcontract, as well as to whether said contractor or subcontractor possesses, or can obtain the necessary equipment in time to perform said contract or subcontract.

Should the Director of Public Works/City Engineer, or his/her designee, determine that said contractor or any subcontractor is not a signatory to a recognized apprenticeship and/or training program under Chapter 4 (commencing at Section 3070), Division 3, of the Labor Code of the State of California and certified by the State Division of Apprenticeship Standards, where such programs exist for the work to be performed, or he/she does not possess the necessary experience and financial qualifications to perform said contract or subcontract, or that he/she does not possess, or cannot obtain in due time the necessary equipment to perform said contract, the Director of Public Works/City Engineer, or his/her designee, may reject the bid of any said contractor or subcontractor. If such determination affects only a subcontractor then the Director of Public Works/City Engineer, or his/her designee, may compel the contractor to substitute a subcontractor who is a signatory to a recognized

apprenticeship and/or training program under Chapter 4, (commencing at Section 3070), Division 3, of the Labor Code of the State of California and certified by the State of California Division of Apprenticeship Standards, where such programs exist for the work to be performed, or who, in the opinion of the Director of Public Works/City Engineer, or his/her designee, possess the necessary experience, financial qualifications, and equipment to perform said subcontract.

The apprenticeship provisions contained herein shall not apply to contracts of general contractors involving less than thirty thousand dollars (\$30,000.00). Contractor shall familiarize himself with the applicable provisions of Labor Code 1777.5

6. Section 7-3, "Liability Insurance" Section 7-3 of said "Standard Specifications" is amended to read:

7-3 "Contractor's Liability and Insurance"

7.3.1 Contractor's Liability:

- (a) To the fullest extent permitted by law, Contractor hereby agrees, at its sole cost and expense, to defend, protect, indemnify, and hold harmless the City of Perris, County of Riverside, and their respective elected and appointed officials and members, officers, attorneys, agents, representatives, consultants, employees, directors, shareholders, successors, and assigns (individually as "Indemnities" and collectively, "Indemnities") from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, expenses, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, expert witnesses, consultants, or other professionals and all costs associated therewith (collectively, "Claims"), to the extent arising or claimed to arise out of, in connection with, resulting from, or related to any negligent act, error, omission or failure to act of Contractor or any of its subcontractors and their respective officers, agents, servants, employees, subcontractors, material men, suppliers or Contractor's failure to perform or negligent performance of any term, provision, covenant or condition of the Agreement or the Scope of Services, including this indemnity provision. This indemnity also applies to any Claims of any type or nature asserted on behalf of any of Contractor's subcontractors. This indemnity provision shall survive the termination of the Agreement and is in addition to any other

rights or remedies which Indemnities may have under the law. Payment is not required as a condition precedent to an Indemnities' right to recover under this indemnity provision. An Indemnities shall have the right to select the attorneys to represent it in the event of a Claim and at Contractor's expense. Contractor shall pay Indemnities for any attorneys' fees, consultant and expert witness fees and costs incurred in enforcing this indemnification provision. This indemnity is effective without reference to the existence or applicability of any insurance coverage which may have been required under the Agreement or any additional insured endorsements, which may extend to Indemnities.

- (b) Contractor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against any Indemnities with respect to those Claims as to which such Indemnities is indemnified under Section 7.3.1.A above, except for such Claims which are the result of such Indemnities' willful misconduct.
- (c) In the event the City of Perris, County of Riverside and their officers, agents or employees are made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising out of or in connection with the negligent performance of or failure to perform the work, operations or activities of Contractor hereunder, Contractor agrees to pay to the City and its officers, agents or employees, any and all costs and expenses incurred by the City and its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees.

7.3.2 Liability Insurance:

The Contractor shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to City, during the entire term of this Agreement including any extension thereof, the following policies of insurance.

- (a) Commercial General Liability Insurance. A policy of commercial general liability insurance written on a per occurrence basis with a combined single limit of at least \$2,000,000 bodily injury and property damage including coverage for contractual liability, personal injury, independent contractors, broad form property damage, products and completed operations. The Commercial General Liability Policy shall name the City of Perris, California, its officers,

employees and agents as additional insured in accordance with standard ISO additional insured endorsement form CG2010(1185) or equivalent language.

- (b) Worker's Compensation Insurance. A policy of worker's compensation insurance in such amount as will fully comply with the laws of the State of California and which shall indemnify, insure and provide legal defense for both the Contractor and the City against any loss, claim or damage arising from any injuries or occupational diseases carrying out the work or service contemplated in this Agreement.
- (c) Business Automobile Insurance. A policy of business automobile liability insurance written on a per occurrence basis with a single limit liability in the amount of \$1,000,000 bodily injury and property damage. Said policy shall include coverage for owned, non-owned, lease and hired cars.

All of the above policies of insurance shall be primary insurance. The insurer shall waive all rights of subrogation and contribution it may have against the City of Perris, County of Riverside, and their officers, employees and agents, and its insurers. In the event any of said policies of insurance are canceled, the Contractor shall, prior to the cancellation date, submit new evidence of insurance in conformance with this Section 7.3.2 to the Contract Officer. No work or service under this Agreement shall commence until the Contractor has provided the City with Certificates of Insurance or appropriate insurance binders evidencing the above insurance coverage and said Certificates of Insurance or binders are approved by the City.

Contractor agrees that the provision of this Section 7.3.2 shall not be construed as limiting in any way the extent to which the Contractor may be held responsible for the payment of damages to any persons or property resulting from the Contractor's activities or the activities of any person or person for which the Contractor is otherwise responsible.

In the event the Contractor subcontracts any portion of the work in compliance with Section 3.3 of the Agreement, the contract between the Contractor and such subcontractor shall required the subcontractor to maintain the same policies of insurance that the Contractor is required to maintain pursuant to this Section.

“It is hereby understood and agreed that this policy may not be canceled nor the amount of the coverage thereof reduced until (30) days after receipt by the City of a written notice of such cancellation or reduction on coverage, as evidenced by receipt of a registered letter.”

7.3.3 Sufficiency of Insurer or Surety:

Insurance or bonds required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated “A” or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category Class VII or better, unless such requirements are waived by the City’s Risk Manager or designee of the City due to unique circumstances. In the event the City’s Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to the City, the Contractor agrees that the minimum limits of the insurance policies required by this Section 5 may be changed accordingly upon receipt of written notice from the City’s Risk Manager or designee; provided that the Contractor shall have the right to appeal a determination of increased coverage by the City’s Risk Manager to the City Council within ten (10) days of receipt of notice from the City’s Risk Manager.

7. Section 7-4, “Workers’ Compensation Insurance” Section 7-4 of said “Standard Specifications is amended to read:

Before execution of the contract by the Board, the Contractor shall file with the engineer the following certification:

“I am aware of, and will comply with, Section 3700 of the Labor Code by securing, paying for, and maintaining in full force and effect for the duration of the contract, complete Workers’ Compensation Insurance, and shall furnish a Certificate of Insurance to the engineer before execution of the contract”. The City, its officers, or employees, will not be responsible for any claims in law or equity occasioned by failure of the Contractor to comply with this paragraph.

Said policy of insurance shall contain an endorsement which:

- A. Waives all right of subrogation against the City and any persons and entities designated in the Special Provisions to be listed as additional insured in the policy of insurance provided for in Section 7-3.2 by reason of any claim arising out of or connected with the operations of Contractor or any subcontractor in performing the work provided

for herein;

- B. Provides it shall not be cancelled or altered without thirty (30) days notice thereof given to the City by registered mail.

The Contractor shall require all subcontractors similarly to provide such compensation insurance for their respective employees.

- 8. Section 7-10.4.1, "Safety Orders" Section 7-10.4.1 of said "Standard Specifications" is amended to read:

The Contractor shall have at the worksite, copies or suitable extracts of: Construction Safety Orders, Tunnel Safety Orders, and General Industrial Safety Orders issued by the State Division of Industrial Safety. He shall comply with provisions of these and all other applicable laws, ordinances, and regulations, including but not limited to, the Occupational Safety and Health Act of 1970 to which particular attention is directed. He also shall have the latest edition of the "Work Area Traffic Control Handbook" published by Building News, Inc.

- 9. Section 7-13, "Laws to Be Observed" Section 7-13 of said "Standard Specifications" is amended to read:

The Contractor shall keep himself fully informed of all existing and future State and Federal laws and county and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies of tribunals having any jurisdiction or authority over same. He shall at all times observe and comply with, and shall cause all his agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders, and decrees of bodies or tribunals having any authority over the work; and shall protect and indemnify the City and all officers and employees thereof connected with the work, including but not limited to the Engineer, against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications, or contract for the work in relation to any such law, ordinance, regulation, order or decree the Contractor shall forthwith report the same to the engineer in writing.

- 10. Section 9-3, "Payment" Section 9-3 of said "Standard Specifications" is amended to read:

Upon the written request of the Contractor, delivered to the City at least ten (10) days in advance, and at the sole cost and expense of the Contractor,

the Contractor may substitute securities for any monies held by the City to ensure the performance of the Contractor hereunder. The securities proposed to be substituted shall be specifically identified in the Contractor's notice, shall be limited to those listed in Government Code Section 16430 and to bank or savings and loan certificates of deposit, and shall be of the market value (as determined by the Finance Director of the City) at least equal to the amount of money withheld by the City. Upon the approval of the proposed substitution by the City, the securities may be deposited with the City or with a State or Federally chartered bank approved by the City as the escrow agent of the parties. The Contractor shall be the beneficial owner of these securities and shall receive interest thereon.

Section 9-3.2 of said "Standard Specifications" shall be amended to read:

PARTIAL PAYMENTS: At the request of the Contractor, partial payments will be made on a monthly basis. The Progress Payments will be made on a monthly basis. The Progress Payment request shall be submitted on or before the 20th day of each month. The estimate may include only work completed up to and including this date. Progress pay requests showing work not accomplished by the 20th day of the month shall be rejected.

Progress payments shall be issued upon successful completion of items listed on the bid schedule of values, and inspection made by the City of Perris, unless otherwise directed by the Engineer, or labor compliance officer Pursuant to Senate Bill 293 the City Council has determined that this project is substantially complex, and shall require the withholding of more than five-percent 5% from Progress Payments issued upon successful completion of items listed on the bid schedule of values, and inspection made by the City. A retention of ten percent (10%), unless otherwise directed by the project manager shall be withheld from this payment.. In accordance with Federal Labor Standards Provisions at 29.CFR.Part 5, Section 5.9 "Suspension of Funds", the Labor Compliance Officer shall suspend all progress payments pending the resolution of alleged labor violations.

11. Section 10, "Other Provisions" Section 10 is added to said "Standard Specifications" to read:

- 10.1 Responsibility for Work. Until the formal acceptance of the work by the City, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof and shall bear the risk of injury or damage to any part thereof by the action of the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above before its completion and acceptance and shall bear the expense thereof,

except for such injuries or damages as are occasioned by acts of the federal government or the public enemy. In case of suspension of work from any cause whatever, the Contractor shall be responsible for all materials and shall properly store them if necessary and shall erect temporary structure where necessary.

Any other provisions of this contract to the contrary notwithstanding, to the extent required by Chapter 2.5 (commencing with Section 4150) of Division 5 of Title I of the Government Code, the Contractor shall not be responsible for the cost of repairing, or restoring damage to the work caused by an act of God as that phrase is defined in Government Code 4151(b).

The City will not be held responsible for the care or protection of any material or parts of the work prior to the final acceptance except as expressly provided in these specifications. The City will not be responsible for any changes in the Contractor's operations due to encountering obstructions which may interfere with the work.

- 10.2 Provisions for Emergencies: Unusual conditions may arise on the work which will require that immediate and unusual provision be made to protect the public from danger or loss or damage to life and property, due directly or indirectly to the prosecution of the work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

The Contractor shall use such foresight and shall take such steps and precautions as his operations make necessary to protect the public from danger or damage, or loss of life or property, which would result from the interruption or contamination of public water supply, irrigation or other public service, or from the failure of partly completed work.

Whenever, in the opinion of the engineer, an emergency exists against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured by process of construction on account of such neglect; and whenever in the opinion of the engineer, immediate action shall be considered necessary in order to protect the public or private, personal or property interests, or prevent likely loss of human life or damage on account of the operations under the contract, then and in the event the Engineer may provide suitable protection to said interest by causing such work to be done and material to be furnished as, in the opinion of the engineer, may seem reasonable and necessary.

The cost and expense of said labor and material, together with the cost and expense of such repairs as may be deemed necessary, shall be borne by the Contractor, and if he shall not pay said cost and expense upon presentation of the bills therefore, duly certified by the engineer, then said cost and expense will be paid by the City and shall thereafter be deducted from any amounts due, or which become due said Contractor. Failure of the City, however, to take such precautionary measure, shall not relieve the Contractor of his full responsibility for public safety.

The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the City.

10.3 Guarantees: Besides guarantees required elsewhere, the Contractor shall and hereby does guarantee all work for a period of one (1) year after the date of acceptance of the work by the City and shall repair and replace any and all such work, together with any other work which may be displaced in so doing, that may prove defective in workmanship and/or materials within the one (1) year period from date of acceptance, without any expense whatsoever to the City, ordinary wear and tear and unusual abuse or neglect excepted. All guarantees shall commence after the end of the required maintenance period and acceptance by the City. In the event of failure to comply with the above mentioned conditions within a week after being notified in writing, the City hereby authorized to proceed to have the defects repaired and made good at the expense of the Contractor, who hereby agrees to pay the cost and charges therefore immediately on demand.

12. "Environmental Provisions" The Contractor shall, as appropriate, comply with all provisions of Public Contracts Code Section 7104 (SB1470). The requirements of this code are summarized as follows: In the event Contractor is required to dig any trench or excavation that extends deeper than four feet below the surface in order to perform the work authorized under this contract, Contractor agrees to promptly notify City in writing and before further disturbing the site if any of the conditions set forth below are discovered:

- (1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, which is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law.
- (2) Subsurface or latent physical conditions at the site differing from those indicated.

- (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in this Contract.
- (a) City agrees to promptly investigate the conditions, and if City finds that the conditions do materially differ, or do involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of the work, shall issue a change order under the procedures described in this Contract.
 - (b) That, in the event a dispute arises between City and Contractor as to whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of the work, Contractor shall not be excused from any scheduled completion date provided for in this Contract, but shall proceed with all work to be performed under the Contract.

Contractor shall retain any and all rights provided either by this contract or by law which pertain to the resolution of disputes and protests between contracting parties.

13. "Requests For Information." The Contractor is directed to Part IV, construction materials, methods, specifications, and payment requirements-Landscape Architectural, Section 01370 requests For Information, for process, time limits, and prescribed forms for requesting additional information.
14. "Product Substitutions." The Contractor is directed to Part IV, construction materials, methods, specifications, and payment requirements-Landscape Architectural, Section 01631 Product Substitutions, for process, time limits, and prescribed forms for requesting product substitutions.

SPECIAL PROVISIONS

Part I – Standard Conditions

SP-1-1.00 GENERAL — It is the intent of these General Provisions, Special Provisions, the plans referred to herein and other documents comprising the contract for the Contractor to provide for and include all labor, materials, equipment, plant, tools, transportation, insurance, bonds, sales taxes, permits, temporary protection, traffic control, watchmen, superintendence and other work necessary to construct and complete all work specified herein, including all addenda and change orders.

The contract documents are complementary, and a requirement in one is as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work.

Full compensation for all work involved in providing for General Standard Conditions and Special Provisions as set forth this section shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefore.

SP-1-1.01 STANDARD SPECIFICATIONS — The specifications entitled, "Standard Specifications for Public Works Construction (Greenbook)," as amended, in the General Provisions of these Specifications, shall hereinafter be referred to as the Standard Specifications. These shall be the most recent version published.

All work shall meet all requirements applicable of Federal, State, County and City regulations and codes governing safety, health, welfare, dust and sound control.

SP-1-1.02 DEFINITIONS — Attention is invited to the provisions of Section 1 — "Terms, Definitions, Abbreviations and Symbols", of the Standard Specifications and these Special Provisions. Whenever in the contract documents, the following terms are used, the intent and meaning shall be interpreted as follows:

AGENCY	City of Perris
BOARD	City Council of the City of Perris
DEPARTMENT	California State Department of Transportation (Caltrans)
ENGINEER	The City Engineer of City of Perris his properly authorized agents, such agent acting within the scope of the particular duties entrusted to them.
STATE	State Of California

DIRECTOR	Capital Improvements Project Manager of the City of Perris
LABORATORY	The laboratory to be designated by the Engineer to test materials and work involved in the contract
NOTICE TO CONTRACTORS	Notice Inviting Bids
RAIN DAY	Precipitation measured to be not less than 0.2" at the nearest official rain gauge
CALENDAR DAY	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

Other terms appearing in the plans, Standard Specifications and in these Special Provisions shall have the same intent and meaning specified in Section 1-2, "Definitions", of the Standard Specifications.

SP-1-1.03 EXAMINATION OF PREMISES — Before bidding on this work, all prospective bidders shall make a careful examination of the jobsite and shall thoroughly familiarize themselves with the requirements of the Contract. By the act of submitting a proposal for the work, the contractor shall be deemed to have made such study and examination and that he is familiar with and accepts all conditions of the site.

SP-1-2.00 SCOPE AND CONTROL OF THE WORK — Attention is invited to the provisions of Section 2 of the Standard Specifications, the amendments in the General Provisions herein and these Special Provisions.

SP-1-2.01 PLANS AND SPECIFICATIONS — Attention is invited to the provisions of Section 2-5, "Plans and Specifications", of the Standard Specifications and these Special Provisions.

The Specifications, Drawings, Special Provisions, Standard Specifications, Riverside County Standards, EMWD Standards, Cal Trans Standards and all supplementary documents are essential parts of the contract, and a requirement in one is as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work.

If, however, the provisions within the documents comprising the contract are in conflict, the most stringent in the opinion of the Director/ Engineer shall apply. Provide and maintain in good order at one's work site, a complete set of contract prints. All changes to the contract shall be clearly recorded on this set of prints. At the end of the project, the contractor shall transfer all changes to one (1) set of prints for submission to the Engineer.

SP-1-2.02 SCHEME OF WORK — The work contemplated in the project consists of furnishing labor, materials, services, and equipment for the work described in these Special Provisions and shown on the plans and delineated in the specifications of this project.

SP-1-2.03 STANDARD PLANS — All work shall conform to the Caltrans Standards and shall be considered a part of these plans, and shall be on the jobsite during the entire duration of construction.

SP-1-2.04 TIME LIMIT — The work specified herein shall be completed within one hundred and sixty (160) calendar days after commencement date given in the Notice to Proceed. The contractor shall also complete construction according to the "Worksite Traffic Control Plan for "4th Street Public Area Enhancements Between "D" and "C" Street, prepared by the Contractor's registered traffic engineer, and roadway closures shall not exceed the total work duration specified for each phase of work.

SP-1-2.05 AWARD AND EXECUTION OF CONTRACT — The bidder's attention is directed to the provisions of the Information for Bidders and to these Special Provisions for the requirements and conditions concerning award and execution of the Contract. A guaranty form to be signed and delivered to the Agency before acceptance is included in the proposal.

The award of the Contract, if it be awarded, will be to the lowest responsible bidder or bidders whose proposal complies with all the requirements described. The award, if made, will be made within forty-five (45) days after the opening of the bids. All bids will be compared on the basis of the Engineer's estimate of quantities of work to be done.

THE CITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS.

If applicable, all bonds in the amounts stipulated in the Information for Bidders shall be furnished by the bidder to whom the contract has been awarded and at Bidders own cost and expense. Whenever the City of Perris has cause to believe that any such bond has become insufficient, a demand in writing may be made of the contractor for such further or additional bond as is considered necessary, considering the extend of the work remaining to be done. Thereafter, no payment shall be made upon such Contract to the contractor or any assignee of the contractor until such further or additional bond has been furnished.

Before commencing any work, the contractor shall obtain insurance required under the General Provisions of these Specifications and show proof of same. Contractor shall not allow any subcontractor to work until similar insurance required of the subcontractor has been obtained and approved by the General Contractor.

The contractor shall, in providing the insurance as provided in Sections 6 and 7 of the General Provisions, include as a provision of the insurance policy, a clause substantially in the following language:

It is hereby understood and agreed that this policy may not be canceled, nor the amount of the coverage thereof reduced except upon thirty (30) days prior to written notice to the City as evidenced by receipt of a registered letter. The insurance policy shall also specify that it is primary insurance and that any insurance held or owned by the designated additional insured shall be excess thereto and shall not be called upon to cover a loss under said policy.

SP-1-2.06 AUTHORITY OF THE PUBLIC WORKS DIRECTOR/CITY ENGINEER The Public Works Director/City Engineer shall decide all questions as to the quality or acceptability of the work performed and to the manner or performance and rate of progress of the work, all questions as to the acceptable fulfillment of the contract on the part of the contractor, and all questions as to compensation. His decision shall be final, and he shall have authority to enforce and make effective such decisions and orders which the contractor fails to carry out promptly. Attention is invited to the provisions of Section 2-10 of the Standard Specifications.

SP-1-2.07 SUBCONTRACT — Attention is directed to the provisions of Section 2-3, "Subcontracts", of the Standard Specifications as amended in the General Provisions herein and these Special Provisions.

A sheet for listing subcontractors, as required, is included in the proposal.

The Contract documents shall not create any contractual relation between any subcontractor and the City. Contractor agrees that he is fully responsible to the City for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

SP-1-3.00 CHANGES IN WORK — All changes in the work, whether requested by the contractor, initiated by the City and/or caused by changed conditions, shall be undertaken only after the issuance of a change order by the Engineer. Attention is invited to Section 3 of the Standard Specifications and the provisions of Paragraph 2 of the General Provisions.

SP-1-4.00 CONTROL OF MATERIALS AND WORKMANSHIP — All materials, parts and equipment furnished by the Contractor in the work shall be new, high grade and free from defects. Quality of work shall be in accordance with generally accepted standards. Attention is invited to Section 4 of the Standard Specifications and the provisions of Paragraph 3 of the General Provisions. No used or secondhand materials, parts and equipment shall be incorporated in the project unless specifically permitted in writing by the Engineer.

SP-1-4.01 TESTS OF MATERIALS AND WORKMANSHIP — All materials shall first be tested and satisfactorily passed in accordance with the requirements of the plans and these specifications, before incorporating said material in the work. Materials placed

otherwise shall be considered defective and will be subject to rejection. The cost of testing of materials and workmanship shall be paid by the City. The cost of re-testing of materials and workmanship shall be at the expense of the contractor. The contractor, at his expense, shall deliver materials for testing to the place and at the time designated by the Engineer. Attention is invited to Section 4-1.4, "Test of Materials", of the Standard Specifications.

SP-1-4.02 LABORATORY — The City shall make all arrangements and designate a laboratory to conduct the test requirements for the project. The contractor shall render all necessary assistance to the personnel of said laboratory to facilitate the inspection and testing of materials. Request for inspection and/or testing shall be made at least twenty-four (24) hours in advance.

SP-1-5.00 UTILITIES — The existence and location of utility structures and facilities are shown on the plans or in the Special Provisions according to records and information available to the City. Attention is called to the fact of the possible existence of other utility facilities or structures not known to the City or in a location different from that shown on the plans or in the Special Provisions. The contractor is required to ascertain the location of all underground utility structures and facilities prior to doing work that may damage such structures and facilities, including those not shown, or interfere with their service and to take such precautionary measures in the course of said work to prevent such damage or interference. Attention is invited to Section 5 of the Standard Specifications. If the contractor, while performing the work under the contract, discovers utility structures or facilities not identified in the plans or specifications or shown differently, he shall immediately notify the City in writing of such discovery and allow the City 48 hours to advise. Contractor shall continue with his work on other areas and provide utility purveyors adequate time to resolve the conflict or continue work if in the opinion of the City and utility purveyors, the construction will not impact these utilities.

SP-1-6.00 PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK — Attention is invited to Section 6 of the Standard Specifications and these Special Provisions.

SP-1-6.01 PROGRESS SCHEDULE — After notification of award and prior to starting any work, the contractor shall submit to the Engineer for approval his proposed construction schedule. Attention is invited to Section 6-1 of the Standard Specifications. The proposed construction schedule shall be submitted on or before the date set for the preconstruction meeting between City and contractor's staff and representatives of utility companies.

Section 6-1.1 of the Standard Specifications is hereby amended to include the following:

The Contractor shall also submit, upon request of the City, a "two-week-look-ahead" schedule detailing the activities, including start and stop dates anticipated to occur during the scheduled time frame.

SP-1-6.02 BEGINNING OF WORK — The contractor shall begin work on August 27, 2018. If for some reason the City does not authorize the work to begin on August 27, 2018 the work shall begin on the date specified by the City, after Contract Award and on date specified in the Notice To Proceed.

SP-1-6.03 TIME OF COMPLETION — The contract time shall commence upon the date of issuance of the Notice to Proceed and shall continue for a period of no more than one hundred sixty (160) calendar days total. The contractor shall also complete construction according to the "Worksite Traffic Control Plan for "4th Street Public Area Enhancements Between "D" and "C" Street, prepared by the Contractor's registered traffic engineer, and roadway closures shall not exceed the total work duration specified for each phase of work. The contractor shall diligently prosecute the project and complete all work within the contract time. Contractor agrees that failure to complete the project within the contract time shall subject him to the liquidated damages provided herein. Attention is invited to Section 6-7 of the Standard Specifications.

SP-1-6.04 EXECUTION OF WORK — The contractor shall give his personal attention to the fulfillment of the contract and shall keep the work under his control. All persons engaged in the project shall be considered by the City as employees of the contractor and he shall be held responsible for their work subject to the provisions of the contract and specifications. The contractor shall execute the work vigorously and diligently until completed with the minimum inconvenience and hazard to the public. Streets and other improvements in the work area shall be restored to their original condition and former state of usefulness as soon as practicable. Attention is invited to the provisions of Section 6-2 of the Standard Specifications.

SP-1-6.05 TEMPORARY SUSPENSION OF WORK — The Public Works Director/City Engineer shall have the authority to suspend the work wholly, or in part, for such period as he may deem necessary due to unsuitable weather or to such other conditions as are considered unfavorable for the suitable prosecution of the work, or for such time as he may deem necessary due to the failure on the part of the contractor to carry out orders given, or to perform the work in accordance with these Specifications. The contractor shall immediately comply with the written order of the Public Works Director/City Engineer to suspend the work wholly or in part. The work shall be resumed when conditions are favorable and methods are corrected, as ordered, or approved in writing by the Public Works Director/City Engineer.

In the event of a suspension of work under any of the conditions above set forth such suspension of work shall not relieve the contractor of his responsibilities as set forth under these Specifications.

SP-1-6.06 SUSPENSION OF CONTRACT — If at any time in the opinion of the Public Works Director/City Engineer, the contractor has failed to supply adequate working force or material of proper quality or has failed in any other respect to prosecute the work with the diligence and force specified and intended in and by the terms of the contract, notice thereof in writing will be served upon him; and should he neglect or refuse to provide

means for a satisfactory compliance with the contract, as directed by the Public works Director/City Engineer, within the time specified in such notice, the City in any such case shall have the power to suspend the operation of the contract.

Attention is invited to the provisions of Section 6-3 of the Standard Specifications. Upon receiving notice of such suspension, the contractor shall discontinue said work, or such parts of it as the City may designate. Upon such suspension the contractor's control shall terminate and thereupon the City or its duly authorized representative may take possession of all or any part of the contractor's materials, tools, equipment and appliances upon the premises, and use the same for the purpose of completing said contract, and hire such force and buy or rent such additional machinery, tools, equipment and appliances at the contractor's expense as may be necessary for the proper conduct of the work and for completion, employ other parties to carry the contract to completion, or may employ the necessary workman, substitute other machinery or materials, and purchase the materials contracted for, in such manner as the City may deem proper; or the City may annul and cancel the contract and relate the work or any part thereof. Any excess cost arising therefore over and above the contract price shall be charged against the contractor and his sureties, who shall be liable therefore. In the event of such suspensions, all monies due the contractor or retained under the terms of this contract shall be forfeited to the City; but such forfeiture shall not release the contractor or his sureties from liability for failure to fulfill the contract. The contractor and his sureties shall be credited with the amount of money so forfeited toward any excess of cost over the above contract price, arising from the suspension of the operation of the Contract and the completion of the work by the City as above provided, and the contractor shall be so credited with any surplus remaining after all just claims for such completion have been paid.

In the determination of the question whether there has been any such noncompliance with the contract as to warrant the suspension or annulment thereof, the decision of the City Council shall be binding on all parties to the contract.

SP-1-6.07 TERMINATION OF CONTRACT — Subject to all applicable provisions of these specifications and/or the contract, the Engineer is hereby empowered to direct the time and date of delivery of materials at the site of work and direct the time, rate, and sequence of work. If contractor fails to begin delivery of material and equipment or to commence work within the time specified herein, and/or in the contract, or to maintain the rates of delivery of material, or to execute the work in a manner and at such locations as directed by the Engineer, or fails to maintain the approved progress schedule in such manner as well, in the judgment of the Engineer, inure to the interests of the City, or, if in the judgment of the Engineer, the contractor is not carrying out the provisions of the contract in their true intent and meaning, written notice by the City Engineer may be served upon him and the Surety on his faithful performance bond demanding a satisfactory compliance with the contract, and with these specifications. If the contractor and/or his Surety refuses or neglects to comply with such notice within five (5) days after receiving same, or after commencing so to do, fails to continue so to do, or has assigned or sublet the contract without the consent of the Engineer, then the Engineer may exclude

him from the premises and take possession thereof, together with all material and equipment thereon, and may complete the work itself, either by force account, or by letting the unfinished portion of the work to another contractor or by a combination of such methods. In any event, the cost of the completion of said work shall be a charge against the contractor and his Surety and may be deducted from any money due or becoming due from the City, and if the sums due under the contract are insufficient, said contractor and/or his Surety shall pay to the City within five (5) days after the completion of the work all of such cost in excess of the contract price.

The Surety, in the event that it assumes part of the work, shall take the contractor's place in this contract in all respects for that part and shall be paid by the City for all work performed by it in accordance with the terms of this contract. If the Surety assumes the entire contract, all monies remaining due to the contractor at the time of his default shall be made payable to the Surety as the work progresses, subject to the terms of the contract.

SP-1-6.08 LIQUIDATED DAMAGES — It is hereby understood and mutually agreed by and between the contractor and the City, that the date of beginning and the time of completion as specified in the contract of the work to be done hereunder are essential conditions of this contract. Attention is invited to Section 6-9 of the Standard Specifications as amended in Paragraph 4 of the General Provisions.

The contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the contractor and the City, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality. If the said contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the City, then the contractor does hereby agree, as a part consideration for the awarding this contract, to pay to the City of Perris the amount of liquidated damages stipulated in Paragraph 4 of the General Provisions for each and every calendar day that the contractor shall be in default after the time stipulated in the contract for completing the work, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth.

The said amount is fixed and agreed upon by and between the contractor and the City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would in such event sustain, and said amount agreed to be the amount of damages which the City would sustain and said amount shall be retained from time to time by the City from current periodical estimates.

SP-1-7.00 RESPONSIBILITIES OF THE CONTRACTOR — Attention is invited to Section 7 of the Standard Specifications as amended in the General Provisions and the provisions of these Special Provisions. The contractor shall keep himself fully informed of all existing and future State and Federal laws and county and municipal ordinances

and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. He shall at all times observe and comply with, and shall cause all his agents and employees to observe comply with all such existing and future laws, ordinances, regulations, orders and decrees of bodies or tribunals having any jurisdiction or authority over the work; and shall protect and indemnify the City, and all officers, employees and consultants thereof connected with the work against any claim or liability arising from or based on the violation of any such law, ordinances, regulation, order, or decree, whether by himself or his employees. If any discrepancy or inconsistency is discovered in the plans, drawing, specifications, or contract for the work in relation to any such law, ordinance, regulation, order or decree, the contractor shall forthwith report the same to the Engineer in writing.

SP-1-7.01 ASSUMPTION OF RISK — During the progress of the work, the City of Perris will not be answerable or accountable in any manner for any loss or damage that may happen to the work or any part thereof; or for any of the materials or other things used or employed in performing the work; or for injury to any person or persons, either workmen or the public; for damage to adjoining property from any cause which might have been prevented by the contractor, or his workmen, or anyone employed by him; against all of which injuries or damages to persons and property the contractor having control over such work must properly guard. The contractor shall be responsible for any damage to any person or property resulting from defects or obstructions or from any causes whatsoever during the progress of the work or at any time before its completion and final acceptance, and shall indemnify and save harmless the City of Perris and/or its officers and/or its employees from all suits or actions of every name and description, brought for, or on account of any injuries or damages received or sustained by any person or persons, by or from the Contractor, his servants or agents, in the construction of the work or by or in consequence of any negligence in guarding the same, in improper materials used in its construction, or by or on account of any act or omission of the contractor or his agents.

SP-1-7.02 LABOR — Attention is invited to the provisions of Section 7-2 of the Standard Specifications as amended in Paragraph 5 of the General Provisions.

SP-1-7.03 LIABILITY INSURANCE — Attention is invited to the provisions of Section 7-3 of the Standard Specifications as amended in Paragraph 6 of the General Provisions.

SP-1-7.04 WORKER'S COMPENSATION INSURANCE — Attention is invited to the provisions of Section 7-4 of the Standard Specifications as amended in Paragraph 7 of the General Provisions.

SP-1-7.05 PERMITS AND INSPECTION — The contractor shall obtain a no-fee encroachment and excavation permit from the City of Perris before proceeding with any work on the project.

The contractor shall call for inspections at the different stages of the work as required by the City of Perris Public Works Inspector. Any portion of the project completed without these required inspections shall be considered as defective and the City reserves the right to reject the affected portion of the work. The contractor shall remove rejected portion of the work upon instruction by the City without additional compensation.

Public Works Inspectors work from 7:00 a.m. until 5:00 p.m., Monday through Friday. Inspections outside these hours and legal holidays may be available through appointments approved by Public Works Director/City Engineer only, and Inspector's time will be billed to the contractor at the rate of \$90.00 per hour. This does not apply for work at intersections where the traffic control plans call for work to take place outside of these hours.

SP-1-7.06 CONTRACTOR'S REPRESENTATIVE — On or before the preconstruction meeting, the contractor shall designate, in writing, a representative who shall have complete authority to act for him. An alternate representative may also be designated. The representative or alternate shall be present at all times at the worksite whenever work is in progress or whenever actions of the elements require his presence to take measures necessary to protect the work, persons, or property. Attention is invited to Section 7-6 of the Standard Specifications.

SP-1-7.07 COOPERATION AND COLLATERAL WORK — Attention is directed to Section 7-7 of the Standard Specifications and these Special Provisions.

Construction work by other contractors may be underway within or adjacent to the worksite specified herein. For this reason, the contractor shall cooperate with all such other contractors to the end that any delay or hindrance to their work shall be avoided, or conduct his operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to work to persons or property caused to the other by his operations, and for loss caused the other due to his unnecessary delays or failure to finish work within the time specified for completion. The Engineer reserves the right to direct the contractor to perform other or additional work at the worksite at any time in order to better coordinate the different activities on the entire project.

It is anticipated that existing utilities will not interfere with the contractor's operations. However, the contractor shall exercise due care to ensure that these utility facilities are not damaged during his operations. The contractor shall call Underground Service Alert (U.S.A.), 800-227-2600, twenty-four (24) hours prior to performing any excavation on this project.

The utility locations shown on the plans are correct to the best of our knowledge. When in doubt, the contractor shall contact utility concerned before proceeding further. The agencies below may be contacted at the following telephone numbers:

<u>AGENCY</u>	<u>TELEPHONE NUMBER</u>
Southern California Edison Company	(800) 655-4555
Southern California Gas Company	(800) 427-2000
City of Perris Public Works-Field Services (Water)	(951) 657-3280
Eastern Municipal Water District	(951) 928-3777
Frontier	(800) 483-5000
Charter (Spectrum)	(951) 830-8172

Full compensation for conforming to the requirements 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 therefore.

SP-1-7.08 **PROJECT APPEARANCE** — The contractor shall maintain a neat appearance to the work. Attention is invited to Section 7-8 of the Standard Specifications.

In any area visible to the public, the following shall apply:

Broken asphalt concrete, aggregate base and debris developed during removals, shall be disposed of concurrently with its removal.

Dust caused by the passage of public traffic through the work shall be considered as resulting from the contractor's performance of the work.

Whenever the contractor fails to control dust resulting from the performance of the work, the Engineer may cause such dust to be controlled and costs thereby incurred shall be deducted from monies due or to become due the contractor.

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SP-1-7.09 **PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS** -

The Contract shall take all necessary precautions to protect in place all existing landscaped parkways, curb, gutter, sidewalk, ADA ramps, guard rails, trees, plants, turf and irrigation lines, underground utilities, storm drain, irrigation controllers, pumps, signage, fencing, City water supply line, electric metered pedestal, traffic signal electrical equipment, loop detectors, handholes, roadway delineators, street striping, road signage, park and trail signage, decorative median rock cobble, etc., and other existing improvements whether called out on the Plans that are not scheduled for removal. The entire cost of replacing and/or repairing, relocating, adjusting said existing improvements shall be borne by the contractor. Attention is directed to the provisions of Section 7-0 of the Standard Specifications. Permit conditions, rules and regulations of agencies having jurisdiction over the contractor's operations shall be strictly complied with.

The contractor shall protect existing improvements in place wherever possible. All existing improvements which must be removed for construction shall be restored to an equal or better condition than that of the existing improvements removed or damaged. Restoration of existing improvements shall be in accordance with the Plans and Specifications and all provisions of the City of Perris Standard Plans.

The contractor shall preserve and protect from injury all buildings, pole lines and all direction, warning and mileage signs which have been placed within the right-of-way.

Full compensation for the work involved in the preservation of property as above specified shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

SP-1-7.10 PUBLIC CONVENIENCE — The contractor shall so conduct his operations to offer the least possible obstruction and inconvenience to the public or to the public traffic. Where existing streets are not available for use as detours, unless otherwise provided in these Special Provisions, all traffic shall be permitted to pass through the work.

Convenience of residents along the street or in the vicinity of the project site shall be provided for as far as practicable. Convenient access to driveways, houses, and buildings along the line of the work shall be maintained and temporary approaches to crossings or intersecting streets shall be provided and kept in good condition.

Full compensation for all work involved in providing for public convenience as set forth in this section shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefore.

SP-1-7.11 PUBLIC SAFETY — The contractor shall furnish, erect, and maintain such fences, barriers, lights and signs as are necessary to give adequate warning to the public at all times that the work is under construction and of any dangerous conditions to be encountered as a result thereof in strict compliance with the latest edition of the "Work Area Traffic Control Handbook"; W.A.T.C.H. Attention is directed to Section 7-10.4 of the Standard Specifications as amended in Paragraph 7 of the General Provisions. He shall also erect such warning and directional signs as shown on plans and as requested by the Engineer. This shall include installing and maintaining all items shown on the traffic control plans prepared by the Contractor's registered traffic engineer.

All barricades shall be of substantial construction and painted in a distinctive color or manner so as to be clearly visible to the approaching public.

Should the City place any warning lights or barricades to protect or warn the public of any dangerous condition connected with contractor's operations, contractor shall become liable to the City at the current rental rate per night for each lantern or warning light placed by the City, plus actual labor, equipment rental and overhead costs, with a minimum

charge of fifty dollars (\$50.00) per day for each obstruction or dangerous condition so barricaded or lighted.

Trench excavation across traveled way or driveway, not more than four feet (4') wide may be bridged across with steel plates of adequate thickness or with any other suitable means available to the contractor for the purpose of temporarily maintaining traffic flow. The contractor shall provide AC easements for both approaches of said temporary bridging to ensure a smooth ride across and such other safety measures as may be directed by the Engineer. Public Safety shall be of the primary concern and the contractor shall be responsible for eliminating all conceivable hazards in providing such temporary passage. Prior approval by the Engineer is required.

The contractor shall conduct his operations such that fire hydrants, meter vaults, water and gas shut-off valves, and similar facilities are not buried during the course of the work and so as to offer the least possible obstruction and inconvenience to public traffic and to properties along the construction areas.

The contractor shall have at the worksite applicable copies or extracts of Construction Safety Orders.

All trenches next to the traveled way shall be protected from traffic at all times or shall be sufficiently sloped per the inspector.

Full compensation for all work involved in providing for public safety as set forth in this section shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefore.

Should the City respond to any threats to public safety to protect or warn the public of any dangerous condition connected with contractor's operations, during standard or after work hours, contractor shall become liable to the City for actual costs incurred for materials, transportation, equipment overhead, and labor to protect the public at the current rate per night, with a minimum charge of fifty (\$90.00) dollars per hour for labor.

SP-1-7.12 PUBLIC NOTICE — The Contractor shall notify the residents/businesses, effected agencies (police, fire), RCTC, Metrolink, and schools affected by construction in writing not less than 7 days (or as required by RCTC or Metrolink) in advance of commencement of construction or storage of material upon the streets. The notice shall include but not be limited to:

1. The time and date of commencement.
2. A copy of the proposed construction schedule.
3. Date of completion.
4. Other requirements by Police, Fire, Metrolink, RCTC, affected agencies, etc.

In addition to the above, the Contractor shall notify all affected parties if work is to begin on new portions of the project as work proceeds, especially if the work involves changes to the traffic control system.

A copy of this notification shall be approved by the Public Works Director/City Engineer prior to its distribution.

Personal vehicles of the contractor's employees shall not be parked on the traveled way at any time, including any section closed to public traffic. When entering or leaving roadways carrying public traffic, the contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

SP1-7.13 SOUND CONTROL REQUIREMENTS — If work is permitted for evening and weekends and holidays, the noise level from the contractor's operations, between the hours of 8:00 p.m. and 6:00 a.m., shall not exceed 86 db at a distance of fifty (50') feet. This requirement in no way relieves the contractor from the responsibility for complying with local ordinances regulating noise level. At all other times, noise level shall be in compliance with standards.

Said noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

The contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the contract. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler.

Full compensation for conforming to the requirements 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 therefore.

SP-1-7.14 LAWS TO BE OBSERVED — The contractor shall keep himself fully informed of Stated and National laws and County and City ordinances and regulations which in any manner affect those employed in the work or the materials used for the work or in any way affect the conduct of work. Attention is directed to Section 7.13 of the Standard Specifications as amended in Section 9 of the General Provisions.

SP-1-7.15 ADVANCE NOTIFICATION — It shall be the contractor's responsibility to determine and notify those agencies requiring advance notification for inspection or other purposes before beginning construction in any area of concern to said agency. A minimum of forth-eight (48) hours advance notice shall be given to the various agencies

before beginning construction in the area, unless specific advance times and requirements are stated in these specifications or required by the agency.

The following entities shall be notified at least seventy-two (72) hours in advance of any street closure or restriction to access by the contractor. Coordination of established service schedules will be available to the contractor at the preconstruction meeting.

<u>AGENCY</u>	<u>TELEPHONE NUMBER</u>
Southern California Edison Company	(800) 655-4555
Southern California Gas Company	(800) 427-2000
City of Perris Public Works-Field Services (Water)	(951) 657-3280
Eastern Municipal Water District	(951) 928-3777
Verizon	(800) 483-5000
Adelphia Cable	(800) 796-3315

Any others that are determined by the Public Works Director/City Engineer, as necessary to be notified.

SP-1-7.16 EXPOSURE OF UTILITIES IN ADVANCE OF WORK — It shall be the contractor's responsibility to determine the true location and depth of all utilities and service connections which may be affected by or affect the work. He shall also determine what type, material, and condition of these utilities.

SP-1-7.17 INTERPRETATION OF DRAWINGS AND CONTRACT DOCUMENTS — If any person contemplating to submit a bid for the proposed work is in doubt as to the correct and true meaning of any part of the drawings, specifications, or other contract documents, or finds discrepancies in, or omissions from the drawings or specifications, he may submit to the Engineer in accordance with Section 01370 of these Specifications, a written request for an interpretation or correction thereof. The person submitting the request shall be responsible for its prompt delivery. Any interpretation or correction of the document in question will be made by Addendum duly issued and a copy of such Addendum will be mailed or delivered to the afore-cited person as well as the other prospective bidders. **THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY OTHER EXPLANATION OR INTERPRETATION OF THE PLANS, SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.**

Part II — Standard Construction Details

SP-2-1.00 SCOPE OF WORK — Contractor shall furnish all tools, equipment, services, apparatus, facilities, transportation, labor, building/encroachment permits, disposal, agency right-of-entry agreements, and materials necessary and reasonably incidental to: construction of new planting, irrigation, landscaping, monument signs, thematic lighting, street furnishings and other associated public improvements within the City of Perris and RCTC/Metrolink rights-of-way along 4th Street within Historic Downtown Perris, CA 92570 in strict accordance with the Specifications and Information for Bidders, Specification No. #CIP S-007-2023-24.

Full compensation for all work involved in providing for all Standard Construction Details as set forth this section shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefore.

SP-2-2.00 DRAWINGS — Contract drawings applicable to the work to be performed under the contract are the drawings entitled "**4th Street Between C and D Downtown Enhancement Project (CIP S-007)**" prepared by Interwest Consulting Group; "**Worksite Traffic Control Plan**" for **4th Street Public Area Enhancement Project**" prepared Contractor's Registered Civil Engineer; and the drawings entitled "**Landscape Construction Documents for: 4th Street Public Area Enhancement Project Between "D" and "C" Street**" prepared by Ima+Design and TK1SC.

SP-2-3.00 SITE OF THE WORK — Site of the work is in the City of Perris, and County of Riverside, California.

SP-2-4.00 PRE-CONSTRUCTION CONFERENCE — The Contractor to whom the contract is awarded shall attend a pre-construction conference at a location and time set by the Public Works Director/City Engineer.

SP-2-5.00 CONSTRUCTION MEETINGS — Construction meetings will be held at the jobsite as required and as requested by the Contractor or the Public Works Director/City Engineer to coordinate and discuss construction activities. Details regarding jobsite meetings will be arranged at the pre-construction conference.

SP-2-6.00 DAILY RECORDS AND REPORTS — Contractor shall fully document on forms/matrix prescribed by the City, the labor force employed on the project and the conditions present at the site, on a daily basis. Contractor shall specifically identify: 1) the effective day and date of the report, 2) briefly describe the weather conditions present at the job site, 3) provide the first and last name of employees, labor classifications and company to whom each employee is assigned (prime contractor and sub-contractor), 4) the time of arrival and departure of each employee, and 5) initials of the employee, and 6) Contractor's representative shall affix his/her signature to the prescribed form certifying the accuracy as to the information provided therein. Said payroll records shall be delivered to the City upon request, and to the State Division of Labor Standards Enforcement, and the State Division of Apprenticeship Standards upon request.

SP-2-7.00 SPECIFICATIONS AND DRAWINGS FURNISHED TO CONTRACTOR — The Owner will furnish to the successful Contractor, five (5) sets of specifications and drawings. Additional quantities of specifications and drawings will be furnished at reproduction cost.

SP-2-8.00 SITE INSPECTION AND VERIFICATION OF EXISTING CONDITIONS — It shall be the Contractor's responsibility to make all examinations, and field studies necessary, both surface and sub-surface, to determine the character of materials and geologic and soils conditions that will be encountered in the work and to fully determine

all existing conditions affecting the project and all related cost factors.

SP-2-9.00 SAFETY — In compliance with generally accepted construction practices, the Contractor will be solely and completely responsible for conditions of the jobsite, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

When performing underground work, Contractor shall call **Underground Service Alert, (800) 227-2600**, the one-call underground facility locating service, two working days prior to beginning work on the project. All underground facilities marked in response to the locating phone call shall be hand-dug and exposed prior to any use of power equipment for excavation. If there is any substantial discrepancy between the field locations of underground facilities and those locations shown on the plans, the Contractor shall notify the Engineer prior to making an excavation.

SP-2-10.00 PROTECTION OF EXISTING FACILITIES — During the installation of work, Contractor shall insure that existing facilities, fences, building facades, and other structures are all adequately protected, unless otherwise stated in the plans or specifications, and that, upon completion of all work, all facilities that may have been damaged are restored to a condition acceptable to the Owner, and no error or omission on said plans shall be construed to relieve the Contractor from the responsibility of protecting any such pipe, conduit or other existing utility structure, fence or structure.

SP-2-11.00 EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF WORK — The bidder shall carefully examine the site of the work contemplated. The submission of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered as to character, quality, and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the bid proposal, plans and specifications.

When deemed necessary by the Engineer, revisions of the contract drawings and additional detailed drawings will be issued to the Contractor during the progress of the work.

The Contractor shall inform the Engineer a reasonable length of time in advance of the times and places at which he intends to work in order that inspection may be provided, and then the necessary measurements for records and payments may be made with minimum inconvenience.

SP-2-12.00 COMPLIANCE WITH REGULATIONS — The Contractor shall familiarize himself and comply with all applicable Federal, State, County and City and Special District rules and regulations pertaining to the job and jobsite safety.

SP-2-13.00 POWER AND WATER SUPPLY — The Contractor shall provide, at his own expense, all necessary power and water required for his operations under the contract. The Contractor shall provide and maintain in good order such modern power equipment

as shall be adequate in the opinion of the Engineer to perform in a safe and satisfactory manner the work required by the contract. Contractor shall be responsible for furnishing and applying water and power, which shall be considered as included in the bid price paid for the various contract items of work requiring such water and no additional compensation will be made therefore.

It is a misdemeanor to use water from any Public Fire Hydrant without authorization.

SP-2-14.00 DUST ABATEMENT — The Contractor shall furnish all labor, equipment and means required and shall carry out protective measures wherever and as often as necessary in the opinion of the Engineer to prevent his operations from producing dust in amounts damaging to property or causing nuisance. The Contractor shall be responsible for any damage resulting from dust originating from his operations. The dust abatement measures shall be continued until all required resurfacing is completed or until the Contractor has completed arrangements with the proper authorities whereby, he is relieved of further responsibility. Such arrangements shall be approved by the Engineer prior to their completion. All compensation to be received for dust abatement shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

SP-2-15.00 COOPERATION BETWEEN CONTRACTORS — The Contractor shall be required to cooperate fully with all utility and public agency representatives engaged in construction, relocation, altering or otherwise re-arranging any facilities interfering with the progress of the work. Full compensation for any delay or inconvenience to the Contractor's operation due to such operations as described above shall be considered included in the unit price paid for other items of work and no additional allowance will be made therefore.

SP-2-16.00 DAILY CLEANUP AND ACCESS — At the completion of work each day, the Contractor shall leave the work area in a clean, safe condition. Access to all adjacent properties and driveways and intersections shall be maintained at all times.

SP-2-17.00 FINAL CLEANUP — After completion of all other work on the project, and before making application for acceptance of the work, the Contractor shall clean the site of his operations, including any areas under the control of the City that have been used by the Contractor in connection with the work.

SP-2-18.00 PROTECTION OF THE PUBLIC — The following minimum restrictions shall be maintained by the Contractor in the conduct of his work:

It is part of the service required of the Contractor to make whatever provisions are necessary to protect the public. The Contractor shall use foresight and shall take such steps and precautions as his operations warrant to protect the public from danger, loss of life or loss of property, or from the failure of partially completed work or partially removed facilities. Conditions may arise on the work which will require that immediate and unusual provisions be made to protect the public from

danger or loss, or damage to life and property, due directly or indirectly to prosecution of work under this Contract.

Whenever, in the opinion of the Public works Director/City Engineer, an emergency exists against which the Contractor has not taken sufficient precaution for the public safety, protection of utilities and protection of adjacent structures or property, which may be damaged by the Contractor's operations and when, in the opinion of the Public Works Director/City Engineer, immediate action shall be considered necessary in order to protect the public or property due to the Contractor's operations under this Contract, the Public Works Director/City Engineer will order the Contractor to provide a remedy for the unsafe conditions.

If the Contractor fails to act on the situation within a reasonable time period, the Public Works Director/City Engineer may provide suitable protection to said interest by causing such work to be done and material to be furnished as, in the opinion of the Public Works Director/City Engineer, may seem reasonable and necessary.

The cost and expense of said labor and material together with the cost and expense of such repairs as are deemed necessary shall be borne by the Contractor. All expenses incurred by the City for emergency repairs will be deducted from the progress payments and the final payment due to the Contractor. However, if the City does take such remedial measures, the Contractor is not relieved of the full responsibility for public safety.

SP-2-19.00 TRAFFIC CONTROL (PUBLIC CONVENIENCE AND SAFETY) STREET CLOSURES, DETOURS, BARRICADES — The Contractor shall comply with all applicable State, County and City requirements for work in the public right-of-way, Riverside County Transportation Commission and Southern California Regional Rail Authority (Metrolink) traffic control/safety guidelines and requirements. The Contractor shall provide and maintain barriers, guards, lights, signs, temporary bridges, pilot cars, arrow boards, message boards, flag persons and watch persons, advising the public of detours and construction hazards. The Contractor shall also be responsible for compliance with additional public safety requirements, which may arise during construction. The Contractor shall furnish and install, and upon completion of the work, promptly remove all signs and warning devices. All work shall be accomplished in accordance with the requirements specified in Subsection 7-10 of the Standard Specifications for "Public Works Construction" latest edition. In addition, traffic control shall be provided in accordance with the State of California's "Traffic Manual", latest edition and plans.

Should the Contractor appear to be neglectful or negligent in furnishing warning and protective measures, the Public Works Director/City Engineer or his representative may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed immediately by the Contractor at his expense. Should the Public Works Director/City Engineer or his representative point out the

inadequacy of warning and protective measures, such action on the part of the City Engineer shall not relieve the Contractor from responsibility for public safety or abrogate his obligation to furnish any pay for these devices. Through traffic may be detoured and adequate signs posted. Local traffic (2-ways) and access to existing driveways shall be maintained at all times.

Contractor shall obtain an encroach permit and submit a traffic control and phasing plan that permits the maximum feasible utilization of the roadway and ingress/egress points. Contractor shall provide a traffic control and phasing plan prepared wet signed and stamped by a registered traffic engineer. The Contractor shall place "No Parking Anytime" signs 48 hours prior to construction at locations approved by the Public Works Director/City Engineer, said signs shall be of the size and type specified in the MUTCD. The Contractor is also responsible for notifying all affected businesses and residents of his scheduled work.

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 allowance will be made therefore.

SP-2-20.00 HOURS OF WORK — Except where otherwise noted, all work shall normally be performed between the hours of 7:00 a.m. and 5:00 p.m. on Monday through Friday except holidays. The Contractor shall obtain the approval of the Public Works Director/City Engineer if he desires to work outside of the hours stated herein. The Contractor shall reimburse the City for any inspection and material testing outside of the City's normal working hours at the rate of \$85.00 per hour.

SP-2-21.00 CONTRACTOR'S RESPONSIBILITY — The Contractor shall be responsible to adhere to these specifications as closely as possible. It is the Contractor's responsibility to confer with the Public Works Director/City Engineer and to get a written agreement as to the necessary changes prior to performing any work that is not in conformance with these specifications or the contract drawings.

SP-2-22.00 CONSTRUCTION PERMITS AND BUSINESS LICENSE — The Contractor and his subs shall procure all permits and business licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work. Any costs for these fees and/or permits shall be included in the prices of other listed in the Bid Form, and no additional compensation shall be allowed therefore.

It is the responsibility of the Contractor to contact the applicable agencies and make himself knowledgeable and responsible to all of their requirements. The Contractor shall, at no additional cost to the City, construct the work in strict accordance with all agencies.

SP-2-23.00 DIRT/GRINDING EXPORT — The Contractor shall be responsible for the removal of all excess dirt, grinding or unsuitable materials, if any, created by the construction of the landscaping and street improvements within this project. The cost for this shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

SP-2-24.00 DIRT IMPORT — The Contractor shall be responsible for the import of any dirt, if required, for the construction of the proposed landscaping and street improvements within this project. The cost for obtaining, hauling and placement of any material shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

SP-2-25.00 COMPACTION — All fill, sub-base, base, under pavement, curb, gutter, and sidewalks to be compacted in place to 95% relative compaction; and all fill, sub-base, base, sidewalks, crosswalks within decorative paver area to be compacted in place to 98% relative compaction except where specified otherwise. The earthwork will be tested for compliance by a Registered Soils Engineer. The City at its expense will provide the required soil testing with a minimum of 24 hours of advance notice of need by the Contractor. Any retesting by the Soils Engineer due to failure to achieve minimum compaction will be paid for by the Contractor at a rate of \$115.00 per hour, and any additional expenses incurred by the City for said retesting.

SP-2-26.00 CONSTRUCTION DETOUR AND TRAFFIC CONTROL— Two-way access to residents and business shall be maintained at all times during construction. The Contractor shall provide all signage, barricades, flaggers, and warning devices necessary to adequately protect the public, through traffic and the Contractor's workers and equipment. A traffic control plan prepared, stamped, and signed by a registered traffic engineer shall be provided to the Engineer from the Contractor. The cost of this work shall be included in the lump sum bid price of traffic control, at no additional cost to the City.

SP-2-27.00 MOBILIZATION — Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site. The cost of mobilization shall be included in the lump sum bid price of mobilization and shall include re-mobilization for different phases of work necessary to complete the project.

SP-2-28.00 CONSTRUCTION SURVEY STAKING — The Contractor will be responsible for supplying construction staking and re-staking.

SP-2-29.00 FEDERAL LOBBYING RESTRICTIONS – Section 1352, Title 31, United States Code prohibits Federal funds from being expended by the recipient or any lower tier sub recipient of a Federal-aid contract to pay for any person for influencing or attempting to influence a Federal agency or Congress in connection with the awarding of any Federal-aid contract, the making of any Federal grant or loan, or the entering into of any cooperative agreement.

If any funds other than Federal funds have been paid for the same purposes in connection

with this Federal-aid contract, the recipient shall submit an executed certification and, if required, submit a completion disclosure form as part of the bid documents.

A certificate for Federal-aid contracts regarding payment of funds to lobby Congress or a Federal agency is included in the Proposal. Standard Form – LLL, “Disclosure of Lobbying Activities”, with instructions for completion of the Standard Form is also included in the Proposal. Signing the proposal shall constitute signature of the Certification.

The above-reference certification and disclosure of lobbying activities shall be included in each sub-contract and any lower-tier contracts exceeding \$100,000. All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the Engineer.

The Contractor, subcontractors and any lower-tier contractors shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by the Contractor, subcontractors, and any lower-tier contractors. An event that materially affects the accuracy of the information reported includes:

- (1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
- (2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
- (3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

PART IV: CONSTRUCTION – MATERIALS, METHODS, SPECIFICATIONS AND PAYMENT REQUIREMENTS

SP-4-1.00 - DESCRIPTION

Furnish all tools, equipment, services, apparatus, facilities, transportation, labor, building/encroachment permits, disposal, agency right-of-entry agreements, and materials necessary and reasonably incidental to: construction of new planting, irrigation, landscaping, monument signs, thematic lighting, street furnishings and other associated public improvements within the City of Perris and RCTC/Metrolink rights-of-way along 4th Street within Historic Downtown Perris, CA 92570 in strict accordance with the Specifications and Information for Bidders, Specification No. #CIP S-007-2023-24.

SP-4-2.00 – MOBILIZATION

Mobilization shall conform to the provisions in Section 11, “Mobilization”, of the Standard Specifications and these Special Specifications.

As part of mobilization, the Contractor shall also provide a single place (job board, etc.) to place all required federal forms, Cal/OSHA and EEO labor compliance posters, all permits, all safety items, and any and all paperwork that must be posted in public view.

The Contract price for mobilization will be paid per lump sum bid item, paid in progress payments, which coincide with the number of calendar days worked; and shall include full compensation for furnishing all labor, materials, tools, equipment, project schedules, two week-look ahead schedules, Daily Contractor’s Reports and incidentals for mobilization for the entire project, and no additional allowance will be made therefore. This includes any remobilization due to phasing of work.

SP-4-3.00 – STORM WATER POLLUTION PREVENTION PLAN

The project area is less than one (1) acre and therefore the project will not be issued a project-specific Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall comply with all, and every water pollution requirement as set by the regulatory agencies, at the Contractors own expense.

The Contractor shall know and fully comply with the applicable provisions of the Manuals, Permits, and Federal, State, and local regulations that govern the Contractor’s operations and storm water discharges from both the project site and areas of disturbance outside the project limits during construction. This includes all requirements to prevent tracking, sediment, debris contaminated water run-off from entering the City’s catch basins and storm water drainage system.

Unless arrangements for disturbance or use of areas outside the project limits are made by the City and made part of the contract, it is expressly agreed that the City assumes no responsibility for the Contractor or property owner with respect to any arrangements made

between the Contractor and property owner. The Contractor shall implement, inspect, and maintain all necessary water pollution control practices to satisfy all applicable Federal, State, and Local laws and regulations that govern water quality for areas used outside of the highway right-of-way or areas arranged for the specific use of the Contractor for this project. Installing, inspecting, and maintaining water pollution control practices on areas outside the road right-of-way not specifically arranged for and provided for by the City for the execution of this contract will not be paid for. Additionally, should any pollutant spills occur or any other event requiring non-visible pollutant testing, the City shall hire a property certified ELAP testing firm to provide all required testing and all associated costs shall be borne by the Contractor. This shall include or be in addition to sweeping at the end of every working day, during activities that cause trenching, and at the discretion of the City Engineer or his representative. Water truck(s) shall be in operation to control dust at the discretion of the City Engineer or his representative.

The Contractor shall be responsible for the costs and for liabilities imposed by law as a result of the Contractor's failure to comply with the provisions set forth in this section "Water Pollution Control (Storm Water Pollution Prevention Plan)", including but not limited to, compliance with the applicable provisions of the Manuals, Permits and Federal, State and local regulations. Costs and liabilities include, but are not limited to, fines, penalties, and damages whether assessed against the State or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act.

In addition to the remedies authorized by law, money due to Contractor under the contract, in an amount determined by the City, may be retained by the City until disposition has been made of the costs and liabilities.

When a regulatory agency or other third party identifies a failure to comply with the permit or any other local, State, or Federal requirement, the Engineer may retain money due to Contractor, subject to the following:

- A. The City will give the Contractor 30 days notice of the City's intention to retain funds from partial payments which may become due to the Contractor prior to acceptance of the contract. Retention of funds from payments made after acceptance of the contract may be made without prior notice to the Contractor.
- B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 9-1.06, "Partial Payments" of the Standard Specifications.
- C. If the City has retained funds and it is subsequently determined that the City is not subject to the costs and liabilities in connection with the matter for which the retention was made, the City shall pay for interest on the amount retained for the period of the retention, and the rate of interest payable shall be 6 percent per annum.

Conformance with the provisions of this section "Water Pollution Control (Storm Water Pollution Prevention Plan)" shall not relieve the Contractor from the Contractor's responsibilities, as provided in Section 7, "Legal Relations and Responsibility", of the Caltrans Specifications.

The Contractor shall notify the Engineer immediately upon request from the regulatory agencies to enter, inspect, sample, monitor or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The cost for water pollution control for the entire project will shall be included within the other bid items for the project, and the Contractor shall not be allowed any additional compensation therefor. The Contractor will be responsible for the payment of any fines without reimbursement from the City.

SP-4-4.00 – ORDERING OF MATERIALS

The Contractor is required to provide product submittals to the City for review and approval prior to ordering all materials including concrete furnishings, lighted bollards, decorative sign poles, clock tower, structural footings, concrete pavers, water meter etc. Contractor shall provide such submittals for review on or before **October 27, 2023 (or within 30 calendar days of bid award)**. Contractor shall allow ten days for review.

The contractor shall provide written notification to the City that all material and equipment has been ordered. This written notification shall include a statement from the contractor including, but not limited to:

1. A signed statement testifying that he has ordered furnishings, concrete pavers, etc.
2. A list of all suppliers, their contact information, costs and expected arrival dates.
3. Copies of all purchase orders, and related paperwork, from the vendors showing that the orders have been executed.

The above notifications and attachments are due to the City **by November 13, 2023 (or 47 calendar days after bid award)**. Note that the time frames included herein do not relieve the Contractor of the maximum time limit (160 calendar days) to complete the project. It is the Contractor's responsibility to ensure that timely submittal of products submittals are made to the City to for review and approval, and to provide for lead times by vendors/suppliers of lighting equipment, decorative furnishings, and sign poles. No extension of time shall be provided by the City to the Contractor for unforeseen delays caused by product ordering and delivery. The contractor is required to store all materials and related equipment at his expense and have it delivered to the site as needed. The contractor may receive partial payment as determined by City once materials are delivered to the job site.

Payment for ordering materials shall be included in costs of other bid items to purchase, store, and install equipment as shown on the plans and stated herein, and no additional compensation shall be allowed therefore.

SP-4-5.00 – TRAFFIC CONTROL SYSTEM

Temporary Traffic Control shall conform to Cal-Trans Standard Specifications, Section 12, and the Manual of Uniform Traffic Control Devices, 2009 Edition with 2015 Revisions.

All work on the 4th Street Public Area Enhancement Project Between “D” and “C” Street shall be accomplished with one lane in each direction open at all times. It is the Contractor’s responsibility to provide adequate direction and safe passage to all public and private facilities within the project limits.

Contractor is responsible to prepare a set of traffic control plans and have signed by a Registered Traffic Engineer. The plans shall be submitted to the City Engineer for review and approval no later than **30 calendar days** after bid award, or **October 27, 2023**.

Dust control shall be considered as part of the traffic control system and shall be in compliance with Section 10, “Dust Control” of the Caltrans Specifications except that no extra work will be paid when the engineer orders the application of water for the purpose of controlling dust caused by public traffic or the contractors operation. Dust control is the contractor’s responsibility throughout construction even when no work is taking place.

All existing traffic control signs, signals, and street name signs shall be maintained in visible locations except as directed by the Engineer and where they conflict with the project.

All warning lights, signs, flares, barricades (including concrete barriers), trench plates, and other facilities for the sole convenience and direction of public traffic or any other reason shall be furnished and maintained by the Contractor. All signs shall conform to the traffic control plans and be placed accordingly and in accordance with the current “Manual of Traffic Controls”, issued by the California Department of Transportation for construction and maintenance of work zones. Any flares, flagman, pilot cars, and any and all other traffic related items, shall be furnished by the Contractor at his expense.

Sufficient lighting will be required for all work performed when sufficient sunlight is not present.

No payment for extra work will be allowed for work performed as specified in Section 12-2.02 (flagging costs) of the Caltrans Specifications. Flagging costs will be borne entirely by the Contractor.

It is the Contractor’s responsibility to provide for the safe passage for vehicles traveling to residences and businesses within the limits of the project.

The contractor shall be responsible to coordinate and assist with trash pick-up and mail delivery for residents and businesses if construction interferes with these activities. CR&R shall be notified of the project schedule before construction begins to coordinate regular trash pick-up. The contractor shall also coordinate with RTA to allow bus traffic through the project as necessary and RTA shall be notified prior to construction to allow time for any bus route modifications necessary.

Public notification shall be considered part of the traffic control system. The contractor shall provide written notices to all affected residents and businesses at least seven days prior to when the traffic control will change. The Contractor shall be responsible for writing, copying, and distributing these notices. The notice shall be reviewed and approved by the Engineer.

All traffic control signs shall be either covered or removed when not required by the nature of work or if no present hazard to the motorist exists.

There shall be no asphalt grinding or excavation creating a "Lip" greater than 1.0 inch left open to traffic. When lips greater than 1.0 inch exist, the lip shall be ramped with cold patch or other approved materials. This applies to all locations, including along gutter lips, manholes, etc.

Traffic control signs and materials shall be maintained at all times including after hours, weekends and holidays.

Contractor shall supply two (2) changeable message signs for the duration of the project and shall display any and all messages as requested by the City Engineer or his representatives. Cost for the changeable message signs and notification signs shall be included in this item and shall include all labor, tools, materials, transportation of the signs to applicable areas of construction, power and fuel for the signs operation throughout the project and no additional compensation shall be allowed therefore.

The lump sum bid for traffic control shall include mobilization and remobilization for different phases, and move-ins to complete the project as designed.

Full compensation, except as otherwise provided herein, for conforming to the requirements of this section shall be paid for on a lump sum basis for traffic control system for the entire project and no additional compensation will be allowed therefore.

SP-4-6.00 – UTILITY VERIFICATIONS AND POTHOLING

Attention is directed to Section 8-1.10, "Utility and Non-Highway Facilities", and Section 15, "Existing Highway Facilities", of the Standard Specifications and these Special Provisions.

Attention is directed to the existence of certain underground facilities that may require special precautions to be taken by the Contractor to protect the health, safety, and welfare

of workers and of the public. Facilities requiring special precautions include, but are not limited to existing utilities.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire, or other structure. Regional notification centers include, but are not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert-Southern California (USA)	1-800-227-2600

The Contractor is responsible to physically locate and identify all facilities (including utilities) within project limits. These shall include potholing. All underground facilities within 4.0' (vertical) of the existing finished surface shall be potholed by the Contractor. These utilities may be shown on plans or are marked in the field. Contractor is hereby notified and shall use all appropriate cautions when working near utilities.

Some of the existing utilities may be in conflict with the project. If this is the case, the contractor shall coordinate his work with that of the utility. No additional compensation will be paid to the Contractor for any delay or loss of efficiency due to having to coordinate his work with that of the utilities. The lump sum price paid shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals (including coordination) for "Utility Verifications and Potholing" and no additional compensation will be allowed thereof.

SP-4-7.00 – AREAS FOR CONTRACTOR'S USE

Attention is directed to the provisions in Section 7-1.19, "Rights in Land and Improvements", of the Standard Specifications and these Special Provisions.

The road right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work unless approved otherwise by the City Engineer.

No City-owned parcels adjacent to the right of way are available for the exclusive use of the Contractor within the contract limits. The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials, or for other purposes, which cannot be safely placed within the area approved by the Engineer.

The Contractor shall remove equipment, materials, and rubbish from the work areas and other City owned property which the Contractor occupies. The Contractor shall leave the areas in a presentable condition in conformance with the provisions in Section 4-1.02, "Final Cleaning Up", of the Standard Specifications.

The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials or for other purposes, if sufficient area is not available to the Contractor within the limits available for use by the City.

Full compensation, except as otherwise provided herein, for conforming to the requirements of this section, shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore

SP-4-8.00 – EARTHWORK, ROADWAY EXCAVATION, DEMOLITION, AND CLEAR AND GRUB

Earthwork shall conform to the provisions in Section 16, "Clearing and Grubbing", Section 17, "Watering", Section 18, "Dust Palliative", Section 19, "Earthwork", Section 20, "Erosion Control and Highway Planting", and Section 22, "Finishing Roadway", of the Caltrans Specifications and these special provisions.

This item shall include all earthwork in the project including, but not limited to, all clearing and grubbing, all import, export, grading, compaction, grading, and structure backfill, backfill and grading of existing areas, all saw cutting of AC and concrete and all earthwork not specifically noted elsewhere in the specifications. This item shall also include all clearing and grubbing and all removals and disposal of bollards, concrete wheel stops, trees, footings/foundations mortared pavers, concrete structures, and all weed kill, small bush weed removal and trimming of all vegetation in conflict with the improvements. Utilities within the downtown area are old and fragile. As such, compaction/grading may require the use of light or handheld compaction equipment including handheld to protect existing old/shallow utilities and covers.

Also included in this item is removal and disposal of all trash, waste, and debris found within the project area. Roadway excavation and earthwork (including removals associated with concrete paver work and disposal) will be paid per lump sum and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work and no additional compensation will be allowed therefore.

SP-4-9.00 – SUBGRADE PREPARATION

The subgrade shall be prepared per the Plans and Specifications, these special provisions, and the geotechnical engineer's reports to be provided by the City. The top twelve inches (1 foot) of subgrade shall be moisture conditioned, processed, and compacted to a minimum relative compaction of 98% for decorative concrete pavers and 95% relative compaction for sidewalks, curb and gutter and transitions.

If areas are encountered that the Contractor believes should be determined to be "unsuitable material", the Contractor shall notify the Engineer. If the Engineer determines that the material is "unsuitable" it shall then be removed and disposed of and paid for as extra work provided in Section 4-1.03D of the Caltrans Specifications. Additional cost for

fill of unsuitable materials shall be paid at the contract unit price for Class II Aggregate Base indicated on the Bid Schedule of Values, and shall include full compensation for all work and no additional compensation will be allowed thereof.

The grade tolerance for the subgrade grading plane at any point shall not vary more than 0.02' (1/4-inch) below or 0.04' (3/4-inch) above the grade established by the Engineer.

Full compensation, except as otherwise provided herein, for conforming to the requirements of this section, shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

SP-4-10.00 – AGGREGATE BASE

Aggregate base shall be Class II and shall conform to the provisions in Section 26, "Aggregate Bases" of the Caltrans Specifications, and these special provisions contained within this specification package. The Class II Aggregate Base shall meet the grading requirement for 3/4-inch maximum.

The Contractor shall have the proposed base certified by an independent testing laboratory to meet Caltrans standards (including R-values) and the minimum unit weight requirement. This certification, along with the data, shall be submitted to the Engineer for review, at the preconstruction meeting. This certification will not release the Contractor from having the base tested by the Engineer to meet specifications during construction.

The maximum thickness of any lift of base shall be 8.0 inches.

Utilities within the downtown area are old and fragile. As such, compaction/grading operation within the alleys may require the use of light or handheld compaction equipment to protect existing old/shallow utilities and covers.

The unit price paid for decorative concrete paver installation, or other items requiring aggregate base, shall include all aggregate base required and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing aggregate base complete in place and no additional compensation will be allowed therefore.

SP-4-11.00 – PRESERVATION OF PROPERTY

Attention is directed to Section 20-1.11, "Preservation of Property", of the Caltrans Specifications and these Special Provisions.

Existing trees, shrubs, and other plants, which are not to be removed as shown on the plans or specified in these Special Provisions, and are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor. The minimum size of tree replacement shall be 36-inch box and the minimum size of shrub replacement shall be No. 15 container. Replacement ground cover plants shall be from flats and shall be

from cuttings and shall be planted 12-inch on center. Replacement planting shall conform to the requirements in Section 20-4.03F, "Replacement", of the Caltrans Specifications. The Contractor shall water replacement plants to conform with the provisions in Section 20-4.03G, "Watering", of the Caltrans Specifications.

Damaged or injured plants shall be removed and disposed of outside the road right of way in conformance with the provisions in Section 20-1.03 of the Caltrans Specifications.

Replacement planting of injured or damaged trees, shrubs, and other plants shall be completed prior to start of the plant establishment period. Replacement planting shall conform to the provisions in Section 20-4.03, "Planting", of the Caltrans Specifications.

The Contractor is also responsible for replacing any damaged sprinklers or related improvements. The Contractor shall trim any and all trees, shrubs, and other plants that may be in conflict with traffic or the Contractor's operations.

Any private items to be removed or relocated in front of houses/businesses due to this project shall be addressed by the Contractor. The Contractor shall ask if the homeowner/business owner wants the materials, and if so, the Contractor shall remove the item from the right-of-way and shall neatly place it in the homeowner's/business owner's property. If there are any disagreements between the homeowner/business owner and the Contractor, please bring this matter to the Capital Improvements Project Manager for resolution.

Replacement planting of injured or damaged trees, shrubs and other plants shall be completed not less than 20 working days prior to acceptance of the contract. Replacement plants shall be watered as necessary to maintain the plants in a healthy condition. The work for preservation of property shall be included in the price paid for Protect in Place items, and no additional compensation shall be allowed therefore.

SP-4-12.00 – NEW 1" WATER METER, SERVICE CONNECTION, AND BACKFLOW PREVENTOR, IRRIGATION MAINLINE, MASTER VALVE AND FLOW SENSOR

All work related to existing water service line, new water meter, service connection, backflow preventor, 1 ½" irrigation mainline, master valve and flow sensor shall be pursuant to utility purveyor, architectural drawings and specifications, and EMWD Standards and shall be in a manner and in compliance with proposed improvements and shall not in any way be in conflict with said work. The work shall include all materials, products, lateral pipe, corporation stop, couplings, and other fittings required for the installation. Full compensation, except as otherwise provided herein, for conforming to the requirements of this section, shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

SP-4-13.00 -REMOVE AND REPLACE AND ADJUST TO GRADE WATER METER BOX

The removal and replacement and adjustment of water meter box, shall be done in accordance with EMWD Standards and these Special Specifications by the Contractor. The water meter box in new improvement/DG Pedestrian Path area shall be lowered to subgrade, raised to base grade, and raised to final DG Path grade. Payment for all work involved in the removal and replacement of water meter box and adjustment of valve covers will be compensated per each.

SP-4-14.00 - SAWCUT EXISTING A.C./CONCRETE PAVEMENT

Contractor to sawcut existing asphalt and concrete pavements at locations shown on the plans. Includes construction of 18” curb opening at existing curb face at drainage swale. The contract price paid per linear foot and per each as shown on bid schedule of values for various AC/concrete sawcut locations shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and no additional compensation will be allowed therefore.

SP-4-15.00 – ASPHALT CONCRETE

Asphalt concrete shall be Type “B” and shall conform to the requirements of Section 39, “Hot Mix Asphalt”, of the Caltrans Specifications, the plans, the geotechnical report, these technical specifications, and the following:

Aggregate grading shall be ¾-inch maximum, medium for base courses and the final course shall be ½-inch maximum, medium for all streets. Within alleys, aggregate grading shall be ½-inch maximum, medium.

The asphalt lift thickness table, as shown in Section 39-1.11, “Transporting, Spreading, and Compacting” of the Caltrans Specifications, is revised as follows:

Total Thickness Shown on Plans	Minimum No. of Layers	Top Layer Thickness		Next Lower Layer Thickness		All Other Lower Layer Thickness	
		Min.	Max.	Min.	Max.	Min.	Max.
0.25' or less	1	-	-	-	-	-	-
0.26' through 0.40'	2	0.12'	0.15'	0.14'	0.25'	-	-
0.45' or more	3 or more	0.12'	0.15'	0.15'	0.25'	0.15'	0.25'

Notes:

- 1) When ¾-inch material is used, the minimum thickness for any lift shall be 0.15'.
- 2) The final cap shall be placed such that the joint is either on the lane line or within one foot of lane line.

The paving asphalt binder grade shall be PG 64-10 or as determined by the City Engineer.

Section 39-1.03 shall be amended to include:

Aggregate of the ¾-inch or ½-inch maximum size and aggregate for asphalt concrete base shall be separated into 3 or more sizes and each size shall be stored in separate bins. If 3 sizes are used, one bin shall contain that portion of the material which will pass the maximum size specified and be retained on a 10 mm sieve; one bin shall contain that portion of the material which will pass a 10 mm sieve and be retained on a 2.36 mm sieve; and one bin shall contain that portion of the material which will pass a 2.36 mm sieve.

All asphalt concrete for this project shall be supplied from one source unless requested in writing and approved by the City Engineer. Said source shall be listed on the Contractors Source of Materials List as required in Section 6, "Control of Materials", of the Caltrans Specifications.

Liquid Asphalt and asphaltic emulsion shall be furnished and applied as provided in Section 39-1.09 of the Caltrans Specifications.

Utilities within the downtown area are old and fragile. As such, compaction/grading operation may require the use of light or handheld compaction equipment including handheld to protect existing old/shallow utilities and covers.

The manholes and valves shall be adjusted to finish grade by the Contractor. The cost shall be considered included in the asphalt concrete item of work unless there is a specific line item for adjusting the valves and/or manholes.

Asphalt concrete will be paid for at a unit price per ton as a combined item, including mineral aggregate and asphalt binder in place on the roadbed and no additional compensation will be allowed therefore.

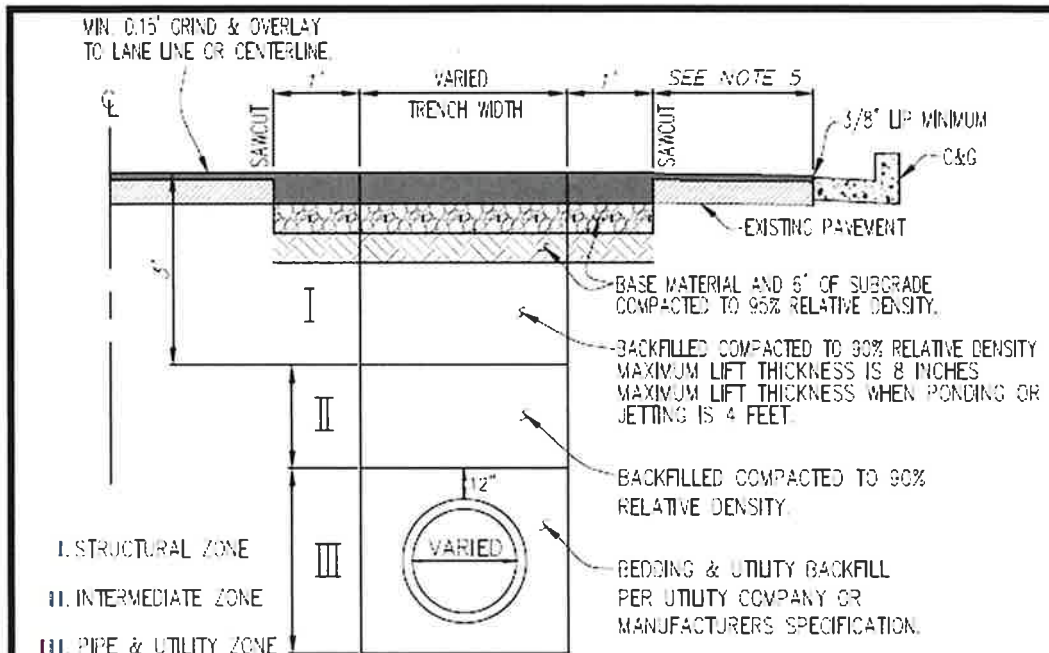
Full compensation for furnishing and applying asphaltic emulsion (paint binder) shall be considered as included in the contract price paid Cold Plan and/or Smooth Joint Transition.

If in the opinion of the Engineer the road does not drive smoothly, he shall direct the Contractor to have the road "profilographed" and the Contractor will be responsible for any "bump" grinding or other remedies required to provide a smooth and aesthetically pleasing road. The cost for both the "profilgraphy" of the roadway and the "bump" grinding of pavement, if needed, shall be borne by the Contractor

The City is aware that Caltrans is in the process of changing their asphalt concrete specifications. If this project is impacted by these changes, the City will use the new specifications upon request of the Contractor.

The contract price paid per ton for asphalt concrete placed shall be included in the price for Cold Plane/grind and overlay and/or Sooth Joint Transition and shall include called

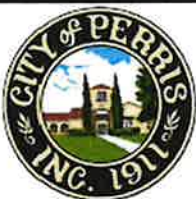
out compensation for furnishing all labor, materials, tools, equipment and incidentals for furnishing and installing all asphalt concrete on the project, unless specifically called-out somewhere else and no additional compensation will be allowed therefore.



NOTES:

1. STREET STRUCTURAL SECTION TO BE AS FOLLOWS:
 A.C. SURFACING = MATCH EXISTING THICKNESS + ONE INCH.
 BASE = MATCH EXISTING THICKNESS (MUST USE CLASS II BASE)
 IN NO CASE SHALL THE STRUCTURAL SECTION SHALL BE LESS THAN 3" OVER 6" CLASS II BASE. CITY MAY ALSO SPECIFY STRUCTURAL SECTION FOR ROADWAY IN CERTAIN SITUATIONS.
2. WHEN A FIRM FOUNDATION IS NOT ENCOUNTERED DUE TO SOFT, SPONGY OR OTHER UNSUITABLE MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO THE LIMITS DIRECTED BY THE INSPECTOR, AND THE RESULTING EXCAVATION BACKFILLED WITH CLASS II BASE.
3. CONTRACTOR TO PROVIDE INSPECTOR COPY OF COMPACTION REPORTS PRIOR TO PAVING.
4. FOR SIGNIFICANT AND MAJOR ROADWAYS, THE SECTIONS SHALL BE AS APPROVED BY THE CITY ENGINEER ON A CASE BY CASE BASIS.
5. MINIMUM 0.15' GRIND & OVERLAY TO LIP OF GUTTER OR LANE LINE (OR 10' EACH SIDE OF TRENCH IF PERPENDICULAR TO CENTERLINE). REMOVAL AND REPLACEMENT OF THE ASPHALT SECTION SHALL BE INCLUDED WITH THE SURFACE REPAIR IF THE DISTANCE IS 4 FEET OR LESS.

REVISED 05/01/2022



CITY OF PERRIS

**CITY STANDARD
UTILITY TRENCH SURFACE REPAIR**

SCALE: NONE

APPROVED BY: *[Signature]*
 CITY ENGINEER: _____ DATE: 01/24/18

STD. NO. N/A

SP-4-16.00 – MINOR CONCRETE WORK

Minor concrete shall comply with Section 90 “Concrete” of the Caltrans Specifications and these special provisions except that no fly ash is allowed, and all minor concrete items shall use Class II concrete. If a conflict between the Civil, Landscape Architect plans and specifications, and geotechnical report arises, the strictest in the opinion of the City Engineer shall apply. Any concrete accelerators used to speed construction shall be at the Contractor’s expense and no additional payment will be made by the City. All concrete used for driveways and cross gutters shall be sufficiently strong to allow them to be opened to traffic within 72 hours of placement.

All minor concrete items including, but not limited to, sidewalks, walkways, cross gutters, curb and gutter, driveway approaches, alley approaches, access ramps, concrete facing, catch basins, ribbon gutters, curb inlets, and under-sidewalk drains shall be built per Riverside County Improvement Standards and Specifications except as modified herein and on the plans. All minor concrete must meet the latest ADA requirements. Minimum sidewalk thickness is a true 4.0 inches, and minimum drive approach and driveway thickness is 8.0 inches, both per Riverside County Standards. The contractor shall refer specifically to the following standard plans of the Riverside County Transportation Department (latest edition) or other specified, for further information:

- Riverside County Standard 200, “Type A-6 Curb and Gutter”, 2500PSI PCC
- Riverside County Standard 202, “Type “C” Curb”, 2500PSI PCC
- Riverside County Standard 204, “Type D Curb”, 2500PSI PCC
- Riverside County Standard 211, “Curb Transition”, 2500PSI PCC
- Riverside County Standard 401, “Sidewalk and Curb” , 2500PSI PCC
- Riverside County Standard 403 Case A, “Curb Ramp” , 2500PSI PCC
- Modified Type “C” Rolled Curb Monolithic with Opposite 6” Curb Only per Detail of the Plans, 2500PSI PCC
- Modified SPPWC Standard Plan 151-3, “Parkway Drain”, 2500PSI PCC

Handicap access ramps shall be bid per each and shall include all work from the BCR to the ECR including, but not limited to, the ramp itself, all concrete curb and gutter, scoring, grading to conform to existing area, and any and all work to make the ramp meet ADA requirements.

Transitions from 6” curb to 4” rolled curb shall be paid half at the smaller curb height item and half at the larger curb height item.

Payment for minor concrete shall be per unit as defined in the bid schedule for each minor concrete item. Payment shall also include the removal of any concrete items if this is not addressed elsewhere in the bid schedule. The price shall also include any required saw-cutting, removal and replacement of any items (including base/sub-base) needed to provide room for the form boards, and shall include full compensation for all labor, materials, tools, equipment, and incidentals for minor concrete complete-in-place. Any

and all landscaping and irrigation replacement and adjustment needed for concrete/masonry work shall also be included here if not included elsewhere in the bid schedule. All base underneath the minor concrete items will be included in the price paid for the minor concrete item. All asphalt concrete used for slot patching or adjacent to the concrete will be paid by through the “minor concrete bid item.

SP-4-17.00 – DETECTABLE WARNING SURFACE

The installation of detectable warning surfaces shall be raised truncated dome pattern as shown on RCTD Standard 403 and installed per manufacturers recommendations. The color shall be yellow #33538. The size is 3’ x 4’ unless directed differently by the Engineer. Payment for all labor, materials, and incidentals involved in the installation of the Detectable Warning Surface shall be compensated per each unit included in the bid schedule of values and no additional compensation shall be allowed therefor.

SP-4-18.00 – DECOMPOSED GRANITE AREA

Contractor shall provide and install 4” thick compacted decomposed granite (D.G.) and 6”x6” concrete mow curb area per Construction Plans and Details. Payment for all labor, materials, and incidentals involved in the installation of the 4” D.G. shall be compensated per square foot unit included in the bid schedule of values, and no additional compensation shall be allowed therefor.

SP-4-19.00 – RIP RAP

Riprap shall conform to Section 72, “Slope Protection” of the Caltrans Specifications. The riprap shall be of class specified on plans.

The contract unit price paid for Riprap shall be paid per square foot for each bid item and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved. No additional compensation shall be allowed, therefore.

SP-4-20.00 – TREE REMOVAL AND TRIMMING

Trees shall be removed and/or trimmed as determined by City in accordance with Section 16, “Clearing and Grubbing” of the Caltrans Specifications, these Special Provisions and as directed by the City Engineer. All trees and branches in conflict with the proposed project, whether shown on the plans or not, shall be removed and disposed of. All trees shall have the stumps removed to within eight (8.0) feet of the finished surface of the road. All roots shall be removed to within four (4) feet of the finished road surface. All organic matter shall be removed and not replaced in the backfill.

All branches in conflict with the proposed improvements shall be removed whether shown or not and as directed by the City Engineer. Any trees trimmed shall be professionally done to “balance” the tree and not leave the tree lopsided.

Compensation for work under this item shall be included in other bid items and shall include all full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work and no additional compensation shall be allowed thereof.

SP-4-21.00 – PROTECT IN PLACE OR REMOVE AND REPLACE RELOCATE OR ADJUST TO GRADE SIGNS, TREES, UTILITY BOXES, LANDSCAPE PLANTING, IRRIGATION LINES AND APPURTENANCES, COLORED CONCRETE PAVERS, STREET FURNISHINGS, VALVES, FENCES, STORE FRONT BUILDING FAÇADES, ETC.

PAYMENT – Payment for this item shall include protecting in place, relocating, removing and replacing, and adjusting to grade (raise or lower) all valves and covers, signs, meters, pedestals, pull boxes, pull box covers, fencing, colored concrete pavers, rock cobble, ADA ramps, curb, gutter, sidewalk, trees, plants, and irrigation lines, underground utilities, gates, store front building facades, etc. not mentioned or specifically referenced elsewhere in the specifications.

The utility boxes and utility valve covers shall be adjusted (up or down) so that the sidewalk meets minimum ADA slope requirements. If the utility box covers and/or box is in too poor of a condition it shall be replaced at the Contractor's expense.

Improvements within the downtown area are old and fragile, and have been retrofitted with structural columns, cosmetic faux columns, brick, stucco, or other treatments. As such, these façade elements may be redheaded into sidewalks, placed on short stem walls, or concreted directly to sidewalks; and may require re-construction or protection during construction operations.

Work in sidewalk and adjacent to businesses along street frontage will require good communication with homeowners/business owners and removal/replacement or protection of existing landscaping, irrigation, mailbox, fences, wall, and all such costs shall be included in lump sum price.

Payment shall include full compensation for furnishing all labor, tools, equipment, materials, services, and incidentals and for doing all work involved with such items to provide a complete in place project.

SP-4-22.00 – REMOVE/REPLACE/ADJUST/INSTALL PROTECT IN PLACE TRAFFIC SIGNAL TRAFFIC LIGHT MODIFICATIONS AT 4th AND C STREET INTERSECTION

The Contractor's attention is directed to the "as-built" Traffic Signal/Loop Detector plans prepared by Interwest Consulting Group included within the Improvement Plan. Payment for this item shall include protecting in place meters, pedestals, relocating, removing and replacing, Traffic Signal Loops, wires, conduits, conductors, adjusting to grade (raise or lower), installing all covers, Traffic Signal/light pull boxes in conflict with drainage

structures, etc., shown on plan, not specifically defined elsewhere in bid, to provide a complete functional traffic signal system. If the utility box covers and/or box is in too poor of a condition it shall be replaced at the Contractor's expense. All materials removed and replaced by Contractor shall be submitted for review and approval by City prior to installation. As determined at the sole discretion of the City, only materials and equipment determined to be of equal durability, quality and performance shall be used.

All traffic signal construction shall be inspected by representatives from the County of Riverside Transportation Department, acting jointly on behalf of the City.

Payment for the installations and modifications of the existing signal equipment at the 4th Street and C Street Intersection shall be paid by lump sum. The lump sum for said construction shall be for a complete installation in place as shown on the plans, and include all labor, materials, tools, equipment, utility coordination, and incidentals.

SP-4-23.00 – COMPACTION TESTING

GENERAL – Compaction tests will be performed by the Soil's Engineer as required. The City will be responsible for the cost of test which meet the requirements of the Contract Documents. When any work is determined to be unsatisfactory, faulty, or defective, or does not conform to the requirements of the Contract Documents, the costs incurred by the Owner for any investigations, retests, or inspections shall be reimbursed by the Contractor. Said costs shall be paid by the owner and deducted by the progress payments to the Contractor. Compaction retesting will be charged at the rate of \$115.00 per retest hour. The Contractor shall include in miscellaneous bid items his cost to achieve compaction to Soil's Engineer's satisfaction, and no additional compensation shall be allowed therefor.

SP-4-24.00- QUALITY OF WORKMANSHIP/OWNER SATISFACTION

All work, all materials, all processes of manufacture, and all methods of constructions shall be at all times and places subject to the inspection of the Owner who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture, and methods of construction for the purposes for which they are used. Should they fail to meet Owner approval, they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. Compensation for work under this item shall be included in other bid items and shall include all full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work and no additional compensation shall be allowed thereof.

SP-4-25.00 – CONSTRUCTION SURVEY AND STAKING

Contractor shall be responsible for providing survey and construction staking to complete the job. The surveyor shall be licensed in the State of California and provide "As Built" at the end of the project.

Where no design centerline elevation is provided on the plans and where sidewalks and drainage are to be reconstructed, the contractor shall be responsible for setting the grade. The surveyor shall attempt to provide 2.0% crossfall from centerline for each side of road. If this is not possible, the surveyor shall try to set the crossfall between 1.5% minimum and 3.2% maximum. If this is still not possible, he shall propose elevations to the City for approval. The surveyor shall also ensure the sidewalks will drain properly and transition smoothly at the tie-in points.

The lump sum cost shall include all costs related to this work including payment of prevailing wage and other required benefits.

SP-4-26.00 – RECORD DRAWINGS

The Contractor shall keep one clean set of bond originals to note any changes which take place during construction. These changes to the original plans and/or specifications shall be noted at the appropriate locations with the appropriate changes indicated in red pencil or ink. The Contractor shall note in large letters “RECORD DRAWINGS” on the Title Sheet of the plans. The job will not be finalized by the Engineer until these record drawings have been completed to the satisfaction of the Engineer. The changes shall be noted on the plans as the changes occur. The record drawings shall be submitted to the Resident Engineer, and become the property of the City at conclusion of the project.

Full compensation for maintaining and compiling the record drawings shall be considered to be included in other items of work and no additional compensation will be allowed.

SP-4-27.00-RIVERSIDE COUNTY TRANSPORTATION COMMISSION (RCTC) RIGHT-OF-ENTRY AND SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY RIGHT-OF-WAY ENTRY PERMIT

Certain improvements being constructed for this Project are located within property owned by the Riverside County Transportation Commission (herein RCTC), and fall outside the jurisdiction of the City of Perris. The Southern California Regional Rail Authority (herein Metrolink), operates Property in close proximity to the Project Site, which falls outside the jurisdiction of both RCTC and the City of Perris.

Under certain conditions, activities within the Metrolink right-of-way or activities deemed by Metrolink to affect the operations of trains must follow Metrolink’s Right-of-Entry Encroachment Process to obtain a Metrolink Right-of-Entry Permit. The City of Perris does not anticipate the need for the City to obtain a Metrolink License Agreement, as no construction will be taking place within the Metrolink right-of-way, and the City is therefore not seeking a License Agreement with Metrolink. However, if deemed necessary by Metrolink, Metrolink may require the City’s Contractor to obtain a Metrolink Right-of-Entry Permit. The Contractor, at his sole expense, shall be required to provide all services and pay all fees required to obtain a right-of-entry permit from Metrolink. The Contractor shall know and fully comply with the applicable provisions of Metrolink’s right-of-entry permit

requirements that govern the Contractor's operations within the Metrolink's right-of-way, Project Site and/or areas of disturbance.

The City is currently pursuing a License Agreement from RCTC. This License Agreement would provide the City with certain rights and responsibilities, including the use of RCTC property for the construction and maintenance of landscape and other associated improvements. If approved, the License Agreement may or may not afford a "right-of-entry" to the City's employees, agents, customers, visitors, invitees, and *contractors* (collectively, "Licensee's Parties"). If this language is not provided in the pending License Agreement, the Contractor, at his sole expense, shall be required to provide all services and pay all fees required to obtain a right-of-entry from the Riverside County Transportation Commission. The Contractor shall know and fully comply with the applicable provisions of RCTC's right-of-entry requirements that govern the Contractor's operations within the RCTC property, Project Site, and/or areas of disturbance.

The Contractor shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to RCTC and/or Metrolink, during the entire term of this Agreement including any extension thereof, the policies of insurance required by RCTC and/or Metrolink. Full compensation for this work shall be considered included in the unit price paid for other items of work and no additional compensation will be allowed, therefore.

The Contractor shall comply with all applicable RCTC and/or Metrolink requirements for work in the public right-of-way and RCTC and/or Metrolink Property stemming from the requirements of the right-of-entry and/or right-of-entry permit. As required by RCTC and/or Metrolink, the Contractor shall be responsible to prepare a set of traffic control plans and have signed by a Registered Traffic Engineer. The plans shall be submitted to RCTC and/or Metrolink for review and approval, if required to obtain a right-of-entry and/or a right-of-entry permit. The Contractor shall provide and maintain barriers, guards, lights, signs, temporary bridges, pilot cars, arrow boards, message boards, flag persons and watch persons, advising the public of detours and construction hazards. The Contractor shall also be responsible for compliance with additional public safety requirements, which may arise during construction. The Contractor shall furnish and install, and upon completion of the work, promptly remove all signs and warning devices. This shall include installing and maintaining all items shown on the traffic control plans. Full compensation for all work involved in providing for public safety/traffic control as set forth in this section shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefore.

The provisions contained in Section 2-7.1, "Changes Initiated by the Agency", of the Standard Specifications shall not apply to this Items of Work, therefore, no adjustment shall, be made in the contract unit price for increased or decreased quantities of this Item of Work. By submitting this bid, Contractor acknowledges and agrees that quantities may be equal to, less than, or more than those listed in the Contract price. The Contractor may not need to secure either an RCTC right-of-entry, and/or may not need to secure a Metrolink right-of-entry permit, and therefore the services described in the preceding paragraphs may not be required. If the right-of-entry and/or the right-of-entry permit are not secured by the Contractor, Contractor shall not be entitled to payment or partial payment of the contract bid items for this work.



**RIVERSIDE
COUNTY
TRANSPORTATION
COMMISSION**

4080 Lemon St. 3rd Fl. Riverside, CA 92501
Mailing Address: P.O. Box 12008 Riverside, CA 92502-2208
951.787.7141 • rctc.org

Application Process for Use of RCTC Property

Applicants requesting permission to enter, construct and/or maintain improvements on RCTC property must execute a written agreement prior to commencement of the project or use. RCTC grants License Agreements and Rights of Entry (ROEs) only. A License Agreement is required for longer term uses of RCTC property (construction of facilities, structures, crossings, and other long term uses). A Right of Entry Agreement is required for all temporary uses of or temporary access to RCTC property (surveys, potholing, and other short term uses). A separate request must be submitted for each entry. Before a License or ROE can be issued, the applicant must submit a complete application for review and approval.

Complete application submissions must include:

- **General Application Form**
- **Required Supplemental Application**
- **Two (2) sets of plans**
- **One (1) set of electronic plans**
- **Non-Refundable Fee of \$6,000 for License application or \$1,000 for ROE application**
- **Certificates of Insurance**

RCTC review generally takes 12 weeks from the receipt of a complete application package. If the project or plans require revision, additional review time will be required after the plans are resubmitted. If railroad right of way is involved, a separate set of plans must be sent to Metrolink. Plan requirements are provided in more detail in the **Application Package Section**.

When the application has been approved, a License or ROE agreement **will be drafted** by RCTC. Template agreements for Licenses and ROEs can be found in the **Forms Section**. RCTC's legal counsel will approve the agreement as to form and a copy will be sent to the applicant for signature. Once the signed copy is received, RCTC will sign the document and send the applicant a fully executed agreement.

An annual fee for Licenses will be determined by RCTC based on the type, location, and area impacted by the project or use.

After the agreement has been fully executed, applicant will need to provide 5 days notice to the RCTC Right of Way department prior to entering and/or beginning construction. If operating railroad right of way is impacted, Metrolink must be given 15 days notice. Arrangements must be made **directly with Metrolink** for flagging requirements. After the facilities are installed or activity is complete, RCTC will **conduct a site visit** to confirm satisfactory completion of work. Further inquiries may be directed to the Right of Way department at 951-787-7141 or row@rctc.org.

Application Package

The applicant must submit a complete application with the following items to start the review process.

1. General Application Form

The General Application Form requests background and high-level project information. This form is required for all applications.

2. Required Supplemental Application

The Required Supplemental Application requests detailed information about the type of facility or use of RCTC property requested. The applicant should review the table in the **Forms Section** and complete the relevant Required Supplemental Application, in addition to the General Application Form.

3. Plans

License

Two (2) sets of detailed final plans (one “wet stamped” original and one copy), approved by applicable jurisdictional agencies (Caltrans, County, City, etc.), are required to be submitted with the application. One (1) set of electronic plans must be sent to row@rctc.org. The drawings will be reviewed by the Right of Way department and engineers. No Licenses will be issued without submission of *final* plans.

If the activities will impact **railroad right of way**, RCTC requires Metrolink’s review prior to issuing permission to enter the right of way. Applicant must submit an application directly to Metrolink for review. The proposed facilities should be in conformance with Metrolink’s Engineering Standards - <https://metrolinktrains.com/about/agency/engineering--construction/>.

For further information regarding Metrolink’s review and approval process, please contact the Eric Reese, Right of Way Coordinator, at (909) 394-3418 or reese@scrta.net.

Additional right of way encroachment process information can be found at <https://metrolinktrains.com/about/agency/right-of-way/>.

Any person performing work on or near the tracks must be complete Metrolink safety training.

Rights of Entry

Two (2) sets of plans and one (1) electronic copy are sufficient to show location and intent of project are acceptable for Right of Entry purposes. Any person performing work on or near the tracks must have completed Metrolink’s safety training.

4. Fees

License

A non-refundable fee of \$6,000 must be submitted with the application. RCTC will assess the expense required for staff, engineer, legal review and appraisal and determine the total application cost. If the cost is over \$6,000, an additional check will be required prior to executing the agreement.

Applicants with ongoing facilities or activities on RCTC property will be required to pay an annual license fee, as determined by RCTC. The annual license fee is in addition to the application fee.

Member agencies are exempt from the application cost and annual license fee.

Rights of Entry

A non-refundable fee of \$1,000 is required to obtain a Right of Entry. This fee covers RCTC's staff, engineering, and legal costs related to processing the application. There are no exemptions from the Right of Entry fee.

5. Certificates of Insurance

Certificates of Insurance must be submitted in order to execute an agreement and enter RCTC property. The limits and insurance requirements are detailed in the **Insurance Section**.

The complete package should be sent to:

Riverside County Transportation Commission
Attention: Right of Way
4080 Lemon Street, 3rd Floor
P.O. Box 12008
Riverside, CA 92502-2208

Questions may be directed to the Right of Way department at 951-787-7141 or row@rctc.org.

Insurance

All entities and individuals proposing to enter RCTC property, shall obtain, and shall require any consultant or contractor working on its behalf, to obtain insurance of the types and amounts described below. Applicant must provide an original executed Certificates of Insurance that clearly evidence all insurance required and provide that such insurance shall not be canceled, allowed to expire, or be materially reduced in coverage, except on 30 days prior written notice to RCTC. RCTC shall have the sole discretion to determine whether the certificates and endorsements presented comply with the applicable provisions.

If the project involves *railroad right of way*, the following insurance requirements apply:

Commercial General Liability Insurance - \$2,000,000 per occurrence/\$10,000,000 in aggregate; the policy shall include RCTC and its officials, officers, employees, agents and consultants as insureds and shall contain no special limitations on the scope of coverage or the protection afforded to these insureds. It will be primary with respect to any insurance or self-insurance programs covering RCTC, its officials, officers, employees, agents and consultants. The insurance will also contain standard separation of insured provisions.

Railroad Protective Liability - \$3,000,000 single limit/\$6,000,000 aggregate (if applicable). Most general liability insurance excludes railroads. In some situations, RCTC has agreed to require Railroad Protective Liability Insurance on behalf of rail lines with operating rights on RCTC's owned lines. The determination of whether this insurance is required for a particular Right of Entry or License will be made on a case by case basis based, in part, on any potential contractual commitment RCTC has made to a rail line to require such insurance. RCTC reserves the right to require the immediate procurement of adequate Railroad Protective Liability insurance by the applicant in the event it is required by a rail freight carrier and RCTC consents to the rail carrier's requirement, even if the requirement is actually imposed during the term of the License or Right of Entry Agreement, after the agreement has been executed.

Pollution Liability - If construction involves any hazardous materials, a \$1,000,000 single limit/\$2,000,000 in aggregate policy is required.

Worker's Compensation Insurance - Within statutory limits and not less than \$1,000,000 per incident.

The certificates shall evidence the insurer's knowledge of the proximity of applicant's operation to active rail tracks. Insurers must have an A.M. Best Company rating of no less than A-:VIII and be licensed to do business in California.

If the project does not involve *railroad right of way*, the following insurance requirements apply:

Commercial General Liability Insurance - \$2,000,000 per occurrence/\$10,000,000 in aggregate; the policy shall include RCTC and its officials, officers, employees, agents and consultants as insureds and shall contain no special limitations on the scope of coverage or the protection afforded to these insureds. It will be primary with respect to any insurance or self-insurance programs covering RCTC, its officials, officers, employees, agents and consultants. The insurance will also contain standard separation of insured provisions.

Pollution Liability - If construction involves any hazardous materials, a \$1,000,000 per occurrence/\$2,000,000 in aggregate.

Worker's Compensation Insurance - Within statutory limits and employers' liability insurance with limits of not less than one million dollars (\$1,000,000) each accident.

Insurers must have an A.M. Best Company ratings of no less than A-:VIII and licensed to do business in California.

Forms

Check the website for the following forms:

General Application Form

Required Supplemental Application – Pipeline Facilities (under Property Forms)

Required Supplemental Application – Wire Line Facilities (under Property Forms)

Required Supplemental Application – Grade Crossing/Access (under Property Forms)

Required Supplemental Application – Private Use (under Property Forms)

Required Supplemental Application – Right of Entry (under Property Forms)

Required Supplemental Application	Examples
Pipeline Facilities	Water, sewage, oil, natural gas, petroleum, storm drains, etc.
Wire Line Facilities	Phone, fiber optic, CATV, electric, etc.
Grade Crossing/Access	Vehicular, pedestrian, bicycle, bridge, and livestock crossing/access
Private Use	Spur tracks, fences, patios, landscaping, slope work, storage, etc.
Right of Entry	Geotechnical survey/inspection, seismograph survey, movie production, potholing, temporary construction access and other temporary use projects

(Note: In July 1997, the Commission adopted the policy of not allowing new billboards on RCTC property. Existing billboards have been allowed to remain at current fair market value prices.)

For uses other than those described above, please contact the Right of Way department at 951-787-7141 or row@rctc.org.

Frequently Asked Questions (FAQs)

- 1. Can a preliminary set of plans be submitted for RCTC review and response prior to the plans being finalized?** A preliminary set of plans may be submitted for RCTC review and response. However, the applicant will be charged engineering time for each review and a review of all final plans is required. No preliminary or final review will begin until the \$6,000 License deposit or \$1,000 ROE fee is submitted.
- 2. What constitutes final plans?** One set of final plans must be “wet stamped” and approved by the jurisdictional agency (Caltrans, County, City, etc.)
- 3. Does RCTC grant easements or permits?** No. RCTC grants Licenses and Rights of Entry, but not easements or permits.
- 4. Can we enter the property with verbal approval if the use is very short term?** No. All entities and individuals entering RCTC property MUST have prior written agreement in the form of a Right of Entry or License.
- 5. How is a public agency defined?** Public agencies are those organized under Local, State or Federal law. Public utilities are not considered to be public agencies.
- 6. Does RCTC allow billboards on its property?** In July 1997, the Commission adopted the policy of not allowing new billboards on RCTC property. Existing billboards have been allowed to remain at current fair market value prices.
- 7. Can I submit one application for a line or facility that is part of one project but crosses RCTC property multiple times?** A separate Supplemental Application and set of plans must be completed for each use of RCTC property. One General Information Form may be completed with multiple Supplemental Applications attached.
- 8. How do I get BNSF licensed?** The BNSF licensing course information can be found at www.contractororientation.com/.
- 9. Do I need to apply again if my Right of Entry expires?** If you require a time extension on your Right of Entry, and if the terms (type of use and area required) are the same, you may request an extension in writing. You must obtain RCTC approval in writing prior to proceeding.



**RIVERSIDE
COUNTY
TRANSPORTATION
COMMISSION**

4080 Lemon St. 3rd Fl. Riverside, CA 92501
Mailing Address: P.O. Box 12008 Riverside, CA 92502-2208
951.787.7141 • rctc.org

**Supplemental Application For
Right of Entry, Private Use, & Grade Crossing/Access**

This application should be used to apply for all temporary uses, including geotechnical survey/inspection, seismograph survey, movie production, potholing, temporary construction access and other temporary use projects. As well as, for all private uses, including spur tracks, fences, patios, landscaping, slope work, storage, etc. Finally, for all grade crossings or access requests for vehicular, pedestrian, bicycle, bridge, livestock and other.

RIGHT OF ENTRY INFORMATION:

Purpose of Right of Entry: _____

Length: _____ feet; Width: _____ feet;

Proposed start date: _____; Proposed end date: _____; Total number of days: _____

Type of equipment to be used:

PRIVATE USE INFORMATION:

Purpose of property use: _____

Length: _____ feet; Width: _____ feet

Material to be used/stored: _____

GRADE CROSSING/ACCESS INFORMATION:

Purpose of grade crossing/access: _____

Beneficiary or crossing (if other than applicant): _____

Crossing Use:

_____ Pedestrian; _____ Passenger vehicles; _____ Bicycle; _____ Livestock;
_____ Farm equipment; _____ Recreational vehicles; _____ Heavy construction vehicles

Approximate number of crossings per day (each way): _____

Time of day/night required for crossing: _____

Level of crossing: _____ Overhead; _____ Underground; _____ Surface

Length: _____ feet; Width: _____ feet; Height: _____ feet; Depth: _____ feet;

Current access availability (other than across RCTC property): _____

Closest public crossing: Distance: _____; Name of street: _____

OTHER INFORMATION FOR ALL APPLICATION TYPES:

Will any dangerous commodities, chemicals, hazardous, flammable or high-pressure substances be involved now, or in the future? ()Yes ()No

If Yes, describe: _____

Are there known pipeline or wire line facilities in the area? ()Yes ()No;

If Yes, describe: _____

If these other known facilities in the area on railroad right of way, list the milepost: _____

If you have a project that will be conducted on or within close proximity of the Metrolink Right of Way, please review the SCRRRA Right of Way Encroachment Process and fill out a Right of Way Encroachment Application:

- Permit information can be found at <https://metrolinktrains.com/about/agency/right-of-way/>.
- Engineering & Construction information can be found at <https://metrolinktrains.com/about/agency/engineering--construction/>.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

Did you remember to include?

- General Application Form
- Two (2) sets of plans to RCTC
- Email plans to row@rctc.org
- Fee of \$6,000 for a License or \$1,000 for a Right of Entry (member agencies exempt)
- Certificates of Insurance

Submit To:

Riverside County Transportation Commission
Attention: Property Agent
4080 Lemon Street, 3rd Floor
P.O. Box 12008
Riverside, CA 92502-2208

METROLINK

**Southern California
Regional Rail Authority**

METROLINK

**RIGHT OF WAY
ENCROACHMENT PROCESS**

Revised
July 14, 2022

Prepared by
SCRRA Track & Signal Infrastructure Maintenance

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SCRRA RIGHT-OF-WAY ENCROACHMENT PROCESS

1.0 GENERAL

- A. All work activities within the Southern California Reginal Rail Authority (SCRRA) operating corridor and right-of-way, or work activities that affect the operation or safety of trains must be reviewed and approved by SCRRA. Typical work activities are categorized into the following project types:
- i. Permanent Facility: Installation of new pipelines (water, sewer, gas, oil, stormwater), wirelines (electrical, traffic, fiber optic cables), or billboards that will be permanent.
 - ii. Temporary Encroachment: Temporary installation of pipelines or wirelines, temporary encroachment for adjacent site development, street maintenance within the railroad right of way, temporary encroachment for vegetation removal or graffiti abatement. Temporary traffic control which is through or near a railroad crossing.
 - iii. Survey and Filming: Site surveying with portable equipment, site observations, and filming with portable equipment.
 - iv. Operation & Maintenance: Operations, maintenance, or removal of installations where the project owner has an existing license agreement with an SCRRA Member Agency.
 - v. House Moving or movement of oversized loads across railroad tracks: Any movement of equipment or loads which exceed the width or weight limits of the road.

1.1 Overview of Requirements

- A. The Right-of-Way Encroachment Process must be followed for all activities described in Section 1.0 General.
- B. An executed Right-of-Way Encroachment agreement (i.e. Form 4, Form 5, Form 6) is required prior to the commencement of any activities within the right-of-way or affecting train operations. A license agreement may be required.
- C. The Applicant's on-site representative must have a copy of the executed Right-of-Way Encroachment available for inspection at all times when on the right-of-way.
- D. Each individual working on the right-of-way must successfully complete Railroad safety training.
- E. Railroad flagging and safety training services are only provided by SCRRA authorized contractors.
- F. SCRRA Cable Marking must be completed prior to the commencement of work and may be required to be refreshed throughout the project duration.

1.2 System Information

- A. SCRRRA is a five-county joint powers authority, created pursuant to California Public Utilities Code Section 130255 and California Government Code Section 6500 et seq., to plan, design, construct, and then maintain and administer the operation of the regional passenger rail lines serving the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCRRRA operates the Metrolink commuter rail service.
- B. SCRRRA plans, designs, builds, operates, and maintains a commuter rail system in the five-county area on rail rights-of-way owned by the member agencies. Two major freight rail carriers, BNSF Railway Company (BNSF) and Union Pacific Railroad (UPRR), and the inter-city passenger carrier Amtrak, operate on SCRRRA tracks through shared track agreements. SCRRRA in turn operates on tracks owned by BNSF, UPRR, and North County Transit District (NCTD).
- C. Figure 1 shows the Metrolink System including stations and connecting rail transit lines. Digital maps are available on the Metrolink website.

Figure 1 Metrolink Regional Rail System Map (2022)



1.3 Contact Information

- A. All submittals must be sent electronically to:

Right-of-Way Encroachments Coordinator
rightofentry@scrra.net

- B. For additional information or to follow up on the status of an application contact:

Mr. Eric Reese, Right-of-Way Encroachments Coordinator
ReeseE@scrra.net
(909) 667-8108

- C. To mail a paper check or submit updated insurance certificates use the following mailing address:

*Southern California Regional Rail Authority
2700 Melbourne Ave Pomona, California 91767
Attn: Mr. Eric Reese, Right-of-Way Encroachments Coordinator*

- D. **In case of emergency or to report issues with the highway-rail at-grade crossing call the 24-hour SCRRRA Communications & Signal Emergency line at 1-888-446-9721.**

1.4 Useful Resources

- A. [Metrolink Website](#) includes information about SCRRRA, Facts Sheets & Numbers, Maps and train schedules.
- B. [Engineering & Construction](#) page includes the latest engineering standards, specifications, design manuals, and maintenance manuals. The Engineering & Construction page is found under the About menu from the Home page.
- C. [Right-of-Way Encroachments](#) page includes the latest contact information, Procedures and FAQ, Right of Way Encroachment Forms, Form 37, requirements for SSWP, and Train Traffic Density. The Right-of-Way Encroachments page is found through a link on the Engineering & Construction page or by searching Right-of-Way Encroachments from the Metrolink Website.

2.0 DEFINITIONS

- A. *Applicant* – The entity which submits the Application for Right of Way Encroachment for a project. The Applicant may be the Project Owner, a contractor or consultant to the Project Owner. The term Applicant includes any contractor completing work covered by the executed Right-of-Way Encroachment agreement.
- B. *Project Owner* – A government entity, public utility, private developer or other entity which owns or is responsible for the project.

- C. *Project Type* – Categories of activities defined in Section 1.0 General.
- D. *Railroad Safety Training* – Required safety training for each individual who will be working on the railroad right-of-way. This is also referred to as “RWP Safety Training”.

3.0 PROCESS OVERVIEW

- A. This section provides an overview of the process required for each project type listed in Section 1.0 General. Review this document in its entirety for detailed descriptions and requirements.
 - i. **Initial Application Submittal** package submitted to rightofentry@scrra.net. SCRRRA receives and reviews submittal package. Incomplete submittals or packages missing information will be returned to the applicant for correction. Once verified as complete, an SCRRRA Project Number is assigned. SCRRRA conducts engineering design review of the project. This step may require more than one resubmittal to address plan review comments.
 - ii. **License Agreement** is necessary for permanent facilities. SCRRRA submits the project to its Member Agency for a License Agreement. The Member Agency will review and execute a license agreement with the project owner.
 - iii. **Construction Submittal** package submitted to rightofentry@scrra.net. SCRRRA receives and reviews the package. This step may require more than one resubmittal to address construction comments.
 - iv. **ROE Encroachment Agreement Executed** and issued to the Applicant allowing the scheduling of training and railroad flagging services. SCRRRA will coordinate SCRRRA Cable Marking and provide a C&S Authorization number to proceed. Refresh of SCRRRA Cable Marking may be required.
 - v. **Work Complete** and project is ready for close out. Applicant submits Confirmation of Completion form to rightofentry@scrra.net. SCRRRA will verify internal billing status and close out the project.

3.1 Process Time

- A. The time period for review and approval of all encroachment activities is estimated in the table below. Every effort will be made to complete the process in a timely manner.

Table 1 Estimate of Process Time

Process Step	Estimated duration (days)
Initial Application	
Application Processing	5-10
Review and Approval by SCRRRA	10-30
Resubmittal by Applicant	10-20
Resubmittal Review and Approval by SCRRRA	5-30
License Agreement	
Issuance of Real Estate Agreement by Member Agency	30-90

Construction Submittal	
Review and Approval by SCRRRA	5-10

4.0 INITIAL APPLICATION SUBMITTAL

- A. This section summarizes the contents of the Initial Application Submittal. Table 2 identifies the submittal contents for each project type.
- B. Incomplete submittals will be returned to the applicant for correction.

Table 2 Initial Application Submittal Contents by Project Type

Item Description	Permanent Facility	Temporary Encroachment	Survey and Filming	Operation & Maintenance	House Moving
SCRRRA Application for Right-of-Way Encroachment	X	X	*	X	
Plan and profile drawings	X	X		X	
Schedule	X	X		X	X
Existing License Agreement				X	
Application Processing Fee	X	X		X	X

* Initial Application Submittal Not Required. Continue to Section 6

4.1 Application for Right-of-Way Encroachment

- A. The Application for Right-of-Way Encroachment is an electronic fillable form available on the Right-of-Way Encroachments page of the Metrolink website.
- B. The following are mandatory sections of the application and must be filled out completely:
 - i. Section 1: Project Owner Information
 - ii. Section 2: Project Contact Information
 - iii. Section 3: Project Information/Location
- C. The following are required to be completed as applicable to the project:
 - i. Section 4: Underground Structure Information
 - ii. Section 5: Overhead Structure Information

4.3 Plans and Drawings

- A. Plans and profiles will be submitted with each request. The plans should be clear, concise, and accurately reflect the design of the project that meets SCRRA standards and requirements.
- B. Drawing submittals shall include typical sections, plans, key maps, profiles, and cross sections. Drawings will be prepared on 11" x 17" sheets and PDF files shall be submitted to SCRRA. Drawings scale shall be 1"=200' for developed and undeveloped areas, 1"=100' in constrained urban areas and 1"=50' for stations and crossings.

4.4 Schedule

- A. An overview schedule of the project including the duration of work within the right-of-way.
- B. The schedule must include the duration of activities within the right-of-way or affecting train operations.
- C. The schedule must include the installation and removal dates of all temporary encroachment installations (e.g. temporary overhead power lines)

4.5 Existing License Agreement

- A. If the project owner has an existing license agreement for an existing or future permanent installation, include a copy of the executed agreement.

4.6 Application Processing Fee

- A. The application processing fee is comprised of Standard Plan Review, Administration and Contingency. Refer to the Schedule of Fees available on the Right-of-Way Encroachment site.
- B. Additional fees may apply depending on the project details. If the project includes temporary traffic control, shoring or falsework additional plan review fees, as identified on the Schedule of Fees, are necessary.
- C. This is a non-refundable fee for permit processing, administrative support, and engineering plan reviews.
- D. To pay fees through paper checks, make checks payable to "Southern California Regional Rail Authority" and mail to the address below.

*Southern California Regional Rail Authority
2700 Melbourne Ave Pomona, California 91767
Attn: Mr. Eric Reese, Right-of-Way Encroachments Coordinator*

- E. To pay fees through Automated Clearing House (ACH) payment, mark the ACH payment type on the Application for Right-of-Way Encroachment form and submit the Initial Application Submittal. The ROE Coordinator will contact the Applicant to provide additional information for payment.

4.7 Engineering Plan Review of Application Submittal

- A. SCRRRA reviews application and plans for compliance to technical and safety regulations, including location of work, horizontal and vertical clearances to tracks, shoring, jacking and false work, any issue determined to impact safety or railroad operations, maintainability, drainage impacts, access to member agency property, compatibility with future plans for rail improvements or use of rail roadway, and existing underground railroad facilities.
- B. Review SCRRRA Form 37 Rules and Requirement for Construction on SCRRRA Right-of-Way to verify compliance with SCRRRA requirements prior to submission.

5.0 LICENSING AGREEMENT

- A. A license agreement is necessary for all permanent facilities.
- B. Member Agency real estate department will review applications for use of the right-of way. Right-of-Entry agreement cannot be granted by SCRRRA until Member Agency real estate agreement is complete.
- C. Generally, agreement processing time will be between 30 - 90 days. Please allow sufficient time for document handling to desired construction date. Before construction begins, real estate agreements must be executed by the Applicant and the Member Agency. License fees will be submitted to the Member Agency directly. The application processing and construction services deposit does not include the license fees.

Table 3 SCRRRA's Member Agency Contact Information

Member Agency	Contacts
Metro	Manager, Property Management Los Angeles County Metropolitan Transportation Agency (Metro) P. O. Box 194 (1 Gateway Plaza, 14th Floor) Los Angeles, CA 90053 Phone: (213) 922-2435
OCTA	Right of Way Administrator Orange County Transportation Authority (OCTA) P. O. Box 14184 (550 South Main Street) Santa Ana, CA 92613-1584 Phone: (714) 560-5737
RCTC	Assistant Director, Planning & Programming Riverside County Transportation Commission (RCTC) 3560 University Avenue, Suite 100 Riverside, CA 92501 Phone: (909) 787-7924
SBCTA	Deputy Executive Director San Bernardino County Transportation Authority (SBCTA) 1170 W. 3rd Street, 2nd Floor San Bernardino, California 92410-1715 (909) 884-8276
VCTC	Executive Director

	Ventura County Transportation Commission (VCTC) 950 County Square, Suite 207 Ventura, CA 93003 Phone: (805) 642-1591
--	---

6.0 CONSTRUCTION SUBMITTAL

- A. This section summarized the contents of the Construction Submittal. Table 4 identifies the submittal contents for each project type.
- B. Incomplete submittals will be returned to the applicant for correction.

Table 4 Construction Submittal Contents by Project Type

Item Description	Permanent Facility	Temporary Encroachment	Survey and Filming	Operation & Maintenance	House Moving
SCRRA Form No. 4					X
SCRRA Form No. 5			X		
SCRRA Form No. 6	X	X			
Insurance certificates as described in the Temporary Right-of-Entry agreement, SCRRA Form No. 6	X	X			
Letter of Intent			X		
Site Specific Work Plan (SSWP) and SSWP Checklist	X	X		X	
Deposit for Right-of-Entry Support (Signal & Communication Cable Locations, Safety training, and flagging Services)	X	X	X	X	X

5.1 Right-of-Way Encroachment Forms

- A. Right-of-Way Encroachment forms are available on the Right-of-Way Encroachments page of the Metrolink website.
- B. Agreement for Moving Oversized Loads Over Highway-Rail Grade Crossings, Form 4:
 - i. Describe the load
 - ii. Provide height, width and length (in feet)
 - iii. Identify if any SCRRA facilities need to be moved (e.g. signs, flashing lights, gates)
 - iv. Identify the location of the crossing

- v. Provide the date and time for the move
- vi. Complete the Applicant information
- vii. Sign the agreement

C. Indemnification and Assumption of Liability Agreement, Form 5:

- i. Identify the Location of Work
- ii. Provide a brief description/purpose of the work
- iii. Complete the Applicant information
- iv. Sign the agreement

D. Temporary Right-of-Entry Agreement, Form 6:

- i. Complete project and applicant details (page 1)
- ii. Complete the Applicant information
- iii. Sign the agreement

5.2 Insurance Certificates

- A. SCRRA requires that insurance coverage be provided prior to any entry and/or work activity within the railroad corridor for permanent and temporary encroachments. The Insurance requirements and limits for Right-of-Entry Agreements are included in Exhibit A of the Form 6.
- B. Railroad Protective Liability Insurance, in addition to general liability insurance is required for permanent and temporary encroachments in the right-of-way.
- C. Updated Train Traffic information is available on the Right-of-Way Encroachment page of the Metrolink website.
- D. The Certificate Holder and Additionally Insured are often overlooked, requiring resubmittal. Verify requirements within Exhibit B of the Form 6.5.2

4.2 Letter of Intent

- A. The letter must contain the following information:
 - i. Location: Provide a map, aerial, design plans, or nearest address for filming or surveying. Describe the area where people or equipment will be during the film shoot. Identify each location if surveying or filming will occur in multiple locations.
 - ii. Duration: Identify each day surveying or filming will occur on the right-of-way. Include the start and end time for each day. This includes any set up or take down time when people or equipment will be on the right-of-way.

- iii. Equipment used: Describe the type and quantities of equipment used.
- iv. Number of individuals who will be on the right-of-way
- v. Parking requirements: Identify the number of vehicles that will be parked on the right-of-way during the filming or surveying.

5.3 Site Specific Work Plan (SSWP)

- A. The details of each construction activity affecting the operations, facilities, or right-of-way of SCRRA, or the operations or facilities of other railroads using the right-of-way, must be described in a Site Specific Work Plan (SSWP).
- B. The requirements of a Site Specific Work Plan (SSWP) is available on the Right-of-Way Encroachment page of the Metrolink website.
- C. Complete the SSWP Checklist and include with the SSWP.

5.4.1 Temporary Traffic Control Plans

- A. If the project will affect vehicular traffic across a highway-rail at-grade crossing, temporary traffic control plans are required.
- B. Temporary Traffic Control Plans must comply with SCRRA Engineering Standard 4301. Engineering Standards are available on the Engineering & Construction webpage (About, Engineering & Construction). Use the flow chart to verify temporary traffic control plans address the circumstances of the project.
- C. If the project will include multiple phases which affect the highway-rail at-grade crossing, additional temporary traffic control plans must be included for each phase.

5.4.2 Shoring Plans

- A. Support or shoring located on the SCRRA right-of-way, or within the zone of influence from railroad loading, shall conform to the SCRRA Design Criteria Manual, available on the Engineering & Construction page of the Metrolink website.

5.4.3 Falsework Plans

- A. If the project will include falsework over SCRRA tracks or will impact clearances (horizontal, vertical), falsework plans are required for SCRRA review. Plans must comply with the SCRRA Design Criteria Manual, and Engineering Standard ES-2101, ES-2102 and ES-2103 for clearance requirements. These documents are available on the Engineering & Construction page of the Metrolink website.

5.5 Deposit for Right-of-Way Encroachment Support

- A. The Deposit for Right-of-Way Encroachment Support is an estimate of the costs needed during the project. The deposit is calculated based on the rates within the Schedule of Fees (available on the Right-of-Way Encroachment site), the project duration, and project

- needs. Support services are expended based on actual costs.
- B. Railroad Safety Training is required for each individual working on the right-of-way. Training is valid for one full calendar year. The expiration date is listed on the training decal provided after successful completion of training. Include Railroad Safety Training based on the number of classes needed for the project.
 - C. Communications and Signal Marking is required when digging, excavating, or installing underground facilities within the railroad right-of-way. C&S Authorization numbers are valid for 30-days. Refresher mark-outs or additional mark-outs may be necessary (e.g., schedule delays, multiple phases).
 - D. Railroad Flagging protection is calculated based on the number of days where protection is needed. Partial days are not used when calculating the deposit.
 - E. Untimely cancellation, failure to attend training, or not showing up for scheduled flagging will result in incurred costs against the deposit.
 - F. To pay fees through paper checks, make checks payable to "Southern California Regional Rail Authority" and mail to the address below.

*Southern California Regional Rail Authority
2700 Melbourne Ave Pomona, California 91767
Attn: Mr. Eric Reese, Right-of-Way Encroachments Coordinator*

- G. To pay fees through Automated Clearing House (ACH) payment notify the ROE Coordinator in the Construction Submittal. The ROE Coordinator will contact the Applicant to provide additional information for payment.
- H. Additional deposits may be requested throughout the project to continue providing Right-of-Way Encroachment support.

5.6 Construction Review

- A. SCRRA reviews Construction Submittals for compliance to technical and safety regulations, including location of work, horizontal and vertical clearances to tracks, shoring, jacking and false work, any issue determined to impact safety or railroad operations, maintainability, drainage impacts, access to member agency property, compatibility with future plans for rail improvements or use of rail roadway, and existing underground railroad facilities.
- B. This review may be conducted during the Engineering Plan Review if the Applicant submits the SSWP, temporary traffic control plans, shoring plans, or falsework plans with the Initial Application Submittal. This review may be conducted separately if a license agreement is needed, or if the Initial Application Submittal is completed by a different entity than the Construction Submittal (e.g., Project Owner submits initial application prior during an earlier phase of a project).
- C. Review SCRRA Form 37 Rules and Requirement for Construction on SCRRA Right-of-Way to verify compliance with SCRRA requirements prior to submission.

7.0 REQUIREMENTS PRIOR TO THE START OF WORK

- A. This section outlines the requirements of the Applicant after the Right-of-Way Encroachment agreement is executed, but before work can commence.
- B. Table 5 lists the requirements applicable to each project type.

Table 5 Requirement Prior to the Start of Work, by Project Type

Item Description	Permanent Facility	Temporary Encroachment	Survey and Filming	Operation & Maintenance	House Moving
Safety Training	X	X	X	X	
SCRRRA C&S Authorization	X	X		X	
Request Railroad Flagging	X	X	X	X	X

7.1 Safety Training

- A. Each individual working on the Right-of-Way must complete the Railroad Safety Training.
- B. Refer to the executed Right-of-Way Encroachment agreement and/or cover letter for contact information.
- A. Dates and availability of training courses may be limited. Advanced planning and flexibility are helpful to the trainers and the Applicant's project schedule.

7.2 Cable Marking and Utilities

- A. The Applicant is responsible for the location and protection of any and all surface, sub-surface, and overhead utilities and structures. Approval of application or issuance of Right of Entry Agreement by SCRRRA does not constitute confirmation of the existence or non-existence of any utilities or structures within the limits of this project.
- B. Before digging, excavating, or installing underground facilities the Applicant must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems, are present and located within the Project work area by calling the Southern California Underground Service Alert at 811.
- C. SCRRRA is not a member of DIGALERT. The Applicant shall call SCRRRA's Signal Department at (909) 592-1346 or by emailing the ROE Coordinator a minimum of fifteen days prior to beginning construction to mark signal and communication cables and conduits. No work may proceed until an SCRRRA C&S Authorization number is provided.
- D. SCRRRA C&S Authorization numbers are valid for 30-day.

- E. In case of signal emergencies or grade crossing problems, the Applicant shall call SCRRA's 24-hour signal emergency number 1-888-446-9721.

8.0 REQUIREMENTS DURING WORK

- A. To comply with Federal requirements, the Applicant's person in charge must keep a copy of SCRRA's agreement at the job site at all times during the encroachment on the Property. Failure to provide necessary information and documents, failure to obtain and produce SCRRA agreements (including not having SCRRA agreement on the job site), or violation of SCRRA rules and regulations will result in the removal of the Applicant, the Contractor, their employees, and equipment from the right-of-way.
- B. The Applicant shall follow SCRRA rules and regulations, addressed in Form 37 "Rules and Requirements for Construction on Railway Property".
- C. All persons working on, over, or under the SCRRA right-of-way must be equipped with personal protective equipment meeting applicable OSHA and ANSI specifications. Employees, contractors, subcontractors, suppliers, agents or invitees of Applicant shall possess the personal protective equipment, including safety glasses with side shields, helmets (hard hats), safety shoes with hardened toes, high visibility ORANGE (and only orange) retro-reflective work wear, and SCRRA railroad safety training decal.

8.1 Flagging Services

- B. The Applicant shall request and arrange for flagging services from SCRRA in the following circumstances:
 - i. When the work activities are within the right-of-way of SCRRA.
 - ii. When the work activities are located over or under a track or tracks.
 - iii. When cranes, pile drivers, drill rigs, concrete pumps, or similar equipment positioned outside of the right-of-way could foul the track in the event of tip-over or other catastrophic occurrence.
 - iv. When any excavation is performed below the elevation of the track sub-grade, or track or other railroad facilities may be subject to movement or settlement.
 - v. When work in any way interferes with the safe operation of trains at timetable speeds.
 - vi. When street construction and maintenance activities, located within the right-of-way or in the vicinity of the highway-rail grade crossing, requiring temporary work area traffic control, which may affect or create unsafe conditions for employees, public, trains and vehicles.
- C. Flagging services are only provided by SCRRA authorized contractors. The Applicant will contact SCRRA's consultant/contractor to arrange for flagging services after approval of construction agreement by SCRRA.
- D. Flagging service is dependent on the availability of a Roadway-Worker-in-Charge

(RWIC) and may require a minimum of fifteen working days prior to beginning work. Prior notification of flagging services does not guarantee the availability of the RWIC for the proposed date of work.

9.0 REQUIREMENTS AFTER WORK IS COMPLETE

- A. The Applicant or its Contractor must submit "AS-BUILT" drawings upon completion of the construction.
- B. The Applicant will request review and signature of the Confirmation of Completion Form by the SCRRA Flagging Contractor. The Application will then submit the Confirmation of Completion form to rightofentry@scrra.net.
- C. SCRRA will verify invoicing and billing status for the project. Any Right-of-Way Encroachment monies or contingency not used will be refunded once the project is closed out by SCRRA's Finance Department.

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**Southern California
Regional Rail Authority**

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**RIGHT OF WAY
ENCROACHMENT
FREQUENTLY ASKED
QUESTIONS**

*Revised
July 14, 2022*

Prepared by
SCRRA Track & Signal Infrastructure Maintenance

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GENERAL QUESTIONS

When would my project require a Metrolink Right of Way Entry (ROE) Permit?

All activities within the railroad right of way or activities that affect the operations or safety of trains must follow the Right of Way Encroachment Process.

What materials should I include in the application submittal?

Please refer to the Right of Way Encroachment Process for Initial Application Submittal and Construction Submittal contents.

What is a Site-Specific Work Plan (SSWP)?

A Site-Specific Work Plan (SSWP) details the type of work the applicant plans to conduct, lists the types of tools and equipment to be used, process to perform the work, contingencies to be employed that will protect railroad operations, and emergency procedures. Refer to the Site-Specific Work Plan (SSWP) and Form 37 Rule and Requirements for Construction on Railway Property for additional requirements.

Are there any time or schedule restrictions for when I may complete my work?

Time restrictions are dependent on the type of work you are doing, the work location, and train schedule. In some cases, work which has a high potential to affect safety or train operations may be required on a weekend or during the night. Any excavating activities that will go underneath the Right-of-Way will typically be scheduled on the weekends, preferably on a Sunday when there less trains running. All projects will be conducted in a manner so as not to unreasonably interfere with the safe operation of the railroad. Any time or schedule restrictions will be determined by our Railroad Civil Engineer and will be communicated during the Plan Check Process.

Who did I send Right of Way Entry Applications to?

Please send all completed applications to RightofEntry@scrra.net

How early should I apply for the Right-of Way Entry Permit?

It is recommended to allow at least 3 months prior to your project start date for processing a Right of Way Encroachment permit. Processing begins once SCRRRA has received a check or ACH payment for fees. Please refer to SCRRRA Right of Way Encroachment Process, Section 6.0 Process Time for additional details.

Is there an expedited permit process?

No.

Can the Initial Application and Construction Submittals be sent in at the same time?

Yes.

What are common reasons submittals are returned?

- The Right of Way Encroachment Application is missing information

What types of comments are common during plan review?

- Plans do not comply with minimum clearance requirements for overhead wire (ES2104 Minimum Vertical Clearance for Wires)
- Plans do not comply with minimum underground depth requirements or do not comply with casing type and thickness requirements (ES5001 Pipe Lines for Non-Flammable Substances Across or Along Right-of-Way; ES5002 Pipe Lines for Flammable and Hazardous Substances across or Along Right-of-Way).
- Temporary perimeter fencing does not include pile driven posts and secured chain link mesh.

What types of comments are common during construction review?

- Temporary traffic control includes lane closures which do not extend through a railroad crossing.
- R8-8 "DO NOT STOP ON TRACKS" sign not included in Temporary Traffic Control plans.
- Insurance has expired
- Insurance limits do not meet requirements within the Form 6.
- Railroad Protective Liability is not provided. Additionally insured does not include all entities listed within Form 6, Exhibit B.

I only need the railroad to review Temporary Traffic Control Plans, what is the process?

Follow the requirements for a Temporary Encroachment described in the Right of Way Encroachment Process document. This will begin the review of temporary traffic control and will determine if the plan meets SCRRRA requirements and whether additional requirements may be necessary.

LICENSE AGREEMENT QUESTIONS

When is a License Agreement required?

A license Agreement is required for any project that will result in a permanent installation of facilities, equipment, or utilities on the Right-of-Way. This includes permanent installations under, on, or above the Right-of-Way.

Who administers License Agreements on the Metrolink Right-of Way?

Metrolink's Member Agencies (LA Metro, OCTA, RCTC, SBCTA, and VCTC) administer the License Agreements on Metrolink Right-of-ways in their respective county.

What is the typical timeline for License Agreements?

Most License Agreements through Metrolink's Member Agencies take on average 30-90 days to approve. To avoid delays to your project, it is recommended that you apply for your Right-of Way Entry Permit at least 6 months prior to your project start date. Most Metrolink Member Agencies will not issue a License Agreement until Metrolink has approved the project plans, therefore please apply early to allow time for plan approvals.

Can Metrolink expedite License Agreements through its Member Agencies?

No.

CERTIFICATE OF INSURANCE QUESTIONS

What type of Insurance does Metrolink require for Right-of Way Entry Projects?

Metrolink requires that all applications include proof of insurance that includes Commercial General Liability with minimum \$2,000,00 coverage per occurrence for bodily injury and property damage; Automotive Liability with minimum \$1,000,000 coverage per accident for bodily injury and property damage; Worker's Compensation with minimum \$1,000,000 per accident for bodily injury or disease; and Railroad Protective Liability Insurance with minimum \$2 million per occurrence, combined single limit, for coverage and for losses arising out of injury to or death of all persons and for physical loss or damage to or destruction of property, including loss of use thereof. A \$6 million annual aggregate shall also apply. Refer to SCRRRA Form #6 Exhibit A for more details.

Does Metrolink allow self-insurance or endorsements to the Commercial General Liability Policy in lieu of obtaining Railroad Protective Liability Insurance?

No. With limited exceptions, all applicants are required to obtain Railroad Protective Liability Insurance coverage. Any exceptions must be pre-approved through Metrolink's Legal Department.

SCRRA PERFORMANCE BOND QUESTIONS

What is a Performance Bond, and when is a Performance Bond required?

A Performance Bond is a surety bond issued by an insurance company to guarantee a contractor's work against failure or settlement of the soil around a project area for 2 years after the completion of work. A Performance Bond is required for any excavation, shoring and support of construction, or boring and jacking of pipe and casing that may affect the stability of the railroad facility or track(s), or settlement of the soil around a pipe. See SCRRA Form #37 for more information.

What amount do I furnish for a Performance Bond?

The amount is dependent on the size of the casing/pipe. Excavation and shoring will require a \$180,000 bond while a 36" casing will require a \$120,000 bond. The amounts will be relayed during the Plan Review Process. Please see SCRRA Form 37 for a complete list of rates.

SCRRRA SCHEDULE OF FEES QUESTIONS

Does SCRRRA accept Credit Cards, Debit cards, or Electronic Bank Transfer for payment of fees?

SCRRRA accepts paper checks and Automated Clearing House (ACH) payments. When mailing a check, please write a short description of the project on the check. This allows us to identify your project with the check.

If paying by check, where do I mail the check?

Please mail all checks payable to the Southern California Regional Railroad Authority (SCRRRA) to the following address:
Southern California Regional Railroad Authority (SCRRRA)
2700 Melbourne Ave
Pomona, CA 91767
Attn: Eric Reese, ROW Encroachments Coordinator

If paying by Automated Clearing House (ACH), who do I submit payment to and how?

For ACH Payment, please indicate that you would like to pay by ACH Payment on the Right of Way Encroachment Application and send to RightofEntry@scrra.net. If you need a W-9 please indicate so in the email. An ACH Payment Form, W-9 (if needed), and SCRRRA Project # will be forwarded to you outlining all the information you need to make an ACH Payment. Once payment has been made please reply to the original email, so we can confirm receipt of payment.

Are SCRRRA Fees Refundable?

With the exception of review fees (i.e., Standard Plan Review, Traffic Control Plan, Administration Fee) which are non-refundable, all other fees are refundable, provided they have not been utilized by the end of the project close-out.

Do SCRRRA Fees include License Agreement fees?

No, License Agreement fees are charged separately by Metrolink's Member Agencies.

How do I know which fees to pay?

Review the Right-of-Way Encroachment Process and Schedule of Fees for explanations of each item and to determine how to calculate the fees required for the Initial Application Submittal and Deposit for Right-of-Way Encroachment Support. It is better to overestimate the deposit amount for Right-of-Way Encroachment Support. For example, if you are unsure how many days of flagging you will need, please include extra days. If the deposit does not cover the duration of work, safety training or cable marking (if applicable), the Right-of-Way Encroachment agreement will not be executed until an additional deposit is received.

RAILROAD SAFETY TRAINING QUESTIONS

What is Railroad Safety Training (also referred to as RWP Safety Training) and why is it required?

SCRRA requires each individual working on the right-of-way to complete Railroad Safety Training. Any individual who has not completed the training and does not have a valid safety training decal will not be allowed on the right-of-way.

How long is Railroad Safety Training valid for?

Railroad Safety Training is valid for one full calendar year. If you have a multi-year project, Railroad safety training and fees will be required for each calendar year until the project is complete.

How many people does a Railroad Safety Training Class accommodate?

Each Railroad Safety Class can accommodate up to 20 people. If you have more than 20 employees or cannot schedule all individuals within the same class, an additional Railroad Safety class and fees will be required. Class size and location may vary with COVID-19 restrictions. Refer to the Right-of-Way Encroachments page of the Metrolink website or contact the Right-of-Way Encroachments Coordinator for the latest information.

If I need to cancel an RWP Training Class for a specific day, how much time must I give advanced notice and what happens if I fail to provide advance notice?

A 24-Hour Notice from the schedule start time of the RWP Training Class is required. If you cancel less than 24-hours, you will be charged for the RWP training Class and will need to submit monies for additional training classes.

I received an RWP Sticker from the class, where do I need to display it?

RWP Stickers must be displayed on the right hand of the hard hat and must be visible for inspection while on the Right-of-Way. Please note that RWP Stickers are uniquely assigned to one person and are nontransferable. You cannot use someone else's RWP Sticker.

RAILROAD FLAGGING SERVICES QUESTIONS

What are railroad flagging services and why does my project require railroad flagging services?

Railroad Flagging services consist of a Railroad Worker In-Charge (RWIC) who will provide protection for workers by communicating with either passing trains or train dispatchers. The RWIC controls the access of trains through the work zone and ensures that trains only pass when all workers are clear from the tracks. Because Metrolink tracks are live and active tracks, flagging services are required by Metrolink, State, and Federal Regulations to ensure that all workers who may have the potential to foul tracks are protected from all passing trains.

Can I hire my own railroad flagger to provide protection?

No, only SCRRA's authorized contractors can provide railroad flagging services.

My project will involve more than 10 workers at the site, how many flaggers will be required?

Per Metrolink policy, one flagger can only provide protection for up to 10 workers at a time. If you have more than 10 workers at a site, an extra flagman will be required. Each flagger represents 1 day of flagging, requiring the submittal of extra funds covering flagging costs

How are railroad flagging services coordinated?

Once a Right-of-Entry Encroachment agreement is executed the Applicant is provided contact information for an SCRRA authorized flagging contractor. The Applicant must provide the SCRRA Project Number and, if applicable, the C&S Authorization Number.

What is the minimum amount of time needed to schedule flagging services?

To ensure flagging availability, all railroad flagging services must be scheduled a minimum of 15 days prior to your desired start date. This prior notification does not guarantee the availability of on track safety protection for the proposed date of construction.

If I need to cancel flagging services for a specific day, how much time must I give advanced notice and what happens if I fail to provide advance notice?

A 24-Hour Notice from the schedule start time of flagging services is required. If you cancel less than 24-hours, you will be charged for 8 hours of flagging services and will need to submit monies for additional flagging services.

FILMING REQUEST QUESTIONS

I am planning on conducting filming near a Metrolink Facility, on a Metrolink trainset or on the Right-of-Way that might impact railroad operations, do I require Metrolink Authorization?

Yes, there are two processes and points of contact depending on the location of filming.

- Filming at a Metrolink Facility or on a Metrolink Trainset requires coordination through Metrolink Marketing. Please visit the Customer Service page of the Metrolink website for more information.
- Filming on the right-of-way or needing access to the right-of-way requires coordination through Metrolink Right-of-Way Encroachments.

After reviewing the filming project scope, the applicable Metrolink department will advise on further requirements

I am planning on conducting filming on the Right-of-Way or will require access to the Metrolink Right-of-Way, (e.g., along, on or across railroad tracks or railroad bridge) what does Metrolink require me to submit?

Please visit the Right-of-Way Encroachment page of the Metrolink website and review the Right of Way Encroachment Process. Refer to Section 6 which identifies the submittal requirements: SCRRA Form 5, a Letter of Intent and deposit for Right-of-Entry Support.

What is the lead time Metrolink needs to review and process film production requests?

Metrolink requires a minimum of four (4) weeks to review and process film production requests, depending on the complexity of the production

What are the fees for filming requests?

Fees will vary depending on the film production shoot and the type of Metrolink support services needed. Please review the Right of Way Encroachment Process for additional information.

COMMUNICATIONS AND SIGNAL CABLE MARKING QUESTIONS

Will Underground Service Alert/DigAlert identify all underground utilities within the SCRRA Right-of-Way?

No, SCRRA is not a member of DigAlert, therefore the applicant must notify SCRRA at least 15 days prior to beginning construction.

When are SCRRA Communications and Signal Cable Marking required?

Communications & Signal Cable Marking is required anytime the applicant plans to conduct excavation, drilling or installation of any underground facilities within the SCRRA Right-of-Way. The Applicant will be provided a SCRRA C&S Authorization number once marking is complete.

How long are C&S Authorization numbers valid for?

Initial C&S Authorization numbers are valid for up to 30-days. Refresher mark-outs (and associated fees) may be required throughout a project.

Who do I contact for Signal and Communications Cable Marking?

SCRRA's Signal Department at (909) 592-1346 or SCRRA Right-of-Way Coordinator at RightofEntry@scrra.net.

PROJECT COMPLETION QUESTIONS

I have finished my project, what do I do?

Once you have finished your project, please complete the Contractor Completion Form (included in the Right-of-Way Encroachment Agreement package) and forward to the flagging contractor for verification. Once the Flagging Contractor signs the form, they will forward the form to the ROW Coordinator who will process the form for project close-out.

If I have unused deposits from the project, will those be refunded to me?

Yes. Once we have received the Contractor Completion Form and have verified there are no outstanding balances remaining, any unused deposits will be refunded by check to the address on file.



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SCHEDULE OF FEES

NO	ITEM	AMOUNT	DESCRIPTION
1	Standard Plan Review	\$2,500.00 <i>(Plus any Additional Fees based on plans being submitted for review. See "description")</i>	\$2,500.00 - SCRRRA basic plan review, site visits and correspondence. Add additional (to Standard Plan Review Fee): \$1,000.00 - Traffic Control Plans \$3,000.00 – Shoring Plans * \$3,000.00 – Falsework Plans *
2	Administration	\$2,000.00	SCRRRA permit processing; and schedule of flagging & signal location services
3	Contingency	\$2,000.00	Monies to cover potential (unforeseen) project administration and support and agency allocated overhead costs. Any monies not utilized will be refunded once the project is closed out by SCRRRA's Finance Dept.
4	RWP Safety Training	\$1,500.00	Costs assume the following: One (4) hour training class Class size – (during COVID - 19 restrictions, up to 6-10 participants)
5	Signal and Communications Line locations	Initial Cable mark-outs: \$2,000.00 Refresher mark-outs: \$1,100.00	Signal and Communications location service is provided by SCRRRA Contractor. Costs assume the following: <ul style="list-style-type: none"> • Signal marking • Travel time
6	Flagging	\$1,750.00 Per day	Railroad flagging is provided by SCRRRA Contractor or consultant. Costs assume the following: <ul style="list-style-type: none"> • Eight (8) hours of RWIC Railroad Protection; 2.5 hours of preparation, set-up, and flag take down if Form B is used. • Vehicle costs • Management oversight
7	Inspection	\$1,500.00 Per day	Railroad inspection is provided by SCRRRA Contractor or consultant. Costs assume one days of inspection including travel time, vehicle costs.

*** Allows for site visit to ensure Shoring and/or False Work meet SCRRRA Standards**



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Notes:

1. The above Schedule of Fees is intended only as a guideline estimate. The Applicant or their contractor shall reimburse SCRRA the actual cost and expense incurred by SCRRA and its contractors and consultants for all services and work performed in connection with the request, including an allocated overhead representing SCRRA's costs for administration and management.
2. For what SCRRA deems as "**Major Construction**" such as (but not limited to);
 - a. **Roadway Alterations**
 - b. **Roadway/Bridge Widening/Bike Trails**
 - c. **Grade Separations**
 - d. **Other construction on or about the Right-of-Way with the potential to affect railroad operational safety**

A "Cost Estimate" will be provided that is contingent on the complexity of the project and the (estimated) direct costs and expenses incurred by SCRRA and its contractors and consultants.

Mail To: Southern California Regional Rail Authority
 ROW Encroachments Coordinator
 2700 Melbourne Ave,
 Pomona, California 91767
RightofEntry@scrra.net

APPLICATION FOR RIGHT-OF-WAY ENCHROACHMENT

Application Date:

SCRRRA File Number:
 SCRRRA Project Number:

SECTION 1: PROJECT OWNER INFORMATION TO BE COMPLETED BY APPLICANT

Project Owner/Legal Company Identification (required)			
Owner's Complete Legal Company Name:			
Legal Address (1):			
Legal Address (2):			
City:	State:	Zip:	
Business Type:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Limited Liability Company	<input type="checkbox"/> Partnership
	<input type="checkbox"/> Municipality	<input type="checkbox"/> Limited Liability Partnership	<input type="checkbox"/> Joint Venture
State of Incorporation:	Other Business Type - Describe:		
Billing Address			
Payment Type: <input type="radio"/> Mail a Check <input type="radio"/> ACH Payment			
<input type="checkbox"/> (Check box if same as above); if not, please complete below.			
Billing Address (1):			
Billing Address (2):			
City:	State:	Zip:	
Project Owner Contact Information			
Contact Name:			Contact Title:
Office Phone:	Ext.:	Mobile Phone:	
Email:	Emergency Phone:		

SECTION 2: PROJECT CONTACT INFORMATION TO BE COMPLETED BY APPLICANT

Check here if address is the same as legal address above.
 If not the same as above, check here if agreement should be mailed to this address.

Project Engineer/Consultant/Agent Information			
Engineer/Consultant/ Agent Company Name:			
Contact Name:			
Mailing Address:			
City:	State:	Zip:	
Office Phone:	Mobile Phone:		
Email:			

Application for Right-of-Way Encroachment

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SECTION 3: PROJECT INFORMATION/LOCATION	TO BE COMPLETED BY APPLICANT
Project Reference	
Is the current work connected to an existing agreement, license, or easement between SCRRRA, a Member Agency, or a prior Railroad? <input type="radio"/> Yes Provide Agreement # or Title and Date: <input type="radio"/> No	
Is this project related to another project or activity involving SCRRRA or to which SCRRRA is a party? <input type="radio"/> Yes Describe: <input type="radio"/> No	
Provide utility owner project reference number:	
Project Scope	
Check box to indicate type of entry request: General Access: <input type="checkbox"/> Bridge Inspection (if checked, must include DOT Bridge Numbers) <input type="checkbox"/> Field Review of Proposed Improvements <input type="checkbox"/> Utility Location <input type="checkbox"/> Monitoring (Vibration, Structural, etc) <input type="checkbox"/> Construction Job Walk <input type="checkbox"/> Surveying <input type="checkbox"/> Film Shooting <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Fiber Optic, Petroleum or Gas Pipeline Access or Investigation: <input type="checkbox"/> Annual Maintenance Permit <input type="checkbox"/> Relocation of Existing Utility <input type="checkbox"/> Protection of Existing Utility <input type="checkbox"/> Potholing of Existing Utilities <input type="checkbox"/> Other </div> <div style="width: 45%;"> Environmental Investigation: <input type="checkbox"/> Groundwater Sampling <input type="checkbox"/> Sediment Sampling <input type="checkbox"/> Soil Sampling <input type="checkbox"/> Remediation <input type="checkbox"/> Monitoring Wells If state or Federal Site, provide Site #: </div> </div> Construction of New Pipeline or Underground Conduit (See Section 4) <input type="checkbox"/> Construct Storm Drain or Sanitary Sewer <input type="checkbox"/> Construct Petroleum or Gas Pipeline <input type="checkbox"/> Construct New Fiber Optic Facilities <input type="checkbox"/> Construct New Underground Power Line <input type="checkbox"/> Construct Underground Cable not Otherwise Described Above <input type="checkbox"/> Other Pipeline or Underground Conduit Railroad Operations: How close will the proposed activity be to the nearest railroad track: Will the proposed activity require crossing railroad track(s): <input type="radio"/> Yes Describe: <input type="radio"/> No	

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SECTION 3: PROJECT INFORMATION/LOCATION		TO BE COMPLETED BY APPLICANT			
Project Description					
Description / Scope <i>(Include: purpose, scope of work, materials, equipment, geographic features, special conditions):</i>					
Project Location					
City:		County:		State:	
Street Address (if applicable):					
Subdivison:			Mile Post:		

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Application for Right-of-Way Encroachment

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SECTION 4: UNDERGROUND STRUCTURE INFORMATION	TO BE COMPLETED BY APPLICANT
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Carrier Pipe:	<input type="checkbox"/> New Construction	<input type="checkbox"/> Reconstruction
Non-Flammable Substance:	<input type="checkbox"/> (See SCRRRA Standard ES 5001)	
Flammable Substance:	<input type="checkbox"/> (See SCRRRA Standard ES 5002)	

Nearest Cross Streets:

Angle of Crossing with Track:

Pipe Slope or Gradient:

	Carrier Pipe	Casing Pipe
Content to be Handled:	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Nominal Diameter	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Pipe Material	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Specifications and Grade	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Wall Thickness	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Operating Pressure/Maximum Pressure	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Minimum Yield Strength	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Type Joints	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Coating Material	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Length of Casing	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Longitudinal Distance from Centerline of Track	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Distance from Centerline of Track	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Base of Rail to Top of Casing	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
Roadway Ditches	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>

Vents: Depth:

Method of Installation: Dry Bore Directional Bore

Application for Right-of-Way Encroachment

May 20, 2022

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SECTION 4: UNDERGROUND STRUCTURE INFORMATION	TO BE COMPLETED BY APPLICANT
---	-------------------------------------

Type, Size, and Spacing of Insulator Supports
Distance to Shut-off Valve on Each Side of R/W
Types of Seals at Ends of Crossings
Cathodic Protection (Type)
Casing Filler
Longitudinal Pipeline: Distance from Centerline of Outside Track
Depth of Bury to Top of Pipe

SECTION 5: OVERHEAD STRUCTURE INFORMATION	TO BE COMPLETED BY APPLICANT
--	-------------------------------------

<input type="checkbox"/> New Construction <input type="checkbox"/> Reconstruction <input type="checkbox"/> Communication Line Crossing <input type="checkbox"/> Power Line Crossing						
Existing Facility						
<input type="checkbox"/> Communication Line			<input type="checkbox"/> Supply (Electrical) Line			
Height Above Top of Rail in (ft):		Supply		Communication		
General						
Angle of Crossing with Tracks:	Length of Span (ft)	Height Above Top of Rail (ft, No Wind, 60 deg)				
Poles						
<input type="checkbox"/> Use Existing Pole(s)	Pole No. or Reference	Depth (below surface)	Circumference (top of pole)	Length of Pole	Within Right-of-Way	Distance to edge of Right-of-Way
<input type="checkbox"/> Replace Pole(s)					{Select}	
<input type="checkbox"/> Install New Pole(s)					{Select}	
					{Select}	
Cable						
Type		Number		Size		
Voltage		Phase		Frequency		
Fiber Optic Cable (type)				Number		

Clear Section 3, 4, 5

Clear All

METROLINK

PART IV: CONSTRUCTION – MATERIALS, METHODS, SPECIFICATIONS AND PAYMENT REQUIREMENTS-STRUCTURAL, ELECTRICAL, LANDSCAPE, SPECIALITY

DIVISION 1 – Requirements

- 01000 – General Requirements
- 01040 – Project Coordination
- 01050 – Field Engineering
- 01340 – Shop Drawings
- 01370 – RFI
- 01400 – Quality Control Services
- 01520 – Temporary Construction
- 01600 – Materials & Equipment
- 01631 – Product Substitutions
- 01631 – Product Substitutions
- 01720 – Project Record Drawings

DIVISION 2 – Site Work

- 02780 – Unit Pavers
- 02810 – Irrigation System
- 02870 – Site Furnishings
- 02900 – Landscape Planting
- 02935 – Planting Maintenance

DIVISION 3 – Concrete

- 02750 – Concrete Paving
- 03100 – Concrete Formwork
- 03200 – Concrete Reinforcement
- 03300 – Cast-In-Place Concrete

DIVISION 4 – Masonry

- 04060 – Masonry Mortar & Grout
- 04210 – Brick Masonry Unit
- 04220 – Concrete Masonry Units

DIVISION 7 – Thermoland Moisture Protection

- 07120 – Fluid Applied Waterproofing
- 07900 – Joint Sealers

DIVISION 9 – Finishes

- 09815 – Hi-Build Anti-Graffiti Coat

DIVISION 10-SPECIALTY PRECAST ARCHITECTURAL ELEMENTS

- 10100 – Storyland Studio Cap w/Textured Acrylite Inserts Material and Attachment Details

DIVISION 16 – Electrical

- 16010 – Basic Electrical Requirements
- 16035 – Acceptance Testing & Calibration
- 16040 – Submittals
- 16112 – Underground Raceways, Direct Burial Cables, Manholes
- 16120 – Wires & Cables
- 16142 – Electrical Connections for Equipment
- 16450 – Grounding
- 16470 – Panelboards
- 16530 – Site Lighting Fixtures

**SECTION 01000
GENERAL REQUIREMENTS**

PART 1 - GENERAL

1.1 THESE DEFINITIONS apply wherever such terms are used:

- A. Federal Agency: U.S. Department of Housing and Urban Development.
- B. Federal Agency's Authorized Representative: Riverside County Economic Development Agency.
- C. Owner: City of Perris, California, a municipal corporation.
- D. Owner's Authorized representative: City of Perris, Public Works Department-Engineering Administration Division.
- E. Contractor: a person, firm or corporation with whom the contract is made by the Owner.
- F. Sub-Contractor: a person, firm or corporation supplying labor and materials or only labor for work at the site of the project and under separate contract or agreement with the Contractor.
- G. Shop Drawings: Drawings, diagrams, schedules and other data specially prepared for the work by the subcontractor to illustrate some portion of the work.
- H. Product Data: Illustrations, standards, schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the subcontractor to illustrate a material, product, or system for some portion of the work.
- I. Samples: Physical examples which illustrate materials, equipment or workmanship and establish standards by which the work will be judged.
- J. Landscape Architect: ima+design.
- K. Engineer: Tri-Lake Engineering.

1.2 THE INTENT OF THE contract documents is to include all items necessary for the proper execution and completion of the work.

- A. The contract documents are complementary, and what is required by any one shall be as binding as if required by all.

- B. Work, including labor materials, services, building permits and equipment which is not covered in the specifications and drawings shall be required when it is deemed necessary or reasonably incidental therewith by the Owner's Authorized Agent and is reasonably inferable there from as being necessary to produce the intended results.
- C. Words and abbreviations which have well-known technical or trade meanings are used in the specifications and drawings in accordance with such recognized meanings.
- D. Written interpretations of specifications and drawings are valid only when issued by the Owner's Authorized Representative.
- E. Drawing scale is selected for convenience in presentation and not for establishment of dimensions.
 - 1. Use drawing dimensions for performance of work.
 - 2. Verify actual dimensions at the site to determine that sufficient space exists and that no interference will be caused. Notify Owner's Representative of any deviation before starting work.
- F. It is the intent of the contract documents, including the specifications and drawings, to provide finished work, tested and ready for operation and complete in every regard. Provide work not shown or specified and accessories necessary to make the work complete and ready for operation. Should there appear to be discrepancies or questions of intent in the contract documents, refer the matter to the Owner for his decision. The decision of the Owner is final.

1.3 CODES AND STANDARDS

- A. In effect as of the contract date shall govern contract document requirements for systems, material and workmanship in addition to federal, state, and local regulations, codes, and ordinances referred to in the specification and drawings. Owner is not required to provide copies of the federal, state and local codes, regulations and ordinances to the contractor and sub-contractor: the contractor and sub-contractor are expected to obtain copies on their own
- B. The project to which the construction work covered by this specification pertains is being assisted by the United States of America and Special Federal Labor Standards are included in this specification/project manual pursuant to the provisions applicable to such Federal Assistance.
- C. In the case where several codes and or standards are referenced, the most stringent code/standards should be used.

1.4 SUBSTITUTION FOR ITEMS DESCRIBED in the contract documents will be as follows:

- A. Proposed substitution shall be:
 - 1. Accompanied by certified data.
 - 2. Available in quantity sufficient to prevent delay of the work.
 - 3. Provided in same range of colors, textures, gages, dimension, capacities, functions, types,
 - 4. Equal to specified item in strength, durability, efficiency, serviceability, ease and cost of maintenance.
 - 5. Owner approved.

1.5 RECORD DOCUMENTS AND SAMPLES

- A. The Contractor shall maintain at the site one record copy of all drawings, specification, addenda, change orders, and other modifications, in good order, and marked currently to record all changes made during construction, and shall maintain at the site APPROVED SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES. These shall be available to the Owner and shall be delivered to the Owner upon completion of the work.

1.6 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES shall comply with individual specification section requirements.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products in accordance with the manufacturer's recommendations, using means, methods that will prevent damage, deterioration, and loss, including theft.
 - 1. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - 2. Location shall be directed and approved by Owner' Authorized Representative.

1.8 FIELD QUALITY CONTROL

- A. Workmanship contemplated under this work shall be first class in every respect. All surfaces, members, frames, and units shall be true, even and in alignment. No warped, bent, dented, or otherwise damaged members of units shall be built into the work. Connections shall be true, tight and neat. Finishes shall be free from chips, dents, or other imperfections not in conformity with first class work.

- B. Factory assemblies shall conform to the first-class standards of the trades concerned.

- C. Defective materials shall not be built in and, if built in, shall be removed at the Contractor's expense. Where, in the sole discretion of the Owner, doubt exists as to the quality or effectiveness of the work, the work shall be reinstalled as directed.
- D. The Contractor is to deliver, store, protect and handle all equipment and material, as required in a manner so that the items are not damaged.
- E. The Contractor is to properly clean all Contractor installed equipment.
- F. Owner may require removal from the premises of such material or work, that in its opinion is not in accordance with contract document.
- G. The Owner may retain the services of competent and qualified third-party inspectors for various portions of the work at the sole discretion of the Owner. The Owner's third party inspectors' inspection reports will be final and shall not be disputed by the Contractor

1.9 PERMITS

- A. Contractor shall furnish or cause to be furnished, without cost to the Owner, any and all permitting necessary to complete the work.

1.10 WARRANTY

- A. The Warranty period is to be 12 months from date of final acceptance by Owner except as otherwise specified or implied in the project specifications. All guarantees shall commence after the end of the required maintenance period and acceptance by the City.

1.11 START-UP

- A. The Contractor shall provide start-up services to ensure all equipment installed by Contractor is operational unless otherwise specified.
- B. Contractor shall adjust all contractor-installed equipment so that it will properly operate, unless otherwise specified.
- C. Contractor shall demonstrate operation of all contractor-installed systems, unless otherwise specified.
- D. Contractor shall supply extra material as specified.

1.12 CLARIFICATIONS

- A. The contractor should immediately contact the Owner if there are any questions concerning the specifications. This also applies to specifications, which are shaded, or in parentheses.

END OF SECTION

SECTION 01040
PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
 - 1. Coordination.
 - 2. Administrative and supervisory personnel.
 - 3. General installation provisions.
 - 4. Cleaning and protection.
- B. Field engineering is included in Section "Field Engineering".
- C. Progress meetings, coordination meetings and pre-installation conferences are included in Section "Project Meetings".
- D. Requirements for the Contractor's Construction Schedule are included in Section "Submittals".

1.3 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
 - 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
 - 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.

- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Mandatory pre-construction conference with contractor, Owner, all sub-contractors and Federal Agency's Authorized Representative.
 - 2. Preparation of schedules.
 - 3. Installation and removal of temporary facilities.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Project Close-out activities.

- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare and submit coordination Drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.
 - 1. Show the interrelationship of components shown on separate Shop Drawings.
 - 2. Indicate required installation sequences.
 - 3. Comply with requirements contained in Section "Submittals."
 - 4. Refer to Division 16 Section "Basic Electrical Requirements" for specific coordination Drawing requirements for electrical installations.

- B. Staff Names: Within 15 days of Notice to Proceed, submit a list of the Contractor's principal staff assignments to Owner, including the Superintendent and other personnel in attendance at the site; identify individuals, titles, their duties and responsibilities; list their addresses and telephone numbers.
 - 1. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed, and obtain any necessary geotechnical reports from Engineer. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner, by Contractor.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect or Owner for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect or Owner for final decision.

3.2 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:
 - DDE
 - 1. Excessive static or dynamic loading.
 - 2. Excessive internal or external pressures.
 - 3. Excessively high or low temperatures.
 - 4. Thermal shock.
 - 5. Excessively high or low humidity.
 - 6. Air contamination or pollution.
 - 7. Water or ice.
 - 8. Solvents.
 - 9. Chemicals.
 - 10. Light.
 - 11. Radiation.
 - 12. Puncture.
 - 13. Abrasion.
 - 14. Heavy traffic.
 - 15. Soiling, staining and corrosion.
 - 16. Bacteria.
 - 17. Rodent and insect infestation.
 - 18. Combustion.
 - 19. Electrical current.
 - 20. High speed operation.
 - 21. Improper lubrication,
 - 22. Unusual wear or other misuse.
 - 23. Contact between incompatible materials.
 - 24. Destructive testing.
 - 25. Misalignment.
 - 26. Excessive weathering.
 - 27. Unprotected storage.
 - 28. Improper shipping or handling.
 - 29. Theft.
 - 30. Vandalism.

END OF SECTION

**SECTION 01050
FIELD ENGINEERING**

PART 1 - GENERAL

1.1 SUMMARY

- A. General: This Section specifies administrative and procedural requirements for field engineering services, including, but not necessarily limited to, the following:
1. Land survey work.

1.2 SUBMITTALS

- A. Certificates: Submit to Owner a certificate signed by the Land Surveyor or Professional Engineer certifying that the location and elevation of improvements comply with the Contract Documents.

1.3 QUALITY ASSURANCE

- A. Surveyor: Engage a Registered Land Surveyor registered in the State where the project is located, to perform land surveying services required. (Cost of surveying will be paid for by Contractor.)

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Owner will identify existing control points and property line corners.
- B. Verify layout information shown on the drawing in relation to existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
 2. Promptly replace lost or destroyed project control points. Base replacements on the original survey control points.

- C. Existing utilities and equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction.
 - 1. Prior to construction, call Dig Alert (1-800-227-2600) and utilize other means to verify the location and invert elevation at points of connection and/or crossing of sanitary sewer, storm sewer water service piping, etc.

3.2 PERFORMANCE

- A. Working from lines and levels established by the project plans, establish stakes and markers to set lines and levels at each area of construction and elsewhere as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
 - 1. Advise entities engaged in construction activities, of marked lines and levels provided for their use.
 - 2. As construction proceeds, check every major element for line, level and plumb.
- B. Surveyor's Log: Maintain a surveyor's log of control and other survey Work. Make this log available for reference.
 - 1. Record deviations from required lines and levels, and advise the OWNER when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
- C. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes and invert elevations by instrumentation and similar appropriate means.
- D. Locate and layout control lines required for irrigation and electrical work.
- E. Existing Utilities: Furnish information necessary to adjust, move or relocate existing vaults, pullbox covers, manhole covers, structures, utility poles, lines, services or other appurtenances located in, or affected by construction. Coordinate with local authorities having jurisdiction.

END OF SECTION

SECTION 01340
SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittal of Shop Drawings, Product Data and Samples to verify that products, materials and systems proposed for use comply with provisions of the Contract Documents.

- B. Shop Drawings include, but are not limited to, the following:
 - 1. Fabrication Drawings.
 - 2. Installation Drawings.
 - 3. Setting diagrams.
 - 4. Shop work manufacturing instructions.
 - 5. Templates and patterns.
 - 6. Schedules.
 - 7. Design mix formulas.

- C. Standard information prepared without specific reference to the Project is not considered to be Shop Drawings.

- D. Coordination Drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require close and careful coordination during fabrication or during installation to fit in the restricted space provided or to function as intended.

- E. Preparation of Coordination Drawings is specified in the "Project Coordination" Section and may include components previously shown in detail on Shop Drawings or Product Data.

- F. Product Data include, but are not limited to, the following:
 - 1. Manufacturer's product Specifications.
 - 2. Manufacturer's installation instructions.
 - 3. Standard color charts.
 - 4. Catalog cuts.
 - 5. Roughing-in diagrams and templates.
 - 6. Standard wiring diagrams.
 - 7. Printed performance curves.
 - 8. Operational range diagrams.
 - 9. Mill reports.
 - 10. Standard product operating and maintenance manuals.
 - 11. Samples include, but are not limited to, the following:
 - 12. Partial Sections of manufactured or fabricated components.
 - 13. Small cuts or containers of materials.

14. Complete units of repetitively-used materials.
 15. Swatches showing color, texture and pattern.
 16. Color range sets.
 17. Components used for independent inspection and testing.
- G. Field Samples are full-size physical examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.
- H. Mock-ups are full size assemblies for review of construction, coordination, testing, or operation; they are not Samples.
- I. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals.
- J. Project Photographs: Submittal of Project photographs is included under Section "Construction Photographs."
- K. Inspection and Test Reports: Submittal of inspection and test reports is included under Section "Quality Control Services."
- L. Mock-ups: Erection of mock-ups is included under Section "Quality Control Services."

1.2 OWNER'S ACTION

- A. Except for submittals for the record, for information and similar purposes, where action and return on submittals is required or requested, OWNER will review each submittal, mark to indicate the action taken, and return promptly, up to and including within ten (10) calendar days.
- B. Compliance with specified characteristics is the Contractor's responsibility, and not considered part of the OWNER'S review and indication of action taken.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01370
REQUESTS FOR INFORMATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section describes procedures for requesting information other than that shown in the Contract Documents, and discusses conditions under which such requests will be considered.

1.2 REQUEST FOR INFORMATION AFTER CONTRACT AWARD

- A. Owner and Architect recognize that data may inadvertently have been omitted from the Contract Documents or require clarification of alleged conflict of data, and the following procedures are established for requesting such data.
- B. Procedures:
1. Prior to requesting information, conduct a thorough search of the Contract Documents and determine that the information is apparently missing from the Contract Documents or requires clarification of an alleged conflict of data.
 2. Fill out a photocopy of the "Request For Information" form, which follows this Section.
 3. The Architect will conduct the necessary search.
 4. Within ten (10) working days, the Owner will respond to the Request for Information.

1.3 REQUEST FOR INFORMATION PRIOR TO BID OPENING

- A. Owner and Architect recognize that data may inadvertently have been omitted from the Contract Documents or require clarification of alleged conflict of data, and the following procedures are established for requesting such data.
- B. Procedures:
1. Prior to requesting information, conduct a thorough search of the Bid Documents and determine that the information is apparently missing from the Bid Documents or requires clarification of an alleged conflict of data.
 2. Bidders' communication will not receive consideration unless they are received by the Agency at least SEVEN (7) working days prior to the day bids are due; the Agency will endeavor to not issue addenda later than THREE (3) working days preceding the day bids are due.

2. Submit your questions through the City's Active Bidder Website by logging onto <http://www.cityofperris.org/city-hall/bids.html>
3. The Architect will conduct the necessary search.
4. Within FIVE (5) working days, the Owner will respond to the Request for Information, in the form of either a "Letter of Clarification," or "Written Addendum," and post the results on active bidder at <http://www.cityofperris.org/city-hall/bids.html>

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION

4TH STREET PUBLIC AREA ENHANCEMENTS B/W C AND D
REQUEST FOR INFORMATION **(FOR USE AFTER AWARD ONLY)**

RFI # _____

To: OWNER
Attention: Michael Morales, Capital Improvements Project Manager

Project: 4TH St. Public Area Enhancements b/w C and D (Specification #CIP S-007-2023-24)

From: _____) Requests for Information
_____) will be considered only
_____) when transmitted by the
_____) Prime Contractor/Bidder

Transmittal
Date: _____

Job Title: _____

Reference: _____
Drawing No. Specification Section No.

Please Clarify the Following:

Signed: _____

CITY USE ONLY
Date Received: _____
Response Required
By: _____

Response: _____

Signed: _____ Date: _____

4TH STREET PUBLIC AREA ENHANCEMENTS B/W C AND D



BID 1

[OVERVIEW](#) [PROJECTS / SPECIFICATIONS](#) [BID DOCS](#) [BID REQUIREMENTS](#) [PREFERENCE](#) [REGISTERED BIDDERS](#) [QNA](#) [ACCESS LIST](#) [PUBLISH BID](#)

QUESTIONS AND ANSWERS

[add new question and answer](#)

[FILTER](#) [RESET FILTER](#) Results: 1

1 | entries per page: [10](#) [25](#) [100](#) [All](#)

<input type="checkbox"/>	Question/Answer	Posted	Status
<input type="checkbox"/>	Q: A:	By: Susan Almanza Date: 04/06/2017 16:44:01	

[PUBLISH SELECTED](#)

1 | entries per page: [10](#) [25](#) [100](#) [All](#)

PUBLISHED QUESTIONS AND ANSWERS

[FILTER](#) [RESET FILTER](#) Results: None

SECTION 01400
QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for quality control services.
- B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the OWNER.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
 - 2. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.
 - 3. Requirements for the Contractor to provide quality control services required by the A/E (Architect/Engineer), Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the OWNER's responsibility, or are provided by another identified entity; these

services include those specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Price.

1. The Contractor shall employ and pay an independent agency, to perform specified quality control services.
 2. The Owner will engage the services of an independent agency to perform inspections and tests specified as the OWNER's responsibilities.
 - a. Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the OWNER, unless otherwise agreed in writing with the OWNER.
 3. Retesting: The Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.
 - a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
 4. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:
 - a. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
 - b. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
 - c. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
 - d. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 - e. Security and protection of samples and test equipment at the Project site.
- B. Owner Responsibilities: The Owner will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Contractor, except where they are specifically provided by another identified entity. Costs for these services are not included in the Contract Price.
- C. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the A/E (Architect/Engineer) and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.
1. The agency shall notify Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
 3. The agency shall not perform any duties of the Contractor.
- D. Coordination: The Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.4 SUBMITTALS

- A. The independent testing agency shall submit a certified written report of each inspection, test or similar service, to OWNER, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service through the Contractor, in duplicate.
1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
 2. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretations of test results.
 - j. Ambient conditions at the time of sample-taking and testing.
 - k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
 - l. Name and signature of laboratory inspector.
 - m. Recommendations on retesting.

1.5 QUALITY ASSURANCE

- A. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for "Cutting and Patching."
- B. Protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION

**SECTION 01520
TEMPORARY CONSTRUCTION**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

The requirements of the “General Conditions of the Contract” and of Division 1, “General Requirements”, shall apply to all work in this Section with the same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish all materials, labor, transportation, services, and equipment necessary to furnish and install temporary work as specified herein.

Work included in this Section:

1. Temporary storage facilities.
2. Temporary toilet accommodations.
3. Temporary utilities.
4. Temporary fences and barricades.
5. Temporary scaffolding, stairs and hoists.
6. Temporary site drainage.
7. Removal of temporary facilities.

1.3 PROJECT LIMITS

- A. Unless otherwise specifically permitted, the Contractor shall confine his operations, including construction, storage and parking, to the project limits shown on the drawings or established by the Owner.

1.4 REQUIREMENTS OF REGULATORY AGENCIES

- A. All Federal, State, and local laws and regulations governing this work are hereby incorporated into and made part of this Section. When this Section calls for certain materials, workmanship or a level of construction that exceeds the level of Federal, State, or local requirements, the provisions of this Section shall take precedence.

1.5 TEMPORARY STORAGE FACILITIES

- A. Storage facilities shall be provided as required for safe-keeping and weather protection of materials. The Contractor shall not request payment for materials delivered to the site that are not installed. The storage facilities shall be subject to the approval of the Owner's Authorized Representative.

1.6 WATCHMAN SERVICES

- A. The Contractor shall provide such watchman services as he may deem necessary to safeguard all tools, materials and work in place. The Owner will not assume any responsibility for loss or damage from any cause.

1.7 TEMPORARY TOILET FACILITIES

- A. Contractor shall furnish, install and maintain for duration of work temporary toilet facilities. An adequate number of fixtures shall be provided at all times.
- B. Units shall be weather tight, floors structures, and shall be kept well stocked with toilet paper. The units shall be thoroughly cleaned not less than once per working day, and shall be kept in condition acceptable to the Owner and the Owner's Authorized Representative at all times.

1.8 TEMPORARY UTILITIES

- A. Electricity
 - 1. All temporary lights and power, complete with meters, wiring, lamps and equipment shall be furnished as required for the completion of the work. Contractor shall arrange and pay for temporary power. When work is performed at night, the lighting intensity of entire project limits shall be sufficient to facilitate reading of the Drawings and Specifications.
- B. Water
 - 1. Water is available on the site. The Owner will provide temporary water service. Contractor will carefully conserve water and if, in the opinion of the Owner, the use is excessive, Owner may require Contractor to pay for use of water. Contractor shall connect to Owner's line at location directed. At completion of requirement, Contractor shall remove all necessary temporary piping, valves and backfill all trenches.

1.9 TEMPORARY SCAFFOLDING, SHORING, STAIRS AND HOISTS

The Contractor shall provide and maintain, for duration of work and in accordance with applicable laws and ordinances, all required temporary scaffolding, shoring, temporary stairs, ladders, ramps, runways and hoists for use of all trades.

- A. Manufacturer's Directions
 - 1. Manufacturer's directions and drawings shall be followed in all cases where the manufacturers of articles used in the Section furnish directions covering points not shown on the Drawings and Specifications.

- B. Permits, Fees, Bonds and Inspections
 - 1. The Contractor shall pay for any and all permits, fees, bonds and inspections necessary to perform and complete his portion of the work.

1.10 PUMPING AND DRAINAGE

- A. Rain, surface, and subsurface waters or other fluid shall not be permitted to accumulate in excavations, low spots on the site, nor under or about the structures. Should such conditions develop or be encountered, the same shall be kept constantly controlled and suitably disposed of by temporary pumps, piping, ditches, dams or other methods acceptable to the Owner. The point of discharge shall be as directed. Water, mud or debris shall be discharged as directed by local authorities.

1.11 PROTECTIVE DEVICES AND BEST MANAGEMENT PRACTICES (BMP)

- A. The Contractor shall provide, install and maintain for duration of work as required all lawful and necessary barricades, traffic control delineators & signage, railings, temporary decks and flooring, lights, warning signs and signals, and shall take all other precautions as may be required to safeguard persons, the site, and adjoining property, including improvements thereon, against injuries and damage of every nature whatsoever.
- B. The Contractor shall consult the Cal Trans Storm Water Quality Hand books Construction Site Best Management Practices Manual; and the Riverside County Supplement A to the Riverside County Drainage Area Management Plan. Contractor shall select therefrom adequate structural and non-structural BMP to control impervious run-off and to identify, construct and implement stormwater pollution preventive measure (control practices) to reduce pollutants in stormwater discharge from the construction site during construction.

1.12 CONSTRUCTION FENCE

- A. Contractor shall comply with all local jurisdictional requirements relative to protection of the public. In addition, he may fence the construction site, open excavations, or portions thereof to protect his property. The Owner will accept no responsibility for loss of tools, equipment or materials, or for any damage which occurs to the work in place for any reason. Fences shall be removed by the Contractor prior to completion of the work. All locked gates shall be secured with a double chain and padlocks. One padlock will be furnished by the Contractor and one by the Owner. The chain shall secure the gates in such a way that opening either padlock will unlock the gate.

1.13 SIGNS

Does not apply.

1.14 TEMPORARY FIRE PROTECTION

- A. During the entire construction period, provide a 2-1/2 gallon fire extinguisher in each temporary building and office, as well as in other locations as required. Provide all other fire protection required to protect the project, and to comply fully with the requirements of insurance underwriters and legally constituted authorities.

1.15 REMOVAL OF TEMPORARY STRUCTURES

- A. All temporary structures, equipment, piping, etc., shall be removed from site as in the opinion of the Owner, progress of the work will permit. Portions of site occupied by temporary structures shall be reconditioned and restored to previous condition. Furniture and other equipment supplied for Architect's office shall remain in the property of the Contractor. Trenches and holes shall be filled and compacted as specified in Division 2 - Site work.

1.16 DUST CONTROL

- A. Throughout the entire construction period, provide effective dust control by means of frequent sprinkling and watering. Excessive blowing dust or sand will not be permitted at any time.

1.17 DISPOSITION OF WASTE

- A. Unless specifically permitted by Owner's Authorized Representative, no washing of cement truck or mixers or similar and associated equipment or dumping of injurious material will be permitted on the site or on the adjacent streets. Should such waste material be inadvertently deposited on the site, it shall be removed to depth as directed and replaced with clean, compacted fill.

1.18 DEFINITIONS

- A. The Owner's Authorized Representative in this Section will refer to the Landscape Architect, Engineer or other designee.

PART 2 - PRODUCTS

Does not apply.

PART 3 - EXECUTION

Does not apply.

END OF SECTION

**SECTION 01600
MATERIALS AND EQUIPMENT**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
 - 1. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each prime Contractor.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.
- D. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

1.3 DEFINITIONS

- A. Definitions used in this Section are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.
 - 1. Items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock shall include material, equipment, system, and terms of similar intent. ("Product")
 - a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - b. "Foreign Products", as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by

persons who are not citizens of nor living within the United States and its possessions.

2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 SUBMITTALS

- A. Product List Schedule: Prepare a schedule showing Products specified in a tabular form acceptable to Owner. Include generic names of Products required. Include the manufacturer's name and proprietary product names for each item listed.
 1. Coordinate the Product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.
 2. Form: Prepare the Product listing schedule with information on each item tabulated under the following column headings:
 - a. Related Specification Section number.
 - b. Generic name used in Contract Documents.
 - c. Proprietary name, model number and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date, or time span of delivery period.
 3. Initial Submittal: Within 10 days after date of Contract award, submit 3 copies of an initial Product list schedule for approval. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 - a. At the Contractor's option, the initial submittal may be limited to Product selections and designations that must be established early in the Contract period.
 4. Owner's Action: Owner will respond in writing to the Contractor within 10 days of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. Owner's response will include the following:
 - a. A list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.5 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.
 1. When specified Products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a

timely manner, consult with Owner for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select Products from sources that produce Products that possess these qualities, to the fullest extent possible.

- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more Products for use on the Project, the Product selected shall be compatible with Products previously selected, even if previously selected Products were also options.
 - 1. Each Prime Contractor is responsible for providing Products and construction methods that are compatible with Products and construction methods of other Prime or separate Contractors.
 - 2. If a dispute arises between Prime Contractors over concurrently selectable, but incompatible products, Owner will determine which products shall be retained and which are incompatible and must be replaced.

- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:
 - 1. No available domestic Product complies with the Contract Documents. Provide certification that no product is available domestically.
 - 2. Domestic products that comply with Contract Document are only available at prices or terms that are substantially higher than foreign products that also comply with the Contract Documents.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle Products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 - 3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 - 4. Inspect Products upon delivery to ensure compliance with the Contract Documents, and to ensure that Products are undamaged and properly protected.
 - 5. Store Products at the Site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

7. Store Products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide Products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
 1. Provide Products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard Products of types that have been produced and used successfully in similar situations on other projects.

- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing Product selection include the following:
 1. Proprietary Specification Requirements: Where only a single Product or manufacturer is named, provide the Product indicated, or Owner approved equal.
 2. Semiproprietary Specification Requirements: Where two or more Products or manufacturers are named, provide one of the products indicated, or Owner approved equal.
 - a. Where Products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed Product.
 3. Non-Proprietary Specifications: When the Specifications list Products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these Products only, the Contractor may propose any available Product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed Product.
 4. Descriptive Specification Requirements: Where Specifications describe a Product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a Product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide Products that comply with these requirements, and are recommended by the manufacturer for the

application indicated. General overall performance of a Product is implied where the Product is specified for a specific application.

- a. Manufacturer's recommendations may be contained in published Product literature, or by the manufacturer's certification of performance.
6. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a Product that complies with the standards, codes or regulations specified.
7. Visual Matching: Where Specifications require matching an established Sample, the Owner's decision shall be final on whether a proposed Product matches satisfactorily.
 - a. Where no Product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching Product in another Product category, or for noncompliance with specified requirements.
8. Visual Selection: Where specified Product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a Product and manufacturer that complies with other specified requirements. The Owner will select the color, pattern and texture from the Product line selected.
9. Allowances: Refer to individual Specification Sections for allowances that control Product selection, and for procedures required for processing such selections.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of Products in the applications indicated. Anchor each Product securely in place, accurately located and aligned with other Work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

**SECTION 01631
PRODUCT SUBSTITUTIONS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
 - 1. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals," 01600.
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.
- D. Procedural requirements governing the Contractor's selection of Products and Product options are included under Section "Materials and Equipment."

1.3 DEFINITIONS

- A. Definitions used in this Section are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:
 - 1. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
 - 2. Revisions to Contract Documents requested by the Owner.
 - 3. Specified options of Products and construction methods included in Contract Documents.
 - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if made and received within 30 days after Contract award. Requests received more than 30 days after commencement of the Work may be considered or rejected at the discretion of the Owner.
1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.
 2. Identify the Product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
 - b. Samples, where applicable or requested.
 - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.
 - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Completion.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.
 3. Owner's Action: Within 10 days of receipt of the request for substitution, the Owner will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or 10 days of receipt of the additional information or documentation, whichever is later, the Owner will notify Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS AFTER CONTRACT AWARD

- A. Conditions: The Contractor's substitution request will be received and considered by the Owner when one or more of the following conditions are satisfied, as determined by the Owner; otherwise requests will be returned without action except to record noncompliance with these requirements.
1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of Contract Documents.
 3. The request is timely, fully documented and properly submitted.
 4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
 5. The specified Product or method of construction cannot be provided within the Construction Schedule. The request will not be considered if the Product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 6. The specified Product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Owner for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
 8. The specified Product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
 9. The specified Product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
 10. The specified Product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
 11. Where a proposed substitution involves more than one prime Contractor, each Contractor shall cooperate with the other Contractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of Products.
 12. All approved substitutions will be documented in the contract by formal modification, and indicated on the "As-Built" drawings.
- B. The Contractor's submittal and Owner's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

2.1 SUBSTITUTIONS PRIOR TO BID OPENING

- A. Should The Bidder wish to substitute an item purported to be equal to the one specified, the Bidder must submit proposed substitution to the Owner not less than TEN (10) working days prior to the date set for receipt of Bids. Bidders will be notified of the approved substitutions by Addendum. Owner may require the submission of Drawings, Product Data, Manufacturer's Warranties, Samples, and other information in approved form for consideration of proposed substitutions. If the proposed substitution is not found by the Architect to be equal or better to the item specified, then the item specified in the Contract Documents shall be furnished.

Approval or rejection of proposed substitutions is at Owner's discretion, whose judgment will be final and will include consideration of the following factors among others in comparing equality of proposed substitutions with indicated or specified requirements:

1. Quality of materials, structural strength, and details of construction or fabrication.
 2. Performance and function, mechanically and technically.
 3. Appearance and finish, or characteristics permitting required finish to be applied.
 4. If proposed substitutions require altering the arrangement of adjoining or related Work, resulting arrangement must be equal in convenience and practically to original agreement.
 5. Products equal in quality and utility are generally competitive products and are generally equal in price. If approval is requested for materials or equipment more economical than the specified products, Owner may require the specified products.
 6. Code approvals and service history.
- B. Substitutions will be considered by the Owner only if they result in sufficient cost savings to the owner over the item specified.
- C. When required by the Contract Documents, or when directed by the Owner furnish full information concerning the material or articles proposed for incorporation into the work. Testing of a proposed substitute material to assure compliance with the Specifications may be required by the Owner at the Bidder's expense. When so directed, submit samples for acceptance. Equipment, material and articles installed or used without required acceptance shall be at the risk of subsequent rejection.
- D. Resubmittal of Proposed Substitutions: Do not resubmit in modified form proposed substitutions that are rejected. Upon rejection of a proposed substitution, Bidder may submit another proposed substitution within the time limit stated above. If the second proposed substitution is rejected or not received by the Owner within the specified time, provide only the indicated and specified Work at no additional cost to owner.

- E. Substitutions shall comply with, or exceed, requirements of dimension, function, structure, durability and appearance without exception. Use of accepted substitutions shall in no way relieve the Bidder from responsibility for compliance with the Contract Documents after installation. It shall be incumbent upon the Bidder using accepted substitutions to assume extra costs caused by the use of such substitutions where they affect other work.
- F. Compliance: Use of Approved Substitutions does not relieve Bidder from compliance with Contract Documents. Bidder shall bear all extra expense resulting from approved substitutions where substitutions affect adjoining or related work.
- G. Unauthorized Substitutions: If substitute materials are installed without prior approval, remove the unauthorized materials and install those indicated or specified, at no extra cost to Owner.
- H. Failure to place orders for specified equipment or material sufficiently in advance of the scheduled installation date will not be considered a valid reason upon which the Bidder may base his request for substitutions or for deviations from the Drawings and Specifications.
- K. In the event the Bidder requests a review to determine an equal product, an/or changes or revisions requiring drawings or services of the Architect or his consultants, to facilitate installation or erection of any portion of the work, the Bidder shall accept the responsibility to hire and pay for the consultant services. A flat hourly rate, as agreed upon, but not less than 150.00 per hour, shall be paid by the Bidder whether the change is accepted or rejected.
- L. Substitution Request Form:
Submittal of the requested information shall be accompanied by the attached Substitution Request Form.

PART 3 - EXECUTION

Not applicable.

END OF SECTION

**4TH STREET PUBLIC AREA ENHANCEMENTS B/W C AND D
SUBSTITUTION REQUEST FORM**

To: OWNER
Attn: Michael Morales, Capital Improvements Project Manager
Project: 4th Street Public Area Enhancements b/w C and D (SPEC. # CIP S-007-2023-24)

Specified Item: _____
 Section Page Paragraph Description

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the requests; applicable portions of the data are clearly identified.

Attached data also includes product description of changes to Contract Documents, which proposed substitution would require for proper installation.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. Contractor/Bidder has enclosed a certified check in the amount of \$600, made payable to the City of Perris, to cover first four (4) hours of professional architectural, structural, civil, an/or electrical engineering services review for the proposed substitution; and Contractor/Bidder understands that additional deposits may be required for additional review. Contractor/Bidder understands that fees shall be paid by Contractor/Bidder whether the change is accepted or rejected.
2. The proposed substitution does not affect dimensions shown on Drawings.
3. The undersigned will pay for changes to the building design, including engineering design.
4. The proposed substitution will have no adverse affect on other work, directly related, or otherwise, the construction schedule, or specified warranty requirements.
5. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitutions are equivalent or superior to the specified item.

SUBMITTED BY:
Signature _____
Firm: _____
Address: _____

Telephone: _____

FOR USE BY OWNER:
() Accepted () Accepted as Noted
() Not Accepted () Received Too Late
By: _____
Date: _____
Remarks: _____

Attachments:

**SECTION 01720
PROJECT RECORD DRAWINGS**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. The requirements of the "General Conditions of the Contract" and of Division 1, "General Requirements", shall apply to all work in this Section with the same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

Furnish all materials, labor, transportation, services, and equipment necessary to provide project record drawings complete and in place and as specified herein.

- A. Work included in this Section:
1. Project Record Drawings.
 2. Operation and Maintenance Manuals.

1.3 DEFINITIONS

- A. The Owner's Authorized Representative in this Section will refer to the Landscape Architect, Engineer, or other designee.

1.4 RECORD DRAWINGS

- A. Contract Drawings
1. The Contractor shall maintain a complete set of drawings for record purposes. This set of drawings shall be used for no other purpose. Drawings shall be corrected daily in a neat, legible manner. All changes from the original Drawings and Specifications shall be shown. These drawings shall indicate exact installed locations of all concealed work, including conduit, piping, ducts, mechanical and electrical equipment, etc. Depths, sizes and dimensional plan locations shall be indicated for all piping below grade or under paving. All changes in structural work shall be similarly shown.
 2. Prior to approving each request for partial payment, the Owner's Authorized Representative, Architect and/or Engineer reserves the right to inspect the record drawings. All corrections or changes which have occurred in the work to the date of payment request shall be shown on the record drawings before the payment request will be approved.
 3. At the conclusion of the work, the Contractor will furnish to the Owner's Authorized Representative a complete set of corrected record drawings for incorporation into the contract originals. All recorded data shall be clearly legible, utilizing the symbols of the Contract Drawings.

4. As a condition for acceptance of the work, the Contractor shall certify that record drawings are an actual representation of work as installed. Each drawing shall be signed, dated and delivered to the Owner's Authorized Representative.

PART 2 - PRODUCTS

Does not apply.

PART 3 - EXECUTION

Does not apply.

END OF SECTION

**SECTION 02750
PORTLAND CEMENT CONCRETE PAVING**

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Furnish materials, labor, transportation, services, and equipment necessary to install portland cement concrete paving as indicated on Drawings and as specified herein.

- B. Work included in this Section:
 - 1. Decorative colored concrete paving.
 - 2. Natural colored concrete paving.

- C. Work related in other Sections:
 - 1. Section 02780 – Unit Pavers.
 - 2. Section 02810 – Irrigation System.
 - 3. Section 03100 – Concrete Formwork.
 - 4. Section 03200 – Concrete Reinforcement.
 - 5. Section 03300 – Cast-in-Place Concrete.
 - 6. ~~Section 05700 – Ornamental Metal.~~

1.2 REFERENCES

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heaveyweight, and Mass Concrete.

- B. ACI 304R - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.

- C. ACI 305R - Hot Weather Concreting.

- D. ACI 306R - Cold Weather Concreting.

- E. ACI 309R - Guide for Consolidation of Concrete.

- F. ASTM A 615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.

- G. ASTM C 31 - Standard Specification for Making and Curing Concrete Test Specimens in the Field.

- H. ASTM C 33 - Standard Specification for Concrete Aggregates.

- I. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

- J. ASTM C 94 - Standard Specification for Ready Mix Concrete.
- K. ASTM C 143 - Standard Specification for Hydraulic Hydrated Cement Concrete.
- L. ASTM C 150 - Standard Specification for Portland Cement.
- M. ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete.
- N. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
- O. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.
- P. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- Q. ASTM C 494 - Standard Specification for Chemical Admixtures for Concrete.
- R. ASTM C 1064 - Standard Test Method for Temperature of Freshly Mixed Portland Cement Concrete.

1.3 SUBMITTALS

- A. In accordance with Section 01340 - Shop Drawings, Samples and Product Data: Procedures for submittals.
- B. Provide Shop Drawings for the Following:
 - 1. Paving Jointing and Pour Sequence Plan - submit six (6) blueprints to the Owner indicating the following:
 - a. Proposed layout of contraction, construction and isolation joints. Clearly delineate the three different joint types.
 - b. Layout of paving types as indicated on Drawing Paving Schedule. Give overall dimensions of each paving type.
 - c. Concrete pour sequence. Indicate sequence of paving pour installation.
- C. Paving Mix Designs: Provide documentation for each paving type specified on Drawings that will enable Owner to better match replaced concrete:
 - 1. Laboratory and Cement Test Reports: Submit six (6) copies to the Owner of laboratory test reports for concrete materials and a certificate with each concrete mixer truck, stating mix design, PSI rating, slump, water and cement quantity, cement/water ratio, fine and coarse aggregate and color additives.
 - 2. Cement:
 - a. Manufacturer and plant location.
 - b. Cement type, i.e. Type I, II or V.

3. Admixtures:
 - a. Manufacturer and plant location.
 4. Sand:
 - a. Source and type.
 5. Aggregates:
 - a. Source and type.
 6. Signed certification from a licensed structural engineer.
- D. Submit specification data “Cut Sheets” for integral color, color hardener, release agent, plastic dowel sleeves, chemical stain,

1.4 QUALITY ASSURANCE

- A. Pre-Bid Conference: Prior to submitting bid, all bidders shall be required to attend pre-bid conference with Owner and to review requirements and artistic effect desired.
- B. Mock-Ups:
 1. Contractor Mock-Ups: All concrete paving shall match approved sample mock-up.
- C. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- D. Installer: Provide evidence in accordance with Federal Procurement Standards listed at 24CFR85 which indicate successful experience in providing patterned concrete work similar to that specified herein and can demonstrate successful experience through past project documentation and references.
 1. Experience: Minimum 5 years experience in the installation of patterned concrete paving.
 2. Demonstration of Experience: 10 projects which have been completed within the past 36 months utilizing similar products, scope, and complexity.
 3. Supervision: Perform placement and finishing of concrete work under supervision of a person having a minimum of 5 years of experience in placement and finishing of products specified herein.
 4. Submit qualifications to Owner for information purposes. Submit a resume of Project Manager and Superintendent who will be overseeing the Work.
- E. Slip Resistance: Provide a finish surface slip resistance coefficient of friction equal or greater than 0.6 for flat surfaces and 0.8 for ramps, when tested in accordance with ASTM F 489.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. In accordance with Section 01640 - Product Handling and Protection: Transport, handle, store, and protect.
- B. Store materials in dry and protected locations and protect from damage.
- C. Do not change brand of cement nor source of aggregate during course of Work.

1.6 SITE CONDITIONS

- A. Do not place concrete when subbase surface temperature is less than 40 degrees F, nor when surface is wet.

1.7 COORDINATION

- A. In accordance with Section 01041 - Project Coordination.
- B. Ensure that irrigation sleeves, electrical conduit, outlets and other utility elements are accommodated and as-built located prior to pouring concrete.

1.8 INSPECTION OF SITE

- A. Verify conditions at site that affect Work of this Section, and take field measurements as required. Report major discrepancies between Drawings and field dimensions to Owner prior to commencing work.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 - 1. Use flexible or curved forms for curves of 200-foot or less radius.

2.2 REINFORCING MATERIAL

- A. Synthetic Fiber Reinforcement: 100% pure synthetic polypropylene fibers, engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C 1116 - Type III. Maximum length of fibers to be 3/4-inch.
 - 1. Acceptable Manufacturers:
 - a. Fibermesh: Stealth (800)348-9348.
 - b. Forta Fiber: Microfiber (800)245-0306.
 - c. W.R. Grace: Monofilament (800)433-0020.

- d. Bomanite; Monofilament (800)854-2094.
- B. Reinforcing Bars and Tie Bars: ASTM A 615 - Grade 60, deformed.
- C. Plain, Cold-Drawn Steel Wire: ASTM A 82.
- D. Fabricated Bar Mats: Welded or clip-assembled steel bar mats, ASTM A 184. Use ASTM A 615, Grade 60 steel bars.
- E. Construction Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60. Cut bars true to length with ends square and free of burrs.
- F. Epoxy-Coated Construction Joint Dowel Bars: ASTM A 775 over ASTM A 615, Grade 60 plain steel bars.
- G. Joint Dowel Alignment Sleeves: Polypropylene plastic sleeve dowel to ensure proper alignment of steel dowels.
- H. Hook Bolts: ASTM A 307, Grade A bolts, internally and externally threaded. Design hook bolt joint assembly to hold coupling against pavement form and in position during concrete operations, and to permit removal without damage to concrete or hook bolt.
- I. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars in place. Use wire bar-type supports.
 - 1. Use supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150 - Type I.
- B. Fly Ash: Not allowed.
- C. Concrete Aggregate: ASTM C 33 - Class 4, and as follows. Provide aggregates from a single source:
- D. Water: Clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete or reinforcement.

2.4 ADMIXTURES

- A. Provide concrete admixtures that contain not more than 1 percent chloride ions and no calcium chloride.

- B. Water-Reducing Admixture: ASTM 4 94, Type A.
- C. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.
- D. Water-Reducing and Retarding Admixture: ASTM C 494, Type D or E.
- E. Acceptable Manufacturers:
 - 1. Water-Reducing Admixtures:
 - a. ChemMasters Corp; Chemtard.
 - b. Cormix Construction Chemicals; Type A Series.
 - c. Euclid Chemical Company; Eucon WR-75.
 - 2. High-Range Water-Reducing Admixtures:
 - a. Anti-Hydro Co. Inc.; Super P.
 - b. Cormix Construction Chemicals; Cormix 2000, PSI Super.
 - c. Euclid Chemical Company; Eucon 37.
 - 3. Water-Reducing and Acceleration Admixtures:
 - a. Conspec Marketing & Manufacturing Company; Q-Set.
 - b. Cormix Construction Chemicals; Gilco Accelerator or Lub NCR.
 - c. Euclid Chemical Company; Accelguard 80.
 - 4. Water-Reducing and Retarding Admixtures:
 - a. Cormix Construction Chemicals; Type D Series.
 - b. Euclid Chemical Company; Eucon Retarder 75.
 - c. W.R. Grace Company; Daratard-17.

2.5 CURING MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One of the following complying with ASTM C 171:
 - 1. Waterproof paper.
 - 2. Polyethylene film.
 - 3. White burlap-polyethylene sheeting.
- C. Clear, Waterborne Membrane-Forming Curing Compounds:
 - 1. Provide curing materials that have a maximum volatile organic compound (VOC) rating of 350 g/l.
- D. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.
 - 1. Clear, Waterborne Membrane-Forming Curing Compounds Acceptable Manufacturers:
 - a. Anti-Hydro Company; Clear Cure Water Base.
 - b. The Burke Company; Spartan Cote WB.
 - c. Cormix Construction Chemicals; Sealco VOC.
 - 2. Acceptable Evaporation Control Manufacturers:
 - a. Conspec Marketing and MFG. Company; Aquafilm.

- b. Euclid Chemical Company; Eucobar.
- c. L&M Construction Chemicals; E-Con.

2.6 RELATED MATERIALS

- A. Integral Color: Integrally color concrete in colors, blending mixtures and application rates necessary to create colors, gradations, and variations to match Owner's mock-up.
- B. Bonding Agent: Acrylic or styrene butadiene.
- C. Epoxy Adhesive: ASTM C 881, two-component material suitable for dry or damp surfaces. Provide material type, grade, and class to suit requirements.
- D. Miscellaneous Materials: Miscellaneous specialty materials, acids, or other materials required to achieve the specialized effects indicated on the mock-up or as required by Owner.
- E. Acceptable Manufacturers: Subject to compliance with requirements, products that may be incorporated in Work include, but are not limited to, the following:
 - 1. Integral Color:
 - a. L.M. Scofield Company; Chromix.
 - b. Davis; Integral Color.
 - 2. Releasing Agents:
 - a. L.M. Scofield; Antiqueing Release.
 - b. Davis; Antiqueing Hardener.
 - 3. Clear Penetrating Sealer (water based):
 - a. L.M. Scofield; Cementone Clear Sealer.
 - b. Davis; Clear Sealer.

2.7 CONCRETE

- A. Prepare design mixes for each type and strength of normal-weight concrete by either laboratory trial batch or field experience methods as specified under ACI 301.
- B. Proportion mixes according to ACI 211.1 and ACI 301 to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength at 28 days: 3,000 psi.
 - 2. Maximum Water-Cement Ratio at Point of Placement: 0.55.
 - 3. Slump Limit at Point of Placement: 3-inches. Slump limit for concrete containing high-range water-reducing admixture: Not more than 8-inches after adding admixture to site-verified 2 to 3-inch slump concrete.
 - 4. Air Content: 2 1/2 to 4 1/2 percent.
- C. Synthetic Fiber Reinforcement: 1 lb. per cu. yd of mix added only at batch plant.

- D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements of ASTM C 94.
 - 1. Reduce mixing and delivery time when air temperature is between 85 degrees F and 90 degrees F and reduce mixing and delivery time from 1-1/2 hours to 75 minutes.
 - 2. Reduce mixing and delivery time to 60 minutes when air temperature is above 90 degrees F.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Prepare subgrade per geotechnical report.
- B. Verify that paving subgrade extends 1-foot beyond the outside edge of paving or curbing and has a positive outfall for trapped water.
- C. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.
- D. Remove loose material from compacted subbase surface immediately before placing concrete.
- E. Provide necessary chairs or supports, and maintain position of reinforcing bars.
- F. Wet a minimum of 2 inches of sand subgrade prior to placing concrete.
- G. Place 1" minimum over prepared subgrade.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for paving to required lines, grades, and elevations.
- B. Install forms to allow continuous progress of Work and so that forms can remain in place at least 24 hours after placing concrete.
- C. Check completed formwork and screeds for grade and alignment to following tolerances:
 - 1. Top of Forms: Not more than 1/8-inch in 10-feet.
 - 2. Vertical Face on Longitudinal Axis: Not more than 1/4-inch in 10-feet.

- D. Clean forms after each use and coat with form release agent to ensure separation from concrete.

3.3 PLACING REINFORCEMENT

- A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover over reinforcement.
- D. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities or replace units as required before placement. Set mats for a minimum 2-inch overlap to adjacent mats.

3.4 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to facilitate installation of their work.
- B. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes and other utility structures until they are at the required finish elevation and alignment.
- C. Comply with requirements and with ACI 304R for measuring, mixing, transporting, and placing concrete.
- D. Deposit and spread concrete in a continuous operation between construction joints. Do not push, drag, or use vibrators to move concrete into place.
- E. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete complying with ACI 309 R.
 - 1. Consolidate concrete along face of forms with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Prevent dislocating reinforcing and dowels.
- F. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on surface. Do not further disturb concrete surfaces prior to beginning finishing operations.

- G. Hot-Weather Placement: Place concrete complying with ACI 305R when hot weather conditions exist.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement 90 degrees F and below. Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 3. Fog-spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, or soft or dry areas.
- H. Cold Weather Placement: Adhere to ACI 306R - Cold Weather Concreting for installing concrete paving during cold weather.

3.5 CONCRETE FINISHING

- A. Light Acid Wash:
1. Provide for containment of acid during finishing procedures so as to protect adjacent improvements. Repair damage to adjacent improvements at no cost to Owner.
 2. Perform acid wash finishing in two separate stages:
 - a. First Stage: Primary wash to take place within 3 days after concrete pour.
 - b. Second stage: Provide a second wash approximately 3 weeks after first stage wash.
- B. Abrasive –or sand- blast finish:
1. Abrasive or sand blast to remove cement – sand matrix to expose aggregate face until aggregate is in uniform relief.
 - (1) Light: Maximum reveal of 1/16” and uniform in color.
 - (2) Medium: Maximum reveal of 1/4”.
 - (3) Heavy: Rugged and uneven appearance. Maximum reveal of 1/3 diameter of coarse aggregate; 1/4 to 1/2” reveal.
 2. Perform abrasive and sand blasting on concrete surfaces at the same time intervals after concrete placement and formwork removal as used to produce sample panels.
- C. Finish surface texture to match texture and pattern as indicated in Owner mock-up.

3.6 JOINTING

- A. Construct contraction, construction, and isolation joints to match irregular edge pattern of stamping tools with faces perpendicular to surface plane of concrete.

- B. Contraction Joints: Provide contraction joints as indicated on Drawings (or to not exceed 10-feet in either direction), to minimize random surface cracking and as indicated on approved Paving Jointing and Pour Sequence Plan provided by Contractor. Match irregular pattern of stamping tools, sectioning concrete into areas as indicated on Drawings. Construct contraction joints for a depth equal to at least one fourth of concrete thickness, as follows:
1. Hand-tooled Joints: Form contraction joints in fresh concrete by grooving and finishing each joint edge with a radiused jointer tool.
 2. Machine-Sawn Joints: Machine-sawn joints are not permitted unless otherwise indicated on Drawings. Provide saw cut joints as soon as concrete has sufficient strength to support sawing equipment.
 3. Do not exceed 1/4-inch in joint width.
- C. Doweled Construction Joints: Construct doweled construction joints at end termination's of paving where paving operations are stopped for more than 1/2 hour, unless paving terminates at an isolation joint and at all edges of different paving types. Locations of doweled construction joints to adhere as closely as possible to Contractor's Paving Jointing and Pour Sequence Plan.
1. Steel Dowels:
 - a. Provide smooth steel dowels across construction joints to reduce differential movement across the joint. Utilize smooth steel dowels based upon the following:
 - 1) 6-inch Thick Pavement:
 - (i) Diameter: 3/4-inch.
 - (ii) Length: 24-inches.
 - (iii) On-center Spacing: 18-inches.
 - 2) 4-inch Thick Pavement:
 - (i) Diameter: 1/2-inch.
 - (ii) Length: 24-inches.
 - (iii) On-center Spacing: 18-inches.
 - b. To assist in correct alignment of steel dowels along construction joints use plastic dowel sleeves:
 - 1) Insure that wood edge forms are true to line and grade prior to installing plastic dowel sleeves.
 - 2) Install plastic dowel sleeves on wood forms at the specified on-center dowel spacing, centered between top and bottom of wood form.
 - 3) Contact plastic dowel sleeve manufacturer for complete installation requirement.
 2. Do not continue tie-reinforcement through sides of strip paving.
 3. Use a bond breaking agent on cured concrete edges that will be joined with fresh concrete.
 4. Immediately before new concrete is placed, wet construction joint and remove standing water.
 5. Tool edges of construction joints to match decorative field jointing.

- D. Isolation Joints: Provide isolation joints to permit horizontal and vertical movement between slab and fixed vertical edges such as building walls, steps, columns, and other vertical restraints. Locations of isolation joints to adhere as closely as possible to Contractor's Paving Jointing and Pour Sequence Plan.
1. Provide 1/4-inch thick pre-molded asphalt impregnated fiber board, backup, and caulking along edges of isolation joints.
 2. Extend pre-molded asphalt impregnated fiber board to full-width and depth of joint, not less than 1/4-inch or more than 1-inch below finished surface of slab.
 3. Furnish pre-molded asphalt impregnated fiber board in one-piece lengths for full width being placed. Where more than one length is required, lace or clip pre-molded asphalt impregnated fiber board sections together.
 4. Protect top edge of pre-molded asphalt impregnated fiber board during concrete placement with a metal, plastic, or other temporary cap. Remove protective cap after concrete has been placed on both sides of joint to facilitate installation of caulking backup.
 5. Joints for Non-Stamped Special Flooring: Tool to profile and dimensions detailed; fill with specified grout, tool grout to a concave profile.

3.7 CONCRETE PROTECTION AND CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of ACI 305R for hot weather and ACI 306R for cold weather protection during curing.
- B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture retaining cover curing, curing compound, or a combination of following:
1. Moisture Curing: Keep surfaces continuously moist for not less than 7 days with following materials:
 - a. Water.
 - b. Continuous water fog spray.
 - c. Absorptive cover, water saturated, kept continuously wet.
 2. Cover concrete surfaces and edges with a 12-inch lap over adjacent absorptive covers.
 3. Curing Compound:
 - a. Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions.
 - b. Recoat areas subjected to heavy rainfall within 3 hours after initial application.

- c. Maintain continuity of coating and repair damage during curing period.

3.8 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, defective, or does not meet the requirements of this Section, at Contractor's expense.
- B. Protect concrete from damage until Final Payment. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material until Final Payment.

3.9 CLEANUP

- A. At completion of Work, Contractor remove concrete stains from adjacent work, including but not limited to dissimilar paving types, walls, columns, railing posts, light fixtures, plant materials, to satisfaction of Owner.

3.10 PAVING FINISH SCHEDULE

- A. Provide paving finishes, as indicated on Paving Schedule on Drawings.

END OF SECTION

**SECTION 02780
UNIT PAVERS**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. Requirements of "General Conditions of the Contract" and of Division 1, "General Requirements", apply to work in this Section with same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

A. Furnish materials, labor, transportation, services, and equipment necessary to furnish and install concrete pavers as indicated on Drawings and as specified herein.

B. Work included in this Section:

1. Sand setting bed.
2. Installation of concrete pavers.
3. Sand jointing.
4. Cement treated base.

C. Work related in other Sections:

1. Section 02750 – Portland Cement Concrete Paving.
2. Section 02810 – Irrigation System.
3. Section 03300 – Cast-In-Place Concrete.
4. ~~Section 05700 – Ornamental Metal.~~

1.3 REFERENCES

A. American Society of Testing Materials (ASTM):

1. C33: Specification for Concrete Aggregates.
2. C67: Method of Sampling and Testing Brick and Structural Clay Tile.
3. C136: Method for Sieve Analysis for Fine and Coarse Aggregates.
4. C140: Method of Sampling and Testing Concrete Masonry Units.
5. C936: Specification for Solid Concrete Paving Units.

1.4 QUALITY ASSURANCE

A. Installation of concrete pavers shall be by an installer with at least 5 year experience in placing concrete pavers.

1.5 SUBMITTALS

- A. Submit shop or product drawings and product data.
- B. Submit five samples of each concrete paver specified.
- C. Submit sieve analysis for grading of bedding and joint sand.
- D. Submit test results for compliance of concrete pavers to requirements of ASTM C936 from an independent testing laboratory.

1.6 MOCK-UPS

- A. Install a 10-foot square mock-up of each pattern specified, and 30-foot section of rail-pattern at tree grate.
- B. Mock-ups will be standard from which future work will be judged by Owner and Architect.
- C. Construct mock-ups on-site in an area where there preservation can be maintained throughout the course of work.

1.7 ENVIRONMENTAL CONDITIONS

- A. Do not install sand or pavers during rain.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Packaging: Pavers shall be packaged on pallets in such a way as to minimize damage during transportation, delivery, storage and handling.
- B. Rate of supply: Deliver pavers to the construction site in such quantities and at such times as will assure the continuity of the installation.
- C. Storage: Place packaged pavers on firm, level, and smooth surfaces and at least 6 in. above the ground. Place stored pallets so that identification marks are visible.
- D. Damaged pavers: No paver, on part thereof, used in the permanent works shall exhibit obvious signs of damage on the top surface, including but not limited to chipping, cracking and staining. Such damage shall be grounds for rejection.
- E. Bedding sand: Deliver and stockpile bedding sand in such a way as to minimize contamination and segregation. Stockpiles are to be located on firm, level, and smooth surfaces that do not channel water into the sand.
- F. Jointing sand: Deliver jointing sand in bags and store in such a way as to

minimize contamination.

G. Joint sand stabilizer: Deliver and store in strict accordance with the manufacturers instructions and maintain a temperature range of 50 degrees to 105 degrees F.

1.9 COORDINATION

A. Notify Contractor and other contractors related to installation of Work in ample time, so as to allow sufficient time for those contractors to perform their portion of work.

PART 2 - PRODUCTS

2.1 CONCRETE PAVERS

A. Concrete pavers shall be in accordance with patterns as indicated on Drawings.

B. Supply only concrete pavers that are manufactured and supplied by a member of Concrete Paver Institute.

C. Acceptable Manufacturers:
1. Acker-Stone – (800) 258-2353
2. Orco Paving Stones- (951) 685-5974
2. Owner Approved Equal

D. Refer to construction schedule on Drawings for concrete paver shape, color and thickness.

E. Concrete used on this project to meet following requirements set forth in ASTM C936, Standard Specification for Concrete Pavers:
1. Minimum average compression strength: 8,000 psi.

2.2 SAND BEDDING COURSE

A. Clean, non-plastic, free from deleterious or foreign matter, and be natural or manufactured from crushed rock in accordance with ASTM C136.

B. Sand particles to be sharp and conform to grading requirements of ASTM C33 as indicated below:

<u>Sieve Size</u>	<u>Percent</u>
3/8 inch	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	54 to 85
No. 30	25 to 60

No. 50	10 to 30
No. 100	2 to 10

2.3 CEMENT TREATED BASE

A. General

Cement Treated Base (CTB) shall consist of aggregate, cement and water uniformly mixed in a central plant, transported to the project, spread, compacted, shaped, finished and cured in accordance with these specifications. It shall conform to the lines, grades, thicknesses and typical cross-section shown on the plans.

B. Materials

1. Cement shall comply with the latest specifications for Portland cement – ASTM C150 (Type I) or Portland-Pozzolan-ASTM C595 (Type IP).
2. Water shall be free from substances deleterious to the hardening of the Cement Treated Base.
3. Aggregate may be any granular material or combinations of aggregates that will, when mixed with adequate amounts of cement and water, produce laboratory mix design Unconfined Compression Test strength of 400 psi at 7 days in accordance with the ASTM D-1633 Method “A.” The preceding tests will utilize the Moisture-Density Relation as determined by ASTM D-558: AASHTO T-134. The maximum size of aggregate shall pass a 2-inch sieve.

- C. Equipment Cement Treated Base may be constructed with any combination of machines or equipment that will produce the results meeting these specifications.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that sub-base is dry and ready to support sand, concrete pavers and anticipated vehicle loads.
- B. Verify that gradients and elevations of sub-base are correct.
- C. Verify location, type, installation and elevations of edge restraints around perimeter area to be paved.
- D. Beginning of concrete paver installation means acceptance of base and edge restraints.

3.2 INSTALLATION OF SAND BEDDING

- A. Spread sand evenly over sub-base course and screed to a consistent 1-inch thickness.

- B. Do not disturb screeded sand.
- C. Place sufficient sand to stay ahead of laid concrete pavers.
- D. Lay concrete pavers in patterns as indicated on Drawings. Maintain straight pattern lines, unless otherwise noted on Drawings.
- E. Joints between concrete pavers: butt joints.
- F. Fill gaps at edges of paved area with cut concrete pavers or edge units.
- G. Cut concrete pavers along its edge with a double-bladed splitter or masonry saw.
- H. Use a low amplitude, high frequency plate vibrator capable of producing 3,000 to 5,000 lbs. centrifugal compaction force to vibrate concrete pavers into sand bedding course.
- I. Vibrate concrete pavers, sweeping dry sand into joints and vibrate until they are fully settled. This will require at least two or three passes with vibrator. Do not vibrate within 3-feet of unrestrained edges of concrete pavers.
- J. Sweep off excess sand when Work is complete.
- K. Do not allow final surface elevations to deviate more than 3/8-inches under a 10-foot long straight edge.
- L. Verify that surface elevations of concrete pavers are at least 1/8 to 1/4-inches above adjacent drainage inlets, paving edge restraints or gutters.

3.3 JOINTING SAND STABILIZER

- A. On completion of the entire pavement installation the surface shall be swept so that the sand level is at the bottom of the chamfers.
- B. The surface shall be made clean and free from oil, laitence, dust and any loose material prior to the application of joint sand stabilizer. The surface and joint sand should be dry for its full depth prior to commencing work.
- C. The joint sand stabilizer sealer shall be applied evenly at the appropriate coverage as follows: Surebond shall be applied from a low pressure regulated backpack sprayer at a coverage rate of 150sqft/gallon. Work the excess material into the joints using a floor squeegee ensuring that all joints are adequately flooded and that no surplus material is left on the surface. This work to be in strict accordance with the manufacturers recommendations.

- D. The treated area shall be protected from rain or moisture and not be trafficked for 24 hours after completing to the stabilizer. Work shall cease if inclement weather (rain or strong wind) will affect the stabilizing operation and shall not recommence until the joint sand has dried sufficiently to allow penetration of the sealant.

3.4 INSTALLATION OF CEMENT TREATED BASE

- A. Before other construction operations are begun, the area to be paved shall be graded and shaped as required to receive the Cement Treated Base in conformance with the grades, lines, thicknesses and typical cross-section shown on the plans. Unsuitable subgrade soil or material shall be removed and replaced with suitable soil. The subgrade shall be firm and able to support without displacement of the construction equipment and the compaction hereafter specified. Soft or Yielding subgrade shall be corrected and made stable before construction proceeds.
- B. Place the geotextile sheeting over prepared subgrade, overlapping ends and edges at least 12 in.
- C. The aggregate, cement and water shall be mixed in a pug mill. The plant shall be equipped with feeding and metering devices that will add the aggregate, cement and water into the mixer in the specified quantities to produce a mixture that will meet or exceed the mix design criteria as stated above. The aggregate and the cement shall be mixed sufficiently to prevent cement balls from forming when the mix water is added. The mixing time shall be sufficient to assure an intimate, uniform mixture of aggregate, cement and water. The percentage of moisture in the aggregate, at the time of cement application shall be the amount that assures a uniform and intimate mixture of aggregate and cement during mixing operations. It shall not exceed the specified moisture content required for adequate compaction. The mixture shall be hauled to the paving areas in trucks having beds cleaned of deleterious material.
- D. The mixture shall be placed on a moistened subgrade in a uniform layer by any approved method of spreading that will deposit the required quantity per lineal foot, without segregation, to produce a uniformly compacted base conforming to the grade and cross-section. Not more than 30 minutes shall elapse between placement of CTB in adjacent lanes at any location except at longitudinal and transverse construction joints. No CTB mixture shall be placed when the subgrade is frozen or when the air temperature is less than 40°F in the shade. Compaction shall start as soon as possible after spreading. The elapsed time between the addition of water to the CTB mixture and the start of compaction shall not exceed 60 minutes under normal conditions. Laboratory tests may be required to verify changes in compaction time limits. At the start of compaction, the percentage of moisture in the mixture shall not be more than one percentage point below or two percentage points above the specified optimum moisture content, and shall be less than that compaction and finishing. The specified optimum moisture content and density shall be determined in the field by a Moisture-Density Test. AASHTO T

134 or ASTM D 556, on representative samples of Cement Treated Base moisture obtained from the area prior to compaction. Prior to compaction, the mixture shall then be compacted uniformly to the specified density. During compaction operations, initial shaping may be required to obtain uniform compaction and required grade and cross- section.

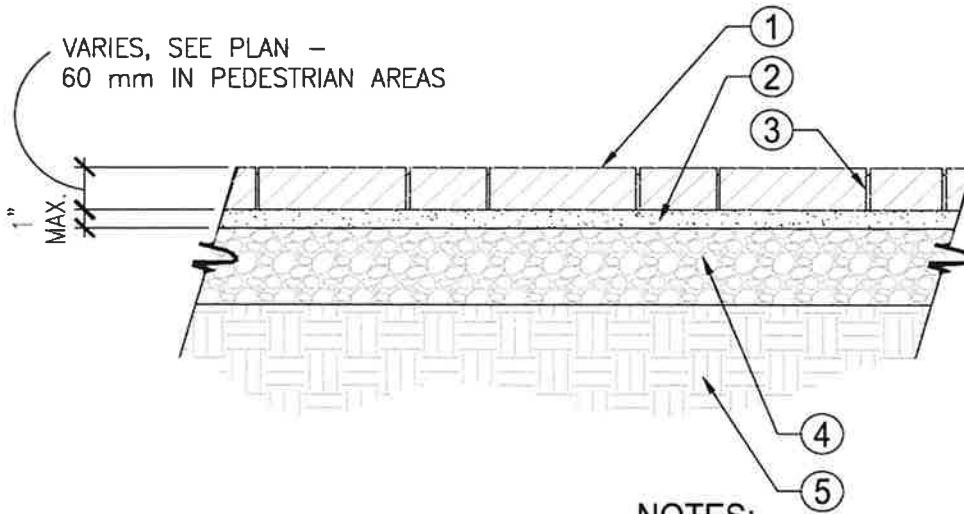
- E. When initial compaction is completed, the surface of the Cement Treated Base shall be shaped to the required lines, grades and cross-section. The moisture content of the surface material shall be maintained at not less than its specified optimum moisture content during finishing operations. If any reshaping of the surface is necessary, it shall be lightly scarified to remove any compaction planes, scales or smooth surfaces left by equipment. Final compaction shall then be continued until uniform and adequate density is obtained. The CTB shall be uniformly compacted to the minimum of 98% of maximum density. Compaction and finishing shall be done in such a manner as to produce, in not longer than two hours, a smooth, dense surface free of compaction planes, cracks, ridges, or loose material.
- F. Finished portions of Cement Treated Base that are traveled on by equipment used in construction an adjoining section shall be protected in such a manner as to prevent equipment from marring or damaging completed work. Cement Treated Base shall be protected against freezing for seven days after its construction and until it has hardened. Curing shall be performed in accordance with manufacturer's recommendations. Construction Joints: At the end of each day's construction a transverse construction joint shall be formed by cutting back in to the completed work to form a full depth vertical face free of loose or shattered material. The section may be opened to all traffic provided that the Cement Treated Base has hardened sufficiently to prevent marring or distorting of the surface by equipment or traffic.
- G. The contractor shall be required within the limits of his contract to maintain the Cement Treated Base in good condition until all the work has been completed and accepted. Maintenance shall include immediate repairs of any defects that may occur. This work shall be done by the contractor at his own expense and repeated as often as may be necessary to keep the area continuously intact. Faulty work shall be corrected. Any low areas shall be remedied by replacing the material for the full depth of treatment rather than by adding a thin layer of Cement Treated Base to the completed work.

3.5 FIELD QUALITY CONTROL

- A. After removal of excess sand, re-check surface elevations for conformance to Drawings. Make adjustments as necessary.

3.6 CLEAN UP

- A. Upon completion of Work, Contractor shall remove rubbish, waste and debris resulting from operations off-site. Remove equipment and implements of service, and leave entire work area in a neat, clean, and Owner-accepted condition.



NOTES:

1. REFER TO CONSTRUCTION SCHEDULE FOR SEALER APPLICATION
2. COMPACT SUBGRADE TO 98% RELATIVE COMPACTION PER ASTM D1557 IN THE UPPER 12" OF SOILS AND ALL AGGREGATE BASE UTILIZED
3. SUB-BASE TO BE .35 FEET OF AGGREGATE BASE COMPACTED TO 98% RELATIVE COMPACTION PER ASTM 1557.
4. THE AGGREGATE BASE SHOULD MEET CAL TRANS SPECIFICATIONS CLASS 2 AGGREGATE BASE
5. REFER TO GEOTECHNICAL REPORT - MOST STRINGENT REQUIREMENTS SHALL APPLY

LEGEND

- ① CONCRETE PAVERS
- ② WASHED CONCRETE SAND LEVELING BED (1" MAXIMUM)
- ③ BUTT JOINT - SWEEP SAND INTO OPENING
- ④ COMPACTED SUB-BASE (SEE NOTES)
- ⑤ COMPACTED SUB-GRADE (SEE NOTES)

CONCRETE PAVERS (PEDESTRIAN)

Scale: 1-1/2"=1'-0"

END OF SECTION

**SECTION 02810
IRRIGATION SYSTEM**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. The requirements of the "General Conditions of the Contract" and of Division 1, "General Requirements", shall apply to all work in this Section with the same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish all materials, labor, transportation, services, and equipment necessary to install landscape irrigation as shown on the Drawings and as specified herein.
1. Work included in this Section:
 - a. Layout.
 - b. Trenching.
 - c. Backfilling.
 - d. Assemblage.
 - e. Wiring.
 - f. System Flushing.
 - g. Sprinkler Head Installation (*Replaced by Secondary Lateral and Drip Emitter System*).
 - h. Valve Installation.
 - i. System Testing and Adjustment.
 - j. Maintenance.
 2. Work related in other Sections:
 - a. Section 02750 - Portland Cement Concrete Paving.
 - b. Section 02900 - Landscape Planting.
 - e. ~~Section 02955 - Palm Tree Planting.~~

1.3 DEFINITIONS

- A. The Owner's Authorized Representative in this Section will also refer to the Architect or other designee.

1.4 REQUIREMENTS OF REGULATORY AGENCIES

- A. All local, municipal and state laws, and rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of this Specification, and its provisions shall be carried out by the Contractor. Anything contained in this Specification shall not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when the Drawings and Specifications call for or describe materials, workmanship, or

construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of the Drawings and Specifications shall take precedence.

1.5 QUALITY CONTROL

A. Manufacturer's Directions

1. The Manufacturer's directions and drawings shall be followed in all cases where the manufacturers of articles used in this Specification, furnish directions covering points not shown in the Drawings and Specifications.

B. Permits, Fees, Bonds and Inspections

1. The Contractor shall pay for any and all permits, fees, bonds and inspections necessary to perform and complete his portion of the Work.

C. Explanation of the Drawings

1. Due to the scale of the Drawings, it is not possible to indicate all offsets, fittings, sleeves, etc. which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc. as may be required to meet such conditions. The Drawings are diagrammatic only and are indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.
2. All work called for on the Drawings by notes or details shall be furnished and installed whether or not specifically mentioned in this Specification.
3. The Contractor shall not willfully install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Owner's Authorized Representative. In the event this notification is not performed, the Contractor shall assume full responsibility for any revisions necessary.

1.6 SUBMITTALS

A. Materials List

1. The Contractor shall furnish the articles, equipment, materials, or processes specified by name in the Drawings and Specifications. No substitution will be allowed without prior written approval by the Owner's Authorized Representative.
2. Complete material list shall be submitted prior to performing any work. Material list shall include the manufacturer, model number and description of all materials and equipment to be used. Although manufacturer and other information may be different, the following is a guide to proper submittal format:

<u>Item No.</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model No.</u>
1.	Backflow Preventer	Febco	825Y
2.	Gate Valve	Nibco	T-113
3.	Etc.	Etc.	Etc.

The irrigation submittal list must be specific and complete. All items must be listed and should include solvent/primer, wire, wire connectors, valve boxes, etc. No copies of manufacturer's literature (catalog cuts) are required as submittal information.

3. The Contractor may submit substitutions for equipment and materials listed on the Drawings by following procedures as outlined in Section 1.6 of this Specification.
4. Equipment or materials installed or furnished without prior approval of the Owner's Authorized Representative may be rejected and the Contractor required to remove such materials from the site at no cost to the Owner.
5. Approval of any item, alternate or substitute indicates only that the product or products apparently meet the requirements of the Drawings and Specifications on the basis of the information or samples submitted.
6. Manufacturer's warranties shall not relieve the Contractor of his liability under the Guarantee. Such warranties shall only supplement the Guarantee.

B. Record Drawings or "As-Built" Drawings

1. The Contractor shall provide and keep up to date at all times, a complete record set of "As-Built" Drawings of black line prints which shall be corrected daily and show every change from the original Drawings and Specifications and the exact installed locations, sizes, and kinds of equipment. Prints for this purpose may be obtained from the Owner's Authorized Representative at the Contractor's cost. "As-Built" Drawings shall be kept on the site and shall be used only as a record set.
2. "As-Built" Drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. "As-Built" Drawings shall be available at all times for observation and shall be kept in a location easily accessible to the Owner's Authorized Representative. Should the "as-built" progress sheets not be available for review or not current at the time of any site visit by the Owner's Authorized Representative, it will be assumed no work has been completed and the Contractor will be assessed the cost of that site visit at the current billing rate of the Owner's Authorized Representative. No other site observations shall take place without prior payment of this assessment.
3. The Contractor shall make neat and legible notations on the "As-Built" Drawing progress sheets daily as the work proceeds, showing the work as actually installed. For example, should a piece of equipment be installed in a location that does not match the Drawings, the Contractor must indicate that equipment has been relocated in a graphic manner so as to match the original symbols as indicated in the irrigation legend. The relocated equipment and

dimensions will then be transferred to the original "As-Built" Drawings at the proper time.

4. Before the date of the Final Walkthrough, the Contractor shall transfer all information from the "as-built" prints to Mylar plans procured from the Owner's Authorized Representative at the Contractor's cost. All drafting shall be done with waterproof technical pen ink and applied to the Mylar by technical drafting pens made expressly for use on Mylar surfaces. Dimensions shall be made on the sepia Mylar so as to be easily readable even on the final irrigation controller chart. The original Mylar "As-Built" Drawings shall be submitted to the Owner's Authorized Representative for approval prior to the making of the irrigation controller charts.
5. The Contractor shall dimension from two (2) permanent points of reference, building corners, sidewalk, or road intersections, etc., the location of the following items:
 - a. Connection to existing water lines.
 - b. Connection to existing electrical power.
 - c. Gate valves.
 - d. Routing of sprinkler pressure lines.
 - e. Sprinkler control valves.
 - f. Routing of control wiring.
 - g. Quick coupling valves.
 - h. Backflow preventer.
 - i. Master valves and flow sensors.
 - j. Other related equipment.
6. On or before the date of the Final Walkthrough, the Contractor shall deliver the corrected and completed Mylar "As-Built" Drawings to the Owner's Authorized Representative. Delivery of the "As-Built" Drawings will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the "As-Built" Drawings.

C. Irrigation Controller Charts

1. "As-Built" Drawings shall be approved by the Owner's Authorized Representative before irrigation controller charts are prepared.
2. Provide one irrigation controller chart for each irrigation controller supplied.
3. Each irrigation controller chart shall show the area controlled by that irrigation controller and shall be the maximum size of which the irrigation controller door will allow.
4. The irrigation controller chart is to be a reduced drawing of the actual installed irrigation system. In the event that the irrigation controller chart is not legible when the chart is reduced, it may be enlarged to a size that will be readable when reduced.
5. The irrigation controller chart shall be a 11" x 17" Xerox bond reduction with each valve station represented by a different color.
6. When completed, hermetically seal the irrigation controller chart between two pieces of 3 mil plastic with a 1/8" edge overlap.

7. Irrigation controller charts shall be completed and approved by the Owner's Authorized Representative prior to the Final Walk-through.
- D. Operation and Maintenance Manuals
1. Prepare and deliver to the Owner's Authorized Representative within 10 calendar days prior to completion of irrigation installation, two (2) - 3 ring hard cover binders each containing the following information:
 - a. Index sheets stating the Contractor's address and telephone number and a list of equipment with the name and addresses of local manufacturer's representatives.
 - b. Approved Irrigation Submittal.
 - c. Catalog and part sheets on every material and equipment installed under this Contract.
 - d. Guarantee statement.
 - e. Complete operating and maintenance instruction on all major equipment.
 2. In addition to the above mentioned maintenance manual, provide the Owner with on-site instructions for major equipment and show evidence in writing to the Owner's Authorized Representative at the conclusion of the Project that this service was rendered.
- E. Furnished Equipment
1. Supply as a part of this Contract the following tools:
 - a. Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on the Project.
 - b. Two (2) five-foot valve keys for operation of gate valves.
 - c. Two (2) keys for each automatic controller and irrigation controller enclosure.
 - d. One (1) quick coupler key and matching hose swivel for every five (5), or fraction thereof, of each type of quick coupling valve installed.
 2. The above mentioned equipment shall be turned over to the Owner at the conclusion of the Project. Before the Final Walk-through shall be performed, evidence that the Owner has received this material must be shown to the Owner's Authorized Representative.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Handling of PVC Pipe and Fittings
1. The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. PVC pipe shall be transported in a vehicle which allows the length of pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping at no cost to the Owner.

1.8 SUBSTITUTIONS

- A. If the Contractor wishes to substitute any equipment or materials for those equipment or materials listed on the Drawings and Specifications, he may do so by providing the following information to the Owner's Authorized Representative for approval:
 - 1. Provide a statement indicating the reason for making the substitution. Use a separate sheet of paper for each item to be substituted.
 - 2. Provide descriptive catalog literature, performance charts and flow charts for each item to be substituted.
 - 3. Provide the amount of cost savings if the substituted item is approved.
- B. The Owner's Authorized Representative shall have the sole responsibility in accepting or rejecting any substituted item as an approved equal to those equipment and materials listed on the Drawings and Specifications.

1.9 PRIOR TO START OF THE LANDSCAPE MAINTENANCE PERIOD

- A. The Contractor shall submit proof of warranty to the Owner's Authorized Representative prior to the start of the landscape maintenance period. All computerized irrigation control system materials except interconnect conductors shall have a five-year warranty. It is the Contractor's responsibility to obtain the necessary warranty inspections from the equipment supplier. No installations will be accepted without proof of warranty.

1.10 GUARANTEE

- A. The Guarantee for the irrigation system shall be made in accordance with the attached form.
- B. A copy of the Guarantee form shall be included in the Operations and Maintenance Manual.
- C. The Guarantee form shall be re-typed onto the Contractor's letterhead and contain the following information:

1.11 GUARANTEE FOR SPRINKLER IRRIGATION SYSTEM

- A. We hereby guarantee that the sprinkler irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the Drawings and Specifications, ordinary wear and tear and unusual abuse, or neglect as exception. We agree to repair or replace any defects in material or workmanship which may develop during the period of one year from date of final acceptance and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the Owner.

We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice. In the event of our failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT:

LOCATION:

SIGNED:

ADDRESS:

PHONE:

DATE OF ACCEPTANCE:

1.12 RULES AND REGULATIONS

- A. Work and materials shall be in accordance with the latest edition of the National Electric Code, the Uniform Plumbing Code as published by the ICBO and IAMPO, and applicable laws and regulations of the governing authorities.

1.13 PROTECTION OF WORK AND MATERIALS

- A. The Contractor shall protect his work and work of others for the duration of the Contract. He shall protect pipes and fittings from direct sunlight, and avoid undue bending and any concentrated external loading. Pipe or fittings that have been damaged shall not be used.
- B. The Contractor shall exercise extreme care in excavating and working near existing utilities. Damage to utilities which are caused by contractor's operation shall be the Contractor's responsibility.
- C. The Contractor shall take necessary precautions to protect site conditions and plant material that is to remain. Should damage to incurred, Contractor shall repair damage to its original condition or furnish and install equal replacements.
- D. All existing irrigation systems shall be kept in operation at all times. If the existing system is damaged by Contractor, he shall be responsible for immediate repair of such damage. After each repair, all heads of the repaired system shall be removed so that the lines can be cleared of all dirt and foreign matter.

1.14 CORRECTION OF WORK

- A. Any and all discrepancies of unsatisfactory work shall be corrected by the Contractor at no additional expense to the Owner. The correction of work shall be finished with a reasonable period mutually agreed upon between the Owner and Contractor.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Use only new materials of brands and types noted on the Drawings or Specifications or an equal approved by Owner.

2.2 PVC PRESSURE MAIN LINE PIPE AND FITTINGS

- A. Pressure main line piping for sizes 2" and larger, shall be Class 315 PVC.
- B. Class 315 PVC pipe shall be made from an NSF approved Type I, Grade I, PVC resin conforming to ASTM resin specification D1784. All pipe must meet requirements as set forth in ASTM D2241 (Solvent-weld Class Pipe), with an appropriate standard dimension (S.D.R.).
- C. Pressure main line piping for sizes 1-1/2" and smaller shall be Schedule 40 PVC with solvent welded joints.
- D. Schedule 40 PVC pipe shall be made from NSF approved Type I, Grade I PVC resin conforming to ASTM resin specification D1784. All pipe must meet requirements as set forth in ASTM D1785 (Solvent-weld Schedule Pipe).
- E. PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466.
- F. Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
- G. PVC pipe must bear the following markings:
 - 1. Manufacturer's name.
 - 2. Nominal pipe size.
 - 3. Schedule or class.
 - 4. Pressure rating in PSI.
 - 5. NSF (National Sanitation Foundation) approval.
 - 6. Date of extrusion.
- H. PVC fittings shall bear the manufacturer's name or trademark, material designation, size, applicable IPS schedule and NSF seal of approval.

2.3 PVC NON-PRESSURE LATERAL LINE PIPING

- A. Non-pressure buried lateral line piping shall be Schedule 40 PVC with solvent-welded joints.
- B. Non-pressure lateral line piping installed under paved areas shall be installed in a Schedule 40 PVC sleeve.
- C. Pipe shall be made from NSF approved, Type I, Grade II PVC resin conforming to ASTM resin specification D1784. All pipe must meet requirements set forth in ASTM D2241 (Solvent-weld Class Pipe) with an appropriate standard dimension ratio.
- D. Except as noted in paragraphs A, B, C and D of Section 2.2, 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 set forth in this Specification.

2.4 BRASS PIPE AND FITTINGS

- A. Where indicated on the Drawings, use red brass screwed pipe conforming to Federal Specification #WW-P-351.
- B. Fittings shall be red brass conforming to Federal Specification #WW-P-460.

2.5 GALVANIZED PIPE FITTINGS

- A. Where indicated on the Drawings, use galvanized steel pipe ASA Schedule 40 mild steel screwed pipe.
- B. Fittings shall be medium galvanized screwed beaded malleable iron, or Class 150 flanged steel with Corten bolts where required. Galvanized couplings may be merchant coupling.
- C. Galvanized pipe and fittings installed below grade shall be painted with two (2) coats of Koppers #50 bitumastic. Or cover pipe with 2 layers of plastic, self-adhesive, pipe wrap, 2 mils thick, as manufactured by 3M Company or equal.
- D. Use non-hardening, nontoxic pipe joint sealant formulated for use on water-carrying pipes on all metal threaded connections.

2.6 GATE VALVES AND BALL VALVES

- A. Gate valves 3" and smaller shall be 125 lb. SWP bronze ball gate valve with blow-out proof and full port.
- B. Gate valves 3" and smaller shall have threaded ends and shall be equipped with a bronze handle.
- C. Gate valves 3" and smaller shall be similar to those manufactured by Hammond.
- D. All gate valves shall be installed per irrigation installation details.
- E. Ball valves 3 inches and smaller shall be Schedule 80 PVC full bore units, and include Teflon ball seats, EPDM O-rings seals, and pressure rated at a minimum of 235 psi @ 73 degrees F.
- F. Ball valves 3 inches and smaller shall be equipped with a full turn stem and polypropylene handle.
- G. Gate and Ball valves shall be installed per installation detail.

2.7 QUICK COUPLING VALVES

- A. Quick coupling valves shall have a brass two-piece body designed for a working pressure of 150 PSI, operable with quick coupler. Key size and type shall be as indicated on the Drawings.

2.8 BACKFLOW PREVENTION UNITS

- A. Backflow prevention units shall be of size and type indicated on the Drawings. Install backflow prevention units in accordance with the Drawings.
- B. Wye strainers at backflow prevention units shall have a bronzed screwed body with 60 mesh stainless steel screen and shall be similar to the Bailey #100B or approved equal.
- C. Pressure main line piping between the Point-of-Connection and the backflow preventer shall be installed as required by local code. The Contractor shall verify with the local governing body as to material type and installation procedures prior to start of construction. Submit shop drawing for approval.
- D. Anti-theft equipment (i.e. Sentry Union and Cable Guard) for backflow preventer shall be as indicated on the drawings, or approved equal.

2.9 CHECK VALVES

- A. Check valves shall be of heavy duty virgin PVC construction with FIP threaded inlets and outlets. Internal parts shall be stainless steel and neoprene. Check valves shall be field adjustable against draw-out from 5 to 40 feet of head. Check valves shall be similar to the King Bros. Industries "CV" series, or equal.

2.10 MASTER VALVES

- A. Master valves shall be of size and type indicated on the irrigation Drawings.
- B. Master valves shall have pressure regulating and manual flow adjustments.
- C. Provide and install one (1) rectangular valve box for each master control valve.

2.11 CONTROL WIRE

- A. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 volt. Pilot wires shall be a different color wire for each automatic controller. Common wires shall be #12 gauge and the color white with a different color stripe for each automatic controller. Install wires in accordance with valve manufacturer's specifications and wire charts. In no case shall wire size be less than #14 gauge. Wire color shall be continuous over its entire length.
- B. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible.
- C. Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of 10 feet.
- D. An expansion curl shall be provided within three (3) feet of each wire connection. Expansion curl shall be of sufficient length at each splice connection at each electric control, so that in case of repair, the valve bonnet may be brought to the surface without disconnecting the control wires. Control wires shall be laid loosely in the trench without stress or stretching of the control wire conductors.
- E. Wire splices shall be made with either Scotch-Lok #3576 Connector Sealing Packs or Rain Bird Snap-Tite wire connector, or approved equal. Use one splice per connector sealing pack.
- F. Field wire splices between the automatic controller and the electrical control valves shall not be allowed without prior approval of the Owner's Authorized Representative.

- G. When control wiring is trenched separately from mainline trenches a continuous warning tape shall be installed with the wiring. Warning tape: Inert plastic film highly resistant to alkalis, acids, or other destructive chemical components likely to be encountered in soils. Three inches wide, colored yellow, and imprinted with "CAUTION: BURIED ELECTRIC LINE BELOW."
- H. Provide a 36-inch excess length of wire in an 8-inch diameter loop at each 90 degree change of direction, at both ends of sleeves, and at 100-foot intervals along continuous runs of wiring. Do not tie wiring loop.
- I. Install common ground wire and one control wire for each remote control valve. Multiple valves on a single control wire are not permitted. Install one common wire for each controller. Multiple controllers with one common wire will not be permitted.

2.12 IRRIGATION CONTROLLERS

- A. Irrigation controllers shall be of the size and type as that indicated on the Drawings.
- B. Final location of irrigation controllers shall be approved by the Owner's Authorized Representative.
- C. Unless otherwise noted on the Drawings, the 120 volt electrical power to the irrigation controller shall be furnished by others. The final electrical hook-up shall be the responsibility of the Contractor.
- D. The irrigation controller shall be included as a part of the Irrigation Controller Enclosure Assembly.

2.13 IRRIGATION CONTROLLER ENCLOSURE ASSEMBLY

- A. The irrigation controller enclosure assembly shall consist of a "Strong Box" housing, stainless steel back board, controller, terminal strip, and a 120 volt outlet.
- B. The stainless steel back board shall be bolted to the housing to provide a base for mounting the irrigation controller and terminal strip.
- C. The irrigation controller enclosure assembly shall be equipped with a 120 volt duplex box with an on/off switch, and 120 volt receptacle and transient protection for both low and high voltage. Enclosure shall be grounded with an 8-foot copper clad grounding rod and #6 gauge solid bare wire. Metal conduit shall run from the 120 volt supply to the irrigation controller housing. All power within the housing shall be properly phased.

- D. The irrigation controller enclosure assembly shall be equipped with a pre-wired terminal strip clearly indicating the proper points of connection of all appropriate wiring, i.e. station valves, master valve, common and central control.
- E. The irrigation controller enclosure assembly shall be manufactured by Green Tech Division of John Deere landscape, (714) 837-4460 or an Owner approved equal.

2.14 FLOW SENSORS

- A. Flow sensor shall be the same manufacturer as indicated on the Drawings.
- B. The flow sensor housing shall be a factory modified tee fitting of PVC material and include a removable moisture proof meter unit having a pulse output rate which is proportional to the GPM flow rate of the piping system being measured.
- C. The flow sensor shall operate on 9 volts DC electrical power. The flow sensor signal cable conductors shall be separated from other power wires when pulled up at the controller enclosure location. Avoid field test of wires with 24-volts AC power applied to the flow meter conductors, the sensing unit will be permanently damaged
- D. Provide and install one rectangular valve box for each flow sensor
- E. Provide flow sensor identification tags as shown on drawings
- F. Flow sensor shall include a 2-year warranty provided by manufacturer and a 5-year warranty when specified as part of the irrigation controller assembly.

2.15 FLOW SENSOR SIGNAL CABLE

- A. The flow sensor signal cable shall be a 2-wire pair, direct burial, shielded cable designed to carry signals for the flow sensor. The cable shall include a foil shield with drain wire.
- B. The flow sensor signal cable shall include two (2) stranded soft annealed tin coated solid copper conductors of 20 AWG wire size, individually insulated with high density (PE) polyethylene. The conductors shall be paired and shall be identified with the following colors: black and white
- C. The flow sensor signal cable shall be installed within PVC conduit routed continuously from irrigation controller to flow sensor
- D. Waterproof conductor connectors for signal cable shall be 3M Company, series 3500, Scotch-Lok Connector packs or 3M Company, series 7000, Epoxy Wire Connector kits. If one connector is used for both conductor connections, the wire

splices shall be staggered within the pack to prevent crossover wire contact. Manufacturer's instructions on the package shall be followed

- E. The flow sensor signal cable shall be as specified with the controller enclosure assembly, or approved equal.

2.16 ELECTRICAL CONTROL VALVES

- A. Electric control valves shall be as indicated on the Drawings.
- B. Electric control valves shall have a manual flow adjustment.
- C. Provide and install one (1) control valve box for each electric control valve.

2.17 VALVE BOXES

- A. Use one 10-inch x 10-inch (T-cover) round box for each quick coupling valve, gate/ball valve, grounding rod, and wire splice as manufactured by Applied Engineering Products - model #0910-L1B2B with bolt-down cover, or approved equal. Extension sleeves for gate valves shall be 6-inch minimum Schedule 40 PVC.
- B. Use one nominal 10-inch x 15-inch x 12-inch deep (T-cover) rectangular box for electrical control valves, and flow sensor assemblies as manufactured by Applied Engineering Products - model #1015T1B2B with bolt-down cover, or approved equal.
- C. Use one nominal 13-inch x 20-inch x 12-inch deep 'jumbo' rectangular box for master valves and drip control valve assemblies as manufactured by Applied Engineering Products - model #1320-1B2B with bolt-down cover, or approved equal
- D. Valve boxes installed in shrub and ground cover areas shall be black in color and valve boxes installed within turf shall be green in color (substitute the letter 'B' representing the color black, with the letter 'G' for the color green).
- E. Use landscape fabric (geotextile soil separator), Model number 140N, as manufactured by Mirafi, Inc. (800) 869-8905, or approved equal.

2.18 SPRINKLER HEADS (*Sprinklers replaced with Drip Emitter Secondary Lateral System and Pre-assembled Flexible Risers*)

- A. ~~Sprinkler heads~~ (*Secondary lateral System*) shall be of the same size, type, and deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as shown on the Drawings and in this Specification.

- B. ~~Spray heads~~(*Secondary lateral System*) shall have a screw adjustment.
- C. ~~Pop-up sprinkler~~ (*Secondary lateral System*)bodies shall be fabricated in accordance with the details shown on the plans.
- D. Riser nipples for all ~~sprinkler heads~~ (*Secondary lateral System*)shall be the same size as the riser opening in the sprinkler body.
- E. ~~Sprinkler nozzles~~ (*Secondary lateral System*) of the same type shall be from the same manufacturer.
- F. ~~Sprinkler~~(*Secondary lateral System*) spacing as shown on the Drawings shall not be exceeded.

2.19 IDENTIFICATION TAGS

- A. Identification tags for electrical control valves shall be manufactured from Polyurethane Behr Desopan, or equal. Use Christy's standard tag hot stamped with black letters on yellow background. Tags shall be numbered to match programming as indicated on the irrigation drawings.
 1. Tags shall be numbered to match programming shown on the Drawings. Provide one tag for each electric control valve, flow sensor and master valve.
 2. Order tags with the controller assignment on the front side of tag and the station sequence indicated on the back side of the tag. The tag has a limit of three digits per side.
- B. Special order tags from T. Christy Enterprises, (714)771-4142 or an Owner approved equal.

2.20 SLEEVING

- A. Install separate sleeve beneath paved areas to route each run of irrigation pipe or wiring bundle.
- B. Sleeving material beneath pedestrian pavements - Schedule 40 PVC pipe with solvent welded joints.
- C. Sleeving beneath streets and drives - Schedule 40 PVC pipe with solvent welded joints.
- D. Sleeving diameter - equal to twice that of the pipe or wiring bundle. Minimum sleeving diameter shall be 2 inches.
- E. Marking stakes - 2" x 2" x 24" wood stakes.

2.21 OTHER COMPONENTS

- A. Tools and Spare Parts
 - 1. Provide operating keys, servicing tools, test equipment, other items, and spare parts as indicated in other areas of this Specification.
- B. Other Materials
 - 1. Provide other materials or equipment not indicated on the Drawings or referenced in this Specification, as necessary, to complete the installation of the irrigation system.

PART 3 - EXECUTION

3.1 GENERAL

- A. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and receive the Owner's Authorized Representative's approval prior to proceeding with any work under this Specification. Contractor shall locate with 2" x 2" wood stakes with identifying markings for all proposed locations of electrical control valve boxes, gate valve boxes and quick coupler boxes for approval by the Owner's Authorized Representative. After locating all these items contact the Owner's Authorized Representative for review and approval. Minor adjustments to the stake locations may be requested of the Contractor by the Owner's Authorized Representative at that time.
- B. Exercise extreme care in excavating and working near existing utilities. The Contractor shall be responsible for damages to these utilities which are caused by his operations. Check existing utility drawings for existing utility locations.
- C. Coordinate installation of sprinkler irrigation materials including pipe, so that there shall be no interference with utilities, construction elements, or the planting of trees, shrubs, and ground covers.
- D. The Contractor shall carefully check all finish grades to satisfy himself that he may safely proceed before starting work on the irrigation system.
- E. Report irregularities to Owner's Authorized Representative prior to beginning work. Beginning of work implies acceptance of existing conditions.

3.2 SITE PREPARATION

- A. Physical Layout
 - 1. Prior to installation, the Contractor shall stake out all pressure and non-pressure supply lines and the location of all sprinkler heads.

2. All layout shall be approved by the Owner's Authorized Representative prior to installation.
- B. Water Supply Point-of-Connections
1. Water supply points of connection are as indicated on the Drawings. The Contractor shall be responsible for minor changes caused by actual site conditions.
 2. The sprinkler irrigation system shall be connected to water supply points of connection as indicated on the Drawings.
- C. Electrical Supply Point-of-Connections
1. Electrical supply point-of-connections for the automatic irrigation controllers are as indicated on the Drawings. The Contractor shall be responsible for minor changes caused by actual site conditions.
 2. Connections shall be made at approximate locations as indicated on the Drawings. The Contractor shall be responsible for minor changes caused by actual site conditions.

3.3 INSTALLATION

- A. Trenching
1. Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow the layout as indicated on the Drawings.
 2. Provide a minimum soil cover of 18 inches for all pressure supply lines.
 3. Provide a minimum soil cover of 12 inches for all non- pressure lines.
 4. Provide a minimum soil cover of 18 inches for all control wire.
 5. Where piping is indicated under paved areas, but running parallel and adjacent to planting areas, install the piping in the planted areas. Irrigation head spacing as indicated on the Drawings shall not be exceeded.
- B. Backfilling
1. The trenches shall not be backfilled until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Backfill shall be mechanically compacted 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.
 2. A fine granular material backfill shall be initially placed over all lines. No foreign matter larger than one-half inch in size will be permitted in the initial backfill.
 3. Flooding of trenches will be permitted only with the approval of the Owner's Authorized Representative.

4. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, planting, or other construction elements are necessary, the Contractor shall make all required adjustments without cost to the Owner.

C. Trenching and Backfilling Under Paving

1. Trenches located under areas where asphaltic concrete or concrete paving occur, shall be backfilled with sand (a layer six (6) inches below the pipe and three (3) inches above the pipe) and compacted in layers to 95% compaction, using manual or mechanical tamping devices. Trenches for piping shall be compacted to equal the compaction of the existing adjacent undisturbed soil and shall be left in a firm unyielding condition. All trenches shall be left flush with adjoining finish grade. The Contractor shall set in place, cap and pressure test all piping under paving prior to the paving work.
2. Generally piping under existing walks is done by jacking, boring or hydraulic driving, but where any cutting or breaking of concrete is necessary, it shall be done and replaced by the Contractor at no cost to the Owner. Permission to cut or break concrete shall be obtained from the Owner's Authorized Representative. No hydraulic driving will be permitted under concrete paving.
3. Provide a minimum soil cover of 18 inches between the top of the pipe and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete paving.

D. Assemblies

1. Routing of irrigation lines as indicated on the Drawings is diagrammatic only. Install lines and various assemblies in such a manner as to conform to the Drawings.
2. Install no multiple assemblies in plastic lines. Provide each assembly with its own outlet.
3. Install all assemblies specified herein in accordance with their respective details. In absence of Drawings or Specifications pertaining to specific items required to complete this work, perform such work in accordance with best standard practice with prior approval of the Owner's Authorized Representative.
4. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
5. On PVC to metal connections work the metal connections first. Teflon tape or approved equal shall be used on all threaded PVC to PVC and threaded PVC to metal joints. Apply a light wrench pressure only. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be solvent welded.

E. Assembling Pipe and Fittings:

1. Inspect all pipe and fittings before installation.

2. Keep pipe free from dirt and pipe scale. Cut pipe ends square and debur. Clean pipe ends of loose pipe shavings.
 3. Keep ends of assembled pipe capped. Remove caps only when necessary to continue assembly.
 4. Install pipe with all markings up for visual inspection and verification.
 5. Parallel lines shall not be installed directly over one another.
 6. Maintain 10 foot minimum horizontal separation from all potable water piping. Where reclaimed and potable water pressure main line piping cross, the reclaimed water piping shall be installed below the potable water piping on a Class 200 PVC pipe sleeve which extends a minimum of five (5) feet on either side of the potable water piping. Provide a minimum vertical clearance of six (6) inches.
 7. Use only strap-type friction wrenches for threaded plastic pipe.
 8. Snake pipe from side to side within the trench.
- F. Line Clearance
1. Pipelines shall have a minimum clearance of six (6) inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.
- G. Automatic Irrigation Controller Installation
1. Install the automatic irrigation controller per the manufacturer's instructions. Electric control valves shall be connected to the irrigation controller in numerical sequence as indicated on the Drawings.
- H. High Voltage Wiring for the Irrigation Controller
1. 120-volt power connection to the irrigation controller shall be provided by the Contractor.
- I. Gate Valve and Ball Valve Installation
1. Install gate valves and ball valves as indicated on the Drawings.
- J. Quick Coupling Valve Installation
1. Install quick coupling valves as indicated on the Drawings.
- K. Master Valve Installation
1. Install master valves as indicated on the Drawings.
 2. Provide and install dedicated controller wiring as indicated on the drawings.
- L. Flow Sensor Installation
1. Install flow sensors as indicated on the Drawings.
 2. Provide and install dedicated flow sensor signal cable as indicated on the drawings.

- M. Electric Control Valve Installation
1. Install electric control valves as indicated on the Drawings. Install each electric control valve in a separate valve box.
 2. The Owner's Authorized Representative shall approve electric control valve and quick coupling valve box locations prior to final installation.
- N. Valve Box Installation
1. Install valve boxes as indicated on the Drawings. When grouped together, allow at least twelve inches between valve boxes.
 2. Each electric control valve number shall be heat-branded on valve box top with 2" tall letters.
 3. Heat brand valve box identification as indicated on Drawings. Heat branding unit available from Hydro-Scape Products, Inc., phone number (714) 639-1850.
- O. System Flushing
1. After all pipe lines and risers are in place and connected and all necessary diversion work has been completed, and prior to installation of sprinkler heads, the control valves shall be opened and a full head of water used to flush out the system. Sprinkler heads shall be installed only after flushing of the system has been performed.
- P. Sprinkler Head Installation (*Secondary Lateral System Emitter*)
1. Install the sprinkler heads as indicated on the Drawings.
 2. Spacing of sprinkler heads shall not exceed the maximum spacing as indicated on the Drawings. In no case shall the spacing exceed the maximum recommended by the manufacturer.
 3. Install check valves on sprinkler heads that drain water after the control valve is turned off. "Low head" drainage will not be allowed on sprinkler heads.
- Q. Sleeving
1. Extend sleeve ends a minimum of 24 inches beyond the edge of the paved surface. Cover pipe ends and mark with stakes. Route wire through and tie at each end to stakes.

3.4 TEMPORARY REPAIRS

- A. The Owner reserves the right to make temporary repairs as necessary to keep the irrigation system in operating condition. The exercise of this right by the Owner shall not relieve the Contractor of his responsibilities under the terms of the Guarantee as herein specified.

3.5 INSTALLATION OF OTHER COMPONENTS

- A. Tools and Spare Parts

1. Prior to the Pre-Maintenance Walk-through, supply the Owner operating keys, servicing tools, test equipment, and any other items as indicated on the Drawings.
- B. Other Materials
1. Install other materials or equipment to be part of the irrigation system, as indicated on the Drawings, even though such items may not have been referenced in this Specification.

3.6 EXISTING TREES

- A. Where it is necessary to excavate adjacent existing trees, the Contractor shall use all possible care to avoid injury to trees and their roots. Excavation in areas where two (2) inch and larger roots occur shall be done by hand. All roots two (2) inches and larger in diameter, except directly in the path of pipe or conduit, shall be tunneled under and shall be heavily wrapped with burlap, to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than two (2) inches in diameter, the wall of the trench adjacent to the tree shall be hand trimmed. Roots one (1) inch and larger in diameter shall be painted with two coats of an approved tree seal. Trenches adjacent to existing trees should be closed within 24 hours. Where this is not possible, the side of the trench adjacent to the existing tree shall be kept shaded with burlap or canvas.

3.7 FIELD QUALITY CONTROL

- A. Adjustment of the Irrigation System
1. Flush and adjust all sprinkler heads for optimum performance and to reduce overspray onto pavement, roadways, and buildings as much as possible.
 2. If it is determined that adjustments to the sprinkler heads will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to any planting. Adjustments may also include changes in nozzle sizes and degrees of arc as required.
 3. Lowering raised sprinkler heads by the Contractor shall be accomplished within 10 days after notification by the Owner's Authorized Representative.
 4. Sprinkler heads shall be set perpendicular to finish grades unless otherwise indicated on the Drawings.
- B. Irrigation System Testing
1. The Contractor shall request the presence of the Owner's Authorized Representative at least 48 hours in advance of irrigation system testing.
 2. Test all pressure lines under hydrostatic pressure of 150 PSI for a period of three (3) hours.
Note: Testing of pressure main line shall occur prior to installation of any electric control valves.
 3. Piping (pressure and non-pressure) under paved areas shall be pressure tested under a hydrostatic pressure of 150 PSI for a period of three (3) hours.

4. If during the pressure test, a pressure drop occurs - indicating a leak, replace the faulty joints and repeat the pressure test until the entire system is proven watertight.
5. Hydrostatic tests shall be made only in the presence of the Owner's Authorized Representative. No pipe shall be backfilled until it has been observed, tested and approved in writing.
6. The Contractor is to furnish the necessary force pump and all other test equipment for the hydrostatic pressure test.
7. When the irrigation system passes the hydrostatic pressure test and is completed, perform a sprinkler coverage test in the presence of the Owner's Authorized Representative. Determine if the water coverage is complete and adequate. Furnish all materials and perform all work necessary to correct any inadequacies of water coverage due to deviations from the Drawings, or where the irrigation system has been willfully installed as indicated on the Drawings when it is obviously inadequate, without bringing this to the attention of the Owner's Authorized Representative. This test shall be accomplished before any groundcover or turf is planted.
8. Upon completion of each phase of work, the entire system shall be coverage tested and adjusted to meet specific site requirements.

3.8 IRRIGATION SYSTEM MAINTENANCE

- A. The entire irrigation system shall be under full, automatic operation for a period of seven (7) days prior to beginning any planting. The Owner reserves the right to waive or shorten this operation period.

3.9 CLEAN UP

- A. Clean up shall be made by Contractor as each portion of work progresses. Refuse and excess dirt shall be removed from the site, all pavement shall be broom swept or washed down, and any damage sustained to the work of other contractors shall be repaired to original conditions at no cost to the Owner.
- B. Upon completion of the Work, the Contractor shall smooth all ground surfaces. Remove excess materials such as rubbish, debris and sweep adjacent streets, curbs, gutters, walkways and trails. Remove construction equipment from the premises.

3.10 FINAL WALK-THROUGH PRIOR TO ACCEPTANCE

- A. The Contractor shall operate the irrigation system in its entirety for the Owner's Authorized Representative at time of the Final Walk through. Any items deemed not acceptable by the Owner's Authorized Representative shall be reworked to his complete satisfaction.

- B. The Contractor shall show evidence to the Owner's Authorized Representative that the Owner has received all accessories, charts, "As-Built Drawings", and equipment as required before the Final Walk through will be performed.

3.11 SITE VISIT OBSERVATION SCHEDULE

- A. The Contractor shall be responsible for notifying the Owner's Authorized Representative in advance of the following site visits:
 - 1. Pre-Job or "Kick-Off" meeting - 7 days.
 - 2. Pressure supply line trenching and installation and testing - 2 days.
 - 3. Irrigation controller installation - 2 days.
 - 4. Control wire installation - 2 days.
 - 5. Lateral line and sprinkler head installation - 2 days.
 - 6. Sprinkler coverage test - 2 days.
 - 7. Final Walkthrough - 7 days.
- B. When site visits are conducted by other than the Owner's Authorized Representative, show evidence in writing of when and by whom these site visits were made.
- C. No site visits will commence without "As-Built" Drawings. In the event the Contractor schedules a site visit without "As-Built" Drawings or without completing previously noted corrections, or without preparing the system for said visit, the Contractor be responsible for reimbursing the Owner's Authorized Representative at his current billing rate per hour portal to portal (plus transportation costs) for this inconvenience. No further site visits will be performed by the Owner's Authorized Representative until this charge has been paid and received.

END OF SECTION

**SECTION 02870
SITE FURNISHINGS**

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Furnish all materials, labor, transportation, services, and equipment necessary to furnish and install site furnishings as shown on the Drawings and as specified herein.

- B. Work included in this Section:
 - 1. Lighted Bollards
 - 2. Decorative 12' Combination traffic poles and sign frames
 - 3. Decorative 12' Combination 90 degree angle traffic poles and sign frames

- C. Work related in other Sections:
 - 1. Cast-In-Place Concrete - Section 03300.
 - 2. Landscape Planting - Section 02900.

1.2 QUALITY CONTROL

- A. Manufacturer's Directions:
 - 1. Manufacturer's directions and drawings shall be followed in all cases where the manufacturers of articles used in the Section furnish directions covering points not shown in the Drawings and Specifications.

- B. Project Assurance:
 - 1. Do not fabricate components that require fitting to structural elements or into finished spaces until dimensions have been verified in the field.

1.3 COORDINATION

- A. The Contractor shall notify all other trades, such as plumbers, electricians and concrete installers in ample time to install his work, including sleeves, bolts and drains.

1.4 SUBMITTALS

The specific submittal requirements of this section shall be guided by Division 1.

- A. Product Data:
 - 1. Submit manufacturer's catalog cuts, or a typed listing of all products specified in this Section.

- B. Shop Drawings:
 - 1. Submit for review and approval all manufacturers catalogue information or shop drawings indicating size, materials, finishes, specifications, installation methods and quantities of items being supplied.

1.5 PRODUCT HANDLING

- A. Delivery:
 - 1. Deliver all specified products on-site in their original unopened packages for review by the Owner's Authorized Representative. If damaged has occurred to the products, the Contractor shall be responsible to replace the damaged product with new at his own expense.
- B. Storage:
 - 1. Store materials in a dry and protected location. Protect from damage, deformation, staining, and moisture damage.
- C. Protection:
 - 1. Protect products from damage due to Contractor negligence, vandalism and inclement weather.

PART 2 - PRODUCTS

2.1 LIGHTED BOLLARDS

- A. Refer to drawings for specifications.

2.2 DECORATIVE 12' TRAFFIC POLES AND SIGN FRAMES

- A. Refer to Drawings for specification

2.3 DECORATIVE 12' 90 DEGREE ANGLE TRAFFIC POLES AND SIGN FRAMES

- A. Refer to drawings for specification

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Location shall be approved by Landscape Architect prior to installation.
- B. Installation shall be per manufacture's recommendations unless otherwise stated in drawings.

- C. Work shall be set plumb, level, and true to line and shall present a neat and finished appearance. Include setting each item in its correct place, fastening it, connecting it, or incorporating it into other portions of the work, as each item may require.
- D. The work of this Section shall include the furnishing of anchors and adhesives required for installing and attaching the equipment specified herein. All furnishings shall be installed per manufacturer's recommendations unless noted otherwise in the Drawings.
- E. Adequately protect all work from damage by subsequent construction operations. Damaged work shall be replaced.

3.2 CLEAN UP

- A. Upon completion of the work under this Section, Contractor shall remove all rubbish, waste and debris resulting from his operations offsite. Remove all equipment and leave the entire work area in a neat, clean, to the satisfaction of the Owner.

END OF SECTION

**SECTION 02900
LANDSCAPE PLANTING**

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Furnish all materials, labor, transportation, services, and equipment necessary to install landscape planting as shown on the Drawings and as specified herein.

- B. Work included in this Section:
 - 1. Fine grading.
 - 2. Soil preparation.
 - 3. Tree, shrub and ground cover planting.
 - 5. Tree staking and guying.
 - 6. Mulching.
 - 7. Clean-up.

- C. Work related in other Sections:
 - 1. Section 02750 – Concrete Paving.
 - 2. Section 02780 – Unit Pavers.
 - 3. Section 02810 – Irrigation System.
 - 4. Section 02870 – Site Furnishings.
 - 5. ~~Section 02955 – Palm Tree Planting.~~
 - 6. Section 02970 – Landscape Maintenance.

1.2 DEFINITIONS

- A. The Owner's Authorized Representative in this Section will also refer to the Landscape Architect or other designee.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

- A. All Federal, State, and local laws and regulations governing this work are hereby incorporated into and made part of this Section. When this Section calls for certain materials, workmanship or a level of construction that exceeds the level of Federal, State, or local requirements, the provisions of this Section shall take precedence.

1.4 REFERENCE STANDARDS

- A. All plant material shall be true to botanical and common name as indicated in "An Annotated Checklist of Woody Ornamental Plants of California, Oregon and Washington", (Number 4091)" published by the University of California School of Agriculture - 1979.

- B. "American Standard for Nursery Stock" edition 1985 by The American National Standards Institute for plant materials.
- C. Hortus Third", 1976; Cornell University for plant nomenclature.
- D. All plant material shall conform to the California State Department of Agriculture's regulation for nursery inspections, rules and ratings.

1.5 QUALITY CONTROL

- A. Manufacturer's Directions - manufacturer's directions and drawings shall be followed in all cases where the manufacturers of articles used in this Specification furnish directions covering points not shown in the Drawings and Specifications.
- B. Permits, Fees, Bonds and Inspections - the Contractor shall pay for any and all permits, fees, bonds and inspections necessary to perform and complete his portion of the Work.
- C. Plant Source Quality - submit written documentation to the Owner within 25 days of Contract award that the plant material listed on the Drawings is available. Any substitutions required due to unavailability must be requested in writing prior to confirmation of ordering.
- D. Plant Inspection Request –
 - 1. Submit written request to the Owner for inspection of the specified plant material, either at the place of growth or by color photographs. Requests for inspection shall state the place of growth and the quantity and variety of plant material.
 - 2. Upon execution of the order, the Owner has the option of either inspecting the plant material at the source of growth, requesting representative color photos, or inspecting the material as it is being delivered to the site for conformity to the Drawings and Specifications. Such approvals shall not impair the right of additional inspections during further progress of the Work.
 - 3. Any tagging of plant material by the Owner does not constitute his approval of the plant materials' health and vigor. The health and vigor of the plant material is the sole responsibility of the Contractor.
 - 4. The Owner reserves the right to refuse inspection if in his judgment, a sufficient quantity of plant material at that time is not available for inspection.
- E. Topsoil Inspection:

1. Within 25 days of contract award, furnish source of topsoil to the Owner for purpose of soil inspection. Take representative soil samples from areas identified in the field by the Landscape Architect.
2. Soil samples shall be tested for pH, alkalinity, total soluble salts, porosity, sodium content, organic matter and soil preparation recommendations.

1.6 QUALIFICATIONS

- A. The applicator of all weed control materials shall be licensed by the State of California as a Pest Control Operator and a Pest Control Advisor in addition to any subcontractor licenses that are required.

1.7 SUBMITTALS

- A. The Contractor shall submit no later than 30 days after the award of Contract (2) bound booklets containing the following landscape information:
 1. List of all proposed landscape materials indicated by description, manufacturer and model number. Include catalog cuts of all items.
 2. List of all trees indicated by botanical name, common name, quantity, size, nursery and location and any specific remarks, i.e. "unable to locate", "photo submitted", etc. The tree list is to be accompanied with color photographs of each tree type and size with specifications, i.e. height, spread and caliper. Include a person in each photograph for scale purposes.
 3. List of all shrubs, vines and ground covers indicated by botanical name, common name, size, nursery and location and specific remarks, i.e. "unable to locate", "photo submitted", etc.
 4. Soil amendment receipts containing analytical data and physical samples of all specified amendments.
 5. Receipts from the soil supplier of all soil mixes specified in this section.
- B. The Contractor shall submit no later than 30 days after the award of Contract the following physical samples sent to the Owner in plastic bags:
 1. Shredded bark mulch.
 2. Certificates
 3. Compliance with State of California and federal quarantine restrictions.
- C. Weed Control
 1. Prior to the installation of any weed control materials, the Pest Control Advisor shall submit to the Owner, a list of the weed control materials and quantities per acre intended for use in controlling the weed types prevalent and expected on the site.

2. The Pest Control Advisor shall furnish data to demonstrate the compatibility of the weed control materials and methods with the intended planting and seed varieties.

1.8 SUBSTITUTIONS

- A. Substitutions shall be in accordance with Division 1.
- B. Specific reference to manufacturer's names and products specified in this Specification are used as standards of quality, this implies no right to the Contractor to substitute other materials, without prior written approval by the Owner.
- C. Any materials installed without written approval by the Owner may be rejected.
- D. If an approval is granted for a substitution, adjustment in the Contract amount will be made in accordance with the Contract Conditions.

1.9 SAMPLES, TESTS AND MOCK-UPS

- A. The Owner reserves the right to take and analyze selected samples of plant material for conformity to this Specification at any time. Rejected plant material shall be removed from the site and be replaced by the Contractor at no cost to the Owner.

1.10 PROJECT CONDITIONS

- A. Perform planting operations only when weather and soil conditions are suitable in accordance with locally accepted practice.

1.11 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery
 1. Deliver all plant material with legible and durable identification labels.
 2. Deliver fertilizer to the site in original, unopened containers bearing the manufacturer's name, guaranteed chemical analysis, and its conformance to California State Law.
 3. Notify the Owner within seven (7) days of the delivery of plant material to the site. Indicate the quantity and type of plant material in each delivery.
- B. Storage
 1. Store plant materials in the shade and protect from the weather.
 2. Maintain and protect plant material not planted within four (4) hours of delivery.
- C. Protection
 1. Protect plant material during delivery and to the site and after, in order to prevent damage to the root ball or desiccation of leaves.

- D. Handling
 - 1. Take extreme care in the loading and unloading of plant material. Do not pick up container plants by the stems or trunks.
 - 2. Any plant material that has been damaged due to mishandling shall be removed and replaced with new material.

1.12 REJECTION OF PLANT MATERIAL

- A. All plant material not conforming to the requirements herein, shall be considered defective. Such plants, whether in place or not, shall be marked as rejected and immediately removed from the site and replaced with new material at the full expense of the Contractor. Replacement plant material shall be of the same size, specie and condition as that indicated on the Drawings.

1.13 PROTECTION OF THE SITE

- A. Protect previously installed work and materials which may be affected by work of this Section. Provide safeguards and exercise caution against injury or defacement of existing site improvements.
- B. The Contractor shall be responsible for any damage resulting from his landscape planting operations. Repair damage and return the area to the previous condition at no additional cost to the Owner.

1.14 COORDINATION

- A. The Contractor shall notify all other trades related to the installation of his work, so as to allow sufficient time for those contractors' to perform their portion of the work.
- B. Determine the locations of underground utilities and perform work in a manner which will avoid damage to the utilities.

1.15 GUARANTEE

- A. The manufacturer's warranty shall not relieve the Contractor of his own liability under the guarantee. Such warranties shall only supplement the guarantee.
- B. All plant material installed under this Contract shall be guaranteed against poor, inadequate and inferior quality and installation for a period of 1 year from the end of the required maintenance period and Final acceptance by the City. Palm trees, however, shall be guaranteed for a period of 2 years, refer to Palm Tree Planting - Section 02955. Any plant material not meeting the satisfaction of the Owner shall immediately be removed and replaced at no cost to the Owner. Replaced plant

material will also be guaranteed for a period of 1 year (palm trees for 2 years) upon installation.

- C. Replace without cost to the Owner and as soon as weather permits, all dead plants and all plants not found in a vigorous, thriving condition, as determined by the Owner during and at the end of the plant warranty period. Replacement of plants shall closely match adjacent specimens of the same specie and shall be subject to all requirements of this section.
- D. Repair damage to adjacent plant material caused by the Contractor's work at no cost to the Owner. All repairs shall be made with materials, varieties, sizes "in kind" with adjacent existing materials.
- E. **Guarantee for Planting**
We hereby guarantee that the planting we have furnished and installed is free from defects in materials and workmanship and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse or neglect excepted. We agree to replace all plants and trees for one (1) year after the end of the required maintenance period and Final acceptance by the City; and we hereby agree to replace all Palm trees for two (2) year after the end of the required maintenance period and Final acceptance by the City, due to plant's or tree's dying or partially dying, thereby damaging shape, size or symmetry. Including damages consequential to defects in materials and workmanship and repair or replacement, which develop during one (1) year after the end of the required maintenance period and Final Acceptance of the work, at no additional cost to the Owner. We agree to make such repairs and replacements within thirty (30) days after receipt of written notice. In the event of our failure to make such repairs and replacements within thirty (30) days of written notice, we authorize the owner to proceed to have such repairs and replacements made at our expense and will pay all costs and charges upon demand:

Perris Gateway
Perris, CA
Date of Final Acceptance:

Signed:
Company Name:
Address:

PART 2 - PRODUCTS

2.1 PRE-EMERGENT WEED CONTROL

- A. Pre-emergent weed control to be Ronstar-G, Treflan, Eptam, Vegitex, or approved equal.

2.2 PLANTING SOIL

A. On-Site Soil

1. Soils for turf beds are classified as 3/8" minus. Soils for miscellaneous landscape areas are classified as 2-inch minus.

B. Soil Characteristics for Native Soil

1. Composition for 3/8-inch minus topsoil - fertile, friable, well-drained soil of uniform quality, free of materials larger than 3/8" in diameter such as sticks, rocks, concrete, oils, chemicals and other deleterious materials.
2. Composition for 2-inch minus topsoil - fertile, friable, well-drained soil of uniform quality, free of materials larger than 2" in diameter such as sticks, rocks, concrete, oils, chemicals and other deleterious materials.
3. Soil Analysis - If soil has not been tested within 30 days of the date of delivery to the project, obtain an agricultural suitability and chemical analysis of the proposed soil from a company as determined by the Owner. Cost of the testing will be paid for by the Contractor. The soil report is to include the following information:
4. Elemental Analysis: Nitrate Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulfur, Sodium Zinc, Iron, Copper, Manganese, Boron and free Lime.
5. Other: pH factor, % base saturation, electrical conductivity, mechanical analysis, % of organic content, cation exchange capacity (C.E.C.).
6. Recommendations: Type and quantity of additives required to establish satisfactory pH factor and supply of nutrients to bring topsoil to a satisfactory level for planting.
7. All native soil to be used from 3/8-inch minus topsoil is to be amended at the levels listed in this Section as part of the base bid. Additional amendments, if requested by the Owner are not part of the contract and the Contractor will be compensated for this work on a Time and Materials basis. Rates for labor and equipment will be charged according to the Construction Contract.

C. Imported Top Soil

1. In order to insure conformance with this Specification, soil samples shall be taken by the Contractor and submitted to a qualified soil testing laboratory chosen by Owner's Authorized Representative for analysis prior to planting.
2. Use natural friable soil of the local region, free from lumps, toxic substances sticks, debris, vegetation or stones over 1-inch in diameter.
3. Silt plus clay content shall not exceed 20% by weight with a minimum 95% passing the 2.0 millimeter sieve.
4. Sodium absorption ratio (SAR) shall not exceed 6.
5. Electrical conductivity (ECe) of the saturated extract of this soil shall not exceed 3.0 millimhos per centimeter at 25 centigrade.

6. Boron content shall not exceed (1) part per billion as measured on the saturation extract.
7. Thoroughly blend the planter mix and amendments through a soil blender before placing the soil.
8. Thoroughly blend the soil mix and amendments through a soil blender before placing the soil.

2.3 SOIL AMENDMENTS

- A. Peat Moss - natural product of sphagnum moss, reed, or sedge peat, taken from a fresh water site, free from lumps, woody material, stones and other foreign matter.
- B. Soil Sulfur - agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).
- C. Iron Oxide - 45% iron (expressed as metallic iron), derived from iron oxide with micronutrients.
- D. Calcium Carbonate - 95% lime as derived from oyster shells.
- E. Gypsum - agricultural grade product containing 98% minimum calcium sulfate.
- F. Iron Sulfate - 20% iron (expressed as metallic iron), derived from ferric and ferrous sulfate, 100% sulfur (expressed as elemental).
- G. Ground Limestone - agricultural limestone containing not less than 85% of total carbonates, ground to such fineness that 50% will pass a #1000 sieve and 90% will pass a #20 sieve.
- H. Dolomite Lime - agricultural grade mineral soil conditioner containing 35% minimum magnesium carbonate and 49% minimum carbonate, 100% passing the #65 sieve.
- I. Sulfate of Potash - agricultural grade product containing 50% to 53% of water soluble potash.
- J. Single Superphosphate - commercial grade product containing 20% to 25% available phosphoric acid.
- K. Ammonium Sulfate - commercial grade product containing approximately 21% ammonia.
- L. Ammonium Nitrate - commercial grade product containing approximately 34% ammonia nitrogen.
- M. Urea Formaldehyde - granular commercial product containing 38% nitrogen.

- N. IBDU (Iso Butldiene Diurea) - commercial grade product containing 31% nitrogen.
- O. Iron: Gro-Power Premium Green Iron - 45% Fe, non-staining.

2.4 FERTILIZERS

A. General Purpose Soil Conditioner Fertilizer (5-3-1)

- 1. Consisting of the following minimum percents by weight:
 - 5% Nitrogen
 - 3% Phosphoric Acid
 - 1% Potash
 - 50% Humus
 - 15% Humic Acids
 - 1% Soluble Metallic Iron
- 2. Soil Conditioner Fertilizer shall be "Gro-Power Plus", as manufactured by Gro-Power (909)393-3744 or approved equal.
- 3. General Purpose Soil Conditioner Fertilizer with Soil Penetrant (5-3-1)
- 4. Soil conditioning fertilizer for use in areas of clay, adobe soils or soils high in salt, sodium boron or pH consisting of the following minimum percents by weight:
 - 5% Nitrogen
 - 3% Phosphoric Acid
 - 1% Potash
 - 50% Humus
 - 15% Humic Acids
 - 4% Sulfur
 - 1% Soluble Metallic Iron

B. Pre-Plant Fertilizer (16-20-0)

- 1. Ammonium phosphate consisting of the following minimum percentages by weight:
 - 16% Nitrogen
 - 20% Phosphoric Acid
 - 0% Potash
- 2. Pre-Plant Fertilizer shall be Best "16-20-0", as manufactured by J.R. Simplot Company (800)992-6066, or approved equal.

C. General Purpose Planting Fertilizer (12-12-12)

- 1. Pelleted or granular form shall consist of the following minimum percents by weight:
 - 12% Nitrogen
 - 12% Phosphoric Acid
 - 12% Potash
- 2. General Purpose Planting Fertilizer shall be Best "Triple Twelve", as manufactured by J.R. Simplot Company (800)992-6066, or approved equal.

- D. Controlled Release Fertilizer (12-8-8)
 - 1. Consisting of the following minimum percents by weight:
 - 12% Nitrogen
 - 8% Phosphoric Acid
 - 8% Potash
 - 25% Humus
 - 5% Humic Acids
 - 2. Acceptable product - "Gro-Power Controlled Release", as manufactured by Gro-Power (909)393-3744, or approved equal.

- E. Planting Tablets (20-10-5)
 - 1. Shall be 7 gram, 24 month release, non-burning tablets containing the following percentages of nutrients by weight:
 - 20% Nitrogen
 - 10% Phosphoric Acid
 - 5% Potassium
 - 2.5% Humic acids
 - 2. Acceptable product - "Gro-Power Planting Tablets", as manufactured by Gro-Power (909)393-3744, or approved equal.

2.5 PLANT MATERIAL

- A. General Plant Condition
 - 1. All plant material delivered to the site shall have a normal habit of growth, well formed and shaped, healthy, vigorous, and free of any insects, diseases, sunscalds, windburn, abrasions of the bark, or other objectionable disfigurements.
 - 2. The size of the plant material shall correspond with that normally expected for species and variety of commercially nursery stock or as specified on the Drawings.
 - 3. Plant material shall be grown under climatic conditions similar to those in the locality of the project unless approved otherwise by the Owner.
 - 4. The use of plant material larger than that specified on the Drawings may be used, pending approval from the Owner, however, there will be no change in the Contract amount if the larger plant material is approved and used.

- B. Trees and Shrubs
 - 1. Tree and shrub trunks shall be sturdy and well hardened with vigorous and fibrous root systems which are not root-bound.
 - 2. In the event of a disagreement as to the condition of the root system, the root conditions of the plants furnished by the Contractor will be determined by the removal of soil around the roots of not less than 10 plants or more than 2% of the total number of plants of each specie.
 - 3. When container grown plants are supplied from several sources, the roots of not less than 10 plants of each specie from each source will be inspected. In

case the plants sampled are found to be defective, the Owner has the right to reject the entire lot represented by the defective sample. Any plant material rendered unsuitable for use because of this inspection will be considered as samples and will be provided at the full expense of the Contractor.

4. Washingtonia robusta palm trunks to be skinned with approximately 4' of fronds left at base of trunk.
 5. Phoenix Canariensis palm trunks to be skinned with approximately 4' of fronds left at base of trunk.
 6. Phoenix Dactylifera palm trunks to be skinned with approximately 4' of fronds left at base of trunk.
- C. Nursery Grown and Collected Stock
1. Nursery grown and collected stock shall be grown under climatic conditions similar to that found in the locality of the site.
- D. Container Grown Stock
1. Container grown stock shall be in a vigorous and healthy condition, not root bound or with the root system hardened off.
- E. Ground Cover Stock
1. Ground cover stock shall be well established in removable containers or having formed homogenous soil sections.

2.6 AUXILIARY ACCESSORIES

- A. Tree Stakes
1. Wood stakes - 2" diameter by 10 feet Lodgepole Pine stake without splits or bowing. Refer to the Drawings for which trees receive wood stakes.
- B. Tree Ties
1. Wonder Tree-Tie as distributed by Hydro-Scape Products, Inc. (714)639-1850, or approved equal.
- C. Tree Guying Hardware
1. Guy Wire - #9 gage, galvanized twisted wire - clear plastic coated.
Deadman - Duckbill Earth Anchoring System, Model #68-DB1, or equal.
Hose - 3/4" reinforced black rubber garden hose.
Warning Guy Wire Tube - 5' long x 1/2" dia. white Class 315 PVC pipe.
Turnbuckles - 6" long, galvanized eye/hook type.
Wire Clamps - 3/4" galvanized "U" clamps.
- D. Headerboard
1. 2"x4"x12" Pressure-treated Douglas Fir.
 2. Nails shall be hot dipped galvanized common nails.
 3. Stakes - Pressure-treated Douglas Fir placed at intervals of not less than 5-feet on-center. Place stakes on ground cover side of headerboard 1/2-inch below the top of the headerboard.

4. Splices – 1”x4” Pressure-treated Douglas Fir not less than 12-inches in length.
- F. Mulches
1. Shredded Bark Mulch
 - a. Shredded bark mulch noted as "Forest Floor" (-inch minus) bark mulch, manufactured and supplied Aquinaga Fertilizer Company, (714) 786-9558 or equivalent, Irvine, California, or approved equal.
- E. Tree Root Barriers
1. Tree root barriers as supplied by Deep Root Corporation (Catalog #UB 24-2) or Root Solutions Root Guide Barrier by Root Solutions, Inc. (415)434-3072, or approved equal.

PART 3 - EXECUTION

3.1 RENOVATION AND PREPARATION OF EXISTING SOIL

- A. Contractor shall prepare Horticultural soil samples taken in (4) selected locations for initial horticultural analysis and soil amendment recommendations:

Soil Sample #1:	Soil Sample #4:
Soil Sample #2:	Soil Sample #5:
Soil Sample #3:	Soil Sample #6:

- B. Contractor shall perform soil renovation procedures to the soil as required by soils report.

3.2 CULTIVATION OF EXISTING SOIL

- A. In areas where topsoil will not be applied, rip or cultivate the existing soil that will be receiving planting to a depth of at least 10-inches immediately prior to applying soil amendments.
- B. In areas where topsoil will be applied the following procedures are to be followed:
- C. Verify that subgrades for installation of topsoil have been established under rough grading, subgrade depth plus specified depth of topsoil should equal finished grade. Do not spread topsoil prior to the Owner acceptance of all subgrade work.
- D. Rip or cultivate subgrade in all planting areas to a minimum depth of 10-inches immediately prior to spreading topsoil.
- E. Remove all rocks, stones, sticks and debris larger than 1-inch in diameter from the surface of the subgrade prior to applying topsoil.

3.3 SOIL SCARIFICATION

- A. Planting areas which become compacted in excess of 85% relative compaction due to construction activities, shall be thoroughly cross-ripped to a minimum depth of 9" to alleviate the condition, taking care to avoid existing subsurface utility lines, if present.

3.4 VERIFICATION OF EXISTING CONDITIONS

- A. Prior to the work in this Section, examine previously installed work from other trades and verify that such work is complete and as required, to the point where this installation may commence properly.

3.5 ROUGH GRADING CERTIFICATION

- A. Obtain the Owner's Authorized Agent's written certification that indicates that final rough grade have been set by previous contractors to plus or minus 0.10' prior to commencing fine grading operations.

3.6 FINE GRADING OPERATIONS

- A. Insure that the top 2-inches of soil is free of stones, roots, stumps, wire, or other deleterious matter 1-inch in diameter and larger. Dispose of debris offsite.
- B. All planting areas to be fine graded to within 1-1/2-inches of paved areas, irrigation valve boxes, concrete mow strips and header boards.
- C. Upon acceptance of rough grade by the Owner's Authorized Agent's and prior to beginning planting operations, finish grade all planting areas, fill as needed and remove surplus soil and float areas to a smooth, uniform grade to elevations as indicated on the Drawings. Obtain the Owner's Authorized Agent's approval of the fine grading prior to commencing planting operations.

3.7 SURFACE DRAINAGE OF PLANTING AREAS

- A. The Contractor shall bear final responsibility for properly draining all planting areas. Any discrepancy in the Drawings or Specifications, obstructions on the site, or prior work done by another contractor, which the Contractor feels precludes establishing proper drainage, shall be brought to the immediate attention of the Owner for correction or relief of said responsibility. The Contractor is to insure proper drainage of all planting areas at a minimum of 2%.

3.8 SOIL PREPARATION

- A. After finish grades for all landscaped areas have been established and approved by the Owner perform the following operations:
- B. Cross-rip all area to a depth of 9".
- C. Spread organic amendments uniformly on the surface of the soil and cultivate thoroughly into the top 4-6 inches in a minimum of two directions with a mechanical rototiller.
- D. The following soil amendments and fertilizers are to be used for bid purposes only. Specific amendment recommendations will be made after horticultural soil samples are taken and paid for by the Contractor and analyzed. Application rates per 1,000 square feet shall be as follows:
- Nitrolized Fir bark - 6 cu. yds.
 - Planting fertilizer - 200 lbs. of Gro-Power Plus.
 - Agricultural gypsum - 100 lbs.
 - Soil sulfur - 20 lbs.
- E. After applying soil amendments and prior to planting, irrigate with overhead irrigation so that a minimum of 1-3 inches of good quality water passes through the soil profile.
- F. For acid loving plant materials, surface treat planting areas with 2" of peat moss for base bid. This may change after soils recommendations are prepared based upon the required soils testing by the selected contractor.
- G. Due to the potential of high constituent rates, at the direction of the landscape Architect, the Contractor may be required to dig drainage sumps in the planting areas for the purpose of leaching soils. Drainage sumps and leaching soils are the responsibility of the Contractor under the Base Bid.

3.9 BACKFILL MIX FOR SHRUBS AND TREES

- A. The following backfill mix is for bid price basis only. Final backfill recommendations will be made only after rough and fine grading operations are completed and horticultural soil testing has been performed and paid for by the Contractor and approved by the Owner.
- 7 parts by volume on-site soil.
 - 3 parts by volume nitrolized stabilized Fir bark.
 - 2 lbs. iron sulfate per cubic yard of mix.
 - 18 lbs. of Gro-Power Plus per cubic yard of mix.
 - Planting tablets - quantity based on size of plant.
- B. Thoroughly blend the backfill mix prior to placement.

- C. Do not apply iron sulfate over paved materials since severe staining is likely to occur.

3.10 TREE PIT PERCOLATION TESTING

- A. Due to the potential of standing water in the tree pits, Contractor is to perform a tree pit percolation test (for trees larger than 15 gallon only, also see plans for palm tree drainage and sump details) in each tree pit prior to planting the tree. Fill the tree pit to the top with water. If the water has not drained by more than 95% within 24 hours, do not plant the tree and bring this to the immediate attention of the Owner. The Contractor may be required to either dig a substitute plant pit or to install a drainage sump in the existing plant pit. Substitute plant pits and drainage sumps are the responsibility of the Contractor under the Base Bid.
- B. Submit written results of each plant pit percolation test with locations, date and time of test to the Owner.

3.11 PLANTING OPERATIONS

- A. Planting Layout
 1. It is the Contractor's responsibility to verify with the Owner's site superintendent and local governing agencies the location and depth of all underground utilities. If any underground construction or utility lines are encountered in the excavation of planting holes, alternative planting locations may be selected by the Owner.
 2. Locations for all shrubs and trees shall be marked on the ground either by flagged grade stakes indicating plant type and size or the actual plants themselves for the Owner's review and approval prior to planting.
- B. General Planting Guidelines
 1. Plant only as many plants that can be planted and watered on that same day in a given planting area.
 2. Protect the planting area from excessive vehicle compaction.
 3. Face plant material with fullest growth into the prevailing wind and/or the primary direction of view.
 4. Center plant material in the planting hole.
 5. Set plant material plumb and hold rigidly in place until soil has been tamped firmly around the rootball.
 6. Planting pits shall have vertical sides and roughened surfaces. The size of the plant pit shall be twice the diameter and only as deep as the rootball itself.
- C. Container Removal
 1. Plant containers shall be opened and removed in such a manner that the soil surrounding the rootball shall not be broken.

2. Do not injure the root ball while removing the container. After removing plant, superficially cut edge roots with a knife on three (3) sides.
- D. Tree Box Removal
1. Remove the bottom of the box before planting.
 2. Remove the sides of the box without damaging the rootball after positioning the tree and partially backfilling the plant pit.
- E. Shrub and Tree Installation
1. Apply backfill mix to the plant pit up to 1/2 the height of the rootball. Add water to the top of the remaining plant pit and let soak in before completing the remainder of backfilling.
- F. Placement of Plant Tablets
1. Prior to planting, place the required amount of planting tablets per plant size on top of each root ball while the plants are still in their containers so that the Owner's Authorized Agent can easily verify their existence and quantity.
 2. After obtaining approval by the Owner's Authorized Agent on plant tablet quantity and after water has completely drained from the plant pit, add plant tablets to the planting pits in the following quantities:
 - 1 gallon - 3 tablets
 - 5 gallon - 8 tablets
 - 15 gallon - 14 tablets
 - 24" box - 15 tablets
 - 36" box - 19 tablets
 - 48" box - 24 tablets
 - 60" box - 35 tablets
 3. Dig planting pit to the recommended depth.
 4. Backfill the plant pit to attain the proper level for the plant.
 5. Place the specified amount of plant tablets between the bottom of the rootball but not higher than 1/3 of the way up the rootball. Space the plant tablets equally around the perimeter of the rootball approximately 2" from the rootball.
 6. Finish backfilling of the planting pit by tamping the soil firmly around the rootball and watering thoroughly.
- G. Final Backfilling
1. Once the water has soaked in thoroughly, place the remaining backfill and tamp firmly.
 2. After final backfilling, construct an earthen basin around the base of each plant with backfill mix sufficient to hold water for the following plant sizes:
 - 1 gallon - 2-inches of water.
 - 5 gallon through 24" box - 3-inches of water.
 - 36" box and larger - 4-inches of water.
 3. Remove basins in all turf areas but not before the irrigation system is operational.

- H. Plant Settling
 - 1. Any plant material that has settled deeper than the surrounding grade shall be raised to the correct level.
- I. Ground Cover Planting
 - 1. Ground cover flats shall contain sufficient moisture to reduce soil separation when lifting out the plants.
 - 2. Plant ground covers in a straight rows, evenly, triangular spaced, and at an on-center spacing as indicated on the Drawings.
 - 3. Each rooted ground cover plant shall be planted with its proportional amount of soil.
 - 4. Apply a 2-inch layer of wood mulch at the completion of planting.

3.12 WATERING

- A. All planting shall be watered immediately after planting. After the first watering, water shall be applied to all plants as conditions may require to keep the plants in a healthy and vigorous growing condition until the completion of the Contract.

3.13 TREE STAKING

- A. Staking of trees shall be completed immediately after planting trees. Trees shall stand plumb before stakes are applied.
- B. All stakes shall be installed plumb when tied to the tree. Stakes may be located in a specific location to the trunk - refer to the Drawings.
- C. When locating a single stake, locate it on the windward side of the tree and as close to the main trunk as possible without damaging the trunk.
- D. Stakes shall be driven at least 3' into the ground or as specified on the plans.
- E. Tie the tree trunk to the stake with the specified tree guy. Cut off stake after installation 4-inches above the upper tie.

3.14 TREE GUYING

- A. Guying of trees shall be completed immediately after planting trees. Trees shall stand plumb before guys are applied.
- B. Trees shall stand plumb once guys are installed.
- C. Guy trees at points of branching with guys spaced 120 degrees apart.

- D. Guys shall be covered with black rubber hose at points of contact with bark positioned at crotches and fastened to a deadman. One turnbuckle shall be provided for each guy wire. Use (2) cable clamps at each cable terminus.
- E. Install a warning guy wire tube on each guy wire.

3.15 PRUNING

- A. At no time shall plant material be pruned, trimmed or topped prior to delivery. Any alteration to their shape shall be conducted only on-site and in the presence of the Owner's Authorized Agent.
- B. All planted material requiring pruning shall be done under the observation of the Owner's Authorized Agent. Prune planted material only when necessary and under standard horticultural practices to preserve the natural character of the plant.

3.16 WOOD MULCH INSTALLATION

- A. Spread a 3" deep layer of shredded bark mulch in all landscaped areas other than the following:
 1. Turf or Hydroseed areas.

3.17 CLEAN UP

- A. Contractor shall remove all trash caused from his Work on a weekly basis throughout the duration of the Project.
- B. Upon completion of his Work under this Section, the Contractor shall remove all rubbish, waste and debris resulting from his operations offsite or as directed by the Owner.
- C. All scars, ruts or other marks in the ground caused by the Contractors work shall be repaired.
- D. Remove all equipment and implements of service, and leave the entire work area in a neat, clean, and Owner-accepted condition. All sidewalks and other paving areas shall receive a broom-clean treatment.

3.18 SITE VISIT SCHEDULE

- A. The Contractor shall be responsible for notifying the Owner in advance to schedule the following site visits:
 1. Pre-construction "Kick-Off" meeting - 7 days.
 2. At completion of fine grading - 2 days.
 3. At completion of soil preparation - 2 days.
 4. Delivery of plant material - 2 days.

5. Plant layout prior to plant pit excavation - 2 days.
6. At start of tree planting, staking and guying - 2 days.
7. Final walkthrough prior to going on contracted maintenance period - 7 days.
8. Final walkthrough for project acceptance - 7 days.

B. The Owner may or may not attend all of the above mentioned site visits. He may also elect to attend more than is listed above, and without notice to the Contractor.

C. When site visits are made by other than the Owner, the Contractor shall show evidence in writing of when and by whom the site visit was made.

D. No site visit will commence without all previous punch list items being completed, unless compliance has been waived by the Owner. Failure to accomplish the timely execution of previous field report punch list items and preparing adequately for the next site visit shall make the Contractor potentially liable for reimbursing the owner's for his labor and reimbursable expenses. No further site visits will be made until outstanding charges have been paid to the Owner by the Contractor.

END OF SECTION

**SECTION 02935
LANDSCAPE MAINTENANCE**

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. After landscape planting and irrigation work have been completed, reviewed and accepted by Owner, furnish materials, labor, transportation, services and equipment necessary to provide landscape maintenance as indicated on Drawings and as specified herein.
- B. Work included in this Section:
 - 1. Continuous maintenance of plant material and irrigation system during specified landscape maintenance period.
 - 2. Continuous maintenance of trash receptacles during specified landscape maintenance period.
- C. Work related in other Sections:
 - 1. Section 02810 – Irrigation System.
 - 2. Section 02900 – Landscape Planting.
 - 3. Section 02955 – Palm Tree Planting.

1.2 LANDSCAPE MAINTENANCE PERIOD

- A. Landscape Maintenance Period: 90 days from Substantial Completion acceptance by Owner. Contractor may, at discretion of Owner, be allowed to proceed into landscape maintenance period if planting and irrigation is deemed "substantially complete" by Owner.
- B. Continuously maintain areas involved in this Contract during progress of Work and during landscape maintenance period until Final Acceptance by Owner has been granted.
- C. Improper landscape maintenance or possible poor condition of planting at termination of the scheduled landscape maintenance period may cause landscape maintenance period to be continued at no cost to Owner.
- D. In order to carry out plant establishment work, furnish sufficient men and adequate equipment to perform Work during landscape maintenance period.
- E. Request an observation of Work by Owner to begin landscape maintenance period after planting and related work has been completed in accordance with Contract Documents. A prime requirement is that groundcover and turf areas be planted and show a consistent and healthy appearance. Mow turf at least two times, no closer than 1 week apart. If such criteria

is met to satisfaction of Owner, a field report may be issued to Owner recommending a start date to begin landscape maintenance period.

F. Any day that Contractor fails to adequately perform landscape maintenance, as determined necessary by Owner, that day will not be credited as one of landscape maintenance working days.

G. Prior to being placed on landscape maintenance, submit a schedule of activities planned during landscape maintenance period. This schedule needs to be accepted by Owner prior to start of landscape maintenance. Document scheduled changes and obtain acceptance by Owner.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide materials used during landscape maintenance work in accordance with requirements of Section 02900 - Landscape Planting and following:

1. Shrub and Groundcover Planting Fertilizer:

a. Consisting of following minimum percents by weight:

- 14% Nitrogen
- 4% Phosphoric Acid
- 9% Potash
- 30% Humus
- 6% Humic Acid
- 3% Sulfur

b. Acceptable Manufacturers:

Gro-Power Hi Nitrogen; Gro-Power (909) 393-3744 or an Owner approved equal.

B. Submit a list of materials that are to be used during landscape maintenance that are not specified in Section 02900 in written form to Owner for review and approval.

PART 3 - EXECUTION

3.1 LANDSCAPE MAINTENANCE

A. Keep landscape areas free of debris.

B. Keep planted areas weed-free. Cultivate at intervals of not more than 10 days.

C. Maintain adequate protection of Work area. Repair damaged areas.

D. Between 15th day and 20th day of landscape maintenance period, reseed or re-sod spots or areas within turf areas where normal turf growth is not evident. After 20th day, areas that are not acceptably are to be sodded at no cost to Owner.

- E. (N/A) Perform palm tree maintenance per the Palm Tree Planting specifications.
- F. Sweep clean paved areas on once a week intervals or less, if deemed necessary.
- G. Empty trash receptacles a minimum of twice a week or more, if deemed necessary.
- H. Remove graffiti from sign walls, vertical columns, sidewalks, paving, steel furnishings, AND palm trees within 48 hours upon notification of City and reapply graffiti coating, if deemed necessary.

3.2 TREE AND SHRUB CARE

- A. Watering:
 - 1. Maintain a large enough water basin around trees and shrubs so that enough water can be applied to establish moisture through major root zone.
 - 2. When hand watering, use a water wand to break water force.
 - 3. Replenish wood mulches to reduce evaporation and frequency of watering.
 - 4. Regulate irrigation watering times to minimize erosion and gullyng.
- B. Pruning:
 - 1. Trees:
 - a. Prune Trees To:
 - 1) Select and develop permanent scaffold branches that are smaller in diameter than trunk or branch to which they are attached which have vertical spacing of from 18-inches to 48-inches and radial orientation so as not to overlay one another.
 - 2) To eliminate diseased or damaged growth.
 - 3) To eliminate narrow V-shaped branch forks that lack strength.
 - 4) To reduce toppling and wind damage by thinning out crowns.
 - 5) To maintain growth within space limitations.
 - 6) To maintain a natural appearance and to balance crown with root mass.
 - b. Under no circumstances, will stripping of lower branches "raising-up" of young trees be permitted.
 - c. Retain lower branches in a "tipped-back" or pinched condition with as much foliage as possible to promote caliper trunk growth.
 - d. Cut lower branches flush with trunk only after tree is able to stand erect without staking or other support.
 - e. Remove sucker growth.
 - f. Thin evergreen trees and shape when necessary to prevent wind and storm damage.
 - 2. Shrubs:
 - a. Overall objective of shrub pruning is same as for trees.
 - b. Do not clip shrubs into balled or boxed forms unless approved initially by Owner.

- c. Make pruning cuts on lateral branches or buds flush with trunk.
 - d. Do not “stub” branches.
- C. Tree Staking and Guying:
- 1. Restake, tighten and repair damaged ties and guys.
 - 2. Reset to proper grades or upright position, trees that are not in their proper growing position.
 - 3. Inspect stakes and guys to prevent girdling of trunks or branches and to prevent rubbing that may cause bark wounds.
- D. Weed Control:
- 1. Keep planted and aggregate areas free of weeds.
 - 2. Use recommended legally approved herbicides.
 - 3. Avoid frequent soil cultivation that destroy shallow surface roots.
 - 4. Replenish lost wood mulch to reduce weed growth.
- E. Insect and Disease Control:
- 1. Maintain insect and disease control during landscape maintenance period.
- F. Fertilization:
- 1. Fertilize planting areas with application of Gro-Power Hi-Nitrogen 14-4-9, or equal, commercial fertilizer at the rate of 7 1/2 pounds per 1,000 square feet 30 days after planting.
 - 2. Repeat fertilizer application at 30 day intervals until end of the landscape maintenance period.
- G. Replacement of Plants:
- 1. Replace dead, dying and missing plants of a like size and condition as to those that were originally installed at no cost to Owner.
- H. Replacement of Soil
- 1. Replacement of soil to maintain height of 1 1/2” below top of planter.

3.3 GROUND COVER CARE

- A. Weed Control:
- 1. Control weeds with chemical systemic spray or by hand so as to cause minimal damage to planted materials.
- B. Watering:
- 1. Water enough so that moisture penetrates throughout root zone and only as frequently as necessary to maintain healthy growth.
- C. Fertilizing:
- 1. Fertilize as specified under Tree and Shrub care of this Specification.

- D. Edge groundcover to keep in bounds and trim top growth as necessary to achieve an overall even appearance.
- E. Replace dead, dying and missing plants of a like size and condition as to those that were originally installed.

3.4 IRRIGATION SYSTEM

- A. Provide maintenance of irrigation system consisting of cleaning and adjusting sprinkler nozzles, repairing damaged equipment, servicing valves, programming controllers and other activities required during landscape maintenance period.

3.5 TRASH RECEPTACLES

- A. Provide maintenance of trash receptacles consisting of cleaning, removing and disposing of trash and debris during landscape maintenance period.

3.5 FINAL WALKTHROUGH

- A. At completion of landscape maintenance period, schedule a Final Walkthrough with Owner's Authorized Agent.
- B. Owner, Architect, Engineer, Contractor and others deemed necessary by Owner may be present at Final Walkthrough.
- C. If, during Final Walkthrough Owner is of opinion that landscape maintenance has been substantially completed in accordance with this Section, written notice of recommendation to allow Contractor to be released from Project will be submitted to Owner for approval. This report will note any incomplete punch list items from Final Walkthrough and a date on which these items must be completed. Contractor shall complete remaining punch list items within 10 (ten) working days after Final Walkthrough was performed by Owner.

3.6 CLEANUP

- A. Upon completion landscape maintenance, Contractor shall remove rubbish, waste and debris resulting from Contractor's operations.
- B. Repair scars, ruts or other marks in landscaped areas caused by Contractor.
- C. Remove equipment, implements of service, and leave Work area in a neat and clean condition. Sweep clean paved areas.

END OF SECTION

**SECTION 03100
CONCRETE FORMWORK**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

Requirements of "General Conditions of the Contract" and of Division 1, "General Requirements", apply to work in this Section with same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish materials, labor, transportation, services, and equipment necessary for construction installation as indicated on Drawings and as specified herein.
- B. Work included in this Section:
 - 1. Formwork for cast-in place concrete.
 - 2. Installation of built-in anchors, inserts, and bolts for connection of other materials.
 - 3. Installation of built-in sleeves, frames, and other embedded items.
- C. Work related in other Sections:
 - 1. Section 03200 - Concrete Reinforcement: Installation of reinforcing steel.
 - 2. Section 03300 - Cast-In-Place Concrete: Supply of concrete accessories for placement by this section.
 - 3. Section 05505 – Miscellaneous Metals.

1.3 REFERENCES

- A. ACI 318 - Building Code Requirements for Reinforced Concrete.
- B. ACI 347 - Recommended Practice For Concrete Formwork.
- C. PS 1 - Construction and Industrial Plywood.

1.4 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing to conform to code requirements. Resultant concrete to conform to required shape, line and dimension, as indicated on Drawings.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 347, 318, and latest edition of Standard Building Code adopted by the City of Perris, State of California.
- B. Design formwork under direct supervision of a Professional Engineer experienced in design of this work and licensed in State of California.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01640 - Product Handling and Protection: Transport, handle, store, and protect products.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Conform with ACI 347 - Chapter 4 - Materials for Formwork, ACI Special Publication No. 4 - Formwork for Concrete, and as herein specified.
- B. Lumber:
 - 1. Softwood framing lumber: In accordance with NFPA National Design Specification for Wood Construction, with Supplement. Provide lumber with moisture content of 19% or less.
 - 2. Grade marked by grading rules agency listed in National Design Specifications for Wood Construction.
 - 3. Light framing or studs for board or plywood forms: 2-inch to 4-inch and larger in nominal width and thickness. Construction grade.
 - 4. Boards for basic forms and form liners: Construction grade.
 - 5. Board pattern: Square edge.
 - 6. Board surface: Surfaced four sides (S4S).
- C. Plywood:
 - 1. For exposed concrete surfaces: HD Overlay Plyform, B-B grade, Class I or II (exterior) APA stamped; 5/8-inch thick minimum.
 - 2. Other locations: Plyform, B-B grade, Class I or II (exterior) APA stamped, 5/8-inch thick minimum.
- D. Fiberglass, Plastic and Metal Forms: May be used, subject to approval by Owner, if they produce concrete surfaces equivalent to those resulting from use of plywood forms.
- E. Non-Removable Forms: Unless indicated otherwise on Drawings, construct using steel or asphalt impregnated cardboard or fiberboard.
Acceptable Manufacturers:
 - 1. "Carton forms" as distributed by Burke Company.

- F. Round column forms: Single-use fibre/tubes with separate plastic liner, "Spiral Stop" as manufactured by Greenstreak, or integral plastic liner, "Smooth Tube" as manufactured by Burke.

2.2 FORMWORK ACCESSORIES

- A. Form Ties: Removable or Snap-off type, galvanized metal, fixed length, cone type, with waterproofing washer for liquid retaining structures, retaining walls, and pit walls, 1-1/2-inch back break dimension, free of defects that could leave holes larger than 1-1/4-inch in concrete surface.
Acceptable Manufacturers:
 - 1. Dayton "Sure-Grip"
 - 2. Heckman "Snapties"
 - 3. Richmond "Snap-Tys"

- B. Form Release Agent: Non-staining clear coating which does not contain oil or wax and will not prevent proper adhesion of applied finish.
Acceptable Manufacturers:
 - 1. "Formshield", by A.C. Horn, Inc.
 - 2. "Release", by Burke Concrete Accessories.
 - 3. "Magic Kote", by Symons.
 - 4. "Form Release-80" or "Form Release-100" by Lambert Corp.
 - 5. "Cast-Off" by Sonneborn Building Products.
 - 6. "Duogard" by W.R. Meadows, Inc.

- C. Corners: Chamfered, rigid plastic type, 3/4 x 3/4-inch size; maximum possible lengths.
Acceptable Manufacturers:
 - 1. Type VE-2 by Vulcan Metal Products, Inc., or an Owner approved equal.

- D. Dovetail Anchor Slot: Galvanized steel, 22 gauge thick, release tape sealed slots, anchors for securing to concrete formwork.

- E. Flashing Reglets: Rigid PVC, 10 gauge thick, longest possible lengths, with alignment splines for joints, release tape sealed slots, anchors for securing to concrete formwork.

- F. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

- G. Waterstops: Polyvinyl chloride, minimum 1,750 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, 6-inches wide, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

Acceptable Manufacturers:

1. Serviced/Durajoint by Construction Productions Div. of W.R. Grace & Co.
 2. BFG Vinyl Waterstops by Building Products Department, B.F. Goodrich Industrial Products.
 3. Sealtight by W.R. Meadows, Inc.
 4. Greenstreak waterstops by Greenstreak Plastic Products.
 5. Vulcan Metal Products, Inc.
- H. Bentonite/Butyl Rubber Waterstops: 75% bentonite and 25% butyl rubber blended together to form a rope material having a sectional dimension of 1-inch x 3/4-inch or 3/4-inch x 3/8-inch. The waterstop is to be applied at below grade construction joints a minimum of 2-inches from exterior face of concrete. To prevent movement of waterstop during concrete placement, attach waterstop to concrete with hardened nails every 12 to 18-inches or continuous epoxy. Protect material from water damage prior to pouring concrete.
- I. Metal Construction Joints:
Acceptable Manufacturers:
1. "Keyed-Kold", by Burke Concrete Accessories
 2. Vulcan Metal Products, Inc.
 3. Form-A-Key Products.
- J. Joint Filler for Exposed Concrete Surfaces: As specified in Section 07900: Joint Sealers.
- K. Pressure Sensitive Tape: 3M or equivalent, polyurethane or mylar faced adhesive backed paper tape, 1-inch wide. Use for formwork joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Drawings.

3.2 EARTH FORMS

- A. Earth forms are only permitted where pre-approved by Owner. Hand-trim sides and bottom of earth forms. Remove loose soil prior to placing concrete.

3.3 ERECTION - FORMWORK

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Obtain approval from Owner before framing openings in structural members which are not indicated on Drawings.
- F. Provide tooled edges or chamfer strips on external corners of exposed concrete, retaining walls, curbs, slabs, etc. and as indicated on Drawings. Provide chamfer strips on external corners of beam and joists.
- G. Coordinate this Section with other Sections of work which require attachment of components to formwork.
- H. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Owner.

3.4 FORM RELEASE AGENT APPLICATION

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are affected by form-release agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in or passing through concrete work.
- B. Locate and set in place items which will be cast directly into concrete.
- C. Coordinate with work of other Sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.

- D. Install accessories in accordance with manufacturer's instructions, straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- E. Install waterstops in accordance with manufacturer's instructions continuous without displacing reinforcement.
- F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- G. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.6 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

3.7 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances in accordance with ACI 301.
- B. Camber beams in accordance with ACI 301.

3.8 FIELD QUALITY CONTROL

- A. Section 01410 - Quality Control: Field inspection and testing.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.
- C. Do not reuse plywood formwork more than three times for concrete surfaces to be exposed to view or formwork that has become split, frayed, delaminated or otherwise damaged, without approval from Owner. Do not patch formwork.

3.9 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

END OF SECTION

**SECTION 03200
CONCRETE REINFORCEMENT**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. Requirements of "General Conditions of the Contract" and of Division 1, "General Requirements", apply to work in this Section with same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish and place concrete reinforcement for cast-in-place concrete.
- B. Fabrication of all reinforcement, including welding of splices where detailed or required.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 04220 - Unit Masonry.

1.4 DEFINITIONS

- A. Concrete reinforcement: Includes reinforcement bars, spirals, wire, welded wire fabric, dovetail anchor slots, chairs, supports and other accessories.

1.5 QUALITY ASSURANCE

- A. Reference specifications and standards:
 - 1. CRSI: Placing Reinforcing Bars, Recommended Practices.
 - 2. AWS: D1.4 Structural Welding Code - Reinforcing Steel.
 - 3. AWS: A5.1 Carbon Steel Covered Arc Welding Electrodes.
 - 4. AWS: A5.5 Low-Alloy Steel Covered Arc-Welding Electrodes.
 - 5. ACI: 315 Manual of Standard Practice for Detailing Reinforced Concrete Structures.
 - 6. ACI: 318 Building Code Requirements for Reinforced Concrete.
 - 7. ASTM: A82 Cold Drawn Steel Wire for Concrete Reinforcement.
 - 8. ASTM: A185 Welded Steel Wire Fabric for Concrete Reinforcement.
 - 9. ASTM: A496 Deformed Steel Wire for Concrete Reinforcement.
 - 10. ASTM: A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- B. Tests and inspections:
 - 1. Procedures: In accord with Section 01400, 01410.
 - 2. Source quality control of identifiable steel: Submit to laboratory, copies of mill certificates for all types, sizes and heats of reinforcing steel intended for use in the work. Include the following information:

- a. Source of steel.
 - b. Description.
 - c. Heat number.
 - d. Yield point.
 - e. Ultimate tensile strength.
 - f. Elongation percentage in 8 in. length.
 - g. Bend test results.
 - h. Chemical analysis.
3. Quality control of unidentifiable steel:
- a. When steel cannot be identified, the testing laboratory will make one series of tensile tests and one series of bend tests in accord with ASTM A615, for each 5 tons or fractional part thereof of each size and kind of reinforcing steel.
 - (1) Make tests using a minimum of two separate samples. Test full sections of bars as rolled.
4. Field quality control for welding:
- a. Inspection and tests of welds will be made by the testing laboratory for reinforcing bar welds, as follows:
 - (1) Certification of welders engaged in electric-arc welding of reinforcing.
 - (2) Inspection of reinforcing bar welds.
 - (3) X-ray test of one of the first arc-welds made by each welder.
 - (4) 2 tensile tests of sample welds of the largest size bar for each type of welding .

1.6 SUBMITTALS

- A. Procedure: Submit in accord with Section 01000, 01340.
- B. Shop Drawings: Submit detailed fabrication, bending, and placement Drawings and schedules.
 - 1. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures."
 - 2. Include bar schedules, stirrup spacing, diagrams of bent bars, assemblies, and any other pertinent data required for the fabrication and placement.
- C. Welding procedures: For welding of reinforcing steel.

1.7 PRODUCT HANDLING

- A. Procedures: In accord with Section 01000, 01640.
- B. Deliver reinforcement to the job site bundled, tagged, and marked. Use metal tags indicating bar size, lengths, and reference information corresponding to markings shown on placement diagrams.
- C. Prevent damage and accumulation of dirt or excessive rust to stored materials.
- D. Store welding electrodes in accord with AWS D1.4.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Reinforcing steel: ASTM A615. Provide grades as noted on Drawings. Where not indicated, provide Grade 60.
- B. Reinforcing mesh: ASTM A185. Welded steel wire fabric with fiber yield (Fy) of 60,000 psi.
 - 1. At Contractor's option, reinforcing mesh may be used in lieu of deformed reinforcing bars at slabs on grade as hereinafter specified.
 - 2. If reinforcing mesh is used at slabs on grade, provide 4 in. x 4 in./#6 x #6 for 4 in. thick slabs and 4 in. x 4 in./#4 x #4 for 5 in. thick slabs. For thicker slabs, provide steel area of mesh equivalent to $0.0013 \times$ area of concrete (A_c).
 - a. Other mesh sizes may be used provided area of steel (A_s) is maintained equivalent to area of steel in sizes specified.
 - 3. Provide mesh in flat sheets only. Mesh in rolls will not be acceptable.
 - 4. Lap adjoining sheets at least one full mesh and tie splices with 16 gauge wire. Offset end laps in adjacent sheets to prevent continuous laps.
- C. Wire:
 - 1. Deformed wire: ASTM A496.
 - 2. Smooth wire: ASTM A82.
- D. Electrodes for welding reinforcing steel:
 - 1. Grade 40 steel: Conform to AWS A5.1, E70XX Series, low hydrogen, having a minimum yield point of 60,000 psi.
 - 2. Grade 60 steel: Conform to AWS A5.5, E90XX Series, low hydrogen, having a minimum yield point of 90,000 psi.
- E. Supports for reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcement in place.
 - 1. Use wire bar type supports complying with CRSI, Chapter 3, unless otherwise indicated.
 - 2. For slabs on grade, use precast concrete "Dobies" with embedded wire ties.
 - 3. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with plastic protected legs, CRSI Class C.
 - 4. Over waterproof membranes and vapor barriers, use precast concrete chairs to prevent puncturing of membrane.

2.2 FABRICATION

- A. Bend and fabricate reinforcing bars to conform with required shapes and dimensions indicated on Drawings. Comply with fabrication tolerances of reference standards.
 - 1. In case of fabricating errors, do not rebend or straighten reinforcement.
 - 2. Make all bends cold.
- B. Reinforcement with any of the following defects will not be permitted.
 - 1. Bar lengths and bends exceeding specified fabrication tolerances.
 - 2. Bends or kinks not indicated on Drawings or approved shop drawings.

3. Bars with reduced cross-section due to excessive rusting or other cause.

PART 3 - EXECUTION

3.1 PLACING STEEL REINFORCEMENT

- A. Industry standards: Except as herein specified, or indicated on Drawings, place steel reinforcement in accord with the standard practices and specifications of the Concrete Reinforcing Steel Institute (CRSI).
- B. Cleaning: Remove loose rust and mill scale, earth, form oil, or any other foreign materials which could reduce or destroy bond with the cement. Wipe oil from forms before reinforcement is placed on or adjacent thereto so that oil will not be tracked over, or in any way come into contact with the reinforcement.
- C. Placing reinforcement:
 1. Place reinforcement bars, wire, and wire fabric of sizes, gauges, lengths and shapes as indicated on Drawings.
 2. Position, support, and secure reinforcement against displacement by moving loads, vibration, or other concrete placement operations.
 3. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.
 4. Except where noted otherwise on Drawings, place reinforcement to obtain the following coverages for concrete protection.
 - a. Concrete in contact with earth: 3 in.
 - b. Concrete in contact with earth, but placed in forms: 2 in.
 - c. Beams or columns (main reinforcement): 2 in.
 - d. Sign, light, and post Footings: 2 in.
 5. Arrange, space, and securely tie bars and bar supports together with 16 gauge wire to hold reinforcement accurately in position during concrete placement operations.
 6. Set wire ties so that twisted ends are directed away from exposed concrete surfaces.
- D. Provide sufficient numbers of supports and of strength to carry reinforcement.
 1. Do not place reinforcing bars more than 2 in. beyond the last leg of any continuous bar support.
 2. Do not use reinforcing bar supports for support of runways for concrete conveying equipment or for any other construction loads.
 3. Exercise care to avoid puncturing the vapor barrier sheeting when placing reinforcing for slabs on grade.
 - a. Place reinforcement supports at such frequency as is necessary to support foot traffic without bending or displacing reinforcing steel or welded wire fabric.
- E. Splices:
 1. Standard reinforcement splices: Lap ends, placing bars in contact, and tightly wire tie. Unless indicated otherwise on Drawings, comply with requirements of ACI 318 for minimum lap of spliced bars.
 2. Welded splices: Use full penetration butt welds by the electric-arc method unless otherwise shown.
 - a. Employ only welders who have passed the AWS standard qualification tests within the past year.

- b. Weld splices to develop 125% of the specified yield strength of the bars, or of the smaller bar in transition splices.
 - c. Clean bars of foreign substances before welding.
 - d. Preheat bars before welding. Stagger splices in adjacent bars.
 - e. Prepare ends of bars in accord with AWS D1.4.
- 3. Mechanical butt splicing Option: Exothermic welding processes and high-strength steel sleeves which develop the same values of strength, may be used in lieu of electric-arc welding. Comply with manufacturer's directions for preparation of bars and installation procedures.
 - 4. Vertical end splices of reinforcing bars No. 11 and larger may be made using a mechanical friction device which provides positive alignment during placement. Comply with manufacturer's directions for bar preparation and installation of clamping devices.
 - 5. Welding: Comply with requirements of AWS D1.4. for field welding. Prior to field welding, determine the weldability of reinforcing bars by a laboratory chemical analysis of steel being used. Only steel conforming to the chemical requirements specified in AWS D1.4. may be considered for welding.

END OF SECTION

**SECTION 03300
CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. Requirements of "General Conditions of the Contract" and of Division 1, "General Requirements", apply to work in this Section with same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Batch, deliver, and discharge at project site location as directed, all concrete of proper mix design for all cast-in-place concrete.
- B. Responsibility for obtaining materials for concrete, processing, storing, grading, blending, mixing, conventional in-plant quality control, batch tickets, correct and timely dispatching, and similar services.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02810 – Irrigation System.
- B. Section 03100 – Concrete Formwork.
- C. Section 03200 – Concrete reinforcement.

1.4 QUALITY ASSURANCE

- A. Ready-mix concrete:
 - 1. Mix and deliver ready-mix concrete in accord with ASTM C94.
- B. Reference specifications and standards:
 - 1. ACI: 302 Recommended Practice for Concrete Floor and Slab Construction.
 - 2. ACI: 304 Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
 - 3. ACI: 305 Hot Weather Concreting.
 - 4. ACI: 306 Recommended Practice for Cold Weather Concreting.
 - 5. ACI: 308 Recommended Practice for Curing Concrete.
 - 6. ACI: 309 Recommended Practice for Consolidation of Concrete.
 - 7. ACI: 347 Recommended Practice for Concrete Formwork.
 - 8. ASTM: C31 Making and Curing Concrete Test Specimens in the Field.
 - 9. ASTM: C33 Concrete Aggregates.
 - 10. ASTM: C39 Compressive Strength of Cylindrical Concrete Specimens.
 - 11. ASTM: C42 Drilled Cores and Sawed Beams of Concrete, Obtaining and Testing.
 - 12. ASTM: C94 Ready-Mixed Concrete.
 - 13. ASTM: C143 Slump of Portland Cement Concrete.
 - 14. ASTM: C150 Portland Cement.
 - 15. ASTM: C260 Air-Entraining Admixtures for Concrete.

- 16. ASTM: C494 Chemical Admixtures for Concrete.
 - 17. ASTM: D1751 Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - 18. ASTM: E154 Methods of Testing Materials for Use as Vapor Barriers Under Concrete Slabs and as Ground Cover in Crawl Spaces.
- C. Allowable tolerances: Flatwork true to plane 1/8 in. to 10 ft. Place vertical work in accord with ACI 347.

1.5 TESTS AND INSPECTIONS

- A. Procedure: In accord with Section 01000, 01410.
- B. Portland cement: Furnish cement mill test reports and manufacturer's certification that cement complies with specifications requirements.
- C. Required tests and inspections: Make and keep an accurate record of all tests and inspections.
 - 1. Hardrock aggregate: Test by approved testing laboratory in accord with ASTM C33.
 - a. Do not deliver aggregates to site, or to ready-mix plant until pit source has been approved, and plant, capacity, and ability to produce a uniform and continuous product has been verified.
 - b. Take samples from aggregate stockpiles assigned to project.
 - 2. Slump tests: Make one slump test in accord with ASTM C143 for each set of test cylinders. Make additional tests as may be ordered by Owner.
 - a. Maximum slumps: As specified in Article 2.3 of this Section.
 - 3. Test cylinders: Take one sample of four cylinders from each day's placement of 100 cubic yards or fractional part thereof of each mix design. Take samples as concrete is deposited in forms. Mark cylinders with date, sample number, and point in structure from which sample was taken. Do not take more than one sample of four cylinders from any point or batch of concrete.
 - a. Make and store cylinders in accord with ASTM C31.
 - b. Curing: At end of 24 hours, take cylinders to laboratory and store under moist curing conditions at approximately 70 degrees F. until tested.
 - c. Testing: Test cylinders in accord with ASTM C39. Test cylinders at age of 7 days and 28 days.
 - (1) Seven-day strength: Not less than 60% of specified ultimate 28-day strength.
 - d. Mix adjustment: Should test results indicate concrete strength below specified 7-day or 28-day minimum requirements, laboratory will adjust mix proportions in future batches as necessary to achieve specified minimum requirements.
 - e. Concrete failures: Should test results show that concrete strength requirements for any portion of work falls below 28-day minimum requirements, secure core or prism specimens of hardened concrete and test in accord with ASTM C42.
 - (1) Laboratory will secure and test specimens under Owner's direction.
- D. Ready-mix plant inspections: Testing laboratory will provide and maintain continuous inspection at plant to check sieve analysis for quality and moisture

content of aggregates, check mix with design mixes, check cement being used with test reports, check loading of mixer trucks, and certify quantities of materials loaded in each mixer truck.

1. Certification: Provide batch tickets signed by the dispatcher and the laboratory inspector at the ready-mix plant. Each batch ticket shall state time of day, batch quantities of cement, water, fine aggregates, coarse aggregates, and admixture contained in each truck load.
 - a. Deliver to Owner's representative on job site a properly signed ticket with each load of ready-mix concrete.

1.6 SUBMITTALS

- A. Procedure: Submit in accord with Section 01000, 01340.
- B. Manufactured items: Submit manufacturers' brochures and technical data for approval.
- C. Certificates: Admixture certification.
- D. Color samples: Grout and Expansion Joint Compounds.
- E. Job site flatwork panel: Contractor shall allow up to four (4) job site 4'x4' panels of each type of concrete color and finish. Required joints materials and treatments shall be included.

1.7 JOB CONDITIONS

- A. Allowable concrete temperatures:
 1. Cold weather: In accord with ACI 306.
 2. Hot weather: In accord with ACI 305.
- B. Do not place concrete in exposed locations while it is raining, unless adequate protection is provided.

1.8 PRODUCT HANDLING

- A. Procedures: In accord with Section 01000, 01640.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Portland cement: ASTM C150, Type I, containing not more than 0.6% total alkali when calculated as sodium oxide as described in ASTM C114. Provide from one source.
 1. Type II cement meeting same requirements is acceptable.
 2. Do not change brand of cement during progress of work unless directed otherwise in writing by Owner.
 3. Store in suitable silos and protect from dampness and contamination.
- B. Fine aggregate (natural stone): ASTM C33, consisting of washed natural sand having hard, strong, durable particles which do not contain more than 1% by weight of such deleterious substances as clay lumps, shale, schist, alkali, mica, coated grains, or soft and flaky particles.

- C. Coarse aggregate (natural stone): ASTM C33, consisting of clean, hard, fine grained, sound, washed gravel, with not to exceed 35% of crushed rock over 1/2 in. in size, and which does not contain in excess of 5% by weight of flat, chip-like, thin, elongated, friable or laminated pieces, or more than 1% by weight of shale or cherty material. Any piece having a major dimension in excess of 2-1/2 times the average thickness is considered flat or elongated.
1. Grading limits of combined aggregates shall be as hereinafter listed:

Sieve Number or Size in Inches	Percentage by Weight	
	1-1/2" Max	1" Max
Passing a 1-1/2"	95-100	--
Passing a 1"	75-90	90-100
Passing a 3/4"	55-77	70-90
Passing a 3/8"	40-55	45-65
Passing a #4	30-40	31-47
Passing a #8	22-35	23-40
Passing a #16	16-30	17-35
Passing a #30	10-20	10-23
Passing a #50	2-8	2-10
Passing a #100	0-3	0-3

2. Store and measure each size aggregate separately.
- D. Water: Clean and potable; free from deleterious amounts of acids, alkalis, salts, and organic matter.
- E. Vapor barrier: 6 mil minimum polyethylene sheeting, conforming to ASTM E154.
1. Ethyl Visqueen.
 2. Rex Plastics.
 3. Monsanto.
 4. Arco Polymers.
- F. Expansion joint filler: Premolded type, conforming to ASTM D1751. Materials made by the following manufacturers are approved:
1. A. C. Horn Co.
 2. Homasote Co.
 3. W. R. Meadows Co.
- G. Integral mineral color pigments: Provide pure mineral oxide colors as selected by Owner. Per concrete types.

2.2 ADMIXTURES

- A. Approved manufacturers:
1. L. M. Scofield Company.
 2. W.R. Grace & Co. - Construction Products Division.
 3. Master Builders Co.
 4. Sika Chemical Co.
 5. Contech Inc. - Sonneborn Division.
- B. Manufacturer's job site representation: A competent field service representative from the manufacturer of the admixture selected for use shall be available at the

job site to provide advice and consultation on the use of the admixture material, including the effect on the concrete in place. The representative shall be available on short call at any time requested by the Owner, Contractor, or concrete producer.

- C. Admixture types:
 - 1. Type A: ASTM C494, water reducing.
 - 2. Type D: ASTM C494, water reducing and retarding.
 - 3. Air entraining: ASTM C260. For all concrete exposed to water or air.
 - a. Do not use air entraining admixture in concrete with Ipanex special waterstop admixture.
- D. Quality: Conform to ASTM designations specified for the various types.
 - 1. Do not use admixtures which cause excessive (up to 10% more than concrete without admixtures) shrinkage.
 - 2. Do not use admixtures which contain calcium chloride or triethanolamine.
 - 3. Do not use admixtures which cause corrosion of embedded steel.
 - 4. Do not use "bleeding" types of admixtures (those which release free water which rises to the top surface of freshly placed concrete) in concrete for walls, columns, or in any concrete where such free water could contribute to weakened or porous concrete at horizontal construction joints or in pour joints.
- E. Manufacturer's recommendations: Use admixtures in strict accord with recommendations of manufacturer of admixture.

2.3 CONCRETE MIXES

- A. It is intended that concrete for all parts of the concrete work be homogenous, and when hardened, possess the required strength, durability, watertightness, appearance, resistance to deterioration and abrasion, and other qualities as specified or required.
- B. Mix proportioning: Use only mixes designed by testing laboratory selected or approved by Owner.
 - 1. Provide concrete which will develop ultimate compressive strength at 28 days equal to that noted on Drawings.
 - a. Use 3000 psi concrete for any portion not otherwise noted on Drawings.
- C. Entrained air: Design all concrete to entrain 3%-5% air.
 - 1. Exceptions: Do not use air entraining admixture in concrete with Ipanex special waterstop admixture nor in special design concrete of 5000 psi and 7000 psi.
- D. Design slumps:
 - 1. Curbs: 3 in. - plus/minus 1 in.
 - 2. Slabs on grade: 3 in. - plus/minus 1 in.

2.4 CEMENT GROUT AND DRYPACK

- A. Cement grout: Mix 1 part portland cement, 2-1/2 parts fine aggregate, and enough water for required consistency. Depending on use, consistency may range from mortar consistency to a mixture that will flow under its own weight. Use for

leveling, preparing setting pads or beds, for filling non-structural voids, and similar uses. Do not use for grouting under bearing plates or structural members in place.

- B. Drypack: Mix 1 part portland cement, 2 parts fine aggregate, and enough water to hydrate cement and provide a mixture that can be molded with the hands into a stable ball (a stiff mix). Do not mix more than can be used in 30 minutes. Use for drypacking under bearing plates and structural members, for patching tie holes, honeycomb and large surface defects in concrete.
- C. Non-shrink grout - acceptable compounds and manufacturers:
 - 1. Master Flo 713 by Master Builders Co.
 - 2. Five Star Grout by U.S. Grout Corporation.
 - 3. Upcon by The Upco Co.
 - 4. Horn Non-Metallic Grout by A.C. Horn, Inc.
 - 5. SonogROUT by Sonneborn Building Products.

2.5 INTEGRALLY COLORED CONCRETE

- A. Provide integral color concrete at locations indicated on Drawings to be colored, (See Article 2.01, G.) including stamped concrete work where indicated to be 4 in. thick or less.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Assure that excavations and formwork have been completed, and that excess water has been removed from excavations.
- B. Verify that steel reinforcements, conduits, outlet boxes, anchors, hangers, sleeves, bolts, expansion joint materials, and other embedded items are in their proper locations, and adequately secured against shifting during placement and vibrating of concrete.

3.2 VAPOR BARRIER

- A. Prior to placing concrete on grade, cover finish earth sub-grade areas with a 6 mil thick polyethylene sheeting vapor barrier. Lap joints in sheeting a minimum of 6 in. and seal edges with plastic pressure sensitive tape. Cover sheeting with a 2 in. deep layer of sand.

3.3 INSTALLATION

- A. Placing concrete:
 - 1. Place concrete immediately after it has been mixed. Concrete which has not been placed in final position in formwork within 1-1/2 hours after water was first added to batch shall be rejected and removed from site.
 - 2. Before placing any concrete in formwork, thoroughly clean and wash-out forms with water.
 - 3. If earth at bottom of forms has dried-out, re-wet so that soil is moist, but free of standing water and mud.

4. Convey concrete from mixer to final position by methods which will prevent separation or loss of materials.
 5. Maximum height of concrete free fall is 4 ft.
 6. Regulate rate of placement so concrete surface is kept level throughout; a minimum being permitted to flow from one area to another. Control rate of placement consistent with form design.
 7. Deposit concrete in continuous operation until section being placed has been completed.
 8. Do not retemper any concrete, or use any concrete which has stood more than 15 minutes after leaving mixer.
- B. Consolidating concrete:
1. Use mechanical vibrating equipment for consolidation. Be sure an adequate number of operating vibrator units are on-hand to properly consolidate the quantity of concrete to be placed, including spares for emergency use.
 2. Vertically insert and remove hand-held vibrators at points 18 in. to 30 in. apart. Vibrate concrete the minimum amount required for consolidation and release of entrapped air bubbles.
 3. Do not use vibrators to transport concrete in forms.
- C. Construction joints:
1. Upon completion of a formed pour, strike concrete smooth at top of formwork, and prepare construction joints to receive next pour by removing entire surface paste to expose aggregate.
 2. Upon completion of a slab pour which will receive subsequent topping or additional concrete, expose aggregate in top surface by brooming in two directions at right angle to each other.
 3. Before fresh concrete is deposited against or upon hardened concrete, sand-blast surfaces to remove all incrustations or laitance, exposing clean coarse aggregate firmly embedded in mortar matrix.
 4. At construction joints, dampen and slush surfaces, which will receive fresh concrete, with neat cement grout slurry.
 5. Make construction joints in exposed surfaces only at predetermined locations approved by Owner.

3.4 DEFECTIVE CONCRETE

- A. Concrete will be deemed defective when:
1. Tests on core or prism specimens fail to show strengths specified.
 2. Not formed as indicated or detailed.
 3. Not plumb or level where so indicated.
 4. Not true to intended grades and levels.
 5. Cut, filled or resurfaced, unless under direction of Owner.
 6. Debris is embedded therein.
 7. Not fully in conformance with provision of Contract Documents.
 8. Damaged by hot or cold weather conditions.
- B. Remove and replace defective concrete at discretion of Owner, or adequately strengthen and resurface in a manner acceptable to Owner.

END OF SECTION

**SECTION 04060
MASONRY MORTAR AND GROUT**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Mortar and grout for unit masonry walls.

1.2 RELATED SECTIONS

- A. Section 03200 - Concrete Reinforcement: Support reinforcement.
- B. Section 04300 - Unit Masonry System: Unit masonry.

1.3 REFERENCES

- A. ACI 530 - Building Code Requirements for Masonry Structures.
- B. ACI 530.1 - Specifications For Masonry Structures.
- C. ASTM C 150 - Portland Cement.
- D. ASTM C 207 - Hydrated Lime for Masonry Purposes.
- E. ASTM C 270 - Mortar for Unit Masonry.
- F. ASTM C 476 - Grout for Masonry.
- G. ASTM C 780 - Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
- H. ASTM C 1019 - Method of Sampling and Testing Grout.
- I. IMIAC (International Masonry Industry All-Weather Council) - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- J. ASTM C 5 - Quicklime for Structural Purposes.
- K. ASTM C 91 - Masonry Cement.
- L. ASTM C 94 - Ready-Mixed Concrete.
- M. ASTM C 144 - Aggregate for Masonry Mortar.
- N. ASTM C 199 - Test Method for Pier Test for Refractory Mortar.

- O. ASTM C 387 - Packaged, Dry, Combined Materials, for Mortar and Concrete.
- P. ASTM C 404 - Aggregates for Masonry Grout.
- Q. ASTM C 595 - Blended Hydraulic Cement.
- R. ASTM C 1072 - Method for Measurement of Masonry Flexural Bond Strength.
- S. ASTM C 1142 - Ready-Mixed Mortar for Unit Masonry.
- T. ASTM E 447 - Test Methods for Compressive Strength of Masonry Prisms.
- U. ASTM E 518 - Test Method for Flexural Bond Strength of Masonry.

1.4 SUBMITTALS

- A. In accordance with Section 01340 - Shop Drawings, Samples and Product Data: Procedures for submittals.
- B. Include design mix, indicate whether proportion or property specification of ASTM C 270 is to be used, required environmental conditions, and admixture limitations.
- C. Reports: Submit reports on mortar indicating conformance of component mortar materials to requirements of ASTM C 270 and test and evaluation reports to ASTM C 780.
- D. Reports: Submit reports on grout indicating conformance of component grout materials to requirements of ASTM C 476 and test and evaluation reports to ASTM C 1019.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 530 and ACI 530.1.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01640: Product Handling and Protection.
- B. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements: IMIAC - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of Work.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Portland Cement: ASTM C 150, Type II.
- B. Mortar and Grout Sand: Fine aggregate local to Orlando area. Natural quartz sand conforming to ASTM C 33, except grading shall conform to FDOT Section 902 with fineness modulus not less than 1.9.
- C. Pea Gravel: ASTM C 404, except soundness. Washed and graded natural Limerock aggregate, with not more than 5% passing the No. 8 sieve, and with 95 to 100% passing 3/8-in. sieve.
 - 1. Sodium sulfate: 17% maximum.
 - 2. Soft particles: ASTM C 88, 15% maximum.
- D. Hydrated Lime: ASTM C 207, Type S. Lime may be substituted.
 - 1. Acceptable Manufacturers:
 - a. Gibco MRF; Gibco Industries, Inc.
 - b. Easy Spread; Peninsula Products, Inc.
- E. Water-reducing Admixture for Grout: Sika Grout Aid by Sika Corp.
- F. Waterproofing Admixture for Mortar: Sika Red Label by Sika Corp.
- G. Water: Clean and potable.
- H. Mortar Aggregate: ASTM C 144-70 natural or manufactured sand of natural color as required to obtain mortar color indicated.
 - 1. For joints less than 1/4-inch use aggregate graded with 100 percent passing a No. 16 sieve.
 - 2. For joints greater than 1/4-inch wide, comply with following limits:

<u>Sieve Size:</u>	<u>Percent Passing:</u>
No. 4	100
No. 8	95 to 100
No. 16	60 to 100

<u>Sieve Size:</u>	<u>Percent Passing:</u>
No. 30	35 to 70
No. 50	15 to 35
No. 100	2 to 15
No. 200	0 to 2

2.2 MORTAR MIXES

- A. ASTM C 270, Type S.

2.3 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in accordance with ASTM C 270 in quantities needed for immediate use.
- B. Maintain sand uniformly damp immediately before mixing process.
- C. Do not use anti-freeze compounds to lower freezing point of mortar.
- D. If water is lost by evaporation, re-temper only within 2 hours of mixing.
- E. Use mortar within 2 hours after mixing at temperatures of 90 degrees F, or two-and-one-half hours at temperatures under 40 degrees F.

2.4 GROUT MIXES

- A. Obtain 3,000 psi strength at 28 days.

2.5 GROUT MIXING

- A. Mix grout in accordance with ASTM C 94.
- B. Do not use anti-freeze compounds to lower the freezing point of grout.

2.6 MIX TESTS

- A. Testing of Mortar Mix: In accordance with ASTM C 270.
- B. Testing of Grout Mix: In accordance with ASTM C 1019 for compressive strength and slump.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Request inspection by Universal of spaces to be grouted prior to beginning Work.

3.2 INSTALLATION

- A. Install mortar in accordance with ASTM C 270. Install grout in accordance with ASTM using low-lift method.
- B. Work grout into masonry cores and cavities to eliminate voids.
- C. Do not install grout in lifts greater than 4-feet.
- D. Consolidate grout by rodding.
- E. Do not displace reinforcement while placing grout.
- F. Remove excess mortar from grout spaces.

3.3 FIELD QUALITY CONTROL

- A. Protect finished Work under provisions of Section 01640: Project Handling and Protection.
- B. Test and evaluate mortar in accordance with ASTM C 780.
- C. Test and evaluate grout in accordance with ASTM C 1019.

END OF SECTION

SECTION 04210

BRICK MASONRY UNITS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Face brick.

1.2 RELATED SECTIONS

- A. Section 04060 - Mortar and Masonry Grout.

1.3 REFERENCES

- A. ASTM C 1088 - Standard Specification for Thin Veneer Brick Units Made From Clay or Shale.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01600.
- B. [Product Data]: Manufacturer's catalog data, detail sheets, and specifications.
- C. Selection Samples: For each product requiring color/texture selection, provide full size samples for final selection.
- D. Verification Samples: For each product, provide two full-size units representing actual color and texture of products to be installed.
- E. Submit detailed shop drawings and installation details for sculptured brick murals.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Construct sample panel at location indicated or directed, and as follows:
 - a. Size: 4 feet by 4 feet (1.2 m by 1.2 m).
 - b. Include all unit types and sizes to be used, and mortar joint treatment.

- c. Obtain architect's acceptance of sample panel before beginning construction activities of this section.
- d. Do not remove sample panel until construction activities of this section have been accepted by architect.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Deliver products of this section on pallets, with individual faces protected; keep dry.
- C. Store glazed units in protected area or under cover on level ground; keep dry. Do not double-stack pallets.
- D. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer Face Brick: Cultured Stone Products and Services 1-800-255-1727
- B. Acceptable Manufacturer Pre-Cast Sill: Quickcrete (951) 737-6240
- C. Approved Equal
- D. Requests for substitutions will be considered in accordance with provisions of Section 01631.

2.2 FACE BRICK

- A. Summer Stream Stone CSV 2071 by Cultured Stone
- B. Precast Concrete Sill Napa MD 110 Medium Etch Grey Left, Center and Right Sill

Custom Fit.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Protect shower and bath from damage from subsequent construction operations. If damage occurs, remove and replace damaged units.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Replace damaged products before Substantial Completion.

END OF SECTION

SECTION 04220
CONCRETE MASONRY UNITS

PART 1 GENERAL

1.1 GENERAL CONDITIONS

- A. Requirements of "General Conditions of the Contract" and of Division 1, "General Requirements", apply to work in this Section with same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish materials, labor, transportation, services, and equipment necessary to install concrete masonry units as indicated on Drawings and as specified herein.

- B. Work included in this Section:
 - 1. Reinforcement.
 - 2. Concrete masonry unit retaining walls.
 - 3. Mortar and masonry grouting.

- C. Work related in other Sections:
 - 1. Section 07140 - Fluid Applied Waterproofing: Waterproofing at raised planter conditions.

1.3 REFERENCES

- A. ASTM C 5 - Quicklime for Structural Purposes.

- B. ASTM A 82 - Cold-Drawn Steel Wire for Concrete Reinforcement.

- C. ASTM C 91 - Masonry Cement.

- D. ASTM C 94 - Ready-Mixed Concrete.

- E. ASTM A 123 - Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products.

- F. ASTM C 129 - Non-Load Bearing Concrete Masonry Units.

- G. ASTM C 144 - Aggregate for Masonry Mortar.

- H. ASTM A 153 - Specifications for Zinc Coating (Hot Dip) or Iron and Steel Hardware.

- I. ASTM C 150 - Portland Cement.
- J. ASTM C 199 - Test Method for Pier Test for Refractory Mortar.
- K. ASTM C 207 - Hydrated Lime for Masonry Purposes.
- L. ASTM C 270 - Mortar for Unit Masonry.
- M. ASTM C 387 - Packaged, Dry, Combined Materials, for Mortar and Concrete.
- N. ASTM C 404 - Aggregates for Masonry Grout.
- O. ASTM E 447 - Test Methods for Compressive Strength of Masonry Prisms.
- P. ASTM C 476 - Grout for Masonry.
- Q. ASTM E 518 - Test Method for Flexural Bond Strength of Masonry.
- R. ASTM C 595 - Blended Hydraulic Cement.
- S. ASTM A 615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- T. ASTM A 641 - Zinc-Coated (Galvanized) Carbon Steel Wire.
- U. ASTM C 780 - Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
- V. ASTM C 1019 - Method of Sampling and Testing Grout.
- W. ASTM C 1072 - Method for Measurement of Masonry Flexural Bond Strength.
- X. ASTM C 1142 - Ready-Mixed Mortar for Unit Masonry.
- Y. ACI 530 - Building Code Requirements for Masonry Structures.
- Z. ACI 530.1 - Specifications For Masonry Structures.
- AA. IMIAC (International Masonry Industry All-Weather Council) - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate bars sizes, spacings, locations, reinforcement quantities, bending and cutting schedules, supporting and spacing devices for reinforcement, accessories.

- B. Product Data: Provide data for masonry units and fabricated wire reinforcement.
- C. Manufacturer's Certificates: Certify that products meet or exceed specified requirements.
- E. Quality Assurance Certifications: Submit current certificates indicating compliance with requirements specified under Quality Assurance Article for Certified Structural Masonry Contractor and Certified Structural Masons.
 - 1. Maintain one copy on file on site while masonry construction is in progress.

1.5 QUALITY ASSURANCE

- A. Conform Work to provision of ACI 530.1/ASCE 6 - Specifications for Masonry Structures.
- B. Construct unit masonry by a certified Masonry Contractor who engages only certified Masons to perform masonry work.
- C. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of a uniform texture and color, from one source and by a single manufacturer.
- D. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for aggregate.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with a minimum of 5 years experience.
- B. Provide unit masonry that develops minimum installed compressive strength of 1,500 psi at 28 days.

1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 530 and ACI 530.1.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry accessories, including metal items to prevent deterioration from corrosion and accumulation of foreign matter.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F and a maximum of maximum 90 degrees F prior to, during, and 48 hours after completion of Work.
- B. Cold Weather Requirements: IMIAC - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

1.10 MOCK-UP

- A. Provide a 10-foot long x 5' high mock-up representing Contractor's capability in providing concrete masonry unit work.
- B. Approved mock-up will be the basis for future review of Work performed under this Section.
- C. Approved mock-up may be used as final portion of Work.

1.11 PROTECTION

- A. Adequately protect work from damage by subsequent construction operations. Damaged work shall be refinished or replaced at no additional cost to Owner.

1.12 COORDINATION

- A. Notify General Contractor and other contractors related to installation of Work in ample time, so as to allow time for those contractors to perform their portion of work.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. Hollow Block Units (CMU): ASTM C90, Type II - Non-moisture controlled, normal weight.
- B. Provide units with minimum average net-area compressive strength 1,900 psi.

2.2 CEMENT

- A. Portland Cement, ASTM C150, Type II.

2.3 WATER

- A. From domestic sources, clean and free from deleterious quantities of acids, alkalis, and organic materials.

2.4 GROUT AND MASONRY SAND

- A. Washed concrete sand conforming to ASTM C 33.

2.5 AGGREGATES

- A. Pea Gravel: Washed and graded natural hardrock aggregate, with not more than 5% passing the No. 8 sieve, and with 95 to 100% passing 3/8-in. sieve.
- B. Mortar Aggregate: Natural or manufactured sand of natural color.
 - 1. For joints less than 1/4-inch use aggregate graded with 100 percent passing a No. 16 sieve.
 - 2. For joints greater than 1/4-inch wide, comply with following limits:

<u>Sieve Size:</u>	<u>Percent Passing:</u>
No. 4	100
No. 8	95 to 100
No. 16	60 to 100
No. 30	35 to 70
No. 50	15 to 35
No. 100	2 to 15
No. 200	0 to 2

2.6 HYDRATED LIME

- A. Dolomite hydrated lime conforming to ASTM C 207, Type "S". Lime may be substituted.
 - 1. Acceptable Manufacturers:
 - a. Gibco MRF; Gibco Industries, Inc.
 - b. Easy Spread; Peninsula Products, Inc.

2.7 ADMIXTURES

- A. Water-reducing Admixture for Grout:
 - 1. Acceptable Manufacturers: Sika Grout Aid by Sika Corp.
- B. Waterproofing Admixture for Mortar:
 - 1. Acceptable Manufacturers: Sika Red Label by Sika Corp.

2.8 REINFORCEMENT

- A. Clean, without rust conforming to ASTM A 615, Grade 40.

2.9 MIXES

- A. Following proportions are arbitrary by loose, dry volumes:
1. Mortar:
 - a. ASTM Rating: C 270, Type S.
 - b. Portland Cement: 1 part.
 - c. Mortar Sand: 3-1/2 parts maximum.
 - d. Hydrated Lime: 1/4 part.
 - e. Water: Sufficient to provide weired end.
 - f. Pea Gravel Grout:
 - 1) Cement: 1 part.
 - 2) Grout Sand: 3 parts.
 - 3) Pea Gravel: 1-1/2 to 2 parts.
 - 4) Water: Sufficient to provide weired end.
- B. Tests: Minimum compressive strength of 1,200 psi at 7 days and 2,000 psi at 28 days. Deliver test reports to Owner's Authorized Representative.
- C. Mixing Mortar and Grout: Accurately make measurements for mortar and grout, by volume - shovel measurements will not be accepted:
1. Mix by placing one-half the water and sand in operating mixer, add cement, lime and remainder of sand and water.
 2. After ingredients are in mixer, mechanically mix for not less than 3 minutes.
 3. Retemper mortar within 1 hour after leaving mixer with water to maintain high plasticity on mortar board by adding water within a basin formed within mortar and mortar reworked into water. Discard mortar which is not used within 1 hour.
 4. Mortar Slump: 2-3/4-inches, natural color.
 5. Grout Slump: Approximately 7 to 9-inches, to permit pouring without segregation.
 6. Grout Strength: Obtain 3,000 psi strength at 28 days.
 7. Do not use anti-freeze compounds to lower freezing point of mortar or grout.

2.10 ACCESSORIES

- A. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.
1. Acceptable Manufacturers:
 - a. ProSoCo Inc.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive Work.
- B. Verify items provided by other sections of work are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into Work.

3.2 PREPARATION

- A. Set or embed in masonry work anchors, bolts, reglets, sleeves, conduits, and other items as required by other trades. Work out details and be responsible for size, position, arrangement of embedded items and other necessary openings.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.3 REINFORCEMENT

- A. Ensure that reinforcing bars are set straight except for bends around corners and where bends or hooks are detailed on Drawings. Do not use "hickey" dowels or reinforcements.
- B. Lap reinforcing steel at 40 bar diameters minimum where spliced. Separated by one bar diameter or wire together.
- C. Hold vertical bars in position at top and bottom and at intervals not exceeding 192 diameters of reinforcement. Ensure that vertical reinforcing steel has a minimum clearance of at least one-half inch from masonry, and not less than one bar diameter between bars.
- D. Lay horizontal reinforcing bars on webs of units in continuous masonry courses, consisting of bond-beam units. Grout bars solid in place.

3.4 LAYOUT

- A. Establish lines, levels, and coursing as indicated on Drawings. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

- C. Concrete Masonry Units:
 - 1. Type: Cinder Block Smooth
 - 2. Size: 8x8x16-inches.
 - 3. Color: Natural gray.
 - 4. Bond: Running.
 - 5. Mortar Joint Type: Concave.

3.5 BONDING

- A. Ensure that when bonding masonry to concrete foundation, top surface of concrete foundation is clean with laitance removed.
- B. Bond intersecting masonry walls and partitions by using steel ties at 2-foot on center maximum.
- C. Provide at corners, standard masonry bond by overlapping units and solid grouted.
- D. Anchor columns, beams, joists, and similar structural members to walls with anchor bolts or their equivalent. Fully grout anchors in place. Ensure that embedment is not less than two-thirds of wall thickness.
- E. Solid grout first base course. Lay hollow masonry units with face shell bedding on head and bed joints.

3.6 PLACEMENT

- A. Make every effort to minimize cutting of blocks and odd joint sizes or bonds.
- B. Cut masonry units by machine.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- D. Remove excess mortar as work progresses.
- E. At corners and wall intersections, provide prefabricated “L” and “T” sections. Cut and bend reinforcement units for continuity at returns, offsets, pipe enclosures, and other special conditions.
- F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar, and replace.
- G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.7 JOINTING

- A. Lay starting joint on foundations with full mortar coverage on bed joint except that area where grout occurs free from mortar so that grout will contact foundation.
- B. Install mortar joints that are straight, clean, and uniform in thickness.
- C. Perform tooling when mortar is partially set but still sufficiently plastic to bond. All tooling shall be done with a tool which compacts the mortar, pressing the excess mortar out of the joint rather than dragging it out. Joints which are not tight at the time of tooling shall be raked out, pointed and then tooled.
- D. Horizontal and Vertical Mortar Joints: 3/8-inch thick with full mortar coverage on face shells and on webs surrounding cells to be filled.
- E. Butter vertical head joints for a thickness equal to face of shell of unit. Shove units tightly so that mortar bonds well to both units. Set joints to depth of face shell.
- F. Set lintels, capping units, and bearing plates that are set by mason in a full bed of mortar.

3.8 GROUTING

- A. Reinforcing steel shall be secured in place and inspected before grouting starts.
- B. Grout cells in structure in heights of less than 4-feet. Keep mortar from dropping into grout space.
- C. Fill vertical cells and ensure that vertical alignment is maintained in a continuous unobstructed cell area not less than 2-inches by 3-inches.
- D. Solidly fill cells with grout . Consolidate grout by rodding.
- E. Stop grout within 1-1/2 inches below top of a course to form a key at pour joints.
- F. Solidly grout in-place bolts, anchors, and other items inserted in wall.

3.9 ENGINEERED MASONRY

- A. Lay masonry units with core cells vertically aligned clear of mortar and unobstructed.
- B. Place mortar in masonry unit bed joints back 1/4-inch from edge of unit grout spaces, bevel back and upward. Permit mortar to cure 7 days before placing grout.

- C. Reinforce masonry unit cores with reinforcement bars and grout as indicated on Drawings.
- D. Retain vertical reinforcement in position at top and bottom of cells and at intervals not exceeding 192 bar diameters. Splice reinforcement in accordance with Section 03200 - Concrete Reinforcement.
- E. Wet masonry unit surfaces immediately prior to grout placement.
- F. Grout spaces less than 2-inches with fine grout using low lift grouting techniques. Grout spaces 2-inches or greater in width with course grout using low-lift grouting techniques.
- G. When grouting is stopped for more than 1 hour, terminate grout 1-1/2-inch below top of upper masonry unit to form a positive key for subsequent grout placement.
- H. Low Lift Grouting: Place each lift of grout to a height of 2-feet and rod for grout consolidation.

3.10 CONTROL JOINTS

- A. Do not continue horizontal joint reinforcement through control joints.

3.11 TOLERANCES

- A. Maximum Variation From Unit to Adjacent Unit: 1/16-inch.
- B. Maximum Variation from Plane of Wall: 1/4-inch in 10-feet and 1/2-inch in 20-feet or more.
- C. Maximum Variation from Plumb: 1/4-inch per story non-cumulative; 1/2-inch in two (2) stories or more.
- D. Maximum Variation from Level Coursing: 1/8-inch in 3-feet and 1/4-inch in 10-feet; 1/2-inch in 30-feet.
- E. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.
- F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4-inch.

3.12 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, and sleeves. Coordinate with other sections of work to provide correct size, shape, and locations.

- B. Obtain Owner's Authorized Representative approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.13 FIELD QUALITY CONTROL

- A. Test and evaluate mortar in accordance with ASTM C 780.
- B. Test and evaluate grout in accordance with ASTM C 1019.

3.14 PROTECTION OF FINISHED WORK

- A. Without damaging completed Work, provide protective boards at exposed external corners which may be damaged by construction activities.

3.15 CLEANING

- A. Remove excess mortar and mortar smears as work progresses.
- B. Replace defective mortar. Match adjacent work, where applicable.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools during cleaning operations.
- E. Upon completion of Work, remove scaffolding and equipment used in Work, debris, refuse, and surplus masonry materials. Leave entire Work area in a neat, clean, and Owner's Authorized Representative-accepted condition.

END OF SECTION

**SECTION 07120
FLUID APPLIED WATERPROOFING**

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

The requirements of the "General Conditions of the Contract" and of Division 1, "General Requirements", shall apply to all work in this Section with the same force and effect as though repeated in full herein.

1.02 SCOPE OF WORK

Furnish all materials, labor, transportation, services, and equipment necessary to furnish and install fluid applied waterproofing as indicated on the Drawings and as specified herein.

A. Work included in this Section:

1. Masonry planters.
2. Membrane installation.
3. Protection board installation.
4. Cleanup.

B. Work related in other Sections:

1. Landscape Planting - Section 02900.
2. Irrigation System - Section 02810.
3. Portland Cement Concrete Paving - Section 02750.
4. Concrete Masonry Unit - Section 04220.
5. Sealants and Caulkings - Section 07900.

1.03 DEFINITIONS

The Owner's Authorized Representative in this Section will refer to the Landscape Architect.

1.04 REQUIREMENTS OF REGULATORY AGENCIES

All Federal, State, and local laws and regulations governing this work are hereby incorporated into and made part of this Section. When this Section calls for certain materials, workmanship or a level of construction that exceeds the level of Federal, State, or local requirements, the provisions of this Section shall take precedence.

1.05 APPLICABLE STANDARDS

Applicable American Society for Testing and Materials (ASTM).

1.06 QUALITY CONTROL

A. The work under this Section must be performed by a Waterproofing Contractor approved by the membrane manufacturer.

B. Manufacturer's Directions

Manufacturer's directions and drawings shall be followed in all cases where the manufacturers of articles used in the Section furnish directions covering points not shown on the Drawings and Specifications.

C. Permits, Fees, Bonds and Inspections

The Contractor shall pay for any and all permits, fees, bonds and inspections necessary to perform and complete his portion of the work.

1.07 QUALIFICATIONS

A. The Waterproofing Contractor shall have a minimum of five (5) years experience in work of similar scope and nature to this project.

B. The Waterproofing Contractor shall obtain the fluid applied membrane's manufacturer's approval before commencing work.

1.08 SUBMITTALS

A. Product Data

The Waterproofing Contractor shall submit no later than 10 days after the award of Contract, manufacturer's data for the following items:

1. Proposed method for applying the fluid applied membrane system - two (2) 8 1/2" x 11" typed booklets with listing of all materials intended for use on the project. If accepted by the Owner's Authorized Representative, this information shall be the basis of acceptance or rejection or actual installation.
2. Fluid applied waterproofing membrane - 12" square sample.
3. Reinforced fabric - 12" sheets of standard and heavy duty grades.
4. Foam backup for use in expansion joints - 12" section.

5. Protection board - 12" square sample.

B. Certificates

Submit certification from manufacturer indicating Waterproofing Contractor's approval and submit certificates from the manufacturer that the substrate, specifications, and details are proper and adequate for the materials being furnished.

1.09 SUBSTITUTIONS

A. Specific reference to manufacturer's names and products specified in this Section are used as standards of quality, this implies no right of the Waterproofing Contractor to substitute other materials without prior written approval.

B. Any materials installed without written approval may be rejected and the Waterproofing Contractor shall at his own cost remove such materials from the site.

C. If an approval is granted for a substitution, adjustment in the Contract price will be made in accordance with the Contract Conditions.

1.10 PROJECT CONDITIONS

- A. Keep work area clean, and in a safe and workmanlike condition so that rubbish, waste and debris do not interfere with the work of other trades.
- B. The waterproofing membrane shall not be installed during inclement weather or when the air temperature is below 40 degrees F. All surfaces to receive waterproof membrane shall be free of moisture, dirt, dust and litter.
- C. Preparation and application of the waterproof membrane must be conducted in a well ventilated area.
- D. Do not allow waste products, i.e. petroleum grease, oil, solvents, etc. to come in contact with the waterproof membrane.
- E. Insure that the waterproof membrane once installed, is protected at all times by damage caused by himself or other trades.

1.11 PRODUCT HANDLING

A. Delivery

Deliver materials in original unopened containers of packaging clearly labeled with manufacturer's name, brand name, instructions for use and all identifying numbers.

B. Storage

1. Store materials in a dry and protected location.
2. Store all primer, mastic, adhesives and waterproof membranes at temperatures between 60 degrees F and 80 degrees F and in a dry area away from heat flames or sparks. If exposed to lower temperatures, restore materials to 60 degrees F minimum temperature before using.
3. Store all protection board flat and off the ground, preferable on a wood pallet. Provide tarpaulin cover on top and all sides.
4. Store only as much materials at the point of use as is required for each day's work.
5. Pallets of waterproof membrane shall not be double stacked on the job site. Provide cover on top and all sides, allowing for adequate ventilation.

1.12 COORDINATION

Notify the General Contractor and all other contractors related to the installation of work in ample time, so as to allow sufficient time for those contractors to perform their portion of work.

1.13 WARRANTY

The manufacturer's warranty shall not relieve the Waterproof Contractor of his own liability under the warranty.

A. Warranty

1. Furnish a written guarantee which guarantees that during a period of five (5) years from the date of completion and final acceptance of the project, he will, without additional cost to the Owner, promptly make any repairs required as a result of ordinary wear and tear of the elements, and further guarantees that any defective material or work shall be promptly repaired or replaced without additional cost to the Owner.
2. Furnish a five (5) year warranty against leaks in the waterproof membrane resulting from defects in materials and workmanship.

B. Repair and/or Replacement

Upon notification of defects within the warranty period, make necessary repairs and replacements at the Owner's convenience. Within the first year of the warranty period, at no additional cost to the Owner, remove and replace permanent wear surface materials, which may be necessary to effect such repairs.

PART 2 - PRODUCTS

2.01 GENERAL

The components of the entire waterproofing system must be covered by a single source warranty, therefore the Waterproof Contractor must obtain approval from the membrane manufacturer for all materials to be used on the project.

2.02 ASPHALT PRIMER

Shall conform to ASTM D41.

2.03 ADHESIVES & SEALANTS

- A. Contact adhesive used to bond flashing together - "Splicing Cement" as manufactured by American Hydrotech.
- B. Contact adhesive used to bond flashing to an approved substrate - "Bonding Adhesive" as manufactured by American Hydrotech.
- C. Sealant used to seal flashing seam edges - "Lap Sealant" as manufactured by American Hydrotech.

2.04 PROTECTION BOARD

A. Horizontal Surfaces

A heavy duty fiberglass reinforced rubberized asphalt sheet - "Hydroflex 30" as manufactured by American Hydrotech.

B. Vertical Surfaces (above four (4) feet in height)

3/4" thick - "Styrofoam FM" as manufactured by Dow Chemical Company and supplied by American Hydrotech, Inc.

2.05 INSULATION LAYER

A. Shall be extruded polystyrene rigid board insulation meeting the following physical properties:

- 1. Insulation shall meet ASTM C-578, type VI.
- 2. Minimum compressive strength per ASTM D-1631, 40 psi.

3. Maximum water absorption by volume per ASTM C-272, .1%
- B. Vertical Application: "Styrofoam SM" as manufactured by Dow Chemical Company and supplied by American Hydrotech, Inc.
- C. Horizontal Application: "Styrofoam PD" as manufactured by Dow Chemical Company and supplied by American Hydrotech, Inc.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION CONFERENCE ("KICK-OFF MEETING")

Prior to the commencement of the work, schedule an on-site meeting with the Owner, Owner's Authorized Representative, Architect, General Contractor and the Waterproof Contractor, Waterproofing Materials Manufacturer and other interested parties to review methods and procedures to be used to achieve end results.

3.02 INSPECTION

- A. Examine the concrete topping slab to receive the fluid applied waterproof membrane and adjoining construction under which the work is to be installed to verify if it is acceptable. Verify the following:
 1. The type, strength, density, curing method and cure/dry time of the concrete topping slab that will be receiving the waterproof membrane.
 2. That the concrete topping slab receiving the waterproof membrane has received a wood float finish and is free from any apparent defects.
 3. Any structural limitations of the concrete topping slab.
 4. That the concrete topping slab has been given sufficient slope to drain.
 5. That sufficient quantity, type and location of deck drains and other flashing details are present.
- B. Do not proceed with the Work until all unsatisfactory conditions have been corrected.

3.03 PREPARATION OF SUBSTRATES

- A. All surfaces to receive waterproof membrane must be dry, smooth, free of depressions, voids, spalled areas, protrusions, unapproved curing compounds, greases, oils, form release agents and other surface contaminants.

B. Concrete Masonry Walls

1. Apply a parget coat of mortar to rough concrete masonry wall surfaces to smooth our rough surfaces and masonry jointing. Allow the parget coat to cure for a minimum of 21 days before applying the waterproof membrane.

3.04 EXPANSION JOINTS

A. Expansion joints up to 1/2" in width.

1. Apply a 125 mils thick layer of waterproof membrane over the entire expansion joint area. Center a 6" wide strip of reinforcing fabric over the crack and embed firmly in the warm membrane. Apply another 125 mils thick layer of waterproof membrane over the reinforcing fabric.

B. Expansion Joints up to 2" in width

1. Apply a 125 mils thick layer of waterproof membrane over the entire expansion joint area. Firmly embed into the still warm membrane, a sheet of heavy duty reinforcing fabric looped down into the joint 1 1/2 times the width of the joint. and extending a minimum of 6" onto either side of the joint. Insert expansion joint foam backer rod snugly onto the top of the reinforcing loop.
2. While the waterproof membrane is still warm, install another strip of heavy duty reinforcing fabric extending a minimum of 8" onto either side of the joint, looping it upwards at its center to accommodate the foam rod.
3. Apply a final 125 mils thick layer of waterproof membrane over the reinforcing fabric except at the expansion loop, totally encapsulating the reinforcing sheet edges.
4. Anticipated structural concrete slab movement at the expansion joints are designed to be taken in by the excess reinforcing loop. Do not design or

3.05 FLUID APPLIED MEMBRANE APPLICATION

Apply the rubberized asphalt membrane at a temperature of between 350 to 425 degrees F and provide a continuous, monolithic coat of 180 mil (approximately 3/16" thick) but not less than 125 mil (approximately 1/8" thick).

3.06 PROTECTION BOARD INSTALLATION

- A. The protection board on horizontal work shall be installed as follows:
1. Embed the protection board into the membrane while it is still hot and pliable to insure a solid bond between them.
 2. Overlap adjoining sheet edges (dry) a minimum of 2-3" to insure complete coverage.
 3. The protection board must be covered by the topping materials as soon as reasonably possible - within 30 days of installing the fluid applied membrane.
- C. The protection board on vertical wall surfaces shall be installed as follows:
1. Embed the protection board into the membrane while it is still tacky to insure a solid bond between them.
 2. Protection boards must be butted tightly together to insure protection of the fluid applied membrane.

3.07 JOB COMPLETION

Contractor shall inspect the completed waterproofing assembly and correct all defects to the satisfaction of the Owner's Authorized Representative.

3.08 CLEANUP

Upon completion of the work under this Section, the Contractor shall remove all rubbish, waste and debris resulting from his operations offsite or as directed by the Owner. Remove all equipment and implements of service, and leave the entire work area in a neat, clean, and Owner-accepted condition.

END OF SECTION

**SECTION 07900
JOINT SEALERS**

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. Requirements of "General Conditions of the Contract" and of the "Greenbook" Standard Specification for Public Works Construction, 2000 edition, apply to work in this Section with same force and effect as though repeated in full herein.

1.2 SCOPE OF WORK

- A. Furnish materials, labor, transportation, services, and equipment necessary to construct seat wall and arbor as indicated on Drawings and as specified herein.
- B. Work included in this Section:
 - 1. Joint sealants in concrete pavers.
- C. Work related in other Sections:
 - 1. Ornamental Metal.
 - 2. Section 201-3 "Expansion Joint Filler and Joint Sealants".

1.3 SYSTEM PERFORMANCE

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

1.4 SUBMITTALS

- A. In accordance with section 2, the "Greenbook".
- B. Submit a list of sealants used on project, along with sealant type system proposed for each condition to fulfill sealing requirements.
- C. Provide data indicating sealant chemical characteristics, manufacturers instructions, performance criteria, substrate preparation, limitations and color availability.
- D. Samples:
 - 1. Submit two samples of each sealant type and color specified for use on project for review and approval by the Engineer.

2. Match sealant color with adjacent paving color. Provide colors from manufacturer's standard or extended color palette, however, the Engineer will not be limited to manufacturer's standard or extended color palette.
3. Unavailability of a specified color in conjunction with a manufacturer's product requires providing a product of another specified manufacturer in which designated color is available.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing Work of this Section with a minimum of 5 years documented experience.
- B. Coordination with Other Trades:
 1. Coordinate installation of sealant and caulking materials of this section with adjacent work of other trades.
- C. Manufacturer's Supervision:
 1. Obtain manufacturer's local representative supervision for the following:
 - a. Inspection of Work just prior to start of sealant application.
 - b. Provide initial instruction at start of Work, to insure that physical conditions which could result in defective work are properly corrected before materials are applied.
 - c. Instruct personnel in correct procedures.
 - d. Verify that proper procedures are being followed.
 - e. Notify manufacturer at least 72 hours prior to time it is required.
 - f. Failure or refusal of manufacturer's local representative to provide inspection and supervision required by this Section constitutes grounds for non-acceptability of materials manufactured by it even though such materials have been specified or approved.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to Project in original factory wrappings and containers, clearly labeled with identification of manufacturer, brand name, and lot number.
- B. Store materials in original undamaged packages and containers, inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.7 PROJECT CONDITIONS

- A. Conform to sealant manufacturer's recommendations for temperatures (ambient, surface and material), moisture, humidity, and similar factors that affect installation of joint sealant materials.

- B. Install joint sealant materials at times when temperatures of surface materials are approximately at median of service temperature extremes.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.9 COORDINATION

- A. Coordinate Work with sections of work referencing this Section.

1.10 WARRANTY

- A. Include coverage for installed sealants and accessories which fail to achieve airtight seal, watertight seal, exhibit loss of adhesion, cohesion, or do not cure for a period of 5 years from date of Final Acceptance by the Engineer.

PART 2 - PRODUCTS

2.1 SEALANT TYPES

- A. Type 1 (vertical joint applications):
 - 1. Two-part, non-sag polyurethane sealant conforming to ASTM C 920, Type M, Grade NS, Use NT, M, A, and O for non-traffic, vertical applications not subject to service temperatures in excess of 150°F. or joint movement in excess of ±50%.
 - a. Acceptable Manufacturer's:
 - 1) Vulkem 922; Mameco International, Inc.
 - 2) Dynatrol II; Pecora Corp.
 - 3) Sikaflex-2C NS; Sika Corporation.
 - 4) Sonolastic NP 2; Sonneborn Building Products.
 - 5) Dymeric 511; Tremco.
- B. Type 3 (horizontal joint applications): Two-part, non-sag polyurethane sealant conforming to ASTM C 920-87, Type M, Grade NS, Class 25, Use T, M, A.
 - 1. Acceptable Manufacturer's:
 - a. Dynatred; Pecora Corp.
 - b. Vulkem 227; Vulkem Corp.
 - c. THC-901; Tremco.
 - d. 2C; Sika Corporation.
 - e. Sonolastic SL-2; Sonneborn Building Products.

2.2 ACCESSORY MATERIALS

- A. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- B. Masking Tape: Provide masking tape on horizontal surfaces prior to installing sealant.
 - 1. Acceptable Manufacturers:
 - a. 3M; Longmask.
- C. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- D. Backer Rod:
 - 1. Horizontal Joints: 9 lb. density, non-gassing, closed-cell polyethylene rod. Oversize rod to 25 to 30% of joint width
 - 2. Vertical Joints: 2 lb. density, non-gassing, closed-cell polyethylene rod. Oversize rod to 25 to 30% of joint width.
 - 3. Acceptable Manufacturers:
 - a. Sof-Rod; Sonneborn Building Products.
 - b. Dual Rod; Nomaco.
 - c. NMC Sof Rod; ITP.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive Work.
- B. Verify that backer rod and bond breaker tape are compatible with sealant.

3.2 JOINT PREPARATION

- A. Remove loose materials and foreign matter from joint which might impair adhesion of backer rod and sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions. Do not spill primer onto visible concrete. Immediately wipe off primer if spilling occurs.

3.3 BACKER ROD INSTALLATION

- A. Allow primer to dry before installing backer rod.

- B. Measure joint dimensions and size backer rod to be larger than 25 to 30% of the joint to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- C. Do not leave gaps between ends of backer rod.
- D. Do not stretch, twist, puncture, or tear backer rod.

3.4 SEALANT INSTALLATION

- A. Provide masking tape along joint edges prior to installing sealant.
- B. Install sealant in accordance with sealant manufacturer's instructions.
- C. Install sealant by proven techniques that result in sealant directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- D. Install sealants at same time sealant backings are installed.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tooling:
 - 1. Tool joints concave.
 - 2. Immediately after sealant application and prior to time curing begins, tool sealant to form smooth, uniform beads, eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint.
 - 3. Remove excess sealant from adjacent joint surfaces.
 - 4. Do not use tooling agents that discolor sealant or adjacent surfaces or are not approved by sealant manufacturer.

3.5 CLEANING

- A. Clean adjacent soiled surfaces.

3.6 PROTECTION OF FINISHED WORK

- A. Protect sealants until fully cured.

END OF SECTION

SECTION 09815
HI-BUILD ANTI GRAFFITI GLAZED COATINGS
FOR EXTERIOR CONCRETE

REQUIREMENTS OF DIVISION ONE APPLY TO WORK OF THIS SECTION

PART 1: GENERAL

1.01 SCOPE

- A. Work of this section includes everything necessary for or incidental to completing Hi-Build Anti-Graffiti Glazed Coating for exterior concrete block work, except as herein specifically excluded.

1.02 RELATED WORK

- A. Painting Section 09900

1.03 SUBMITTAL-SAMPLE REQUIREMENTS

- A. Submit Manufacturer's Application Instructions, standard color selections, test reports, and samples for approval by the Architect.
- B. Materials meeting these requirements produced by manufacturers other than those named, may be substituted in accordance with the substitution procedures established in Section 01631 Product Substitutions. No substitutions will be allowed without prior approval.

1.04 PRODUCT HANDLING

- A. Delivery and Storage of Materials: Deliver all materials in their original packages with seals unbroken, with manufacturers name and product identification clearly legible on each package. Store to preclude entry of moisture or damage from any source.

1.05 ENVIRONMENTAL CONDITIONS

- A. Field Conditions: Verify actual field conditions. Inspect related work and adjacent surfaces. Report all conditions which prevent proper execution of this work, to the Construction Manager.
- B. Do not apply coatings in damp or rainy weather. Do not apply coatings at temperatures below 40 degrees Fahrenheit

1.06 WARRANTY

Provide a two-year written warranty against defects in materials and workmanship.

- A. Warranty shall begin on date of final acceptance of the project.

PART 2: PRODUCTS

2.01 MANUFACTURER

- A. Vitrocem as manufactured by Bithell, Inc.
1004 East Edna Place
Covina California 91724
Telephone: 626-331-2292
Fax: 626-339-4588
- B. Materials meeting these requirements produced by manufacturers other than those named, may be substituted in accordance with the substitution procedures established in Section 01631. Product Substitutions. No substitutions will be allowed without prior approval.
- C. Coating System: Anti-Graffiti Glazed Coating System for Exterior Concrete.

2.02 MATERIALS

- A. Pigmented Acrylic Color Coat when Color is required.
- B. Polyester Clear Glazed Coating.
- C. Polyester Polyurethane Clear Glazed Coating.

PART 3: EXECUTION

3.01 SURFACE PREPARATION

- A. Ascertain that surfaces to be coated are in proper condition to receive Hi-Build glazed coatings. Report all unsatisfactory surfaces to Construction Manager in writing.
- B. Mask to protect uncoated adjacent surfaces.
- C. Repair minor surface damage.
- D. Check for moisture, or excessive alkali. Correct as required.

3.02 MATERIAL PREPARATION.

- A. Vitrocem Polyester Coatings require the addition of catalyst just prior to use. Atmospheric conditions affect the curing. Follow manufacturer's printed directions regarding catalyst concentrations at varying temperatures.

3.03 APPLICATION

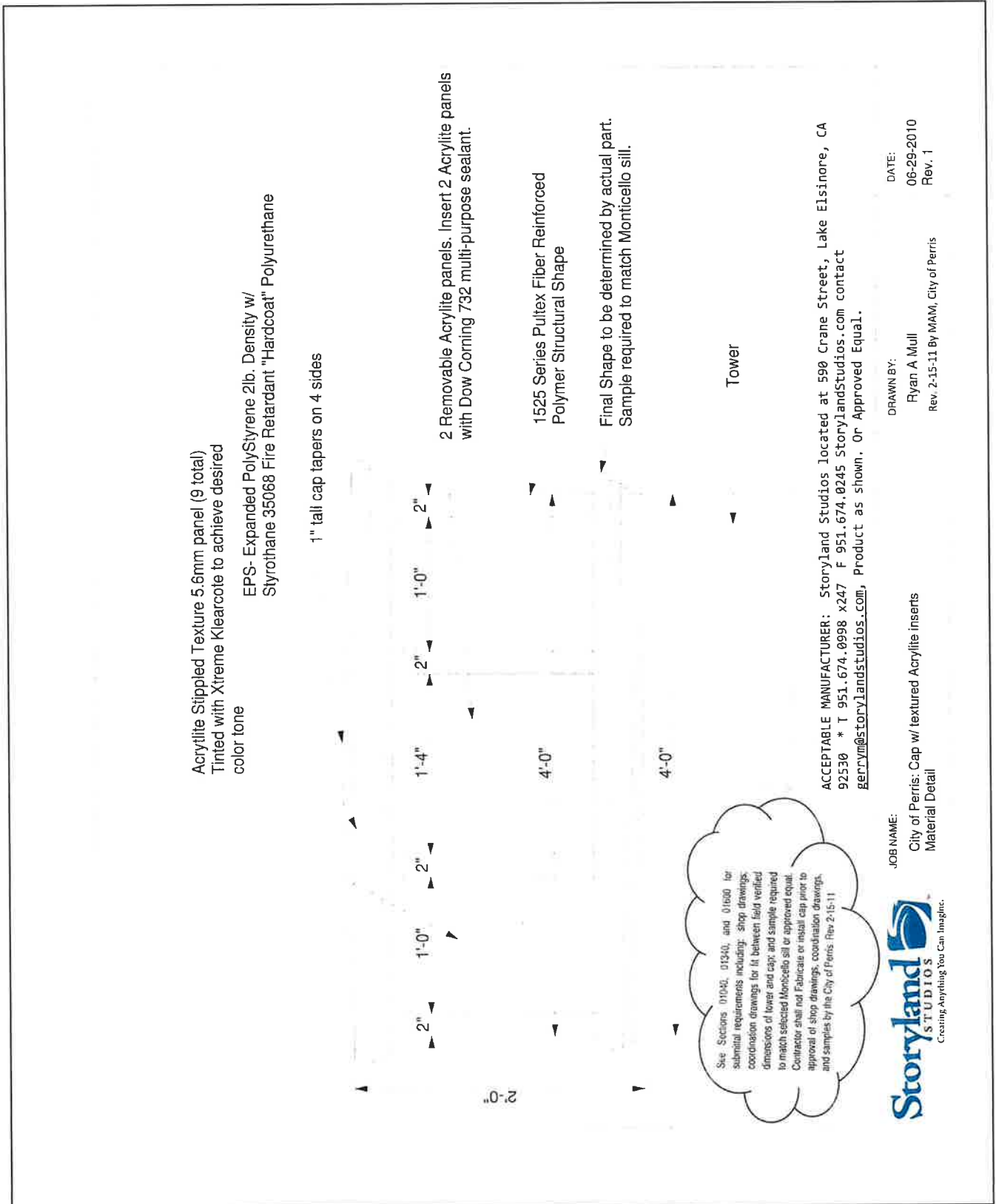
- A. Apply coatings to surfaces in accordance with manufacturer's instructions.
 - 1. Apply a first coat of Vitrocem Acrylic Color Coat (If Color is required).
 - 2. After the first coat has cured, apply a second coat of Vitrocem Acrylic polyester by spray or roller.
 - 3. Apply a Third Coat of Clear Vitrocem Polyester Polyurethane. Final Surface appearance shall be free of surface voids and pinholes.

3.04 CLEANING

- A. As the work proceeds, and upon completion, promptly remove coating material where spilled, splashed or splattered.
- B. During progress of work, keep premises free from any unnecessary accumulation of tools, equipment, surplus materials and debris.
- C. Upon completion of work, leave premises neat and clean, to the satisfaction of the Architect/Engineer.

END OF SECTION

**DIVISION 10
SPECIALITY PRECAST ARCHITECTURAL ELEMENTS**



See Sections 01040, 01340, and 01600 for similar requirements including: shop drawings; coordination drawings (or fit between field verified dimensions of lower and cap; and sample required to match selected Monicello seal or approved equal. Contractor shall not fabricate or install cap prior to approval of shop drawings, coordination drawings, and samples by the City of Perris. Rev 2-15-11

2 1525 Series Pultex Fiber Reinforced Polymer 4" Equal Length Angle 1/4" thick
 2 Removable Acrylite panels. Insert Acrylite panel with Dow Corning 732 multi-purpose sealant.

Grab it Loc-tite & Lag bolts to tower frame

ACCEPTABLE MANUFACTURER: Storyland Studios located at 590 Crane Street, Lake Elsinore, CA 92530 * T 951.674.0998 x247 F 951.674.0245 StorylandStudios.com contact berry@storylandstudios.com, Product as shown. Or Approved Equal.

JOB NAME: City of Perris: Cap w/ textured Acrylite inserts Attachment Detail
 DRAWN BY: Ryan A Mull
 DATE: 06-29-2010
 Rev. 2-15-11 By MAM, City of Perris



END OF SECTION

SECTION 16010
BASIC ELECTRICAL REQUIREMENTS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to this Section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 SUMMARY

This Section specifies the basic requirements for electrical installations and includes requirements common to more than one section of Division 16. It expands and supplements the requirements specified in sections of Division 1.

1.03 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.

1.04 ELECTRICAL INSTALLATIONS

- A. Coordinate electrical equipment and materials installation with street components.
- B. Verify all dimensions by field measurements.
- C. Arrange for chases, slots and openings streets, sidewalk, and curbs to allow for electrical installations.
- D. Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed.
- E. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the work.
- F. Install electrical equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
- G. Coordinate the installation of electrical materials and equipment in streets with other street scope.

- H. Coordinate connection of electrical systems with existing underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Pay all necessary fees and obtain all necessary permits from local jurisdiction, franchised service companies, and controlling agencies.

1.05 CUTTING AND PATCHING

- A. This Article specifies the cutting and patching of electrical equipment, components, and materials to include removal and legal disposal of selected materials, components, and equipment.
- D. Do not endanger or damage installed Work through procedures and processes of cutting and patching.
- E. Arrange for repairs required to restore other work, because of damage caused as a result of electrical installations.
- F. No additional compensation will be authorized for cutting and patching work that is necessitated by ill-timed, defective, or non-conforming installations.
- G. Perform cutting, fitting, and patching of electrical equipment and materials required to:
 - 1. Uncover work to provide for installation of ill-timed work.
 - 2. Remove and replace defective work.
 - 3. Remove and replace work not conforming to requirements of the contract Documents.
 - 4. Upon written instructions from the Architect/Engineer, uncover and restore work to provide for Architect/Engineer observation of concealed work.
- H. Cut, remove and legally dispose of selected electrical equipment, components, and materials as indicated, including, but not limited to removal of electrical items indicated to be removed and items made obsolete by the new work.
- J. Protect the structure furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
- K. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
- L. Locate, identify, and protect electrical service passing through work area and serving other areas required to be maintained operational. When transit services must be interrupted, provide temporary services for the affected areas and notify the Owner prior to changeover.

1.06 ELECTRICAL SUBMITTALS

- A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 Section: SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES for submittal definitions, requirements, and procedures.

- B. Submittal of shop drawings, product data, and samples will be accepted only when submitted by the Contractor. Data submitted from subcontractors and material suppliers directly to the Architect/Engineer will not be processed.

1.07 PRODUCT OPTIONS AND SUBSTITUTIONS

Refer to the Instructions to Bidders and the Division 1 Sections "PRODUCTS AND SUBSTITUTION" for requirements in selecting products and requesting substitutions.

1.08 PRODUCT LISTING

- A. Prepare listing of major electrical equipment and materials for the project.
- B. Provide all information requested.
- C. Submit this listing as a part of the submittal requirement specified in the Division 1 Section: "PRODUCTS AND SUBSTITUTION".
- D. When two or more items of the same material or equipment are required, they shall be of the same manufacturer. Product manufacturer uniformity does not apply to raw materials, bulk materials, wire, conduit, fittings, sheet metal, steel bar stock, welding rods, solder, fasteners, motors for dissimilar equipment units, and similar items used in Work, except as otherwise indicated.
- E. Provide products which are compatible within systems and other connected items.

1.09 ELECTRICAL IDENTIFICATION - NAMEPLATES AND WARNINGS:

Provide permanent operational data nameplate on each item power service, indicating manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliance's, and similar essential data. Locate nameplates in an accessible location.

- A. Nameplates: Furnish permanently installed on electrical equipment and devices including, but not limited to, the following items:
 - 1. Enclosures for panels.
 - 2. Enclosures for separately enclosed devices to disconnect switches, circuit breakers, contactors, time switches, control stations and relays.
- B. Nameplate designations shall clearly state:
 - 1. Equipment enclosure nameplates:
 - a. Manufacturer's nameplate including equipment design rating of current, voltage, bus bracing rating, or as applicable.
- C. Nameplate material: Engraved, laminated, plastic with white letters engraved through black background. Letters shall be 3/16" high for devices and minimum 1/4" high for equipment and enclosures. Adhesives are not acceptable.

- D. Provide cable I.D. tags in each hand hole. Bundle each multi-wire circuit separately and place cable I.D. tag indicating circuit number on the tag.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.
- B. Store equipment and materials at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage.
- C. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

1.11 RECORD DOCUMENTS

- A. Refer to the Division 1 Section: PROJECT CLOSE-OUT, or PROJECT RECORD DOCUMENTS for requirements. The following paragraphs supplement the requirements of Division 1.
- B. Mark drawings to indicate revisions to conduit size and location: actual light locations, dimensioned from centerlines of streets.
- C. Mark specifications to indicate approved substitutions; change orders, actual equipment and materials used.

1.12 WARRANTIES

- A. Provide one year warranty on all work performed
- B. Provide two year warranty on all Ballasts.
- C. Compile and assemble the warranties specified in Division 16, into a separated set of vinyl covered, three ring binders, tabulated and indexed for easy reference.
- D. Provide complete warranty information for each item to include product or equipment data of beginning of warranty or bond; duration of warranty or bond and names, addresses, and telephone numbers and procedures for filing a claim and obtaining warranty services.

1.13 CLEANING

- A. Refer to Civil Engineering for general requirements for final cleaning.
- B. Clean all light poles fixtures, lamps and lenses prior to final acceptance. Replace all inoperative lamps.

- C. At completion of work contractor shall remove rubbish, waste and debris resulting from operations. Remove equipment and implements of service, and leave entire work area neat and clean, to the satisfaction of the owner.

PART 2 - PRODUCTS

Not applicable

PART 3 - EXECUTION

Not applicable

END OF SECTION 16010

SECTION 16035

ACCEPTANCE TESTING AND CALIBRATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 INSPECTION AND TESTS

- A. General
 - 1. Upon completion and adjustment of the work under this Division of the Specification, all systems shall be tested by the Contractor to demonstrate that all wiring and equipment furnished, installed and/or connected under this Division has been properly installed, is in good operating condition and will function in the required manner. Faulty or defective wiring and equipment shall be replaced and the associated system Re-tested to demonstrate the elimination of such faults or defects.
 - 2. If laws, ordinances or any public authority require any of the work performed by the Contractor under this Division of the Specification to be specifically tested, inspected or approved, the Contractor shall arrange for the same at no cost to the Owner.
 - 3. The necessary tests on the electrical systems shall be made in the presence of the City's Representative. The Contractor shall notify him one (1) week in advance of the date for all tests. The Contractor shall provide qualified personnel and all required equipment to properly calibrated, to perform all tests specified in this Division of the Specification, and/or required by inspection authorities. All fees for testing and inspection shall be paid by the Contractor.
 - 4. Shop and field inspections and tests made by the City's Representative shall in no way relieve the Contractor from his responsibility to furnish satisfactory materials and workmanship. The right is reserved by the City's Representative to reject any material or work at any time before the final acceptance if, in his opinion, the material and/or work do not conform to the requirements of the Specifications.
 - 5. The final inspection and test shall be made only after the City's Representative is satisfied that the work specified in this Division of the Specification has been completely installed. The acceptance of the Work shall not in any way prejudice the City's rights to demand new replacement of defective material and/or workmanship. All parts of the

electrical system for which the contractor is responsible shall be adjusted and left in proper operating condition.

B. Grounding

1. See Section 16450 for additional information and requirements.
2. Completed wiring system shall be free of short circuits and unwanted grounds.

1.03 CALIBRATION

A. Calibrate and adjust all components requiring same as directed, in accordance with manufacturer's procedures and recommendations, or as required for the following categories of equipment.

1. Lighting fixtures (lamp positions, reflector positions, etc. required).

B. Provide overloads in all motor starters, in accordance with motor nameplate data and as recommended by the manufacturer.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION 16035

SECTION 16040

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 WORK INCLUDED

This Section describes the general requirements and purpose of submittals for Division 16 equipment and materials.

1.03 RELATED WORK

The general term "Shop Drawings" includes manufacturer's standard drawings and specifications, text data and maintenance and operating instructions including recommended spare parts list. Submittals shall be made and approvals as required, rendered in accordance with conditions of the Contract. In addition to identification requirements contained therein, proper equipment and/or system designations shall be affixed to all related electrical shop drawings.

1.03 SUBMITTAL REQUIREMENTS

- A. The attached Submittal list specifies the data to be submitted for various materials and equipment used in this Work. Comply with instructions as noted therein.
- B. Refer to respective Equipment Specification Sections for additional submittal requirements.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

**ATTACHMENT "A"
SUBMITTALS**

	<u>Mfg.</u>	<u>Cat No.</u>	<u>Marked Brochure</u>	<u>Shop Dwg.</u>	<u>Wiring Diagram</u>	<u>Submit For</u>
Control Devices	X	X	X			(1)(2)
St. Light Fuse Kits	X	X	X			(1)(2)
Lighting:						
- Poles	X	X	X	X		(1)(2)
- Lamps & Accessories	X	X	X	X		(1)(2)
Panelboard	X	X	X			(1)(2)
Handholes	X	X	X			(1)(2)
Meter Cabinet	X	X	X	X		(1)(2)

(1) Submit for approval.
(2) Submit for Owner's records only.

Instructions: Submit all items marked with an "X".

END OF SECTION 16040

SECTION 16112

UNDERGROUND RACEWAYS, DIRECT BURIAL CABLES, MANHOLES, TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 DESCRIPTION

- A. The conditions of the Construction Contract and Division 1 - General Requirements and Section 16010 - General Provisions apply to the work specified in this Section.
- B. Perform all trenching, backfilling and compacting for underground utilities and street lights as shown on Drawings and as herein specified.
- C. Furnish and install all underground systems as shown on Drawings and herein specified, including the following systems:
 - 1. All handholes.
 - 2. Underground conduits.
 - 3. Direct burial cables.
- D. Related Work Specified Elsewhere: Exterior pole mounted lighting: Section 16530.

1.03 QUALITY ASSURANCE

- A. Inspection and Testing: Inspection and testing by OWNER'S Designated Representative and/or a Soils Technician, hired and paid for by OWNER, will be conducted as required during the trenching and backfilling operations to assure compliance with this Specification.
- B. Requirements of Regulatory Agencies:
 - 1. It shall be CONTRACTOR's responsibility and duty to be familiar with local, state and federal rules and regulations relating to this type of work and he shall assume the responsibility for compliance therewith.
 - 2. A permit for crossing a railroad or road will be obtained by OWNER from the agency operating the railroad or road, and CONTRACTOR shall

comply with all requirements governing the issuance of such permit as to time limits, safety precautions, type of materials, method of construction and performance security, at no extra cost to owner.

3. All other permits required shall be obtained and paid for by CONTRACTOR.
4. Warning Lights and Barricades: CONTRACTOR shall provide, as directed by OWNER's Designated Representative, warning lights or barricades for open trenches or excavations, and whenever required by OSHA.

PART 2 - PRODUCTS

2.01 UNDERGROUND SYSTEM

- A. Pre-cast handholes are acceptable but product data and/or shop drawings must be submitted for final approval before installation can begin.
- B. All handholes shall have covers and frames of heavy-duty type. Handhole shall be colored concrete lets to match landscape. Lid shall be lettered "Lighting".
- C. All direct burial conduit shall be rigid steel or PVC, Schedule 40.

2.02 DIRECT BURIAL SYSTEMS

All construction material for direct burial system shall meet the requirements as specified in Article 3.2 of this Section.

2.03 SOIL MATERIALS

- A. Compaction and backfill requirements will be established by the civil engineer.

PART 3 - EXECUTION

3.01 UNDERGROUND ELECTRICAL DUCT SYSTEMS

- A. Underground Work: CONTRACTOR shall do all excavating, concrete work and backfilling, unless otherwise noted. Trenching, backfilling, shoring and compacting shall be in accordance with this Section. CONTRACTOR shall furnish and install all manholes, cable pits, conduit, fittings, manhole hardware, and grounding, unless otherwise noted.
- B. Conduit:
 1. Conduit shall be rigid PVC, Schedule 40 of the sizes and number as indicated on Drawings. Exception: where rigid steel is called out on the Drawings or herein specified for structural strength of duct system, such as under roadways.
 2. Use rigid steel conduit when pushing conduits.
 3. Adapters shall be provided where the conduit run changes from PVC to heavy wall steel conduit construction.

4. When a duct terminates at a terminal pole, the last five feet (minimum) of duct shall be rigid steel, including all conduits on the pole.
5. In laying the conduit, all joints shall be staggered at least 6 inches both vertically and horizontally. All joint/fittings shall be joined together by means of an approved solvent cement system. The joints/fittings shall then be taped with one (1) layer of 3M Brand "Duct" tape.
6. A 200-pound poly rope shall be installed and left in all spare conduit not containing wire or cable.
7. All conduits shall be swabbed clean before cable or poly rope installation and kept clean and free of contaminants throughout construction.

D. Manholes, Handholes and Cable Pits:

1. CONTRACTOR shall install handholes in accordance with the details shown on Drawings and as hereinafter specified.
2. CONTRACTOR shall install one 5/8 by 120-inch copper clad ground rods in each handhole. Ground rods shall protrude 6 inches above the manhole floor and shall be connected by a length of exposed No. 6 AWG, copper conductor secured to the side walls. Each ground wire shall be secured with a suitable thermoweld type ground rod connection.

3.02 TRENCHING

A. General Excavation:

1. Excavation shall be made to the alignment and depth shown on Drawings and limited to not more than 100 feet in advance of conduit, cable or concrete duct laying, unless otherwise authorized by OWNER'S Designated Representative. All excavations shall be made by open cut, unless otherwise approved by OWNER or shown on Drawings. The banks of trenches shall be so cut to meet the requirements of federal, state and local codes and regulations

B. Rock Excavation

1. Rock occurring in excavation shall be uncovered by CONTRACTOR and measured by OWNER before its removal by CONTRACTOR. Any rock removed before OWNER'S inspection and measurements shall be construed as general excavation and CONTRACTOR cannot obtain additional compensation for its removal. Rock occurring in excavation for conduit, cable and concrete duct work shall be measured at its cable and concrete duct work shall be measured at its actual width but not more than 24 inches greater than the outside diameter of the conduit, cable and concrete duct. Rock occurring in excavation for handholes and other construction shall be measured to include 12 inch clearance from outside face of the structure. The bottom of the rock excavation shall be 6 inches below the bottom of the conduit, cable and concrete duct. The volume in cubic yards will be computed by the method of average end areas.

C. Trench:

1. Pavements of all types shall be cut with a saw or other equipment in order to provide a straight edge for replacement.

2. Excavation for handholes and similar items shall be sufficient to permit the carrying out of the construction as required.

D. Disposal of Waste Materials:

1. Any material found in the excavation as determined by OWNER'S Designated Representative to be unsuitable for backfill shall be separated from the suitable material.
2. Unsuitable and excess suitable materials shall be removed from the work site as directed by OWNER'S Designated Representative, and at the expense of the contractor.

3.03 SHORING AND SHEETING

- A. Shoring, sheeting, bracing and similar items as may be required to support the side of the excavation and to prevent any movement which may in any way endanger personnel or injure or delay the work or endanger adjacent buildings or other structures shall be put in place and maintained by CONTRACTOR at his own expense. Where sheeting and bracing are used, the trench width shall be of such width to allow proper placement of the conduit, cable or concrete duct and backfill. Bedding requirements shall be increased when the maximum trench width is exceeded as previously specified under Article 3.1 of this Section (refer to paragraph entitled Trench Width). Trench sheeting shall remain in place until conduit, cable or concrete duct has been laid, around it compacted to a depth of 12 inches over the top of the conduit, cable or concrete duct. Steel sheeting and bracing shall be removed in such a manner as not to endanger the constructed conduit, cable, concrete duct, structure, utilities or property, whether public or private.
- B. Where wood sheeting or wood skeleton sheeting is driven along side the conduit, cable or concrete duct, it shall be cut off and left in place to an elevation 18 inches above the top of the conduit or concrete duct.
- C. If removal of the skeleton sheeting might cause a collapse of the trench wall and/or a widening of the trench at the top of the conduit, cable or concrete duct, the skeleton sheeting system may be left in place.
- D. A trench shield or trench box made of steel or wood and adequately braced may be used. This shield shall be pulled along in the trench and the conduit or concrete duct bedded and jointed inside the box. Care shall be exercised in moving the shield so that the previously laid conduit or concrete duct and backfill is not disturbed.

3.05 TUNNELING

- A. Wherever excavation by open cut is impractical, such as in crossing pavement or railroad tracks, the conduit, shall be placed by tunneling, jacking or auguring.
- B. The method of tunneling used shall be such as to insure proper alignment and grade of the conduit, cable or concrete duct in final position. If open tunneling is feasible, the space between the conduit, cable or concrete duct and undisturbed

earth shall be completely filled with a suitable material and thoroughly compacted. If it is required that the conduit, cable or concrete duct be placed inside of a carrier type unit, the space between the two units (conduit cable or concrete duct) shall be filled and prevent future movement. The material used for this bedding shall be concrete sand. The ends of the carrier type unit shall be blocked with a masonry or concrete end wall.

3.06 BACKFILLING AND COMPACTING

- A. Backfill at Conduit, Cable and Concrete Duct Zone:
 - 1. Unless otherwise indicated on Drawings, selected suitable material backfill free from rock, frozen material, large clods of earth, broken concrete, boulders, chunks of wood and similar items, shall be deposited on both sides of the conduit. The backfill material shall be compacted per civil engineer specifications.
- B. Improper Backfilling: Where there is evidence of improper backfilling, trenches shall be re-opened to the depth required for proper compaction and backfilled as specified herein.

3.07 PROTECTION OF EXISTING UTILITIES

- A. All existing utilities and structures shall be protected from damage during excavation and backfilling of trenches. If any of the existing utilities are damaged during construction, the damage shall be properly repaired by CONTRACTOR at his expense.
- B. Before any digging, trenching, or excavation, CONTRACTOR shall notify the local utility company (gas, telephone, electric) and have them locate and identify any existing underground utilities.

3.08 RESTORATION OF SURFACE

Unless otherwise noted on Drawings, CONTRACTOR shall restore to original condition all surfaces disturbed from site drainage and/or utility construction under this Contract.

END OF SECTION 16112

SECTION 16120
WIRES AND CABLES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 DESCRIPTION OF WORK

- A. Extent of electrical wire and cable work is indicated by drawings and schedules.
- B. Types of electrical wire, cable, and connectors specified in this section include the following:
 - 1. Copper conductors
 - 2. Fixture wires
 - 3. Tap type connectors
 - 4. Split-bolt connectors
 - 5. Wirenut connectors
- C. Applications of electrical wire, cable, and connectors required for project are as follows:
 - 1. For lighting circuits.

1.03 QUALITY ASSURANCE

- A. **Manufacturers:** Firms regularly engaged in manufacture of electrical wire and cable products of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. **Installer's Qualifications:** Firm with at least 3 years of successful installation experience with projects utilizing electrical wiring and cabling work similar to that required for this project.
- C. **NEC Compliance:** Comply with NEC requirements as applicable to construction, installation and color coding of electrical wires and cables.
- D. **UL Compliance:** Comply with applicable requirements of UL Std 83, "Thermoplastic-Insulated Wires and Cables", and Std 486A, "Wire Connectors and Soldering Lugs for Use with Copper Conductors".

- E. UL Compliance: Provide wiring/cabling and connector products which are UL-listed and labeled.
- F. ETL Compliance: Provide wiring/cabling and connector products which are ETL-listed and labeled.
- G. NEMA/ICEA Compliance: Comply with NEMA/ICEA Std. Pub/No.'s WC 5, "Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy", and WC-30, "Color Coding of Wires and Cables", pertaining to electrical power type wires and cables.

1.04 SUBMITTALS

Product Data; Submit manufacturer's data on electrical wires, cables, and connectors.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wire and cable properly packaged in factory-fabricated type containers, or wound on NEMA-specified type wire and cable reels.
- B. Store wire and cable in clean dry space in original containers. Protect products from weather, damaging fumes, construction debris and traffic.
- C. Handle wire and cable carefully to avoid abrasing, puncturing and tearing wire and cable insulation and sheathing. Ensure that dielectric resistance integrity of wires/cables is maintained.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products of one of the following (for each type of wire, cable and connector):

1. Wire and Cable:

Apex Wire and Cable Corporation
 American Insulated Wire Corporation
 American Wire and Cable Company
 Anaconda-Ericsson Inc; Wire and Cable Div.
 Berden Div; Copper Industries.
 Brand-Rez Div; Pyle National Company
 Cerro Wire and Cable Company
 Cleveland Insulated Wire Company
 General Cable Corporation
 Helix Wire Corporation
 Hitemp Wires, Inc.
 Indiana Insulated Wire Inc.
 Madison Wire and Cable Corporation
 Phelps Dodge Cable and Wire Company
 Pirelli Cable Corporation
 Radix Wire Company
 Rome Cable Corporation

Southwire Company
Triangle PWC, Inc.

2. Connectors:

AMP, Inc.
Appleton Electric Co; Emerson Electric Company
Burndy Corporation
Brand-Rex Div, Pyle National Company
Electrical Products Div; Midland-Ross Corporation
General Electric Company
Gould, Inc.
Ideal Industries, Inc.
Leviton Mfg Company
3M Company
O-Z/Gedney Company
Southport Industries Inc.
Square D Company
Thomas and Betts Company

2.02 WIRES, CABLES, AND CONNECTORS

- A. General: Provide electrical wires, cables, and connectors of manufacturer's standard materials, as indicated by published product information; designed and constructed as recommended by manufacturer, for a complete installation, and for application indicated. Except as otherwise indicated, provide copper conductors with conductivity of not less than 98% at 20 degrees C (68 degrees F).
- B. Wires: Provide factory-fabricated wires of sizes, ampacity ratings, and materials for applications and services indicated. Where not indicated, provide proper wire selection as determined by Installer to comply with project's installation requirements, NEC and NEMA standards. Selector from the following UL types, those wires with construction features which fulfill project requirements.
1. Type THWN: For dry and wet locations; maximum operating temperature 75 degrees C (167 degrees F). Insulation, flame-retardant, moisture-and heat-resistant, thermoplastic; outer covering, nylon jacket; conductor, annealed copper.

PART 3 - EXECUTION

3.01 INSTALLATION OF WIRES AND CABLES

- A. General: Install electrical cables, wires and wiring connectors as indicated, in compliance with applicable requirements of NEC, NEMA, UL, and NECA's "Standard of Installation", and in accordance with recognized industry practices.
- B. Coordinate wire/cable installation work including electrical raceway and equipment installation work, as necessary to properly interface installation of wires/cables with other work.
- C. Install UL wiring in conduit, for feeders and branch circuits.

1. Pull conductors simultaneously where more than one is being installed in the same raceway.
 2. Use pulling compound or lubricant, where necessary; compound must not deteriorate conductor or insulation.
 3. Use pulling means including fish tape, cable, rope and basket weave wire/cable grips which will not damage cables or raceway.
 4. Keep conductor splices to minimum.
- D. Install splices and tapes which possess equivalent-or-better mechanical strength and insulation ratings than conductors being spliced: Use splice and tap connectors which are compatible with conductor material.
- E. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Std 486A and B.
- F. Bundle and tag each circuit in every handhole.

3.02 FIELD QUALITY CONTROL

- A. Prior to energization of circuitry, check installed wires and cables with megohm meter to determine insulation resistance levels to ensure requirements are fulfilled.
- B. Prior to energization, test wires and cables for electrical continuity and for short-circuits.
- C. Subsequent to wire and cable hook-ups, energize circuitry and demonstrate functioning in accordance with requirement. Where necessary, correct malfunctioning units, and then retest to demonstrate compliance.

END OF SECTION 16120

SECTION 16142

ELECTRICAL CONNECTIONS FOR EQUIPMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 DESCRIPTION OF WORK

- A. Extent of electrical connections for equipment is indicated by drawings and schedules. Electrical connections are hereby defined to include connections used for providing electrical power to equipment.
- B. Applications of electrical power connections specified in this section includes the following:
 - 1. To lighting fixtures.
- C. Electrical identification for wire/cable conductors is specified in Division-16 section, "Electrical Identification", and is work of this section.

1.03 QUALITY ASSURANCE

- A. **Manufacturers:** Firms regularly engaged in manufacture of electrical connectors and terminals, of types and ratings required, and ancillary connection materials, including electrical insulating tape, soldering fluxes, and cable ties, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. **Installer's Qualifications:** Firms with at least 2 years of successful installation experience with projects utilizing electrical connections for equipment similar to that required for this project.
- C. **NEC compliance:** Comply with applicable requirements of NEC as to type products used and installation of electrical power connections (Terminals and Splices), for junction boxes, motor starters, and disconnect switches.
- D. **IEEE Compliance:** Comply with Std 241, "IEEE Recommended Practice for Electric Power Systems in Commercial Buildings" pertaining to connections and terminations.

- E. ANSI Compliance: Comply with applicable requirements of ANSI/NEMA and ANSI/EIA standards pertaining to products and installation of electrical connections for equipment.
- F. UL Compliance: Comply with UL Std. 486A, "Wire Connectors and Soldering Lugs for Use with Copper Conductors" including, but not limited to, tightening of electrical connectors to torque values indicated. Provide electrical connection products and materials which are UL-listed and labeled.
- G. ETL Compliance: Provide electrical connection products and materials which are ETL-listed and labeled.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products of one of the following (for each type of product):

Adalet-PLM Div, Scott and Fetzer Company
 Allen-Stevens Conduit Fittings Corporation
 AMP Incorporated.
 Appleton Electric Company
 Arrow-Hart Div, Crouse-Hinds Company
 Atlas Technologies, Inc.
 Bishop Div, General Signal Corporation
 Burndy Corporation
 Eagle Electric Mfg. Company
 Electroline Mfg Company
 Gardner Bender, Inc.
 General Electric Company
 Gould, Inc.
 Harvey Hubbell Inc.
 Ideal Industries, Inc.
 Pyle National Company
 Reliable Electric Company
 Square D Company.
 Thomas and Betts Corporation

2.02 ACCEPTABLE MANUFACTURERS

- A. General: For each electrical connection indicated, provide complete assembly of materials, including but not necessarily limited to, pressure connectors, terminals (lugs), electrical insulating tape, electrical solder, electrical soldering flux, heat-shrinkable insulating tubing, cable ties, solderless wire-nuts, and other items and accessories as needed to complete splices and termination of types indicated.
- B. Wires, Cables, and Connectors:
- C. General: Provide wires, cables, and connectors complying with Division-16 basic electrical materials and methods section "Wires and Cables".

- D. Wires/Cables: Unless otherwise indicated, provide wires/cables (conductors) for electrical connections which match, including sizes and ratings, of wires/cables which are supplying electrical power. Provide copper conductors with conductivity of not less than 98% at 20 degrees C (68 degrees F).
- E. Connectors and Terminals: Provide electrical connectors and terminals which mate and match, including sizes and ratings, with equipment terminals and are recommended by equipment manufacturer for intended applications.
- F. Electrical Connection Accessories: Provide electrical insulating tape, heat-shrinkable insulating tubing and boots, electrical solder, electrical soldering flux, wirenuts and cable ties and recommended for use by accessories manufacturers for type services indicated.

PART 3 - EXECUTION

3.01 INSPECTION

Inspect area and conditions under which electrical connections for equipment are to be installed and notify Contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.02 INSTALLATION OF ELECTRICAL CONNECTIONS

- A. Install electrical connections as indicated; in accordance with equipment manufacturer's written instructions and with recognized industry practices, and complying with applicable requirements of UL, NEC and NECA's "Standard of Installation" to ensure that products fulfill requirements.
- B. Coordinate with other work, including wires/cables, raceway and equipment installation, as necessary to properly interface installation of electrical connections for equipment with other work.
- C. Connect electrical power supply conductors to equipment conductors in accordance with equipment manufacturer's written instructions and wiring diagrams. Mate and match conductors of electrical connections for proper interface between electrical power supplies and installed equipment.
- E. Cover Splices with electrical insulating material equivalent to, or of greater insulation resistivity rating, than electrical insulation rating of those conductors being spliced.
- F. Prepare cables and wires, by cutting and stripping covering armor jacket, and insulating properly to ensure uniform and neat appearance where cables and wires are terminated. Exercise care to avoid cutting through tapes which will remain on conductors. Also avoid "ringing" copper conductors while skinning wire.

- G. Trim cables and wires as short as practicable and arrange routing to facilitate inspection, testing and maintenance.
- H. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturers published torque-tightening value for equipment connectors. Accomplish tightening by utilizing proper torquing tools, including torque screwdriver, beam-type torque wrench, and ratchet wrench with adjustable torque settings. Where manufacturer's torquing requirements are not available, tighten connectors and terminals to comply with torquing values contained in UL's 486A.
- I. Fasten identification markers to each electrical power supply wire/cable indicating their voltage, phase and feeder number in accordance with Division Identification". Affix markers on each terminal conductor, as close as possible to the point of connection.

3.03 FIELD QUALITY CONTROL

Upon completion of installation of electrical connections, and after circuitry has been energized with rated power source, test connections to demonstrate capability and compliance with requirements. Ensure that direction of rotation of each motor fulfills requirement. Correct malfunctioning units at site, then retest to demonstrate compliance.

END OF SECTION 16142

SECTION 16450

GROUNDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 DESCRIPTION OF WORK

- A. Extent of grounding work is indicated by drawings and schedules.
- B. Types of grounding specified in this section include Solid grounding.
- C. Applications of grounding work in this section include the following:
 - 1. Grounding rods.
 - 2. Service equipment.
 - 3. Enclosures
 - 4. Equipment.
- D. Requirements of this section apply to electrical grounding work specified elsewhere in the specifications.

1.03 QUALITY ASSURANCE

- A. Manufacturers: Firms regularly engaged in manufacture of electrical connectors, terminals and fittings, of types and ratings required, and ancillary grounding materials, including stranded cable, copper braid and bus, ground rods and plates electrodes, whose projects have been in satisfactory use in similar service for not less than 3 years.
- B. Installer: Qualified with at least 3 years of successful installation experience on projects with electrical grounding work similar to that required for project.
- C. NEC Compliance: Comply with applicable requirements of UL Standards Nos. 467 and 869 pertaining to electrical grounding and bonding.
- E. IEEE Compliance: Comply with applicable requirements of IEEE Standard 142 and 241 pertaining to electrical grounding.

1.04 DELIVERY, STORAGE, AND HANDLING

Handle electrical grounding accessories and components carefully to avoid damage; store in original wrappings and protect from dirt and weather.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Subject to compliance with requirements, provide grounding products of one (1) of the following:

- B-Line Systems, Inc.
- Burndy Corporation
- Crouse-Hinds Company
- Electrical Components Div; Gould Inc.
- General Electric Supply Company
- Ideal Industries, Inc.
- Thomas and Betts Corporation

2.02 GROUNDING SYSTEMS

- A. Materials and Components:
- B. General: Except as otherwise indicated, provide electrical grounding systems indicated; with assembly of materials, including, but not limited to, cables/wires, connectors, terminals (solderless lugs), rounding rods/electrodes bonding jumper braid, and additional accessories needed for complete installation. Where more than one type unit meets indicated requirements, selection is Installer's option. Where materials or components are not indicated, provide products complying with NEC, UL IEEE, and established industry standards for applications indicated.
- C. General: Provide raceways, and electrical boxes and fittings complying with Division-16 Basic Materials and Methods sections "Raceways" and "Electrical Boxes and Fittings", in accordance with the following listing:
1. Rigid steel conduit (heavy wall).
 2. Liquid-tight flexible metal conduit.
 3. PVC Schedule 40 rigid plastic.
- D. Conductors: Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials and sized according to NEC.
- E. Conductors: Copper cable.
- F. Bonding Jumper Braid: Copper braided tape, constructed of 30-gauge bare copper wires and properly sized for indicated applications.

- G. Flexible Jumper Strap: Flexible flat conductor, 490 strands of 30-gauge bare copper wire; 3/4" wide, 9-1/2" long; 48,250 c. Protect braid with copper bolt hole ends with holes sized for 3/8" diameter bolts.
- H. Electrical Grounding Connection Accessories: Provide electrical insulating tape, heat-shrinkable insulating tubing, welding materials, bonding straps, as recommended by accessories manufacturers for type services indicated.
- I. Field Welding: Comply with AWS Code for procedures, appearance and quality of welds; and methods used in correcting welding work. Provide welded connections where grounding conductors connect to underground grounding rods/electrodes.

PART 3 - EXECUTION

3.01 INSPECTION

Installer must examine areas and conditions under which electrical grounding connections are to be made and notify Contractor in writing of conditions detrimental to proper completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.02 INSTALLATION OF ELECTRICAL GROUNDING

- A. General: Install electrical grounding systems where shown, in accordance with applicable portions of NEC, with NECA's "Standard of Installation", and in accordance with recognized industry practices to ensure that products comply with requirements and serve intended functions.
- B. Coordinate with other electrical work as necessary to interface installation of electrical grounding system with other work.
- C. Weld grounding conductors to underground grounding rods/electrodes.
- D. Ground all metallic conduits, wireways, metal enclosures of busways, cable boxes, electrical equipment housings and all non-current carrying metallic parts. Use metallic conduit system for equipment and enclosure grounding but not as a system ground conductor. Include a code sized copper grounding conductor in nonmetallic conduits.
- E. Feeder runs and branch circuit wiring in non-metallic conduit shall carry a code sized ground conductor per circuit properly connected for electrical ground continuity.
- F. Do not use flexible conduit as a ground path. Include code sized green conductor in all flex conduit.
- G. Provide bonding devices, fittings or jumpers at expansion fitting, isolation sections or wherever continuity of ground is broken.

END OF SECTION 16450

SECTION 16470

PANELBOARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 DESCRIPTION OF WORK

- A. Extent of panelboard, and enclosure work, including cabinets and cut out boxes is indicated by drawings and schedules.
- B. Types of panelboards and enclosures in this section include Lighting panelboards; 120/240 volts.
- C. Refer to other Division-16 sections for cable/wire, connectors and electrical raceway work required in conjunction with panelboards and enclosures; not work of this section.

1.03 QUALITY ASSURANCE

- A. Manufacturers: Firms regularly engaged in manufacture of water proof free standing panelboards and enclosures, of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. NEC Compliance: Comply with NEC as applicable to installation of panelboards, cabinets, and cut out boxes. Comply with NEC requirements pertaining to installation of wiring and equipment in wet locations.
- C. UL-Compliance: Comply with applicable requirements of Std NO. 67, "Electrical Panelboards", and Stds No.'s 50, 869, 486A, 486B, and 1053 pertaining to panelboards, accessories and enclosures. Provide units which are UL-listed and labeled.
- D. NEMA Compliance: Comply with NEMA Stds Pub/No. 250, "Enclosures for Electrical Equipment (1000 Volts Maximum)", Pub/No. PB1, "Panelboards", and Pub/No. PB 1.1, "Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or less".

- E. Federal Specification Compliance: Comply with FS W-P-115, "Power Distribution Panel", pertaining to panelboards and accessories.

1.04 SUBMITTALS

- A. Comply with pertinent provision of Section 01340.
- B. Product Data: Submit manufacturer's data on panelboards.

PART 2 -PRODUCTS

2.01 MANUFACTURES

Subject to compliance with requirements, provide products of one of the following (for each type and rating of panelboard and enclosure):

Meyers
Unicorn

2.02 PANELBOARDS

- A. General: Except as otherwise indicated, provide meter facilities, panelboards, enclosures and ancillary components, of types, sizes, and ratings indicated, which comply with manufacturer's standard materials, design and construction in accordance with published product information; equip with proper number of unit panelboard devices as required for complete installation. Where types, sizes, or ratings are not indicated, comply with NEC, UL and established industry standards for those applications indicated.
- B. Lighting Panelboards: Provide dead-front safety type lighting and appliance panelboards as indicated, with switching and protective devices in quantities, ratings, types and arrangements shown; with anti-burn solderless pressure type lug connectors approved for copper conductors. Provide suitable lugs on neutral bus for each outgoing feeder required; provide bare uninsulated grounding bars suitable for bolting to enclosures. Select enclosures fabricated by same manufacturer as panelboards, which mate properly with panelboards.
- C. Panelboard Enclosures: Provide zinc coated steel cabinet NEMA 3R type enclosures, in sizes and NEMA types as indicated, code-gauge, minimum 12-gauge thickness. Construct with multiple knockout and wiring gutters. Provide fronts with adjustable trim clamps, and doors with flush locks and keys, all panelboard enclosures keyed alike, with concealed piano door hinges and door swings as indicated. Equip with interior circuit-directory frame, and card with clear plastic covering.

PART 3 - EXECUTION

3.01 INSPECTION

Installer must examine areas and conditions under which panelboards and enclosures are to be installed, and notify Contractor in writing of condition detrimental to proper completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.02 INSTALLATION OF METER/PANEL

- A. General: Install panelboards and enclosures as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC Standards and NECA's "Standard of Installation", and in compliance with recognized industry practices to ensure that products fulfill requirements.
- B. Coordinate installation of panelboards and enclosures with cable and raceway installation work.
- C. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Stds 486A and B.
- D. Anchor enclosures firmly to house keeping pad, ensuring that they are permanently and mechanically secure.
- E. Provide properly wired electrical connection within enclosures.
- F. Fill out panelboard's circuit directory card upon completion of installation work.

3.03 GROUNDING

Provide equipment grounding connections for panelboards as indicated. Tighten connections to comply with tightening torques specified in UL Stds 486A and B to assure permanent and effective grounds.

3.04 FIELD QUALITY CONTROL

- A. Prior to energization of circuitry, check all accessible connections to manufacturer's tightening torque specifications.
- B. Prior to energization of panelboards, check with ground resistance tester phase-to-phase and phase-to-ground insulation resistance levels to ensure requirements are fulfilled.
- C. Prior to energization, check panelboards for electrical continuity of circuits, and for short-circuits.
- D. Subsequent to wire and cable hook-ups, energize panelboards and demonstrate functioning in accordance with requirements. Where necessary, correct malfunctioning units, and then retest to demonstrate compliance.

END OF SECTION 16470

SECTION 16530

SITE LIGHTING FIXTURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. This section is a Division-16 basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

1.02 QUALITY ASSURANCE

- A. Applicable Standards:
 - 1. UL label for ballasts.
 - 2. Ballasts conforming to UL, ANSI and NEMA standards.

1.03 SUBMITTALS

- A. General:
 - 1. Mark each submittal with fixture type designation; indicated data applicable to designated fixture.
 - 2. Owner will require submittal of complete sample fixture for all fixture types.
 - 3. Owner reserves right to require submittal of original photometric test reports by independent testing laboratory for each fixture type specified.
 - 4. Submit photometric run of entire area with submittal package.
- B. Shop Drawings:
 - 1. Catalog number, fixture designation and other information required for complete identification of components and complete unit.
 - 2. Complete bill of material including quantity, description and rating of every component, including lamps, ballasts, fuses and lampholders.
 - 3. Manufacturer's Standard Specification covering construction details, types and gauges of materials and finish for items specified in this Section.
 - 4. Outline Drawings including sections indicating overall dimensions, arrangement of equipment and net weights.
 - 5. Wiring Diagrams.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Refer to Lighting Fixture Schedule for basic fixture descriptions. Provide fixtures with features specified in Article 2.2 below.
- B. Approved site lighting fixture manufacturers.

2.02 MATERIALS

- A. General: Provide fixtures complete with all required self-aligning and adjustable supporting devices, frames and facilities for pole and cable mounting as required.
- B. Fixture housing & finishes as noted in lighting fixture schedule.
- C. Ballasts:
 - 1. Acceptable Manufacturers:
 - Valmont Electric Company
 - Advance Transformer Company
 - Magnetic Lighting Products (Universal)
 - 2. Ballast Case: Heavy gauge steel or aluminum with color-coded neoprene jacketed leads brought out through sealed nipple providing weather-tight unit.
 - 3. Ballast Housing: Integral part of luminaire; cast aluminum, weather-sealed to protect against moisture, corrosion, dust and bug entry.
 - 4. Ballast Characteristics: Newest Technology Pulse Start Metal Halide Ballasts.
 - 5. Noise Control: Designed for quiet operation without amplification of noise due to improper attachment of ballast within compartment.
 - 6. Ballast Fuses: In-the-line type, 600 volt:
 - a. Five Amperes and Less: Bussmann Type HPC-L fuse holder with Type BBS fuse.
 - b. Above Five Amperes: Bussmann Type HPC fuse holder with Type KTP fuse.
 - c. Each ballast separately fused with fuse holder mounted within fixture or ballast compartment.
 - 7. Supply Conductors Minimum Temperature Rating: Marked inside each ballast wiring compartment.
- D. Lampholders:
 - 1. Heavy duty porcelain, rated at 600 volts, base.
 - 2. Integral part of ballast housing or reflector assembly.
 - 3. Designed with protection of socket assemblies against breakage and accidental damage.

- E. Lighting Standards (Poles): As indicated in Lighting Fixture Schedule on Drawings with following features:
 - 1. Pole welded to base.
 - 2. Large reinforced handhold and flush, gasketed cap; located near pole base.
 - 3. Two welded-on ground copper lug inside pole opposite handhold.
 - 4. Four galvanized steel anchor bolts, galvanized hexagonal head nuts (two each bolt), washers and shims.
 - 5. Stainless steel miscellaneous hardware.
 - 6. Designed to withstand wind gusts of 100 miles per hour while equipped with luminaries and accessories.
 - 7. Decorative Base.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install luminaries and standards using necessary hardware and anchor bolts at locations shown on Drawings.
- B. Coordinate installation of fixtures to avoid interferences.
- C. Aim floodlights and adjust luminaries for desired lighting patterns.
- D. Leave fixtures in satisfactory working order, free of dirt and smudges.
- E. Effectively ground fixtures.

END OF SECTION 16530