




Public Works
LOS ANGELES COUNTY

NOTICE INVITING BIDS,
SPECIAL PROVISIONS
AND
SAMPLE AGREEMENT
FOR

PROJECT ID NO. WMU0000010

EAST LOS ANGELES SUSTAINABLE MEDIAN
STORMWATER CAPTURE PROJECT

Approved, MARK PESTRELLA, Director of Public Works

By  Date 6/24/19
Deputy Director

NOTICE INVITING BIDS

Sealed bids will be received by the County of Los Angeles Department of Public Works, Construction Division, for the construction of a storm drain system, filtration units, dry wells, infiltration galleries, slide gates, monitoring wells, landscaping, irrigation, lighting, electrical, and other appurtenant work under Project ID No. WMU0000010, East Los Angeles Sustainable Median Stormwater Capture Project, in the community of East Los Angeles.

Pursuant to State Public Contract Code 3400, the Board of Supervisors made a finding that stormwater flow metering components, groundwater monitoring components, stormwater quality monitoring components, and irrigation system components identified in the Special Provisions are designated by specific brand names in order to match other products in use at other County facilities.

The bids must be submitted at the Cashier's Office, located on the Mezzanine level, 900 South Fremont Avenue, Alhambra, California 91803-1331, before 11 a.m. on Tuesday, September 10, 2019. The bids will then be publicly opened and read in the location posted in the main lobby. **Alternatively, bids may be submitted electronically using Bid Express, www.BidExpress.com.**

The work shall be done in accordance with the Plans and Specifications on file and open for inspection at the Department of Public Works. The work is estimated to cost \$15,000,000 and shall be completed in 280 working days. The prime contractor shall possess a valid California Class A contractor's license. Prebid questions regarding the Plans and Specifications shall be submitted via email only to: Mr. Harry Cong at hcong@pw.lacounty.gov. **Prebid questions will not be accepted after 12 p.m. on Monday, September 2, 2019.**

The bids must be submitted on the proposal forms included in the bidder's package of the contract documents. The contract documents for this project may be downloaded free of charge by visiting the following website:

<http://dpw.lacounty.gov/general/contracts/opportunities/>

Each bid must be accompanied by a certified check, cashier's check, or surety bond payable to County of Los Angeles in an amount equal to at least 10 percent of the bid to guarantee that the bidder will enter into the contract if it is so awarded.

No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code Section 1771.1 (a)]. 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. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

All persons performing the work shall be paid not less than the General Prevailing Wage Determination prepared by the Director of Industrial Relations pursuant to the State Labor Code. Copies of these wage rates are available at the Department of Public Works.

The successful bidder must provide full disclosure of False Claims Act violations, labor law/payroll violations, debarments, and civil/criminal legal actions as provided in the Instructions to Bidders. Failure to complete these forms may result in a determination that the bidder is nonresponsive and/or not responsible.

The contract, if awarded, will be awarded to a responsible contractor with the lowest responsive bid; however, the Board of Supervisors reserves the right to reject any and all bids.

A responsible contractor is one who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the contract. It is the County's policy to conduct business only with responsible contractors.

The County maintains the Contractor Alert Reporting Database (CARD), which is used to track/monitor poorly performing contractors. When a County department identifies a significant performance/non-compliance issue(s) with a contractor, the department will provide notice to the contractor and will give the contractor an opportunity to correct the issue(s). If the contractor does not take any appropriate steps to correct the issue(s), the County department will enter the contractor, along with any other relevant information pertaining to the contractor's performance issue(s), into CARD.

The information entered into CARD can be accessed by all County departments, and will be used, along with any other relevant information not included in CARD, in determining bidder responsibility. If a department reviews this information and determines that a finding of non-responsibility should be pursued, the department will adhere to the guidelines specified in the Los Angeles County Code, Chapter 2.202 and the County's Implementation Procedures for Determinations of Contractor Non-Responsibility and Contractor Debarment.

The County encourages the participation of Community Business Enterprises (CBE) in the project and has established a goal of twenty-five percent CBE participation which all bidders shall aspire to meet. Bidders shall document their good faith efforts to utilize CBEs in accordance with the Special Provisions.

The successful bidder will be required to fully comply with all applicable State and Federal reporting requirements relating to employment reporting for its employees and comply with all lawfully served Wage and Earnings Assignment Orders and Notice of Assignment and continue to maintain compliance throughout the duration of the contract. Failure to comply may be cause for termination of the contract or initiation of debarment proceedings.

The contract is subject to the requirements of the County of Los Angeles' Defaulted Property Tax Reduction Program (Defaulted Tax Program), Los Angeles County Code, Chapter 2.206. Bidders should carefully read the Defaulted Tax Program. The Defaulted Tax Program applies to both contractors and their subcontractors.

Bidders will be required to certify that they are in full compliance with the provisions of the Defaulted Tax Program and shall maintain compliance during the term of the contract, or shall certify that they are exempt from the Defaulted Tax Program by completing a certification of compliance with the County's Defaulted Property Tax Reduction Program. In accordance with Los Angeles County Code, Chapter 2.202, failure to maintain compliance with the Defaulted Tax Program or to cure defects within the time specified may be cause for termination of the contract and/or initiation of debarment proceedings against the noncompliant contractor.

Bids that fail to comply with the certification requirements of the Defaulted Tax Program will be considered nonresponsive and excluded from further consideration.

The successful bidder will be required to submit a faithful performance bond, payment bond, and liability and workers' compensation insurance with the contract.

As provided for in Section 22300 of the State Public Contract Code, the contractor may substitute securities for any monies withheld by the Department of Public Works to ensure performance under the contract, or enter into an escrow agreement for payment of such monies to an escrow agent.

Each person by submitting a response to this Notice Inviting Bids certifies that such bidder and each County lobbyist and County lobbying firm, as defined by Los Angeles County Code, Section 2.160.010, retained by the bidder, is in full compliance with Chapter 2.160 of the Los Angeles County Code.

Para mas informacion con relacion a esta noticia, por favor llame a este numero (626) 458-3118. Nuestras horas de oficina son de 7 a.m. a 5:30 p.m. de Lunes a Jueves.

The County supports and encourages equal opportunity contracting.

By order of the Board of Supervisors of the County of Los Angeles, State of California.

Dated August 6, 2019.

Celia Zavala
Executive Officer of the
Board of Supervisors

CSM: ____

Pre-Bid inquiries regarding the following shall be directed to
Mr. Harry Cong, hcong@pw.lacounty.gov
Include “Pre-Bid Questions for WMU0000010” in the subject line of the email.

A. NOTICE INVITING BIDS

B. SPECIAL PROVISIONS

- SECTION G - GENERAL PROVISIONS
- SECTION EC - ENVIRONMENTAL COMPLIANCE
- SECTION D - DRAINAGE
- SECTION E - ELECTRICAL
- SECTION M - MECHANICAL
- SECTION S - SIGNING
- SECTION SP - STRIPING AND PAVEMENT MARKINGS
- SECTION TC - TEMPORARY TRAFFIC CONTROL
- SECTION TS - TRAFFIC SIGNALS
- SECTION LS - LANDSCAPING AND IRRIGATION

C. SAMPLE AGREEMENT

The following Contract Documents are separate:

1. BID PROPOSAL
2. PLANS
3. INSTRUCTIONS TO BIDDERS



Individuals requiring reasonable accessibility accommodations may request written materials in alternate formats, physical accessibility accommodations, sign language interpreters or other reasonable accommodations by contacting our Departmental Americans with Disabilities Act Coordinator at (626) 458 4081, from 7:30 a.m. to 5:00 p.m., Monday through Thursday (excluding holidays). Persons who are deaf or hard of hearing may make contact by first dialing the California Relay Service at 7-1-1. Requests should be made at least one week in advance to ensure availability. When making a reasonable accommodation request, please reference CON.

PUBLIC WORKS

LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

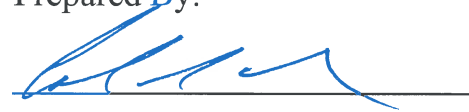
SPECIAL PROVISIONS

SECTION G - GENERAL PROVISIONS

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:



June 18, 2019

Date

Reviewed By:



6/24/19

Date

TABLE OF CONTENTS

PART 1 - GENERAL PROVISIONS

SECTION 1 - GENERAL

1-2 TERMS AND DEFINITIONS	G-1
1-3 ABBREVIATIONS.....	G-3
1-3.2 Common Usage	G-3
1-6 BIDDING AND SUBMISSION OF THE BID	G-3
1-6.1 General.....	G-3
1-6.2 Subcontractor Listing.....	G-3
1-7 AWARD AND EXECUTION OF THE CONTRACT	G-4
1-7.1 General.....	G-4
1-7.2 Contract Bonds	G-5

SECTION 2 - SCOPE OF THE WORK

2-1 WORK TO BE DONE	G-5
2-3 RIGHT-OF-WAY	G-5
2-4 COOPERATION AND COLLATERAL WORK	G-6
2-7 CHANGES INITIATED BY THE AGENCY.....	G-6
2-11 MEETINGS	G-7
2-12 NOTIFICATIONS	G-7
2-13 REQUESTS FOR INFORMATION (RFI)	G-7
2-13.1 General.....	G-7
2-13.2 Submittals	G-8
2-13.3 RFI Log.....	G-9
2-13.4 RFI Response Time	G-9
2-13.5 Quality Assurance.....	G-9
2-13.6 Payment	G-10
2-14 PHOTOGRAPHIC DOCUMENTATION	G-10
2-14.1 General.....	G-10
2-14.2 Preconstruction Photographs	G-11
2-14.3 Periodic Construction Photographs	G-11
2-14.4 Engineer Directed Construction Photographs	G-11
2-15 AS-BUILTS	G-11
2-15.1 General.....	G-11

TABLE OF CONTENTS

SECTION 3 - CONTROL OF THE WORK

3-2 SELF-PERFORMANCE.....	G-12
3-5 INSPECTION.....	G-13
3-6 THE CONTRACTOR’S REPRESENTATIVE.....	G-13
3-7 CONTRACT DOCUMENTS	G-14
3-7.1 General.....	G-14
3-7.2 Precedence of the Contract Documents.....	G-16
3-8 SUBMITTALS.....	G-16
3-8.1 General.....	G-16
3-8.2 Working Drawings.....	G-17
3-8.3 Shop Drawings.....	G-18
3-8.4 Supporting Information	G-18
3-14 NONCOMPLIANCE WITH THE PLANS AND SPECIFICATIONS	G-19

SECTION 4 - CONTROL OF MATERIALS

4-2 PROTECTION	G-19
4-4 TESTING	G-20
4-6 TRADE NAMES.....	G-21

SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES

5-1 LAWS AND REGULATIONS.....	G-22
5-3 LABOR	G-22
5-3.1 General.....	G-22
5-3.2 Prevailing Wages	G-22
5-3.3 Payroll Records.....	G-23
5-3.6 Work Records	G-23
5-3.7 County Equal Employment Opportunity (EEO) Provisions	G-23
5-3.8 Local and Targeted Worker Hire Policy	G-24
5-3.9 Community Business Enterprise (CBE) Participation	G-33
5-4 INSURANCE.....	G-34
5-4.1 General.....	G-34
5-4.2 General Liability Insurance	G-35
5-4.3 Workers Compensation Insurance.....	G-37
5-4.4 Automobile Liability Insurance.....	G-37
5-4.5 Builder’s Risk Course of Construction Insurance	G-38
5-7 SAFETY	G-38
5-7.1 Work Site Safety.....	G-38

TABLE OF CONTENTS

5-7.7 Security and Protective Devices	G-40
5-8 NOT USED.....	G-40

SECTION 6 - PROSECUTION AND PROGRESS OF THE WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK.....	G-41
6-1.1 Construction Schedule	G-41
6-1.2 Commencement of The Work	G-50
6-1.3 Management Meetings	G-51
6-2 PROSECUTION OF THE WORK	G-52
6-2.1 General.....	G-52
6-2.2 Work by Others Due to Unsatisfactory Work Prosecution	G-52
6-2.3 Sequence of Work.....	G-52
6-3 TIME OF COMPLETION	G-54
6-3.1 General.....	G-54
6-4 DELAYS AND EXTENSIONS OF TIME.....	G-54
6-4.1 General.....	G-54
6-4.2 Extensions of Time	G-54
6-5 USE OF IMPROVEMENT DURING CONSTRUCTION	G-55
6-7 TERMINATION OF THE CONTRACT FOR DEFAULT	G-55
6-8 TERMINATION OF THE CONTRACT FOR CONVENIENCE.....	G-55
6-9 LIQUIDATED DAMAGES.....	G-55

SECTION 7 - MEASUREMENT AND PAYMENT

7-2 LUMP SUM WORK.....	G-56
7-3 PAYMENT.....	G-56
7-3.1 General.....	G-56
7-3.2 Partial and Final Payment.....	G-56
7-3.3 Delivered Materials	G-57
7-3.4 Mobilization.....	G-58
7-3.5 Contract Unit Prices.....	G-59
7-3.9 Allowance Items	G-59
7-4 PAYMENT FOR EXTRA WORK	G-60
7-4.2 Basis for Establishing Costs	G-60
7-4.3 Markup.....	G-61
7-6 CLAIMS.....	G-62
7-7 FINAL PAY ITEMS	G-64

TABLE OF CONTENTS

SECTION 8 - FACILITIES FOR AGENCY PERSONNEL

8-1 GENERAL G-65
8-2 FIELD OFFICE FACILITIES G-65
8-2.1 Class "A" Field Office..... G-65
8-6 BASIS OF PAYMENT G-68

PART 4 - EXISTING IMPROVEMENTS

SECTION 400 - PROTECTION AND RESTORATION

400-1 GENERAL G-68
400-2 PERMANENT SURVEY MARKERS G-68

SECTION 402 - UTILITIES

402-1 LOCATION..... G-69
402-1.1 General..... G-69
402-1.2 Payment G-70
402-1.3 Exploratory Excavations G-71
402-2 PROTECTION G-72
402-2.1 General..... G-72
402-4 RELOCATION G-73
402-5 DELAYS DUE TO UTILITY CONFLICTS G-74

INSURANCE ENDORSEMENT SAMPLE..... G-75

PART 1 GENERAL PROVISIONS

SECTION 1 - GENERAL

1-2 TERMS AND DEFINITIONS. (Page 1 of the SSPWC)

Agency –

Add the following to the definition in the Standard Specifications:

The Agency is the County of Los Angeles.

Board –

Replace the definition in the Standard Specifications with the following:

The Board of Supervisors of the County of Los Angeles.

Engineer –

Replace the definition in the Standard Specifications with the following:

The Director of Public Works of the County of Los Angeles acting either directly or through authorized agents. Pursuant to the authority of the Los Angeles County Code, the term "Director of Public Works" shall mean the Road Commissioner or County Engineer, County of Los Angeles; or Chief Engineer, Los Angeles County Flood Control District; as appropriate.

Working Day –

Replace subparagraphs "e" and "f" with the following:

- e) any day the Contractor is prevented from working at the beginning of the workday for cause as specified in 6-4.1 and the following:
 - 1) Inclement weather or conditions resulting immediately therefrom.
 - 2) Installation, relocation and/or alteration of public and/or private utilities by others.

or,

- f) any day the Contractor is prevented from working during the first 5 hours with at least 60 percent of the normal work force for cause as specified in 6-4.1 and the following:
 - 1) Inclement weather or conditions resulting immediately therefrom.
 - 2) Installation, relocation and/or alteration of public and/or private utilities by others.

Add the following:

Allowance – An amount established in the Bid by the Agency for the purpose of reimbursing the Contractor for its actual expenses plus the specified markup for an item of work.

Bid Guaranty – The cash, certified check or Bidder's surety bond accompanying the Bid as a guaranty that the Bidder will enter into a Contract with the Board for the performance of the Work.

Board Acceptance – The determination by the Board that all of the requirements contained in the Contract Documents have been fulfilled as specified in 3-13.2 of the SSPWC.

Claim – A separate demand by the Contractor for:

- a) a time extension,
- b) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for, or the claimant is not otherwise entitled to, or
- c) an amount, the payment of which is disputed by the Agency.

County – The County of Los Angeles.

Department – Los Angeles County Public Works.

Field Acceptance – The determination by the Engineer that the Work has been completed in conformance with the Contract Documents as specified in 3-13.1 of the SSPWC.

Project – See Work.

Quality Assurance – Those standards, systems, processes, procedures and activities exercised by the Agency and the Engineer to ensure that the Work is constructed by the Contractor in accordance with the Contract Documents.

Quality Control – Those standards, systems, processes, procedures and activities exercised by the Contractor to ensure that the Work is constructed in accordance with the Contract Documents.

1-3 ABBREVIATIONS.

1-3.2 Common Usage. (Page 5 of the SSPWC)

Add the following abbreviations:

<u>Abbreviation</u>	<u>Word or Words</u>
NTP	Notice to Proceed

1-6 BIDDING AND SUBMISSION OF THE BID.

1.6-1 General. (Page 10 of the SSPWC)

Replace the entire paragraph with the following:

Bidding and submission of the Bid shall conform to the requirements specified in the Instructions to Bidders and Notice Inviting Bids.

1-6.2 Subcontractor Listing. (Page 10 of the SSPWC)

Replace subheading a) with the following:

- a) The name, the location of the place of business, the California contractor license number, and public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under

subcontract to the prime contractor, 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 1 percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars (\$10,000), whichever is greater.

1-7 AWARD AND EXECUTION OF THE CONTRACT. (Page 10 of the SSPWC)

Replace the entire subsection with the following.

1-7.1 General. No Contractor or Subcontractor may be listed on a Bid Proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 (with limited exceptions from this requirement for Bid purposes only under Labor Code section 1771.1(a)). 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.

Upon determination of the lowest responsive and responsible Bidder, the Agency will recommend to the Board award of the Contract to that Bidder. Upon award of the Contract by the Board, the Agency will issue a Notice of Award to the Contractor.

Various documents and instructions for their completion will be mailed to the Contractor prior to issuance of the Notice of Award. The Contractor shall submit the completed documents to the Agency within the time specified.

The Notice to Proceed will be issued per 6-1.2.

1-7.2 Contract Bonds. (Page 11 of the SSPWC)

Replace the second and third sentences of the first paragraph with the following:

Bonds shall be duly executed by a solvent surety company that is authorized by the State of California, is listed in the United States Department of the Treasury's Listing of Approved Sureties (Treasury Circular 570) (www.fms.treas.gov/c570/) and is satisfactory to the Agency.

SECTION 2 - SCOPE OF THE WORK

2-1 WORK TO BE DONE. (Page 11 of the SSPWC)

Add the following:

The estimated quantities of work and materials to be performed, constructed or furnished by the Contractor under this Contract are as shown on the Schedule of Prices in the Bid Proposal.

2-3 RIGHT-OF-WAY. (Page 11 of the SSPWC)

Delete the last sentence.

Add the following:

The Contractor shall conduct all of its activities and operations within the rights of way provided by the Agency or within the confines of public thoroughfares. The Contractor shall not allow its employees to use private property for any reason or to use water or electricity from such property without written permission from the owner.

If, for any reason, the Contractor elects to encroach upon other lands, it shall first obtain written permission from the owner and provide evidence of such permission in writing to the Engineer prior to entering upon such lands. In performing any work or doing any activity on lands outside of public rights of way, the Contractor shall comply with all applicable Federal, State and local laws, ordinances, and regulations. The Contractor shall indemnify and hold the Agency harmless from all claims or suits for damages occasioned by such work or activity, whether done in compliance with this subsection and with permission from the owner or in violation of this subsection without permission from the owner.

2-4 COOPERATION AND COLLATERAL WORK. (Page 12 of the SSPWC)

Add the following after the last paragraph:

When the Plans indicate that a portion or all of the above work is to be performed by others, the Contractor shall notify the Engineer a sufficient amount of time in advance of construction to enable the Engineer to give the affected agency 72 hours notice to perform the work. This shall also apply to all other facilities of a similar nature which are located in public streets over which another agency has jurisdiction or control, and which must be relocated, reconstructed, or modified to permit or facilitate the construction of the Project. Such relocation, reconstruction, or modification will be requested when, in the opinion of the Engineer, such work is necessary for construction of the Project. This work will be performed at no cost to the Contractor. However, relocation, reconstruction, or modification of the above-mentioned facilities performed for the convenience of the Contractor, or because of damage caused by the Contractor's operations, shall be at the Contractor's expense.

2-7 CHANGES INITIATED BY THE AGENCY.**2-7.1 General.** (Page 12 of the SSPWC)

Add the following after the first paragraph:

A Change Order will require the prior approval of the Board, which will be obtained by the Engineer, when the dollar value exceeds:

- a) \$5,000 when the Contract Price does not exceed \$50,000;
- b) 10 percent of the Contract Price when the Contract Price exceeds \$50,000, but does not exceed \$250,000; or
- c) \$25,000 plus 5 percent of the Contract Price in excess of \$250,000 up to a not to exceed total of \$210,000.

Add the following subsections:

2-11 MEETINGS. The Contractor shall attend and participate in all meetings scheduled by, or at the request of, the Engineer. These include, but are not limited to, a regularly scheduled weekly on-site meeting for the purposes of the management of the construction and Project site operations. The Contractor shall make available those resources, reports and records necessary to effectuate timely and productive management meetings.

2-12 NOTIFICATIONS. Three weeks prior to the start of construction, the Contractor shall notify the schools and agencies listed below:

<u>School and address Or Service Agency</u>	<u>Contact Name</u>	<u>Telephone no. or Email Address</u>
Montebello Park Elementary 6300 Northside Dr. East Los Angeles, CA 90022	Gina Andujo Principal	andujo_gina@montebello.k12.ca.us
Los Angeles County Sheriff	Sergeant Mort Deputy Buckband (Outreach Program Director)	(323) 981-5025 (323) 981-5024 sbuckba@lasd.org

At least 24 hours in advance of closing or restricting access to any property, the Contractor shall notify the owner or resident of said property. A copy of said notification shall be provided to the Engineer. The Contractor shall conduct its operations, including those of its subcontractors and suppliers, so as to provide reasonable access to the adjacent properties and have no greater length or quantity of work under construction than can be properly prosecuted with a minimum of inconvenience to the public and other contractors engaged on adjacent or related work.

2-13 REQUEST FOR INFORMATION (RFI).

2-13.1 General. A RFI shall be submitted to the Engineer when:

- a) An unforeseen condition or constructability question occurs.
- b) Questions regarding information in the Contract Documents arise.
- c) Information not found in the Contract Documents is required.

2-13.2 Submittals. When possible, such clarification shall be requested either verbally or in writing at the next scheduled Project meeting. When the RFI is answered at the Project meeting, the RFI shall be numbered and the response shall be entered into the meeting minutes. When the urgency of the need or the complexity of the item makes clarification at the next scheduled Project meeting impractical, a formal written RFI shall be submitted to the County. The Contractor shall use Primavera Expedition 9.1 (or the latest version) to prepare and submit RFIs unless otherwise instructed by the Engineer.

RFIs shall be submitted within a reasonable time frame so as not to interfere with or impede the progress of the Work. The Contractor shall make every effort to keep the number of RFIs to a minimum. If the number of RFIs becomes unwieldy, the Agency may require the Contractor to abandon the RFI process and submit requests as either submittals, substitutions, or requests for change.

When the response to an RFI effects the cost or time duration of the project, the Agency shall be notified in accordance with the 2-12 at the time of the submittal. Notification shall occur prior to commencing such work, so the Change Order process can be initiated. At the time of the RFI submittal, the Contractor shall notify the Agency of the time available before the response will cause a time or cost impact to the Project. An answered RFI shall not be construed as approval to perform extra work.

2-13.2.1 Submittal Form. Four copies of the written RFI request shall be submitted. The written request shall be legible, on a standard CSI or AIA preprinted form or other such form as approved in advance by the Agency (an email followed by 4 copies forwarded by first class mail is acceptable.) Each RFI request shall include the following information:

- a) Project name and project identification number, as listed on the Contract Documents;
- b) Date;
- c) RFI number;
- d) Contractor's name, address, telephone and e-mail address;
- e) Number and title of affected Specification Section(s);
- f) Drawing numbers and detail numbers as appropriate;
- g) Whether the RFI will result in a time or cost impact;
- h) Clear, concise explanation of information or clarification requested;

- i) Blank, lined spaces for Engineer's response;
- j) Signature block for Agency to acknowledge review of Engineer's response;
- k) Each page of each RFI attachment shall be marked in the lower right corner with the RFI number;
- l) Submitted RFIs shall be numbered consecutively; and
- m) All RFI forms shall be signed and stamped.

RFIs from the subcontractor or material supplies shall be submitted through the Contractor. The Contractor shall review all such information request prior to submitting to the Engineer.

RFIs not meeting the requirements of this section will not be answered and any consequential impact on the Project shall be the sole responsibility of the Contractor. Unanswered RFIs will be returned with a stamp or notification "Not Reviewed."

2-13.3 RFI Log. The Contractor shall maintain a RFI log. The log shall be updated weekly and furnished to the Agency when requested. The log shall contain the following minimum information:

- a) RFI number
- b) Date submitted
- c) Brief description of content or subject
- d) Date answered

2-13.4 RFI Response Time. A minimum of five (5) Working Days shall be allowed for review and response. The response time will be increased if more information is required, when the RFI is submitted out of sequence, or if in the opinion of the Agency, more time is required to answer the RFI.

2-13.5 Quality Assurance. The Contractor shall review the Contract Documents carefully before submitting a RFI to the Agency. The information requested shall be verified that it is not indicated in the Contract Documents or cannot be determined from a careful review. The Agency will not answer RFIs for information that is readily available in the Contract Documents.

RFIs requesting clarification of coordination issues, shall include Contractor's suggested solution as an attachment to the RFI. Such coordination issues include, but are not limited to, pipe and duct routing, clearances, specific locations of work shown diagrammatically, and similar items. Scale drawings or sketches indicating the proposed solution shall be provided. RFIs which do not include a suggested solution will not be answered.

RFIs shall not be used for the following:

- a) To request approval of submittals,
- b) To request approval of substitutions,
- c) To request changes to the Contract Documents and to confirm action taken by the Contractor for requested changes/substitutions to the Contract Documents.

2-13.6 Payment. Payment for RFIs shall be considered as included in the prices in the Bid for the various items of work.

2-14 PHOTOGRAPHIC DOCUMENTATION.

2-14.1 General. The Contractor shall provide photographic documentation, which shall include preconstruction photographs and periodic construction photographs. Photographic documentation shall be submitted to the Engineer with the Monthly Schedule Updates.

The photographic documentation shall conform to the following requirements:

- a) Photographic images shall be digital images, which shall be in JPEG format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.
- b) Photographs shall be taken using the maximum range of depth of field, and that are in focus, to clearly show the work. Photographs with blurry or out-of-focus areas will not be accepted.
- c) A key plan shall be maintained with each set of construction photographs that identifies each photographic location.
- d) The digital images shall be submitted exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

- e) The date and time shall be included in the file name for each digital image.
- f) One set of digital images on CD-ROM shall be maintained in the field office at the project site, available at all times for reference. These digital images shall have the same identification as those submitted to the Engineer.

2-14.2 Preconstruction Photographs. Before commencement of demolition or commencement of construction, photographs of the project site and surrounding properties, including existing items to remain during construction, shall be taken from different vantage points.

2-14.3 Periodic Construction Photographs. Photographs shall be taken weekly. Vantage points shall be selected to show status of construction and progress since last photographs were taken.

2-14.4 Engineer Directed Construction Photographs. From time to time, the Engineer may instruct the Contractor about the number and frequency of photographs and subject, and the general directions or vantage points for photographs. Photographs shall show status of construction and progress since last photographs were taken.

Payment for photographic documentation shall be considered as included in the prices in the Bid for the various items of work.

2-15 AS-BUILTS.

2-15.1 General. The Contractor shall keep one (1) complete and up-to-date set of prints (Plans and Specifications) at all times on the job, reserved for use as a record set of changes from the bid set. Throughout the duration of the construction work, this set of prints shall be the responsibility of the Contractor to maintain as a record of all field changes, including underground runs which are installed in locations other than those indicated on the Plans and those that have been indicated as to be field run as located. The lines shall be located on the Plan dimensionally from a fixed point, such as a street-curb line, or centerline, or a permanent structure. A copy of the updated as-built Plans and as-built Specifications shall be made available to the Agency.

Contractor progress payment will be contingent upon the as-built Plans and Specifications being maintained in current status, and the Agency will not approve progress payments unless these as-built Plans and specifications are current.

As a condition to certifying the final payment under this Contract, within 30 calendar days after completion, the Contractor will submit to the Engineer the original set of as-built Plans as well as the set of as-built specifications. If needed, a complete set of Plans will be furnished to the Contractor for which the as-built Plans are required. All variations from the Plans and any additional information required by the Specifications shall be entered on the as-built Plans and specifications as they occur, neatly and legibly, in ink of a contrasting color or otherwise marked as approved by the Agency. Each set of as-built Plans and specification shall be signed and dated before being accepted by the Agency at the completion of the Work.

The as-builts shall conform to the following requirements:

- a) New information that is important to the Agency, but was not shown on the Plans, shall be marked on the as-builts.
- b) Where applicable, Change Order numbers shall be noted.
- c) The as-builts shall be bound and marked "as-builts" with dates and other identification on the title sheet.

Payment for as-builts shall be considered as included in the prices in the Bid for the various items of work.

SECTION 3 - CONTROL OF THE WORK

3-2 SELF-PERFORMANCE. (Page 14 of the SSPWC)

Add the following as the second paragraph:

The following work will be considered "Specialty Items":

- a) Item 12 – ELECTRICAL WORK
- b) Item 22 – DRILL 72” DIAMETER HOLE

3-5 INSPECTION. (Page 14 of the SSPWC)

Add the following:

As part of the administration of the Contract and the inspection process, the Agency will perform Quality Assurance compaction testing as required. For unclassified fill, structure backfill, roadway subgrade, base material, trench backfill, and other compacted fills of any nature, the first Quality Assurance compaction test will be performed at no cost to the Contractor. In the event that additional Quality Assurance compaction tests are required due to the failure of the Contractor to construct to the required density, the sum of \$250 for each such additional test will be deducted from any monies due the Contractor.

The Contractor and the Engineer shall confer prior to the start of the Work and review the Contractor's schedule. The Engineer will designate those operations which will require continuous inspection by the Agency. Should the Contractor perform any operations requiring continuous inspection for more than eight hours on any Working Day or perform any work on a day other than a Working Day, the Agency will deduct from any monies due the Contractor the amount of \$100 per hour for each hour or portion thereof that the Contractor performs such work. The Agency reserves the option to waive this stipulation if it is in its best interests.

Unless otherwise directed by the Engineer, the Agency will perform one inspection and one re-inspection of underground conduit and appurtenant structures. Should subsequent re-inspections be required due to the work not being in conformance with the Plans and Specifications, the Agency will deduct from any monies due the Contractor the amount of \$300 per hour for each hour or portion thereof required for the time necessary to perform the second and subsequent re-inspections.

3-6 THE CONTRACTOR'S REPRESENTATIVE. (Page 14 of the SSPWC)

Add the following as the last paragraph:

The failure of the designated representative(s) to faithfully prosecute the Work, including, but not limited to, failure to adhere to the Contractor's construction schedule shall be deemed grounds for removal from the Work per 5-3.1.

3-7 CONTRACT DOCUMENTS.

3-7.1 General. (Page 15 of the SSPWC)

Add the following:

The Standard Specifications for Public Works Construction and the Standard Plans for Public Works Construction are both promulgated by Public Works Standards, Inc. These publications are available for purchase from BNi Building News, Inc., 1612 South Clementine Street, Anaheim, California 92802, (800) 873-6397, www.bnibooks.com. **These publications are copyrighted, and the Agency will not provide copies.**

Standard Plans of the Los Angeles County Department of Public Works are available for purchase in the Agency's Cashier's Office located at 900 South Fremont Avenue, Alhambra, California 91803-1331, (626) 458-6959, or for downloading on the internet, www.ladpw.org/des/Design_Manuals/StandardPlan.pdf.

Add the following subsections:

3-7.1.1 Plans. Included as part of the Contract Documents are the following which show the location, character, dimensions or details of the Work:

a) Project Plans

- 1) Drainage Plans (Plan DR) - 26 sheets
- 2) Electrical Plans (Plan EE) - 14 sheets
- 3) Landscape Plans (Plan LS) - 27 sheets
- 4) Mechanical Plans (Plan ME) - 10 sheets
- 5) Signing and Striping Plans (Plan SP) - 2 sheets
- 6) Traffic Control Plans (Plan TC) - 8 sheets

b) Standard Plans

- 1) Standard Plans for Public Works Construction 2012 Edition, promulgated by Public Works Standards, Inc. (included by reference only):

100-2	101-2	112-2	120-2	121-2	122-2
132-3	133-3	134-2	224-2	300-3	302-3
308-2	309-2	310-3	312-4	313-3	320-2
321-2	326-2	327-2	331-3	332-2	333-2
335-2	342-2	380-4	523-2	630-4	633-4
635-3					

- 2) Standard Plans of the Los Angeles County Department of Public Works, 2000 Edition (included by reference only):

3080-3	3090-1	3091-1	3093-1	6002-1	6008-1
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- 3) Caltrans Standard Plans, 2015 edition (included herein at the end of Section D):

RSP A88A (7-21-17)	RSP A88B (7-21-17)
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- 4) Caltrans Standard Plans, 2018 edition (included herein at the end of Section SP):

A20 (A-D)	A24 (A-E)
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- 5) City of Los Angeles Bureau of Engineering (included herein at the end of Section D):

S-342-4

3-7.1.2 Specifications. The Work shall be constructed or done in accordance with these Special Provisions and the following:

The "Standard Specifications for Public Works Construction 2018 Edition," hereinafter referred to as the "Standard Specifications."

3-7.2 Precedence of the Contract Documents. (Page 15 of the SSPWC)

Replace the order of precedence under the first paragraph with the following:

- a) Permits issued by jurisdictional regulatory agencies.
- b) Change Orders and/or Supplemental Agreements; whichever occurs last.
- c) Contract/Agreement.
- d) Addenda.
- e) Bid/Proposal.
- f) Special Provisions.
- g) Plans.
- h) Agency Standard Plans.
- i) Other Standard Plans.
- j) Notice Inviting Bids.
- k) Instructions to Bidders.
- l) Standard Specifications for Public Works Construction.
- m) Reference Specifications.

Detail drawings shall take precedence over general drawings.

3-8 SUBMITTALS.**3-8.1 General.** (Page 15 of the SSPWC)

Replace the second paragraph with the following:

The Contractor shall allow a minimum of 20 Working Days for each review, unless otherwise approved by the Engineer. Review periods are not cumulative. The aforementioned time frames begin anew upon each submission whether the initial submission or a resubmission after a prior review by the Agency. Each set of submittals shall be accompanied by a letter of transmittal describing exactly what is being transmitted.

Add the following:

Submittals shall be submitted to:

Ms. Regina Quan
 Los Angeles County Public Works
 Construction Division, 8th Floor
 900 South Fremont Avenue
 Alhambra, CA 91803
 Business hours: 7:00 a.m. - 5:00 p.m. Monday through Thursday
 Telephone No. (626) 300-3255
 FAX No. (626) 458-2197
 Email Address: rquan@dpw.lacounty.gov

Mailing Address:

P.O. Box 1460
 Alhambra, CA 91802-1460

All submittals shall be submitted and approved prior to issuance of the Part 2 NTP unless otherwise specified herein or approved by the Engineer.

No work shall begin on the respective items of work which require a submittal until the submittals for those items of work have been approved in writing by the Agency.

3-8.2 Working Drawings. (Page 16 of the SSPWC)

Add the following to Table 3-8.2:

Item	Subsection Number	Title	Subject
15	306-16.1.1	Drilling Method/Temp. Steel Casings	Dry Wells
16	E-5 1.1 (B)	Conduit Layout	
17	M-1.1.1	Cast Iron Slide Gate Assembly	
18	M-2.2	Mechanical Equipment	
19	306-3.7	Manholes	Control Operations
20	306-7.8	Water Pressure Test	
21	306-7.9	Temporary Bulkheads	

Falsework shall be designed in accordance with Section 51-1.06, 55-1.05, and 86-6.11 of the State of California Department of Transportation (Caltrans) Standard Specifications, 2015 edition.

Working Drawings listed as Items 7, 8, 9, and 10 in Table 3-8.2 shall be prepared on 2-foot x 3-foot sheets.

Replace the fourth paragraph with the following:

Working Drawings listed as Items 2, 4, 5, 6, 7, 9, 10, 11, 12, 13, and 15 in Table 3-8.2 shall be prepared, wet stamped, and signed by a Civil or Structural Engineer registered by the State of California.

3-8.3 Shop Drawings. (Page 16 of the SSPWC)

Add the following to Table 3-8.3:

Item	Subsection Number	Title	Subject
7	207-2.1	Reinforcement and Perforations	Drywell RCP
8	218-1.2	System Components	Filtration Unit
9	306-16.1.1	52" RCP casings	
10	800-1.8.6	Interpretive Sign	Graphic Panel
11	M-1.1.1	Cast Iron Slide Gate	
12	M-1.1.1	Equipment Vaults and appurtenances	
13	M-1.1.1	Drive Shaft Covers	
14	M-1.1.1	Bevel Gear Pedestals and Support	
15	M-1.1.1	Weir Plate and appurtenances	
16	M-1.1.1	Flow Meter Mount Bracket Cut-Away	
17	215-1.1	Traffic Signs and Posts	

Add the following:

Shop Drawings listed above as Items 7 and 9 shall be prepared, wet stamped, and signed by a Civil or Structural Engineer registered by the State of California.

3-8.4 Supporting Information. (Page 16 of the SSPWC)

Add the following:

- n) Detailed schedule for "IMPLEMENTATION OF THE SWPPP" per 7-2 and Section EC 3-12.6.3.
- o) Stabilization Geotextile per Section LS, 800-1.8.9.
- p) Root Control Barrier and Root Sealer per Section LS, 800-1.7

- q) Electrical Systems per Section E
- r) Mechanical Systems per Section M-1.1.3

Add the following subsection:

3-14 NONCOMPLIANCE WITH THE PLANS AND SPECIFICATIONS. Failure of the Contractor to comply with any requirement of the Plans and Specifications, and to immediately remedy any such noncompliance upon notice from the Engineer, may result in suspension of Contract progress payments on all items of work. Any progress payments so suspended shall remain in suspension until the Contractor's operations are brought into compliance to the satisfaction of the Engineer. Upon determination by the Engineer that the Contractor is in compliance, progress payments will resume for those items of work which have been constructed in conformance with the Plans and the Specifications. No additional compensation shall be due the Contractor as a result of the suspension of progress payments due to noncompliance with the Plans and Specifications.

SECTION 4 - CONTROL OF MATERIALS

4-2 PROTECTION. (Page 22 of the SSPWC)

Add the following:

The Contractor shall assume all risks and expenses, including the costs of any interferences, delays to its operations and the protection from, or the repair of, damage to improvements being constructed under the Contract, as may be caused by water of whatever quantity from floods, storms, industrial waste, irrigation, underground or other sources. However, the Contractor shall be entitled to an extension of time per 6-6. The Contractor shall also assume full responsibility for, and the expense of, protecting or removing and returning to the Work site, all equipment or materials under its care endangered by any action of the elements.

The Contractor shall provide the Agency with emergency callback information for the Project. The callback information shall include current names, titles, and telephone numbers for both primary and secondary response personnel.

When rain or severe weather is forecast the following procedures shall be implemented:

- a) To ensure a timely and proper response, the Contractor shall designate primary and secondary responders. Responders shall be trained personnel such as field superintendents or foremen who are properly equipped with communication devices, tools, and equipment, and who have the authority and ability to make critical on-site decisions and commit the Contractor's resources.
- b) Contractor responders and the Engineer will patrol the Work site and identify potential hazards or problems. Should a potential hazard or problem be identified in the absence of a Contractor responder, the Engineer will notify and request a Contractor-designated emergency responder report to the Work site immediately.
- c) If notified, the Contractor's responder shall report immediately, irrespective of the day or time, to the Work site and take necessary corrective actions including emergency and/or temporary repairs.
- d) If the Contractor fails to respond, the Engineer will arrange for Agency forces to perform the necessary work. The cost to perform this work and related expenses will be deducted from any monies due the Contractor.

4-4 TESTING. (Page 22 of the SSPWC)

Add the following after the first paragraph:

Unless otherwise specified, initial review of mix design submittals and acceptance testing of a material proposed for use on the Project from up to two sources will be performed by the Agency at no cost to the Contractor. Any additional tests from another source or retest beyond the allowable shall be at the Contractor's expense. The Agency will deduct from any monies due the Contractor the amount of \$250 per each additional test.

The Agency's materials testing laboratory is located at:

1537 Alcazar Street,
Los Angeles, California 90033, (626) 458-1707.

The Contractor shall notify the Engineer 24 hours in advance of its request for inspection and testing laboratory services for each specific operation. The Engineer will make arrangements for such services which require the presence of Agency personnel not assigned to the Project.

Should the Contractor's operations or a change in schedule result in Agency personnel being delayed in performing the requested services, the Agency will deduct from any monies due the Contractor the amount of \$100 per hour of delay or portion thereof.

4-6 TRADE NAMES. (Page 23 of the SSPWC)

Replace the entire subsection with the following:

Pursuant to the Public Contract Code, Section 3400, the Contractor may supply any of the products or materials specified or offer an equivalent except for the components identified by specific brand or trade name in Enclosure A included at the end of this Section G. Pursuant to Public Contract Code 3400, the Board has made a finding that those components are designated by brand or trade name in order to match other products in use on County facilities either completed or in the course of completion.

A listing of materials is not intended to be comprehensive, or in order of preference. The Contractor may offer any material or product it considers to be an equivalent to that specified.

If the Contractor wishes to request consideration of a proposed "equal" product or material, it shall submit such request in writing to the Agency within 2 Working Days after the date of the Bid opening on the Submissions of Equals form available at the following website address:

http://dpw.lacounty.gov/contracts/resources/doc/Submission_of_Equals.pdf

Requests received after that time period will not be considered.

The Contractor shall, at its expense, furnish information supporting the proposed "equal" product or material offered within 10 Working Days after the date of the Bid opening.

The Contractor shall have the material tested as required by the Engineer to determine if the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the proposed "equal" will fulfill the intended function. Test methods shall be subject to the approval of the Engineer. Test results shall be reported promptly to the Engineer, who will evaluate the results.

The Agency will review the supporting information within 5 Working Days from the date of submission. The findings of the Agency shall be final.

If the proposed “equal” product or material is determined by the Agency to not be equivalent to the specified product or material, the Contractor shall furnish and install the specified product or material.

Agency-approved "equal" products or materials shall not be installed nor put into usage without the prior approval of the Engineer.

The Contract time of completion specified in 6-3 shall not be affected by any circumstance arising from the provisions of this subsection.

SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES

5-1 LAWS AND REGULATIONS. (Page 24 of the SSPWC)

Add the following:

When required by City ordinance, the Contractor shall obtain and pay for a City business license.

5-3 LABOR.

5-3.1 General. (Page 24 of the SSPWC)

Add the following:

This Project is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations.

5-3.2 Prevailing Wages. (Page 25 of the SSPWC)

Add the following after the second sentence:

The Agency will furnish copies of said wage rates for the Contractor's use.

Add the following:

The General Prevailing Wage Rate Determinations are available at www.dir.ca.gov/DLSR/PWD/index.htm. Copies of the General Prevailing Wage Determinations are on file at the Los Angeles County Public Works, Construction Division, 8th Floor, 900 South Fremont Avenue, Alhambra, CA 91803-1331, telephone (626) 458-3104. Copies will be made available to any interested party upon request. Future effective wage rates will be on file with the Department of Industrial Relations and are referenced but not printed in said publication. The new wage rates shall become effective on the day following the expiration date of the current determinations and apply to the Contract in the same manner as if they had been included or referenced in the Contract.

5-3.3 Payroll Records. (Page 25 of the SSPWC)

Replace the entire subsection with the following:

Pursuant to Section 1776 of the California Labor Code, the Contractor shall keep accurate payroll records (“certified payroll records”) showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee the Contractor employs in connection with the Work.

Whenever so requested by the Engineer, the Contractor shall submit to the Engineer a certified copy of each such employee’s payroll record (“certified payrolls”) at the end of each week for the period ending the previous week. Failure to submit such payroll records will result in the Agency withholding from any monies due the Contractor the amount of \$250 for each week in which certified payrolls have not been submitted.

Add the following subsections:

5-3.6 Work Records. Pursuant to Section 1812 of the California Labor Code, the Contractor shall maintain an accurate written record of all employees working on the Project each calendar day. The record shall include each employee's name, Social Security number, job classification and the actual number of hours worked. The Contractor shall submit a signed copy of this record to the Engineer at the end of each week.

5-3.7 County Equal Employment Opportunity (EEO) Provisions. The Agreement will contain a section of the same title (refer to the "Sample Agreement"). The Contractor shall submit the form mentioned to the Engineer before the start of the Work and twice each year, once before March 10, and again before September 10. Failure to so submit will result in the deduction prescribed.

5-3.8 Local and Targeted Worker Hire Policy.

5-3.8.1 Mandatory Hiring Goals.

The County of Los Angeles has implemented a Local and Targeted Worker Hire Policy (LTWHP) to facilitate the hiring of Local and Targeted workers. Pursuant to this policy, this project has a **mandatory goal** of at least 30 percent of total California Construction Labor Hours worked be performed by a qualified Local Resident and at least 10 percent of total California Construction Labor Hours worked on this project shall be performed by County residents classified as a Targeted Worker. Hours worked by a Targeted Worker who is also a Local Resident may be applied towards both the mandatory 30 percent Local Hire and 10 percent Targeted Worker Hire goals.

In addition, there shall be a **mandatory** requirement to use a Jobs Coordinator to be hired directly by the Contractor, prior to the start of work on the project. The Jobs Coordinator is an independent third-party individual, entity, or employee with whom the Contractor enters into a contract or employs to facilitate the implementation of the Local and Targeted Worker Hiring Requirements of this Agreement. The Jobs Coordinator may be selected from the approved Jobs Coordinators list available as Form 00 09 12-5. If the Contractor utilizes an employee as a Jobs Coordinator, the Jobs Coordinator must be able to demonstrate or document to the Agency the minimum qualifications and/or experience to fulfill the duties and responsibilities as outlined in 5-3.8.6.

5-3.8.2 Definitions. Terms used in the implementation of the LTWHP shall be defined as follows:

California Construction Labor Hours – Includes all craft worker hours performed on the project by California residents, excluding the hours performed by off-site material fabricators, designers, project office staff, or vendors.

Certified Payroll Reports – The Contractor shall comply with the requirements of Section 1776 of the Labor Code, State of California for the submission of Certified Payroll Reports (CPR).

Community Service Providers – A network of public and private partners working to support workers and businesses by serving their employment and training needs. These providers include local one-stop job/career centers funded by the Federal Workforce Innovation and Opportunities Act (WIOA). These centers help businesses find skilled workers and connect customers to work related training and education; most services are available at no cost. Examples of Community Service Providers are listed in 5-3.8.5.

Craft Employee Request Form – The form used by the Contractor and its subcontractors to request dispatch of craft workers (including, but not limited to, apprentices and journeymen), who are Local Residents or Targeted Workers, from a Community Service Provider or union hiring hall in the event that assistance in obtaining such workers is needed. The request form is submitted by the Contractor/subcontractor, completed and executed by the Community Service Provider or union hiring hall, and a copy retained by the General Contractor for auditing purposes.

Jobs Coordinator – An individual or firm that facilitates implementation of the Targeted Worker hiring requirements of the County of Los Angeles for the Contractors/subcontractors. The Jobs Coordinator must be able to demonstrate or document to the Agency the requisite qualifications and/or experience to fulfill the duties and responsibilities as outlined in 5-3.8.6.

Local and Targeted Hire Status Report – A monthly report required to be submitted to the County as listed on Form 00 09 12-4.

Local Resident – A Local Resident is defined as an individual whose primary place of residence is within the Tier 1 or Tier 2 ZIP Codes of the County, as listed in Forms 00 09 12-1 and 00 09 12-3.

Targeted Worker – An individual who is a County resident and faces one or more of the following barriers to employment:

- Has a documented annual income at or below 100 percent of the Federal Poverty Level;
- No high school diploma or GED;
- A history of involvement with the criminal justice system;
- Protracted unemployment (receiving unemployment benefits for at least 6 months);
- Is a current recipient of government cash or food assistance benefits;
- Is homeless or has been homeless within the last year;
- Is a custodial single parent;
- Is a former foster youth;
- Is a veteran, or is the eligible spouse of a veteran of the United States armed forces, under Section 2(a) of the Jobs for Veterans Act (38 U.S.C.4215[a]);
- Eligible Migrant and seasonal farmworkers;
- Currently an English language learner;
- Older Individuals (55+);

- Disabled; or
- Individuals with low levels of literacy.

Tier 1 Zip Codes – Tier 1 Zip Codes are those zip codes listed in Form 00 09 12-1.

Tier 2 Zip Codes – Tier 2 Zip Codes are those zip codes listed in Form 00 09 12-3.

Workforce Utilization Plan – Form 00 09 12-2 submitted by the Contractor on behalf of itself and its subcontractors prior to commencing work, specifying a Workforce Utilization Plan, which contains the workforce plan and schedule for the hiring of qualified Local Residents and Targeted Workers, including the use of the subcontractors' workforce to meet the LTWHP hiring goal. The Contractor shall submit updates of the Workforce Utilization Plan to reflect changes in project conditions, schedules, or subcontractors.

Forms 00 09 12-1 through 00 09 12-5 are available for download at the following web address:

<ftp://dpwftp.co.la.ca.us/pub/CND/LTWHP/>

5-3.8.3 Local and Targeted Worker Hire Program.

- a) The Contractor and its subcontractors shall meet the following minimum mandatory Local Resident and Target Worker hiring requirements:
1. At least 30 percent of total California Construction Labor Hours worked on the project must be performed by a qualified Local Resident;
 2. And at least 10 percent of total California Construction Labor Hours worked on the project shall be performed by a Targeted Worker. The hours worked by a Targeted Worker who is also a Local Resident may also be applied towards the 30 percent Local Resident hiring goal.
 3. In addition, there shall be a mandatory requirement to use a Jobs Coordinator, as that term is defined in Section 5-3.8.6, to facilitate implementation of the Targeted hiring requirements of this Policy; and the Contractor shall ensure the mandatory hiring requirements provided for Local and Targeted Workers are met in accordance with this Policy.

- b) The available pool of Local Residents whose primary place of residence is within Tier 1 ZIP Codes (listed under Form 00 09 12-1), must first be exhausted in the manner specified in Section 5-3.8.4 before employing worker(s) from Tier 2 ZIP Codes (listed under Form 00 09 12-3).
- c) All California Construction Labor Hours shall be included in the calculation for the percentage requirements set forth in Section 5-3.8.1.
- d) The General Contractor and its Subcontractors shall not discriminate against or give preference to any particular individual or group based on race, color, gender, sexual orientation, age or disability.

5-3.8.4 Administration and Compliance.

- a) Prior to issuance of the Part 2 NTP, the Contractor shall retain the services of a Jobs Coordinator in accordance with 5-3.8.6. The Jobs Coordinator shall be retained for the duration of the Contract.
- b) Prior to issuance of the Part 2 NTP, the Contractor, and all subcontractors of every tier shall coordinate with the Jobs Coordinator for services to support their efforts in meeting the targeted hiring percentages as described in 5-3.8.1.
- c) Prior to issuance of the Part 2 NTP, the Contractor, on behalf of itself and its subcontractors, shall conduct at least 1 community outreach meeting to target Local Residents and Targeted Workers for potential employment. The meeting shall be in a facility located within 5 miles of the Project site at a location approved by the Agency.
- d) Prior to issuance of the Part 2 NTP, the Contractor, on behalf of itself and its subcontractors, shall submit a Workforce Utilization Plan to the Office Engineer named in 3-8 that contains the plan and schedule for the hiring of qualified Local and Targeted Workers and the assignment and use of the subcontractors' workforce to meet the Local Worker Hire requirement. The Contractor, thereafter, shall submit updates of the Workforce Utilization Plan to reflect changes in Project conditions, schedule, or subcontractors.
- e) The Contractor and its subcontractors shall submit certified payroll reports on a monthly basis, but no later than on the 1st Monday of the subsequent month. Certified payroll reports shall be submitted electronically if an online system is designated by the Agency.

- f) *The Contractor and its subcontractors shall first meet the Local and Targeted Worker Hire participation requirement by employing qualified workers from the Tier 1 Preference Area.* If the Contractor is unable to meet their entire Local and Targeted Worker Hire need from this area, it must submit a statement on company letterhead certifying that it has exhausted all available qualified Local and Targeted Workers from this area during a 48-hour period before pursuing workforce from the Tier 2 Preference Area.
- g) The Contractor and its subcontractors shall use the Craft Employee Request Form (00 09 12-1) for all requests for dispatch of qualified Local Resident and Targeted Worker craft workers (including apprentices and journeymen) in the event that assistance in obtaining such workers is needed from a Community Service Provider, union hiring hall, or other source.
- h) No later than the 1st Day of each month for the duration of the Project, the Contractor shall submit a completed Local and Targeted Hire Status Report containing the relevant information for the preceding month to demonstrate progress in meeting the Workforce Utilization Plan. The Local and Targeted Hire Status Report shall contain, at a minimum the information specified below for the Contractor and each subcontractor:
- 1) For each California Project Craft Worker (apprentices and journeymen): (a) the total labor hours, total number of all workers (apprentices and journeymen), and hours worked on the Project; and (b) the wages earned on the Project.
 - 2) Total number of Local Residents (apprentices and journeymen), hours worked (apprentices and journeymen), segregated by Tier 1 and Tier 2 Residency Preference Areas, and wages earned by each Local Resident.
 - 3) Total number of Targeted Worker hours worked (apprentices and journeymen) (by Primary and Secondary Residency Preference Areas).
 - 4) Total number of hours worked by Local Residents by subcontractors.
- i) The Agency may, in its sole discretion, elect to provide an online system for the Contractor and its subcontractors to input the data required in the Local and Targeted Hire Status Report. If the Agency so elects, the Contractor and its subcontractors shall utilize that online system in lieu of completing and submitting the Local and Targeted Worker Hire Status Report.

- j) No later than the 15th calendar day of each month, the Contractor and all its subcontractors shall submit the Local and Targeted Hire Status Report to the designated Agency representative (or submit the data online if the Agency elects to provide an online system), to demonstrate progress in meeting the Workforce Utilization Plan. Failure to submit the Local and Targeted Worker Hire Status Report shall be deemed to constitute zero percent local hire participation for the month and the Agency will retain the Monthly Local Hire Participation Contract Compliance Value of \$1,000 for that month.

- k) The Contractor’s compliance with the approved Manpower Utilization Plan will be evaluated monthly using the Local and Targeted Hire Status Report. The Local and Targeted Hire Participation Compliance Rectification Amount will be determined by multiplying the Monthly Local Hire Participation Contract Compliance Value of \$1,000 by the number of months expired since the Part 2 Notice to Proceed was issued multiplied by the fraction (percentage) generated from dividing the Cumulative Actual Local Hire Participation (numerator) by the Cumulative Forecast Local Hire Participation (denominator). To this end, the Agency will release the Local and Targeted Hire Participation Compliance Rectification Amount in direct proportion to the actual Local and Targeted hire participation levels achieved by the Contractor and as forecasted in the Manpower Utilization Plan.

Monthly Local Hire Participation Contract Compliance Value	X	Number of Months Since Notice to Proceed (NTP 2)	X	Cumulative Actual Local Hire Participation	=	Local Hire Participation Compliance Rectification Amount
				Cumulative Forecast Local Hire Participation		
(\$1,000)	(Multiply)		(Multiply)	(Divide)	(Equals)	

- l) On a monthly basis, the Agency will release the Local and Targeted Hire Participation Compliance Rectification Amount, minus the total value of previous releases, in direct proportion to the actual Local and Targeted hire participation levels achieved by the Contractor consistent with the Manpower Utilization Plan. If the Cumulative Actual Local Hire Participation exceeds the Cumulative Forecast Local Hire Participation, the Agency will release the Local Hire Participation Compliance Rectification Amount based on a value not to exceed 100 percent. The total aggregate amount to be withheld, or released, for the Local Worker Hiring Requirement shall not exceed \$14,000 (based on \$1,000 / month for (14 months)).

Local Hire Participation Compliance Rectification Amount	-	Cumulative Value of Previous Monthly Releases	=	Current Month's Release
	(Minus)		(Equals)	

- m) After completion of the Work, the Agency will conduct a final evaluation of the Contractor's compliance with the Manpower Utilization Plan and execute a final release of the Rectification Amount, if applicable. The Contractor's failure to meet the Local and Targeted Worker Hiring Requirement specified in 5-3.8.1 will result in the Agency imposing liquidated damages and deducting such amount otherwise owed to the Contractor in its final payment. The Agency will not be required to pay interest on any amounts withheld during the term of the Contract.
- n) The Agency and the Contractor specifically agree that the Local and Targeted Hire Participation Compliance Rectification Amount, minus the total value of previous releases, in direct proportion to the actual Local and Targeted hire participation levels achieved by the Contractor consistent with the Manpower Utilization Plan, shall be imposed as liquidated damages, and not as a forfeiture or penalty. It is further specifically agreed that the aforesaid amount is presumed to be the amount of damages sustained due to the Contractor's inability to achieve the Local and Targeted Worker Hiring Requirement specified in 5-3.8.1.

5-3.8.5 Community Service Providers. Community Service Providers include local one-stop job/career centers funded by the Federal Workforce Innovation and Opportunities Act (WIOA). These centers help businesses find skilled workers and connect customers to work related training and education; most services are available at no cost. Examples of Community Service Providers that may be used by the Contractor and its subcontractors to identify Local Residents and Targeted Workers include:

- America's Job Center of California:

<http://www.americasjobcenter.ca.gov/>

- Cal Jobs:

<http://www.caljobs.ca.gov/vosnet/Default.aspx>

- Helmets to Hardhats:

<https://www.helmetstohardhats.org>

- LA Jobs:

<https://www.jobsla.org/vosnet/Default.aspx>

- Los Angeles County America's Job Centers of California:

<http://workforce.lacounty.gov/>

- Los Angeles County Workforce Development, Aging, and Community Services:

<http://wdacs.lacounty.gov/>

5-3.8.6 Jobs Coordinator. The Contractor shall submit, in accordance with 3-8, the name of the individual or firm that will serve as the Jobs Coordinator for the duration of the Contract.

5-3.8.6.1 Responsibilities of the Jobs Coordinator. The Contractor shall ensure that the selected Jobs Coordinator effectively performs the following duties:

- a) Develop, create, design and market specific programs to attract Targeted Workers for construction opportunities (e.g. handouts and fliers for "walk-ins" demonstrating program entrance procedures).
- b) Coordinate services for contractors to use in the recruitment of Targeted Workers.
- c) Educate and assist contractors on incentives provided by state or federal programs for on-the-job training and employer tax credits.
- d) Conduct orientations, job fairs and community outreach meetings in the local community.
- e) Screen and certify the Targeted Workers status.
- f) Establish a referral and retention tracking mechanism for placed Targeted workers and apprentices.
- g) Network with the various work source centers, community and faith-based organizations and other non-profit entities that provide qualified Local and/or Targeted Workers.
- h) Coordinate with the various building trades crafts for referral and placement of Targeted Workers.
- i) Maintain a database of pre-qualified Targeted Workers for referral.

- j) Be the point of contact to provide information about available job opportunities on projects.
- k) Assist the Subcontractors with their documentation effort and other reports as it relates to their Targeted Worker hiring requirements.
- l) Work closely with Agency staff, the building trades and Subcontractors in achieving the Targeted hiring goals.

5-3.8.6.2 Minimum Qualifications of the Jobs Coordinator. If the Jobs Coordinator is selected from the approved list provided on Form 00 09 12-5, that Jobs Coordinator shall be deemed to meet the minimum qualifications. No additional qualification information need be provided.

If the Prime Contractor desires to utilize a Jobs Coordinator not listed on Form 00 09 12-5 (i.e., a contractor employee or other non-listed firm), the Contractor must be able to demonstrate that the selected Jobs Coordinator meets the minimum qualifications listed in this section. When requested by the Agency, the Contractor shall provide documentation sufficient to satisfy the Agency, in the Agency's sole discretion, that the selected Jobs Coordinator meets the following minimum qualifications:

- a) A minimum of 3 years' experience as providing Jobs Coordinator services. Successful candidates for Jobs Coordinators must be able to demonstrate the in-depth ability, experience, and possess the necessary staff capable of providing required services.
- b) Possess working relationships with the Building Trades, Targeted Workers and signatory craft councils and unions operating within County of Los Angeles' jurisdiction by describing previous interactions, relationships, and partnerships with these party's/groups.
- c) Possess experience on projects similar in scale to the current Project.
- d) Possess experience with Targeted Worker populations.
- e) Possess experience in working with work-source centers, faith-based organizations and other Community Based Organizations (CBOs).
- f) Be familiar with incentive programs and tax credit subsidies provided by the State and Federal government to hire workers that fit the corresponding category. Jobs Coordinator to describe their experience in working with these programs.

5-3.8.6.3 Payment. Full compensation for all work described in 5-3.8, including the services provided by the Jobs Coordinator, shall be considered as included in the lump sum price in the Bid for “IMPLEMENTATION OF THE LTWHP”.

Payment will be prorated on a monthly basis over the duration of the Contract.

5-3.9 Community Business Enterprise (CBE) Participation.

- A. The County encourages the participation of Community Business Enterprises (CBE) in the project and has established a goal of twenty-five percent (25%) CBE participation which all contractors must aspire to meet. Participation in the Work is based on total monetary value of the proposed subcontract. CBEs are defined as Minority/Women/Disadvantaged/Disabled Veteran owned Business Enterprises (M/W/D/DVBE).
- B. Bidders shall document their good faith efforts to utilize CBEs. The apparent responsible Bidder with the lowest responsive Bid shall submit the documentation of its good faith efforts to the County within 24 hours of the Bid opening. The Agency will evaluate the Bidder's good faith efforts to meet the CBE participation goal by the following criteria:
1. Bidder identified and selected specific items of the Project for which the Contract will be awarded to be performed by CBEs to provide an opportunity for participation by those enterprises.
 2. Bidder advertised, not less than ten (10) calendar days before the date the Bids are opened, in one or more daily or weekly newspaper trade association publications, minority-or trade-oriented publications, trade journals, or other media, specified by the local agency for CBEs that are interested in participating in the Project.
 3. Bidder provided written notice of his or her interest in bidding on the contract to the CBEs required to be notified by the Project specifications not less than ten (10) calendar days prior to the opening of Bids.
 4. Bidder followed up initial solicitations of interest by contacting the enterprises to determine with certainty whether the enterprises were interested in performing specific items of the Project.
 5. Bidder provided interested CBEs with information about the Plans, Specifications, and requirements for selected subcontracting or material supply Work.
 6. Bidder requested assistance from minority and women community organizations; minority and women contractor groups; local, state, or federal minority and women business assistance offices; or other organizations that provide assistance in the recruitment and placement of minority or women business enterprises, if any are available.

7. Bidder negotiated in good faith with the CBEs and did not unjustifiably reject as unsatisfactory bids prepared by any CBE.
 8. Where applicable, the Bidder advised and made efforts to assist interested CBEs in obtaining bonds, lines of credit, or insurance required by these Contract Documents.
 9. Bidder's efforts to obtain CBE participation could reasonably be expected by the Agency to produce a level of participation sufficient to meet the goals and requirements of the Agency.
- C. Bidder may request for a certified CBE listing via email to Ms. Cynthia Tucker at the County of Los Angeles Office of Small Business at:
- CBESBE@isd.lacounty.gov
- D. Contractors, material, and services and supplies vendors interested in becoming registered as certified minority or women business enterprises may contact the County of Los Angeles Countywide Contract Compliance Section, at (626) 943 5619.
- E. The apparent responsible Bidder with the lowest responsive Bid is required to submit documentation which describes the Bidder's good faith efforts to utilize CBEs within 24 hours of the bid opening. Other Bidders shall so submit within 24 hours if so requested by the Agency.

5-4 INSURANCE.

5-4.1 General. (Page 25 of the SSPWC)

Add the following as the second sentence of the first paragraph:

Such insurance shall be primary to and not contributing with any other insurance or self-insurance programs maintained by the Agency.

Add the following to the third paragraph:

The Contractor shall provide renewal certificates to the Agency not less than 10 Days prior to the Contractor's policy expiration date(s). The Agency reserves the right to obtain complete, certified copies of any required Contractor and/or Subcontractor policies at any time.

Add the following after the fifth paragraph:

The Contractor may use a combination of primary and excess insurance policies, which provide coverage as broad as the underlying primary policy(ies), to satisfy the insurance requirements.

5-4.2 General Liability Insurance. (Page 26 of the SSPWC)

Replace the first paragraph with the following:

The policy shall insure the Agency, its officers, employees, and agents while acting within the scope of their duties on the Work, against all claims arising out of or in connection with the Work, except as otherwise specified in 6-5. Notwithstanding any inconsistent statement in the policy or any subsequent endorsement, the Agency shall be the insured or named as an additional insured with respect to liability arising out of the Contractor's ongoing and completed operations. The certificate of insurance submitted to the Agency shall state that the Contractor's insurance is primary and that any other insurance held by the Agency is non-contributory. The endorsement shall contain the language provided in the sample included at the end of this Section G.

Replace the second paragraph with the following:

The Contractor's general liability insurance may cover more than one contract but must be acceptable to the Agency. General liability insurance shall be written on ISO policy form CG 00 01 or its equivalent with limits of not less than the following:

Personal and Advertising Injury	\$3,000,000
Each Occurrence	\$3,000,000
Products/Completed Operations Aggregate.....	\$3,000,000
General Aggregate	\$6,000,000

Add the following:

To the fullest extent permitted by law, the Contractor waives its and its insurer(s) rights of recovery against the Agency under all required insurance policies for any loss arising from or related to the Contract. The Contractor shall require its insurers to execute any waiver of subrogation endorsements which may be necessary to affect such waiver.

The Contractor shall provide the Agency with evidence of the required insurance coverage satisfactory to the Agency, including certificate(s) of insurance coverage and copies of applicable additional insured endorsements.

The County of Los Angeles, along with its Special Districts, elected officials, officers, employees, and agents shall be named under the policy as an insured or additional insured covering the Work, including the Contractor's ongoing and completed operations. Such coverage for additional insureds shall apply with respect to liability and defense of suits or claims arising out of the Contractor's acts or omissions, whether such liability is attributable to the Contractor or the Agency. The full policy limits and scope of protection shall apply to the aforementioned additional insureds even if they exceed the minimum insurance requirements specified in the Specifications.

In the event the Contractor's policy contains a deductible or self-insured retention, and in the event that any of the additional insureds specified above seeks coverage under such policy, the Contractor shall satisfy such deductible or self-insured retention to the extent of loss covered by such policy, even if the Contractor is not a named defendant. Notwithstanding the foregoing, if, for any reason, one of the additional insureds listed herein pays any such deductible or self-insured retention, the Agency has the right to withhold the amount of such payment from any monies owed to the Contractor.

The Contractor shall include all Subcontractors as insureds under the Contractor's own policies or shall provide the Agency with each Subcontractor's separate evidence of insurance coverage. The Contractor shall be responsible for verifying each Subcontractor complies with the insurance requirements specified in the Specifications and the Agreement and shall require that each Subcontractor name the Agency and each additional insured, and the Contractor as additional insureds on the Subcontractors general liability policy. The Contractor shall obtain the Agency's prior review and approval of any Subcontractor request for modification of the insurance requirements.

The policy shall not contain a deductible or self-insured retention in excess of \$25,000. The Agency retains the right to require the Contractor to provide a bond or other financial agreement guaranteeing payment of all such retained losses and costs attributable to the Contractor's retention, or, withhold payment to the Contractor in the amount of all or any deductibles/retentions as the Agency deems appropriate. The Contractor's policies shall not obligate the Agency to pay any portion of the Contractor's deductible or self-insured retention.

5-4.3 Workers' Compensation Insurance. (Page 26 of the SSPWC)

Add the following:

Should evidence of the renewal or replacement of the policy not be filed with the Agency prior to the expiration or cancellation date, the Agency will stop all work on the Project and no further work shall be performed until new insurance coverage has been obtained by the Contractor. Such stop order shall not be a cause for a time extension to the Contract duration.

Such policy shall be endorsed to waive subrogation against the Agency for injury to the Contractor's employees. If the Contractor's employees will be engaged in maritime employment, the coverage shall provide the benefits required by the U.S. Longshore and Harbor Workers Compensation Act, Jones Act or any other Federal law to which the Contractor is subject. If the Contractor will provide leased employees, coverage shall also include an Alternate Employer Endorsement (providing scope of coverage equivalent to ISO policy form WC 00 03 01 A) naming the Agency as the Alternate Employer and the endorsement form shall be modified to provide that the Agency will receive not less than 30 Days advance written notice of cancellation of this coverage provision.

In all cases, the above insurance shall include employer's liability coverage with limits not less than:

Each Accident: \$1,000,000

5-4.4 Automobile Liability Insurance. (Page 26 of the SSPWC)

Replace the entire paragraph with the following:

The Contractor shall provide evidence of and maintain automobile liability insurance. Such insurance shall be written on ISO policy form CA 00 01 or its equivalent with a limit of liability of not less than \$1,000,000 for bodily injury and property damage, in combined or equivalent split limits, for each single accident. Such insurance shall cover liability arising out of the Contractor's use of autos in performing the Work, including owned, leased, hired, and/or non-owned autos, as each may be applicable.

Add the following subsection:

5-4.5 Builder's Risk Course of Construction Insurance. The Contractor shall provide evidence of and maintain builder's risk course of construction insurance until acceptance of the Contract by the Agency. Such insurance shall insure against damage from perils covered by the Causes-of-Loss Special Form (ISO policy form CP 10 30), and be endorsed to include earthquake, flood, ordinance or law coverage, coverage for temporary offsite storage, debris removal, pollutant cleanup and removal, preservation of property, excavation costs, landscaping, shrubs and plants, and full collapse coverage during construction (without restricting collapse coverage to specified perils). Such insurance shall be extended to include machinery coverage for air conditioning, heating, hoist, and other equipment during testing.

Coverage shall be written on a completed-value basis and cover the entire value of the Contract against loss or damage until completion and acceptance by the Agency.

5-7 SAFETY.

5-7.1 Work Site Safety. (Page 27 of the SSPWC)

5-7.1.1 General.

Add the following:

The Contractor shall be solely responsible for ensuring that all work performed under the Contract is performed in strict compliance with all applicable Federal, State and local occupational safety regulations. The Contractor shall provide at its expense all safeguards, safety devices and protective equipment, and shall take any and all actions appropriate to providing a safe Project site.

5-7.1.2 Work Site Safety Official.

Add the following:

Failure by the Contractor to provide the required Project Safety Official shall be grounds for the Agency to direct the cessation of all work activities and operations at no cost to the Agency until such time as the Contractor is in compliance.

Add the following subsections:

5-7.1.3 Safety Indemnification. To the extent allowed by law, the Contractor agrees to defend, indemnify and hold harmless the Agency and its officers, employees and agents from and against any and all investigations, complaints, citations, liability, expense (including defense costs and legal fees), claims and/or causes of action for damages of any nature whatsoever, including but not limited to injury or death to employees of the Contractor, its subcontractors or Agency, attributable to any alleged act or omission of the Contractor or its subcontractors which is in violation of any Cal/OSHA regulation. The obligation to defend, indemnify and hold harmless includes all investigations and proceedings associated with purported violations of Section 336.10 of Title 8 of the California Code of Regulations pertaining to multi-employer work sites. The Agency may deduct from any payment otherwise due the Contractor any costs incurred or anticipated to be incurred by the Agency, including legal fees and staff costs, associated with any investigation or enforcement proceeding brought by Cal/OSHA arising out of the Project.

5-7.1.4 Mental Health Services for Critical Incidents. In the event of a serious accident on the Project site, the Los Angeles County Department of Mental Health (DMH) will, if requested, respond. The response may be within a few hours or as long as a few Days after the incident, depending on when the request was made. The services DMH will provide include crisis intervention, normalization of the stress response that survivors may be experiencing, stress management techniques and resources if the stress reactions increase in frequency or intensity.

Requests for services may be made by calling the DMH Emergency Outreach Bureau Deputy Director, (213) 738-4924, during normal business hours or the ACCESS Center, (800) 854-7771, evenings, holidays, and weekends.

5-7.7 Security and Protective Devices. (Page 29 of the SSPWC)**5-7.7.2 Security Fencing.**

Replace the entire subsection with the following:

Fencing or steel plate covers shall be installed in advance of or concurrently with excavation operations in accordance with LACDPW Standard Plan 6008. Fencing shall completely enclose all open excavations and shall remain in place until backfill has been placed to approximately adjacent ground level. Fencing may be removed during working hours as necessary to provide access and working room for construction operations. It shall be the Contractor's responsibility to provide equivalent security during these periods. Fencing shall be of either Type 1 or 2 as defined below or a combination thereof as approved by the Engineer and shall be securely fastened together. However, adjacent to any school or park, fencing shall be Type 2.

Type 1 fencing shall be in accordance with LACDPW Standard Plan 6002. Type 2 fencing shall be 11 gage, 2-inch mesh, 5-foot chain link fabric securely fastened to metal posts driven in place at 10 foot maximum spacing and extending at least 5 feet above ground, or securely fastened to the shoring system if in the opinion of the Engineer this method will provide equivalent security to the method of driven posts.

Payment for temporary fencing and/or plating shall be considered as included in the prices in the Bid for the various items of work.

Add the following subsection:

5-7.7.3 Temporary Manhole Shaft Covers. The Contractor shall protect the public at all times from accidental entry into manhole or manhole shaft openings. Any such opening shall be covered with an entry proof cover approved by the Engineer.

Payment for temporary manhole shaft covers shall be considered as included in the lump sum price in the Bid for "DRAINAGE".

Add the following:

5-8 NOT USED.

SECTION 6 - PROSECUTION AND PROGRESS OF THE WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK. (Page 30 of the SSPWC)

Replace the entire subsection with the following:

6-1.1 Construction Schedule.

6-1.1.1 Terms and Definitions. The following terms and their respective definitions are in addition to those specified in 1-2.

As-Built Schedule – The final updated Construction Schedule that reflects actual construction progress throughout the entire duration of the Project.

Baseline Schedule – The original Construction Schedule used as the basis for measuring construction progress and Contract performance.

Constraint – A requirement that restricts or dictates the Construction Schedule.

Construction Schedule – The schedule of construction activities that reflects the means and methods, planned sequencing, duration, and Milestone dates for the completion and acceptance of the Work. Types include the Baseline Schedule, Weekly Schedule Update, Monthly Schedule Update, and the As-Built Schedule.

Critical Path – The sequence of activities shown on the Construction Schedule which adds up to the longest overall duration.

Data Date – The latest date through which the activities shown on the Construction Schedule have been updated.

Milestone – A schedule activity that has zero duration and which graphically represents the start or finish of a portion of the Work.

Monthly Schedule Update – An updated Construction Schedule submitted every month that compares actual construction progress versus the progress planned on the Baseline Schedule.

Project Float – The difference between the Scheduled Completion Date and Required Completion Date. Float shall be an expiring resource available to both the Contractor and the Agency. Float shall not be for the exclusive use or benefit of either the Agency or the Contractor.

Required Completion Date – The required date for completion of the Work as specified in 6-3.1 of the SSPWC.

Scheduled Completion Date – The planned date for completion of the Work shown on the Construction Schedule as specified in 6-3.1 of the SSPWC.

Total Float – the maximum amount of time an activity can be delayed from its early start without delaying the completion of the Work. Float shall be an expiring resource available to both the Contractor and the Agency. Float shall not be for the exclusive use or benefit of either the Agency or the Contractor.

Weekly Schedule Update – An updated Construction Schedule submitted every week that reflects the status of construction activities from the past week and also includes construction activities scheduled in detail for the following 2 weeks.

6-1.1.2 General. Construction schedules shall conform to the following requirements:

- a) The Construction Schedule shall be prepared using the latest version of Primavera P6.
- b) The Construction Schedule shall be prepared using the Critical Path Method (CPM) illustrating the chronological relationship and sequence of work activities. Activities on the Critical Path shall be clearly delineated.
- c) Work activities shall be based on the Bid items listed in the Schedule of Prices in the Bid Proposal and the following:
 - 1) Bid Items shall be subdivided into those portions to be constructed during each stage or phase of construction, or portions which do not exceed 20 Working Days, whichever is less.
 - 2) Each submittal, and the corresponding Agency review period, shall be shown as an individual activity.
 - 3) The procurement of construction materials and equipment shall be identified and shown as individual activities.

- 4) Part 1 NTP requirements shall be shown as individual activities.
- d) The Construction Schedule shall commence on the Part 1 NTP Issuance Date and end on the Required Completion Date milestone, or Scheduled Completion Date milestone, whichever date is later.
- e) Change Orders, including number, description, and duration shall be shown as individual activities.
- f) Each activity must have at least one predecessor and one successor with the exception the of the Project start and finish milestones.
- g) Schedule options within the program file shall be as follows:
 - 1) Use retained logic when scheduling progressed activities.
 - 2) Define critical activities as Longest Path.
 - 3) Compute Total Float as the difference between late finish and early finish.
 - 4) Use predecessor activity calendar for scheduling relationship lag.
 - 5) Use of “Must Finish By” date in the project settings shall not be used.
- h) Calendars, codes, and other information shall be on a project-level basis within the schedule software, as opposed to global, so that any changes to subsequent schedules are independent of past schedule submittals.
- i) A level-of-effort type activity shall be included named “Project Float”, with the Scheduled Completion Date milestone as a predecessor and the Required Completion Date milestone as a successor.
- j) Date and time constraints and lags, other than those specified in this subsection, are not allowed unless otherwise accepted by the Engineer. The use of negative lags is not allowed.
- k) Notification activities shall be milestones linked as predecessors to the related work. These milestones shall contain “As Late As Possible” constraints with lags equal to the notice duration specified.

- l) Phase 1 shall be defined as dry well and storm drain construction at the 3 medians adjacent to Montebello Parkway, East Olympic Boulevard, and Coolidge Way.
- m) Phase 2 shall be defined as the construction of dry well E1-A and the connecting storm drain.
- n) Phase 3 shall be defined as dry well and storm drain construction along the remainder of the Northside Drive median.
- o) Phase 4 shall be defined as dry well and storm drain construction on the Southside Drive median and the adjacent work on Garfield Avenue.
- p) Phase 5 shall be defined as the remainder of the Work, including mechanical, electrical, and landscaping.
- q) The schedule shall reflect the following Constraints:
 - 1) Utility relocations per 402-4.
 - 2) Schedule impacts due to the protection, removal, or relocation of utilities per 402-5.
 - 3) The Sequence of Work per 6-2.3.
 - 4) All work shall only be performed on the allowed days as shown on the Project Calendar, at the end of this Section G.
 - 5) All work on Phase 2 or impacting operations at Montebello Park Elementary School shall only be performed between June 15 and August 15 each calendar year.
 - 6) Work shall only be performed on Phase 2 or impacting operations at Montebello Park Elementary School between 8:30 a.m. and 2:15 p.m. on Mondays, Tuesdays, Wednesdays, and Fridays and only between 8:30 a.m. and 1:15 p.m. on Thursdays between June 15 and August 15 each calendar year, unless otherwise approved by the Engineer.
 - 7) Working hours shall be 7:00 a.m. to 3:30 p.m. for all other Phases, unless otherwise approved by the Engineer.

- 8) Temporary traffic control requirements per Section TC of the Special Provisions.
- 9) The Time of Completion per 6-3. A Baseline Schedule submitted showing completion earlier or later than the time of completion specified will not be accepted.
- r) The schedule shall include the following Milestones:

Activity ID	Activity Name	Constraint Type
NTP1	Part 1 NTP Issuance Date	Start On
NTP2	Part 2 NTP Issuance Date	Start On
REQS	Required Start Date	Start On
REQC	Required Completion Date	Finish On
COMP	Scheduled Completion Date	Finish On or Before

- s) The Contractor shall use the project-specific activity codes loaded in the Project Template provided by the Agency including, but not limited to, the following:

1) Work Type (TYPE):

Code Value	Description
ADM	Administrative activities such as contract Milestones, meetings, permits, etc.
SUB	Submittals by the Contractor
REV	Submittal Reviews by the Agency
PRO	Procurement of Materials or Equipment
NOT	Notification Activities
CON	Construction Activities
UFE	Unforeseen Events
OTH	Other Activities

2) Responsibility (RESP).

Code Value	Description
PRI	Prime Contractor Activities
SUB	Subcontractor Activities
AGE	Agency Activities
UTI	Utility Company Activities
OTH	Other Entity Activities

- 3) Item No. (ITEM) - Each activity shall be identified using an activity code with its corresponding Bid item number(s) or Change Order item number(s) listed in the Engineer’s Monthly Estimate.

6-1.1.3 Submittals.

a) **General.** Construction Schedule submittals shall include a portable document file (pdf) and a program file (.xml), accessible using the latest version of Primavera P6. The submittal shall be emailed to the Engineer or submitted on a compact disc (CD) along with 2 printed color copies on 11-inch x 17-inch sheets.

b) **Baseline Schedule.**

Within 10 Days of issuance of the Part 1 NTP, the Contractor shall submit a Baseline Schedule for review and acceptance by the Engineer.

The Engineer will provide the Contractor with an electronic Primavera P6 Project Template (Project Template) that shall be used as a basis for developing the Baseline Schedule, and the schedule updates. The Project Template includes the required formatting and settings for items including, but not limited to: Project- specific activity codes and WBS structure; calendars; schedule options; milestones; constraints; and other items. The Project Template may also include some basic activities that should be included in the schedule. The schedule developed by the Contractor shall then be submitted.

c) **Weekly Schedule Updates.** During the weekly on-site management meetings, the Contractor shall submit Weekly Schedule Updates which will be used to manage, coordinate, and schedule all upcoming Contract activities. These detailed schedules may be submitted in bar chart format and shall reflect the logic and sequence used for the accepted Baseline Schedule. The Weekly Schedule Update shall include the following:

- 1) Status of the construction activities of the past week, scheduled vs. actual.
- 2) An explanation for deviations from planned activities, together with actions taken or planned to recover lost time, if applicable.
- 3) Two-week "look-ahead" Schedule detailing all work activities planned for the next 2 weeks, including all work to be performed by others. Activities included in the Baseline Schedule shall be further broken down into detailed activities, by specific task, by specific area, at the crew level or lower.

- d) **Monthly Schedule Updates.** On the 1st day of each month, the Contractor shall submit a Monthly Schedule Update using the same software used to prepare the Baseline Schedule. The Engineer will not submit the Engineer's Monthly Estimate specified in 7-3.2 for processing until the Monthly Schedule Update has been submitted. The schedule may be emailed to the Engineer or submitted on a CD with 2 printed color copies on 11-inch x 17-inch sheets. Should the update not reflect the actual progress of the Work, the update will be returned to the Contractor for inclusion of the changes on the next update. Updates shall conform to 6-1.1.2 and the following:
- 1) Actual start and completion dates versus the original accepted Baseline Schedule shall be illustrated.
 - 2) Deviations in the progress and sequence of the Work shall be identified and supported by a detailed narrative justification. The updates shall include necessary remedies and revisions to recover delays to the schedule to meet the original Contract milestones.
 - 3) The data date shall be the 1st day of each month.
 - 4) Change Order work scheduled after the Data Date that includes an approved time extension shall be shown as a Critical Path activity. Change Order work scheduled after the Data Date without an approved time extension shall be shown as a non-Critical Path activity. Change Order work performed prior to the Data Date shall be shown as an as-built activity.
 - 5) The Required Completion Date milestone constraint date shall be adjusted to account for time extensions approved as of the Data Date.
 - 6) The Scheduled Completion Date milestone constraint date shall be adjusted to match the Required Completion Date as of the Data Date.
 - 7) Schedule updates shall only include changes related to a Time Impact Analysis (TIA) that has been accepted by the Engineer. Schedule updates shall not include changes related to a rejected TIA, or a TIA that is pending.
- e) **As-Built Schedule.** Within 7 Days after completion of the Work per 3-13.1, the Contractor shall prepare and submit an As-Built Construction Schedule using the same software used to prepare the Baseline Schedule. The Engineer will not submit the final monthly progress payment for processing until the schedule has been submitted. The schedule may be emailed to the Engineer or submitted on a CD with 2 printed color copies on 11-inch x 17-inch sheets.

The As-Built Schedule shall reflect the actual progress of the Work from the date of issuance of the Part 1 NTP through the date of completion. Should the As-Built Schedule not reflect the actual start and finish dates of all work activities, the schedule will be returned to the Contractor for revision and re submittal.

The schedule shall be submitted with a written certificate signed by the Contractor's Authorized Representative stating:

“To my knowledge and belief, the enclosed As-Built Schedule reflects the actual start and finish dates of the actual work activities for the Contract contained herein.”

6-1.1.4 Time Impact Analysis (TIA).

6-1.1.4.1 General. Time Impact Analysis (TIA) is a scheduling technique and analysis report used to assess and quantify the effects of one or more of the following occurrences:

- a) an unforeseen event,
- b) an approved Change Order,
- c) a proposed Change Order, or
- d) a changed condition.

6-1.1.4.2 Submittals. A TIA submittal shall be submitted when the Contractor or Engineer identifies an occurrence that potentially impacts the Critical Path and delays progress of the Work. The TIA submittal shall be submitted in accordance with 3-8 and shall include the following:

- a) **Narrative Report.** A report that defines the scope and conditions of an occurrence specified in 6-1.1.4.1; type of delay as defined in 6-1.1.4.3; provides start and finish dates of impact; provides predecessor and successor activities to the impact period; identifies the party responsible for the occurrence; and describes how the occurrence originated and how it impacts the schedule.
- b) **Schedules.** A schedule submission that consists of the following two electronic Primavera P6 schedule files in accordance with 6-1.1.3:

- 1) Unimpacted Schedule – The Monthly Schedule Update that has a Data Date closest to and prior to the occurrence. If the Engineer determines that the schedule update submitted does not appropriately represent the conditions prior to the occurrence, the schedule update shall be updated to the day before the occurrence being analyzed. Schedule updates, modifications, and changes shall be listed in the narrative report.
 - 2) Impacted Schedule – The schedule developed from incorporating the occurrence into the unimpacted schedule by adding or deleting activities, or by changing durations or logic of existing activities. Schedule updates, modifications, and changes shall be listed in the narrative report.
- c) The Contractor shall submit a TIA within 10 Working Days of receiving a written request for a TIA from the Engineer.
 - d) For a claimed delay in completion of the Work, the unimpacted and impacted schedules shall be modified to account for as-built events known to occur after the Data Date.
 - e) If the impacted schedule shows that the Critical Path and Scheduled Completion Date are affected by the occurrence, the difference between Scheduled Completion Dates of the unimpacted and impacted schedules, minus any remaining Project Float, must be equal to the request for adjustment of the Contract time of completion. No time of completion extensions will be granted unless a delay occurs which first consumes all available Project Float and extends the Scheduled Completion Date beyond the Required Completion Date.
 - f) All TIAs must include mitigation measures and must apportion the overall delay assignable to any individual delays. The associated narrative report must clearly describe findings in chronological order.
 - g) Subsequent Monthly Schedule Updates shall include changes related to a TIA that has been accepted by the Engineer. Schedule updates shall not include changes related to a rejected TIA, or a TIA that is pending review.

6-1.1.4.3 Types of Delay. The TIA shall identify the type of delay as follows:

- a) Excusable and Compensable Delay - Delay for which the Agency is the sole proximate cause. The Contractor must not have been delayed for any other reason during that time period.

- b) Excusable and Noncompensable Delay - Delay caused from unforeseen events as defined in 6-4.1.
- c) Inexcusable and Noncompensable Delay - Delay caused by the fault or negligence of the Contractor.
- d) Concurrent Delay - Combination of the types outlined above occurring during the same time period.

6-1.1.4.4 Acceptance. Acceptance of a TIA will be determined in accordance with the following:

- a) Upon submittal of a TIA by the Contractor, an analysis of the facts will be performed by the Engineer to determine compensability and entitlement to any time extension under the applicable contract clauses.
- b) Acceptance of a TIA is at the sole discretion of the Engineer.
- c) The Engineer will construct its own TIA or utilize another method to determine adjustments in the Contract time of completion if the Contractor fails to submit a TIA.

6-1.1.5 Payment. Payment for preparation of the Baseline Schedule will be made at the Stipulated Unit Price for “CONSTRUCTION SCHEDULE (BASELINE)”. No payment will be made until the Baseline Schedule has been accepted by the Engineer.

No separate or additional payment will be made for preparation of each Weekly Schedule Update or Time Impact Analysis.

Payment for preparation of each Monthly Schedule Update will be made at the Stipulated Unit Price per month for “CONSTRUCTION SCHEDULE (UPDATE)”. No payment will be made for monthly updates submitted after the due date.

Payment for preparation of the As-Built Schedule will be made at the Stipulated Unit Price for “CONSTRUCTION SCHEDULE (AS-BUILT)”. No payment will be made until the As-Built Schedule has been accepted by the Engineer.

6-1.2 Commencement of the Work. The Notice to Proceed (NTP) for this Contract will be issued in 2 separate parts. The Agency will issue the Part 1 NTP after the Contractor satisfactorily submits all of the documentation required in the Instructions to Bidders and the Agency has executed the Contract.

The Part 1 NTP shall be for the Contractor to perform the following:

- a) Submit all required Submittals per 3-8 and receive Agency approval for such submittals unless otherwise specified.
- b) Ensure that all labor, equipment, and materials required for the Contract will be available when required by the Construction Schedule per 6-1.1.
- c) Mobilization, including the physical and operational establishment of the Class “A” Field Office per 8-2.
- d) Attend preconstruction meetings with the Agency.
- e) Submit a Baseline Schedule per 6-1.1.3 and receive Agency acceptance.
- f) Submit subsurface installation location data to the Engineer per 402-1.1.

The Contractor shall complete all of the above stated-activities within 45 Working Days of the Part 1 NTP. Each additional Working Day in which the Contractor is not in compliance with this requirement will be subtracted from the number of Working Days allowed for the Time of Completion per 6-3. When the number of Working Days specified in 6-3.1 is exhausted, the Contractor will be subject to liquidated damages. The counting of Working Days for the completion of Part 1 NTP activities will stop upon the receipt of all required Submittals and resume upon the return of any required submittal to the Contractor per 3-8.

The Part 2 NTP shall be for the start of the Work. The Part 2 NTP will not be issued until all Part 1 NTP activities have been completed.

Payment for compliance with Part 1 and Part 2 NTP requirements, except for preparation of the Baseline Construction Schedule, shall be considered as included in the lump sum Bid price for “MOBILIZATION”.

6-1.3 Management Meetings. The Agency will schedule and conduct weekly on-site meetings for the purposes of construction management as well as assessing the status of the informal partnership. The weekly meetings will have a set agenda, including, but not limited to, a report and discussion of the status of the following:

- a) Weekly Detailed Schedule per 6-1.1.3(c).
- b) Quality assurance/quality control
- c) BMPs/SWPPP Compliance

- d) Site operations, including coordination of work by others
- e) Community/public relations
- f) Change Orders
- g) Submittals
- h) RFIs

The fourth weekly meeting of each month will include an executive review of the Project to be attended by Agency and Contractor executives.

6-2 PROSECUTION OF THE WORK. (Page 30 of the SSPWC)

Add the following before the first paragraph:

6-2.1 General.

Add the following subsections after the last paragraph:

6-2.2 Work by Others Due to Unsatisfactory Work Prosecution. If, as determined by the Engineer, the Contractor is not prosecuting the Work in a satisfactory manner or is not providing for public safety, traffic and protection of the Work, the Engineer will notify the Contractor of such unsatisfactory conditions and will indicate the date and time when corrective work must be completed. If the Contractor fails to comply, the Agency may elect to do the Work or have the Work performed by others and deduct the cost thereof from any monies due the Contractor. Such action shall not relieve the Contractor from liability.

6-2.3 Sequence of Work. The Contractor's construction schedule and sequence of work shall conform to the following:

- a) The first order of work on the Project shall be the total number of exploratory excavations required by 402-1, and the exposure of existing conduits to be joined as part of the Project by excavation at the point of such joining in order to uncover as much of the existing conduit as will confirm the location and elevation of the join(s) as shown on the Plans. Unless otherwise specified, no construction work shall be performed on the Project until the work involved in exploratory excavations and exposure of conduits is completed.
- b) No Work is to be performed concurrently on the medians defined in Phases 1, 2, 3, or 4 as defined in subsection 6-1.1.2 unless approved in writing by the Engineer. Work on Phase 5 shall only commence when the dry well and drainage construction is complete at that respective median.

- c) The surface course of pavement shall be scheduled to follow completion of parkway improvements throughout the length of the Project unless otherwise approved in writing by the Engineer.
- d) Unless otherwise directed by the Engineer, all parkway improvements behind the curb and gutter shall be completed immediately following completion of a continuous pour of curb and gutter. This requirement shall not be interpreted to prohibit the Contractor from performing concurrent work.
- e) As soon as permitted by the Specifications, all backfill within paved reaches shall be immediately placed and densified to the specified relative compactions.
- f) Structures appurtenant to reinforced concrete box or reinforced concrete pipe storm drains which lie within the traveled way of a public street shall be constructed during or immediately after construction or placement of the mainline conduit in order to expedite the restoration of the street to public use. Appurtenant structures, such as but not limited to, manholes, transition structures and junction structures, for which the excavation has been performed, shall be constructed promptly after placing or constructing the adjoining conduit. The remaining construction, including the placement of backfill and pavement, shall proceed around such structures thereafter without delay until completion.
- g) Once construction has commenced on an individual catch basin, it shall be prosecuted diligently until completion of the basin, including backfill and appurtenant work, including but not limited to, reconstruction of curbs, gutters, and sidewalk, and construction of the adjoining local depressions.
- h) Unless otherwise approved in writing by the Engineer, connector pipes for catch basins and other inlets shall be installed prior to construction of the catch basins or inlets and prior to construction of the main line conduit at its junction with said connector pipes. Installation of connector pipe shall be started not more than 15 Days prior to the starting time of mainline conduit construction at the point of connection.
- i) If written approval is granted by the Engineer to construct connector pipes after construction of the mainline or laterals, it shall be understood that any revisions to blocked out openings in the mainline or laterals, for any reasons whatsoever, to allow connections of the connector pipes thereto, shall be the Contractor's responsibility and at its expense.

- j) Where the connector pipe system consists of two or more connector pipes, one of which is a connector pipe discharging into an intermediate catch basin and thence through one or more other connector pipes to the mainline, the Contractor shall perform exploratory excavations for utilities where shown on the Plans or specified to permit adjustment in the depths of catch basins and the grades of connector pipes thus allowing construction of a system which will require the minimum relocation of utilities. All such exploratory excavations shall be performed per 402-1.

6-3 TIME OF COMPLETION.

6-3.1 General. (Page 31 of the SSPWC)

Replace the first sentence with the following:

The Contractor shall complete the Work within 280 Working Days.

6-4 DELAYS AND EXTENSIONS OF TIME.

6-4.1 General. (Page 31 of the SSPWC)

Replace the second paragraph with the following:

No extension of time will be granted for a delay caused by the inability to obtain materials unless the Contractor obtains from the supplier and furnishes to the Engineer documentary proof that such materials could not be obtained due to war, government regulations, labor disputes, strikes, fires, floods, adverse weather necessitating the cessation of work, or other similar action of the elements.

6-4.2 Extensions of Time. (Page 31 of the SSPWC)

Add the following:

Extensions of time will be reflected as non-Working Days on the Statement of Working Days except when such extensions are a result of Extra Work.

6-5 USE OF IMPROVEMENT DURING CONSTRUCTION. (Page 32 of the SSPWC)

Add the following after the first paragraph:

Action by the Agency to take over and utilize any part of the Project shall become effective only upon issuance of a written notice, signed by the Engineer, setting forth a description of the completed improvements to be taken over, the effective date, location and limits thereof.

6-7 TERMINATION OF THE CONTRACT FOR DEFAULT. (Page 32 of the SSPWC)

Delete the entire subsection. Refer to the Agreement.

6-8 TERMINATION OF THE CONTRACT FOR CONVENIENCE. (Page 33 of the SSPWC)

Delete the entire subsection. Refer to the Agreement.

6-9 LIQUIDATED DAMAGES. (Page 34 of the SSPWC)

Replace the third sentence of the first paragraph with the following:

For each Day in excess of the time specified for the completion of the Work in 6-3.1, as adjusted in accordance with 6-4, the Contractor shall pay to the Agency, or have withheld from monies due it, the sum of \$2,000.

Replace the first sentence of the second paragraph with the following:

Execution of the Contract shall constitute agreement by the Agency and the Contractor that \$2,000 per Day is the minimum value of the costs and actual damage caused by the failure of the Contractor to complete the Work within the allotted time.

SECTION 7 - MEASUREMENT AND PAYMENT**7-2 LUMP SUM WORK.** (Page 34 of the SSPWC)

Replace the first sentence of the second paragraph with the following:

The Contractor shall submit, per 3-8 and 6-1.2, a detailed schedule to be used only as a basis for determining progress payments for all lump sum Bid items, including those items in the Bid with detailed schedules.

7-3 PAYMENT.**7-3.1 General.** (Page 35 of the SSPWC)

Replace the last paragraph with the following:

Following acceptance of the performance of the Contract by the Board, or as prescribed by law, the amount deducted from the final estimate and retained by the Agency will be paid to the Contractor, except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be provided under the Contract to be deducted.

7-3.2 Partial and Final Payment. (Page 35 of the SSPWC)

Replace the first sentence of the first paragraph with the following:

The closure date for the purpose of making the monthly progress payment shall be the 6th day of each month. Monthly progress payments will be made only if the number of Working Days for the Project plus any extensions of time granted by the Agency after the Work has started equals 20 or more Working Days and the schedule update requirements specified in 6-1.1.3 have been completed and accepted by the Engineer.

Add the following after the first sentence of the second paragraph:

The Agency will transmit to the Contractor within 10 Days after each established monthly payment closure date a copy of the Engineer's Monthly Estimate showing the amount of work completed as of the closure date.

Add the following after the second paragraph:

In the case of a Bid item where several types of work are included in the item, the Agency may make partial payment for the portions of such work that are completed at the time of making the monthly progress estimates, provided, in the opinion of the Engineer, the work considered for payment has been completed in compliance with the requirements of the Plans and the Specifications.

Payment for a lump sum Bid item will be based upon the lump sum Bid price and the Engineer's estimate as to the percentage of completion.

Replace the last paragraph with the following:

Pursuant to Section 22300 of the California Public Contract Code, the Contractor at its own expense may deposit securities with the Agency or with a State or Federally chartered bank as the escrow agent in lieu of having funds withheld by the Agency to ensure performance under the Contract.

The securities which will be allowed to be substituted are those listed in Section 16430 of the Government Code or bank or savings and loan certificates of deposit.

The amount of securities to be deposited shall be equivalent to the maximum amount permitted to be withheld. The Agency may claim and receive all or a portion of these funds to be used for the same purposes and expenditures as if the funds had been withheld as specified above. Formal acceptance of the Project by the Agency terminates the Agency's interest in the securities.

7-3.3 Delivered Materials. (Page 36 of the SSPWC)

Replace the entire subsection with the following:

When approved by the Engineer, payment may be made for materials and equipment other than reinforced concrete pipe delivered to and stored at the Project site, or other approved location, for use on the Project but not yet incorporated in the Work. Before accounting for these materials and equipment on the monthly estimate, the Contractor shall furnish to the Engineer paid invoices therefor. The payment will be limited to the cost shown on said invoices until incorporated into the Work.

7-3.4 Mobilization. (Page 36 of the SSPWC)

Replace the entire subsection with the following:

When a Bid item is included in the Bid for “MOBILIZATION”, the costs of work in advance of construction operations and not directly attributable to any specific Bid item will be included in the progress estimate.

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 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.

Payments for mobilization will be made as follows:

- a) When the monthly progress payment estimate of the amount earned, not including the amount earned for mobilization, is 5 percent or more of the Contract Price, the total amount earned for mobilization shall be 50 percent of the Contract Unit Price for mobilization or 5 percent of the Contract Price, whichever is less, and said amount will be included in said estimate for payment.
- b) When the monthly progress payment estimate of the amount earned, not including the amount earned for mobilization, is 10 percent or more of the Contract Price, the total amount earned for mobilization shall be 75 percent of the Contract Unit Price for mobilization or 7.5 percent of the Contract Price, whichever is less, and said amount will be included in said estimate for payment.
- c) When the monthly progress payment estimate of the amount earned, not including the amount earned for mobilization, is 20 percent or more of the Contract Price, the total amount earned for mobilization shall be 95 percent of the Contract Unit Price for mobilization or 9.5 percent of the Contract Price, whichever is less, and said amount will be included in said estimate for payment.
- d) When the monthly progress payment estimate of the amount earned, not including the amount earned for mobilization, is 50 percent or more of the Contract Price, the total amount earned for mobilization shall be 100 percent of the Contract Unit Price for mobilization or 10 percent of the Contract Price, whichever is less, and said amount will be included in said estimate for payment.

- e) After completion of the Contract Work, the amount, if any, of the Contract Unit Price for mobilization in excess of 10 percent of the Contract Price will be included in the final progress payment.

7-3.5 Contract Unit Prices. (Page 36 of the SSPWC)

Replace the entire subsection with the following:

If a change is ordered in an item of work covered by a Contract Unit Price in a Detailed Schedule of Prices for a Lump Sum item in the Bid, and such change does not involve a substantial change in the character of the work from that shown on the Plans or specified in the Specifications, then an adjustment in payment will be made. This adjustment will be based on the increase or decrease in quantity and the Contract Unit Price in the Detailed Schedule of Prices for a Lump Sum item in the Bid.

If a change is ordered in an item of work covered by a Contract Unit Price in a Detailed Schedule of Prices for a Lump Sum item in the Bid, and such change does involve a substantial change in the character of the work from that shown on the Plans or specified in the Specifications, an adjustment in payment will be made per 7-3.7.

There will be no adjustment in Contract Unit Price should there be variation in the final quantity of any item of work covered by a Contract Unit Price in the Bid and constructed in conformance with the Plans and Specifications.

Add the following subsection:

7-3.9 Allowance Items. The Agency may establish an Allowance in the Bid for items in which there is insufficient information for the Contractor to submit a Contract Unit Price or for which a basis of bidding may not be established for any reason.

The Contractor shall submit to the Engineer an estimate for each element to be furnished or provided under the Bid item for which an Allowance has been established.

Upon approval of the estimate, the Contractor will be reimbursed for its actual costs plus the specified markup, if any, upon presentation to the Engineer of original, itemized, paid invoices. The Contractor shall not be entitled to full payment for the amount of the Allowance should it not be utilized. Should the Contractor's actual costs exceed the Allowance, the difference will be considered as Extra Work.

7-4 PAYMENT FOR EXTRA WORK.**7-4.2 Basis for Establishing Costs.** (Page 37 of the SSPWC)**7-4.2.1 Labor.**

Replace the first paragraph with the following:

The cost of labor shall be the cost of wages (basic hourly rate) plus the cost of employer payments (health and welfare, pension, vacation/holiday, training, and other payments for assessments or benefits required by lawful collective bargaining agreements) as listed on the General Prevailing Wage Determination made by the Director of Industrial Relations in effect at the time the Extra Work is performed. ***To the total of these costs, a labor surcharge of 15 percent shall be applied for statutory payroll items stipulated by various governmental agencies.*** The statutory payroll items included are worker's compensation insurance, Social Security, Medicare, Federal unemployment insurance, State unemployment insurance, and State training taxes.

7-4.2.3 Tool and Equipment Rental.

Replace the second paragraph with the following:

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed those listed in the current edition of the "Labor Surcharge and Equipment Rental Rates" of the State of California Department of Transportation (Caltrans) (www.dot.ca.gov/hq/construc/equipmnt.html) at the time the work is performed. Standby rates shall be 50 percent of the hourly rate. Payment for standby shall not exceed 8 hours per day, 40 hours per week and 176 hours per month. If the equipment is not listed, the rate allowed shall be that calculated for a comparable item.

7-4.3 Markup. (Page 38 of the SSPWC)

7-4.3.1 Work by Contractor.

Replace the entire paragraph with the following:

The following percentages shall be added to the Contractor’s costs and shall constitute the markup for overhead and profit, and all other costs not specifically provided for on work performed by the Contractor:

Labor	20%
Materials.....	15%
Equipment Rental.....	15%
Other Items and Expenditures.....	15%

The Labor markup shall be applied to the total costs established in 7-4.2.1.

To the sum of the costs and markups provided for in this subsection, 1 percent shall be added as compensation for bonding.

7-4.3.2 Work by Subcontractor.

Replace the entire paragraph with the following:

When all or any part of the Extra Work is performed by a Subcontractor, the markup established in 7-4.3.1 shall be applied to the Subcontractor’s actual cost of such work. A markup of 5 percent on the total costs established in 7-4.3.1 of the subcontracted portion of the Extra Work may be added by the Contractor. This markup shall constitute the Contractor’s markup for overhead and profit on work performed by the Subcontractor.

Add the following:

7-4.3.3 General. The markups specified in 7-4.3.1 and 7-4.3.2 above shall be considered as including, but not be limited to, the Contractor's labor costs for personnel not working directly on the Extra Work, including the cost of any tools and equipment which they may use. Such costs shall not be reported as labor or equipment costs elsewhere except when they are actually used in the performance of the Extra Work. Labor costs shall in that case be reported for the labor classification corresponding to the type and nature of Extra Work performed.

Add the following:

7-4.3.4 Allowance Items. The following percentage shall be added to the Contractor's actual costs unless otherwise specified: 15 percent.

Add the following subsection:

7-6 CLAIMS. Notwithstanding Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, Section 9204 of the Public Contract Code shall apply to any claim by the Contractor in connection with the Project.

- a) Upon receipt of a claim pursuant to Section 9204 of the Public Contract Code, the Agency will conduct a reasonable review of the claim and, within a period not to exceed 45 Days, provide the Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, the Contractor and the Agency may, by mutual agreement, extend the aforementioned time period.
- b) The Contractor shall furnish reasonable documentation to support the claim.
- c) If Board approval is needed to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the claim, and the Board does not meet within the 45 Days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the Agency will have up to 3 Days following the next duly publicly noticed meeting of the Board after the 45-Day period, or extension, expires to provide the Contractor a written statement identifying the disputed portion and the undisputed portion.
- d) Any payment due on an undisputed portion of the claim will be processed and made within 60 Days after the Agency issues its written statement. If the Agency fails to issue a written statement, paragraph (j) shall apply.
- e) If the Contractor disputes the Agency's written response, or if the Agency fails to respond to a claim issued pursuant to Section 9204 within the time prescribed, the Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the Agency will schedule a meet and confer conference within 30 Days for settlement of the dispute.

- f) Within 10 business days (Monday-Thursday) following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the Agency will provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim will be processed and made within 60 Days after the Agency issues its written statement. Any disputed portion of the claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the Agency and the Contractor sharing the associated costs equally. The Agency and the Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside those established in Section 9204.
- g) Mediation shall include any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in Section 9204.
- h) Unless otherwise agreed to by the Agency and the Contractor in writing, the mediation conducted pursuant to Section 9204 shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.
- i) Section 9204 does not preclude the Agency from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under Section 9204 does not resolve the parties' dispute.
- j) Failure by the Agency to respond to a claim from the Contractor within the time periods described in Section 9204 or to otherwise meet the time requirements of Section 9204 shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the Agency's failure to have responded to a claim, or its failure to otherwise meet the time requirements of Section 9204, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.
- k) Amounts not paid in a timely manner as required by Section 9204 will bear interest at 7 percent per annum.

- l) If a Subcontractor or a lower tier Subcontractor lacks legal standing to assert a claim against the Agency because privity of the Contract does not exist, the Contractor may present to the Agency a claim on behalf of a Subcontractor or lower tier Subcontractor. A Subcontractor may request in writing, either on its own behalf or on behalf of a lower tier Subcontractor, that the Contractor present a claim for work which was performed by the Subcontractor or by a lower tier Subcontractor on behalf of the Subcontractor. The Subcontractor requesting that the claim be presented to the Agency shall furnish reasonable documentation to support the claim. Within 45 Days of receipt of this written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor presented the claim to the Agency and, if the original Contractor did not present the claim, provide the Subcontractor with a statement of the reasons for not having done so.
- m) A waiver of the rights granted by Section 9204 is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the Contractor and the Agency may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) the Agency may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of Section 9204, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in Section 9204.

Add the following subsection:

7-7 FINAL PAY ITEMS. When an item of work is designated as a Final Pay Item in the Schedule of Prices, the estimated quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion of the item are revised, and the revisions result in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

The estimated quantity for each item of work designated as a Final Pay Item shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the Plans, will equal the estimated quantity. No allowance will be made in the event that the quantity based on computations does not equal the estimated quantity.

In the case of a discrepancy between the quantity shown in the Schedule of Prices for a Final Pay Item and the quantity or summation of quantities for the same item shown on the Plans, payment will be based on the quantity shown in the Schedule of Prices.

SECTION 8 - FACILITIES FOR AGENCY PERSONNEL

8-1 GENERAL. (Page 39 of the SSPWC)

Add the following:

The Contractor shall furnish and place in operation a Class "A" field office for the Project if a Bid item for "OFFICE FACILITIES" is included in the Bid.

Replace the first sentence of the fifth paragraph with the following:

The Contractor shall provide, at least once per week, janitorial and other maintenance services in all types of facilities provided.

8-2 FIELD OFFICE FACILITIES.

8-2.1 Class "A" Field Office. (Page 39 of the SSPWC)

Add the following to the end of the first paragraph:

All exterior doors shall have a locking device consisting of either a padlock hasp or a double cylinder deadbolt lock in which case 4 keys for the lock shall be provided. Provisions shall be made for the locking of windows from the inside and all windows shall have security bars. The field office, if portable, shall be enclosed with a 6 foot high security fence equipped with a suitable lockable gate. Adequate parking shall be provided for the Engineer and other such Agency representatives as are assigned to the Project.

Replace the second, fourth and fifth paragraphs with the following:

The office shall be equipped with:

- a) fully operational heating and air conditioning systems of sufficient capacity,
- b) an internal restroom, equipped with a toilet and a sink with hot and cold running water, for the sole use of the Engineer,

- c) a water cooler with drinking water provided by the Contractor,
- d) one standard 5-foot (1.5 m) long double-pedestal desk with a drawer suitable for holding files and one desk chair,
- e) one 6-foot long, 30-inch wide, 30-inch tall table and 7 chairs,
- f) one plan table and one drafting stool,
- g) a photocopier/scanner/fax (“all in one”) machine for the sole use of the Engineer,
- h) broadband internet service with wi-fi capability,
- i) one plan rack,
- j) one mounted functional fire extinguisher with a minimum UL rating of 2A:10B:C, and contains at least 4 pounds of multipurpose dry chemical extinguishing agent,
- k) “Exit” and “Not an Exit” sign(s),
- l) an evacuation diagram, and
- m) a first aid kit that is ANSI compliant containing all items and quantities shown in Table 8-2.1:

TABLE 8-2.1

Item	Quantity
Adhesive Bandage, 3/8" x 1 1/2"	15
Adhesive Bandage, 1" x 3"	30
Triangular Bandage, 40" x 40" x 56"	1
Adhesive Tape, 1/2" x 5 yards	1
Cotton Tip Applicators	10
Finger Splints	2
Gauze Pad, 2" x 2"	4
Gauze Pad, 4" x 4"	4
Gauze Pad, 5" x 9"	1
Gauze Roll, 2" x 4 yards	1
Latex Free Exam Gloves	4
Instant Cold Compress	1
Scissors	1
Tweezers	1
Burn Cream Ointments	6
Antibiotic Ointments	6
Alcohol Prep Pads	15
Sting Relief Pads	2
Antiseptic Towelettes	12
First Aid Instructions	1

All equipment/furniture specified in 8-2.1 shall be in good working condition subject to approval by the Engineer and shall be maintained by the Contractor for the duration of the Project.

The all in one machine shall be capable of using standard 8 1/2-inch x 11-inch, 8 1/2-inch x 14-inch, and 11-inch x 17-inch bond paper. The paper necessary for each copy shall be automatically fed. The Agency will furnish paper for its own use. All other materials required for the all in one machine shall be furnished by the Contractor.

The location of the field office shall be approved by the Engineer. The field office shall be located on the Project site or within a 0.5 mile drive of the Project limits. The Contractor will not be compensated for a field office located outside the aforementioned limits.

The field office shall be in-place and fully operational prior to the date of issuance of the Part 2 Notice to Proceed. No payment will be made for each Working Day in which the field office is not in-place and fully operational.

8-6 BASIS OF PAYMENT. (Page 41 of the SSPWC)

Add the following:

Payment for office facilities will be made at the Contract Unit Price per month for "OFFICE FACILITIES".

PART 4 EXISTING IMPROVEMENTS

SECTION 400 - PROTECTION AND RESTORATION

400-1 GENERAL. (Page 479 of SSPWC)

Add the following:

All existing permanent traffic and bus stop signs which are removed or altered during construction shall be replaced by the Contractor to a condition equal to or better than, in all respects, the condition which prevailed prior to the start of construction under the Contract. While construction is in progress, any signs which are removed shall be posted by the Contractor in temporary locations as near the original locations as practicable. Signs shall be replaced in their original location as soon as possible. Traffic sign replacement shall be in conformance with the current requirements of the California Manual on Uniform Traffic Control Devices, <http://www.dot.ca.gov/hq/traffops/engineering/mutcd/>. If any sign is damaged or lost, thus requiring a new sign, the Contractor shall immediately notify the Engineer, and shall immediately replace any traffic sign in accordance with the above-mentioned manual at its own expense. The replacement of traffic signs must be approved by the Engineer in writing.

400-2 PERMANENT SURVEY MARKERS. (Page 479 of SSPWC)

Add the following:

When a change is made in the finished surface elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument cover to the new grade. Refer to Section D.

SECTION 402 - UTILITIES**402-1 LOCATION.****402-1.1 General.** (Page 481 of the SSPWC)

Add at the end of the first paragraph the following:

Service connections may not be shown on the Plans.

Replace the last sentence of the third paragraph with the following:

The Contractor shall provide the subsurface installation location data to the Engineer prior to issuance of the Part 2 Notice to Proceed.

The Contractor shall physically locate all utilities, including service connections, which have been marked by the respective utility owners and which may affect or be affected by the Contractor's operations prior to the start of any directional drilling, jacking, mainline trench, or lateral trench construction. The Contractor shall be responsible for locating service connections which may affect or be affected by the Contractor's operations even if they are not marked by the utility owner(s).

Add the following:

"Subsurface installation" shall include service connections. Location of subsurface installations shall be shown as an individual activity on the Baseline Schedule. Refer to 6-1.1.

Where water lines exist, at each angle point, cross connection and "T" connection, the Contractor shall assume the existence of a concrete thrust block located such as to resolve thrust loads.

The Agency may arrange for and conduct a preconstruction meeting between the Contractor, the Engineer, and the utility owners to discuss scheduling, coordination of any required utility relocations, and the protection of existing utilities. The Contractor shall attend any preconstruction meeting scheduled by the Agency and shall cooperate with all utility owners performing utility relocation or installation work on the Project site.

The utilities which have facilities located within the limits of the Project are as follows:

<u>Utility Owner</u>	<u>Contact</u>	<u>Phone Number/E-Mail</u>
Southern California Edison (Dist)	Heriberto "Eddie" Guerrero	(323) 889-5517 Cell: (323) 219-0761 Heriberto.Guerrero@sce.com
Southern California Edison (Dist)	Noelle Peterson	(310) 608-5162 Cell (310) 612-8628 Noelle.Peterson@sce.com
The Gas Company	Cesar Arroyo	(310) 605-7981 JMartinez4@semprautilities.com
California Water Service Company	Philip Delgado	(323) 263-4145 pdelgado@calwater.com
Crowncastle	David Antol	1 (888) 6332-0931 fiber/dig@ceowncastle.com
XO Communication	Matt Bergine	(714) 822-6207 Matt.bergine@verizon.com
AT&T -TCA	Maria Guzman	(213) 787-9996 g05131@att.com
Verizon Wireless	Heather Sharpsteen	(818) 898-2352 Heather.Sharpsteen@cableeng.com
AT&T (Distribution)	Marcus Martinez	(415) 530-0192 mm24lh@att.com

402-1.2 Payment. (Page 481 of the SSPWC)

Replace the entire subsection with the following:

No separate payment will be made for the location of utilities pursuant to Government Code Sections 4215 and 4216, and 402-1.1, or for attendance at the preconstruction meeting. Payment shall be considered as included in the various items of the Bid.

Add the following subsection:

402-1.3 Exploratory Excavations. In addition to the requirements of 402-1.1, the various cases under which exploratory excavations will be required and the respective basis of payment shall be as follows:

CASE 1 - Service connections:

Payment for all necessary exploratory excavations on service connections shall be considered as included in the lump sum Bid price "DRAINAGE".

CASE 2 - Utilities indicated by a triangle symbol:

The Contractor shall perform exploratory excavations on all utilities which are indicated on the Plans by a triangle symbol. The Contractor shall be responsible for determining the horizontal location, vertical location measured to the top and bottom of the conduit, and size of each utility so designated from a survey reference point. Nonhazardous utilities which are found by the Contractor to be within 12 inches vertically of any permanent work shall remain exposed until precisely located by the Agency.

Payment for exploratory excavations which are designated on the Plans by a triangle symbol shall be considered as included in the lump sum Bid price "DRAINAGE"..

CASE 3 - Utilities parallel to trenches:

For all trench excavations, the Contractor shall make exploratory excavations of all utilities, except sanitary sewers, lying wholly or in part within 2 feet of, and which are running approximately parallel to, the Contractor's proposed trench excavation limit. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment of the utility. When such exploratory excavations show the utility location as indicated on the Plans to be in error, the Contractor shall notify the Engineer. Upon completion of the work involved in locating utilities, the Contractor shall immediately backfill and either temporarily or permanently resurface the excavation.

Payment for exploratory excavations required to locate utilities running parallel to trench excavations shall be considered as included in lump sum Bid price "DRAINAGE"..

CASE 4 -All utilities marked, but not indicated on the Plans which may, as marked, be affected by the Work; and include exploratory excavations ordered by the Engineer and not covered under Cases 1, 2, or 3.

The Engineer may require one or more exploratory excavations to be dug prior to any trenching to be performed, or in advance of other construction operations in order to confirm the location of utilities. Payment for exploratory excavations ordered by the Engineer which are 5 feet or less in depth will be made at the Stipulated Unit Price of \$1,400 for each exploratory excavation, including backfilling and restoration of pavement or concrete. Exploratory excavations which are over 5 feet in depth will be considered as Extra Work.

If interference occurs between a storm drain connector pipe and a utility which was not marked as requiring an exploratory excavation, the Contractor shall be entitled to additional compensation in the Stipulated Unit Price of \$1,400 for the changes resulting from the necessary revisions to the connector pipe. It is mutually agreed by the Contractor and the Agency that the Stipulated Unit Price of \$1,400 shall be the total payment for any and all delays and additional work resulting from the connector pipe grade change (or changes) required by a utility interference. The Stipulated Unit Price of \$1,400 will be paid for each connector pipe grade change (or changes) due to interfering utilities. It is not intended that this subsection preclude payment for items of work associated with grade changes included in the Bid such as concrete collars.

402-2 PROTECTION. (Page 481 of the SSPWC)

Add the following before the first paragraph:

402-2.1 General. When directed by the Engineer, the Contractor shall encase interfering service connections in the slab or walls of poured in place concrete structures. Such encasing will be considered as Extra Work.

Service connections which do not interfere with any permanent work shall be maintained in place by the Contractor.

Add the following after the second paragraph:

When indicated on the Plans, the Contractor shall construct concrete supports for existing water lines, utility lines, and sanitary sewers or house connections which cross over storm drain or connector pipes constructed as part of the Project, and shall construct concrete blankets and encasements for existing sanitary sewers which cross under the storm drain, connector pipes and appurtenances.

The word existing as used herein in reference to sanitary sewer facilities shall refer to those sewer facilities within the immediate area affected by the Work which are existing, and which were not previously constructed as part of the Project.

As required by 3-8, Working Drawings prepared on 2' x 3' sheets for temporary utility supports shall be prepared by a Civil or Structural Engineer registered by the State of California. Working Drawings and complete calculations bearing an original signature of the designer shall be submitted to the Agency and to the utility owner for review and approval.

Unless otherwise noted or specified, the concrete supports shall be constructed in accordance with Standard Plan 224. In the case of sanitary sewer supports per Cases 1, 2, and 4, the sewer shall be encased. The encasement shall be a minimum of 6 inches (150 mm) wider on each side of the sewer (OD plus 12 inches (300 mm)) and a minimum of 6 inches (150 mm) above the top of the sewer. The support beam or support wall shall be widened to the width of the encasement and shall be lengthened to fully support the encasement.

Concrete blankets shall be constructed in accordance with Standard Plan 225, unless otherwise noted on the Plans.

Payment for encasing, thickening and extending sewer supports to fully support the encasements shall be considered as included in the Contract Unit Price for the sewer support if a Bid item is provided therefore. If no specific Bid item is provided, all costs involved shall be considered as included in the Contract Unit Prices in the Bid for the various items of work.

402-4 RELOCATION. (Page 482 of the SSPWC)

Replace the fourth paragraph with the following:

Unless otherwise indicated on the Plans, the Agency will arrange for the alteration or permanent relocation of all service connections (except sewer house connections) which interfere with the Work. Such alteration or permanent relocation will be performed by others and paid for by the Agency.

Add the following:

Some existing utility facilities may remain in place. The Contractor shall work around and pave up to said facilities. During paving operations, the Contractor shall raise sleeve-type valve covers to the new grade. For non-sleeve type valve covers and all other utility facilities which are required to be raised to the new grade, the Contractor shall, prior to the start of paving operations, notify the utility owners to adjust their facilities to the new grade. Payment for raising sleeve-type valve covers and utility owner notifications shall be considered as included in the lump sum Bid price for the "ROADWAY".

Southern California Edison (SCE) has facilities which will be adjusted or relocated within the limits of the Project. The Contractor shall coordinate with and accommodate the work required by SCE as shown on the SCE Service Plan. The Contractor shall provide SCE with 30 Days of notice to the SCE Inspector listed on the the SCE Service Plan to de-energize street lighting systems as required by the Work. A separate 30 Days of notice to the SCE Inspector is required upon completion of the relocation work to re-energize the street lighting systems.

402-5 DELAYS DUE TO UTILITY CONFLICTS. (Page 483 of the SSPWC)

Add the following to the end of the last paragraph:

Payment to the Contractor for actual loss due to a protracted utility delay shall be calculated based on wage increases, price increases of material and equipment, additional insurance costs and actual direct costs of maintaining the Project site incurred as a result of such utility delay.

CSM:

O:\Projects\Watershed Management\WMU0000010 - East Los Angeles Sustainable Median Stormwater Capture Project\Contract Documents\Specifications\Section G (2018 Edition) (1-22-19).docx

Number:

Effective Date:

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

Project Name: EAST LOS ANGELES SUSTAINABLE MEDIAN
STORMWATER CAPTURE PROJECT

Project ID No.: WMU0000010

County of Los Angeles,

Shall be named under the policy as insured or additional insured with respect to liability arising out of the Contractor's ongoing and completed operations.

This Endorsement shall apply to claims arising from occurrences during the time period from the commencement of work until the completion of the work to be performed and the acceptance of the work by the County of Los Angeles.

In the event of expiration, proposed cancellation, or any change in the insurance required in the Specifications, including insurer, limits of coverage, term of coverage or period of this policy for any reason whatsoever, the insurer shall notify the County of Los Angeles by registered mail, return receipt requested, sent to the County of Los Angeles c/o County of Los Angeles, Public Works, Construction Division, 8th Floor, Attention Irma Vasquez, 900 South Fremont Avenue, Alhambra, CA 91802-1460, giving a sufficient time before the date thereof to comply with any applicable law or statute, but in no event less than 10 days in advance of the effective date of proposed cancellation due to non-payment of premium, and not less than 30 days in advance of the effective date of expiration, proposed cancellation for any other reason, or for a policy change.

2019 Project Calendar

EAST LOS ANGELES SUSTAINABLE MEDIAN STORMWATER CAPTURE PROJECT

PROJECT ID NO: WMU0000010

JANUARY 2019							FEBRUARY 2019							MARCH 2019						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		H	2	3	4	5						1	2						1	2
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	H	22	23	24	25	26	17	H	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31			24	25	26	27	28			24	H	26	27	28	29	30
														31						
APRIL 2019							MAY 2019							JUNE 2019						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6				1	2	3	4							1
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30					26	H	28	29	30	31		23	24	25	26	27	28	29
														30						
JULY 2019							AUGUST 2019							SEPTEMBER 2019						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	H	5	6					1	2	3	1	H	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28	29	30	31	29	30					
OCTOBER 2019							NOVEMBER 2019							DECEMBER 2019						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5						1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	H	15	16	17	18	19	10	H	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	H	26	27	28
27	28	29	30	31			24	25	26	27	H	H	30	29	30	31				

= Work Allowed

= No Work Allowed

H = Holiday

2020 Project Calendar

EAST LOS ANGELES SUSTAINABLE MEDIAN STORMWATER CAPTURE PROJECT

PROJECT ID NO: WMU0000010

JANUARY 2020							FEBRUARY 2020							MARCH 2020						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			H	2	3	4							1	1	2	3	4	5	6	7
5	6	7	8	9	10	11	2	3	4	5	6	7	8	8	9	10	11	12	13	14
12	13	14	15	16	17	18	9	10	11	12	13	14	15	15	16	17	18	19	20	21
19	H	21	22	23	24	25	16	H	18	19	20	21	22	22	23	24	25	26	27	28
26	27	28	29	30	31		23	24	25	26	27	28	29	29	H	31				
APRIL 2020							MAY 2020							JUNE 2020						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4						1	2		1	2	3	4	5	6
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
26	27	28	29	30			24	H	26	27	28	29	30	28	29	30				
							31													
JULY 2020							AUGUST 2020							SEPTEMBER 2020						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	H	4							1			1	2	3	4	5
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	H	8	9	10	11	12
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30			
							30	31												
OCTOBER 2020							NOVEMBER 2020							DECEMBER 2020						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	H	12	13	14	6	7	8	9	10	11	12
11	H	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	H	H	28	20	21	22	23	24	H	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

= Work Allowed

= No Work Allowed

H = Holiday

ENCLOSURE A

LIST OF PRODUCTS WITH SPECIFIC BRAND NAMES

	Item/Category	Manufacturer	Model
1	12VDC 12 Ah Sealed Lead Acid Battery w/mount	Campbell Scientific/IEI	BP12
2	12VDC 12Ah Sealed Lead Acid Battery no mount (Replacement)	Campbell Scientific/IEI	8062
3	2 dBd 4G/3G Multiband Omnidirectional Antenna with Mounting Hardware	Campbell Scientific/IEI	32262
4	20W Solar Panel with Regulator 15 ft cable	Campbell Scientific/IEI	SP20R-L15-PT-SM
5	CR310 Data Logger w/WiFi	Campbell Scientific/IEI	CR310-WiFi
6	CS475 Adjustment Display Module	Campbell Scientific/IEI	25616
7	CS475 Cap w/Window for use w/Display	Campbell Scientific/IEI	25654
8	CS475 Level Bubble	Campbell Scientific/IEI	25619
9	Desiccant & Document Holder, User Installed	Campbell Scientific/IEI	10525
10	Electrician's Putty for Sealing Enclosure Conduit	Campbell Scientific/IEI	6596
11	Enclosures for battery & data logger ENC16/18 Weather Resistant 16 x 18 inch	Campbell Scientific/IEI	ENC16/18-ES-SB-PM
12	Four-Unit Desiccant Bags (quantity of 20)	Campbell Scientific/IEI	6714
13	LOGGERNET Datalogger Support Software	Campbell Scientific/IEI	LoggerNet
14	Power Supply, 24Vdc	Campbell Scientific/IEI	29796
15	Radar Water Level Sensor, 114.8 ft Max (140 FT cable length)	Campbell Scientific/IEI	CS475A-L140-PT
16	Radar Water Level Sensor, 114.8 ft Max (50 FT cable length)	Campbell Scientific/IEI	CS475A-L50-PT
17	Rain Gage Mounting Kit	Campbell Scientific/IEI	CM270
18	Replacement Enclosure Humidity Indicator	Campbell Scientific/IEI	28878
19	RG8 Antenna Cable with 2 Type N Male Connectors	Campbell Scientific/IEI	COAXNTN-L12

	Item/Category	Manufacturer	Model
20	RV50 Cell Modem (Verizon US)	Campbell Scientific/IEI	RV50-NA-V
21	RV50 Mounting Kit	Campbell Scientific/IEI	32252
22	Surge Protection Kit, Type N to SMA, 700 to 2700 MHz	Campbell Scientific/IEI	31317
23	Texas Electronics Rain Gauge 0.01 inch (0.254 mm) Tip w/6 inches Orifice (w/ 25 ft cable)	Campbell Scientific/IEI	TE525-L25-PT
24	12VDC Replacement Sealed Lead Acid Battery, 75Ah, 0.197" Diameter Tab with Bolt Hole	Grainger	26111701
25	1-lb Refill Bottle of Desiccant	Teledyne ISCO/MCRT	60-2004-233
26	ISCO 12-Bottle Configuration for standard compact base w/ 12 glass 375-mL round bottles and PTFE lined caps, bottle retaining ring, carrier, and two discharge tubes.	Teledyne ISCO/MCRT	68-6700-024
27	ISCO 3/8 inch vinyl suction line - 200 feet, SPA 491.	Teledyne ISCO/MCRT	60-5304-491
28	ISCO 4 Bottle Config Kit for 6712FR	Teledyne ISCO/MCRT	60-5304-606
29	ISCO 750 Low Profile Area Velocity Flow Module (75FT) and Low Profile Velocity Sensor Measure 10 FT Level Range	Teledyne ISCO/MCRT	60-9004-051
30	ISCO 6712C Portable Sampler	Teledyne ISCO/MCRT	68-6710-071
31	ISCO 6712ci Modem (cellular) - CDMA w/ antenna	Teledyne ISCO/MCRT	68-6710-148
32	ISCO 6712FR Refrigerated Sampler (120V, 60Hz)	Teledyne ISCO/MCRT	68-6710-072
33	ISCO 720 Module and submerged probe with 75FT cable, measures 10FT Level Range	Teledyne ISCO/MCRT	68-6700-068
34	ISCO Model 948 Lead-Acid Battery. Rechargeable, 12VDC, 45 amp-hours	Teledyne ISCO/MCRT	68-3000-948
35	ISCO Pump Tubing for 6700 series sampler (25 tubes)	Teledyne ISCO/MCRT	68-6700-045
36	ISCO Sensor Mounting Plate	Teledyne ISCO/MCRT	60-3253-077
37	ISCO SPA 1026-12 foot length (cut to length cable; base price + 1.19 per foot)	Teledyne ISCO/MCRT	60-5314-026
38	ISCO Stainless Steel Strainer (3/8")	Teledyne ISCO/MCRT	69-2903-138
39	ISCO Tubing Coupler, 3/8 inch. One-piece, clampless coupler made of stainless steel	Teledyne ISCO/MCRT	60-3709-002

	Item/Category	Manufacturer	Model
40	Model 914 Battery-Backed Power Packs	Teledyne ISCO/MCRT	68-3004-130
41	Electric Motor Operators (EMO)	Limitorque	L120 Series
42	Gearbox	Limitorque	V Series 3.25:1
43	Flowmeter	Hach	Flo-DAR AV
44	Level Transmitter	Ametek	575
45	Air Relief Valve	Rainbird	ARV050
46	Flow Sensor	Calsense	FM-2B
47	Rain Sensor	Calsense	RB-1
48	CONTROLLER	Calsense	CS3-48-S-UPGRADE/CS3-8STA-KIT/CS3-GR/CS3-W-KIT/RB-1/COMM-5Y
49	Remote Control Valve, Remote Control Valve Drip	Rainbird	PEB-PRS-D, XCZ-100-PRB-COM, XCZ-150-PRB-COM
50	QUICK COUPLER	Rainbird	33 DLRC
51	BELOW SURFACE DRIPLINE	Rainbird	XFS-06-12-500
52	TREE DRIPLINE	Rainbird	XFS-09-12-500
53	POP-UP INDICATOR WITH MANUAL FLUSH NOZZLE	Rainbird, GPH	RD-12-S-P30-F (Rainbird Pop-up body), GDFN (GPH Nozzle)

PUBLIC WORKS

LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

SPECIAL PROVISIONS

SECTION EC – ENVIRONMENTAL COMPLIANCE

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:

A handwritten signature in blue ink, appearing to be "Colin Scott McCarter", written over a horizontal line.

June 18, 2019

Date

Reviewed By:

A handwritten signature in black ink, appearing to be "May D. [unclear]", written over a horizontal line.

6/24/19

Date

TABLE OF CONTENTS

PART 1 - GENERAL PROVISIONS

SECTION 3 - CONTROL OF THE WORK

3-12	WORK SITE MAINTENANCE	EC-1
3-12.1	General.....	EC-1
3-12.2	Air Pollution Control.....	EC-2
3-12.3	Noise Control.....	EC-3
3-12.6	Water Pollution Control	EC-5

SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES

5-7	SAFETY	EC-22
5-7.9	Silica Exposure Control Plan (SECP)	EC-22
5-8	NOT USED.....	EC-22
5-9	SPECIES PROTECTION.....	EC-23
5-9.1	General.....	EC-23

SECTION 6 - PROSECUTION AND PROGRESS OF THE WORK

6-6	DELAYS AND EXTENSIONS OF TIME	EC-24
6-6.2	Archaeological and Paleontological Discoveries.....	EC-24

PART 1

GENERAL PROVISIONS

SECTION 3 - CONTROL OF THE WORK

3-12 WORK SITE MAINTENANCE.

3-12.1 General. (Page 18 of the SSPWC)

Replace the second paragraph with the following:

During all phases of trenching operations and whenever dirt or base material is stored on paved roadways, the Contractor shall furnish and operate a motorized street sweeper with water spray nozzles and a functioning vacuum system at least twice a day within the areas of its operations and, as determined by the Engineer, along haul routes and in areas within vicinity of the construction operations. The sweeping shall be near or after the end of construction operations for the day or as directed by the Engineer. At the same time, the Contractor shall also manually sweep the sidewalks and driveways in the vicinity of the construction operations. The sweeping operations shall produce a clean surface throughout the Project area.

If, in the opinion of the Engineer, this effort does not result in satisfactorily clean streets and sidewalks, then the Contractor shall take whatever other measures are necessary to keep the streets and sidewalks clean. Such measures may include, but not be necessarily limited to, more frequent use of a motorized street sweeper with water spray nozzles with a vacuuming system, the use of a self-loading vacuum sweeper, including the use of sufficient hand labor to satisfactorily comply with this specification.

Add the following:

As used in Subsection 3-12, the definition for “Engineer” in 1-2 of Section G shall be amended to add, “The authorized representative of the Engineer for 3-12 shall be:

Oscar Enriquez
oenrique@pw.lacounty.gov

All monitoring reports required in Subsection 3-12 shall contain the following completed declaration completed and signed by a corporate officer:

“I declare under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system or those directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on the _____ day of _____ at _____.
(Signature) _____
(Printed Name) _____
(Title) _____

3-12.1.1 Street Sweeper Equipment. All street sweepers shall be compliant with SCAQMD Rules 1186 and 1186.1. All street sweepers for the project shall be self-loading, motorized street sweepers equipped with a functional water spray system and functioning vacuuming system. Refer to 3-12.2.3.

3-12.1.3 Off-Road Diesel-Powered Equipment. All off-road diesel-powered construction equipment that will be used during any portion of the Work shall meet the Tier 2 emission standards.

3-12.2 Air Pollution Control.

Add the following before the first paragraph:

3-12.2.1 General.

Add the following subsection:

3-12.2.2 Control of Fugitive Dust.

3-12.2.2.1 General. This Contract is subject to the South Coast Air Quality Management District (SCAQMD) Rule 401, Rule 402, and Rule 403. The Contractor shall comply with these rules. Copies of these rules and further information may be obtained from the following:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Telephone: (909) 396-3600

<http://www.aqmd.gov/home/programs/business/training-403-403-1-fugitive-dust>

3-12.2.3 Reporting Requirements. The Contractor shall submit the completed and signed “NOx and PM10 Inventory Forms” (included as *Attachment A* the end of this Section EC) to the Engineer monthly throughout the duration of the Project.

3-12.2.3.1 Payment. No separate or additional payment will be made for compliance and submission of the monthly “NOx and PM10 Inventory Forms”. Payment will be considered as included in the Contract Unit Price for the various Bid items affected by these requirements.

3-12.3 Noise Control.

Replace the entire subsection with the following:

The Contractor shall implement the following noise reduction measures:

- a) Place noise-generating construction activities (e.g., operation of compressors and generators, cement mixing, general truck idling) as far as possible from the nearest noise-sensitive land uses.
- b) Locate stationary construction noise sources as far from adjacent noise-sensitive receptors as possible.

The Contractor shall implement these noise reducing measures at all times throughout the duration of construction activities.

Payment for implementing the noise reducing measures shall be considered as included in the prices in the Bid for the various items of work.

3-12.3.1 Temporary Sound Barriers. Prior to the start of work, the Contractor shall construct the temporary sound barriers around all drilling operation locations or as directed by the Engineer. The temporary sound barrier shall be able to be moved to the various drilling site locations as required to reduce noise from drilling and well installation activities to maximum extent possible. The temporary sound barrier shall be constructed and placed in such a manner that maximizes sound attenuation from the nearest sound receptor. When installing the temporary sound barriers, care shall be taken so as not to impair the line of sight from street or pedestrian traffic. The proposed sound barrier shall be designed to be a minimum of 10 feet in height. Refer to *Attachment B* included at the end of this Section EC for typical installation configurations.

The temporary sound barrier shall be a manufactured by one of the following or an Agency-approved equal:

Environmental Noise Control
STC-25 Acoustical Barrier Blanket
K-Rail Mounted Temporary Sound Wall
13806 Inglewood Avenue
Hawthorne, CA 90250
(310) 771-0571
<http://www.environmental-noise-control.com>

Acoustical Surface Inc.
BBC-13X-2" Temporary Construction Noise Barrier, or
BBC-EXT-R-2 Noise Barrier/Sound Absorber Sound Blankets
123 Columbia Ct N,
Chaska, MN 55318
(800) 854-2948
<https://www.acousticalsurfaces.com/>

eNoise Control
UNC-XT-1 / UNC-XT-1 Exterior Noise Barrier/Sound Absorber Composite, or
QFA-XT-2D Sound Blankets
129 Penn Street
Westfield, IN 46074
(317) 774-1900
<https://www.enoisecontrol.com/products/outdoor-sound-blankets>

The Contractor shall maintain the temporary sound wall and its associated performance throughout the duration of construction activities. Upon completion of construction activities, the Contractor shall remove and dispose of the temporary sound barriers.

3-12.3.4 Payment. Payment for the construction and maintenance will be made at the lump sum price in the Bid for “TEMPORARY SOUND BARRIER.” No separate or additional payment will be made to relocate or remobilize the barrier to accommodate the Work or for additional barriers to be installed to mitigate impact of the Work at multiple locations.

3-12.6 Water Pollution Control. (Page 20 of the SSPWC)

3-12.6.3 Storm Water Pollution Prevention Plan (SWPPP).

Replace the entire subsection with the following:

3-12.6.3.1 Terms and Definitions.

Active Areas of Construction – areas subject to land surface disturbance activities related to the Project including, but not limited to, the Project site, staging areas, immediate access areas and storage areas. Previously active areas will be considered active areas until temporary or final soil stabilization BMPs are implemented.

Accumulated Precipitation Procedure (APP) – the methods and procedures for management and discharge of accumulated precipitation on the Project site.

Agency-Certified SWPPP – a SWPPP that has been reviewed and certified by the Agency.

Best Management Practices (BMPs) – shall be defined as specified in the Waste Discharge Requirements referenced in 3-12.6.3.4.

BMP Manual – the edition of the Los Angeles County Department of Public Works Construction Site Best Management Practices (BMPs) Manual, in effect as of the date of advertisement of the Contract.

Exposed Soil – native soil left exposed as the result of uncovering, removal of vegetation or pavement, grading, excavation, or any other construction activity. Soil protected with temporary soil stabilization BMPs will not be considered exposed soil.

Final Stabilization – the implementation of soil stabilization BMPs following the completion of construction activities.

Inactive Disturbed Soil Areas (DSA) – areas that have been disturbed and have not or will not be disturbed for at least 14 Days.

Likely Precipitation Event – Any weather pattern that is forecasted to have a 50 percent or greater chance of producing precipitation within the Project site.

Non-Storm Water Discharges – discharges that do not originate from precipitation events.

Non-Visible Pollutants – pollutants associated with a specific Project site or activity that cannot be seen through observation and which can have a negative impact on water quality.

Numeric Action Level (NAL) – The action level (250 NTU and 6.5-8.5 pH) at which the QSP shall evaluate whether the implemented BMPs are performing effectively or if corrective actions are required.

Perimeter Sediment Control BMPs – a temporary sediment control BMP around the perimeter of the Project site used to prevent sediment discharges from storm water run-on or run-off.

Qualified SWPPP Developer (QSD) – an individual certified by the State Water Resources Control Board as meeting the requirements of Order No. 2009-0009-DWQ to develop, revise, and amend SWPPPs.

Qualified SWPPP Practitioner (QSP) – an individual certified by the State Water Resources Control Board as meeting the requirements of Order No. 2009-0009-DWQ.

Qualifying Rain Event - any event that produces 0.50 inch or more of precipitation within a 48-hour or greater period between rain events. Qualifying rain event forecast information shall be obtained from the National Weather Service Forecast (e.g., by entering the zip code of the Project location

at <http://www.srh.noaa.gov/>). Qualifying rain event actual precipitation amounts shall be obtained from the closest Agency rain gauge station by checking the 24-hour rain amounts on the Agency rain gauge website, http://ladpw.org/wrd/precip/alert_rain/index.cfm?cont=24hr.cfm.

Rain Event Action Plan (REAP) – a written plan (Attachment P in the SWPPP) specific for each rain event that discusses and describes the procedures to be followed, and the measures to be taken, that, when implemented, will result in the protection of all exposed soil within the Project site for 48 hours from the start of a Likely Precipitation Event.

Run-On – storm water discharges that flow onto the Project site.

Run-On Control BMPs – BMPs used to divert or direct run-on either around or through the Project site.

Sampling and Analysis Plan (SAP) – A written document that discusses and describes how samples will be collected; under what conditions, where and when the samples will be collected; what the samples will be tested for; what test methods will be followed and their detection limits; and what methods/procedures will be followed to ensure the integrity of the sample during collection, storage, shipping and testing (i.e., quality assurance/quality control protocols).

SWPPP Preparation Manual – the edition of the Los Angeles County Department of Public Works Storm Water Pollution Prevention Plan (SWPPP) Preparation Manual in effect as of the date of advertisement of the Contract.

Turbidity – The cloudiness of water quantified by the amount light traveling through a water column is scattered by suspended organic and inorganic particles as measured and reported in Nephelometric Turbidity Units (NTU).

3-12.6.3.2 Abbreviations.

<u>Abbreviation</u>	<u>Word or Words</u>
APP	Accumulated Precipitation Procedure
BMP	Best Management Practice
CSMP	Construction Site Monitoring Program
NAL	Numeric Action Level
NPDES	National Pollutant Discharge Elimination System

NTU	Nephelometric Turbidity Unit
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
REAP	Rain Event Action Plan
RWQCB	Los Angeles Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SMARTS	Storm water Multiple Application Reporting and Tracking System
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
WDID	Waste Discharge Identification Number

3-12.6.3.3 General. The SWPPP shall conform to the requirements in these Special Provisions, the BMP Manual, and the SWPPP Manual. This manual is available from the following website address:

<http://dpw.lacounty.gov/cons/specs/SWPPPMannual.pdf>

The SWPPP shall be prepared by a QSD for a Risk Level 2 (as referenced in 3-12.6.3.4, subparagraph “b).”

No work having the potential to cause pollution, as determined by Engineer, shall be performed until the SWPPP has been reviewed and certified by the Agency and a Waste Discharge Identification Number (WDID) has been issued by the State Water Resources Control Board (SWRCB) Storm Water Multiple Application Reporting and Tracking System (SMARTS).

3-12.6.3.4 Regulatory Agency Requirements. The Contractor shall comply with the following at all times:

- a) Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles, and the Incorporated Cities Therein, Except the City of Long Beach (Order No. R4-2012-0175, NPDES Permit No. CAS004001). Within the City of Long Beach, Order No. 99-060, NPDES Permit No. CAS004003.
- b) National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Order No.-2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities for Risk Level 2.

- c) Within the unincorporated areas of the County of Los Angeles, Los Angeles County Code, Chapter 12.80.
- d) Other applicable environmental regulatory permits.

3-12.6.3.5 Best Management Practices (BMPs).

- a) **Minimum Requirements.** The Contractor shall implement an effective combination of erosion and sediment controls and maintain the appropriate Construction Site BMPs shown in Table 3-12.6.3.5 (A). The BMPs shown in this table meet or exceed the Waste Discharge Requirements referenced in 3-12.6.3.4.

TABLE 3-12.6.3.5(A)

Construction Site BMPs		
ID	BMP Name	Minimum Requirement
Temporary Soil Stabilization		
SS-1	Scheduling	X
SS-2	Preservation of Existing Vegetation	X
SS-3	Hydraulic Mulch	
SS-4	Hydro seeding	
SS-5	Soil Binders	
SS-6	Straw Mulch	
SS-7	Geotextiles, Plastic Covers, & Erosion Control Blankets/Mats	X
SS-8	Wood Mulching	
SS-9	Earth Dikes/Drainage Swales & Ditches	
SS-10	Outlet Protection/Velocity Dissipation Devices	
SS-11	Slope Drains	
SS-12	Stream bank Stabilization	
Temporary Sediment Control		
SC-1	Silt Fence	X
SC-2	Sediment/Desilting Basin	
SC-3	Sediment Trap	
SC-4	Check Dam	
SC-5	Fiber Rolls	X
SC-6	Gravel Bag Berm	X
SC-7	Street Sweeping and Vacuuming	X
SC-8	Sandbag Barrier	X
SC-10	Storm Drain Protection	X
Wind Erosion Control		
WE-1	Wind Erosion Control	X
Tracking Control		
TC-1	Stabilized Construction Entrance/Exit	X
TC-2	Stabilized Construction Roadway	

TC-3	Entrance/Outlet Tire Wash	
Non-Storm Water Management		
NS-1	Water Conservation Practices	X
NS-2	Dewatering Operations	X
NS-3	Paving and Grinding Operations	X
NS-4	Temporary Stream Crossing	
NS-5	Clear Water Diversion	
NS-6	Illicit Connection/Illegal Discharge Detection and Reporting	X
NS-7	Potable Water/Irrigation	X
NS-8	Vehicle Equipment Cleaning	X
NS-9	Vehicle Equipment Fueling	X
NS-10	Vehicle Equipment Maintenance	X
NS-11	Pile Driving Operations	
NS-12	Concrete Curing	
NS-13	Material and Equipment Use Over Water	
NS-14	Concrete Finishing	
NS-15	Structure Demolition Over or Adjacent to Water	
NS-16	Temporary Batch Plant	
Waste Management and Material Pollution Control		
WM-1	Material Delivery	X
WM-2	Material Use	X
WM-3	Stockpile Management	X
WM-4	Spill Prevention and Control	X
WM-5	Solid Waste Management	X
WM-6	Hazardous Waste Management	X
WM-7	Contaminated Soil Management	X
WM-8	Concrete Waste Management	X
WM-9	Sanitary/Septic Waste Management	X
WM-10	Liquid Waste Management	X

Additional BMPs may be required as a result of actual field conditions, Contractor activities, or construction operations.

b) **Implementation Requirements.** Implementation shall conform to the requirements on the applicable BMP Fact Sheets and the following:

1) **Temporary Soil Stabilization**

- i) Inactive Disturbed Soil Areas, and completed areas of construction shall be stabilized after 14 Days of inactivity or prior to a Likely Precipitation Event.
- ii) Active areas of construction shall be stabilized and temporary sediment controls implemented prior to a rain event.

2) Temporary Sediment Control

- i) Linear sediment controls shall be placed along the toe and face of inactive disturbed slopes (14 Days or more of inactivity), and at grade breaks of exposed soil in accordance with Table 3-12.6.3.5 (B).

TABLE 3-12.6.3.5(B)

Slope Percentage	Maximum Spacing
0-25% (flat to 1:4 V:H)	20 feet
25-50% (1:4 to 1:2 V:H)	15 feet
Over 50% (steeper than 1:2 V:H)	10 feet

- ii) Stockpiles shall be surrounded by a berm of perimeter sediment controls prior to a Likely Precipitation Event and when not in use.

3) Wind Erosion Control

- i) Wind erosion control BMPs shall be implemented in conformance with the requirements of the jurisdictional air quality regulatory agency.

4) Tracking Control

- i) Each entrance to, and exit from, the Project site shall be stabilized. Traffic entering/exiting the Project site shall be directed so as to only use such stabilized entrances/exits. Mud and/or sediment tracked onto paved surfaces shall be removed by the end of each Day.

5) Non-Storm Water Management

- i) Accumulated precipitation shall be discharged in accordance with the APP (Attachment K of the SWPPP).
- ii) Separate permits are required for groundwater dewatering.
- iii) Non-storm water BMPs shall be implemented to prevent un-authorized discharges.
- iv) Non-storm water discharges shall be in compliance with Section III of the Waste Discharge Requirements referenced in 3-12.6.3.3.

6) Waste Management and Material Pollution Control

- i) Stockpiles (and portions thereof) that are not actively being used shall be covered and bermed (surrounded by a berm).
- ii) Material and waste stockpiles shall be covered prior to a Likely Precipitation Event.
- iii) Stockpiles of temporary asphalt concrete (“cold mix”) shall be covered at all times.
- iv) Stockpiles shall be removed from roadways at the end of each Day.
- v) The Contractor shall have a minimum of 3 spill response cleanup on the Project site at all times.
- vi) Spills and leaks shall be cleaned up within one hour after spillage.
- vii) Concrete waste shall be considered as including, but not be limited to, slurry, cement, wash waters, additives, or grout. Concrete waste shall be contained in a concrete washout bin. At-grade and below- grade washouts are prohibited. There shall be no discharge of concrete washout or waste onto the underlying soil or surrounding areas.

3-12.6.3.6 Preparation and Submittal Requirements.

- a) **General.** The SWPPP shall be prepared in accordance with the SWPPP Preparation Manual.

The SWPPP shall be signed and stamped by a Civil Engineer registered in the State of California.

The SWPPP shall be submitted in accordance with 3-8.2 within 14 Days of the issuance of Part 1 NTP. One printed copy in a 3-ring binder shall be submitted for initial Agency review.

Failure to submit a SWPPP which conforms to the requirements in this manual will result in rejection of the submittal.

- b) **Qualified SWPPP Developer (QSD).** The SWPPP shall be prepared, certified and amended by a QSD.

A copy of the QSD's certificate shall be included in Attachment I of the SWPPP submittal.

3-12.6.3.7 Agency Review and Certification. The Agency will review each submittal. The Agency may require corrections and/or revisions (comments) and one or more re-submittals prior to certification.

If the Agency has comments, the Contractor shall prepare a comment response table following the format below. The table shall be submitted with each re-submittal.

Comment No.	Comment	Response
Include the Agency comment number.	Repeat the comment.	Describe action taken to fully address the comment.

Once the Contractor has satisfactorily addressed all review comments, the Agency will sign Section 100.2 of the SWPPP and provide it to the Contractor for inclusion. The Contractor shall insert Section 100.2. This becomes the Agency-Certified SWPPP.

The term SWPPP, as used in Subsections 3-12.6.3.8 and thereafter, shall mean the SWPPP which has been reviewed by the Agency and includes the Agency-signed Section 100.2.

The Contractor shall provide three hard copies of the SWPPP to the Office Engineer in accordance with Section 2.4 of the SWPPP Preparation Manual. In addition, the Contractor shall submit one electronic copy of in portable document format (pdf) on a read/write (R/W) capable compact disk (CD). The pdf shall not exceed a file size of 70 MB.

The Agency will submit the SWPPP to the SWRCB. The SWRCB and Regional Water Quality Control Board (RWQCB) may require revisions. Should revisions be required, the Contractor shall perform such and re-submit the SWPPP to the Agency within 5 Days of being notified in writing by the Engineer. The SWRCB has not established a time frame for SWPPP review and issuance of the WDID. Should this process result in delays, the Contractor will be entitled to an extension of time in accordance with 6-4.2.

Review and certification by the Agency and acceptance by the SWRCB will not relieve the Contractor of the responsibility for the adequacy of the SWPPP nor for full compliance with all applicable Federal, State, and local laws and regulations governing water quality.

The Contractor shall maintain (1) one hard copy of the SWPPP and SWPPP amendments at the Project site. The SWPPP shall be made available to a representative of the RWQCB, SWRCB, United States Environmental Protection Agency or the Agency upon request. Any requests by the public shall be directed to the Engineer.

3-12.6.3.8 SWPPP Amendments. An amendment to the SWPPP shall be prepared and submitted when there is a change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, or municipal storm drain systems; when the Contractor's activities or operations violate any condition of the Permits; if the QSD or QSP is proposed to be changed; or when so directed by the Engineer.

Amendments shall be prepared in accordance with Section 200 of the SWPPP Preparation Manual and shall include the following:

- a) A description of what SWPPP section is being amended.
- b) Why the Amendment is necessary.
- c) Who requested the Amendment?
- d) An Amendment Log.
- e) The signed certification of the QSD.

Amendments shall describe additional water pollution control practices or revised operations, including those areas or operations not shown in the SWPPP. Amendments to the SWPPP shall be prepared and submitted for review and certification by the Agency within 14 Days of direction by the Engineer.

3-12.6.3.9 Implementation.

- a) **General.** The Contractor shall be responsible year-round, throughout the duration of the Project, for implementation of the SWPPP and all certified SWPPP amendments until the Notice of Termination is filed by the Agency. The Contractor's responsibility for implementation of the SWPPP shall continue throughout any temporary suspension of the Work or designated construction moratorium.

Implementation of the SWPPP shall conform to the requirements in the SWPPP Preparation Manual and the BMP Manual.

If the BMPs selected in the SWPPP do not result in conformance with the performance standards specified in 3-12.6.3.4, the Contractor shall implement additional BMPs as necessary.

- b) **Qualified SWPPP Practitioner (QSP).** The Contractor shall designate a QSP. A copy of the QSP's certificate shall be included in Attachment I.

The Contractor shall provide a QSP full-time on the Project site during working hours and rain events. The QSP shall have the responsibility and authority to fully implement the SWPPP.

- c) **BMP Manual.** The Contractor shall have a readily accessible copy of the BMP Manual on the Project site at all times.
- d) **Weather Forecast:** The Contractor shall monitor the National Weather Service (NWS) forecast on a daily basis. Forecast information shall be obtained from the National Weather Service by entering the zip code of the Project's location at <http://www.wrh.noaa.gov/lox/>.
- e) **Rain Event Action Plan (REAP).** A REAP shall be prepared by the QSP whenever a Likely Precipitation Event is forecast. REAPs shall be prepared in conformance with the REAP template (Attachment P). The Contractor shall plan for 20 Likely Precipitation Events throughout the duration of the Contract.

The QSP shall prepare and submit to the Engineer a REAP and a printed copy of the National Weather Service forecast a minimum of 48 hours prior to a forecast Likely Precipitation Event. The Contractor shall implement the REAP a minimum of 24 hours of prior to the forecast start of the Likely Precipitation Event.

If a Likely Precipitation Event is forecast less than 24 hours in advance or otherwise occurs, the QSP shall immediately prepare a REAP and submit to the Engineer, and the Contractor shall immediately implement the REAP.

The QSP shall inspect the Project site and document the actions implemented as part of the REAP.

Completed REAPs shall be filed in Attachment P.

- f) **Accumulated Precipitation Procedure (APP).** The Contractor shall implement the APP (Attachment K) whenever a discharge of accumulated precipitation is necessary. Accumulated precipitation shall not be discharged without an APP. The Contractor shall notify the Engineer 24 hours prior to the scheduled discharge. Samples of accumulated precipitation shall be collected and analyzed prior to discharge.
- g) **Construction Site Monitoring Program (CSMP).** The QSP shall implement the CSMP included in the SWPPP for visual monitoring (inspections), and sampling and analysis. CSMP implementation shall include the following:
- 1) **Visual Monitoring.** The QSP shall inspect the Project site to ensure compliance with the SWPPP. The QSP shall document inspections on the BMP Checklist (Attachment H) at the frequencies specified below:
 - i) A minimum of once every week.
 - ii) Within 48 hours prior to a Likely Precipitation event.
 - iii) Within 48 hours after all rain events (0.01 inch of precipitation or more).
 - iv) At least once every 24 hours during extended rain events (a Qualifying Rain Event that occurs for more than 24 hours).

The Contractor shall sign and submit one copy of the completed BMP Checklist to the Engineer within 24 hours of completing each inspection. One completed and signed copy of each BMP Checklist shall be kept with the SWPPP.

The QSP shall perform at a minimum the following:

- v) Inspect all BMPs. Document the inspection and whether BMPs have been implemented in accordance with the SWPPP/REAP. If needed, corrective actions shall be implemented by the Contractor.

- vi) Inspect each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources. Document the inspection and findings.
 - vii) Inspect all actual and potential run-on sources from surrounding areas. Document the inspection and findings.
 - viii) Ensure all accumulated precipitation discharges are in compliance with the APP.
 - ix) Document all BMP deficiencies and corrective actions on the BMP Checklist as required in the BMP Manual.
 - x) Implement BMP corrective actions within 24 hours.
 - xi) Inspect all non-storm water discharges. Document the inspection and findings. The QSP shall implement non-storm water corrective actions within 24 hours.
- 2) **Rain Gauge Reading.** The QSP shall record the time, date, and rain gauge reading from the Agency's real-time rainfall data precipitation map, http://ladpw.org/wrd/precip/alert_rain/. If the rain event was a Qualifying Rain Event, attach a copy to Attachment N.
- 3) **Storm Water Sampling and Analysis.** The QSP shall submit rain event field water sampling and analytical data (on Attachment N) within 24 hours of the conclusion of each Qualifying Rain Event. Attachment N shall be completed for each Qualifying Rain Event regardless of whether samples were collected. The QSP shall submit non-storm water and non-visible pollutant water sampling laboratory results within 20 Days after sample collection. The QSP shall submit the data in accordance with the SWPPP Preparation Manual.

The Contractor shall plan for 10 Qualifying Rain Events and collection of 3 samples per event (total of 30 samples). The QSP shall collect samples only when storm water discharges occur during working hours.

The QSP shall collect storm water samples for each Qualifying Rain Event as follows:

- i) Collect and analyze storm water samples from each discharge location. A minimum of 3 samples shall be collected each Day. Discharge locations are identified on Attachment B (Water Pollution Control Drawings).
- ii) Ensure storm water samples are representative of the flow and duration of the discharge from the Project site.
- iii) Collect a minimum of one run-on sample from each run-on source.

Calibrated turbidity and pH meters conforming to the requirements shown in Table 3-12.6.3.9 shall be provided by the Contractor and retained on the Project site at all times.

TABLE 3-12.6.3.9

Parameter	Test method	Min. Detection Limit	Units	Numeric Action Level (NAL)
pH	Calibrated portable pH meter	0.2	pH units	lower NAL 6.5 upper NAL 8.5
Turbidity	Calibrated portable turbidity meter	1	NTU	250

Turbidity and pH meters must be calibrated in accordance with the manufacturer's specifications prior to use for field analysis. Calibration data shall be filed with the analytical results in the SWPPP at the Project site.

If any storm water test result exceeds the NALs shown in Table 3-12.6.3.9, the QSP shall:

- iv) Implement immediate corrective actions to address the cause of the exceedance and to prevent further exceedance. Re-sample the discharge location to ensure the average analytical result is in compliance the above referenced table.
- v) If the average of the samples still exceeds the NALs, sign and submit a Numeric Action Level Exceedance Report (Attachment R) to the Engineer within 5 Days of the date of sampling.

- vi) Notify the Engineer and the Environmental Compliance Unit (ECU) within 24 hours of any NAL Exceedance at oenrique@pw.lacounty.gov.
- vii) Revise the NAL exceedance reports to the satisfaction of the Engineer when requested.
- 4) **Non-Storm Water Sampling.** If Project site inspections indicate any authorized or unauthorized non-storm water discharges, the QSP shall record the findings on the BMP Checklist and immediately implement the procedures for non-storm water sampling specified in the SWPPP.

The QSP shall collect samples at all discharge points. Each sample shall be transported under chain-of-custody procedures to a State of California Department of Health Services Environmental Accreditation Program (ELAP) certified laboratory for analysis as identified in the SWPPP.

The QSP shall submit a summary of the water quality data collected, including signed laboratory analytical data sheets, chain-of-custody (COCs) forms, and laboratory QA/QC data sheets with Attachment N within 20 Days after sample collection. The QSP shall submit the data in accordance with the SWPPP.

- 5) **Non-Visible Pollutant Monitoring.** Non-visible pollutant discharges are not authorized. The QSP shall collect one or more samples down gradient and one or more upstream control samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants from the Project site that would not be visually detectable. Samples shall be analyzed in the field or by a laboratory in accordance with the SWPPP.

Analytical results shall be submitted in accordance with Attachment N and shall be accompanied by a determination by the QSP if down-gradient samples show elevated levels of the tested parameter relative to levels in the uncontaminated control sample. If down-gradient samples show increased levels, the Contractor shall implement corrective actions.

Where appropriate BMPs are not implemented prior to a rain event, and if a failure of a BMP occurs, or spilled materials or wastes are not completely removed (including contaminated soils) which could result in the discharge of non-visible pollutants from the Project site, the requirements to conduct

sampling and analysis shall apply. If the Engineer determines that the Contractor has not properly deployed or maintained the appropriate BMPs necessary to significantly reduce and minimize the discharge of pollutants, the Engineer will direct the Contractor to collect and analyze water quality samples as specified in these Special Provisions.

The QSP shall submit a summary of the water quality data collected, including signed laboratory analytical data sheets, chain-of-custody (COCs) forms, and laboratory QA/QC data sheets with attachment N for non-visible pollutant sampling within 20 Days after sample collection. The QSP shall submit the data in accordance with the SWPPP Preparation Manual.

- h) **Annual Report.** The QSP shall prepare, sign and submit to the Engineer an annual report for the reporting period of July 1 to June 30 of each year. The Annual Report shall be completed using Attachment L in accordance with the SWPPP Preparation Manual. If construction occurs through June 30, the report shall be submitted no later than July 15 for the prior reporting period. If construction ends before June 30, the report shall be submitted within 15 Days after being requested by the Engineer.

3-12.6.3.10 Progressive Enforcement. The Agency, as a permittee, is subject to enforcement action by the State Water Resources Control Board (SWRCB), Environmental Protection Agency, private citizens and citizen groups. The Contractor shall notify the Engineer immediately following receipt of a request from any jurisdictional regulatory agency, to enter, inspect, sample, monitor or otherwise access the Project site or the Contractor's records pertaining to water pollution control.

The Agency will assess the Contractor a penalty of \$1,000 for each Day that the Contractor fails to fully-comply with the specified requirements. The penalty will be deducted from Contract progress payments due the Contractor.

The Contractor shall be responsible for the costs and for the liabilities imposed by law as a result of its failure to fully-comply. Costs and liabilities include, but are not limited to, fines, penalties and damages whether assessed against the Agency or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act. In addition, the Agency will deduct from any monies due the Contractor, the total amount of any legal fees, staff costs, and consultant fees incurred as a result of the Contractors non-compliance with these Special Provisions.

3-12.6.3.11 Payment. Payment for preparation of the SWPPP shall be considered as included in the Stipulated Unit Price for "PREPARATION OF THE SWPPP."

Payment for:

- a) implementation of the SWPPP, including SWPPP revisions and amendments, QSD/QSP training and certifications,
- b) providing a full-time QSP on the Project site during working hours and rain events,
- c) BMP inspection and maintenance,
- d) BMP corrective actions,
- e) providing a printed copy of the daily weather forecast and rain gauge data,
- f) implementation of the CSMP,
- g) APP implementation,
- h) implementation and removal of BMPs,
- i) 20 Rain Event Action Plans,
- j) sampling and analysis for 30 storm water samples,
- k) preparation of NAL Exceedance reports and revisions,
- l) preparation of Annual Reports and revisions, and
- m) all other SWPPP reporting documents and requirements and related costs, shall be considered as included in the lump sum Bid price for "IMPLEMENTATION OF THE SWPPP."

If the BMPs selected in the certified SWPPP do not meet the performance standards of these special provisions, the Contractor shall implement additional BMPs and amend the SWPPP at no additional cost to the Agency.

Payment will be prorated on a monthly basis over the duration of the Contract. The final payment will not be made until the final Annual Report is reviewed and accepted in writing by the Agency.

SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES

5-7 SAFETY

Add the following subsections:

5-7.9 Silica Exposure Control Plan (SECP). The Contractor shall submit a copy of their written SECP prior to starting work that disturbs any existing concrete. The SECP shall be prepared in accordance with 29 CFR 1926.1153, “Respirable Crystalline Silica”, including all subsections.

The Contractor shall also submit the following supplemental information to their SECP:

- a) Names and current and valid Respirable Crystalline Silica training certificates for the individual(s) who will be conducting and supervising any work that will impact the existing concrete including any subcontractors. All training certificates must be complete and have all required signatures. Respirable Crystalline Silica Awareness training shall be conducted in accordance with 29 CFR 1926.1153(i) and CCR Title 8, Section 5194 “Hazard Communication Standard”. If the proposed individuals are not available to perform the work, the Contractor may replace the personnel conducting any concrete impacted work by submitting names, current and valid Respirable Crystalline Silica training certificates for review to the Engineer at least 10 Working Days prior to the start of any concrete impacted work.
- b) The Contractor shall also include a statement that “all required worker training certificates will be provided 10 Working Days prior to any concrete impacted work”.
- c) The Contractor shall perform personal exposure air monitoring as required for OSHA compliance per 29 CFR 1926.1153(j)(1).

- d) The Contractor shall submit copies of the personal exposure air monitoring test results for review to the Engineer. All personal exposure air monitoring test results shall be in compliance with 29 CFR 1926.1153(j)(1).

5-8 NOT USED

5-9 SPECIES PROTECTION.

5-9.1 General. The Agency Biologist will conduct a bird nesting survey 30 Days prior to the disturbance of suitable nesting habitat. The survey will be for the presence of any nesting bird within 300 feet of the Work area. The surveys will continue weekly until no more than 3 Days prior to the start of clearing/construction work.

If an active nest is found, the Agency Biologist will develop and implement appropriate protection measures for that nest. These protection measures may include, as appropriate, construction of exclusionary devices or avoidance buffers. The Agency Biologist will adjust the buffer area as appropriate based on the construction activity, the bird species involved, and the status of the nest, but will not be less than 30 feet.

The Contractor shall not work within a buffer area established by the Agency Biologist. The Engineer will allow work in the buffer area to resume once the nest has been determined to be inactive by the Agency Biologist.

Payment will be made on the basis of Extra Work.

SECTION 6 - PROSECUTION AND PROGRESS OF THE WORK

6-6 SUSPENSION OF THE WORK.

6-6.2 Archaeological and Paleontological Discoveries. (Page 32 of the SSPWC)

Add the following:

To reduce potential impacts on public resources identified during project construction that have the potential to be Tribal Cultural Resources, an Agency archaeologist will monitor all proposed ground-disturbing activities of the project site located in native soils in order to minimize disturbance of subsurface archaeological deposits.

If intact cultural subsurface resources are identified during construction by the Agency's archaeologist, the Contractor shall stop work within a buffer, established by the Agency's archaeologist, around the find until the Agency's archaeologist determines its significance, in cooperation with the Native American monitor. No soil shall be exported off-site until a determination can be made regarding the significance of the resource.

Pursuant to Section 5097.98 of the Public Resources Code and the California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, LACDPW, or its authorized representative, shall immediately notify the Los Angeles County Coroner's office by telephone. All work shall stop within a buffer, established by the Agency, of the discovery until the coroner determines if the human remains are those of a Native American.

CSM: __

O:\Projects\Watershed Management\WMU0000010 - East Los Angeles Sustainable Median Stormwater Capture Project\Contract Documents\Specifications\Section EC (2018 Edition) (11-14-18).docx

ATTACHMENT A



LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
 CONSTRUCTION DIVISION – ENVIRONMENTAL COMPLIANCE UNIT
NOx AND PM₁₀ EMISSIONS REPORTING FORM OFF-ROAD DIESEL-FUELED EQUIPMENT

Project Name		Project ID	
Reporting Month/Year		Name of Responsible Official ⁽⁴⁾	

Equipment Identification Number (EIN)	Equipment Description	Tier Rating ⁽¹⁾	Equipment Horsepower	DOORS ⁽²⁾ Fleet ID No.	CARB Executive Order ⁽³⁾	Actual Hours of Operation

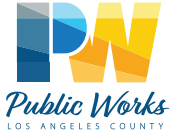
By signing below, I, the responsible official, affirm and certify under penalty of perjury, under the laws of the State of California, that I have used all reasonable diligence in preparing this report, and that I have reviewed this report and the information reported on this form below is true, accurate, and complete to the best of my knowledge. By signing below, I further certify that I have the authority to make this affirmation and certification for the equipment indicated below.

 Signature of Responsible Official/Designated Official ⁽⁴⁾ _____
 Date

 Print Name of Responsible Official/Designated Official ⁽⁴⁾ _____
 Company Name

- (1) Only Tier 2 or greater equipment shall be operated on the project.
- (2) Diesel Off-Road Online Reporting System.
- (3) Attach copy of the Executive Order issued by California Air Resources Board for this engine model.
- (4) Responsible Official/Designated Official shall be the person reported on the Responsible Official Affirmation of Reporting (ROAR) for the Current Reporting Year (CARB Form MSCD/ORB-143 (REV 12/15)). Attach a copy of the ROAR for the Current Reporting Year. To designate a different Responsible Official, submit the Designated Official Form from the ROAR.

ATTACHMENT B



**LOS ANGELES COUNTY PUBLIC WORKS
CONSTRUCTION DIVISION - ENVIRONMENTAL COMPLIANCE UNIT
SOUND BARRIER INSTALLATION - TYPICAL CONFIGURATIONS**

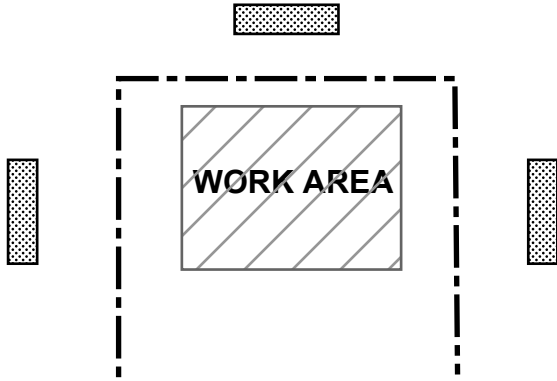


Figure 1

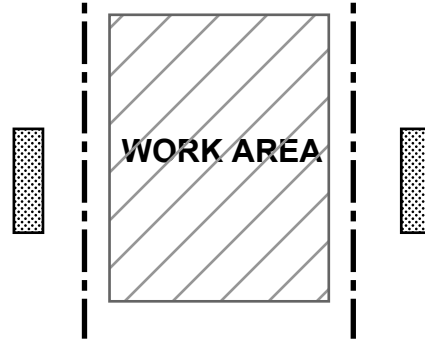


Figure 2

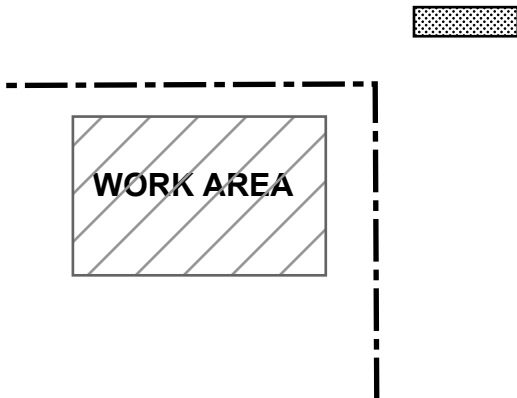


Figure 3

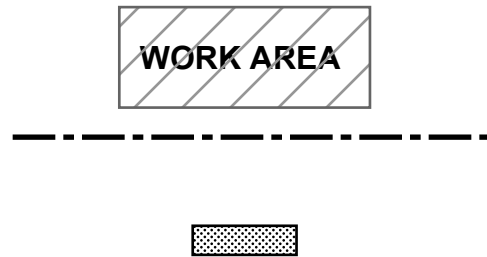
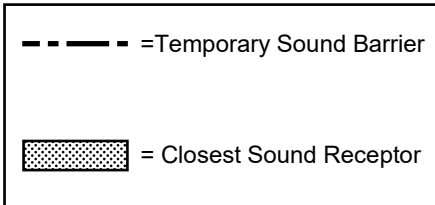


Figure 4



PUBLIC WORKS

LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

SPECIAL PROVISIONS

SECTION D – DRAINAGE STRUCTURES, UNDERGROUND CONDUIT CONSTRUCTION, AND ROADWAY

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:

Christopher Ravé

07/01/19

Date

Reviewed By:

Dean Radle

07/01/19

Date

TABLE OF CONTENTS

PART 1 - GENERAL PROVISIONS

SECTION 3 - CONTROL OF THE WORK

3-12 WORK SITE MAINTENANCE	D-1
3-12.7 Drainage Control	D-1

PART 2 - CONSTRUCTION MATERIALS

SECTION 201 - CONCRETE, MORTAR, AND RELATED MATERIALS

201-1 PORTLAND CEMENT CONCRETE	D-2
201-1.1 Requirements	D-2
201-1.2 Materials	D-5
201-1.3 Proportioning	D-5
201-2 REINFORCEMENT FOR CONCRETE	D-5
201-2.2 Steel Reinforcement.....	D-5
201-2.4 Samples for Testing	D-6
201-10 CONCRETE REPAIR PRODUCTS.....	D-6
201-10.1 Materials	D-6

SECTION 203 – BITUMINOUS MATERIALS

203-6 ASPHALT CONCRETE.....	D-7
203-6.1 General.....	D-7
203-6.7 Production.....	D-8

SECTION 207 - GRAVITY PIPE

207-2 REINFORCED CONCRETE PIPE (RCP)	D-8
207-2.1 General.....	D-8
207-2.2 Materials	D-8
207-2.4 Reinforcement.....	D-9
207-2.9 Basis for Acceptance	D-9

TABLE OF CONTENTS

SECTION 211 - MATERIAL TESTS

211-1	COMPACTION TESTS.....	D-10
211-1.1	Laboratory Maximum Density	D-10
211-1.3	Relative Compaction.....	D-11

SECTION 217 - BEDDING AND BACKFILL MATERIALS

217-1	BEDDING MATERIAL	D-11
217-1.1	General.....	D-11
217-2	TRENCH BACKFILL	D-11
217-2.1	General.....	D-11
217-2.2	Imported Trench Backfill	D-12
217-5	FILTER AND DRAIN MATERIALS	D-12

SECTION 218 - IMPORTED FILL MATERIAL

218-1	GENERAL	D-13
218-2	SAMPLING FREQUENCY AND LOCATION	D-13
218-3	SOIL SAMPLE ANALYSIS	D-13
218-4	QUALITY CONTROL	D-14
218-5	REPORTING AND DOCUMENTATION.....	D-14
218-6	APPROVAL.....	D-15
218-7	PAYMENT.....	D-15

SECTION 219 – FILTRATION UNIT

219-1	FILTRATION UNIT.....	D-15
219-1.1	General.....	D-15
219-1.2	Submittals	D-15
219-2	PRODUCTS	D-16
219-2.1	Filtration Unit Manufacturers.....	D-16
219-2.2	System Performance, Structural Loading.....	D-16
219-2.3	Materials	D-17

TABLE OF CONTENTS

PART 3 - CONSTRUCTION METHODS

SECTION 300 - EARTHWORK

300-1 CLEARING AND GRUBBING D-17

300-1.2 Root Pruning, Tree Trimming, and Tree Removal..... D-17

300-1.4 Payment..... D-20

300-1.6 Construction and Demolition Debris Recycling..... D-21

300-1.7 Green Waste Recycling Requirements D-24

300-2 UNCLASSIFIED EXCAVATION D-25

300-2.1 General..... D-25

300-2.8 Measurement..... D-25

300-2.9 Payment..... D-25

300-3 STRUCTURE EXCAVATION AND BACKFILL D-25

300-3.3 Foundation Material Treatment D-25

300-3.6 Measurement..... D-25

300-3.7 Payment..... D-26

300-4 UNCLASSIFIED FILL D-26

300-4.9 Measurement..... D-26

300-4.10 Payment..... D-26

**SECTION 301 – TREATED SOIL, SUBGRADE PREPARATION,
AND PLACEMENT OF BASE MATERIALS**

301-2.4 Measurement and Payment..... D-27

SECTION 302 - ROADWAY SURFACING

302-5 ASPHALT CONCRETE PAVEMENT D-27

302-5.1 General..... D-27

302-5.5 Distribution and Spreading D-27

302-5.6 Rolling..... D-28

302-5.7 Joints D-28

302-5.9 Measurement and Payment..... D-28

302-6 PORTLAND CEMENT CONCRETE PAVEMENT D-28

302-6.2 Forms and Headers D-28

302-6.3 Placing Concrete D-29

302-6.4 Finishing D-29

302-6.5 Joints D-33

TABLE OF CONTENTS

302-6.6 Curing	D-33
302-6.8 Measurement and Payment.....	D-33

SECTION 303 - CONCRETE AND MASONRY CONSTRUCTION

303-1 CONCRETE STRUCTURES	D-34
303-1.5 Removal of Forms for Cast-In-Place Reinforced Concrete Box (CIPRCB) Sections	D-34
303-1.7 Placing Reinforcement.....	D-37
303-1.8 Placing Concrete	D-37
303-1.12 Payment.....	D-37
303-1.13 Drill and Bond Dowel (Epoxy Cartridge).....	D-40
303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INETERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.....	D-41
303-5.1 Requirements	D-41
303-5.3 Placing Concrete.....	D-42
303-5.5 Finishing	D-42
303-5.8 Backfilling and Clean-Up.....	D-43
303-5.9 Measurement and Payment.....	D-43

SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

306-3 TRENCH EXCAVATION.....	D-44
306-3.2 Removal of Surface Improvements	D-44
306-3.3 Removal and Abandonment of Existing Conduits and Structures	D-44
306-3.5 Maximum Length of Open Trench	D-45
306-3.7 Remodeling Existing Sewer Facilities.....	D-47
306-4 SHORING AND BRACING	D-48
306-4.1 General.....	D-48
306-4.2 Additional Requirements	D-48
306-4.3 Submittals	D-50
306-4.4 Agency Review	D-52
306-4.5 Construction.....	D-53
306-4.6 Vertical Shores for Supporting Trench Excavations	D-53
306-5 DEWATERING	D-55
306-6 BEDDING	D-56
306-6.1 General.....	D-56
306-7 PREFABRICATED GRAVITY PIPE	D-56
306-7.3 Reinforced Concrete Pipe (RCP).....	D-56
306-7.8 Gravity Pipeline Testing	D-57

TABLE OF CONTENTS

306-7.9 Temporary Bulkheads for Storm Drains	D-57
306-12 BACKFILL	D-58
306-12.1 General.....	D-58
306-12.3 Mechanically Compacted Trench Backfill.....	D-59
306-12.4 Jetted Trench Backfill.....	D-60
306-12.7 Concrete Backfill.....	D-61
306-13 TRENCH RESURFACING.....	D-62
306-13.1 Temporary Resurfacing	D-62
306-14 MEASUREMENT	D-63
306-14.3 Gravity Pipe.....	D-63
306-15 PAYMENT	D-63
306-15.1 General.....	D-63
306-15.2 Shoring and Bracing.....	D-64
306-15.3 Dewatering.....	D-65
306-15.7 Buried Structures	D-65
306-15.9 Temporary Resurfacing.....	D-65
306-15.10 Permanent Resurfacing	D-65
306-16 DRY WELL CONSTRUCTION.....	D-66
306-16.1 General.....	D-66
306-16.2 Drilling.....	D-67
306-16.3 Vinyl-Coated Welded Wire Mesh	D-68
306-16.4 Dry Well Pipe	D-69
306-16.5 Gravel Packing	D-70
306-16.6 Sand Pack Layer	D-71
306-16.7 Bentonite Transition Seal	D-71
306-16.8 Grouting Wells	D-72
306-16.9 Dry Well Cover	D-73
306-16.10 Dry Well Manhole Shaft.....	D-74

PART 4 - EXISTING IMPROVEMENTS

SECTION 400 - PROTECTION AND RESTORATION

400-1 GENERAL	D-75
400-2 PERMANENT SURVEY MARKERS	D-78
400-3 PAYMENT.....	D-78

TABLE OF CONTENTS

SECTION 401 - REMOVAL

401-2 ASPHALT CONCRETE PAVEMENT	D-79
401-3 CONCRETE AND MASONRY IMPROVEMENTS	D-79
401-3.2 Concrete Curb, Walk, Gutters, Cross Gutters, Driveways and Alley Intersections	D-79
401-6 MEASUREMENT.....	D-79
401-7 PAYMENT.....	D-79

SECTION 404 - COLD MILLING

404-11 PAYMENT	D-80
----------------------	------

SECTION 900 - CONNECTOR PIPE SCREENS

900-1 CATCH BASINS	D-80
900-1.1 General.....	D-80
900-1.2 Manufacturer's Warranty	D-80
900-1.3 CPS Units.....	D-80
900-2 CONNECTOR PIPE SCREENS (CPS).....	D-81
900-2.1 General.....	D-81
900-2.2 Requirements	D-81
900-2.3 Materials and Fabrication	D-82
900-2.4 Staff Gauge	D-82
900-2.5 Payment	D-83
APPENDIX A CPS Requirements	D-84
APPENDIX B CPS Sizing Table	D-91
ATTACHMENT 1 Construction and Demolition Debris Recycling Summary	D-93
EXHIBIT A Proper Pruning Procedures	D-94
EXHIBIT B Drop Crotch Pruning.....	D-95
EXHIBIT C Clearance Trim	D-96

PART 1

GENERAL PROVISIONS

SECTION 3 - CONTROL OF THE WORK

3-12 WORK SITE MAINTENANCE. (Page 18 of the SSPWC)

Add the following subsection:

3-12.7 Drainage Control.

3-12.7.2 Damage from Elements and Control of Water. It shall be the Contractor's responsibility to divert and take all necessary precautions to protect the construction and existing improvements from damage due to water from any source. The Contractor is cautioned that construction of Bid items under this Contract entails working within an active flood control facility. Water in varying amounts flow in the system throughout the year.

The Contractor shall construct temporary by-pass facilities for water flows within the flood control facility from whatever source. The Contractor shall maintain the temporary by-pass facilities throughout the duration of construction.

All temporary improvements installed and/or constructed by the Contractor for dewatering and control of water, but not specified to become a permanent part of the Project, shall be removed upon completion of the Work.

All costs associated with the diversion of water from all sources, including nuisance water, shall be included in the prices in the Bid for the various items of work.

PART 2 CONSTRUCTION MATERIALS

SECTION 201 - CONCRETE, MORTAR, AND RELATED MATERIALS

201-1 PORTLAND CEMENT CONCRETE.

201-1.1 Requirements. (Page 55 of the SSPWC)

201-1.1.1 General.

Add the following as the third paragraph:

High early strength concrete for underground structures shall conform to 201-1.1.7.

201-1.1.4 Concrete Specified by Compressive Strength.

Replace the first paragraph with the following:

The Contractor shall determine the mix proportions of concrete specified by compressive strength shown on the Plans. Unless otherwise specified, the minimum compressive strength of concrete at 28 Days shall be 4000 psi. The proposed concrete mix design and aggregate gradations shall be submitted in accordance with 3-8 of SSPWC. The concrete shall contain not less than 560 pounds of cement per cubic yard for concrete strengths of 3,250 psi or greater, in accordance with Table 201-1.1.2 of the Standard Specifications. The concrete shall contain an Agency-approved water-reducing admixture. The combined aggregate gradation shall be Grading C except for 4000 psi or higher compressive strength concrete to be used for inverts shall be Grading B.

Replace the third paragraph with the following:

The proposed mix design for 4000 psi or higher compressive strength concrete shall be evaluated from field tests of a trial batch conforming to the size of load, materials, proportions, slump, mixing and placing equipment, and procedures to be used in the Work.

The placing of said concrete shall not begin until a trial batch of the mix design to be used has been produced by the Contractor and sampled and tested by the Agency. The exact proportions of the materials to be used in the trial batches shall be determined by the Contractor and sampled and tested by the Agency.

For each trial batch, the materials (brand and type of cement; admixture; source, size and gradation of aggregate), proportions, procedures, size of load, and slump shall be the same as that to be used in the Work. The trial batch shall be representative of the concrete to be used in the Work. Should the materials or procedures be changed, new trial batches will be required.

The Contractor's attention is directed to the time required to test trial batches. The Contractor shall be responsible for production of trial batches at a sufficiently early date so that the progress of the Work is not delayed.

The trial batch procedure herein may be waived by the Engineer if the Contractor complies with one of the following:

- a) Test data of prior performance of the proposed mix design is presented by the Contractor as described above and approved by the Engineer. The Contractor may, at its option, utilize any strength data on file with the Agency for this purpose. Submitted data shall include recent 7-Day and 28-Day compressive strength test data for the proposed concrete mix design. In addition, the data shall include the brand name and type of any admixtures used; the type and brand of cement; aggregate source and gradation; mix proportions; procedures; load size; and slump.
- b) The concrete mix design includes an Agency-approved water-reducing admixture and a minimum of 650 pounds of cement per cubic yard for 4000 psi compressive strength concrete, or 660 pounds of cement per cubic yard for 5000 psi compressive strength concrete.

The Contractor is responsible for submitting mix designs with higher cement contents, as necessary, to meet any cement content requirements.

For both alternates to trial batching, the proposed mix design and combined aggregate gradation shall be submitted in accordance with 3-8 of SSPWC. In the case of alternate "a)", the compressive strength data shall be submitted at the same time.

201-1.1.5 Tests for Portland Cement Concrete.

Delete the following tests from the first paragraph:

- e) Flexural Strength..... C78
- h) Unit Weight Yield..... C138
- i) Setting of Mortar..... C191 or C266
- k) Drying Shrinkage (with admixture).....California Test 530

Add the following after the test listing:

The Contractor shall furnish all materials required by ASTM C31, C39, C143, C172, C470, and C1064 for sampling and testing fresh concrete including a slump cone, proper scoop, required rod for rodding samples, temperature gauge, concrete cylinder molds with caps, wheel barrow, shovel and a laborer to assist the Engineer.

Add the following subsection:

201-1.1.7 High Early Strength Concrete for Underground Structures. Under paved streets, high early strength concrete shall be used in the construction of all cast-in-place structures in open trenches, except invert slabs, junction structures, and sewer manholes.

The Contractor shall provide concrete mix designs for all high early strength concrete applications that meet the specified strength requirements. The proposed mix designs and aggregate gradations shall be submitted in accordance with 3-8 of SSPWC.

High early strength in 3250 psi compressive strength concrete shall be attained by using an Agency-approved water-reducing admixture, or by using a concrete mix which has a minimum of 650 pounds of either Type II Portland cement or Type V Portland cement per cubic yard. Rapid hardening hydraulic cement conforming to 201-1.2.1 may also be used.

The following requirements apply to high early strength in 4000 psi compressive strength concrete:

- a) The concrete shall attain a 7-Day (9-Day where Type V Portland cement is required) strength such that the average of any 3 consecutive compressive strength tests shall be equal to or greater than 4000 psi, and not more than 10 percent of the tests shall be less than 4000 psi. No test shall be less than 85 percent of 4000 psi.
- b) The concrete shall include a minimum of 650 pounds to a maximum of 750 pounds of either Type II Portland cement or Type V Portland cement per cubic yard and an Agency-approved water-reducing admixture.
- c) Prequalification of the mix for high early strength in 4000 psi compressive strength concrete by trial batching will not be required.

201-1.2 Materials. (Page 61 of the SSPWC)

201-1.2.1 Cement.

Add the following after the sentence including Certificate of Compliance:

The Certificate of Compliance shall be sent to the Materials Analysis Unit, Geotechnical and Materials Engineering Division, 4th Floor, Los Angeles County Public Works, 900 South Fremont Avenue, P.O. Box 1460, Alhambra, CA 91802-1460.

201-1.3 Proportioning. (Page 65 of the SSPWC)

201-1.3.3 Concrete Consistency.

Add the following as the last paragraph:

Any concrete specified by compressive strength per 201-1.1.4 having a slump greater than 6 inches will be rejected. If the Engineer determines that a slump greater than 6 inches is required, it shall be accomplished by using an Agency-approved high range, water-reducing admixture (ASTM C494, Type F), which shall be submitted to the Engineer for approval.

201-2 REINFORCEMENT FOR CONCRETE

201-2.2 Steel Reinforcement. (Page 69 of the SSPWC)

201-2.2.1 Reinforcing Steel.

Replace the first sentence with the following:

All steel, except longitudinal steel, shall be Grade 60 for design pipe, box conduit, open channels, tunnel lining, and transition structures to be constructed per SPPWC Standard Plans; open channel transition structures; dry well covers; and special structures. Longitudinal steel shall be Grade 40.

201-2.4 Samples for Testing. (Page 69 of the SSPWC)**201-2.4.1 General.**

Add the following:

Unless otherwise specified, certified mill test reports along with a Certificate of Compliance conforming to 4-5 of SSPWC and truck bills of lading are required in lieu of a physical test. The Contractor shall submit the aforementioned documents to the Engineer in accordance with 3-8 of SSPWC. The certified mill test reports shall include the name and location of the mill at which the steel was produced. An additional report shall be furnished to the Engineer prior to installation for each heat or size of reinforcing steel.

Add the following subsection:

201-10 CONCRETE REPAIR PRODUCTS.**201-10.1 Materials.**

1. Restoration and bonding materials shall be manufactured by Agency-approved products as listed in Table 201-10.1A. Repair products for each category shall be from one manufacturer to assure product compatibility.
2. The Contractor shall provide a certificate of compliance stating that the repair material meets the specified requirements and have the manufacturer's current printed literature on the specified product.
3. Acceptable Materials and Agency-approved equals are listed in Table 201-10.1A.
4. Other products from this manufacturer may be used for other uses, if needed. Product data sheets shall be submitted to the Agency for review and approval per 3-8 of SSPWC.

TABLE 201-10.1A

Category	Type of Repair	Repair Product
Restoration	Concrete repair and restoration	<ul style="list-style-type: none"> • SikaRepair 224 • BASF MasterInject 1380 • Hilti RM 800 PC Repair Mortar • Euclid Concrete Top Supreme
Bonding	Bonding agent – New pipe to pipe wall	<ul style="list-style-type: none"> • SikaGrout 212 • BASF MasterFlow 100 • Hilti CB-G EG • Euclid Dural 452 Gel

SECTION 203 - BITUMINOUS MATERIALS

203-6 ASPHALT CONCRETE.

203-6.1 General. (Page 95 of the SSPWC)

Replace the entire subsection with the following:

Asphalt concrete shall be the product of mixing mineral aggregate and up to 25 percent reclaimed asphalt pavement (RAP) with asphalt binder at a central mixing plant. Asphalt concrete for placement as a surface course may contain up to 20 percent RAP. For all other placement applications, asphalt concrete may contain up to 25 percent RAP.

At the Contractor's option, asphalt concrete may be produced using a warm mix asphalt technology conforming to 203-6.7.2.

Asphalt concrete mixtures shall conform to 203-6.4.

203-6.7 Production. (Page 102 of the SSPWC)

203-6.7.2 Warm Mix Asphalt (WMA) Technologies.

Replace the first paragraph with the following:

At the Contractor's option, asphalt concrete mixtures may be produced using a WMA technology. The WMA technology used shall be on the Caltrans list of approved technologies for warm mix asphalt in effect as of the date of advertisement of the contract, http://www.dot.ca.gov/hq/esc/approved_products_list/pdf/wma_list.pdf. Either an additive technology or a water injection technology may be used.

Add the following:

When using a WMA technology, asphalt concrete mixtures shall be produced within the temperature range of 250⁰F to 290⁰F.

SECTION 207 - GRAVITY PIPE

207-2 REINFORCED CONCRETE PIPE (RCP).

207-2.1 General. (Page 140 of the SSPWC)

Add the following:

The Contractor shall submit Shop Drawings showing details of the 52" RCP dry well pipe, including the steel reinforcement and perforation patterns.

207-2.2 Materials. (Page 142 of the SSPWC)

Add the following to the first paragraph:

d) Reinforcing steel samples may be required to be tested in accordance with 201-2.4 of SSPWC.

207-2.4 Reinforcement. (Page 143 of the SSPWC)**207-2.4.2 Location of Reinforcement.**

Add the following after the third paragraph:

The required covers and permitted tolerances shown in Table 207-2.4.2 are applicable to wet cast and spun pipe only. The reinforcement for machine made pipe shall be at the location designated by the manufacturer per their standard details which shall be furnished to the Engineer. The actual location shall not vary more than $\pm 3/8$ inch from the designated location; however, in no case shall the cover over the circumferential reinforcement be less than $5/8$ inch. The minimum cover over longitudinal steel shall be as shown in Table 207-2.4.2.

If the joint is of the bell and spigot type similar in shape to that shown on LACPW Standard Plan 3095, additional reinforcement shall conform to Standard Plan 3095.

Add the following as the last paragraph:

Where single circular reinforcement is used in wet cast or spun pipe, it shall be placed in the center of the wall.

207-2.9 Basis of Acceptance. (Page 147 of the SSPWC)**207-2.9.1 General.**

Replace the first paragraph with the following:

The basis of acceptance will be:

The D-load bearing strength test, compliance with the requirements of the Contract Documents, inspection of the pipe during manufacture, and inspection of the completed pipe.

Add the following as the last paragraph:

In addition to the above, rubber-gasketed pipe shall be subjected to the hydrostatic pressure test specified in 207-2.9.6.

Add the following subsection:

207-2.9.6 Hydrostatic Pressure Test. The pipe to be tested will be selected in accordance with 207-2.9.2 of SSPWC.

The pipe and joint shall be tested concurrently by attaching 2 pipes together or a pipe and a standard joint section together. At the Contractor's option, the test section may be filled with water and placed under a hydrostatic pressure of 10 psi for a 24-hour period prior to the tests. The hydrostatic pressure in the test section shall be gradually increased until it reaches 13 psi.

The test section shall not show measurable leakage when kept under the test pressure for 20 minutes. Damp spots or water condensing on the surface of the pipe shall not be considered as leakage nor cause for rejection. The joint shall show no leakage at the test pressure.

If the test pipe passes the test, the lot will be accepted.

If the test pipe fails the hydrostatic test, 2 additional pipes from the same lot will be selected for testing. If both pipes pass the test, the lot, except for the first test pipe, will be accepted. If either of the 2 additional pipes fails the test, the lot will be rejected. The Contractor may elect to individually test each pipe in a rejected lot for acceptance.

Repair of leaks in rejected test pipe may be made if so approved by the Engineer. The repaired pipe shall be retested.

SECTION 211 - MATERIAL TESTS

211-1 COMPACTION TESTS.

211-1.1 Laboratory Maximum Density. (Page 213 of the SSPWC)

Replace the second and third paragraphs with the following:

Compaction tests will be performed in accordance with ASTM D1557 using the appropriate procedure based on the materials gradation where applicable. The Engineer may specify another procedure within this test; require the use of another test procedure; or specify a specific compaction method to be used where this test is not applicable.

All reported maximum densities shall be based on dry unit weight. However, the Engineer may modify the procedure in ASTM D1557, at its option, to calculate a relative compaction at the site based on adjusted laboratory maximum wet density to give the Contractor an indication of the achieved relative compaction. The adjusted laboratory maximum wet density will be calculated as follows:

211-1.3 Relative Compaction. (Page 213 of the SSPWC)

Replace the entire subsection with the following:

The words "Relative Compaction" shall mean the ratio of the field dry density to the laboratory maximum dry density expressed as a percentage.

SECTION 217 - BEDDING AND BACKFILL MATERIALS

217-1 BEDDING MATERIAL.

217-1.1 General. (Page 262 of the SSPWC)

Add the following:

If the Contractor elects or is required by the Special Provisions to import material from a source outside the Project limit for use as bedding, representative samples of imported material for use as bedding must be approved by the Agency.

The material obtained from the open trench excavations *cannot be used* as bedding material.

217-2 TRENCH BACKFILL.

217-2.1 General. (Page 262 of the SSPWC)

Add the following:

The material obtained from the open trench excavations *can be used* as trench backfill, subject to the provisions specified herein, and provided that all organic material, rubbish, debris, and other objectionable materials are first removed.

217-2.2 Imported Trench Backfill. (Page 263 of the SSPWC)

Add the following:

If imported trench backfill is required or if the Contractor elects to import material from a source outside the Project limits for use as trench backfill, said material shall be clean soil, free from organic material, trash, debris, rubbish, broken Portland cement concrete, bituminous pavement, or other objectionable substances, and shall have a minimum sand equivalent of 20.

The Contractor shall inform the Engineer of the actual street address or location from which the intended material will be furnished not less than 15 Days prior to its proposed use. The Agency will perform testing as deemed appropriate by the Engineer.

Add the following subsection:

217-5 FILTER AND DRAIN MATERIALS. Filter material Class “D5” shall be placed as gravel pack in the annular space between the perforated pipe and wall of the drilled hole as shown on the Plans.

The composition of the drain material shall conform to the grading requirements shown in Table 217-5.1 (B).

TABLE 217-5.1(B)

Drain Material					
Screen or Sieve Size	Grading - % Passing				
	D1	D2	D3	D4	D5
3 inch	100	100	100	100	-
1-1/2 inch	100	95 - 100	90 - 100	90 - 100	85 - 100
1 inch	-	-	65 - 100	-	5 - 60
3/4 inch	90 - 100	75 - 100	50 - 90	20 - 60	0 - 30
3/8 inch	60 - 100	30 - 70	0 - 50	0 - 20	0 - 5
No. 4	5 - 50	0 - 25	0 - 10	0 - 5	-
No. 8	0 - 10	0 - 5	0 - 5	-	-
No. 16	0 - 5	-	-	-	-
Approximate Composition	(No. 4)	(No. 3 and No. 4, 1:1)	(No. 3)	(No. 2 and No. 3, 1:1)	(No. 2)

The approximate compositions shown above are for information purposes only; the grading limits shown above shall control.

Add the following section:

SECTION 218 - IMPORTED FILL MATERIAL

218-1 GENERAL. The Contractor shall implement the following sampling and analysis requirements prior to importing fill material (imported borrow, structure backfill, and imported backfill) to the Project site.

218-2 SAMPLING FREQUENCY AND LOCATION. The Contractor shall collect discrete soil samples that are representative of the material to be imported. The Contractor shall establish a grid system over the potential borrow site or stockpile. The Contractor shall collect and analyze one soil sample from each grid. The grid and soil sampling frequency shall be as follows:

TABLE 218-2

Volume of Soil	Number of Grids/Samples
1 to 20 cubic yards	1 sample
21 to 500 cubic yards	1 sample every 50 cubic yards
501 to 1,000 cubic yards	1 sample every 100 cubic yards
>1,000 cubic yards	1 sample every 200 cubic yards

All sampling shall be conducted by qualified personnel under strict chain-of-custody procedures, and analyzed by a State of California Environmental Laboratory Accreditation Program (ELAP)-certified laboratory in accordance with the testing procedures specified in 40 CFR 136.

218-3 SOIL SAMPLE ANALYSIS. Soil sample analysis, containers, preservation methods, and holding times for soil samples shall be in accordance with test procedures provided by 40 CFR 136 and EPA Publication SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," Third Edition, November 1986.

Soil samples shall be transported, under strict chain-of-custody procedures, to an ELAP-certified analytical laboratory within 24 hours of collection. The soil samples shall be analyzed for the following constituents:

TABLE 218-3

Constituent	EPA Method
Total Recoverable Petroleum Hydrocarbons (TRPH)	EPA Test Method 418.1
Total Petroleum Hydrocarbons (TPH-G) -Gasoline Range C4-C12	Modified EPA Test Method 8015
Total Petroleum Hydrocarbons (TPH-D) -Diesel Range C10-C24	Modified EPA Test Method 8015
Volatile Organic Compounds (VOCs)	EPA Test Method 8260
CCR Title 22 Metals (TTLC)	EPA Method 6010
Simulated Distillation – Hydrocarbon Distribution. Hydrocarbon Chain	EPA Test Method 3550

If the Contractor is aware of other potential contaminants, or the borrow site or stockpile history may indicate other potential contaminants not listed above, the Contractor shall analyze all samples for all other potential contaminants.

Based on the results of the tests, the Engineer may require additional or supplemental soil samples be collected and tested in order to determine whether the proposed imported fill material is acceptable.

218-4 QUALITY CONTROL. One duplicate soil sample shall be collected and analyzed for every ten-soil samples collected and analyzed. If less than ten samples are collected, a minimum of one duplicate sample is required. Duplicate samples shall be collected in separate containers and located immediately adjacent to the original sample location(s).

Any soil samples having a dilution factor of greater than one will be rejected by the Engineer. The Agency reserves the right to approve and observe all sampling, loading, and transportation of soil proposed to be imported.

218-5 REPORTING AND DOCUMENTATION. Prior to the acceptance of the imported fill material, the Contractor shall submit to the Engineer a summary report of all analytical data from soil sampling activities conducted on the proposed fill material. The report shall include a table summarizing all analytical data and observations, a sketch drawing or diagram of the borrow/stockpile site and sample locations, general soil

conditions or classification, description of the borrow/stockpile site, signed laboratory analytical data sheets, signed laboratory analytical QA/QC data sheets, signed/completed chain-of-custody forms, field logbook, and all other pertinent information.

The Contractor shall maintain a bound sample documentation logbook. The logbooks will be used for documenting data collection and work activities. Entries shall be made in ink and shall include sufficient detail to reconstruct site activities without reliance on memory. All samples collected shall be recorded in the logbook.

218-6 APPROVAL. The Engineer will evaluate the data submitted in this report and determine if the proposed material may be imported and used on the Project. The Contractor shall not import any soil on to the Project site until the Agency has reviewed the summary report and written approval has been received from the Engineer.

218-7 PAYMENT. Payment for sampling and analysis of imported fill material shall be made at the Contract Unit Price for “STRUCTURE BACKFILL (DRY WELL)” or at the lump sum Bid price for “DRAINAGE”, whichever is applicable.

Add the following section:

SECTION 219 – FILTRATION UNIT

219-1 FILTRATION UNIT.

219-1.1 General. Filtration unit shall be designed for HS-20 truck loading with impact applied. Manholes shall be as shown on the Plans.

219-1.2 Submittals. The Contractor shall submit Shop Drawings in accordance with subsection 3-8.3 of Section G that detail the system components and sequence for installation including the following:

- System configuration and dimensions.
- Materials and details: Show materials, details of components, methods of joining, sealants, openings, and pipe locations.

219-2 PRODUCTS.

219-2.1 Filtration Unit Manufacturers. The following products have been approved for use on this Project:

1. Suntree Technologies, Inc.
 - a. Address: 798 Clearlake Road, Suite 2, Cocoa, Florida 32922
 - b. Phone: (323) 637-7552
 - c. Website: www.suntreetech.com

2. Bioclean Environmental Services, Inc.
 - a. Address: 398 Via El Centro, Oceanside, CA 92058
 - b. Phone: (855) 566-3938
 - c. Website: www.biocleanenvironmental.com

219-2.2 System Performance, Structural Loading. Filtration unit shall accommodate HS-20 truck loading with impact applied.

Each filtration unit shall demonstrate to the Engineer's satisfaction that they will meet the following performance specifications at the design treatment capacities, as listed below:

Location (per Plan DR)	Design Treatment Capacity	Minimum Suspended Sediment Mass Removal Efficiency	Horizontal Dimensions
Montebello Pkwy (Sheet 4)	3.19 CFS	80%	9'L X 5'W
Southside Dr at Coolidge Way (Sheet 6)	2.10 CFS	80%	7.5'L X 5'W
Northside Dr (Sheet 8)	8.09 CFS	80%	13'L X 7'W
Southside Dr (Sheet 10)	7.73 CFS	80%	13'L X 7'W

Each filtration unit shall include sediment removal chambers that eliminate re-suspension of previously captured sediment; a screening system designed to capture and store solid debris in a dry state; and a skimmer system to remove oils, grease, and floating pollutants.

Each filtration unit and all of its components shall be housed within one structure. Each filtration unit shall not release material during flow events greater than the design flow rate.

Removal efficiencies shall only be considered valid if they are verified by independent third-party testing and be based on mass basis and have a manufacturer's Certificate of Compliance.

219-2.3 Materials. Filtration unit shall be reinforced concrete. Furnish per Manufacturer's instructions and as specified in Section 201 of SSPWC.

PART 3 CONSTRUCTION METHODS

SECTION 300 - EARTHWORK

300-1 CLEARING AND GRUBBING.

300-1.2 Root Pruning and Tree Trimming. (Page 265 of the SSPWC)

Replace the entire subsection with the following:

300-1.2 Root Pruning, Tree Trimming, and Tree Removal.

300-1.2.1 Root Pruning.

300-1.2.1.1 General. Root pruning shall conform to SPPWC Standard Plan 523 and the provisions herein. Root control barriers shall conform to 300-1.2.1.2. Trees to be root pruned shall be trimmed by the crown reduction method in accordance with 300-1.2.2. Root pruning and tree trimming shall be performed by ISA Certified Tree Workers. Supporting information for root control barriers and root sealer fabric shall be submitted in accordance with 3-8.4 of Section G.

Root pruning equipment shall be specifically designed for this purpose, sharpened adequately to sever roots in a clean manner, and equipped with padded tracks or rubber tires to prevent scraping or marking of the roadway or curbs.

Roots shall be pruned immediately adjacent to the edge of the curb. Cuts shall be at the back of curb and shall be 4 inches wide and 18 inches deep as measured from the top of curb. The cuts shall extend 6 feet in each direction along the curb from the center of the tree trunk for a total length of 12 feet or as directed by the Engineer. When root pruning adjacent to sidewalk is required, the same details shall apply.

Root sealer fabric shall be applied to cut root areas which are larger than 2 inches in diameter. The root sealer fabric shall be "Bio Barrier," www.biobarrier.com, or Agency-approved equal. Root sealer fabric shall be applied as soon as practical after the cuts have been made.

The Contractor shall repair or replace utility service connections and sprinkler systems within the right-of-way which are damaged or removed as a result of root pruning operations. Repairs shall be initiated immediately upon the occurrence of damage or removal and completed by the end of each working day. Repairs and replacements shall be the equivalent of, or better than, the existing improvements in material, dimension, and function. Repair and replacement shall be at the Contractor's expense and to the satisfaction of the Engineer.

300-1.2.1.2 Root Control Barriers. See 800-1.7 of Section LS for special provisions on root control barriers.

300-1.2.2 Tree Trimming (Crown Reduction). Trimming shall be done by the crown reduction method (see Exhibit B). Crown reduction trimming is the size reduction of tops, sides, under branches or individual limbs by trimming back to a strong crotch able to sustain the sap flow of the parent branch.

Crown reduction shall include reduction, shaping, thinning and cleaning of heavy weight as necessary to leave the tree in a balanced, symmetrical-looking condition. Trimming shall be done to bring out or emphasize the natural characteristics of the tree.

Crown reduction shall also include removal of deadwood and weak, split, diseased, insect infested, broken, low or crossing limbs. Branches with extremely narrow angles of attachment shall be removed. Stubs 1 inch in diameter and larger throughout the tree shall be removed. Any structural weaknesses, dead or diseased trees, decayed trunks or branches shall be reported to the Engineer.

Laterals shall be cut to preserve the natural form and shape of the tree. Limbs which extend beyond the natural perimeter or where such overburden appears likely to cause breakage of the limb shall be shortened. The crown shall form a symmetrical shape with the weight evenly distributed when trimming is completed.

Foreign vegetation, vines entwined in trees, and all vines and sucker growth on tree trunks shall be removed. Vine tendrils shall be removed without injury to trees and cleared at least 18 inches from the base of the trees.

The work shall also include trimming to provide adequate clearance for moving vehicles within the traveled roadway, for pedestrians on sidewalks, and for structures with their connecting utility lines. Final minimum clearance under trees shall be as shown on Exhibit C. When trimming the bottom branches, care shall be taken to obtain a balanced appearance when viewed from the opposite side of the street immediately opposite the tree.

Limbs 2 inches in diameter or over shall be pre-cut to prevent splitting. When there is a chance of bark tearing below the crotch, large limbs shall be removed with three cuts (see Exhibit A). The first cut "(A)" shall be made on the underside of the branch 1 to 2 feet from the crotch. The undercut shall be at least 1/3 of the diameter. The second cut "(B)" shall be made on the upper side of the branch a distance equal to the diameter of the limb further from the crotch than the first. The final cut "(C)" shall be made at the crotch in a manner to favor the earliest possible covering of the wound by callus growth. Cuts shall not be made so large that they will prevent sap flow. This requires that the cut be as small as practical, be reasonably flush within the shoulder or sap ring area, and that the cambium tissues at the edge of the cut be alive and healthy. Flush cuts which produce large wounds and weaken the tree at the cut shall not be made.

On all trees known or suspected to be diseased, pruning tools as well as cut surfaces shall be disinfected with a 20 percent chlorine bleach solution or 70 percent methyl alcohol solution after each cut and between trees where there is danger of transmitting the disease on tools or as directed by the Engineer. Fresh solution shall be mixed daily.

Trees shall be trimmed to clear all adjacent structures by a minimum of 4 feet. Trimming of the trees shall provide adequate clearance for any obstructed street light standards, mast arms or globes.

Branches shall be cut back to a lateral branch not less than 1/3 of the diameter of the branch being removed. Wounds made by splitting limbs shall be cleaned of torn and broken wood fibers and bark traces to ensure proper healing. Unbroken branches shall be headed back to balance cuts made on broken branches particularly to reduce exposure to future high winds.

As part of crown reduction trimming, trees over 45 feet shall be reduced in height approximately 33 percent. Trees less than 45 feet tall may be reduced in height; however, this height reduction shall not exceed 33 percent. Height reduction shall not be performed when this treatment is incompatible with the species.

300-1.2.3 Tree Removal. Tree removal shall include stump and root removal. Trees designated for removal shall be "topped", or, if in the opinion of the Contractor, a tree is unable to withstand the strain of the topping procedure, the branches shall be lowered by

some other means, such as a tree crane. Unless impractical, lower limbs shall be removed first, working toward the top until the tree is de-limbed. Stubs, at least 12 inches or more in length, shall be left following de-limbing to provide crotches for lowering sections of the trunk or main limbs.

Extreme care shall be taken to prevent limbs, branches, and trunks from falling and damaging adjacent structures, driveways, sidewalks, streets, fences, lawns and other property both public and private. When necessary, brush mats, tires, logs or skids shall be used to prevent such damage.

Stump removal shall include grinding out the stump and all roots, including surface roots, to a minimum depth of 24 inches below existing ground level. Stump holes shall be backfilled with Class "A" Topsoil conforming to 800-1.1.2 and planted in accordance with 801 with grass seed or sod of the same variety as the adjacent lawn. Topsoil used for backfill shall be subject to the approval of the Engineer.

Chips and debris from stump removal shall be removed from the Project site by the end of the work day that such chips and debris were generated. No stump removal chips or debris shall be left on the parkway overnight. The Project site shall be raked and swept.

300-1.2.4 Cleanup. Debris generated by root pruning and trimming operations shall be removed from the Project site at the end of each working day and properly disposed of outside the right-of-way.

The Contractor shall clean the Project site daily when work is completed, including the raking of leaves, twigs, chips, etc., from lawns and parkways and the sweeping of streets. However, fireplace size logs may be left on parkway areas for pickup by adjacent property owners for a period of up to 4 Days following tree trimming or removal. All wood shall be removed from the Project site within 5 Days of the trimming or removal.

300-1.4 Payment. (Page 265 of the SSPWC)

Replace the first sentence of the first paragraph with the following:

Payment for clearing and grubbing shall be included in the lump sum Bid price for "ROADWAY".

Payment for excavation, root pruning, furnishing and installing root sealer fabric and root control barriers, backfilling, cleanup, and all other appurtenant work shall be included in the lump sum Bid price for "ROADWAY".

Payment for crown reduction for the various diameter sizes and all work required for conformance to the requirements specified in 300-1.2.2 and 300-1.2.4 shall be included in the lump sum Bid price for "ROADWAY".

Payment for trees to be cut, removed, and disposed of including stump and root removal for trees having a trunk 6 inches in diameter or greater shall be included in the lump sum Bid price for "ROADWAY". Said diameter shall be the smallest diameter measured 6 inches above the crown roots. Multi-trunk trees will be considered as one tree if any one trunk is 6 inches in diameter or greater.

Add the following subsection:

300-1.6 Construction and Demolition Debris Recycling.

300-1.6.1 General. Consistent with the Agency's efforts to comply with the California Integrated Waste Management Act of 1989 (AB 939), the Contractor shall reduce, reuse, and/or recycle at least 50 percent by weight or volume or to the maximum extent feasible, the construction and demolition debris (debris) generated by this Contract thereby diverting the debris from disposal facilities, saving landfill space, and conserving virgin materials and natural resources.

300-1.6.2 Definitions.

Construction and Demolition Debris (Debris) - materials resulting from building, construction or demolition-related activities such as excavation, grading, land clearing, renovation, repair, road work and site cleanup which are considered solid waste pursuant to Section 40191 of the California Public Resources Code. The materials include, but are not limited to, asphalt, brick, cardboard, carpet, cinder block, concrete, concrete with reinforcement bars, drywall, excavated materials, fixtures and fittings, glass, gravel, green waste, metal, mixed rubble, packaging materials, paper, plastics, porcelain, road work materials, roofing materials, rock, sand, site clearance materials, soil, trees, tree stumps and other vegetative matter, stones, and wood waste.

Deconstruction - the process of carefully dismantling a structure, piece by piece prior to or instead of conventional demolition, to maximize the recovery of building materials for reuse and/or recycling.

Delivery Site - a recycling facility as defined in Subsection E.14 and recycling or reuse site as defined in Subsection E.15 or any place, including a transfer station as defined in Subsection E.20 where the debris is delivered for the sole purpose of reuse and/or recycling in a manner acceptable to the Agency.

Disposal - the process of disposing of debris at a Disposal Facility.

Disposal Facility - a Landfill or any location where the debris is taken for "Transformation" as defined.

Generation - the quantity of debris produced by the Work before the debris is reused and/or recycled.

Green Waste - all vegetative cuttings, shrubs, stumps, logs, brush, tree trimmings, grass, and related materials which have been separated from other solid waste.

Landfill - a solid waste disposal facility that accepts solid waste for land disposal and is operating under a current Solid Waste Facility Permit issued by a local enforcement agency as defined in Section 40130 of the California Public Resources Code and concurred upon by the California Integrated Waste Management Board.

Recyclable - material that still has useful physical or chemical properties after serving its original purpose and that can be reused or re-manufactured into additional products.

Recycle or Recycling - the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste and returning them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace, and in a manner acceptable to the Agency. "Recycle" or "Recycling" does not include Transformation.

Recycling Facility - any facility (except a transformation facility) whose principal function is to receive, store, convert, separate, or transfer recyclable materials for processing.

Recycling or Reuse Site - any place other than a recycling facility acceptable to the Agency for recycling and/or reuse of debris.

Reduce - any action which causes a net reduction in the generation and/or disposal of solid waste.

Reuse - the use, in the form as it was produced, and in a manner acceptable to the Agency of material which might otherwise be discarded into a Disposal Facility.

Site Clearance Material - materials such as trees, brush, earth, mixed concrete, rubble, sand, steel, extraneous paper, plastics, and other waste materials generated from site clearance.

Source Separation - the segregation, by the generator, of materials designated for separate collection for materials recovery or special handling.

Transfer Station - a facility utilized to receive solid wastes and to temporarily store, separate, convert, or otherwise process the materials in the solid wastes, and/or to transfer the solid wastes directly from smaller to larger vehicles or railroad trains for transport.

Transformation - incineration, pyrolysis, distillation, gasification, or biological conversion other than composting.

Wood Waste - solid waste consisting of wood pieces or particles which are generated from the manufacturing or production of wood products, harvesting, processing or storage of raw wood materials, or construction or demolition activities.

300-1.6.3 Recycling Summary. The Contractor shall prepare and submit a Recycling Summary report using the form included as Attachment 1 summarizing the disposal, reuse, and/or recycling activities which occurred throughout the Contract duration. This report shall be emailed to: cnd@dpw.lacounty.gov and submitted to the Agency within 30 Days after field acceptance of the Work.

Failure of the Contractor to submit the Recycling Summary within the time specified will result in damages being sustained by the Agency. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For failure to submit the Recycling Summary within the time specified, the Contractor shall pay to the Agency, or have withheld from monies due it, the sum of \$10,000.

Execution of the Contract shall constitute agreement by the Agency and Contractor that \$10,000 is the minimum value of the costs and actual damage caused by the failure of the Contractor to submit the Recycling Summary within the time specified. Such sum is liquidated damages and shall not be construed as a penalty and may be deducted from payments due the Contractor.

300-1.6.4 Payment. Payment for construction and demolition debris recycling shall be considered as included in the lump sum Bid price for "ROADWAY". As part of the Recycling Summary report, the Contractor shall fill in the blank after the "Construction Demolition and Debris Recycling Requirements Cost:" This cost shall be the incremental cost of complying with the aforementioned requirements. This cost will be used for information gathering purposes only and not for purposes of payment to the Contractor.

300-1.7 Green Waste Recycling Requirements.

- a) In accordance with Agency efforts to comply with the California Integrated Waste Management Act of 1989 (AB 939), the Contractor shall recycle all tree trimming waste and other green waste, with the exclusion of palm tree waste. In no event shall green waste be disposed of in a landfill and/or transformation (e.g. incineration) facility unless otherwise approved by the Engineer in writing. No separate payment will be made for compliance with green waste recycling and reporting requirements.
- b) The Contractor shall furnish the Engineer with documentation adequate to determine the tonnage/volume of green waste recycled. The documentation shall be either:
 - 1) delivery receipts showing the quantity of green waste delivered for recycling;
 - 2) certified weigh-master tickets showing the weight of green waste delivered for recycling; or
 - 3) the Daily Green Waste Recycling Form included at the end of these Specifications completed by the Contractor.

In the case of (iii), the Contractor shall also submit to the Engineer: (1) a permission letter(s) issued by the landowner and site operator, acceptable to the Engineer, authorizing the Contractor to deliver the green waste to the recycling/delivery site; and (2) proof from the landowner or site operator, acceptable to the Engineer, which shows that the green waste delivered to the site will be recycled or reused in accordance with these Specifications.

Payment for green waste recycling shall be considered as included in the Contract Unit Price for the various Bid items which generate green waste.

300-2 UNCLASSIFIED EXCAVATION.**300-2.1 General.** (Page 265 of the SSPWC)

Replace the entire paragraph with the following:

Unclassified excavation shall consist of all excavation, including roadways, unless separately designated. Unclassified excavation **will not include** structure excavation as specified in 300-3 of SSPWC, and excavation for underground conduit construction as specified in 306 of SSPWC.

300-2.8 Measurement. (Page 267 of the SSPWC)

Add the following:

h) Removal of bituminous pavement.

300-2.9 Payment. (Page 267 of the SSPWC)

Add the following:

Payment for unclassified excavation shall be included in the lump sum Bid price for “ROADWAY” or “LANDSCAPING AND IRRIGATION”, whichever is applicable.

300-3 STRUCTURE EXCAVATION AND BACKFILL.**300-3.3 Foundation Material Treatment.** (Page 268 of SSPWC)

Add the following to the end of the second paragraph:

If unsuitable material is encountered when the structure excavation has progressed to required grades, as indicated on the Plans, such unsuitable materials shall be excavated and backfilled with suitable material to the required grades, with the prior approval of, and as directed by the Engineer.

300-3.6 Payment. (Page 270 of the SSPWC)

Replace the entire subsection with the following:

300-3.6 Measurement. Structure excavation and structure backfill shall be that volume in-place included within the vertical plane 1 foot outside of and parallel with the outermost

horizontal dimensions of the structure and surface of the existing ground, final ground surface, or proposed street grade, whichever is lower, and the footing subgrade.

The volume of structure excavation will be a Final Payment Quantity in accordance with 7-7 of Section G.

The volume of structure backfill will be a Final Payment Quantity in accordance with 7-7 of Section G

Add the following:

300-3.7 Payment. Payment for structure excavation for dry well Work will be made at the Contract Unit Price for “STRUCTURE EXCAVATION (DRY WELL)”.

Payment for structure backfill for dry well Work will be made at the Contract Unit Price for “STRUCTURE BACKFILL (DRY WELL)”.

300-4 UNCLASSIFIED FILL.

300-4.9 Measurement. (Page 271 of the SSPWC)

Replace the entire subsection with the following:

Unclassified fill will not be measured separately for payment.

300-4.10 Payment. (Page 271 of the SSPWC)

Replace the first sentence of the first paragraph with the following:

There will be no separate payment for any Unclassified Fill. Payment for such fill shall be considered as included in the lump sum Bid price for “ROADWAY” or “LANDSCAPING AND IRRIGATION”, whichever is applicable.

SECTION 301 – TREATED SOIL, SUBGRADE PREPARATION, AND PLACEMENT OF BASE MATERIALS

301-2.4 Measurement and Payment. (Page 281 of the SSPWC)

Add the following:

Payment for crushed miscellaneous base shall be included in the lump sum Bid price for “ROADWAY”.

SECTION 302 - ROADWAY SURFACING

302-5 ASPHALT CONCRETE PAVEMENT

302-5.1 General. (Page 316 of the SSPWC)

Add the following:

The Contractor shall schedule the paving work such that no longitudinal drop-offs on the pavement will remain overnight in the travelled way. Any transverse drop-offs in the pavement over 1 inch in height that will remain overnight shall be ramped with temporary AC pavement.

302-5.5 Distribution and Spreading. (Page 316 of the SSPWC)

Replace the fourth paragraph with the following:

Asphalt concrete shall not be placed until the atmospheric temperature is a minimum of 55°F and rising, and the surface temperature of the underlying material is a minimum of 55°F. Asphalt concrete shall also not be placed during unsuitable weather.

Add the following after the sixth paragraph:

A fully automatic screed control system will not be required for the work described in 302-5.

302-5.6 Rolling. (Page 317 of the SSPWC)**302-5.6.2 Density and Smoothness.**

Replace “b)” in the third paragraph with the following:

- b) California Test Method 308, Method A (modified to use zinc stearate) when slabs or cores are taken for laboratory testing.

302-5.7 Joints. (Page 320 of the SSPWC)

Add the following:

Longitudinal joints shall coincide with the traffic lines.

302-5.9 Measurement and Payment. (Page 320 of the SSPWC)

Add the following:

Payment for the adjustment of survey monument lids shall be considered as included in the lump sum Bid price for “ROADWAY”.

Payment for asphalt concrete pavement placed adjacent to curb and gutter, curb ramps and cross gutters, where the trench width shown on the Plans is 2 feet or less, prior to resurfacing shall be considered as included in the lump sum Bid price for “ROADWAY”.

302-6 PORTLAND CEMENT CONCRETE PAVEMENT.**302-6.2 Forms and Headers.** (Page 320 of the SSPWC)**302-6.2.1 General.**

Replace the first sentence with the following:

Forms and headers for PCC pavement shall be metal except for bus pad construction where wood forms may be used.

302-6.2.3 Metal Forms.

Add the following as the first sentence:

Metal forms shall be designed specifically for PCC pavement construction.

302-6.3 Placing Concrete. (Page 321 of SSPWC)**302-6.3.1 General.**

Add the following:

Prior to placement against construction joints, curing compound shall be applied and allowed to dry.

Add the following subsection:

302-6.3.3 Roller Screed. A self-propelled, ride-on roller screed shall be used to spread and screed concrete during placement. The roller screed shall be equipped with a minimum of 2 roller tubes. The following roller screeds conform to the aforementioned requirements:

- a) Multiquip Superscreed (WRS-Series Ride-On Roller Screed), www.multipquip.com.
- b) Allen RS800 Series, www.alleneng.com.

The roller screed shall ride on a chair and rail system. The roller screed shall neither ride directly on the edge of an existing concrete gutter nor on an existing pavement edge.

302-6.4 Finishing. (Page 322 of the SSPWC)**302-6.4.2 Tamping.**

Add the following:

If vibrators are used:

- a) High-frequency vibrators shall be used within 15 minutes of depositing concrete to uniformly consolidate the concrete across the paving width.
- b) The vibration rate shall be a minimum of 3,500 cycles per minute for surface vibrators and 5,000 cycles per minute for internal vibrators.

- c) The amplitude of vibration must cause perceptible concrete surface movement at least 1 foot from the vibrating element.
- d) A calibrated tachometer shall be used for measuring the frequency of vibration.
- e) Vibrators shall not rest on side forms or new concrete pavement.
- f) Power to vibrators must automatically cease when forward or backward motion of the roller screed is stopped.

302-6.4.4 Final Finishing.

Replace the entire subsection with the following:

- a) After floating has been completed, edges of initial paving widths shall be rounded to a 1/2-inch radius. Transverse construction joints and the edge of longitudinal construction joints adjacent to hardened concrete pavement shall be rounded to a 1/4-inch radius.
- b) Prior to curing, the pavement surface shall be given an initial and a final texturing. Initial texturing shall be performed with a burlap drag or broom device capable of producing striations parallel with the centerline. Final texturing shall be performed with a broom device.
- c) Initial and final texturing shall produce a pavement surface having a minimum coefficient of friction of 0.30 when tested in accordance with California Test 342.

Add the following subsection:

302-6.4.5 Smoothness.

302-6.4.5.1 General. The Contractor shall perform profilograph testing on the final pavement surface within 10 Working Days after paving. Profilograph testing shall only be performed in the presence of the Engineer unless otherwise approved.

302-6.4.5.2 Profilograph Testing. Profilograph testing shall measure the PI_0 using a zero (null) blanking band in accordance with California Test 526, March 2012 (included at the end of this Section R).

A California profilograph shall be used to determine the profile. If the profilograph uses a mechanical recorder, an electronic scanner shall be used to reduce the profilogram. The profilograph operator must be qualified under the Caltrans "Independent Assurance Manual."

Before starting profilograph testing, the profilograph shall be calibrated in the presence of the engineer unless otherwise approved. The Engineer's absence during calibration shall be noted on the profilogram.

PI₀ values shall be determined for the final pavement surface for each 528-foot section of a traffic lane. Two profiles shall be taken within each traffic lane, 3 feet from and parallel with the edge of each lane. Each section's PI₀ is the average of the PI₀ values for the measurements within that traffic lane. A section that is less than 528 feet long and is the result of an interruption to continuous concrete pavement surface must comply with the PI₀ specifications for a full section. The PI₀ for a partial section shall be adjusted to reflect a full section.

Stationing shall be used to locate vertical deviations greater than 0.3 inch. The profilogram stationing must be the same as the stationing shown on the Plans. The 528-foot segments shall be noted on the profilogram.

The profilogram shall be labeled with:

- a) Project ID No.
- b) Street Name/X-Street Limits
- c) Stationing
- d) Operator's name
- e) Test date
- f) Test number
- g) Traffic direction
- h) Traffic lane (numbered from left to right when facing in the direction of travel)
- i) Test wheel path (left or right when facing in the direction of travel)
- j) Test direction
- k) Paving direction

Profilograms shall be submitted to the Engineer within 5 Working Days of initial profiling and within 2 Working Days of profiling corrected sections.

302-6.4.5.3 Requirements. The final pavement surface shall conform to the following which take precedence over the straightedge tolerances specified in 302-6.4.1:

- a) For tangents and horizontal curves having a centerline radius of curvature 2,000 feet or more, the PI_0 shall not exceed 2-1/2 inches per 528-foot section.
- b) For horizontal curves having a centerline radius of curvature from 1,000 to 2,000 feet including concrete pavement within the superelevation transitions of those curves, the PI_0 shall not exceed 5 inches per 528-foot section.
- c) The surface shall not have individual high points greater than 0.3 inch.

302-6.4.5.4 Grinding. Grinding shall conform to Section 42, “Grinding” of the Caltrans Standard Specifications, 2015 Edition. Grinding shall be performed as needed to conform to 302-6.4.5.3 and in accordance with the following:

- a) Individual high points in excess of 0.3 inch shall be reduced by grinding until the high points as indicated by reruns of the profilograph do not exceed 0.3 inch.
- b) After grinding has been completed to reduce individual high points in excess of 0.3 inch, additional grinding shall be performed as necessary to reduce the Profile Index to values specified above in any 528-foot section along any line parallel with the pavement edge.
- c) Additional grinding shall be performed as necessary to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel with, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement centerline, within any one ground area. All ground areas shall be neat rectangular areas of uniform surface appearance.

302-6.4.5.5 Acceptance. The Engineer will accept the final pavement surface for smoothness when the final pavement surface conforms to the requirements above and the profilograms have been submitted.

302-6.5 Joints. (Page 323 of the SSPWC)**302-6.5.2 Construction Joints.**

Replace the entire subsection with the following:

Construction joints are those made by placing fresh concrete against hardened concrete at the locations shown on the Plans. Longitudinal construction joints not shown on the Plans shall coincide with traffic lane lines or be placed in the middle of a traffic lane. Transverse construction joints shall be perpendicular to traffic lane lines.

Construction joints, both longitudinal and transverse, shall be constructed with a keyway and tie-bars, and as shown on SPPWC Standard Plan 134.

302-6.5.4 Weakened-Plane Joints.

Replace the first sentence of the first paragraph with the following:

Weakened-plane joints shall be formed by cutting a groove in the pavement with a power-driven saw. Weakened-plane joints shall be constructed transversely at 15 feet on center and shall be a minimum of 5 feet from any transverse construction joint. Weakened-plane joints shall not deviate by more than 1-1/4 inches from either side of a 12-foot straight line. Replace the last sentence of the fourth paragraph with the following:

Tie bars shall be placed in the PCC pavement prior to final tamping operations. Said tie bars shall be placed at the last 4 transverse saw cuts at each end of the new construction. Tie bars shall conform to Standard Plan 134.

302-6.6 Curing. (Page 324 of the SSPWC)

Add the following:

When side forms are removed within 72 hours of the start of curing, the concrete pavement edges shall also be cured.

302-6.8 Measurement and Payment. (Page 324 of the SSPWC)

Add the following:

Payment for PCC pavement shall be considered as included in the lump sum Bid price for "ROADWAY".

No separate or additional payment will be made for grinding necessary to achieve the specified smoothness requirements.

SECTION 303 - CONCRETE AND MASONRY CONSTRUCTION

303-1 CONCRETE STRUCTURES.

303-1.5 Removal of Forms for Cast-In-Place Reinforced Concrete Box (CIPRCB) Sections. (Page 336 of the SSPWC)

Add the following subsection:

303-1.5.1 General. The Contractor shall furnish all equipment, material, supplies and labor for performing field tests which will be used as a basis of determining when forms may be removed or stripped. Forms shall not be removed until approval therefor has been given by the Engineer.

The Contractor shall be responsible for determining when concrete placed in the forms has attained the compressive strength specified for form removal by means of tests on specimens made from the concrete placed in the forms. The Contractor shall make such number of 6-inch diameter by 12-inch high cylindrical test specimens as may be required to determine whether the specified strength has been attained; however, the number of specimens shall be such as to allow a minimum of 3 specimens to be tested at any one age. The equipment, materials and supplies to be furnished shall include, but not be limited to, molds, tamping rods, sulfur capping compound, capping compound warmer, a capping device and a compression testing machine.

The specimens shall be made in the presence of the Engineer, during every concrete pour for which stripping strengths are required, by taking representative samples of fresh concrete, directly from the mixer, and placing such concrete into suitable molds where it shall be rodded into place. The specimens shall be made in accordance with ASTM C31. Specimens shall be made and stored on a casting board made of 5/8-inch plywood measuring 21 inches x 21 inches.

The specimens shall be covered by a box fabricated of 1/2-inch plywood measuring 21 inches x 21 inches x 15 1/2 inches high, outside dimensions. During the period of November 1 to May 31, inclusive, said casting board and box shall be insulated with an inside covering of 1/2-inch thick styrofoam or Agency-approved equal. No insulation shall be used during the period of June 1 to October 31, inclusive. The use of plastic sheets, light bulbs or other heating devices, inside or outside of the box, will not be permitted. Not more than 3 specimens shall be stored within the box at any one time.

The box and board containing the 3 specimens shall be stored near the point of sampling, either on hardened concrete adjacent to the freshly placed concrete, or on the ground surface adjacent to the freshly placed concrete.

At an appropriate time, prior to loading, the specimens shall be removed from the box and moved to the location where the capping equipment and compression testing machine are kept; however, under no circumstances shall specimens be stored in the box for a period greater than 24 hours. At the aforementioned location, the specimens shall be removed from the molds and capped with a sulfur capping compound in accordance with the methods of ASTM C31. After the caps have hardened, the specimens shall be loaded to failure in a compression testing machine, in the presence of the Engineer, in accordance with ASTM C39. The compressive strength of each specimen shall be calculated by dividing the maximum load carried by the specimen during the test by the average cross sectional area, and the result expressed to the nearest 10 psi. The compressive strength of the concrete represented by the specimens shall be taken as the average compressive strength of 3 specimens tested at the same age except that if one specimen in a test shows manifest evidence of improper sampling, molding or testing, it shall be discarded and the remaining 2 strengths averaged. Should more than one specimen representing a given test show definite defects due to improper sampling, molding or testing, the entire test shall be discarded.

In the event specimens are to be tested at ages greater than 24 hours, the specimens shall be taken from the box at an age of 24 hours, removed from the molds when the forms are stripped, and stored at the location where the capping equipment and compression testing machine are kept, where they shall receive, insofar as is practicable, the same exposure and/or protection from the elements as the portions of the structure which they represent, until the time of testing.

The equipment, materials and supplies to be furnished by the Contractor shall conform to the following requirements:

- a) **Molds.** Molds for compression test specimens shall be 6 inches inside diameter by 12 inches high, made of nonabsorbent material, watertight and shall conform to the requirements of ASTM C470.
- b) **Tamping Rod.** Tamping rods shall be round, straight steel rods, 7/8 inch in diameter and 24 inches long, having one end rounded to a hemispherical tip of the same diameter.

- c) **Sulfur Capping Compound.** Capping compound shall be plasticized, contain at least 55 percent refined sulfur and not more than 45 percent graded silica aggregate, and shall be free of sodium chloride or other water soluble salts, clay, shale, brick, dust, iron filings or similar fillers. It shall have an absorption of less than 0.5 percent by weight, a compressive strength of not less than 5,000 psi, and a melting point between 265°F and 290°F.
- d) **Capping Compound Warmer.** The capping compound warmer shall be capable of melting the capping compound and maintaining a temperature between 265°F and 290°F. The capacity of the warmer shall be sufficient to allow at least 3 specimens to be capped on both ends from one filling of the warmer with capping compound.
- e) **Capping Device.** The capping device shall be suitable for use with the capping compound. It may hold the cylindrical specimens in either the vertical or horizontal position and allow both ends of the specimen to be capped simultaneously, or each end may be capped individually. The device shall produce thin caps with plane end surfaces at right angles to the axis of the specimen.
- f) **Compression Testing Machine.** The compression testing machine shall contain a hydraulic loading unit with a capacity of not less than 200,000 pounds. The loads may be developed by means of a hand-operated pump or a motor driven pump. The machine shall be capable of loading specimens at the rate specified in ASTM C39.

The machine shall accommodate 6-inch by 12-inch cylindrical specimens between the upper and lower steel bearing blocks. The upper block shall be spherically seated, adjustable for specimen height, not less than 6.18 inches in diameter, and have a hardened bearing face. The lower block shall be removable, have a hardened bearing face, and be not less than 6.18 inches in diameter.

The testing machine shall have a hydraulic pressure gauge reading directly in pounds of load applied to the specimen. The capacity of the gauge shall not exceed 200,000 pounds. The gauge shall be not less than 8 inches in diameter, be equipped with a maximum load pointer, and contain a quick coupler which will prevent leakage of hydraulic fluid from the system whenever the gauge is removed.

The testing machine shall be accurate to within one percent of the indicated load and shall be calibrated at intervals not to exceed 6 months by an agency approved by the Engineer.

The completed specimens may be tested by a certified testing laboratory; however, forms shall not be stripped until the Engineer has been furnished with the results of the tests and until approval has been given by the Engineer to remove the forms.

In the event that the compressive strength as determined from the cylinder tests is less than that required for form removal, and the Contractor does not have sufficient specimens to perform additional tests, then the Contractor shall wait 4 hours for each 100 psi that the compressive strength is below that required before removing the top slab forms.

303-1.7 Placing Reinforcement. (Page 336 of the SSPWC)

303-1.7.1 General.

Delete the first paragraph.

303-1.8 Placing Concrete. (Page 338 of the SSPWC)

303-1.8.2 Grouting.

Delete the entire subsection.

303-1.8.4 Consolidating.

Replace the first sentence of the third paragraph with the following:

The number of vibrators employed shall be of sufficient size to consolidate the concrete being placed within 15 minutes after it has been placed into the forms.

303-1.12 Payment. (Page 345 of the SSPWC)

Add the following before the first paragraph:

303-1.12.1 General.

Replace the fifth, sixth, and seventh paragraphs with the following:

No separate or additional payment will be made for reinforcing steel. Payment shall be considered as included in the lump sum Bid price for "DRAINAGE" or "FILTRATION UNIT", whichever is applicable.

Add the following:

Should the Contractor request and obtain permission to use admixtures for its own benefit, the Contractor shall furnish such admixtures and incorporate them in the concrete mixture at its own expense and no additional payment will be made therefore.

Should the Engineer direct the Contractor to incorporate any admixtures in the concrete mixture when their use is not required by the Specifications, furnishing the admixtures and incorporating them in the concrete mixture will be paid for as Extra Work.

Payment for modifying structures to be constructed per Standard Plans in accordance with the notes and/or details of the modifications shown on the Plans shall be considered as included in the lump sum Bid price for "DRAINAGE" for the various structure items to be constructed per Standard Plans.

Payment for constructing local depressions per SPPWC Standard Plan 313, or as shown on the Plans, shall be considered as included in the lump sum Bid price for "DRAINAGE" for the catch basin involved.

Add the following subsections:

303-1.12.2 Payment for Catch Basins. The selection of the various "V" depths for the catch basins shown on the Plans was based upon the best available data with respect to the locations of various utilities; however, in order to avoid utilities, or for other reasons deemed necessary by the Engineer, the Agency reserves the right to increase or decrease the depth of any catch basin from that shown on the Plans. If the "V" depth of a catch basin is decreased, there will be no adjustment in payment. If the "V" depth is increased by more than 6 inches, then an adjustment to the payment will be made as Extra Work in accordance with 7-4 of SSPWC. Any increase or decrease in the cost of constructing the connector pipe resulting from the "V" depth change, or of the catch basin due to thickening of the concrete section or addition of steel reinforcement, shall be considered as included in the said item of Work. Any reduction in "V" depth exceeding 6 inches must be approved by the Engineer and the jurisdictional agency.

The construction of catch basins shall include structure excavation, structure backfill, formwork, furnishing and placing of materials, pipe connections, and all other necessary Work.

Payment for catch basins will be made in accordance with 303-1.12.1 and shall be included in the lump sum Bid price for "DRAINAGE".

303-1.12.3 Payment for Filtration Unit. The construction of the filtration units shall include structure excavation; furnishing and placing of all materials including filtration units and manholes; gravel pack; structure backfill; pipe connections; and all other necessary Work.

Payment for filtration units, shall be included in the lump sum Bid price for “FILTRATION UNIT”.

303-1.12.4 Payment for 72” RCP Trash/Slide Gate Manhole. The construction of the 72” RCP Trash/Slide Gate manhole shall include structure excavation, structure backfill, formwork, furnishing and placing of all materials, concrete backwall, 72” RCP, trash rack assembly, pipe connections, concrete cap, manhole frame and cover, and all other necessary Work.

Payment for 72” RCP Trash/Slide Gate manholes shall be included in the lump sum Bid price for “DRAINAGE”.

303-1.12.5 Payment for 72” RCP Bypass Manhole. The construction of the 72” RCP Bypass manhole shall include structure excavation, structure backfill, formwork, furnishing and placing of all materials, 72” RCP, pipe connections, concrete cap, manhole frame and cover, and all other necessary Work.

Payment for 72” RCP Bypass manholes shall be included in the lump sum Bid price for “DRAINAGE”.

303-1.12.6 Payment for 72” RCP Influent Monitoring Manhole. The construction of the 72” RCP Influent Monitoring manhole shall include structure excavation, structure backfill, formwork, furnishing and placing of all materials, 72” RCP, pipe connections, concrete cap, manhole frame and cover, and all other necessary Work.

Payment for 72” RCP Influent Monitoring manholes shall be included in the lump sum Bid price for “DRAINAGE”.

303-1.12.7 Payment for Effluent Monitoring Manhole. The construction of the Effluent Monitoring manhole shall include structure excavation, structure backfill, pipe connections, concrete cap, manhole per SPPWC Standard Plan 321, manhole frame and cover, and all other necessary Work.

Payment for Effluent Monitoring manholes shall be included in the lump sum Bid price for “DRAINAGE”.

Add the following subsection:

303-1.13 Drill and Bond Dowel (Epoxy Cartridge). Drilling and bonding dowels with epoxy cartridge systems shall conform to the details shown on the Plans and the requirements in these Special Provisions.

The epoxy cartridge system shall comply with the 2009 International Building Code and evaluated in accordance with ICC-ES Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete (AC308). The Contractor shall provide one of the following epoxy cartridge systems or Agency-approved equal:

1. Hilti, Inc., HIT-RE 500-SD
2. Simpson Strong-Tie Co., Inc, SET-XP
3. Sakrete, High Strength Anchoring Epoxy

The epoxy cartridge system used shall be appropriate for the ambient concrete temperature and installation conditions at the time of installation in conformance with the manufacturer's specifications.

Epoxy cartridges shall be accompanied by a Certificate of Compliance as provided in Section 4-5 of SSPWC, "Certificates of Compliance," of the Standard Specifications. The certificate shall state that the material complies in all respects to the requirements of ICBO AC58 and Caltrans Augmentation/Revisions to ICBO AC58.

Each epoxy cartridge shall be clearly and permanently marked with the manufacturer's name, model number of the epoxy cartridge system, manufacturing date, and lot number. Each carton of epoxy cartridges shall contain the manufacturer's recommended installation procedures, minimum cure time, and such warning or precautions concerning the contents as may be required by Federal or State laws and regulations.

The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes. If reinforcement is encountered during drilling, before the specified depth is attained, the Engineer shall be notified. Unless the Engineer approves, in writing, coring through the reinforcement, the hole will be rejected and a new hole, in which reinforcement is not encountered, shall be drilled adjacent to the rejected hole to the depth recommended by the manufacturer. The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes. If reinforcement is encountered during drilling, before the specified depth is attained, the Engineer shall be notified. Unless the Engineer approves, in writing, coring through the reinforcement, the hole will be rejected and a new hole, in which

reinforcement is not encountered, shall be drilled adjacent to the rejected hole to the depth recommended by the manufacturer.

The drilled holes shall be cleaned in conformance with the manufacturer's instructions and shall be dry at the time of placing the epoxy cartridge bonding material and the steel dowels. The bonding material shall be a 2-component epoxy system contained in a cartridge having 2 separate chambers and shall be inserted into the hole using a dispensing gun and replaceable mixing nozzle approved by the manufacturer. Unless otherwise specified, the depth of hole and the installation procedure shall be as recommended by the manufacturer. A copy of the manufacturer's recommended installation procedure shall be provided in accordance with 3-8.5 of SSPWC to the Engineer at least 2 days prior to beginning the bonding of dowels or threaded rods.

Immediately after inserting the dowels into the epoxy, the dowels shall be supported as necessary to prevent movement during curing and shall remain undisturbed until the epoxy has cured a minimum time as specified by the manufacturer. Dowels that are improperly bonded, as determined by the Engineer, will be rejected. Adjacent new holes shall be drilled, and new dowels shall be placed and securely bonded to the concrete. All work necessary to correct improperly bonded dowels shall be performed at the Contractor's expense.

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.

303-5.1 Requirements. (Page 357 of the SSPWC)

303-5.1.1 General.

Add the following:

To facilitate access to properties, the Contractor may be directed to include admixtures or additional cement in the concrete mix for driveway aprons.

Add the following subsection:

303-5.1.4 Curb Ramps. Curb ramps shall conform to the Standard Plans referenced, and details shown, on the Plans.

303-5.3 Placing Concrete. (Page 359 of the SSPWC)

Add the following:

Concrete for walk, driveways, and access ramps (curb ramps) shall not be placed monolithically with curbs, integral curbs and gutters, or gutters. Concrete for such shall not be placed until a minimum of 4 hours after concrete for the adjoining curb or gutter has been placed.

Add the following after the second paragraph:

At locations where new sidewalk will join a wall, the sidewalk shall be placed in two separate pours. The first pour shall include the portion of the walk from the back of the curb to approximately 6 inches off the face of the wall or as directed by the Engineer. The second pour shall be between the wall and the edge of the walk previously placed. Full compensation for complying with these requirements shall be considered as included in the lump sum Bid price for "ROADWAY".

303-5.5 Finishing. (Page 360 of SSPWC)**303-5.5.3 Walk.**

Replace the second paragraph with the following:

After concrete has been deposited in place, it shall be thoroughly tamped in such a manner that coarse aggregate will be forced down and a layer of free mortar approximately 1/4-inch-thick covers the surface. The concrete shall be screeded to the required grade and floated to a smooth, flat, uniform surface. Immediately after the initial set has taken place, the surface shall be broom-finished. Broom-finishing shall be accomplished by a fine-hair broom and shall be performed perpendicular to the centerline of the adjacent roadway as directed by the Engineer.

303-5.5.5 Alley Intersections, Access Ramps, and Driveways.

Add the following:

A detectable warning surface shall be constructed in the areas shown on the Plans and Standard Plans. Detectable warning surfaces shall be the cast-in-place type and consist of a rigid, pre-cast tile embedded into fresh concrete. The detectable warning surface shall have the dimensions and dome spacing shown on the Standard Plan. The color shall be yellow conforming to Federal Standard 595B, Color No. 33538.

Detectable warning surfaces shall be one of the following:

- a) Cast-In-Place Replaceable Tactile Pavers as manufactured by ADA Solutions:
www.adatale.com/replaceable_wet_set.php
- b) “Alert Cast” as manufactured by Detectable Warning Systems, Inc.:
<http://detectable-warning.com/products/alertcast/>
- c) “Armor-Tile Replaceable Herculite” series as manufactured by Armor-Tile.:
<http://www.armor-tile.com/herculite-series.html>

Detectable warning surfaces shall be installed in accordance with the manufacturer’s installation instructions.

303-5.8 Backfilling and Clean-Up. (Page 361 of the SSPWC)

Add the following:

All parkway areas that will not be covered with new walk, driveways, or curb ramps shall be backfilled with clean native soil as directed by the Engineer. Such material will not be considered as Selected Material.

303-5.9 Measurement and Payment.

Add the following:

Payment for the placement and removal of forms (including excavation), backfilling, grading, shaping, preparation of subgrade, root pruning not requiring the use of root control barriers, and other incidental costs connected with the construction of walk, curb ramps, cross gutters, and driveways shall be considered as included in the lump sum Bid price for “ROADWAY”.

Payment for the construction of retaining curbs integral with curb ramps, if so required by the curb ramp case and type specified on the Plans, shall be considered as included in the lump sum Bid price for “ROADWAY”.

Payment for construction of detectable warning surfaces shall be considered as included in the lump sum Bid price for “ROADWAY”. The payment shall include the underlying concrete, and furnishing and installing the precast tile.

Payment for admixtures or additional cement to achieve high early strength, if so directed by the Engineer, will be made on the basis of Extra Work in accordance with 7-4 of SSPWC for the additional cost of the materials only.

SECTION 306 - OPEN TRENCH CONDUIT CONSTRUCTION

306-3 TRENCH EXCAVATION.

306-3.2 Removal of Surface Improvements. (Page 389 of the SSPWC)

Add the following:

Sewer lines and water lines shall be jacked or tunneled under all concrete curbs, gutters, cross gutters, driveways and sidewalks, or upon approval of the Engineer, such surface improvements may be removed and replaced in accordance with the appropriate Standard Plans and 400-1 of SSPWC unless otherwise specified.

306-3.3 Removal and Abandonment of Existing Conduits and Structures. (Page 389 of the SSPWC)

Add the following after the last paragraph:

All salvageable storm drain manhole frames and covers and other metal appurtenances shall be delivered by the Contractor at its own expense to one of the following Stormwater Maintenance Division yards:

5525 E. Imperial Highway, South Gate, California 90280,
(310) 861-0316

10179 Glenoaks Blvd, Sun Valley, California 91352,
(818) 896-0594

160 E. Longden Drive, Irwindale, California 91706,
(626) 445-7630

2986 New York Dr., Pasadena, California 91107,
(626) 798-6761

5520 W. 83rd St., Los Angeles, California 90045,
(323) 776-7610

306-3.5 Maximum Length of Open Trench. (Page 391 of the SSPWC)

Replace the entire subsection with the following:

Open trench, as referred to herein, shall be defined as all trench excavations which have not been completely backfilled (including attaining required relative compaction) as required elsewhere in these Specifications and in which neither temporary nor permanent resurfacing has been placed.

For purposes of this subsection, pavement breaking in advance of trench excavation is considered a part of the trench excavation and, as such, is a part of the open trench.

- a) Case 1, Prefabricated Pipe:** The maximum length of open trench along any one heading shall not exceed the following:

Depth of Cover in Feet	Maximum Allowable Trench Length in Multiples of Length of Pipe Actually Placed in a Single Day
0 to 5	7
Over 5 to 10	8
Over 10 to 15	9
Over 15	10

In the event additional curing time is necessary for poured-in-place concrete structures, such structures will not be considered in the calculation of the maximum allowable open trench length but shall be backfilled and the trench restored using either temporary or permanent resurfacing as soon as the required concrete compressive strengths have been attained.

- b) **Case 2, Reinforced Concrete Box:** The maximum length of open trench along any one heading shall not exceed the following:

Depth of Cover in Feet	Maximum Allowable Trench Length in Multiples of Length of RCB Actually Poured in a Single Day
0 to 5	7
Over 5 to 10	8
Over 10 to 15	9
Over 15	10

In the event the Contractor elects to delete the temporary resurfacing and place permanent resurfacing immediately, 2 additional multiples may be added to the above table if so approved by the Engineer. However, the actual length of open trench may be limited by the Engineer due to adverse Project site conditions.

The length completed in a single day as used in both cases above shall be defined as the daily average length completed during the 5 immediately preceding Working Days exclusive of placement of resurfacing (temporary or permanent) and restoration of other existing improvements. Where more than one line is shown on the Plans, an operation which moves progressively from one line to another shall be considered a single heading. The depth of cover, as referred to in this subsection, shall be the average distance from the top of the completed structure to the ground surface computed from measurements at equal intervals along the conduit constructed during the 5 immediately preceding working days.

Additional length of open trench may be permitted by the Engineer, should it be in the best interests of the Agency.

Failure by the Contractor to comply with the parameters specified herein, or as may be specifically authorized by the Engineer, may result in a written order from the Engineer to halt progress of the Work until the Contractor complies with this subsection.

Add the following subsection:

306-3.7 Remodeling Existing Sewer Facilities. Where construction involving existing sewer facilities is shown on the Plans, the Contractor shall provide temporary seals, enclosures, forced ventilation, or other devices as may be necessary to prevent odor nuisance during construction. Sewers shall be open to the atmosphere only for a reasonable time necessary for construction.

Existing sewer facilities shall be considered potential permit-required confined spaces in accordance with 5-7.5 of SSPWC. Hazards to which workers may be exposed, include, but are not limited to engulfment, hydrogen sulfide gas, explosive/flammable gases, and/or oxygen deficiency. When required, the Contractor shall implement a permit-required confined space entry program.

Whenever cast-iron pipe is specified, ductile iron pipe may be used in lieu thereof.

Where a manhole bottom is to be remodeled on an existing sewer, the portion to be remodeled shall be removed to a minimum depth of 3 inches to permit construction of new channels and shelves. Sewage in new and remodeled manholes shall be controlled across the manhole in such a manner that sewage does not flow over concrete channels until they have cured for 24 hours. The controls shall prevent backup of sewage upstream from the manhole unless otherwise approved by the Engineer.

The Contractor shall submit Working Drawings for control operations in accordance with 3-8.2 of SSPWC.

The Contractor shall provide suitable trench support devices, wherever required, to prevent movement of the ground under and adjacent to sewers already constructed, wherever the excavation is parallel to and deeper than the sewer.

The locations of existing house connections as shown on the Plans are approximate only. Any house connections or sewer lines or other facilities which are discovered to interfere with the proposed storm drain conduit or appurtenant structures and which therefore must be broken into, disturbed or relocated shall be reconstructed to the satisfaction of the owner.

Sanitary sewer house connections shall be remodeled in accordance with SPPWC 223.

When constructing sanitary sewer supports per Cases 1, 2, and 4 of SPPWC 224, the sewer shall be encased. The encasement shall be a minimum of 6 inches wider on each side of the sewer, and a minimum of 6 inches above the top of the sewer. The support beam or

support wall shall at least match the width of the encasement and be of such length to fully support the encasement.

306-4 SHORING AND BRACING. (Page 391 of the SSPWC)

Add the following before the first paragraph:

306-4.1 General.

Replace the first paragraph with the following:

For the purpose of shoring or bracing, a trench is defined as an excavation in which the depth is greater than the width. Shoring and bracing are required when the depth is 5 feet or greater. In cases where there are unstable soil conditions, shoring or bracing may be required for depths less than 5 feet.

Add the following after the last paragraph:

Open trenches shall be protected by protective and security fencing or plates in accordance with LACPW Standard Plan 6008. If an exception as specified on LACPW Standard Plan 6008 Sheet 2 exists, barricades conforming to LACPW Standard Plan 6009 shall be placed in accordance with the California MUTCD. The maximum spacing of barricades shall not exceed 25 feet. Such open trench areas shall not be opened for vehicular use by the public until temporary or permanent resurfacing has been placed to provide a smooth surface for vehicular travel. Areas that are opened for use of the public shall be maintained by the Contractor to provide a smooth surface until the permanent resurfacing is placed.

306-4.2 Additional Requirements. The Contractor shall be fully responsible for securing the design, and for furnishing and installing adequate shoring, fencing, and covers to protect all excavations from slides and cave-ins, and the public from hazardous conditions. The excavations and shoring therefor shall be such as to protect all existing improvements and utilities from any damage and to be fully compatible with all requirements for traffic and access and the safe performance of the Work.

Except as otherwise specified herein, excavations 5 feet or more in depth shall be shored such that the sides will be supported in accordance with the requirements set forth in LACPW Standard Plan 3090. Where the use of shields is proposed in lieu of shoring, their use shall conform to LACPW Standard Plan 3090 and shall be subject to the restrictions shown thereon. When a utility is in Zone A, the restrictions on the use of shields may be waived if:

- a) the Contractor submits written approval from the owner of the utility for its proposed construction method, and
- b) the Contractor complies with any support or protection method the utility owner requires and submits such requirements to the Engineer for enforcement.

Materials excavated from the trench shall be placed away from the edge of the trench so as not to overstress the shoring or bracing in accordance with LACPW Standard Plan 6008.

The design shall be based on "Kw" values and soil parameters not less than those specified plus a uniform surcharge of at least 72 psf from the walls of the trench. If these items are not included, they shall be determined by the designer of the shoring system. Structural steel design shall be in accordance with the current edition of the AISC Manual of Steel Construction. Timber design shall be in accordance with the National Specification for Stress-Grade Lumber and Its Fastenings.

Allowable stresses specified in the listed publications may be increased by 1/3. The maximum allowable timber flexural stress shall not exceed 2,000 psi. This includes the 1/3 increase.

The "Kw" value(s) and soil type(s) for use in the design of shoring of excavations are as follows:

<u>Line</u>	<u>Station Limits</u>	<u>"Kw" (pcf)</u>	<u>Soil Type</u>
Line A-1	10+00 to 14+00	41	ML, SM, SP, SW
Line A-2	20+00 to 21+00	41	ML, SM, SP, SW
Line A-3	30+00 to 30+75	51	CL, ML, SM, SP, SW
Line A-4	40+00 to 40+50	51	CL, ML, SM, SP, SW
Line A-5	50+00 to 50+50	51	CL, ML, SM, SP, SW
Line A-6	60+00 to 60+50	51	CL, ML, SM, SP, SW
Line B-1	70+00 to 73+00	51	CL, ML, SM, SP, SW
Line C-1	100+00 to 113+00	55	CL, CH, ML, SC, SM, SP, SW
Line D-1	200+00 to 219+00	25	CL, CH, ML, SC, SM, SP, SW
Line E-1	80+00 to 83+00	55	CL, CH, ML, SC, SM, SP, SW
Line F-1	90+00 to 93+00	25	CL, CH, ML, SC, SM, SP, SW

Excavations 5 feet or more in depth for catch basins and connector pipes may be shored with a support system designed in accordance with the criteria set forth on LACPW Standard Plan 3090 or with a system that meets the requirements in Paragraph 1541 of the Construction Safety Orders of the State of California, Department of Industrial Relations, except that where aluminum rails or wailers are used for hydraulic shoring, they shall be heavy duty. Use of shields shall be as specified above. If the support system is designed in

accordance with LACPW Standard Plan 3090, the plans shall be prepared by a Civil or Structural Engineer, registered as such in the State of California. The design shall be based on "Kw" values not less than those specified above.

The criteria set forth on LACPW Standard Plan 3090 are the minimum for the conditions shown thereon. In addition to shoring the excavations as specified above, it shall be the Contractor's responsibility to provide all additional shoring required to support loads which may exceed those derived by using the criteria set forth. It shall also be the Contractor's responsibility to provide adequate shoring for the protection of existing improvements in the vicinity of any excavation. The design and details of the shoring system, as submitted, shall reflect the additional shoring necessary to provide for these loads and the required protection. The Contractor shall be solely responsible for any damages which may result from its failure to provide adequate shoring to support the excavations under any or all of the conditions of loading which may exist or which may arise during the construction of the Project.

The provisions of this subsection shall not apply to the support of excavations required for tunneling, boring, jacking or other similar underground excavations. However, shoring for jacking pits or similar open excavations used in connection with such work shall be governed by these Specifications. Support of excavations for boring, jacking or other similar underground excavations shall be in accordance with the Tunnel Safety Orders of the State of California, Department of Industrial Relations.

Prior to the beginning of work, the Contractor shall designate in writing to the Engineer someone whose responsibility it is to supervise the installation and removal of sheeting, shoring and bracing.

306-4.3 Submittals. The Contractor shall prepare and submit in accordance with 3-8.2 of SSPWC Working Drawings and supporting information for its proposed shoring system showing the reaches, design criteria, calculations, sketches, sequence of placement and removal, and other data required in order to shore the excavation for the appropriate cases of shoring expected to be used on the Project. Where shields are to be used, the Working Drawings shall include a typical cross section of the proposed conduit showing adjacent utilities. If a previously approved shield is to be used, submittal of calculations for the shield are not required if the current calculated load does not exceed the load for which the shield was previously approved. If it is requested that the limitation on the use of shields in the vicinity of existing utilities be waived, the submittal shall also include the written statements from the affected utility owners and Working Drawings and calculations of the required utility support. The submitted Working Drawings shall be of the same format as that shown on LACPW Standard Plan 3091. The Working Drawings shall indicate the methods of sheeting, shoring and bracing which will be used, applicable reaches, and the installation

and removal sequence. The Working Drawings shall also show the positioning of said sheeting, shoring and bracing with respect to the planned location of the proposed structures. Existing improvements which may be affected by the proposed excavation shall also be shown. It is the Contractor's responsibility to submit to the Agency all test data and calculations required to substantiate the load supporting ability of special components of shoring systems such as screw jacks, speed shores, etc.

Partial submittals will be rejected. Submittals shall include the following:

- a) Shoring plans which show on each sheet the Project title, sheet number, total number of sheets, and wet stamp and signature of the California Registered Civil or Structural Engineer responsible for the design.
- b) Limits of application for the shoring design, with beginning station and end station.
- c) Working Drawings (plans, sections, elevations, and details), material specifications, notes, construction and removal procedures, etc. necessary for the construction and inspection of the shoring system.
- d) Supporting calculations prepared by the responsible Registered Civil or Structural Engineer, who will wet stamp and sign the first sheet of these calculations. The calculations shall show and justify the design loads on the shoring. The calculations shall also show the capacity of the shoring system is adequate to withstand the imposed loads.
- e) Shoring design criteria. A sample of some of the information required is shown on LACPW Standard Plan 3091.
- f) Notes as shown on LACPW Standard Plan 3091.
- g) A statement confirming the Contractor has reviewed the proposed shoring Working Drawings and found them compatible with the site conditions and proposed construction methods.
- h) If shields are proposed, the shoring Working Drawings shall show the limits of Zone A and Zone B offset from the toe of excavation as delineated on LACPW Standard Plan 3090 Case 4. The shoring designer shall verify the field condition and state on the Working Drawings that the design conforms to the requirements shown in Section D "SHIELDS" on Sheet 4 of LACPW Standard Plan 3090.

The submittal package shall also include:

- i) Manufacturer's specifications and other data necessary for the review of the proposed shoring as applicable.
- j) Traffic Control Plan, *if not included with the Plans*, if it affects the live load surcharge or the aforementioned Zone A requirements on the shoring system.

306-4.4 Agency Review. A detailed review of the submitted Working Drawings and supporting information will be performed by the Agency. The review will be for the purpose of determining that the following items have been considered and are in accordance with the specified criteria.

- a) Soil Loads.
- b) Surcharge Loads, including effect of existing improvements.
- c) Method of Analysis.
- d) Allowable Stresses, including soil stresses where applicable.
- e) Protection of Existing Improvements.
- f) Feasibility of Construction.
- g) Delineation of Criteria.
- h) Calculations.
- i) Statement of Applicable Reaches.
- j) Original wet stamp and signature of the California Registered Civil or Structural Engineer responsible for the shoring design.

If the submittal is in conformance with the shoring criteria and the Specifications, the Agency will sign the submitted Working Drawings.

Acceptance of the Contractor's submitted Working Drawings shall not be construed to invalidate other provisions of these Specifications which may be affected by the accepted method of shoring such as, but not limited to, the requirements concerning street closures, detours, barricades and utilities.

Acceptance of shoring for excavations with either vertical or sloping banks shall not be construed to have altered any pay lines shown on the Plans.

306-4.5 Construction. As construction progresses, should a type of soil be encountered which requires a different method of shoring or shoring of greater strength than previously accepted by the Agency, or should a situation or condition arise which in the opinion of the Engineer and/or California Division of Occupational Safety and Health requires additional shoring, then the Contractor shall submit for acceptance revised shoring details, and work in the affected excavations shall be discontinued until the revised shoring details have been accepted by the Agency. The preparation and furnishing of such revised details shall be done as specified above for the Contractor's proposed method of sheeting, shoring and bracing for the Project excavations. All of the above-specified provisions concerning submittal by the Contractor, commencement of work on sheeting, shoring and bracing by the Contractor, and action to be taken by the Engineer and the Contractor shall apply in the event a different type or additional sheeting, shoring and bracing is required beyond that originally contemplated by the Contractor.

The Contractor's attention is directed to the trench width, "W", distances shown on LACPW Standard Plan 3080. The design of the conduit and the shoring is based on this maximum width. If the trench width exceeds the maximum design width, the pipe bedding, pipe D-Load and the shoring shall be redesigned.

If excavations are supported employing used materials, such materials shall be free from defects which may impair their protective function. Used materials which are damaged, fatigued, or are otherwise defective to the extent that they will not safely perform their intended function, shall not be used in supporting excavations. It shall be solely the Contractor's responsibility to furnish sheeting, shoring, and bracing of such grades and stresses as specified on the accepted Working Drawings.

306-4.6 Vertical Shores for Supporting Trench Excavations. H-beams, piles or other similar supports for trench excavations shall be placed in holes drilled to the bottom of the excavation and then driven the remainder of the required depth. Sonic pile drivers may not be used. Drilled holes shall be filled with jetted sand having a minimum sand equivalent of 30.

In lieu of the above method, vertical supports may be placed in holes drilled to the full depth required and backfilled to subgrade. Backfill shall be trench backfill slurry conforming to 201-1.1.2 of SSPWC. However, where the in-situ material is granular and free-draining, the backfill may be sand conforming to 200-1.5 of SSPWC. Trench backfill slurry shall be placed 72 hours prior to excavating and sand shall be flooded 24 hours prior

to excavating. Calculations for embedment depth shall be based on beam width, not hole diameter.

When driving the vertical supports, as well as when drilling the holes, the Contractor shall take care to avoid damage to any and all existing improvements and utilities.

The Engineer may, upon request of the Contractor, approve in writing the use of means other than drilling for the purpose of placing the vertical supports at locations where the drilling of such holes is impractical because of the existence of running sand, rocks or other similar conditions, and provided impracticability is demonstrated to the satisfaction of the Engineer by actual drilling operations by the Contractor. Such other means, however, must be of a nature which will accomplish, as nearly as possible, the purpose of drilling, namely, the prevention of damage to existing surface or subsurface improvements, both public and private.

The above specifications shall not apply to driven sheet piling where such piling is necessary, because of the type of material being excavated, to adequately and safely support the excavation.

Immediately after the drilling for, or extraction of, a pile, the Contractor shall place a steel cover over the hole which shall be left in place until the pile is inserted or the hole is filled, as applicable. The cover shall be heavy enough to withstand traffic, be anchored to prevent lateral movement and have a minimum weight of 75 pounds. Drilling or pile extraction will not be permitted until covers are on the Project site and available for immediate use.

The minimum required depth of penetration for vertical shores below the bottom of the excavation shall be determined using soil resistance based on the following equations, the resultant of which shall be applied at a distance "X" below the bottom of the excavation.

<u>Case</u>			
<u>No.</u>	<u>Equation</u>	<u>X</u>	<u>D_{min}</u>
1	$F_p = E (D-D_1)^2$	$2D/3$	$D_1 + 2'$
2	$F_p = A (D)^2$	$2D/3$	$2'$
3	$F_p = A (D)^2 + B (D)$	$(D/2) + \{D(0.167)/[1 + (B/AD)]\}$	$2'$
4	$F_p = A (D-D_1)^2$	$2D/3$	$D_1 + 2'$

- Where F_p = Resultant force in pounds per foot of width of vertical shore.
 D_{min} = Minimum depth of penetration in feet below the bottom of the excavation.
 D_1 = Distance in feet between bottom of excavation and point of zero pressure.
 X = Distance in feet between bottom of excavation and line of action of F_p .

A, B & E = Soil parameters for continuous abutting vertical shores. (Values may be doubled for single or spaced vertical shores.) Unitless.

The parameters for determining the minimum penetration for vertical shores are as follows:

<u>Line</u>	<u>Station Limits</u>	<u>Case No.</u>	<u>Soil Parameters</u> (pcf)			<u>Distance (feet)</u>
			<u>A</u>	<u>B</u>	<u>E</u>	
Line A-1	10+00 to 14+00	1	-	-	110	2.8
Line A-2	20+00 to 21+00	1	-	-	110	2.8
Line A-3	30+00 to 30+75	4	45	-	-	6.9
Line A-4	40+00 to 40+50	4	45	-	-	6.9
Line A-5	50+00 to 50+50	4	45	-	-	6.9
Line A-6	60+00 to 60+50	4	45	-	-	6.9
Line B-1	70+00 to 73+00	4	45	-	-	6.9
Line C-1	100+00 to 113+00	1	-	-	65	6.2
Line D-1	200+00 to 219+00	3b	40	920	-	-
Line E-1	80+00 to 83+00	1	-	-	65	6.2
Line F-1	90+00 to 93+00	3b	40	920	-	-

The soils encountered in the borings shall be classified as Type C as defined in the California Code of Regulation Title 8, Division 1, Chapter 4, Subchapter 4, Article 6, Appendix A.

Applicable Case Nos., D₁ and soil parameters are provided in the Special Provisions and are to be used in conjunction with LACPW Standard Plan 3090. It should be noted that this type of system is subject to the restriction that the distance from the bottom of the excavation to the lowest strut shall not exceed 15 feet. It should be further noted that this information is not applicable to the design of cantilevered shoring or sheet piling.

306-5 DEWATERING. (Page 391 of the SSPWC)

Add the following to the end of the first paragraph:

Dewatering shall be performed to a level sufficiently below the structure subgrade to ensure a firm and stable subgrade for the construction of the structure.

306-6 BEDDING.**306-6.1 General.** (Page 392 of the SSPWC)

Replace the entire subsection with the following:

Pipe bedding for storm drain construction shall conform to LACPW Standard Plan 3080-3.

The subgrade upon which the pipe is to be constructed shall be true to grade. Bedding material shall be so loosely placed and shaped as to provide uniform bearing for the bottom of the pipe for a width equal to at least $D/3$ times the outside diameter and for the entire length of the pipe.

Bedding material for any section of pipe conduit shall first be placed such that, after densification, the top of the bedding material will be approximately at the elevation of the spring line of the pipe. A second lift of bedding shall then be placed such that, after densification, the top of the bedding material will be 1 foot over the top of the pipe. However, bedding for all pipe 51 inches or less in diameter may be placed in one lift such that, after densification, the top of the bedding material will be 1 foot over the top of the pipe.

306-7 PREFABRICATED GRAVITY PIPE.**306-7.3 Reinforced Concrete Pipe (RCP).** (Page 395 of the SSPWC)**306-7.3.2 Joints.****306-7.3.2.1 Tongue and Groove Self-Centering Joints.**

Replace the fourth paragraph with the following:

When RCP is under 30 inches in diameter, the outer joint space shall be filled with mortar.

Replace the first sentence of the fifth paragraph with the following:

When RCP is 30 inches or greater in diameter, the interior annular space of each joint shall be filled with mortar.

306-7.8 Gravity Pipeline Testing. (Page 401 of the SSPWC)**306-7.8.5 Rubber-Gasketed Pipe Testing.**

Add the following subsection:

- a) Plant Test. Pipe and joints shall be tested at the manufacturing plant in accordance with 207-2.9.6 of SSPWC.
- b) Field Test. The Contractor shall pressure test each pipe joint individually using a joint tester. The joint shall be subjected to a test pressure of 7 psi for a period of one minute and shall not leak. Details of the joint tester shall be submitted in accordance with 3-8.4 of Section G.

Testing shall be performed prior to the mortaring of the joints.

Add the following subsection:

306-7.9 Temporary Bulkheads for Storm Drains. If for its convenience or protection, the Contractor elects to use temporary bulkheads that are not detailed on the Plans, the Contractor shall submit for approval detailed calculations and Working Drawings of the bulkheads in accordance with 3-8.2 of SSPWC, whenever the span exceeds 4 feet (1.2 m) or the depth of cover above the bottom of the bulkhead exceeds 20 feet (6.2 m).

Bulkheads for which a submittal is not required shall have the following minimum structural sections, or the Contractor at its option may submit lesser sections for approval in the manner specified hereinabove.

<u>Material</u>	<u>Grade</u>	<u>Section</u>
Timber	D.F. No. 2	3" thick
Concrete	$f'_c = 2500$ psi	6" thick w/ #4 @ 10" parallel to span and #4 @ 18" perpendicular
Brick	2500 psi solid units	12" thick w/ #4 @ 9" parallel to span 1/2" from inside course and #4 @ 18" perpendicular to span
Steel Plate	A36 Steel	1/2" thick

All costs involved in temporary bulkhead work for the Contractor's convenience or protection shall be considered as included in the prices in the Bid for the various items of work unless otherwise specified.

306-12 BACKFILL.**306-12.1 General.** (Page 436 of the SSPWC)

Add the following after the first paragraph:

Whenever fill or backfill is specified to be placed and no method of placement is indicated, it shall mean that the material may be placed either by mechanical compaction methods in accordance with 306-12.3 of SSPWC, jetted in accordance with 306-12.4 of SSPWC, or by a combination of the two methods; however, the option to use jetting does not ensure that the required relative compaction can be attained by that method alone, and the Contractor shall not be relieved of the responsibility for attaining the specified relative compaction.

Add the following after the second paragraph:

For reinforced concrete box or other cast-in-place structures within street right-of-way where the cover is 3 feet or less, the backfill 1 foot immediately above the structure shall be bedding material conforming to 217-1.1 of SSPWC, except that the sand equivalent value shall not be less than 30. However, at the Contractor's option, crushed miscellaneous base conforming to 200-2.4 of SSPWC may be placed from the top of the box or structure to pavement subgrade.

Add the following after Table 306-12.1:

The Contractor may, at its option and at its own expense, furnish all equipment, material, supplies and labor for making field tests of the compressive strength of concrete, and such tests may be used as a basis for determining the time at which backfill operations may be started as described below. Backfill shall not be commenced until approval therefor has been given by the Engineer. The use of tests by the Contractor for determining compressive concrete strengths is permissive only and is subject to the Contractor assuming all risks that may be involved in backfill operations based on the Contractor's tests. Concrete test cylinders shall be prepared and tested in accordance with the applicable provisions of 306-11.7.2.2 of SSPWC. This includes removal from the molds at the time of form stripping and storing at the location where the capping equipment and compression testing machine are kept. Test cylinders shall receive, insofar as practicable, the same exposure and/or protection from the elements as the portions of the structure which they represent, until the time of testing. For placement of backfill against the sides and top of concrete structures, the required strengths for structures designed for 3000 psi concrete shall be a minimum of 3000 psi. For structures designed for 4000 psi concrete, the average of any three consecutive

tests shall be equal to, or greater than, 4000 psi and not more than 10 percent of the tests shall be less than 4000 psi. No test shall be less than 85 percent of 4000 psi.

Note: A test shall consist of the average strength of 3 concrete cylinder specimens tested at the same age. If less than 3 tests are available, the individual tests shall be equal to, or greater than, 4000 psi.

When high early strength concrete is specified, the Contractor shall make concrete test cylinders as described above to determine the time at which backfill operations may be started.

306-12.3 Mechanically Compacted Trench Backfill. (Page 437 of the SSPWC)

306-12.3.1 General.

Add the following after the first paragraph:

During the placement of backfill by mechanical compaction methods around utilities, the use of other than hand-held vibratory plates or tamping equipment within 1 foot of any utility is not allowed.

Mechanical compaction methods of placement below 1 foot over the top of pipe conduits shall be limited to the use of hand-held vibratory plates or tamping equipment. The use of impact or roller type compaction equipment will not be allowed for placement of the backfill below 1 foot over the top of the pipe.

Mechanical compaction methods of placement shall not include a sheepsfoot wheel mounted on a backhoe within the top 3 feet of the pipe or one-half of the internal diameter of the pipe, whichever is greater.

Add the following:

Unless otherwise directed by the Engineer, at the beginning of mechanically compacted backfill operations, test sections shall be constructed as follows:

- a) The test section may be any length sufficient, in the opinion of the Engineer, to conclusively demonstrate that the type of compaction equipment, lift thickness and moisture content used will result in the specified relative compactions being met or exceeded. A sufficient number of lifts shall be placed in the test section to conclusively demonstrate that adequate placement is being attained. The Agency will perform the necessary testing, and if the results are in conformance with the

Specifications and satisfactory to the Engineer, the type of compaction equipment, lift thickness, moisture content and compaction effort used in the test section shall be used thereafter in the placing and compacting of backfill. However, when backfill material different from that previously tested is used, or when tests indicate that placement is not in conformance with the Specifications, a new test section shall be constructed and the type of compaction equipment, lift thickness, moisture content and compaction effort shall be adjusted or changed as necessary to attain the specified relative compaction. Approval of equipment, thickness of layers, moisture content and compaction effort shall not be deemed to relieve the Contractor of the responsibility for attaining the specified relative compaction. The Contractor, in planning its work, shall allow sufficient time to perform the work connected with the test sections, and for the Agency to perform the necessary testing for determining compliance.

- b) Each lift shall be evenly spread, moistened and worked by disc harrowing or other means approved by the Engineer, and then mechanically compacted until the specified relative compaction has been attained.

306-12.3.2 Compaction Requirements.

Replace the entire subsection with the following:

Mechanically compacted trench backfill shall be densified to the following minimum relative compaction:

- a) 90 percent relative compaction.
- b) 95 percent relative compaction where required by 301-1.3 of SSPWC.

306-12.4 Jetted Trench Backfill. (Page 438 of the SSPWC)

306-12.4.1 General.

Replace the second sentence of subparagraph "a)" with the following:

The jet pipe shall be of sufficient length to reach the bottom of the lift being jetted.

Replace subparagraph "c)" with the following:

- c) The lift of backfill shall not exceed that which can be readily densified by jetting, but in no case, shall the un-densified lift exceed 5 feet.

306-12.4.2 Compaction Requirements.

Replace the entire subsection with the following:

Trench bedding and backfill densified through jetting shall be densified to the following minimum relative compaction:

- a) 90 percent relative compaction.
- b) 95 percent relative compaction where required by 301-1.3 of SSPWC.

Bedding material shall be densified by jetting. Jetting shall provide enough water to thoroughly saturate and densify, without voids, the bedding material around the pipe. The jet pipe shall be inserted at intervals of 3 feet maximum, contiguous along each side of the pipe. Neither flooding, nor free standing water will be permitted. Unless the sheeting or shoring is to be cut off and left in place, densification of bedding for pipe shall be accomplished after the sheeting or shoring has been removed from the bedding zone, and prior to the placement of backfill.

The placement of backfill shall not begin until the Agency has completed Quality Assurance compaction testing and the Contractor has attained the required relative compaction.

Add the following subsections:

306-12.7 Concrete Backfill. Concrete backfill will be measured by the cubic yard, based upon the volume calculated to the following limits:

- a) The lateral limits shall be vertical planes on each side of the pipe located a distance away from the outside barrel equal to the minimum value of "W" as specified on LACPW Standard Plan 3080.
- b) The upper limit shall be 4 inches above the top of the pipe.
- c) The lower limit shall be the bottom of the pipe. The length will be determined in the field by the Engineer, and shall meet the requirements of the general note on the Plans.
- d) No deduction in quantities will be made for the space occupied by the bells of concrete pipe or the sheeting, if any, left in place.

- e) For the purpose of computing the volume of concrete backfill, the wall thickness of reinforced concrete and non-reinforced concrete pipe shall be assumed to be the following regardless of the actual wall thickness:

<u>Pipe Size, inches</u>	<u>Wall Thickness, inches</u>
12	2
15	2
18	2-1/4
21	2-3/8
24	2-1/2
27	2-5/8
30	2-3/4
33	2-7/8
36	3-1/8

306-13 TRENCH RESURFACING.

306-13.1 Temporary Resurfacing. (Page 439 of the SSPWC)

Add the following:

Temporary resurfacing or permanent pavement shall be in place before the traveled way is opened for vehicular traffic.

Temporary resurfacing shall be placed as soon as the backfill is densified or immediately when so directed by the Engineer. If further densification of backfill is necessary due to settlement, failure to achieve the specified compaction, or any other reason, the temporary resurfacing shall be removed and replaced at the Contractor's expense.

Prior to placing the temporary resurfacing, the street and surrounding area shall be cleared of rubbish and debris, the street swept, and the surrounding area cleaned thoroughly.

The finished surface of said temporary resurfacing shall be placed flush with the adjoining pavement grade.

Immediately after placement of temporary resurfacing, the surface and surrounding area shall be swept clean of all dust and debris utilizing a self-loading motorized sweeper with spray nozzles (pick-up broom).

The Contractor shall stockpile enough temporary resurfacing material on the Project site to insure a ready supply at all times for necessary repairs to the temporary resurfacing already placed.

Temporary resurfacing shall not be left in place longer than 30 Days unless otherwise permitted by the Engineer. Permanent resurfacing shall be placed immediately following the removal of the temporary resurfacing.

Delete the last two paragraphs.

306-14 MEASUREMENT.**306-14.3 Gravity Pipe.** (Page 441 of the SSPWC)

Replace the third sentence with the following:

Pipe for storm drain connector pipes to and between catch basins will be measured for payment along the center longitudinal axes of said connector pipes. Distances will be measured between the inside faces of all catch basins or other storm drain structures involved.

306-15 PAYMENT.**306-15.1 General.** (Page 442 of the SSPWC)

Replace the entire subsection with the following:

Payment for diversion structure, diversion berm, junction structure, transition structure, trash/slide gate manhole, influent manhole, bypass manhole, effluent manhole, pipe and conduit shall be included in the lump sum Bid price for "DRAINAGE". The lump sum Bid price shall include payment for:

- a) the control of surface waters;
- b) trench excavation;
- c) removal of interfering portions of existing conduits and improvements;
- d) the sealing or removal of abandoned conduit and structures;
- e) subgrade preparation;
- f) bedding;

- g) all wyes, tees, bends, monolithic catch basin connections, and specials shown on the Plans;
- h) furnishing and placing prefabricated or precast conduit;
- i) erection and removal of forms;
- j) furnishing and placing reinforcing steel;
- k) construction of cast-in-place conduit;
- l) joining and connecting to existing pipe or conduit;
- m) sealing open ends of pipe or cast-in-place conduit;
- n) drying, blending, transporting, and importing backfill;
- o) backfilling the trench, including compaction;
- p) temporary resurfacing;
- q) pressure testing;
- r) video inspection; and
- s) all other work necessary to construct the pipe or conduit, complete in-place, except as otherwise specified as a separate Bid item.

No separate or additional payment will be made for additional bedding or a higher strength of pipe necessitated by the Contractor exceeding the maximum trench width.

306-15.2 Shoring and Bracing. (Page 442 of the SSPWC)

Replace the entire subsection with the following:

Payment for shoring of open excavations shall be included in the lump sum Bid price for "SHORING OF OPEN EXCAVATION".

No additional payment will be made as a result of any required revisions in the shoring details.

No additional payment will be made for the use of means other than drilling for the purpose of placing vertical shores, if such other means is approved by the Engineer.

306-15.3 Dewatering. (Page 442 of the SSPWC)

Replace the entire paragraph with the following:

Payment for dewatering shall be included in the lump sum Bid price for "DRAINAGE".

306-15.7 Buried Structures. (Page 443 of the SSPWC)

Add the following:

Payment for constructing connector pipe inlets (junction structures) into the mainline conduits per SPPWC 331, 332, 333, and 335 shall be considered as included in the lump sum Bid price for "DRAINAGE".

306-15.9 Temporary Resurfacing. (Page 443 of the SSPWC)

Replace the entire subsection with the following:

No separate payment will be made for temporary resurfacing. The cost of temporary resurfacing shall be considered as included in the prices in the Bid for the items of work which require removal of pavement for their construction or for which the Contractor, at its option, intends to place temporary resurfacing.

Add the following subsection:

306-15.10 Permanent Resurfacing. Payment for permanent resurfacing shall be included in the lump sum Bid price for "RESTORATION OF PERMANENT SURFACING".

The Agency does not guarantee the accuracy of the limits, type and thickness of existing pavement as shown on the Plans or as specified in the Contract Documents and the Contractor shall so consider this in preparing its Bid. However, additional costs incurred in the removal of pavement which is found to be over 1 inch greater in thickness than that indicated on the Plans or in the Special Provisions will be considered as Extra Work. In addition, costs incurred for the removal of Portland cement concrete found to underlie pavement which is indicated on the Plans to be entirely bituminous will be paid for as Extra Work.

Add the following subsection:

306-16 DRY WELL CONSTRUCTION.

306-16.1 General. Dry well construction shall consist of drilling the dry well hole; installing a temporary bolted steel casing; installing solid wall and perforated wall RCP casings; installing vinyl-coated welded wire mesh; packing the annular space with gravel, sand, bentonite, and cement grout; removing the temporary steel casing, structural excavation for the dry well cover; constructing the dry well cover and installing safety grate assembly; constructing the inspection manhole, and placing structure backfill. The dry well shall be constructed as shown on the Plans.

A geotechnical engineer and/or engineering geologist from the Agency's Geotechnical and Materials Engineering Division (GMED) shall be present during excavation to verify subsurface conditions and to make additional recommendations as necessary. The Contractor shall inform the Engineer to contact GMED at least 1 week prior to construction of low impact development (LID) features to perform infiltration test to determine infiltration test rates.

306-16.1.1 Submittals. The contractor shall submit the following in accordance with 3-8 of SSPWC:

- Drilling methods, equipment for placing temporary bolted steel casing, RCP and steel casings, vinyl-coated welded wire mesh, gravel pack, sand pack, bentonite transition seal, and cement grout mix.
- Methods and equipment for verifying bottom of drilled hole is clean before placing leveling pad gravel pack
- Methods, equipment, and sequence for placing, positioning, and supporting RCP casings
- Working Drawings for temporary steel casings

- Methods, equipment, and sequence for:
 - Installation and removal of temporary steel casing
 - Installation of vinyl-coated welded wire mesh
 - Placing gravel pack, sand pack, bentonite transition seal, and cement grout in annular space
 - Determining depth of gravel pack, sand pack layer, bentonite transition seal, and cement grout in annular space
 - Verifying volume of gravel pack, sand pack layer, bentonite transition seal, and cement grout in annular space
- Gravel pack samples
- Shop drawings of 52” solid wall and perforated RCP casings, and safety grate assembly

306-16.2 Drilling.

306-16.2.1 General. Drilling the dry well hole shall be accomplished using rotary bucket auger or similar drilling methods approved by the Engineer. Slurry wet methods and polymer drilling fluids are not allowed. The Contractor shall always maintain the stability of the hole during drilling until the completion of the construction of the dry well.

At the Contractor’s option, the dry well hole may be drilled without a temporary bolted steel casing. If caving soils are encountered, as determined by the Engineer, the Contractor shall cease drilling operations until the temporary steel casing is installed to the depth drilled before continuing.

306-16.2.2 Plumbness and Alignment. All holes shall be drilled round, plumb and true to line as defined herein. The horizontal deflection from the plumb line shall be measured in two planes, 90° from each other. The horizontal drift of the casing or hole shall not exceed 1 inch throughout the depth of the hole. Plumbness and alignment shall be measured at least every 10 feet of holes drilled.

306-16.2.3 Cleanup and Disposal of Materials. The Contractor shall keep Leonard Place, Leonard Avenue, Northside Drive, Southside Drive, Montebello Parkway clean at all times. Drill cuttings shall be confined near the holes and placed in soil storage bins as drilling progresses. The Contractor shall effectively implement and maintain appropriate Construction Site BMPs, as provided in 3-12.6.2 of SSPWC.

The Contractor shall be responsible for all costs incurred in the disposal of well drill cuttings as prescribed by the Agency. All of this material shall be disposed at locations which have been legally approved for this disposal. The Contractor shall provide soil storage bins in the vicinity of each well site in numbers sufficient to contain all soil generated by the drilling operations. The well drill cuttings shall be disposed offsite within 24 hours after the completion of the drilling of each well.

306-16.2.4 Measurement and Payment. Drilling of the dry well hole shall be measured by the linear foot (LF) of a 72"-diameter circular area.

All labor, materials, and equipment necessary to drill the dry well hole including setup of the drilling rig, drilling the dry well hole, sounding the drilled hole for plumbness and alignment, cleanup of work area affected by drilling operations, and disposal of excess drill cuttings shall be considered as included in the Contract Unit Price in the Bid for "DRILL 72" DIAMETER HOLE".

306-16.3 Vinyl-Coated Welded Wire Mesh.

306-16.3.1 General. Installation of the vinyl-coated welded wire mesh shall include furnishing and wrapping vinyl-coated welded wire mesh around the 52" perforated RCP in accordance with the Plans and Special Provisions.

306-16.3.2 Materials The vinyl-coated welded wire mesh used in the construction shall be 1/4" x 23 gauge.

306-16.3.3 Wrapping Vinyl-Coated Welded Wire Mesh. The Contractor shall install the vinyl-coated welded wire mesh by firmly wrapping the mesh around the outside diameter of the 52" perforated casing. The Contractor shall exercise care to avoid damage to the vinyl-coated welded wire mesh during installation and construction of the dry wells.

306-16.3.4 Measurement and Payment. Vinyl-coated welded wire mesh shall be measured by the square foot (SF).

All labor, materials, and equipment necessary to install the vinyl-coated welded wire mesh shall be considered as included in the Contract Unit Price in the Bid for "1/4" X 23 GAUGE VINYL-COATED WELDED WIRE MESH".

306-16.4 Dry Well Pipe.

306-16.4.1 General. Installation of the dry well pipe shall include furnishing and placing solid and perforated reinforced concrete pipe; maintaining alignment of the pipe; and furnishing all labor, equipment, and materials necessary to place the pipe complete in place, in accordance with the Plans and Special Provisions.

306-16.4.2 Materials. All pipe used in the dry well construction shall be 2350 D.

Dry well pipe for the wells shall be 52-inch inside diameter solid wall RCP and 52-inch inside diameter perforated RCP with tapered openings as shown on the Plans. Solid wall and perforated RCP shall have interlocking joints and shall be stacked vertically to the depths shown on the Plans.

306-16.4.3 Placing Dry Well Pipe. The Contractor shall exercise care to avoid damage to the pipe and pipe ends. Any pipe which is damaged and cannot be repaired to the satisfaction of the Engineer shall be replaced by the Contractor at no additional cost to the Agency.

All foreign matter shall be removed from the outside and inside surfaces of the pipe before lowering the pipe into the drilled hole.

The first RCP section to be placed shall have the tongue facing downward.

306-16.4.4 Plumbness and Alignment. Dry well pipe shall be constructed plumb and true to line as defined herein. The horizontal deflection from the plumb line shall be measured in two planes, 90° from each other. The horizontal drift of the pipe shall not exceed 1 inch throughout the depth of the hole. Tests for plumbness and alignment shall be made before the placement of the gravel pack and must be approved by the Engineer.

306-16.4.5 Measurement and Payment. 52-inch solid wall RCP and 52-inch perforated wall RCP shall be measured by the linear foot (LF).

All labor, materials, and equipment necessary to place 52-inch solid wall RCP including furnishing the pipe, placing the pipe, and sounding the pipe for plumbness and alignment shall be considered as included in the Contract Unit Price in the Bid price for "52" SOLID WALL RCP, 2350 D".

All labor, materials, and equipment necessary to place 52-inch perforated wall RCP including furnishing the pipe, placing the pipe, and sounding the pipe for plumbness and

alignment shall be considered as included in the Contract Unit Price in the Bid price for “52” PERFORATED WALL RCP, 2350 D”.

306-16.5 Gravel Packing.

306-16.5.1 General. Gravel packing shall consist of the furnishing and placing of select gravel as packing in the annular space between the dry well pipe and drilled hole.

The work shall include obtaining, hauling, and delivery of gravel; and all labor, material, and equipment necessary to place the gravel pack, sound the gravel pack levels, and to otherwise place the gravel pack in the dry wells to the satisfaction of the Engineer.

306-16.5.2 Materials. Gravel pack used in the construction shall be “D5” class.

The composition of the gravel pack material shall conform to the grading requirements shown in Table 217-5.1(B).

The gravel pack shall be clean and thoroughly washed before delivery and shall be composed of sound, durable, well-rounded material with no organic or other deleterious material contained herein. Gravel pack delivered to the Project site shall not be dumped on the ground but shall be stored in suitable containers such as sacks, supersacks, or equivalent, until installed in the well.

Samples of the gravel pack must be submitted to and approved by the Agency before placing in the wells.

306-16.5.3 Placing Gravel Pack. The gravel pack shall be placed to form a continuous unbroken column placed within the limits shown in the Plans. The gravel pack shall not be placed by dropping the materials from the top of the well hole. The gravel pack shall be placed by means of a tremie pipe starting from the bottom. The tremie shall be pulled upwards as the gravel is placed in the annular space. The depth of the top of the gravel pack shall be carefully checked and the volume of emplaced gravel shall be verified to determine that the gravel pack materials have not bridged into the area where the sand pack will be placed.

306-16.5.4 Measurement and Payment. Class “D5” gravel pack shall be measured by the cubic yard (CY).

All labor, material, and equipment necessary to place the gravel pack layer including furnishing, placing, and sounding the gravel pack shall be considered as included in the Contract Unit Price in the Bid for “CLASS “D5” GRAVEL PACK (DRY WELL)”.

306-16.6 Sand Pack Layer.

306-16.6.1 General. The sand pack layer shall consist of the furnishing and placing of sand above the gravel pack in the annular space between the dry well pipe and drilled hole.

The work shall include obtaining, hauling, and delivery of sand; and all labor, material, and equipment necessary to place the sand, sound the sand pack levels, and to otherwise place the sand pack in the dry wells to the satisfaction of the Engineer.

306-16.6.2 Materials. Sand pack used in the construction shall be #3 8x20 washed, cleaned, and dried sand.

The composition of the sand pack material shall conform to the grading requirements shown in Table 200-1.5.5 (Page 47 of the SSPWC).

306-16.6.3 Placing Sand Pack Layer. The sand pack layer shall be placed using similar method as 306-16.5.3. The depth of the top of the sand pack shall be carefully checked and the volume of emplaced sand shall be verified to determine that the sand pack materials have not bridged into the area where the bentonite transition seal will be placed.

306-16.6.4 Measurement and Payment. Sand pack shall be measured by the cubic yard (CY).

All labor, material, and equipment necessary to place the sand pack layer including furnishing, placing, and sounding the sand pack shall be considered as included in the Contract Unit Price in the Bid for “NO. 3 8X20 SAND PACK (DRY WELL)”.

306-16.7 Bentonite Transition Seal.

306-16.7.1 General. The bentonite transition seal shall consist of the furnishing and placing of bentonite chips above the sand pack layer in the annular space between the dry well pipe and drilled hole.

The work shall include obtaining, hauling, and delivery of bentonite chips; and all labor, material, and equipment necessary to place the bentonite chips, hydrate the bentonite chips, sound the bentonite seal levels, and to otherwise place the bentonite seal in the wells to the satisfaction of the Engineer.

306-16.7.2 Materials. The composition of bentonite shall be dried, natural, bentonite clay chips medium size (3/8” diameter).

306-16.7.3 Placing Bentonite Transition Seal. The bentonite chips shall be placed by means of a tremie pipe starting from the top of the sand pack layer to the limits as shown on the Plans. The tremie shall be pulled upwards as the bentonite chips is placed in the annular space. The depth of the top of the bentonite seal pack shall be carefully checked and the volume of emplaced bentonite shall be verified to determine that the bentonite materials have not bridged into the area where the cement mortar grout will be placed.

Bentonite chips shall be hydrated with the placement of fresh water through the tremie. The amount water and the time for full hydration shall be in accordance with the bentonite manufacturer's recommendation. Cement grout shall not be placed until the bentonite transition seal has fully hydrated.

306-16.7.4 Measurement and Payment. Bentonite transition seal shall be measured by the cubic yard (CY).

All labor, material, and equipment necessary to place the bentonite transition seal including furnishing, placing, and hydrating the bentonite chips shall be considered as included in the Contract Unit Price in the Bid for "BENTONITE TRANSITION SEAL DRY WELL)".

306-16.8 Grouting Wells.

306-16.8.1 General. The work shall consist of grouting the annular space between the dry well pipe and drilled hole.

306-16.8.2 Materials. The grout used in the construction shall be Class "C" cement mortar grout conforming to the requirements of 201-5 of SSPWC. The cement shall conform to 201-1.2.1 of SSPWC, Portland cement, Type II. The grout shall contain 3% bentonite which shall be mixed with the cement before the water is added to the grout mix.

The grout shall contain the minimum amount of water (not over 8-1/2 gallons per sack of cement) required to give a mixture of such consistency that it can be placed in the well through a tremie pipe.

306-16.8.3 Placing Cement Mortar Grout. The Contractor shall calculate the volume of the annular space between the outside of dry well pipe and the drilled hole. The calculated annular volume will be reviewed by the Engineer prior to placement. The Contractor shall keep a record of the volume of grout used.

The grout shall be placed by means of a tremie pipe. The grout shall fill the entire annular space through the designated limits shown on the Plans. The Contractor shall exercise extreme care to avoid having the grout enter the perforations of the dry well pipe.

306-16.8.4 Measurement and Payment. Class “C” cement mortar grout shall be measured by the cubic yard (CY).

All labor, material, and equipment necessary to place the cement mortar grout including furnishing and placing the grout shall be considered as included in the Contract Unit Price in the Bid for “CLASS “C” CEMENT MORTAR GROUT (DRY WELL)”.

306-16.9 Dry Well Cover.

306-16.9.1 General. The work shall consist of obtaining, hauling, and delivery of the necessary materials and equipment for laying out reinforcing steel and formwork, pouring concrete, and installing the safety grate assembly to construct the dry well cover.

306-16.9.2 Materials. The reinforcing steel used in the construction of dry well covers shall conform to 201-2.2.1 of SSPWC. The concrete used in the construction of dry well covers shall conform to 201-1 of SSPWC. The steel used for the safety grate assembly including the circular grating, steel angles, and anchors shall conform to 206-1 of SSPWC.

The Contractor must submit shop drawings to be approved by the Agency before constructing the dry well cover.

306-16.9.3 Measurement and Payment. Structure concrete shall be measured by the cubic yard (CY). There will be no additional payment for reinforcing steel.

Safety grate assembly including the circular grating, steel angles, and anchors shall be measured per assembly (EA).

All labor, material, and equipment necessary to construct the dry well cover including the obtaining, hauling, and delivery of concrete materials, reinforcing steel, and formwork shall be considered as included in the Contract Unit Price in the Bid for “STRUCTURE CONCRETE (DRY WELL COVER)”.

All labor, material, and equipment necessary to furnish and install the safety grate assembly including the circular grating, steel angles, and anchors shall be considered as included in the Contract Unit Price in the Bid for “SAFETY GRATE ASSEMBLY (CIRCULAR GRATING, STEEL ANGLES, AND ANCHORS)”.

306-16.10 Dry Well Manhole Shaft.

306-16.10.1 General. The work shall consist of obtaining, hauling, and delivery of the necessary materials and equipment for laying out reinforcing steel and formwork, pouring concrete, and installing the dry well manhole shaft per the Plans.

306-16.10.2 Materials. The Contractor shall refer to the Plans for materials used in the construction of the dry well manhole shaft.

306-16.10.3 Construction of Dry Well Manhole Shaft. The Contractor shall refer to the dry well case (Case 1, Case 2, or Case 3) details and tables on the Plans for depths and elevations pertaining to the dry well manhole shafts.

306-16.10.4 Measurement and Payment. Dry well manhole shafts shall be measured per shaft (EA).

All labor, material, and equipment necessary to install the Case 1 dry well manhole shaft per the Plans shall be considered as included in the Contract Unit Price in the Bid for “DRY WELL MANHOLE SHAFT PER STD PLAN 326, SECTION C-C (CASE 1) ON PLAN DR”.

All labor, material, and equipment necessary to install the Case 2 dry well manhole shaft per the Plans shall be considered as included in the Contract Unit Price in the Bid for “DRY WELL MANHOLE SHAFT PER STD PLAN 326, SECTION C-C (CASE 2) ON PLAN DR”.

All labor, material, and equipment necessary to install the Case 3 dry well manhole shaft per the Plans shall be considered as included in the Contract Unit Price in the Bid for “DRY WELL MANHOLE SHAFT PER STD PLAN 326, SECTION C-C (CASE 3) ON PLAN DR”.

PART 4

EXISTING IMPROVEMENTS

SECTION 400 - PROTECTION AND RESTORATION

400-1 GENERAL. (Page 479 of the SSPWC)

Add the following:

All existing permanent traffic and bus stop signs which are removed or altered during construction shall be replaced by the Contractor to a condition equal to or better than, in all respects, the condition which prevailed prior to the start of construction under the Contract. While construction is in progress, any signs which are removed shall be posted by the Contractor in temporary locations as near the original locations as practicable. Signs shall be replaced in their original location as soon as possible. Traffic sign replacement shall be in conformance with the current requirements of the California Manual on Uniform Traffic Control Devices, <http://www.dot.ca.gov/hq/traffops/engineering/mutcd/>. If any sign is damaged or lost, thus requiring a new sign, the Contractor shall immediately notify the Engineer, and shall immediately replace any traffic sign in accordance with the above-mentioned manual at its own expense. The replacement of traffic signs must be approved by the Engineer in writing.

The Contractor will be required to maintain the pavement within construction areas. Any pavement damaged by the Contractor or its subcontractors and all pavement constructed on the Project that becomes damaged shall be repaired or replaced, as directed by the Engineer.

Where curb or sidewalk in a pedestrian crosswalk area is damaged by the Contractor or must be removed to construct underground improvements, the Contractor shall construct a curb ramp as part of the restoration required by this subsection. At an intersection, the crosswalk area shall be considered as including, but not necessarily limited to, the entire curb return area. If the damaged or removed curb is in an area where no sidewalk exists, the curb ramp will not be required. The curb ramp shall be constructed in accordance with the Standard Plan referenced on the Plans or as directed by the Engineer.

In the event field conditions necessitate a change of plan which requires the removal of curb or sidewalk not previously requiring removal within a pedestrian crosswalk area as specified above, the Contractor shall construct a curb ramp. The curb ramp shall be constructed in accordance with the Standard Plan referenced on the Plans or as directed by the Engineer.

Should any operation of the Contractor cause damage to a sewer or storm drain not delineated on the Plans to be removed, relocated or reconstructed which, in the opinion of the Engineer, cannot be properly restored, replaced or reconstructed without a special plan being prepared, the Contractor and the owner of the sewer or storm drain will be so advised by the Engineer. The Contractor shall prepare and submit a suitable reproducible plan for the restoration, replacement or reconstruction of the facility. The Contractor shall obtain a permit for such work from the owner of the facility. In performing the restoration, replacement or reconstruction of the facility under permit, the owner of the facility will furnish the required inspection in order that the facility may be restored, replaced or reconstructed in a manner satisfactory to the owner.

Areas to be excavated for storm drains, waterlines, or sewer lines that are neither presently covered nor scheduled to be permanently covered under the Contract by some type of material, such as asphalt concrete, Portland cement concrete, grouted rock, stonework or rubble, which renders such areas as unsuitable for planting, shall be considered for the purposes of these Specifications to be suitable and shall be covered with a 6-inch layer of topsoil. Unless otherwise specified, the top 6 inches of all such suitable areas shall be restored with imported Class A Topsoil conforming to 800-1.1.2 of SSPWC.

With respect to the restoration of lawns for the construction of storm drain, waterline, or sewer line improvements, where the Contract requires their removal, or it has been damaged or removed through the Contractor's operations, the Contractor shall comply with the following minimum requirements: The grass seed used shall be for grass of the same type as was removed, or an approved equal, and shall be sown at the rate recommended by the seed distributing company. Processed deseeded steer manure shall be applied to the planted area at the rate recommended by the vendor. The Contractor shall water and care for replaced lawns until the grass has attained a complete cover and has been given its first cutting, unless other arrangements are made with the affected property owner(s). The lawn restoration, as described above, shall be completed prior to Field Acceptance.

On storm drain, water line, and sewer line construction projects, the Contractor shall be responsible for the relocation, reconstruction, or modification of traffic control, police and fire signal installations, safety lighting, and street lighting.

Sprinkler systems damaged by the Contractor's operations shall immediately be replaced and rehabilitated by the Contractor at its own expense. Vegetation damaged as a result of the sprinkler system being damaged due to the Contractor's operations shall be restored by the Contractor at its own expense. The Contractor shall completely replace and rehabilitate any interfering sprinkler system, including relocating sprinkler heads to the back of sidewalk, in order to produce a fully functional system. Payment for removing, modifying,

or restoring sprinkler systems, including the relocation of sprinkler heads, shall be considered as included in the prices in the Bid for the various items of work.

The following provisions shall apply for storm drain, water line, and sewer line construction:

- a) Concrete pavement removal shall conform to 401-3.1 of SSPWC and replacement shall conform to 302-6 of SSPWC and SPPWC Standard Plan 132, unless otherwise specified.
- b) In the event a portion of curb, gutter or monolithic curb and gutter is damaged by the Contractor's operations, a minimum of 10 feet of curb, gutter or curb and gutter shall be removed and replaced regardless of how short a length is damaged. One end of said 10-foot section may be taken at a joint or scoring line and the other end shall be measured the minimum distance of 10 feet therefrom. If said 10 feet falls within 3 feet of a joint or scoring line, then the removal shall extend to said joint or scoring line.
- c) When concrete local depressions are to be constructed at locations where there is an existing monolithic curb and gutter, the existing monolithic curb and gutter shall be removed to the limits of the local depression, or to the next joint or scoring line beyond the local depression if such joint or scoring line is less than 3 feet away. The new curb shall then be reconstructed monolithic with the local depression or with the gutter if the curb was removed beyond the limits of the local depression.
- d) When concrete local depressions are to be constructed using existing finished street surface as the vertical control for the outer edge of the local depressions, the local depression shall be constructed on a straight grade from outer corner to outer corner.
- e) Unless otherwise specified on the Plans, the removal and replacement of concrete cross gutters and spandrels shall conform to LACPW Standard Plan 3082.
- f) The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the Engineer. All existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the Contractor, or a licensed tree contractor which employs a certified arborist, to the satisfaction of the Engineer. Tree trimming and replacement shall be accomplished in accordance with the following requirements:

- 1) Trimming. Symmetry of the tree shall be preserved; no shrubs, splits or torn branches shall be left. Clean cuts shall be made close to the trunk or a large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with a tree sealant approved by the Engineer.
 - 2) Replacement. The Contractor shall immediately notify the Engineer and the jurisdictional city involved if a tree is damaged by its operations. If, in the opinion of the Engineer, the damage is such that replacement is necessary, the Contractor shall replace the tree at its own expense. The tree shall be of a like variety as the damaged tree and shall be subject to the approval of the Engineer. The size of the tree shall be 24-inch box and not less than 3/4-inch in diameter measured 3 feet above the root ball, nor less than 6 feet in height.
- g) Replace affected vehicle loop detectors in kind.

400-2 PERMANENT SURVEY MARKERS. (Page 479 of the SSPWC)

Add the following:

Survey monument lids shall be adjusted by the Contractor to the new finished surface. Survey monuments will be located and marked by the Agency prior to the start of the Work. During the progress of the Work, cold millings, hot or cold mix asphalt concrete materials, and other debris shall not be deposited in survey monument wells. Each well shall be free of debris prior to adjustment. Should the monument lids be damaged prior to adjustment, the Contractor shall notify the Engineer. The Agency's Survey/Mapping and Property Management Division, Construction Surveys Section, will furnish new lids for the Contractor to install.

400-3 PAYMENT. (Page 479 of the SSPWC)

Replace the entire paragraph with the following:

Payment for protection or restoration of existing improvements not specifically described in the aforementioned provisions, and compliance with all other requirements, shall be considered as included in the lump sum Bid price for "RESTORATION OF EXISTING IMPROVEMENTS". No separate or additional payment will be made for restoration of existing improvements damaged by the Contractor. Permanent survey markers will be restored by the Agency at its own expense.

SECTION 401 - REMOVAL**401-2 ASPHALT CONCRETE PAVEMENT.** (Page 480 of the SSPWC)*Add the following:*

If the edge of trench is within 12 inches of the edge of an existing concrete gutter (including integral curb and gutter) or edge of concrete pavement, the existing bituminous pavement shall be completely removed and replaced to join the existing concrete edge of gutter (including integral curb and gutter), or edge of concrete pavement.

Existing bituminous pavement to be removed to accommodate new asphalt concrete pavement, as shown on the Plans, shall be removed by the use of cold milling machines.

401-3 CONCRETE AND MASONRY IMPROVEMENTS.**401-3.2 Concrete Curb, Walk, Gutters, Cross Gutters, Driveways and Alley Intersections.** (Page 480 of the SSPWC)*Add the following:*

Concrete removal shall include removal of existing asphalt concrete ramps adjacent to curb, gutter, sidewalk, driveways and curb ramps to be constructed.

Where portions of existing concrete are designated to be removed, cutting or removal will not be permitted until approved by the Engineer. Longitudinal saw cuts in the flow line of curb and gutter will not be allowed.

401-6 MEASUREMENT. (Page 480 of the SSPWC)*Add the following:*

Existing improvements will not be measured separately for removal.

401-7 PAYMENT. (Page 480 of the SSPWC)*Add the following:*

Payment for the removal of existing improvements including bituminous pavement, non-reinforced concrete, and reinforced concrete shall be included in the lump sum Bid price for "ROADWAY" or "DRAINAGE", whichever is applicable.

SECTION 404 - COLD MILLING**404-11 PAYMENT.** (Page 486 of the SSPWC)

Add the following:

Payment for cold milling asphalt concrete pavement shall be included in the lump sum Bid price for “RESTORATION OF PERMANENT SURFACING”.

Add the following section:

SECTION 900 – CONNECTOR PIPE SCREENS**900-1 CATCH BASINS.**

900-1.1 General. The work specified in this subsection includes the furnishing and installation of Connector Pipe Screen (CPS) units, described herein, into new catch basins. These devices are intended to reduce the amount of trash entering the storm drain system through the catch basins.

900–1.2 Manufacturer's Warranty. The Contractor shall obtain a three (3) year manufacturer's warranty for all devices included in Section 900 of these Special Provisions, starting on the date of acceptance of the Project by the Agency. The warranty shall cover the devices against corrosion and operational malfunction. It shall also include all labor, material, and equipment required to repair or replace the devices during the warranty period at no additional cost to the Agency.

The Contractor shall submit the Manufacturer's Warranty Certificate to the Engineer within two weeks after the completion of the installation of all devices covered by the warranty.

All work requested by the Agency during the manufacturer's warranty period shall be completed within three weeks.

900–1.3 CPS Units. The following companies have manufactured the only acceptable CPS units:

- 1) American Stormwater, Inc. MODEL: Surf Gate
 - a. Address: 19500 Normandie Avenue, Torrance, CA 90502
 - b. Phone: (310) 354-9999

- c. Website: www.americanstormwater.com
- 2) G2 Construction, Inc. MODEL: Cam Debris Gate
 - a. Address: 13331 “H” Garden Grove Boulevard, Garden Grove, CA 92843
 - b. Phone: (714)748-4242
 - c. Website: www.g2construction.com
- 3) United Storm Water Inc. MODEL: Clean Screen III
 - a. 14000 East Valley Blvd., City of Industry, CA 91746-2801
 - b. Phone: (877) 717-8676
 - c. Website: www.unitedstormwater.com

Bidders are advised that only the above listed manufacturer’s devices were tested by the Agency and meet the requirements of these Special Provisions.

900–2 CONNECTOR PIPE SCREENS (CPS).

900–2.1 General. The CPS prevents trash and debris from entering the storm drain system during dry weather and moderate storm flows by keeping the trash and debris inside the catch basin.

900–2.2 Requirements. The CPS shall be designed to retain all trash larger than 5 mm (0.197 inches) in the catch basin and shall comply with the following items.

- 1) The CPS shall be installed conforming to the configurations shown in Appendix A-1 and the minimum dimensions shown in the CPS sizing Table (Appendix B) based on field measurements per submittal per subsection 900-1.3, with approval from the Engineer. In catch basins where the minimum dimensions cannot be met, adjustments shall be made to the satisfaction of the Engineer.
- 2) The CPS bypass will accommodate the catch basin design capacity if the screen becomes clogged. The bypass shall meet the requirements shown on the attached CPS Configuration diagram (Appendix A-1) and CPS Sizing Table (Appendix B), unless stated otherwise in the Project Plans.
- 3) The CPS shall not interfere with the operation of the ARS.
- 4) The CPS unit shall have a structural integrity to withstand a lateral force of standing water (62.4 lb/ft³) within the catch basin area when the screen becomes 100 percent clogged. The CPS unit shall be bolted to the catch basin walls.

- 5) The CPS shall be configured with deflector plates or screens preventing trash from falling between the screen and connector pipe. The deflector plate shall be designed to withstand a vertical load of 10 lbs per square foot.
- 6) The gap at the bottom, sides, and joints of the CPS unit shall not exceed 5mm (0.197 inches).
- 7) The perimeter of the CPS shall include a structural frame for stiffness, a bolting surface to fasten the CPS to the wall of the catch basin, and as a support for the upper portion of the CPS unit referred to as the “bypass” (see Appendix A-1).
- 8) All parts/components of the CPS shall be sized to fit through the catch basin’s manhole opening.

900–2.3 Materials and Fabrication. The CPS shall meet the following requirements:

- 1) The CPS frame shall be manufactured/fabricated from S-304 stainless steel, or an Agency-approved equal stainless-steel alloy. The Structural members shall have a minimum thickness of 3/16 inches.
- 2) The CPS screen shall be manufactured/fabricated from perforated metal of Type 304 stainless steel, or an Agency-approved equal stainless-steel alloy. The screen shall have a minimum thickness of fourteen (14) gauge (0.0781 inches) The geometrical opening shape shall have a diameter of 5mm (0.197 inches).
- 3) The screen material used shall have at least a 45 percent open area.
- 4) Any Sedge of the CPS that is not flush with the wall or floor of the catch basin shall be smooth with no prongs or jagged edges.
- 5) The assembly bolts, screws, nuts, and washers shall be fabricated entirely from S-316 stainless steel. The concrete anchor bolts shall be Red Head Multi-Sub 11 drop anchor, RM-38, with Type 316 stainless steel threaded rods, nuts, and washers, or Agency-approved equal. The red head anchor shall be set in epoxy adhesive.

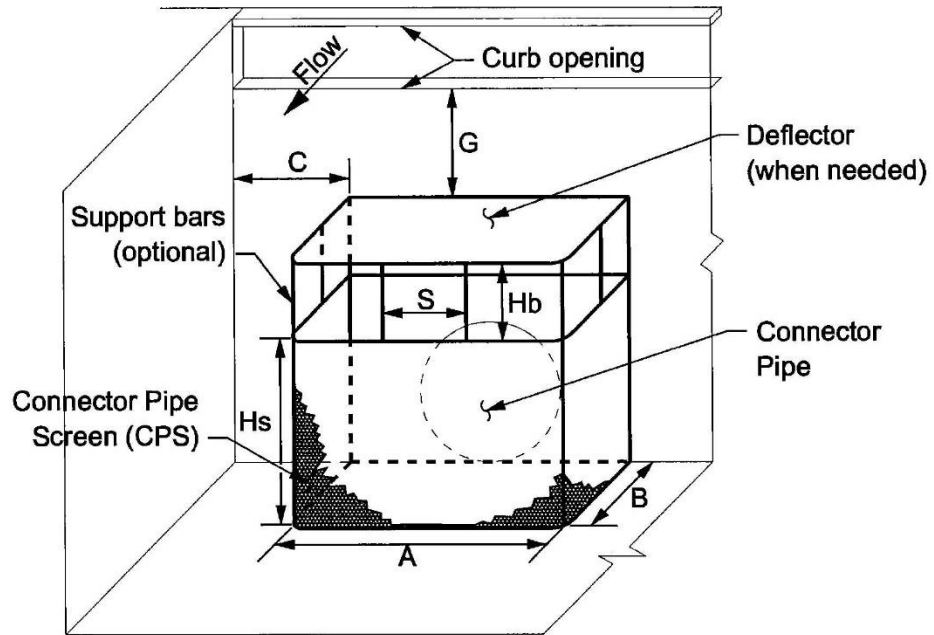
900–2.4 Staff Gauge. The contractor shall paint a staff gauge and level indicators per Appendix A-2. The staff gauge shall be located such that it is visible through the curb opening or grating of the catch basin.

900–3.5 Payment. Payment for the painting of staff gauge, test for safe atmospheric conditions, furnishing and installing CPS which properly provides treatment for stormwater flows entering existing catch basin connector pipes including all labor, materials, and equipment for the installation; submittals; prototype testing; costs associated with the 3-year warranty, and all other costs involved in the work not specifically covered by other items of work shall be included in the lump sum Bid price for “DRAINAGE”.

CRP:\ddpub\GENERAL\CRave\East LA Median Repurposing\100%\Special Provisions\Section D 07082019.docx

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

APPENDIX A-1: CPS CONFIGURATION



CATCH BASIN INTERIOR VIEW
(Not to scale)

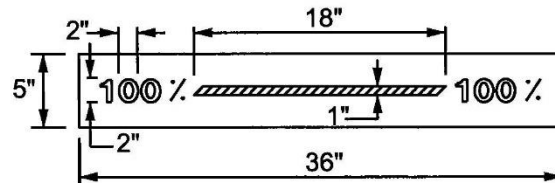
CPS Length	$L = A + 2B$
CPS Height at projected slope	H_s
Bypass Height	H_b
Minimum Wall Clearance	$C \geq 4"$
Minimum Bar Spacing	$S \geq 6"$
Minimum Interior Spacing	$B \geq 10"$
Minimum Distance from Flow Line	$G \geq 4"$

NOTES

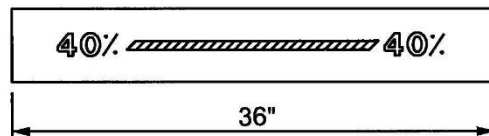
1. The CPS shown above is for illustrative purposes only. The catch basin connector pipe location and the shape and design of the CPS may significantly deviate from the above example.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

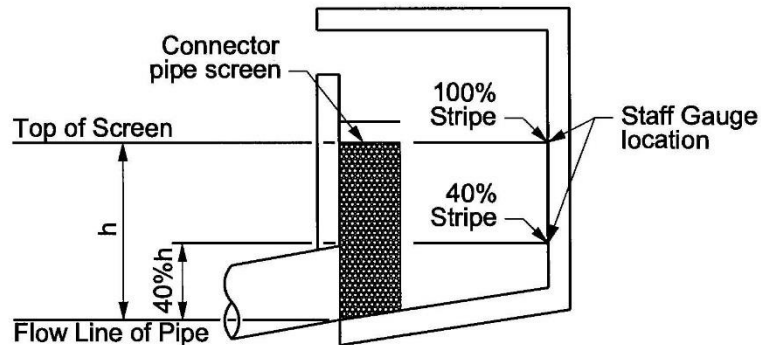
APPENDIX A-2: STAFF GAUGE



100% STRIPE
(Red Stripe and Numbers on White Background)



40% STRIPE
(Red Stripe and Numbers on White Background)

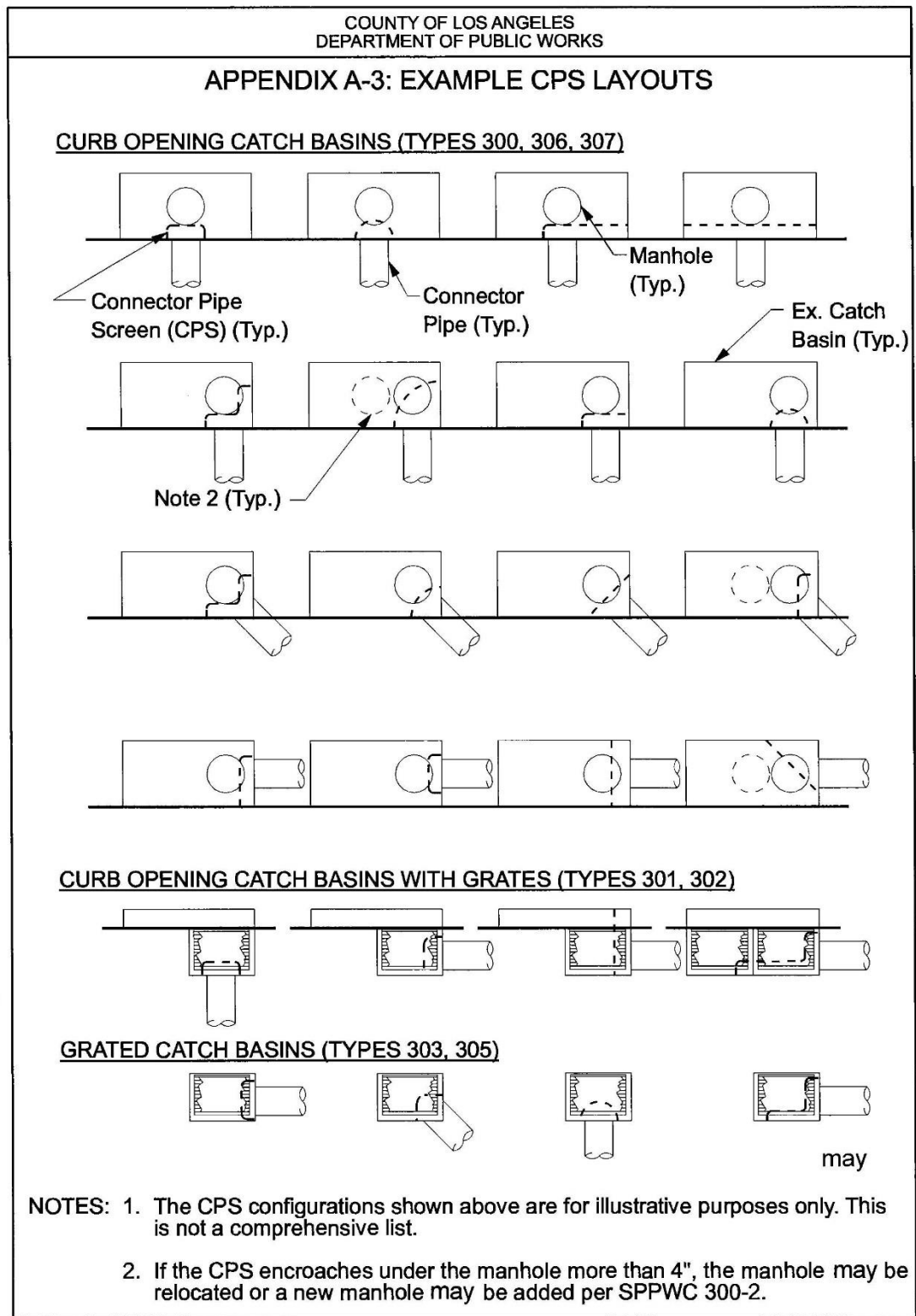


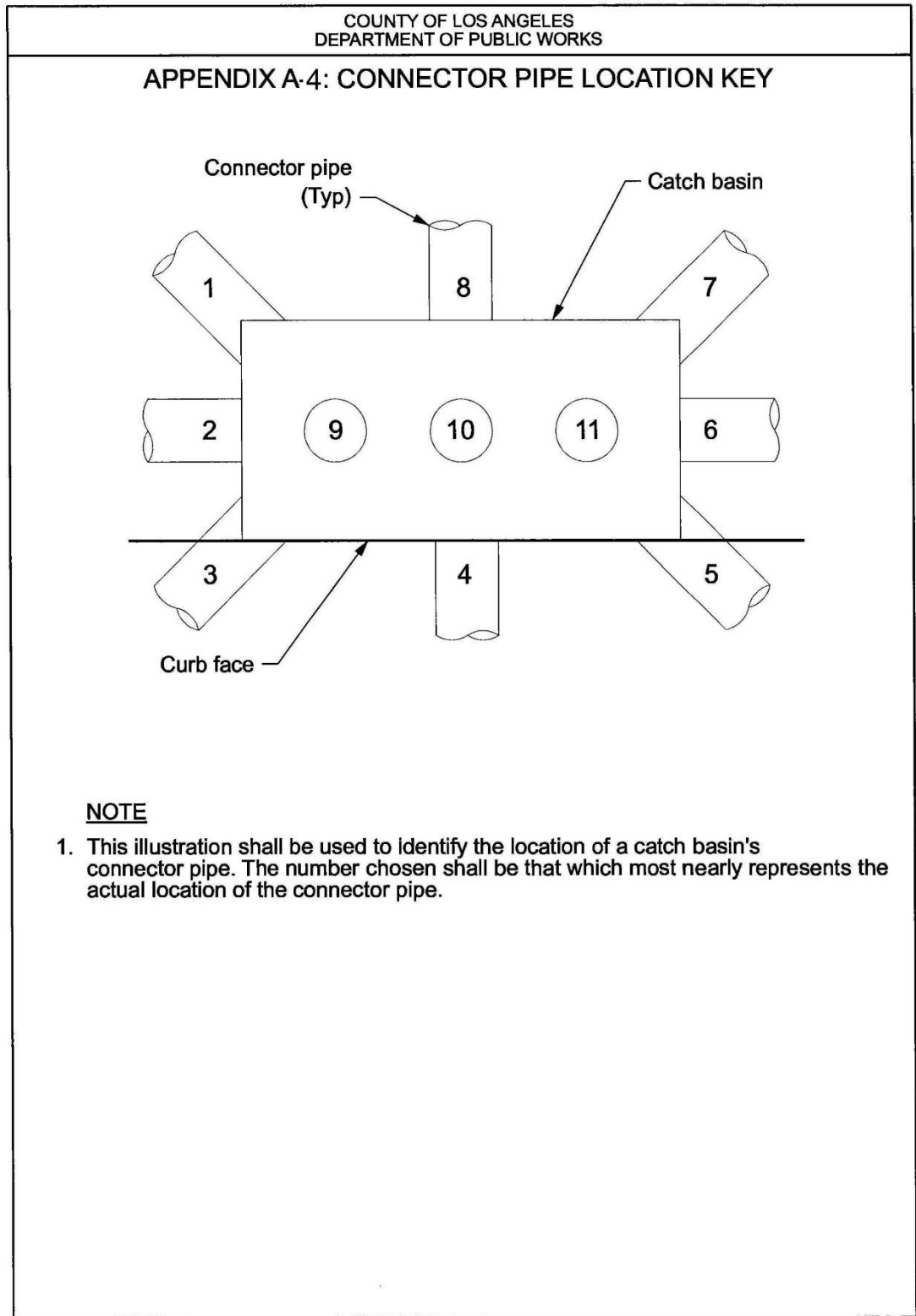
EXAMPLE LAYOUT

"THE PAINT TYPE AND SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO USE."

1. The Contractor shall paint a staff gauge as shown on an externally visible interior wall of each catch basin.
2. The Contractor shall paint red stripes and numbers on white background labeling 40% and 100% screen height as shown above.
3. Surfaces must be clean, dry and free from all contaminants including rust that may impair adhesion.

Revised 07/21/2010



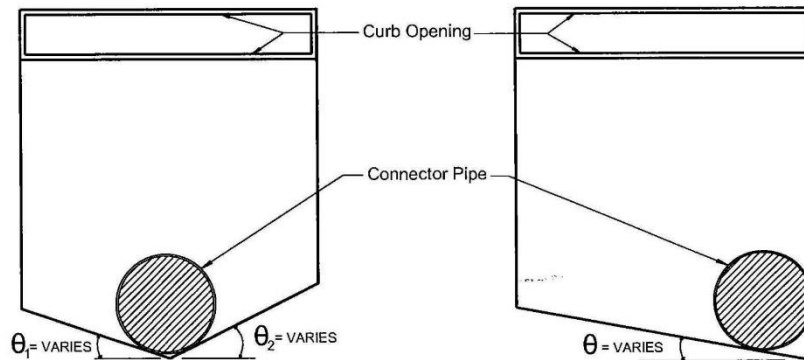


NOTE

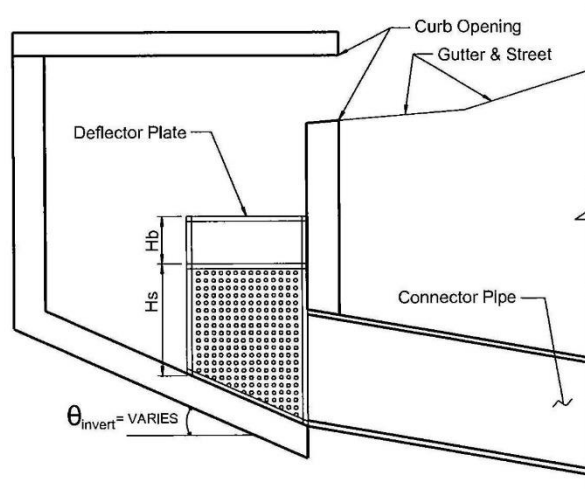
1. This illustration shall be used to identify the location of a catch basin's connector pipe. The number chosen shall be that which most nearly represents the actual location of the connector pipe.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

APPENDIX A-5: CB WITH ADVERSE SLOPE & MISC.
CONNECTOR PIPE POSITION



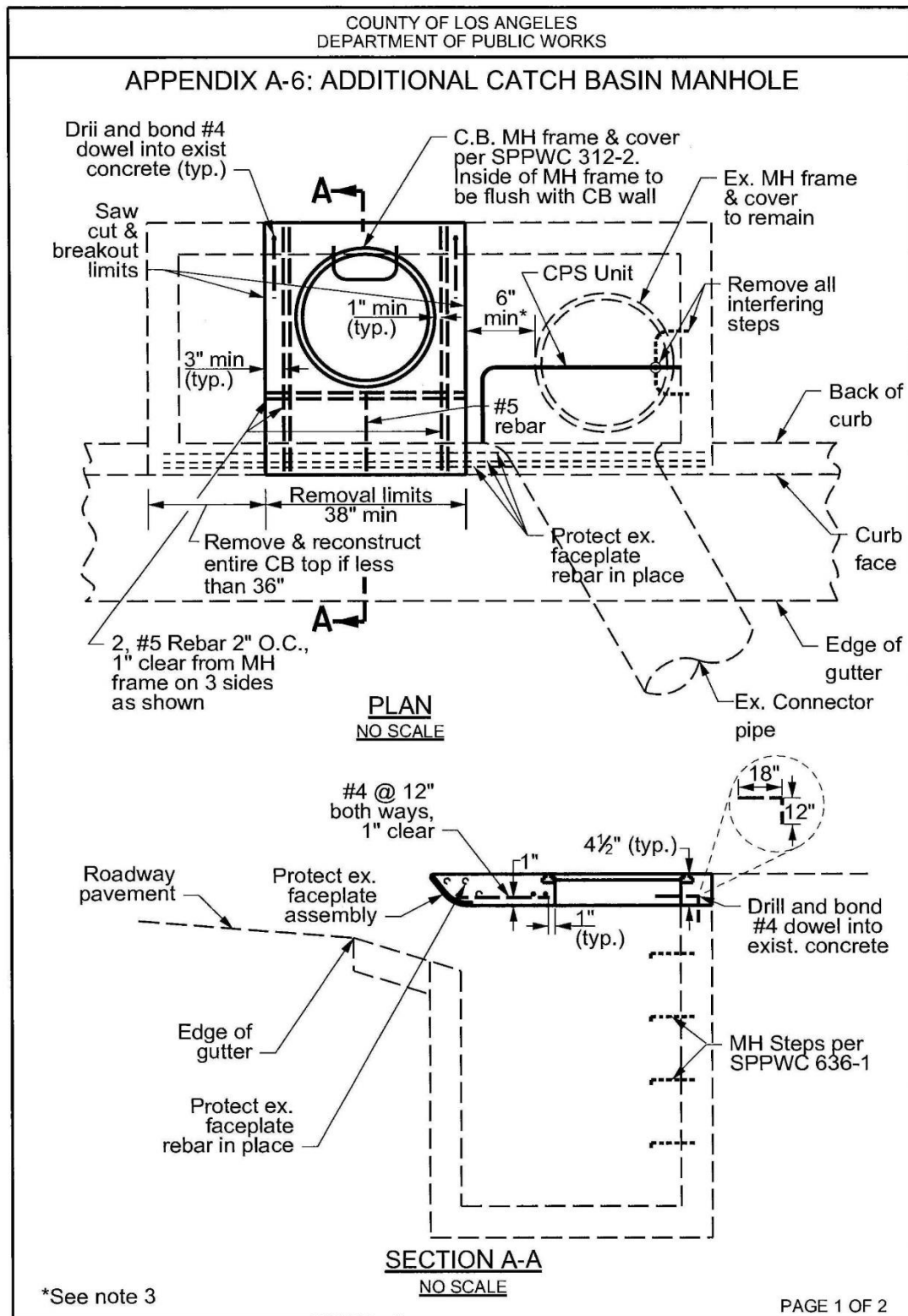
CATCH BASIN (MISC.)
(not to scale)



CATCH BASIN WITH ADVERSE SLOPE
(ELEVATION VIEW)
(not to scale)

NOTES

1. The CPS shown above is for illustrative purposes only. The catch basin connector pipe location and the shape and design of the CPS may significantly deviate from the above examples.
2. All CPS's shall be flush with catch basin walls and invert. Contractor to verify dimensions prior to fabrication.
3. Hs (screen height) shall be projected along the slope of the invert.



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

APPENDIX A-6: ADDITIONAL CATCH BASIN MANHOLE

NOTES

1. Where reinforcement is required to extend through the new joint, concrete shall be removed in the following sequence:
 - A. A saw cut shall be made one and one-half inches deep at the removal limits. Care shall be exercised in sawing at the removal limits so as not to cut the reinforcing steel in the remaining slab.
 - B. The existing reinforcing steel shall be retained and protected in place. Remove reinforcing steel only where it interferes with installation of manhole frame and cover.
 - C. The remaining concrete may be removed by any suitable method upon approval of the engineer, who shall be the sole judge of the use of any concrete removal equipment. Explosives, wrecking ball, or other similar devices, which are likely to damage the concrete to be left in place, shall not be used.
2. New concrete at saw cut boundaries shall be bonded with SikaLatex R or agency approved equal.
3. The new manhole must be located to allow adequate access to the catch basin per subsection 700-5.2, number 11 of the Special Provisions

APPENDIX B - CPS SIZING TABLE
TABLE 1

Revised 5/4/2016

CPS SIZING TABLE FOR NON-SUMP CONDITIONS

Catch Basin Type	*V-depth (ft)	CB Width (ft)	No. Grates	** Bypass Height H _b (in)	**Screen Height H _s (in)	**Screen Length L (ft)	**G (in)
300	2.5 (30 inch)	3.5	-	8	8	3.0	4
		7				4.0	
		10				6.0	
		14				7.0	
	2.67 (32 inch)	3.5	-	8	10	3.0	4
		7				4.0	
		10				6.0	
		14				7.0	
	2.83 (34 inch)	3.5	-	8	12	3.0	4
		7				4.0	
		10				6.0	
		14				6.0	
		21				7.0	
	3.0	3.5	-	8	12	3.0	6
		7				4.0	
		10		8	14	6.0	4
		14				7.0	
		21				8.0	
	28						
	3.5	3.5	-	8	18	3.0	6
		7				4.0	
		10		10	16	6.0	
		14				6.0	
		21				7.0	
		28				8.0	
	4.0	3.5	-	12	20	3.0	6
		7				4.0	
		10				6.0	
14		6.0					
21		7.0					
28		8.0					
4.5 or greater	3.5	-	12	24	3.0	≥ 8	
	7				4.0		
	10				6.0		
	14				6.0		
	21				7.0		
	28				8.0		

* CB's with V-depth values less than given above, the CB must be removed from the project.

** H_b, H_s, L, and G values given above are minimum values.

APPENDIX B - CPS SIZING TABLE

Revised 5/4/2016

TABLE 1

CPS SIZING TABLE FOR NON-SUMP CONDITIONS

Catch Basin Type	*V-depth (ft)	CB Width (ft)	No. Grates	** Bypass Height H _b (in)	**Screen Height H _s (in)	**Screen Length L (ft)	**G (in)
301	3.0 (36 inch)	7	1	8	10	4.0	10
		10	2			5.0	
		14	1			4.0	
		14	2			5.0	
	3.5	7	1	10	12	4.0	12
		10	2			5.0	
		14	1			4.0	
		14	2			5.0	
	4.0	7	1	12	15	4.0	13
		10	2			5.0	
		14	1			4.0	
		14	2			5.0	
	4.5 or greater	7	1	12	18	4.0	≥ 16
		10	2			5.0	
		14	1			4.0	
		14	2			5.0	
302	3.0 (36 inch)	-	1	9	9	2.5	10
		-	2			4.0	
		-	3			5.0	
	3.5	-	1	10	12	2.5	12
		-	2			4.0	
		-	3			5.0	
	4.0 or greater	-	1	10	18	2.5	≥ 12
		-	2			4.0	
		-	3			5.0	
303	3.0 (36 inch)	-	1	9	9	2.5	10
		-	2			4.0	
		-	3			5.0	
	3.5	-	1	10	12	2.5	12
		-	2			4.0	
		-	3			5.0	
	4.0	-	1	12	16	2.5	12
		-	2			4.0	
		-	3			5.0	
	4.5 or greater	-	1	12	22	2.5	≥ 12
		-	2			4.0	
		-	3			5.0	

* CB's with V-depth values less than given above, the CB must be removed from the project.

** H_b, H_s, L, and G values given above are minimum values.

**ATTACHMENT 1
CONSTRUCTION AND DEMOLITION DEBRIS RECYCLING SUMMARY**

Project Information

Check one: Roadway Flood Control Water/Sewer
 Traffic Signal/Street Lighting Bridge/Structure Other _____

Project Name: _____

Project ID No.: _____

Project Address/Location: _____

Thomas Guide Page/Grid No(s).: _____

Resident Engineer/Inspector: _____ Office Engineer: _____

Contractor Information

Company Name: _____

Company Address: _____

Report Prepared by _____ Phone Number: _____

Project Duration: From: _____ **To:** _____

Construction Demolition and Debris Recycling Requirements Cost: \$ _____

Type(s) of Debris Generated	Estimated Quantity Generated (tons, c.y. or units)	Reuse/Recycling		Disposal	
		Estimated Quantity (tons, c.y. or units)	Name of Reuse/Recycling Facility/Site	Estimated Quantity (tons, c.y. or units)	Name of Disposal Facility
Asphalt					
Brick					
Concrete					
Green Waste					
Metal (ferrous)					
Metal (non-ferrous)					
Mixed Debris					
Rock					
Soil					
Wood Waste					
Other:					
Other:					
Total					

Notes:

- Other debris types may include, but are not limited to, Ash, Cardboard, Carpeting, Glass, Gravel, Land Clearing Debris, Non-friable Asbestos, Paper, Plastic, Porcelain, Roofing Material, Sand, and Tires. Attach additional sheets if necessary.
- If the debris is taken to a transfer station solely for the purpose of reuse/recycling, then list the transfer station as the reuse/recycling facility/site.
- If the debris is taken to a transfer station solely for the purpose of transfer to a disposal facility, then list the transfer station as the disposal facility.

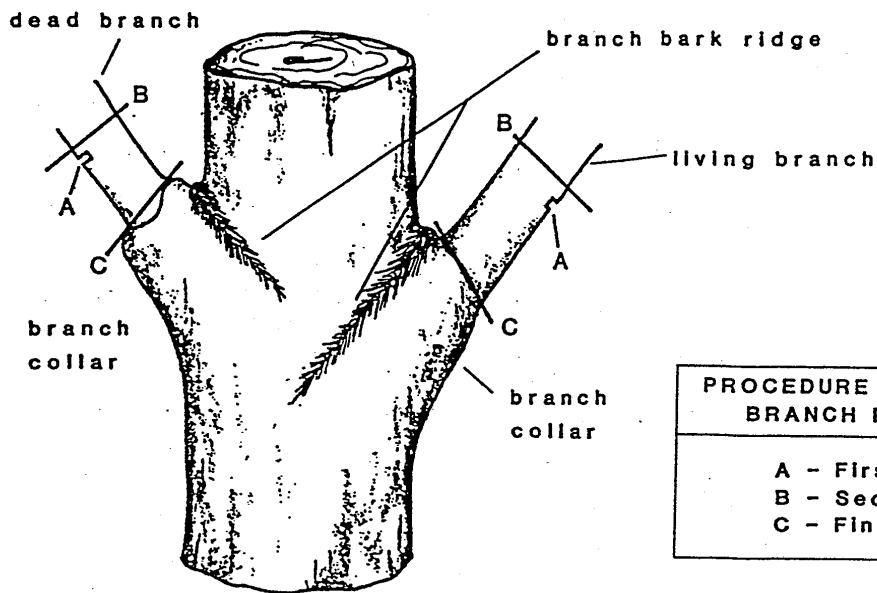
Please email this completed form to: cnd@dpw.lacounty.gov

To: C&D Unit, LACDPW

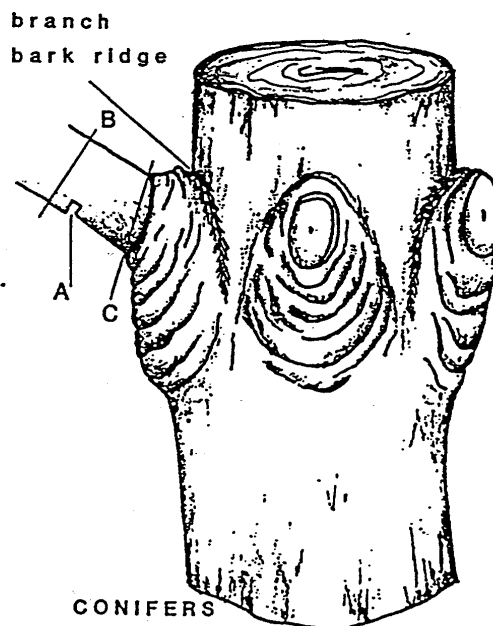
From: _____

EXHIBIT A

PROPER PRUNING PROCEDURES



HARDWOODS



CONIFERS

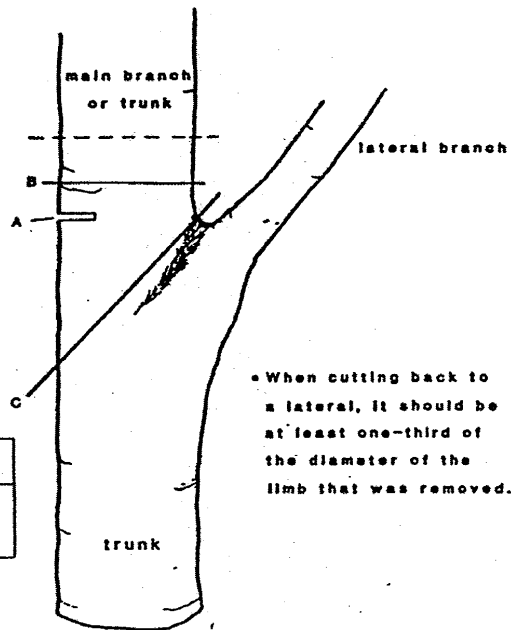
DO NOT

1. Cut behind the branch bark ridge.
2. Leave stubs.
3. Cut the branch collar which is part of the trunk wood.
4. Paint cuts, except for cosmetic reasons, or when specified for sprout regrowth control.

EXHIBIT B

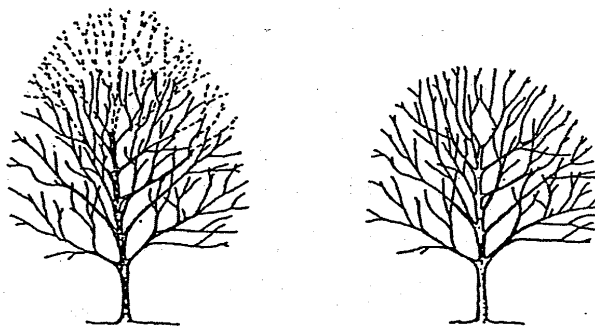
DROP CROTCH PRUNING

Do not leave a flat top when topping.



DROP CROTCH PRUNING PROCEDURE	
A	- First Cut
B	- Second Cut
C	- Final Cut

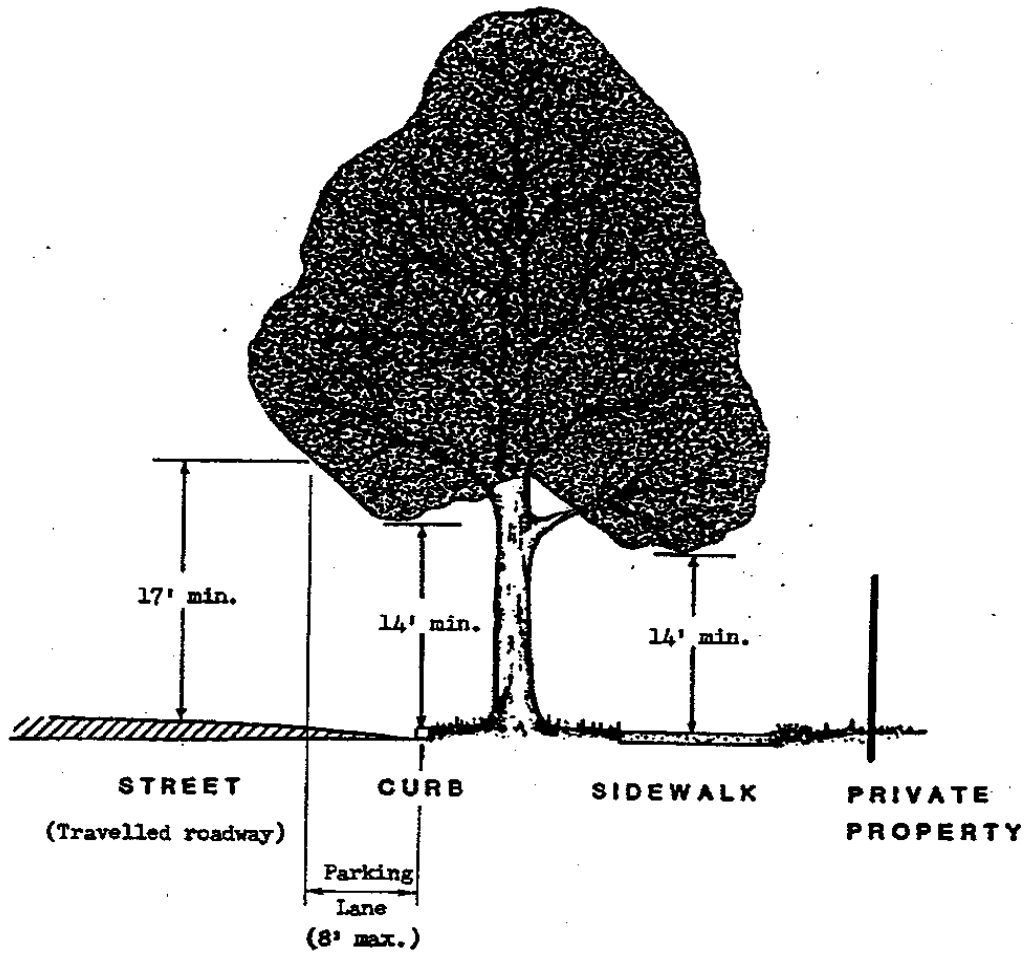
• When cutting back to a lateral, it should be at least one-third of the diameter of the limb that was removed.



"Drop Crotch" Trimming

EXHIBIT C

CLEARANCE TRIM

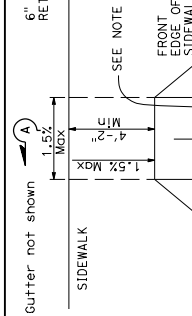
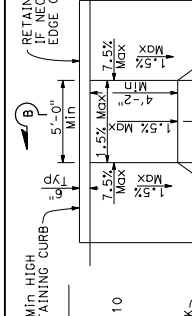
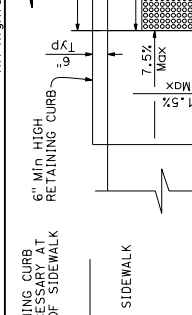
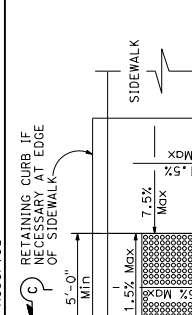
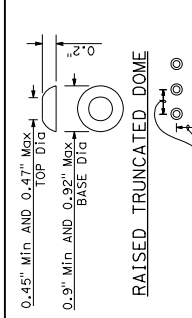


NOTE: At locations where there is no parking lane, the tree shall be trimmed to provide 17' of clearance all the way to the curb or the edge of pavement.

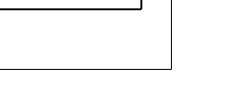
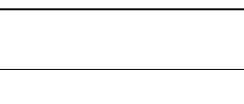
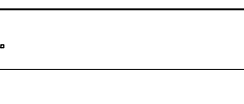
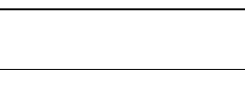
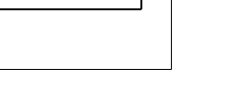
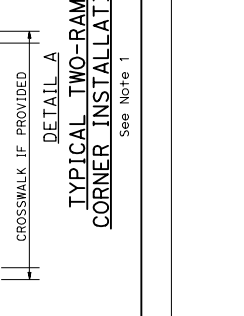
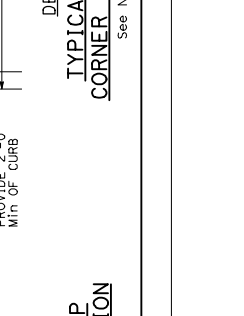
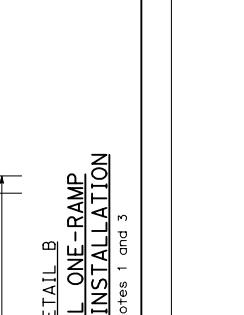
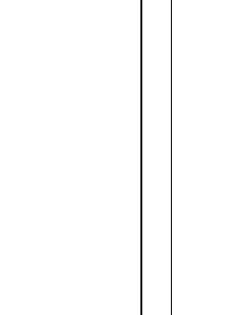
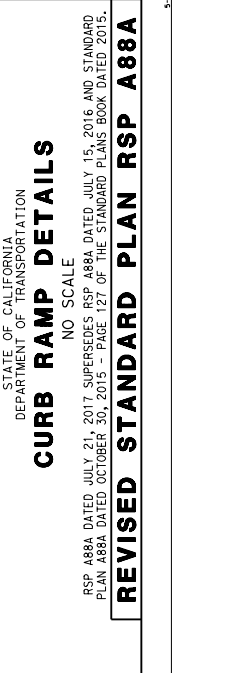
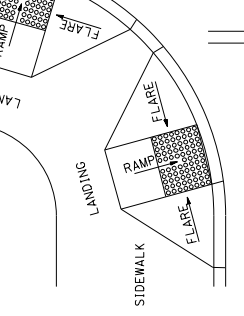
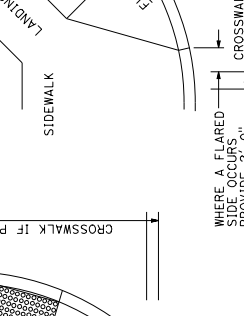
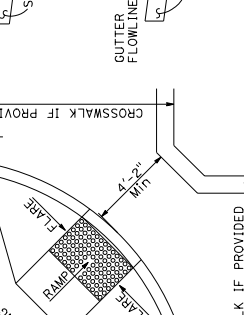
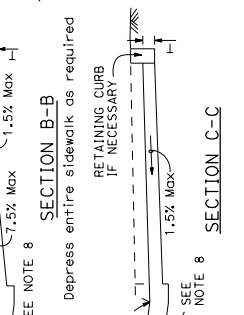
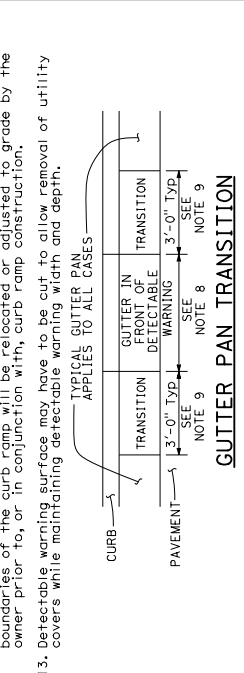
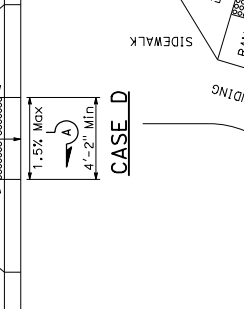
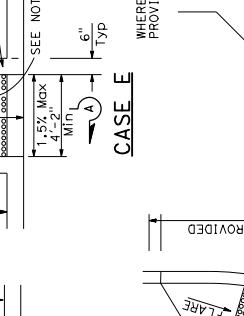
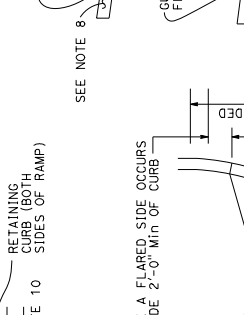
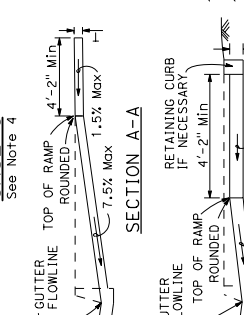
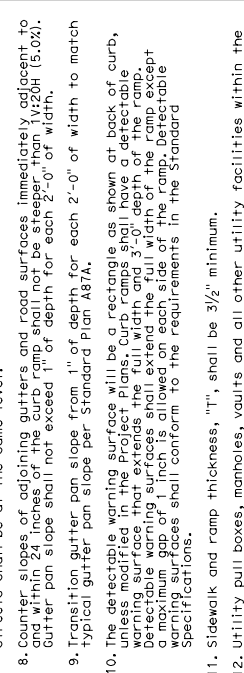
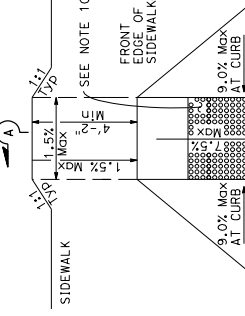
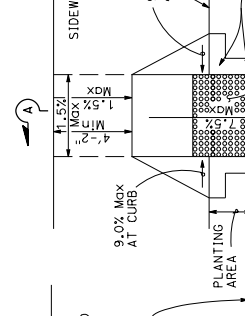
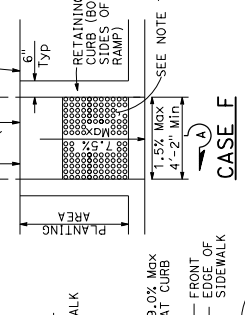
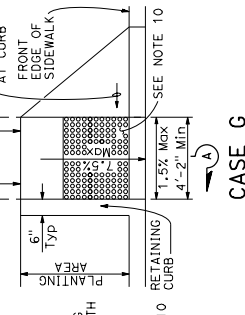
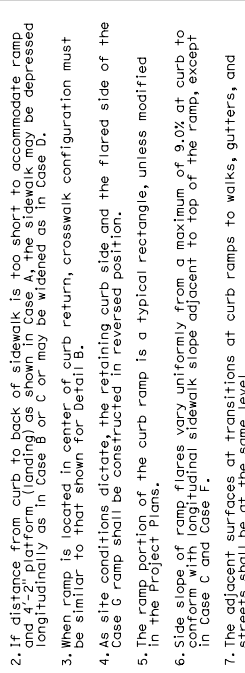
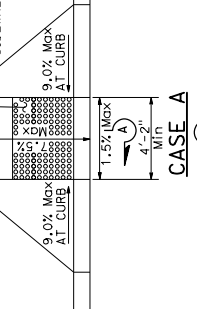
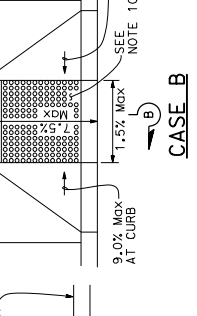
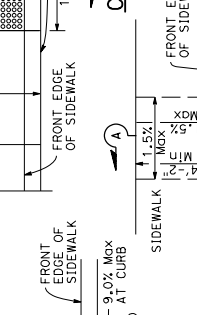
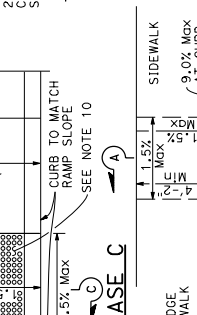
DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL SHEETS

David Cardona
 REGISTERED CIVIL ENGINEER
 JULY 21, 2017
 EXPIRES ON: JULY 21, 2021
 THE ENGINEER OR ARCHITECT SHALL BE RESPONSIBLE FOR THE ACCURACY OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED _____



- NOTES:**
- As site conditions dictate, Case A through Case G, curbs, ramps may be used. The case of curbs ramps used in Detail A do not have to be the same. Case A through Case G curbs ramps also may be used at mid block locations, as site conditions dictate. For specific site condition configuration, including the conform to existing sidewalk, see Project Plans.
 - If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B or C or may be widened as in Case D.
 - When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
 - As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
 - The ramp portion of the curb ramp is a typical rectangle, unless modified in the Project Plans.
 - Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
 - The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
 - Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1%:20H (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
 - Transition gutter pan slope from 1" of depth for each 2'-0" of width to match typical gutter pan slope per Standard Plan A87A.
 - The detectable warning surface shall be a rectangle as shown at back of curb, unless modified in the Project Plans. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. A maximum gap of 1/4 inch is allowed on each side of the ramp. Detectable surfaces shall conform to the requirements in the Standard Specifications.
 - Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
 - Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
 - Detectable warning surfaces may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.



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DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL SHEETS

David Cardona
REGISTERED CIVIL ENGINEER

JULY 21, 2017
PROJECT CONTROL DATE

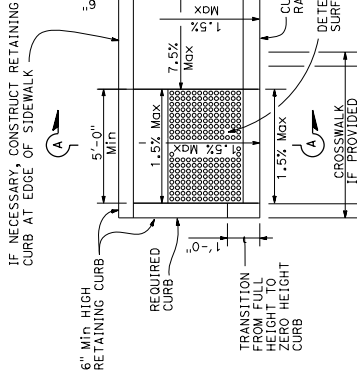
NO. 041957
EXP. 3-31-19
CIVIL

REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

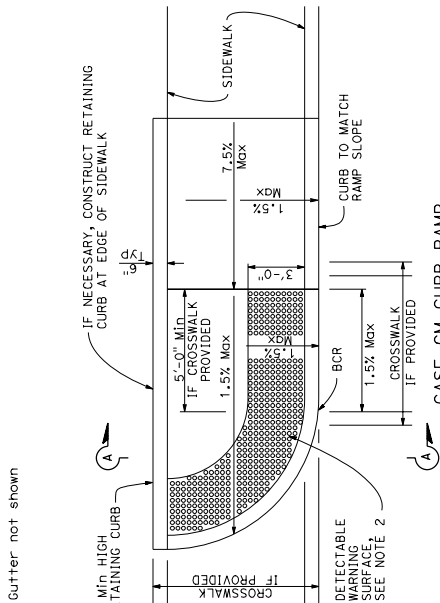
THE ENGINEER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THIS PLAN SHEET.

NOTES:

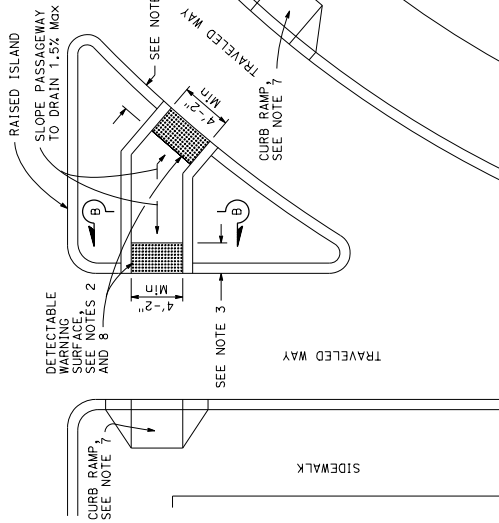
1. Sidewalk, ramp, and passageway thickness, T , shall be $3/2$ minimum.
2. For details of detectable warning surfaces, see Revised Standard Plan RSP A88A.
3. Where an island passageway length is greater than or equal to $8'-0"$, each detectable warning surface shall extend the full width and $2'-0"$ depth of the passageway length. Where an island passageway length is greater than or equal to $8'-0"$, each detectable warning surface shall extend the full width of the island passageway except a maximum gap of 1 inch is allowed on each side of the passageway.
4. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
5. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be in conjunction with curb ramp construction.
6. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.
7. For additional curb ramp details, see Revised Standard Plan RSP A88A.
8. The detectable warning surface will be a rectangle as shown at the face of curb, unless modified in the Project Plans.



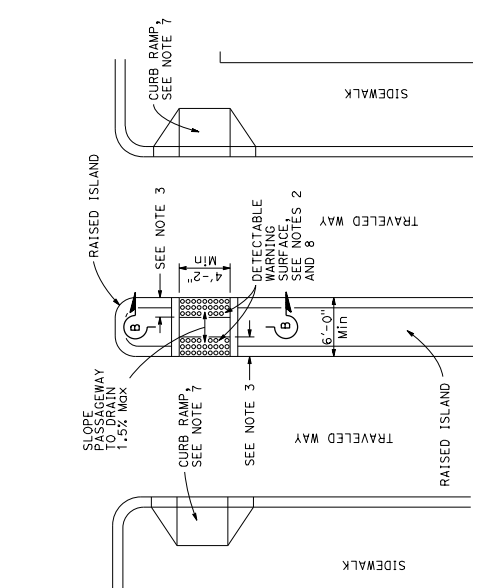
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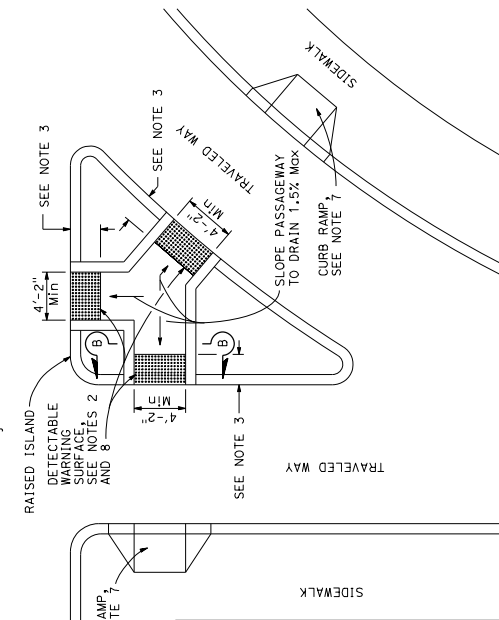
CASE CM CURB RAMP



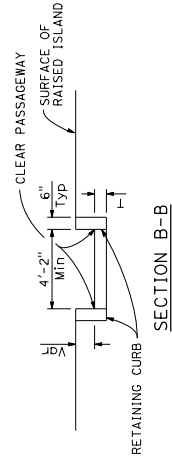
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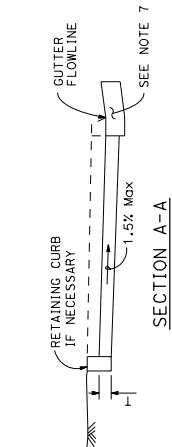
TYPE A PASSAGEWAY



TYPE C PASSAGEWAY



SECTION B-B



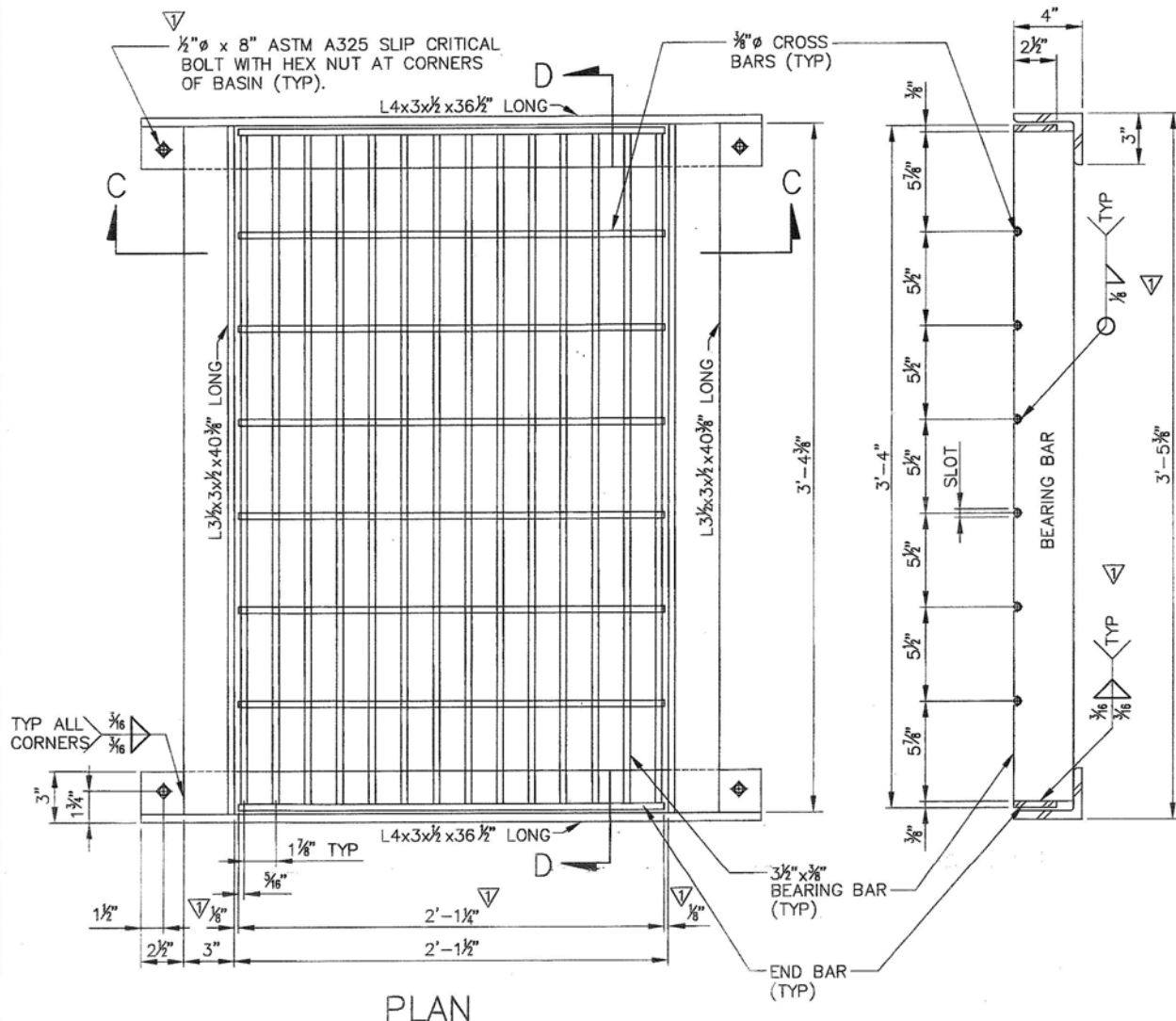
SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP AND ISLAND PASSAGEWAY DETAILS

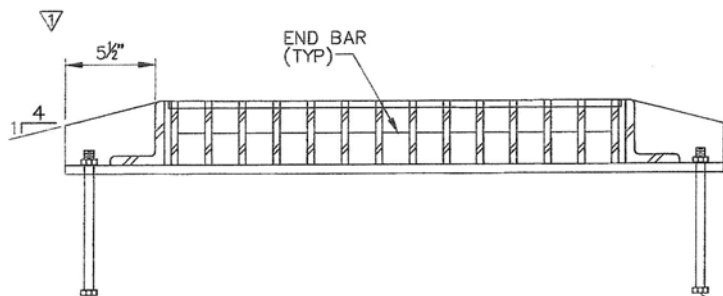
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RSP A88B DATED JULY 21, 2017, SUPERSEDES RSP A88B DATED JULY 15, 2016, AND STANDARD PLAN A88B DATED OCTOBER 30, 2015 - PAGE 128 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP A88B



PLAN

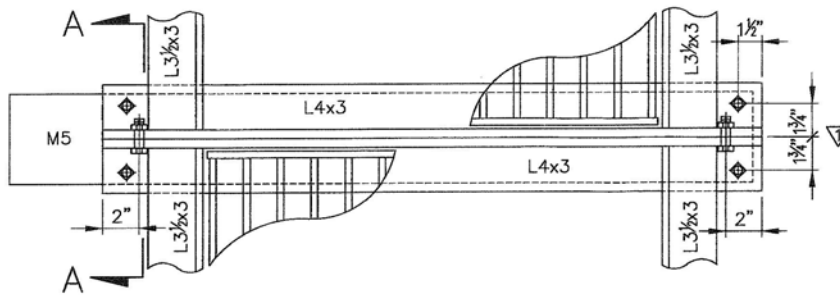


SECTION C-C

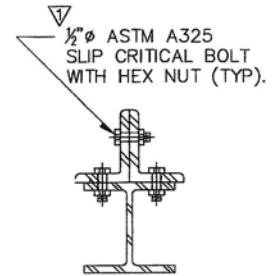
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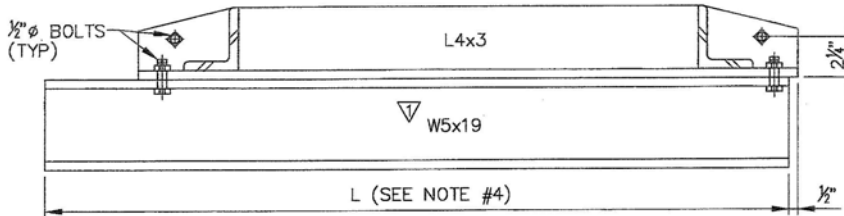
BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS			CITY OF LOS ANGELES		
FRAME AND GRATING FOR CATCH BASINS (BICYCLE SAFE)				STANDARD PLAN S-342-4			
SUBMITTED 10/30 2008 <i>Jeana Durr</i> ENGINEER OF DESIGN <i>Michael E. Kears</i> DEPUTY CITY ENGINEER			REVISIONS			SUPERSEDES B-3970	REFERENCES
APPROVED 11/5 2008 <i>Gary Lee Moore</i> CITY ENGINEER			NO. DATE DESCRIPTION ENGR. OF DESIGN CITY ENGR.	B-4611		VAULT INDEX NUMBER B- SHEET 1 OF 2 SHEETS	
DESIGNED BY	DRAWN BY	CHECKED BY					
P.H.L.	R.H.L.	F.S.P.					



PARTIAL PLAN



SECTION A-A



ELEVATION
CENTER SUPPORT ASSEMBLY

NOTES:

1. UNLESS SPECIFIED OTHERWISE, ALL METAL PARTS SHOWN HEREON SHALL BE ASTM A36 STEEL CONFORMING TO SECTION 206-1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC). ALL BOLTS SHALL BE ASTM A325 SLIP CRITICAL BOLT WITH HEX NUT.
2. ALL METAL PARTS (INCLUDE NUTS & BOLTS) SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH SECTION 210-3 OF THE SSPWC AFTER FABRICATION.
3. $\frac{3}{8}$ " ϕ CROSS BARS MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO THE BEARING BARS.
4. L = 36 INCHES FOR CURBSIDE GRATING BASINS AND ALLEY GRADING BASINS.
L = 45 INCHES FOR COMBINATION CATCH BASINS.
L = 64 INCHES FOR CURB OPENING CATCH BASINS WITH GRATING AND DEBRIS SKIMMER.
5. FRAME AND GRATING SHALL BE INSTALLED WITH LOGITUDINAL BEARING BARS ALIGNED WITH THE DIRECTION OF THE GUTTER FLOW.



B-4611

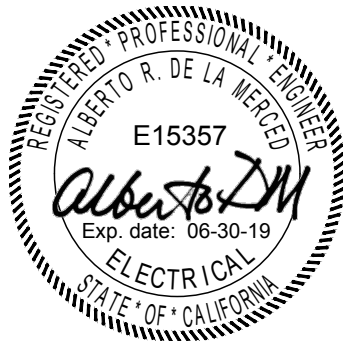
PUBLIC WORKS LOS ANGELES COUNTY

PROJECT ID NO. WMD0000010

SPECIAL PROVISIONS

SECTION E - ELECTRICAL

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:

Alberto De La Merced, P.E.

March 07, 2019

Date

Reviewed By:

Weifeng Lin, P.E.

March 07, 2019

Date

TABLE OF CONTENTS

SECTION E-1 BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL.....E-1

1.1 RELATED SECTIONSE-1

1.2 DESIGN REQUIREMENTS.....E-1

1.3 SUBMITTALS.....E-1

1.4 DESCRIPTION OF WORK.....E-1

PART 2 PRODUCTSE-3

2.1 GENERALE-3

PART 3 EXECUTIONE-3

3.1 GENERALE-3

3.2 LOAD BALANCE.....E-3

3.3 CHECKOUT AND STARTUP.....E-4

SECTION E-2 BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL.....E-5

1.1 SUBMITTALS.....E-5

1.2 QUALITY ASSURANCE.....E-5

1.3 EXTRA MATERIALS.....E-6

PART 2 PRODUCTSE-6

2.1 METERING FACILITIESE-6

2.2 OUTLET AND DEVICE BOXES.....E-6

2.3 JUNCTION AND PULL BOXESE-6

2.4 WIRING DEVICESE-8

2.5 DEVICE PLATESE-10

2.6 LIGHTING AND POWER DISTRIBUTION PANELBOARD.....E-11

2.7 NON-FUSED SWITCH, INDIVIDUAL, 0 TO 600 VOLTSE-14

2.8 FUSE, 0 TO 600 VOLTS.....E-14

2.9 PUSHBUTTON, INDICATING LIGHT, AND SELECTOR SWITCHES.....E-15

2.10 TERMINAL JUNCTION BOXE-16

2.11 TERMINAL BLOCK (0 TO 600 VOLTS).....E-16

2.12 MAGNETIC CONTROL RELAYE-17

2.13 ELECTRICAL SERVICE PEDESTAL.....E-17

2.14 SUPPORT AND FRAMING CHANNELSE-19

2.15 NAMEPLATESE-20

PART 3 EXECUTIONE-20

3.1 GENERALE-20

3.2 OUTLET AND DEVICE BOXES.....E-20

TABLE OF CONTENTS

3.3 JUNCTION AND PULL BOXESE-21
3.4 WIRING DEVICESE-23
3.5 DEVICE PLATESE-24
3.6 PUSHBUTTON, INDICATING LIGHT, AND SELECTOR SWITCHE-24
3.7 TERMINAL JUNCTION BOXE-24
3.8 LIGHTING AND POWER DISTRIBUTION PANELBOARD.....E-25
3.9 NON-FUSED SWITCH ENCLOSURESE-25
3.10 ELECTRICAL SERVICE PEDESTAL.....E-25
3.11 SUPPORT AND FRAMING CHANNEL.....E-25
PART 4 PAYMENT.....E-25

SECTION E-3 GROUNDING

PART 1 GENERAL.....E-26
1.1 SUBMITTALS.....E-26
1.2 QUALITY ASSURANCE.....E-26
PART 2 PRODUCTSE-26
2.1 GROUND RODE-26
2.2 GROUND CONDUCTORS.....E-26
2.3 CONNECTORS.....E-27
2.4 GROUNDING WELLS.....E-28
PART 3 EXECUTIONE-28
3.1 GENERALE-28
3.2 WIRE CONNECTIONSE-29
3.3 MOTOR GROUNDING.....E-29
3.4 GROUND RODS.....E-29
3.5 GROUNDING WELLS.....E-30
3.6 CONNECTIONS.....E-30
3.7 METAL STRUCTURE GROUNDINGE-31
3.8 TRANSFORMER GROUNDINGE-31
3.9 SURGE PROTECTION EQUIPMENT GROUNDINGE-31
PART 4 PAYMENT.....E-31

SECTION E-4 CONDUCTORS

PART 1 GENERAL.....E-32
1.1 SUBMITTALS.....E-32
1.2 QUALITY ASSURANCE.....E-32
PART 2 PRODUCTSE-33
2.1 CONDUCTORS 600 VOLTS AND BELOWE-33
2.2 600-VOLT RATED CABLEE-33

TABLE OF CONTENTS

2.3 GROUNDING CONDUCTORSE-37
2.4 ACCESSORIES FOR CONDUCTORS 600 VOLTS AND BELOWE-37
2.5 PULLING COMPOUND.....E-41
2.6 WARNING TAPEE-41
2.7 SOURCE QUALITY CONTROLE-41

PART 3 EXECUTIONE-42

3.1 GENERALE-42
3.2 POWER CONDUCTOR COLOR CODINGE-42
3.3 CIRCUIT IDENTIFICATIONE-43
3.4 CONDUCTORS 600 VOLTS AND BELOWE-44

PART 4 PAYMENTE-46

SECTION E-5 RACEWAYS

PART 1 GENERAL.....E-47

1.1 SUBMITTALS.....E-47
1.2 QUALITY ASSURANCE.....E-47

PART 2 PRODUCTSE-48

2.1 CONDUIT AND TUBINGE-48
2.2 FITTINGS.....E-48
2.3 METAL WIREWAYSE-51
2.4 ACCESSORIESE-51

PART 3 EXECUTIONE-53

3.1 GENERALE-53
3.2 INSTALLATION IN CAST-IN-PLACE STRUCTURAL CONCRETEE-54
3.3 CONDUIT APPLICATIONE-54
3.4 CONNECTIONS.....E-55
3.5 PENETRATIONSE-55
3.6 SUPPORTE-56
3.7 BENDS.....E-56
3.8 PVC CONDUITE-57
3.9 WIREWAYSE-57
3.10 TERMINATION AT ENCLOSURESE-58
3.11 UNDERGROUND RACEWAYSE-59
3.12 EMPTY RACEWAYSE-59
3.13 IDENTIFICATION DEVICESE-60
3.14 PROTECTION OF INSTALLED WORKE-60

PART 4 PAYMENTE-60

SECTION E-1 BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Requirements specified within this subsection apply to all subsections in Electrical. Work specified herein shall be performed as if specified in the individual subsections on E-1 through E-4.

1.2 DESIGN REQUIREMENTS

- A. All equipment anchoring and mounting shall be in accordance with manufacturer's requirements for the seismic zone.

1.3 SUBMITTALS

- A. Submit per Subsection 3-8 of Section G.
- B. Supporting Information:
 - 1. Voltage Field Test Results.
 - 2. Voltage Balance Report.
 - 3. Equipment Line Current Report.
 - 4. Factory test certification and reports for all major electrical equipment.
 - 5. Site test certification and reports as specified in other Electrical subsections.

1.4 DESCRIPTION OF WORK

- A. Furnish and install power and monitoring conduits and cables, pull boxes, grounding, electrical service pedestals, junction boxes, program logic controllers (PLC), solar power pole, telemetry equipment, remote slide gate control, equipment supports, and testing apparatus for complete electrical installation at the following location:
 - 1. Monitoring equipment cabinet at Northside Drive and Garfield Avenue.
 - 2. Pole mounted solar powered data logger equipment cabinet at Olympic Boulevard and Garfield Avenue.

3. Monitoring equipment cabinet at Southside Drive and Garfield Avenue.
 4. Monitoring equipment chest at Montebello Parkway and Leonard Avenue.
 5. Monitoring equipment chest at Northside Drive and Easton Street.
 6. Monitoring equipment chest at Southside Drive and Coolidge Way.
 7. Electrical equipment cabinet at Northside Drive and Garfield Avenue.
 8. Electrical equipment cabinet at Southside Drive and Garfield Avenue.
 9. Electrical equipment cabinet at Montebello Parkway and Leonard Avenue.
 10. Electrical service pedestal "A" at Northside Drive and Garfield Avenue.
 11. Electrical service pedestal "B" at Southside Drive and Garfield Avenue.
 12. Electrical service pedestal "C" at Montebello Parkway and Leonard Avenue.
- B. Furnish the following for powering and operation:
1. Furnish and install conduits, pull boxes, power cables, and associated support hardware from new points of source to power and operate new equipment devices.
 2. Furnish and install monitoring conduits, pull boxes, cables from the new monitoring equipment cabinet and electrical equipment cabinet to pressure transducers, low-profile area velocity sensors, etc..., as shown on plans.
- C. Point of contact from Southern California Edison, for the new electrical service pedestals "A" and "B", is Mr. Christopher Long and he can be reached at (310) 608-5042. Point of contact from Southern California Edison, for the new electrical service pedestal "C", is Mr. Heriberto "Eddie" Guerrero and he can be reached at (323) 889-5517.

- D. Provide support personnel and testing equipment necessary to facilitate the start-up and testing of all monitoring equipment devices and sports field lighting system.

PART 2 PRODUCTS

2.1 GENERAL

A. Agency Requirements:

1. The Work shall be done in accordance with NFPA 70, 2017 Los Angeles County Electrical Code (2014 NEC). Where required by the Agency, material and equipment shall be labeled or listed by a nationally recognized testing laboratory or other acceptable organization in order to provide a basis for approval under NEC.
2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.

B. Equipment Finish:

1. Furnish manufacturers' standard finish and color, except where specific color is indicated.
2. If manufacturer has no standard color, furnish equipment with ANSI No. 61, light gray color.

PART 3 EXECUTION

3.1 GENERAL

- A. The Plans show general locations of equipment, devices, and raceway, unless specifically dimensioned.
- B. Install work in accordance with NECA Standard, unless otherwise specified.

3.2 LOAD BALANCE

- A. Plans and Specifications indicate circuiting to electrical loads and distribution equipment.
- B. Balance electrical load between phases as nearly as possible on switchboards, panel boards, motor control centers, and other equipment where balancing is required.

- C. When loads must be reconnected to different circuits to balance phase loads, maintain accurate record of changes made, and provide circuit directory that lists final circuit arrangement.

3.3 CHECKOUT AND STARTUP

A. Voltage Field Test:

1. Check voltage at point of termination of power company supply system to project when installation is essentially complete and is in operation.
2. Check voltage amplitude and balance between phases for loaded and unloaded conditions.
3. Unbalance Corrections:
 - a. Make written request to power company to correct condition if balance (as defined by NEMA) exceeds 1 percent, or if voltage varies throughout the day and from loaded to unloaded condition more than plus or minus 4 percent of nominal.
 - b. Obtain a written certification from a responsible power company official that the voltage variations and unbalance are within their normal standards if corrections are not made.

B. Equipment Line Current Tests:

1. Check line current in each phase for each piece of equipment.
2. Make line current check after power company has made final adjustments to supply voltage magnitude or balance.
3. If any phase current for any piece of equipment is above rated nameplate current, prepare Equipment Line Phase Current Report that identifies cause of problem and corrective action taken.

SECTION E-2 BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.1 SUBMITTALS

- A. Submit per Subsection 3-8 of Section G.
- B. Shop Drawings:
 - 1. Junction and pull boxes used at or below grade.
 - 2. Junction and pull boxes.
 - 3. Terminal junction boxes.
 - 4. Panelboards and circuit breaker data.
 - 5. Wiring devices.
 - 6. Control devices.
 - 7. Control relays.
 - 8. Electrical service pedestals.
 - 9. Fuses.
 - 10. Circuit Breakers.
 - 11. Program Logic Controller (PLC).
 - 12. Telemetry System.

1.2 QUALITY ASSURANCE

- A. Agency Requirements:
 - 1. The Work shall be done in accordance with NFPA 70, 2017 Los Angeles County Electrical Code (2014 NEC). Where required by the Agency, material and equipment shall be labeled or listed by a nationally recognized testing laboratory or other acceptable organization in order to provide a basis for approval under NEC.
 - 2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.

1.3 EXTRA MATERIALS

- A. Furnish, tag, and box for storage the following spare parts.
 - 1. Fuses, 0 to 600 Volts: Six of each type and each current rating installed.

PART 2 PRODUCTS

2.1 METERING FACILITIES

- A. Furnish materials as required by electric utility for utility's installation of metering equipment, service conductors, and mounting of utility company equipment.

2.2 OUTLET AND DEVICE BOXES

- A. Cast Metal:
 - 1. Box: Cast ferrous metal.
 - 2. Cover: Gasketed, weatherproof, cast ferrous metal, with stainless steel screws.
 - 3. Hubs: Threaded.
 - 4. Lugs: Cast Mounting.
 - 5. Manufacturers and Products, Nonhazardous Locations:
 - a. Crouse-Hinds; Type FS or FD.
 - b. Appleton; Type FS or FD.

2.3 JUNCTION AND PULL BOXES

- A. Outlet Boxes Used as Junction or Pull Box: As specified under Subsection 2.2 (Outlet and Device Boxes) in Section E-2 (Basic Electrical Materials and Methods).
- B. Conduit Bodies Used as Junction Boxes: As specified under Subsection 2.2 (Fittings) in Section E-5 (Raceways).

- C. Cast Metal Box:
 - 1. NEMA 250, Type 4.
 - 2. Box: Cast ferrous metal, electrogalvanized finished, with drilled and tapped conduit entrances and exterior mounting lugs.
 - 3. Cover: Hinged with screws.
 - 4. Gasket: Neoprene.
 - 5. Hardware and Machine Screws: ASTM A167, Type 316 stainless steel.
 - 6. Manufacturers and Products, Surface Mounted Nonhinged Type:
 - a. Crouse-Hinds; Series W.
 - b. O-Z/Gedney; Series Y.
 - c. Appleton / Emerson
 - 7. Manufacturer and Product, Surface Mounted, Hinged Type:
O-Z/Gedney; Series YW.
 - 8. Manufacturers and Products, Recessed Type:
 - a. Crouse-Hinds; Type WJBF.
 - b. O-Z/Gedney; Series YR.
 - c. Appleton / Emerson
- D. Concrete Box, Nontraffic Areas:
 - 1. Box: Reinforced, cast concrete with extension.
 - 2. Cover: Steel diamond plate with locking bolts.
 - 3. Cover Marking: ELECTRICAL, TELEPHONE, or as shown.
 - 4. Size: As shown on plans.
 - 5. Manufacturers and Products:
 - a. Utility Vault Co.
 - b. Christy, Concrete Products, Inc.

c. Strongwell.

E. Concrete Box, Traffic Areas:

1. Box: Reinforced, cast concrete with extension and bottom slab.
2. Cover: Steel checked plate. H/20 loading with screw down.
3. Cover Marking: ELECTRICAL, TELEPHONE, or as shown.
4. Manufacturers and Products:
 - a. Christy, Concrete Products, Inc.
 - b. Utility Vault Co.
 - c. J&R Concrete Products

2.4 WIRING DEVICES

A. Switches:

1. NEMA WD 1 and FS W-S-896.
2. Industrial grade, totally enclosed, ac type, with quiet tumbler switches and screw terminals.
3. Rivetless one-piece brass or copper alloy contact arm with silver alloy contacts.
4. Capable of controlling 100 percent tungsten filament and fluorescent lamp loads.
5. Rating: 20 amps, 120/277 volts.
6. Color:
 - a. All Areas: Gray.
7. Automatic grounding clip and integral grounding terminal on mounting strap.
8. Manufacturers and Products:
 - a. Arrow Hart; 1891/1991 Series.
 - b. Bryant; 4801/4901 Series.
 - c. Hubbell; 1201/1221 Series.

- B. Receptacle, Single and Duplex:
1. NEMA WD 1 and FS W-C-596.
 2. Specification grade, two-pole, three-wire grounding type with screw type wire terminals suitable for No. 10 AWG.
 3. High strength, thermoplastic base color.
 4. Color:
 - a. All Areas: Gray.
 5. Contact Arrangement: Contact to be made on two sides of each inserted blade without detent.
 6. Rating: 125 volts, NEMA WD 1, Configuration 5-20R, 20 amps.
 7. One-piece mounting strap with integral ground contact (rivetless construction).
 8. Manufacturers and Products:
 - a. Arrow Hart; 5263 Series.
 - b. Bryant; 5263 Series.
 - c. Hubbell; 5263 Series.
- C. Receptacle, Ground Fault Circuit Interrupter:
1. Duplex, listed Class A to UL Standard 943, tripping at 5 mA.
 2. Color: Gray.
 3. Rating: 125 volts, NEMA WD 1, Configuration 5-20R, 20 amps.
 4. Size: For 2-inch by 4-inch outlet boxes.
 5. Standard Model: NEMA WD 1, with No. 12 AWG copper USE/RHH/RHW-XLPE insulated pigtails and provisions for testing.
 6. Impact resistant nylon face.

- 7. Manufacturers:
 - a. Bryant.
 - b. Hubbell.
 - c. Arrow Hart.

2.5 DEVICE PLATES

- A. General: Sectional type plates not permitted.
- B. Metal:
 - 1. Material: Specification grade, one-piece, 0.040-inch nominal thickness stainless steel.
 - 2. Finish: ASTM A167, Type 302/304, satin.
 - 3. Mounting Screw: Oval-head, finish matched to plate.
- C. Cast Metal:
 - 1. Material: Malleable ferrous metal, with gaskets.
 - 2. Screw: Oval-head stainless steel.
- D. Engraved:
 - 1. Character Height: 1/8-inch.
 - 2. Filler: White.
- E. Weatherproof:
 - 1. For Receptacles:
 - a. Gasketed, cast-aluminum, with individual cap over each receptacle opening.
 - b. Mounting Screw and Cap Spring: Stainless steel.
 - c. Manufacturers and Products:
 - 1) Crouse-Hinds; Type WLRD-1.
 - 2) Appleton; Type FSK-WRD.
 - 3) Leviton Manufacturing

- 2. For Switches:
 - a. Gasketed, cast-metal or -aluminum, incorporating external operator for internal switch.
 - b. Mounting Screw: Stainless steel.
 - c. Manufacturers and Products:
 - 1) Crouse-Hinds; DS-181 or DS-185.
 - 2) Appleton; FSK-1VTS or FSK-1VS.
 - 3) Leviton Manufacturing
- F. Raised Sheet Metal: 1/2-inch high zinc- or cadmium-plated steel designed for one-piece drawn type sheet steel boxes.
- G. Sheet Steel: Formed sheet steel or Feraloy designed for installation on cast metal boxes.

2.6 LIGHTING AND POWER DISTRIBUTION PANELBOARD

- A. NEMA PB 1, NFPA 70, and UL 67, including panelboards installed in motor control equipment.
- B. Panelboards and Circuit Breakers: Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
- C. Short-Circuit Current Equipment Rating: Fully rated; series connected unacceptable.
- D. Rating: Applicable to a system with available short-circuit current of 42,000 amperes rms symmetrical at 120/240 volts.
- E. Ground Fault Circuit Interrupter (GFCI): UL Class A GFCI, 5 mA trip, 10,000 amps interrupting capacity circuit breakers.
- F. Ground Fault Interrupter (GFI): 30 mA trip, 10,000 amps interrupting capacity circuit breaker, and UL listed for equipment ground fault protection.
- G. Cabinet:
 - 1. NEMA 3R.
 - 2. Material: Code-gauge, hot-dip galvanized sheet steel, with reinforced steel frame.

3. Front: Fastened with adjustable clamps.
 - a. Trim Size:
 - 1) Surface Mounted: Same as box.
 - b. Finish: Rust inhibitor prime, with manufacturer's standard baked enamel or lacquer.
 4. Interior:
 - a. Factory assembled; complete with circuit breakers.
 - b. Capable of circuit breaker replacement without disturbing adjacent circuit breakers or without removing main bus.
 - c. Spaces: Cover openings with easily removable metal cover.
 5. Door Hinges: Concealed.
 6. Locking Device:
 - a. Padlock Hasp type.
 7. Circuit Directory: Metal frame with transparent plastic face and enclosed card on interior of door.
- H. Bus Bar:
1. Material: Tin-plated copper full sized throughout length.
 2. Provide for mounting of future circuit breakers along full length of bus regardless of number of units and spaces shown. Machine, drill, and tap as required for current and future positions.
 3. Neutral: Insulated, rated same as phase bus bars with at least one terminal screw for each branch circuit.
 4. Ground: Copper, installed on panelboard frame, bonded to box with at least one terminal screw for each circuit.
 5. Lugs and Connection Points:
 - a. Suitable for copper conductors only.
 - b. Solderless main lugs for main, neutral, and ground bus bars.

6. Bolt together and rigidly support bus bars and connection straps on molded insulators.
- I. Circuit Breakers:
1. NEMA AB 1 and UL 489.
 2. Thermal-magnetic, quick-make, quick-break, molded case, of indicating type showing ON/OFF and TRIPPED positions of operating handle.
 3. Noninterchangeable, in accordance with NFPA 70.
 4. Locking: Provisions for handle padlocking, unless otherwise shown.
 5. Type: Bolt-on circuit breakers in 240/120-volt panelboard.
 6. Multipole circuit breakers designed to automatically open all poles when an overload occurs on one pole.
 7. Do not substitute single-pole circuit breakers with handle ties for multipole breakers.
 8. Do not use tandem or dual circuit breakers in normal single-pole spaces.
 9. Ground Fault Interrupter:
 - a. Equip with conventional thermal-magnetic trip and ground fault sensor rated to trip in 0.025 second for a 5 mA ground fault (UL 943, Class A sensitivity).
 - b. Sensor with same rating as circuit breaker and a push-to-test button.
- J. Manufacturers:
1. Square D Co.
 2. General Electric
 3. Siemens

- 2.7 NON-FUSED SWITCH, INDIVIDUAL, 0 TO 600 VOLTS
- A. NEMA KS 1.
 - B. Quick-make, quick-break, motor rated, load-break, heavy-duty (HD) type with external markings clearly indicating ON/OFF positions.
 - C. Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
 - D. Enclosure: NEMA 250, Type as indicated in Part 3 of this Specification unless otherwise shown.
 - E. Interlock: Enclosure and switch to prevent opening cover with switch in the ON position.
- 2.8 FUSE, 0 TO 600 VOLTS
- A. Current-limiting, with 200,000 ampere rms interrupting rating.
 - B. Provide to fit mountings specified with switches and features to reject Class H fuses.
 - C. Motor and Transformer Circuits, 0- to 600-Volt:
 - 1. Amperage: 0 to 600.
 - 2. UL 198E, Class RK-1, dual element, with time delay.
 - 3. Manufacturers and Products:
 - a. Bussmann; Type LPS-RK.
 - b. Littelfuse, Inc.; Type LLS-RK.
 - c. Ferraz Shawmut
 - D. Motor and Transformer Circuits, 0- to 250-Volt:
 - 1. Amperage: 0 to 600.
 - 2. UL 198E, Class RK-1, dual element, with time delay.

3. Manufacturers and Products:
 - a. Bussmann; Type LPN-RK.
 - b. Littelfuse, Inc.; Type LLN-RK.
 - c. Ferraz Shawmut

2.9 PUSHBUTTON, INDICATING LIGHT, AND SELECTOR SWITCHES

- A. Contact Rating: NEMA ICS 2, Type A600.
- B. Selector Switch Operating Lever: Standard.
- C. Indicating Lights: Push-to-test.
- D. Pushbutton Color:
 1. ON,OFF, or START: Black.
 2. OFF or STOP: Black.
- E. Pushbuttons and selector switches lockable in OFF position where indicated.
- F. Legend Plate:
 1. Material: Aluminum.
 2. Engraving: 11-character/spaces on one line, 14-character/spaces on each of two lines, as required, indicating specific function.
 3. Letter Height: 7/64-inch.
- G. Manufacturers and Products:
 1. Heavy-Duty, Oil-Tight Type:
 - a. General Electric Co.; Type CR 104P.
 - b. Square D Co.; Type T.
 - c. Cutler-Hammer; Type 10250T.
 2. Heavy-Duty, Watertight, and Corrosion-Resistant Type:
 - a. Square D Co.; Type SK.
 - b. General Electric Co.; Type CR 104P.

c. Cutler-Hammer; Type E34.

d. Crouse-Hinds; Type NCS.

2.10 TERMINAL JUNCTION BOX

A. Cover: Hinged, unless otherwise shown.

B. Interior Finish: Paint with white enamel or lacquer.

C. Terminal Blocks:

1. Separate connection point for each conductor entering or leaving box.

2. Spare Terminal Points: 25 percent.

2.11 TERMINAL BLOCK (0 TO 600 VOLTS)

A. UL 486E/GEN and UL 1059.

B. Size components to allow insertion of necessary wire sizes.

C. Capable of termination of control circuits entering or leaving equipment, panels, or boxes.

D. Screw clamp compression, dead front barrier type, with current bar providing direct contact with wire between compression screw and yoke.

E. Yoke, current bar, and clamping screw of high strength and high conductivity metal.

F. Yoke shall guide all strands of wire into terminal.

G. Current bar shall ensure vibration-proof connection.

H. Terminals:

1. Capable of wire connections without special preparation other than stripping.

2. Capable of jumper installation with no loss of terminal or rail space.

3. Individual, rail mounted.

I. Marking system, allowing use of preprinted or field-marked tags.

- J. Manufacturers:
 - 1. Weidmuller, Inc.
 - 2. Ideal.
 - 3. Electrovert USA Corp.

2.12 MAGNETIC CONTROL RELAY

- A. NEMA ICS 2, Class A600 (600 volts, 10 amps continuous, 7,200VA make, 720VA break), industrial control with field convertible contacts.
- B. Manufacturers and Products:
 - 1. Square-D.
 - 2. Cutler-Hammer.
 - 3. General Electric Company

2.13 ELECTRICAL SERVICE PEDESTAL

- A. U.S.E.R.C. 308 Compliant; UL 508: Weather and vandal resistant 100% stainless steel enclosed commercial meter pedestal on cast in place concrete footing. Enclosure section for load center, Self-cooled, two-winding, copper conductors.
- B. Load Center and Circuit Breakers: Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
- C. Short-Circuit Current Equipment Rating: Fully rated; series connected unacceptable.
- D. Rating: Applicable to a system with available short-circuit current of 42,000 amperes rms symmetrical at 120/240 volts.
- E. Cabinet:
 - 1. NEMA 3R.
 - 2. Material: Stainless steel, with reinforced steel frame.

3. Front: Fastened with adjustable clamps.
 - a. Trim Size:
 - b. Capable of circuit breaker replacement without disturbing adjacent circuit breakers or without removing main bus.
 - c. Spaces: Cover openings with easily removable metal cover.
 4. Interior:
 - a. Factory assembled; complete with circuit breakers.
 - b. Capable of circuit breaker replacement without disturbing adjacent circuit breakers or without removing main bus.
 - c. Spaces: Cover openings with easily removable metal cover.
 5. Door Hinges: Concealed.
 6. Locking Device:
 7. Circuit Directory: Metal frame with transparent plastic face and enclosed card on interior of door.
- F. Bus Bar:
1. Nominal system voltage: 120/240V-1Ø-3W
 2. Material: Tin-plated aluminum full sized throughout length.
 3. Provide for mounting of future circuit breakers along full length of bus regardless of number of units and spaces shown. Machine, drill, and tap as required for current and future positions.
 4. Neutral: Insulated, rated same as phase bus bars with at least one terminal screw for each branch circuit.
 5. Ground: Copper, installed on panelboard frame, bonded to box with at least one terminal screw for each circuit.
 6. Lugs and Connection Points:
 - a. Suitable for copper conductors only.
 - b. Solderless main lugs for main, neutral, and ground bus bars.
 7. Bolt together and rigidly support bus bars and connection straps on molded insulators.

G. Circuit Breakers:

1. NEMA AB 1 and UL 489.
2. Thermal-magnetic, quick-make, quick-break, molded case, of indicating type showing ON/OFF and TRIPPED positions of operating handle.
3. Noninterchangeable, in accordance with NFPA 70.
4. Locking: Provisions for handle padlocking, unless otherwise shown.
5. Type: Bolt-on circuit breakers in 240/120-volt panelboard.
6. Multipole circuit breakers designed to automatically open all poles when an overload occurs on one pole.
7. Do not substitute single-pole circuit breakers with handle ties for multipole breakers.
8. Do not use tandem or dual circuit breakers in normal single-pole spaces.

H. Manufacturers:

1. Myers Power Products
2. VIT Products, Strong Box
3. Milbank Manufacturing

2.14 SUPPORT AND FRAMING CHANNELS**A. Carbon Steel Framing Channel:**

1. Material: Rolled, mild strip steel, 12-gauge, ASTM A1011/A1011M, Grade 33.
2. Finish: Hot-dip galvanized after fabrication.

B. Manufacturers:

1. B-Line Systems, Inc.
2. Unistrut Corp.
4. Aickinstrut.

2.15 NAMEPLATES

- A. Material: Laminated plastic.
- B. Attachment: Rivets only. Screws not acceptable.
- C. Color: Black, engraved to a white core.
- D. Engraving:
 - 1. Pushbuttons/Selector Switches: Name of drive controlled on one, two, or three lines, as required.
 - 2. Panelboards: Panelboard designation, service voltage, and phases.
- E. Letter Height:
 - 1. Pushbuttons/Selector Switches: 1/8-inch.
 - 2. Panelboards: 1/4-inch.

PART 3 EXECUTION**3.1 GENERAL**

- A. Install equipment in accordance with manufacturer's recommendations.
- B. Use appropriate conduit and conductor entry fittings with enclosures to maintain the specified enclosure environmental capability after installation.

3.2 OUTLET AND DEVICE BOXES

- A. Install suitable for conditions encountered at each outlet or device in wiring or raceway system, sized to meet NFPA 70 requirements.
- B. Size:
 - 1. Depth: Minimum 2 inches, unless otherwise required by structural conditions. Box extensions not permitted.
 - 2. Switch and Receptacle: Minimum 2-inch by 4-inch sheet steel device box.

- C. Locations:
 - 1. Plan locations are approximate.
 - 2. To avoid interference with mechanical equipment or structural features, relocate outlets as directed by the engineer.
- D. Mounting Height:
 - 1. General:
 - a. Dimensions given to centerline of box.
 - 2. Light Switch: 48 inches above floor.
 - 3. Convenience Receptacle:
 - a. Outdoor, All Areas: 24 inches above finished grade.
- E. Install plumb and level.
- F. Threaded studs driven in by powder charge and provided with lock washers and nuts are acceptable in lieu of expansion shields.
- G. Boxes embedded in concrete or masonry need not be additionally supported.
- H. Install galvanized mounting hardware in industrial areas.
- I. Boxes Supporting Fixtures: Provide means of attachment with adequate strength to support fixture.
- J. Open no more knockouts in sheet steel device boxes than are required; seal unused openings.
- K. Box Type (Steel Raceway System):
 - 1. Exterior Locations:
 - a. Exposed Raceways: Cast metal.
 - b. Concrete Encased Raceways: Cast metal.
- L. Box Type (Nonmetallic Raceway System):
 - 1. Concrete Encased Raceways: Cast metal.

3.3 JUNCTION AND PULL BOXES

- A. Install where shown and where necessary to terminate, tap-off, or redirect multiple conduit runs.

- B. Install pull boxes where necessary in raceway system to facilitate conductor installation.
- C. Install in conduit runs at least every 150 feet or after the equivalent of three right-angle bends.
- D. Use outlet boxes as junction and pull boxes wherever possible and allowed by applicable codes.
- E. Use conduit bodies as junction and pull boxes where no splices are required and their use is allowed by applicable codes.
- F. Installed boxes shall be accessible.
- G. Do not install on finished surfaces.
- H. Install plumb and level.
- I. Support boxes independently of conduit by attachment to building structure or structural member.
- J. Install bar hangers in frame construction or fasten boxes directly as follows:
 - 1. Wood: Wood screws.
 - 2. Concrete or Brick: Bolts and expansion shields.
 - 3. Hollow Masonry Units: Toggle bolts.
 - 4. Steelwork: Machine screws.
- K. Threaded studs driven in by powder charge and provided with lock washers and nuts are acceptable in lieu of expansion shields.
- L. Boxes embedded in concrete or masonry need not be additionally supported.
- M. At or below grade:
 - 1. Install boxes for below grade conduit flush with finished grade in locations outside of paved areas, roadways, or walkways.
 - 2. If adjacent structure is available, box may be mounted on structure surface just above finished grade in accessible but unobtrusive location.
 - 3. Obtain engineer's written acceptance prior to installation in paved areas, roadways, or walkways.

4. Use boxes and covers suitable to support anticipated weights.

N. Flush Mounted:

1. Install with concealed conduit.
2. Holes in surrounding surface shall be no larger than required to receive box.
3. Make edges of boxes flush with final surface.

O. Mounting Hardware:

1. Wet Areas: Stainless steel.

P. Location/Type:

1. Unfinished, Indoor and Outdoor, Wet: NEMA 250, Type 4.
 - a. Steel Raceway System: Cast metal.
2. Underground Conduit: Concrete.
3. Outdoor Locations Where Indicated Weatherproof (WP): NEMA 250, Type 3S, Outdoor, Iceproof.

3.4 WIRING DEVICES

A. Switches:

1. Mounting Height: See Subsection 3.2 (Outlet and Device Boxes) in Section E-2 (Basic Electrical Materials and Methods).
2. Install with switch operation in vertical position.
3. Install single-pole, two-way switches such that toggle is in up position when switch is on.

B. Receptacles:

1. Install with grounding slot up, except where horizontal mounting is shown, in which case install with neutral slot up.
2. Ground receptacles to boxes with grounding wire only.
3. Weatherproof Receptacles:
 - a. Install in cast metal box.

- b. Install such that hinge for protective cover is above receptacle opening.

4. Ground Fault Interrupter: Install feed-through model at locations where ground fault protection is specified for “downstream” conventional receptacles.

3.5 DEVICE PLATES

- A. Securely fasten to wiring device; ensure a tight fit to box.
- B. Surface Mounted: Plate shall not extend beyond sides of box, unless plates have no sharp corners or edges.
- C. Install with alignment tolerance to box of 1/16-inch.
- D. Engrave with designated titles.
- E. Types (Unless Otherwise Shown):
 1. Exterior: Weatherproof.

3.6 PUSHBUTTON, INDICATING LIGHT, AND SELECTOR SWITCH

- A. Heavy-Duty, Oil-Tight Type: Locations (Unless Otherwise Shown): Nonhazardous, indoor, dry locations, including motor control centers, control panels, and individual stations.
- B. Heavy-Duty, Watertight, and Corrosion-Resistant Type:
 1. Locations (Unless Otherwise Shown): Nonhazardous, outdoor, or normally wet areas.
 2. Mounting: NEMA 250, Type 4X enclosure.

3.7 TERMINAL JUNCTION BOX

- A. Install in accordance with Subsection 3.3 (Junction and Pull Boxes) in Section E-2 (Basic Electrical Materials and Methods).
- B. Label each block and terminal with permanently attached, nondestructible tag.
- C. Do not install on finished outdoor surfaces.
- D. Location/Type:
 1. Unfinished, Indoor and Outdoor, Wet: NEMA 250, Type 4.

3.8 LIGHTING AND POWER DISTRIBUTION PANELBOARD

A. Provide typewritten circuit directory for each panelboard.

B. Cabinet Location/Type:

1. General Use in MCC: NEMA 250, Type 12.

3.9 NON-FUSED SWITCH ENCLOSURES

A. Location/Type:

1. Wet: NEMA 250, Type 4.

3.10 ELECTRICAL SERVICE PEDESTAL

A. See electrical plan for installation specification..

3.11 SUPPORT AND FRAMING CHANNEL

A. Install where required for mounting and supporting electrical equipment and raceway systems.

B. Channel Type:

1. Outdoor, Noncorrosive Locations:
 - a. Steel Raceway: Carbon steel or paint coated framing channel, except where mounted on aluminum handrail, then use aluminum framing channel.
 - b. Aluminum Raceway and Other Systems Not Covered: Aluminum framing channel.

C. Paint cut ends prior to installation with the following:

1. Carbon Steel Channel: Zinc-rich primer.

PART 4 PAYMENT

A. All cost for furnishing and installing all the Electrical Work shown on the plans and required in these Special Provisions for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "ELECTRICAL WORK".

SECTION E-3 GROUNDING

PART 1 GENERAL

1.1 SUBMITTALS

- A. Submit per Subsection 3-8 of Section G.
- B. Shop Drawings:
 - 1. Product data for the following:
 - a. Exothermic weld connectors.
 - b. Mechanical connectors.
 - c. Compression connectors.

1.2 QUALITY ASSURANCE

- A. Agency Requirements:
 - 1. The Work shall be done in accordance with NFPA 70, 2017 Los Angeles County Electrical Code (2014 NEC). Where required by the Agency, material and equipment shall be labeled or listed by a nationally recognized testing laboratory or other acceptable organization in order to provide a basis for approval under NEC.
 - 2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.

PART 2 PRODUCTS

2.1 GROUND ROD

- A. Material: Copper-Clad Steel.
- B. Diameter: Minimum 3/4-inch.
 - 1. Length: 10 feet.

2.2 GROUND CONDUCTORS

- A. Grounding and bonding conductors shall be soft drawn stranded copper conductors.

2.3 CONNECTORS

A. Exothermic Weld Type:

1. Outdoor Weld: Suitable for exposure to elements or direct burial.
2. Indoor Weld: Utilize low-smoke, low-emission process.
3. Manufacturers:
 - a. Erico Products, Inc.; Cadweld and Cadweld Exolon.
 - b. Thermoweld.
 - c. Fuseweld

B. Compression Type:

1. Compress-deforming type; wrought copper extrusion material.
2. Single indentation for conductors 6 AWG and smaller.
3. Double indentation with extended barrel for conductors 4 AWG and larger.
4. Barrels prefilled with oxide-inhibiting and antiseizing compound and sealed.
5. Manufacturers:
 - a. Burndy Corp.
 - b. Thomas and Betts Co.
 - c. Ilso Corp.

C. Mechanical Type: Split-bolt, saddle, or cone screw type; bronze material.

1. Manufacturers:
 - a. Burndy Corp.
 - b. Thomas and Betts Co.
 - c. Erico International Corp.

2.4 GROUNDING WELLS

- A. Ground rod box complete with cast iron riser ring and traffic cover marked GROUND ROD.
- B. Manufacturers and Products:
 - 1. Brooks Catalog No. 1 RD.
 - 2. Lightning and Grounding Systems, Inc.; I-R Series.
 - 3. J&R Concrete Products Inc.

PART 3 EXECUTION

3.1 GENERAL

- A. Grounding shall be in compliance with NFPA 70 and IEEE C2.
- B. Ground electrical service neutral at service entrance equipment to supplementary grounding electrodes.
- C. Ground each separately derived system neutral to nearest effectively grounded building structural steel member or separate grounding electrode.
- D. Bond together system neutrals, service equipment enclosures, exposed noncurrent-carrying metal parts of electrical equipment, metal raceways, ground conductor in raceways and cables, receptacle ground connections, and metal piping systems.
- E. Shielded Instrumentation Cables:
 - 1. Ground shield to ground bus at power supply for analog signal.
 - 2. Expose shield minimum 1 inch at termination to field instrument and apply heat shrink tube.
 - 3. Do not ground instrumentation cable shield at more than one point.

3.2 WIRE CONNECTIONS

- A. Ground Conductors: Install in conduit containing power conductors and control circuits above 50 volts.
- B. Nonmetallic Raceways and Flexible Tubing: Install equipment grounding conductor connected at both ends to noncurrent-carrying grounding bus.
- C. Connect ground conductors to raceway grounding bushings.
- D. Extend and connect ground conductors to ground bus in all equipment containing a ground bus.
- E. Connect enclosure of equipment containing ground bus to that bus.
- F. Bolt connections to equipment ground bus.
- G. Bond grounding conductors to metallic enclosures at each end, and to intermediate metallic enclosures.
- H. Junction Boxes: Furnish materials and connect to equipment grounding system with grounding clips mounted directly on box, or with 3/8-inch machine screws.

3.3 MOTOR GROUNDING

- A. Extend equipment ground bus via grounding conductor installed in motor feeder raceway; connect to motor frame.
- B. Nonmetallic Raceways and Flexible Tubing: Install an equipment grounding conductor connected at both ends to noncurrent-carrying grounding bus.
- C. Motors Less Than 10 hp: Furnish compression, spade-type terminal connected to conduit box mounting screw.
- D. Motors 10 hp and Above: Tap motor frame or equipment housing; furnish compression, one-hole, lug type terminal connected with minimum 5/16-inch brass threaded stud with bolt and washer.
- E. Circuits 20 Amps or Above: Tap motor frame or equipment housing; install solderless terminal with minimum 5/16-inch diameter bolt.

3.4 GROUND RODS

- A. Install full length with conductor connection at upper end.

- B. Install with connection point below finished grade, unless otherwise shown.
- C. Space multiple ground rods at a minimum of 6 feet apart.

3.5 GROUNDING WELLS

- A. Install outside of main service switchboard.
- B. Install riser ring and cover flush with surface.
- C. Place 6 inches of crushed rock in bottom of each well.

3.6 CONNECTIONS

- A. General:
 - 1. Above-grade Connections: Install exothermic weld, mechanical, or compression-type connectors; or brazing.
 - 2. Below-grade Connections: Install exothermic weld or compression type connectors.
 - 3. Remove paint, dirt, or other surface coverings at connection points to allow good metal-to-metal contact.
 - 4. Notify Agency prior to backfilling ground connections.
- B. Exothermic Weld Type:
 - 1. Wire brush or file contact point to bare metal surface.
 - 2. Use welding cartridges and molds in accordance with manufacturer's recommendations.
 - 3. Avoid using badly worn molds.
 - 4. Mold to be completely filled with metal when making welds.
 - 5. After completed welds have cooled, brush slag from weld area and thoroughly clean joint.
- C. Compression Type:
 - 1. Install in accordance with connector manufacturer's recommendations.
 - 2. Install connectors of proper size for grounding conductors and ground rods specified.

3. Install using connector manufacturer's compression tool having proper sized dies.

D. Mechanical Type:

1. Apply homogeneous blend of colloidal copper and rust and corrosion inhibitor before making connection.
2. Install in accordance with connector manufacturer's recommendations.
3. Do not conceal mechanical connections.

3.7 METAL STRUCTURE GROUNDING

- A. Ground metal sheathing and exposed metal vertical structural elements to grounding system.
- B. Bond electrical equipment supported by metal platforms to the platforms.
- C. Provide electrical contact between metal frames and railings supporting pushbutton stations, receptacles, and instrument cabinets, and raceways carrying circuits to these devices.

3.8 TRANSFORMER GROUNDING

- A. Bond neutrals of transformers system ground network, and to any additional indicated grounding electrodes.

3.9 SURGE PROTECTION EQUIPMENT GROUNDING

- A. Connect surge arrestor ground terminals to equipment ground bus.

PART 4 PAYMENT

- A. All cost for furnishing and installing all the Electrical Work shown on the plans and required in these Special Provisions for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "ELECTRICAL WORK".

SECTION E-4 CONDUCTORS

PART 1 GENERAL

1.1 SUBMITTALS

- A. Submit per Subsection 3-8 of Section G.
- B. Shop Drawings:
 - 1. Wire and cable descriptive product information.
 - 2. Wire and cable accessories descriptive product information.
 - 3. Manufactured wiring systems descriptive product information.
 - 4. Manufactured wire systems rating information.
 - 5. Manufactured wire systems dimensional drawings.
 - 6. Manufactured wire systems special fittings.
 - 7. Busway descriptive product information.
 - 8. Busway rating information.
 - 9. Busway dimensional drawings.
 - 10. Busway special fitting information.
 - 11. Busway-equipment interface information for equipment to be connected to busways.
- C. Supporting Information:
 - 1. Certified Factory Test Report for conductors 600 volts and below.

1.2 QUALITY ASSURANCE

- A. Agency Requirements:
 - 1. The Work shall be done in accordance with NFPA 70, 2017 Los Angeles County Electrical Code (2014 NEC). Where required by the Agency, material and equipment shall be labeled or listed by a nationally recognized testing laboratory or other acceptable organization in order to provide a basis for approval under NEC.

2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.

PART 2 PRODUCTS

2.1 CONDUCTORS 600 VOLTS AND BELOW

- A. Conform to applicable requirements of NEMA WC 70.
- B. Conductor Type:
 1. 120- and 277-Volt Lighting, No. 10 AWG and Smaller: Solid copper.
 2. 120-Volt Receptacle Circuits, No. 10 AWG and Smaller: Solid copper.
 3. All Other Circuits: Stranded copper.
- C. Insulation: Type THHN/THWN-2, except for sizes No. 6 and larger, with XHHW-2 insulation.

2.2 600-VOLT RATED CABLE

- A. General:
 1. Type TC, meeting requirements of UL 1277, including Vertical Tray Flame Test at 70,000 Btu per hour, and NFPA 70, Article 340, or UL 13 Listed Power Limited Circuit Cable meeting requirements of NFPA 70, Article 725.
 2. Permanently and legibly marked with manufacturer's name, maximum working voltage for which cable was tested, type of cable, and UL listing mark.
 3. Suitable for installation in open air, or conduit.
 4. Minimum Temperature Rating: 90 degrees C dry locations, 75 degrees C wet locations.
 5. Overall Outer Jacket: PVC, flame-retardant, sunlight- and oil-resistant.

B. Type 1, Multiconductor Control Cable:

1. Conductors:
 - a. No. 14 AWG, seven-strand copper.
 - b. Insulation: 15-mil PVC with 4-mil nylon.
 - c. UL 1581 listed as Type THHN/THWN rated VW-1.
 - d. Conductor group bound with spiral wrap of barrier tape.
 - e. Color Code: In accordance with ICEA S-58-679, Method 1, Table 2.
2. Cable: Passes the ICEA T-29-520 210,000 Btu per hour Vertical Tray Flame Test.
3. Cable Sizes:

No. of Conductors	Max. Outside Diameter (Inches)	Jacket Thickness (Mils)
3	0.41	45
5	0.48	45
7	0.52	45
12	0.72	60
19	0.83	60
25	1.00	60
37	1.15	80

4. Manufacturers:
 - a. Okonite Co.
 - b. Southwire.

- C. Type 3, No. 16 AWG, Twisted, Shielded Pair, Instrumentation Cable:
Single pair, designed for noise rejection for process control, computer, or data log applications meeting NEMA WC 55 requirements.
1. Outer Jacket: 45-mil nominal thickness.
 2. Individual Pair Shield: 1.35-mil, double-faced aluminum/synthetic polymer overlapped to provide 100 percent coverage.
 3. Dimension: 0.31-inch nominal OD.
 4. Conductors:
 - a. Bare soft annealed copper, Class B, seven-strand concentric, meeting requirements of ASTM B8.
 - b. 20 AWG, seven-strand tinned copper drain wire.
 - c. Insulation: 15-mil nominal PVC.
 - d. Jacket: 4-mil nominal nylon.
 - e. Color Code: Pair conductors black and red.
 5. Manufacturers:
 - a. Okonite Co.
 - b. Alpha Wire Corp.
 - c. Belden.
- D. Type 4, No. 16 AWG, Twisted, Shielded Triad Instrumentation Cable:
Single triad, designed for noise rejection for process control, computer, or data log applications meeting NEMA WC 55 requirements.
1. Outer Jacket: 45-mil nominal.
 2. Individual Pair Shield: 1.35-mil, double-faced aluminum/synthetic polymer, overlapped to provide 100 percent coverage.
 3. Dimension: 0.32-inch nominal OD.

4. Conductors:
 - a. Bare soft annealed copper, Class B, seven-strand concentric, meeting requirements of ASTM B8.
 - b. 20 AWG, seven-strand, tinned copper drain wire.
 - c. Insulation: 15-mil nominal PVC.
 - d. Jacket: 4-mil nylon.
 - e. Color Code: Triad conductors black, red, and blue.
 5. Manufacturers:
 - a. Okonite Co.
 - b. Alpha Wire Corp.
 - c. Belden.
- E. Type 5, No. 18 AWG, Multi-Twisted, Shielded Pairs with a Common, Overall Shield Instrumentation Cable: Designed for use as instrumentation, process control, and computer cable, meeting NEMA WC 55 requirements.
1. Conductors:
 - a. Bare soft annealed copper, Class B, seven-strand concentric, in accordance with ASTM B8.
 - b. Tinned copper drain wires.
 - c. Pair drain wire size AWG 20, group drain wire size AWG 18.
 - d. Insulation: 15-mil PVC.
 - e. Jacket: 4-mil nylon.
 - f. Color Code: Pair conductors black and red with red conductor numerically printed for group identification.
 - g. Individual Pair Shield: 1.35-mil, double-faced aluminum/synthetic polymer.
 2. Cable Shield: 2.35-mil, double-faced aluminum/synthetic polymer, overlapped for 100 percent coverage.

3. Cable Sizes:

Number of Pairs	Maximum Outside Diameter (Inches)	Nominal Jacket Thickness (Mils)
4	0.50	45
8	0.68	60
12	0.82	60
16	0.95	80
24	1.16	80
36	1.33	80
50	1.56	80

4. Manufacturers:

- a. Okonite Co.
- b. Alpha Wire Corp.
- c. Belden.

2.3 GROUNDING CONDUCTORS

- A. Equipment: Stranded copper with green, Type USE/RHH/RHW-XLPE or THHN/THWN, insulation.
- B. Direct Buried: Bare stranded copper.

2.4 ACCESSORIES FOR CONDUCTORS 600 VOLTS AND BELOW

- A. Tape:
 - 1. General Purpose, Flame Retardant: 7-mil, vinyl plastic, Scotch Brand 33, rated for 90 degrees C minimum, meeting requirements of UL 510.
 - 2. Flame Retardant, Cold and Weather Resistant: 8.5-mil, vinyl plastic, Scotch Brand 88.

- 3. Arc and Fireproofing:
 - a. 30-mil, elastomer.
 - b. Manufacturers and Products:
 - 1) 3M; Scotch Brand 77, with Scotch Brand 69 glass cloth tapebinder.
 - 2) Plymouth; 53 Plyarc , with 77 Plyglas glass cloth tapebinder.
 - 3) Axim Mica

B. Identification Devices:

- 1. Sleeve:
 - a. Permanent, PVC, yellow or white, with legible machine-printed black markings.
 - b. Manufacturer and Product:
 - 1) Raychem; Type D-SCE or ZH-SCE.
 - 2) Brady, Type 3PS.
 - 3) Thomas & Betts
- 2. Heat Bond Marker:
 - a. Transparent thermoplastic heat bonding film with acrylic pressure sensitive adhesive.
 - b. Self-laminating protective shield over text.
 - c. Machine printed black text.
 - d. Manufacturer: 3M Co.; Type SCS-HB; Raychem
- 3. Marker Plate: Nylon, with legible designations permanently hot stamped on plate.

4. Tie-On Cable Marker Tags:
 - a. Chemical resistant white tag.
 - b. Size: 1/2-inch by 2-inch.
 - c. Manufacturer and Product: Raychem; Type CM-SCE; Grafoplast; Floy Tag & Manufacturing, Inc.
5. Grounding Conductor: Permanent green heat-shrink sleeve, 2 inch minimum.

C. Connectors and Terminations:

1. Nylon, Self-Insulated Crimp Connectors:
 - a. Manufacturers and Products:
 - 1) Thomas & Betts; Sta-Kon.
 - 2) Burndy; Insulug.
 - 3) ILSCO.
2. Nylon, Self-Insulated, Crimp Locking-Fork, Torque-Type Terminator:
 - a. Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
 - b. Seamless.
 - c. Manufacturers and Products:
 - 1) Thomas & Betts; Sta-Kon.
 - 2) Burndy, Insulink.
 - 3) ILSCO; ILSCONS.
3. Self-Insulated, Freespring Wire Connector (Wire Nuts):
 - a. Plated steel, square wire springs.
 - b. UL Standard 486C.

- c. Manufacturers and Products:
 - 1) Thomas & Betts.
 - 2) Ideal; Twister.
 - 3) O-Z Gedney
- 4. Self-Insulated, Set Screw Wire Connector:
 - a. Two-piece compression type with set screw in brass barrel.
 - b. Insulated by insulator cap screwed over brass barrel.
 - c. Manufacturer:
 - 1) 3M Co.
 - 2) Thomas & Betts.
 - 3) Marrette.
- D. Cable Lugs:
 - 1. In accordance with NEMA CC 1.
 - 2. Rated 600 volts of same material as conductor metal.
 - 3. Uninsulated Crimp Connectors and Terminators:
 - a. Suitable for use with 75 degrees C wire at full NFPA 70, 75 degrees C ampacity.
 - b. Manufacturers and Products:
 - 1) Thomas & Betts; Color-Keyed.
 - 2) Burndy, Hydent.
 - 3) ILSCO.
 - 4. Uninsulated, Bolted, Two-Way Connectors and Terminators:
 - a. Manufacturers and Products:
 - 1) Thomas & Betts; Locktite.
 - 2) Burndy; Quiklug.
 - 3) ILSCO.

- E. Cable Ties:
 - 1. Nylon, adjustable, self-locking, and reusable.
 - 2. Manufacturer and Product: Thomas & Betts; TY-RAP; ABB.
- F. Heat Shrinkable Insulation:
 - 1. Thermally stabilized, cross-linked polyolefin.
 - 2. Manufacturer and Product: Thomas & Betts; SHRINK-KON: Raychem.

2.5 PULLING COMPOUND

- A. Nontoxic, noncorrosive, noncombustible, nonflammable, water-based lubricant; UL listed.
- B. Suitable for rubber, neoprene, PVC, polyethylene, hypalon, CPE, and lead-covered wire and cable.
- C. Approved for intended use by cable manufacturer.
- D. Suitable for zinc-coated steel, aluminum, PVC, bituminized fiber, and fiberglass raceways.
- E. Manufacturers:
 - 1. Ideal Co.
 - 2. Polywater, Inc.
 - 3. Cable Grip Co.

2.6 WARNING TAPE

- A. Furnish and install a 6" wide polyethylene red underground barrier type 12" above full length of conduit run.

2.7 SOURCE QUALITY CONTROL

- A. Conductors 600 Volts and Below: Test in accordance with UL 44 and 854 Standards.

PART 3 EXECUTION**3.1 GENERAL**

- A. Conductor storage, handling, and installation to be in accordance with manufacturer's recommendations.
- B. Conductor and cable sizing shown is based on copper conductors, unless noted otherwise.
- C. Do not exceed cable manufacturer's recommendations for maximum pulling tensions and minimum bending radii.
- D. Terminate all conductors and cables, unless otherwise indicated.
- E. Tighten screws and terminal bolts in accordance with UL 486A for copper conductors.
- F. Cable Lugs: Provide with correct number of holes, bolt size, and center-to-center spacing as required by equipment terminals.
- G. Bundling: Where single conductors and cables in manholes, handholes, vaults, cable trays, and other indicated locations are not wrapped together by some other means, bundle conductors from each conduit throughout their exposed length with cable ties placed at intervals not exceeding 12 inches on center.
- H. Ream, remove burrs, and clear interior of installed conduit before pulling wires or cables.

3.2 POWER CONDUCTOR COLOR CODING

- A. Conductors 600 Volts and Below:
 - 1. No. 6 AWG and Larger: Apply general purpose, flame retardant tape at each end, and at accessible locations wrapped at least six full overlapping turns, covering an area 1-1/2 to 2 inches wide.
 - 2. No. 8 AWG and Smaller: Provide colored conductors.

3. Colors:

System	Conductor	Color
All Systems	Equipment Grounding	Green
240/120 Volts Single-Phase, Three-Wire	Grounded Neutral One Hot Leg Other Hot Leg	White Black Red
208Y/120 Volts Three-Phase, Four-Wire	Grounded Neutral Phase A Phase B Phase C	White Black Red Blue
240/120 Volts Three-Phase, Four-Wire Delta, Center Tap Ground on Single-Phase	Grounded Neutral Phase A High (wild) Leg Phase C	White Black Orange Blue
480Y/277 Volts Three-Phase, Four-Wire	Grounded Neutral Phase A Phase B Phase C	White Brown Orange Yellow
NOTE: Phase A, B, C implies direction of positive phase rotation.		

4. Tracer: Outer covering of white with an identifiable colored strip, other than green, in accordance with NFPA 70.

3.3 CIRCUIT IDENTIFICATION

A. Circuits Not Appearing in Circuit Schedules:

1. Assign circuit name based on device or equipment at load end of circuit.
2. Where this would result in same name being assigned to more than one circuit, add number or letter to each otherwise identical circuit name to make it unique.

B. Method:

1. Conductors No. 3 AWG and Smaller: Identify with sleeves or heat bond markers.

2. Cables, and Conductors No. 2 AWG and Larger:
 - a. Identify with marker plates; or
 - b. Tie-on cable marker tags.
 - c. Attach with nylon tie cord.
3. Taped-on markers or tags relying on adhesives not permitted.

3.4 CONDUCTORS 600 VOLTS AND BELOW

- A. Install 10 AWG or 12 AWG conductors for branch circuit power wiring in lighting and receptacle circuits.
- B. Do not splice incoming service conductors and branch power distribution conductors No. 6 AWG and larger, unless specifically indicated or approved by the engineer.
- C. Connections and Terminations:
 1. Install wire nuts only on solid conductors.
 2. Install nylon self-insulated crimp connectors and terminators for instrumentation and control, circuit conductors.
 3. Install self-insulated, set screw wire connectors for two-way connection of power circuit conductors No. 12 AWG and smaller.
 4. Install uninsulated crimp connectors and terminators for instrumentation, control, and power circuit conductors No. 4 AWG through No. 2/0 AWG.
 5. Install uninsulated, bolted, two-way connectors and terminators for power circuit conductors No. 3/0 AWG and larger.
 3. Install uninsulated terminators bolted together on motor circuit conductors No. 10 AWG and larger.
 4. Place no more than one conductor in any single-barrel pressure connection.
 5. Install crimp connectors with tools approved by connector manufacturer.
 6. Install terminals and connectors acceptable for type of material used.

7. Compression Lugs:
 - a. Attach with a tool specifically designed for purpose.
 - b. Tool shall provide complete, controlled crimp and shall not release until crimp is complete.
 - c. Do not use plier type crimpers.
- D. Do not use soldered mechanical joints.
- E. Splices and Terminations:
 1. Tape insulate all uninsulated connections.
 2. Indoors: Use general purpose, flame retardant tape.
 3. Outdoors: Use flame retardant, cold- and weather-resistant tape.
- F. Cap spare conductors with UL listed end caps.
- G. Cabinets, Panels, and Motor Control Centers:
 1. Remove surplus wire, bridle and secure.
 2. Where conductors pass through openings or over edges in sheet metal, remove burrs, chamfer edges, and install bushings and protective strips of insulating material to protect the conductors.
- H. Control and Instrumentation Wiring:
 1. Where terminals provided will accept such lugs, terminate control and instrumentation wiring, except solid thermocouple leads, with insulated, locking-fork compression lugs.
 2. Terminate with methods consistent with terminals provided, and in accordance with terminal manufacturer's instructions.
 3. Locate splices in readily accessible cabinets or junction boxes using terminal strips.
 4. Cable Protection:
 - a. Under Infinite Access Floors: May be installed without bundling.
 - b. All Other Areas: Install individual wires, pairs, or triads in flex conduit under the floor or grouped into bundles at least 1/2 inch in diameter.

- c. Maintain integrity of shielding of instrumentation cables.
 - d. Ensure grounds do not occur because of damage to jacket over the shield.
- I. Extra Conductor Length: For conductors to be connected by others, install minimum 6 feet of extra conductor in freestanding panels and minimum 2 feet in other assemblies.

PART 4 PAYMENT

- A. All cost for furnishing and installing all the Electrical Work shown on the plans and required in these Special Provisions for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "ELECTRICAL WORK".

SECTION E-5 RACEWAYS

PART 1 GENERAL

1.1 SUBMITTALS

- A. Submit per Subsection 3-8 of Section G.
- B. Shop Drawings:
 - 1. Manufacturer's Literature:
 - a. Rigid galvanized steel conduit.
 - b. PVC Schedule 80 conduit.
 - c. Flexible metal, liquid-tight conduit.
 - d. Conduit fittings.
 - e. Wireways.
 - 2. Conduit Layout:
 - a. Plan and section type, showing arrangement and location of conduit and duct bank required for:
 - 1) Low voltage feeder and branch circuits.
 - 2) Instrumentation and control systems.
 - 3) Empty conduit for future use.
 - b. Reproducible mylar; scale not greater than 1-inch equals 20 feet.
 - 3. Equipment and machinery proposed for bending metal conduit.
 - 4. Method for bending PVC conduit less than 30 degrees.

1.2 QUALITY ASSURANCE

- A. Agency Requirements:
 - 1. The Work shall be done in accordance with NFPA 70, 2017 Los Angeles County Electrical Code (2014 NEC). Where required by the Agency, material and equipment shall be labeled or listed by

a nationally recognized testing laboratory or other acceptable organization in order to provide a basis for approval under NEC.

2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.

PART 2 PRODUCTS

2.1 CONDUIT AND TUBING

- A. Rigid Galvanized Steel Conduit (RGS):
 1. Meet requirements of ANSI C80.1 and UL 6.
 2. Material: Hot-dip galvanized, with chromated protective layer.
- B. PVC Schedule 80 Conduit:
 1. Meet requirements of NEMA TC 2 and UL 651.
 2. UL listed for concrete encasement, underground direct burial, concealed or direct sunlight exposure, and 90 degrees C insulated conductors.
 3. Furnish without factory-formed bell.
- C. Flexible Metal, Liquid-Tight Conduit:
 1. UL 360 listed for 105 degrees C insulated conductors.
 2. Material: Galvanized steel, with an extruded PVC jacket.

2.2 FITTINGS

- A. Rigid Galvanized Steel Conduit:
 1. General:
 - a. Meet requirements of UL 514B.
 - b. Type: Threaded, galvanized. Set screw and threadless compression fittings not permitted.

2. Bushing:
 - a. Material: Malleable iron with integral insulated throat, rated for 150 degrees C.
 - b. Manufacturers and Products:
 - 1) Appleton; Series BU-I.
 - 2) O-Z/Gedney; Type HB.
 - 3) Crouse-Hinds
3. Grounding Bushing:
 - a. Material: Malleable iron with integral insulated throat rated for 150 degrees C, with solderless lugs.
 - b. Manufacturers and Products:
 - 1) Appleton; Series GIB.
 - 2) O-Z/Gedney; Type HBLG.
 - 3) Crouse-Hinds
4. Conduit Hub:
 - a. Material: Malleable iron with insulated throat with bonding screw.
 - b. UL listed for use in wet locations.
 - c. Manufacturers and Products:
 - 1) Appleton, Series HUB-B.
 - 2) O-Z/Gedney; Series CH.
 - 3) Meyers; ST Series.
5. Conduit Bodies:
 - a. Sized as required by NFPA 70.
 - b. Manufacturers and Products (For Normal Conditions):
 - 1) Appleton; Form 35 threaded unilets.
 - 2) Crouse-Hinds; Form 7 or 8 threaded condulets.

- 3) Killark; Series O electrolets.
- 4) Thomas & Betts; Form 7 or 8.
- 6. Couplings: As supplied by conduit manufacturer.
- 7. Unions:
 - a. Concrete tight, hot-dip galvanized, malleable iron.
 - b. Manufacturers and Products:
 - 1) Appleton; Series SCC Bolt-On Coupling or Series EC Three-Piece Union.
 - 2) O-Z/Gedney; Type SSP split coupling or Type 4 Series, three-piece coupling.
 - 3) Crouse-Hinds
- 8. Expansion Fitting Manufacturers and Products:
 - a. Deflection/Expansion Movement:
 - 1) Appleton; Type DF.
 - 2) Crouse-Hinds; Type XD.
 - 3) O-Z Gedney
 - b. Expansion Movement Only:
 - 1) Appleton; Type XJ.
 - 2) Crouse-Hinds; Type XJ.
 - 3) O-Z Gedney
- B. PVC Conduit:
 - 1. Meet requirements of NEMA TC-3.
 - 2. Type: PVC, slip-on.
- C. Flexible Metal, Liquid-Tight Conduit:
 - 1. Metal insulated throat connectors with integral nylon or plastic bushing rated for 105 degrees C.
 - 2. Insulated throat and sealing O-rings.

3. Manufacturers and Products:
 - a. Thomas & Betts; Series 5331.
 - b. O-Z/Gedney; Series 4Q.
 - c. Crouse-Hinds

2.3 METAL WIREWAYS

- A. Meet requirements of UL 870.
- B. Type: Steel-enclosed, with removable, screw type cover.
- C. Rating: Outdoor raintight.
- D. Finish: Gray, baked enamel.
- E. Manufacturers:
 1. Circle AW.
 2. Hoffman.
 3. Eaton

2.4 ACCESSORIES

- A. Duct Bank Spacers:
 1. Type: Nonmetallic, interlocking, for multiple conduit sizes.
 2. Suitable for all types of conduit.
 3. Manufacturers:
 - a. Underground Device, Inc.
 - b. Carlon.
 - c. Ipex

B. Identification Devices:

1. Raceway Tags:

- a. Material: Permanent, nonferrous metal.
- b. Shape: Round.
- c. Raceway Designation: Pressure stamped, embossed, or engraved.
- d. Tags relying on adhesives or taped-on markers not permitted.

2. Warning Tape:

- a. Material: Polyethylene, 4-mil gauge with detectable strip.
- b. Color: Red.
- c. Width: Minimum 6 inches.
- d. Designation: Warning on tape that electric circuit is located below tape.
- e. Identifying Letters: Minimum 1-inch high permanent black lettering imprinted continuously over entire length.
- f. Manufacturers and Products:
 - 1) Panduit; Type HTDU.
 - 2) Reef Industries; Terra Tape.
 - 3) Brady

3. Buried Raceway Marker:

- a. Material: Sheet bronze, consisting of double-ended arrows, straight for straight runs and bent at locations where runs change direction.
- b. Designation: Incise to depth of 3/32 inch, ELECTRIC CABLES, in letters 1/4-inch high.
- c. Minimum Dimension: 1/4-inch thick, 10 inches long, and 3/4-inch wide.

- C. Raceway Coating: Clean and apply protective coatings.
- D. Wraparound Duct Band:
 - 1. Material: Heat-shrinkable, cross-linked polyolefin, precoated with hot-melt adhesive.
 - 2. 50 mm width (minimum).
 - 3. Manufacturer and Product: Raychem; Type TWDB; Brady.

PART 3 EXECUTION**3.1 GENERAL**

- A. Conduit and Tubing sizes shown are based on the use of copper conductors.
- B. All installed Work shall comply with NECA 5055.
- C. Crushed or deformed raceways not permitted.
- D. Maintain raceway entirely free of obstructions and moisture.
- E. Immediately after installation, plug or cap raceway ends with watertight and dust-tight seals until time for pulling in conductors.
- F. Avoid moisture traps where possible. When unavoidable in exposed conduit runs, provide junction box and drain fitting at conduit low point.
- G. Group raceways installed in same area.
- H. Follow structural surface contours when installing exposed raceways. Avoid obstruction of passageways.
 - I. Run exposed raceways parallel or perpendicular to walls, structural members, or intersections of vertical planes.
- J. Install watertight fittings in outdoor, underground, or wet locations.
- K. Paint threads and cut ends, before assembly of fittings, galvanized conduit, installed in exposed or damp locations with zinc-rich paint or liquid galvanizing compound.
- L. Metal conduit to be reamed, burrs removed, and cleaned before installation of conductors, wires, or cables.
- M. Do not install raceways in concrete equipment pads, foundations, or beams.

- N. Horizontal raceways installed under floor slabs shall lie completely under slab, with no part embedded within slab.
- O. Install concealed, embedded, and buried raceways so that they emerge at right angles to surface and have no curved portion exposed.
- P. Install conduits for telephone cables in strict conformance with the requirements of EIA/TIA 596-A.

3.2 INSTALLATION IN CAST-IN-PLACE STRUCTURAL CONCRETE

- A. Minimum cover 2 inches, including all fittings.
- B. Conduit placement shall not require changes in reinforcing steel location or configuration.
- C. Provide nonmetallic support during placement of concrete to ensure raceways remain in position.
- D. Slabs:
 - 1. Trade size of conduit not to exceed one-fourth of the slab.
 - 2. Separate conduit by a minimum 3" between conduits, unless otherwise shown.
 - 3. Cross conduit at an angle greater than 45 degrees, with minimum separation of 1 inch.
 - 4. Conduit shall not be installed below the maximum water surface elevation in walls of water holding structures.

3.3 CONDUIT APPLICATION

- A. Diameter: Minimum 1-inch.
- B. Exterior, Exposed:
 - 1. Rigid galvanized steel.
- C. Aboveground, Embedded in Concrete slabs:
 - 1. Rigid galvanized steel.
- D. Direct Earth Burial:
 - 1. PVC Schedule 40.

- E. Under Slabs-On-Grade:
 - 1. Rigid galvanized steel.

3.4 CONNECTIONS

- A. For motors, dry type transformers, electrically operated valves, instrumentation, and other equipment where flexible connection is required to minimize vibration:
 - 1. Conduit Size 4 Inches or Less: Flexible, liquid-tight conduit.
 - 2. Wet Areas: Flexible metal liquid-tight.
 - 3. Dry Areas: Flexible, metallic liquid-tight.
 - 4. Length: 18-inch minimum, 60-inch maximum, sufficient to allow movement or adjustment of equipment.
- B. Outdoor Areas, Process Areas Exposed to Moisture, and Areas Required to be Oil tight and Dust-Tight: Flexible metal, liquid-tight conduit.
- C. Transition from Underground or Concrete Embedded to Exposed: Rigid galvanized steel conduit.
- D. Under Equipment Mounting Pads: Rigid galvanized steel conduit.

3.5 PENETRATIONS

- A. Make at right angles, unless otherwise shown.
- B. Apply single layer of wraparound duct band to all metallic conduit protruding through grade to a point 2 inches above and 2 inches below concrete surface.
- C. Concrete Floors (Aboveground): Provide nonshrink grout dry-pack, or use watertight seal device.

D. Entering Structures:

1. General: Seal raceway at the first box or outlet with oakum or expandable plastic compound to prevent the entrance of gases or liquids from one area to another.
2. Existing or Precast Wall (Underground): Core drill wall and install a watertight entrance seal device.
3. Nonwaterproofed Wall or Floor (Underground, without Concrete Encasement):
 - a. Provide Schedule 40 galvanized pipe sleeve, or watertight entrance seal device.
 - b. Fill space between raceway and sleeve with expandable plastic compound or oakum and lead joint, on each side.

3.6 SUPPORT

- A. Support from structural members only, at intervals not exceeding NFPA 70 requirements, and in any case not exceeding 8 feet. Do not support from piping, pipe supports, or other raceways.
- B. Application/Type of Conduit Strap:
 1. Rigid Steel: Zinc coated steel, pregalvanized steel or malleable iron.
 2. Nonmetallic Conduit: Nonmetallic or PVC coated metal.

3.7 BENDS

- A. Install concealed raceways with a minimum of bends in the shortest practical distance.
- B. Make bends and offsets of longest practical radius. Bends in conduits and ducts being installed for fiber optic cables shall be not less than 20 times cable diameter, 15 inches, minimum.
- C. Install with symmetrical bends or cast metal fittings.
- D. Avoid field-made bends and offsets, but where necessary, make with acceptable hickey or bending machine. Do not heat metal raceways to facilitate bending.
- E. Make bends in parallel or banked runs from same center or centerline with same radius so that bends are parallel.

- F. Factory elbows may be installed in parallel or banked raceways if there is change in plane of run, and raceways are same size.
- G. PVC Conduit:
 - 1. Bends 30 Degrees and Larger: Provide factory-made elbows.
 - 2. 90-Degree Bends: Provide rigid steel elbows, tape wrapped where direct buried.
 - 3. Use manufacturer's recommended method for forming smaller bends.
- H. Flexible Conduit: Do not make bends that exceed allowable conductor bending radius of cable to be installed or that significantly restricts conduit flexibility.

3.8 PVC CONDUIT

- A. Solvent Welding:
 - 1. Provide manufacturer recommended solvent; apply to all joints.
 - 2. Install such that joint is watertight.
- B. Adapters:
 - 1. PVC to Metallic Fittings: PVC terminal type.
 - 2. PVC to Rigid Metal Conduit or IMC: PVC female adapter.
- C. Belled-End Conduit: Bevel the unbelled end of the joint prior to joining.

3.9 WIREWAYS

- A. Install in accordance with manufacturer's instructions.
- B. Locate with cover on accessible vertical face of wireway, unless otherwise shown.
- C. Applications:
 - 1. Metal wireway in indoor dry locations.
 - 2. Nonmetallic wireway in indoor wet, outdoor, and corrosive locations.

3.10 TERMINATION AT ENCLOSURES

- A. Cast Metal Enclosure: Provide manufacturer's premolded insulating sleeve inside metallic conduit terminating in threaded hubs.
- B. Nonmetallic, Cabinets, and Enclosures: Terminate conduit in threaded conduit hubs, maintaining enclosure integrity.
- C. Sheet Metal Boxes, Cabinets, and Enclosures:
 - 1. Rigid Galvanized Conduit:
 - a. Provide one lock nut each on inside and outside of enclosure.
 - b. Install grounding bushing.
 - c. Provide bonding jumper from grounding bushing to equipment ground bus or ground pad; if neither ground bus nor pad exists, connect jumper to lag bolt attached to metal enclosure.
 - d. Install insulated bushing on ends of conduit where grounding is not required.
 - e. Provide insulated throat when conduit terminates in sheet metal boxes having threaded hubs.
 - f. Utilize sealing locknuts or threaded hubs on outside of NEMA 3R and NEMA 12 enclosures.
 - g. Terminate conduits at threaded conduit hubs at NEMA 4 and 4X boxes and enclosures.
 - 2. PVC Schedule 80 Conduit: Provide PVC terminal adapter with lock nut.
- D. Motor Control Center, Switchboard, and Free-Standing Enclosures:
 - 1. Terminate metal conduit entering bottom with grounding bushing; provide a grounding jumper extending to equipment ground bus or grounding pad.
 - 2. Terminate PVC conduit entering bottom with bell end fittings.

3.11 UNDERGROUND RACEWAYS

- A. Grade: Maintain minimum grade of 4 inches in 100 feet, either from one manhole, handhole, or pull box to the next, or from a high point between them, depending on surface contour.
- B. Cover: Maintain minimum 2-foot cover above conduit unless otherwise shown.
- C. Make routing changes as necessary to avoid obstructions or conflicts.
- D. Couplings: In multiple conduit runs, stagger so that couplings in adjacent runs are not in same transverse line.
- E. Union type fittings not permitted.
- F. Spacers:
 - 1. Provide preformed, nonmetallic spacers, designed for such purpose, to secure and separate parallel conduit runs in a trench.
 - 2. Install at intervals not greater than that specified in NFPA 70 for support of the type conduit used, but in no case greater than 10 feet.
- G. Support conduit so as to prevent bending or displacement during backfilling or concrete placement.
- H. Installation with Other Piping Systems:
 - 1. Crossings: Maintain minimum 12-inch vertical separation.
 - 2. Parallel Runs: Maintain minimum 12-inch separation.
 - 3. Installation over valves or couplings not permitted.
- I. Backfill:
 - 1. Do not backfill until inspected by the engineer.

3.12 EMPTY RACEWAYS

- A. Provide permanent, removable cap over each end.
- B. Provide PVC plug with pull tab for underground raceways with end bells.
- C. Provide nylon pull cord.

- D. Identify, as specified in Subsection 3.13 (Identification Devices) in Section E-5 (Raceways) with waterproof tags attached to pull cord at each end, and at intermediate pull point.

3.13 IDENTIFICATION DEVICES

- A. Raceway Tags:
 - 1. Identify origin and destination.
 - 2. Install at each terminus, and near midpoint.
 - 3. Provide nylon strap for attachment.
- B. Warning Tape: Install approximately 12 inches above underground. Align parallel to, and within 12 inches of, centerline of runs.

3.14 PROTECTION OF INSTALLED WORK

- A. Protect products from effects of moisture, corrosion, and physical damage during construction.
- B. Provide and maintain manufactured watertight and dust-tight seals over all conduit openings during construction.
- C. Touch up painted conduit threads after assembly to cover nicks or scars.
- D. Touch up coating damage to PVC-coated conduit with patching compound approved by manufacturer; compound shall be kept refrigerated according to manufacturers' instructions until time of use.

PART 4 PAYMENT

- A. All cost for furnishing and installing all the Electrical Work shown on the plans and required in these Special Provisions for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "ELECTRICAL WORK".

PUBLIC WORKS LOS ANGELES COUNTY

PROJECT ID NO. WMD0000010

SPECIAL PROVISIONS

SECTION M - MECHANICAL

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



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03/07/2019

Date

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03/10/2019

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TABLE OF CONTENTS

SECTION M – MECHANICAL

M-1 SPECIAL REQUIREMENTS	M-1
M-1.1 Submittals	M-1
M-1.1.1 Working Drawings	M-1
M-1.1.2 Shop Drawings.....	M-1
M-1.1.3 Supporting Information.....	M-2
M-1.2 Inspection at Place of Manufacture	M-2
M-1.3 Instruction Manuals and Parts Catalogs.....	M-2
M-1.4 Field Tests.....	M-3
M-1.5 Payment.....	M-3
M-2 MISCELLANEOUS MECHANICAL WORK	M-4
M-2.1 General	M-4
M-2.2 Installation of Equipment and the Appurtenances	M-4
M-2.3 Metal Work.....	M-4
M-2.3.1 Materials	M-4
M-2.3.1.1 Structural Steel.....	M-4
M-2.3.1.2 Sheet Metal	M-4
M-2.3.1.3 Bolts, Nuts, and Steel Washers.....	M-5
M-2.3.1.4 Washers.....	M-5
M-2.3.1.5 Pipe.....	M-5
M-2.3.1.6 Stainless Steel Plate	M-5
M-2.3.1.7 Stainless Steel Bolts and Nuts	M-5
M-2.3.2 Workmanship	M-5
M-2.3.2.1 Welding	M-5
M-2.3.2.2 Galvanizing	M-6
M-2.3.2.3 Bolted Connections	M-6
M-2.3.2.4 Concrete Expansion Anchors.....	M-6
M-2.3.2.5 Adhesive Anchors	M-6
M-2.3.3 Hangers and Supports	M-6
M-2.3.3.1 Flange Supports.....	M-7
M-2.4 Painting and Coating.....	M-7
M-2.4.1 Paint Primer	M-7
M-2.4.2 Paint Finish Coats	M-7
M-2.4.3 Paint Schedule	M-8
M-2.4.4 Epoxy Coating - Liquid Applied	M-8
M-2.4.5 Clean-Up.....	M-9
M-2.5 Flow Measuring Weir Plate	M-9
M-2.6 Payment.....	M-9
M-3 CAST IRON SLIDE GATE ASSEMBLY	M-10
M-3.1 General	M-10
M-3.2 Frame.....	M-10
M-3.3 Disc	M-11
M-3.4 Disc Guides.....	M-11
M-3.5 Wedges.....	M-11
M-3.6 Seat Faces.....	M-11

TABLE OF CONTENTS

M-3.7 Flush Bottom Closure.....	M-12
M-3.8 Thrust Nut	M-12
M-3.9 Stem.....	M-12
M-3.9.1 Stem Guide.....	M-12
M-3.10 Bevel Gear Support Structure	M-13
M-3.11 Yoke.....	M-13
M-3.12 Pedestal Assembly.....	M-13
M-3.13 Materials	M-13
M-3.14 Payment.....	M-14
M-4 ELECTRIC MOTOR OPERATORS AND APPURTENANCES	M-15
M-4.1 General	M-15
M-4.2 Operational Requirements	M-15
M-4.3 Motor.....	M-15
M-4.4 Operator Reduction Gearing	M-16
M-4.5 Stem Nut	M-16
M-4.6 Manual Operation.....	M-16
M-4.7 Hammer Blow Device.....	M-16
M-4.8 Position Limit Switch	M-16
M-4.9 Torque Switch	M-17
M-4.10 Reversing Magnetic Starter.....	M-17
M-4.11 Heater	M-17
M-4.12 Electrical Control Enclosure	M-17
M-4.13 Electric Motor Operator Control Station	M-17
M-4.14 Protective Coating and Painting.....	M-18
M-4.15 Bevel Gear Operators	M-18
M-4.16 EMO Remote Controller.....	M-18
M-4.17 Payment.....	M-18
M-5 ACTUATOR VAULTS AND APPURTENANCES	M-19
M-5.1 Payment.....	M-19
M-6 WATER LEVEL SENSORS AND APPURTENANCES	M-20
M-6.1 Wheatstone Bridge Circuit Level Transmitter.....	M-20
M-6.2 Laser Level Sensor	M-20
M-6.3 Payment.....	M-20
M-7 WATER QUALITY MONITORING INSTRUMENTATION	M-21
M-7.1 General	M-21
M-7.2 Refrigerated Sampler and the Accessories.....	M-21
M-7.3 Portable Autosampler.....	M-21
M-7.4 Rain Gauge.....	M-22
M-7.5 Bypass Runoff Flow Measurement	M-22
M-7.6 Water Quality Monitoring Equipment List	M-22
M-7.7 Payment.....	M-25
M-8 FLOW METER SENSORS.....	M-26
M-8.1 Non-Contact Flow Sensor	M-26
M-8.2 Flow Meter Sensor Data Logger	M-26
M-8.3 Payment.....	M-27

M-1 SPECIAL REQUIREMENTS

All work covered under this Section M – Mechanical shall pertain to Plan Sheets M-1 to M-10.

M-1.1 Submittals.

All submittals shall be clearly marked "East Los Angeles Sustainable Median Stormwater Capture Project." For submittals and review, see Subsection 3-8 of Section G.

M-1.1.1 Working Drawings.

The following Working Drawings shall be included:

- 24" cast iron gate assembly and the appurtenances
- Electric motor operators
- Actuator vaults and the appurtenances
- Drive shaft covers
- Bevel gear pedestals and support structures
- Flow meter mount bracket cut-away
- Weir plate and the appurtenances

M-1.1.2 Shop Drawings.

Shop Drawings shall be of a size and scale to clearly show all necessary details, dimensions, clearances, finishes, materials, and other pertinent data. Non-scaled, manufacturer general catalog outline drawings are not acceptable as a substitute for Shop Drawings.

The Contractor shall submit the following items to be furnished, fabricated, or manufactured under the Contract:

- 24" cast iron gate assembly and the appurtenances
- Electric motor operators
- Actuator vaults and the appurtenances
- Drive shaft covers
- Bevel gear pedestals and support structures
- Weir plate and the appurtenances
- Flow meter mount bracket cut-away

M-1.1.3 Supporting Information.

Submittals of supporting information shall consist of manufacturer's published brochures, catalog cut sheets, technical bulletins, or product specification sheets. Data shall be specific for the item to be furnished, and not general for a line of products.

The Contractor shall submit all supporting information including, but not limited to the following items to be manufactured or furnished:

- Cast iron slide gate assembly and the appurtenances
- Electric motor operators and controllers
- Bevel gear unit
- Flow meter and data logger
- Pressure transducer
- Velocity sensor
- Refrigerated sampler

M-1.2 Inspection at Place of Manufacture.

The Agency reserves the right to inspect or witness all phases of manufacturing, assembly, and testing of all equipment to be furnished, at the place of manufacture. The Contractor shall provide access to all testing and manufacturing facilities to the Agency, and inspections will be made at the discretion of the Agency.

The Contractor shall notify the Engineer at least two weeks in advance of the time of any equipment fabrication or testing to permit scheduling of the inspection.

M-1.3 Instruction Manuals and Parts Catalogs.

Before final inspection and performance testing of the cast iron gate assemblies, electric motor operators, and the flow measuring and monitoring system, the Contractor shall submit one complete bound together set of instruction manuals and parts catalogs and PDF format electronic file on at least five separate CDs with proper label described on Section M-1.1 to include, but not limited to the following items:

- Cast iron slide gate assembly and the appurtenances
- Electric motor operators and the appurtenances
- Bevel gear unit
- Flow meter

M-1.4 Field Tests

After all machinery and equipment called for herein or shown on the Plans has been installed and other necessary appurtenant work performed, and prior to the acceptance of the Work, a complete test shall be made of the entire equipment under working conditions of automatic operations.

In this test, all automatic features of the cast iron slide gates and their electric motor operators shall be tested. The operation of the valves and operators shall be tested for each gate and accurately recorded to verify that each valve and operator will operate under the specified flow and pressure. For purpose of making the test, the Contractor shall furnish the required amount of water to conduct the test, as required by the Engineer.

If during the test, any structural defect or weakness, or any leakage of pipe or fittings develops, or if any of the equipment fails to perform as required by the Plans and Specifications, the Engineer reserves the right to reject any part, or the whole of such equipment and demand reconstruction of same to meet the requirements of these specifications. All costs of such reconstruction or replacement shall be borne by the contractor.

A qualified engineer furnished by the manufacturer of the equipment shall be present at the time final tests are made and assist the Contractor in placing the gate and EMO in final adjustment and operation. Such person shall approve the installation and operation of the equipment before final acceptance. The above shall be performed without additional cost to the Agency.

Prior to final acceptance of the Work, tests shall be made to demonstrate that the equipment meets the following requirements:

1. Gates and all mechanical equipment shall operate without excessive noise or vibration and without overheating of bearings.
2. All automatic and manual electrical controls and instrumentation, shall operate in accordance with the Specifications and manufacturer's requirements.
3. All motors shall operate without being overloaded.
4. Bearings shall operate without being overheated.

M-1.5 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-1 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

M-2 MISCELLANEOUS MECHANICAL WORK.**M-2.1 General.**

The Contractor shall furnish and install cast iron slide gate assemblies and electric motor operators, auxiliary equipment, and controls as specified on the Plans. The Contractor shall furnish and install cast iron slide gate assemblies and the appurtenances complete with electric motor operators, and other appurtenances specified or required to provide a complete and operable installation per Plans. Any metal material used cannot be glossy, reflective, or cause glare.

M-2.2 Installation of Equipment and the Appurtenances.

The Plans show the basis for design and installation. Installation details and exact dimensions shall be determined by the Contractor after equipment selection. The Contractor shall submit Working Drawings in full detail of all equipment and appurtenances to be furnished and/or installed by the Contractor per Subsection 3-8.2 of Section G.

M-2.3 Metal Work.

This subsection includes, but is not limited to, the following: pipe supports, wall electrical panels and junction boxes, miscellaneous brackets, fasteners, anchors bolts, and bolted connections shown or required for complete installation. miscellaneous metal work required for the installation of the pipes, fittings, supports, and valves.

All ferrous metal work below the finished grade, which is not specified to be painted or coated, shall be galvanized. All stainless steel shall remain uncoated.

M-2.3.1 Materials.**M-2.3.1.1 Structural Steel.**

All structural steel shapes, plates, and bars shall conform to ASTM A36, "Structural Steel."

M-2.3.1.2 Sheet Metal.

All sheet metal shall conform to ASTM A569, "Steel, Carbon (0.15 Maximum percent), Hot-Rolled Sheet and Strip Commercial Quality," galvanized per ASTM A123.

M-2.3.1.3 Bolts, Nuts, and Steel Washers.

Materials for bolts, nuts, and plain steel washers shall conform to ASTM A307, Grade B or ASTM A325, Type 3, unless otherwise specified.

M-2.3.1.4 Pipe

Pipe for use in structural items and utility purposes shall be standard steel pipe conforming to ASTM A53, for "Black and Hot-Dipped, Zinc Coated (Galvanized) Welded and Seamless Steel Pipe."

M-2.3.1.5 Stainless Steel Plate.

Stainless steel plate shall be ASTM A167 or ASTM A240, Type 304.

M-2.3.1.6 Stainless Steel Bolts and Nuts.

Stainless steel bolts and nuts shall be ASTM F593 and ASTM F594, Alloy 304.

M-2.3.2 Workmanship.

All fabrication and assembly methods used shall be in accordance with the latest AISC Specifications unless otherwise noted or shown on the Plans.

Before laying out or working in any way, materials shall be thoroughly straightened. Sharp kinks or bends in members will be cause for rejection. Finished members shall be free from kinks or bends. Shearing shall be accurately done, and all portions of the work neatly finished. Re-entrant cuts shall be made in a workmanlike manner and, where they cannot be made by shearing, a rectangular punch may be used. Re-entrant cuts shall be filleted unless otherwise approved by the Engineer. Corners shall be square and true unless otherwise shown on the Plans. All bends, except for minor details, shall be made by approved dies or bending rolls. Where heating is required, precautions shall be taken to avoid overheating the metal, and allowed to cool in such a manner as not to destroy the original properties of the metal. Steel with welds will not be accepted, except where welding is specified or called for on the Plans. All bolts, nuts, and screws shall be tight.

M-2.3.2.1 Welding.

All welding shall be done by the electric arc welding process using certified welders, arc welding machines, and approved electrodes, conforming in all respects to the applicable code of the American Welding Society.

M-2.3.2.2 Galvanizing.

All metal fabricated items specified in these specifications or on the Plans to be galvanized shall be galvanized in conformance with the requirements specified in Subsection 210-3 of the SSPWC. All galvanizing shall be performed after fabrication.

Wherever galvanized metal items are welded, abraded, or cut in the field, all such surfaces or welds shall be coated with "Galvicon" as manufactured by the Galvicon Corp., Brooklyn, N.Y., or "Galvalloy" as manufactured by the Metalloy Products Co., of Los Angeles, California, or an Agency-approved equal.

M-2.3.2.3 Bolted Connections.

Bolt holes for fitted bolts shall be truly cylindrical throughout. Holes for unfinished bolts, unless otherwise specified on the Plans, shall be drilled and shall not be more than 1/16-inch larger than the nominal diameter of the bolts for machinery connection, and no more than 1/8-inch larger than the nominal diameter of the bolts for foundation anchors.

M-2.3.2.4 Concrete Expansion Anchors.

Concrete anchors shall be stainless steel, threaded stud wedge anchor type with expansion clip, supplied with nut and washer. Concrete anchors shall be "Trubolt" by ITW Ramset/Red Head, "Kwik Bolt" by Hilti, or approved equal. Size shall be as indicated or required. In general, it shall be required that the anchor system provide load capacity (pull out strength) at least equal to that of the concrete in which it is set.

M-2.3.2.5 Adhesive Anchors.

Adhesive anchors shall consist of a self-contained two-component capsule containing vinylester resin and hardening catalyst, supplied with stainless steel threaded stud, nut, and washer. Anchors shall be "HVA Adhesive Anchors" with "HEA" capsule, as manufactured by Hilti, or Agency approved equal.

M-2.3.3 Hangers and Supports.

The Contractor shall furnish and install brackets, hangers and supports or other approved devices for all piping, and equipment components to be supported where indicated or necessary.

Items shall be as manufactured by B-Line, Tolco Inc., Grinnell, or Agency-approved equal. All brackets, hangers and supports below pump room floor shall be galvanized.

M-2.3.3.1 Flange Supports.

Flange support shall support 125-lb cast iron and 150-lb forged steel slanged connections with an unthreaded base stand.

M-2.4 Painting and Coating.

All painting and application of epoxy coatings shall be included in this subsection. Except as otherwise specified here within, all steel surfaces (except stainless steel) shall be painted or epoxy coated.

M-2.4.1 Paint Primer.**A. Iron and Steel Primer**

Iron and steel primer shall be "Kromik Metal Primer" as manufactured by Sherwin-Williams Company, Stops Rust Metal Primer as manufactured by Rust-Oleum Corporation, or an Agency-approved equivalent industrial primer.

B. Galvanized Metal Primer

Galvanized metal primer shall be "Galvanized Iron Primer" as manufactured by the Sherwin - Williams Company, "Galvinoleum 3202 Undercoat" as manufactured by Rust-Oleum Corporation, or Agency-approved equal.

Galvanized metal surfaces shall first be treated with a prepared metal bonderizer before applying metal primer.

M-2.4.2 Paint Finish Coats.**A. Interior and Exterior Metal Paint**

Interior and exterior metal paint shall be high-build acrylic modified enamel with rust-inhibitive properties as manufactured by the Sherwin - Williams Company, Rust-Oleum, Behr or Agency-approved equal.

B. Enamel

Enamel shall be "KEM 400 Enamel" as manufactured by Sherwin-Williams Company, and equal industrial finish as manufactured by Rust-Oleum Corporation, or an Agency-approved equal.

M-2.4.3 Paint Schedule.

In general, all exposed metal items of this work above the engine room floor level shall be primed and painted with two coats of finish paint.

Other manufactured items that have received factory enamel need not be repainted, except where coatings have been damaged or abraded in shipping or installation.

M-2.4.4 Epoxy Coating – Liquid Applied.**A. Epoxy Primer**

Epoxy primer shall be 2mil dry thick epoxy primer as manufactured by Eastwood Company, Rust-Oleum, TotalBoat or an Agency-approved equal.

B. Epoxy Coating

Epoxy coating shall be 15 mil dry thick epoxy as manufactured by Eastwood Company, Rust-Oleum, TotalBoat or an Agency-approved equal.

C. Preparation for Epoxy Coatings

All metal surfaces to receive epoxy coatings shall be cleaned to bright metal by sandblasting using clean, dry sharp sand in accordance with SSPC-SP5. After cleaning, all accumulated dust shall be removed. The primer coat shall be applied immediately after cleaning. Coating on pipes to be field welded, shall be held back from the weld joints approximately 2 inches. In held back areas, pipe and fittings shall be brushed or ground to bright metal, cleaned with solvent, then coated as specified.

The epoxy coatings shall be applied in a shop by skilled applicators approved in advance by the Agency. Field sandblasting and application of coatings will not be permitted.

Upon completion of coatings, a holiday detector of suitable high frequency shall be used to test the coatings. Any imperfect spots shall be recoated to the satisfaction of the Engineer. Low frequency detectors of wet wipe type are not approved.

D. Epoxy Applicators.

The epoxy coatings shall be applied by an approved applicator. Epoxy coated items shall not be shipped until the epoxy coating has been permitted to dry and age a minimum of 72 hours. The number of coats and maximum coat thickness and drying time shall be in strict compliance with the coating manufacturer's instructions. Thick spongy applications shall be rejected and will need to be sandblasted and properly re-applied.

E. Field Touch-up of Epoxy Coatings.

Any epoxy coatings damaged in shipment or subsequent handling shall be patched by the Contractor at his own expense, in full conformance with the recommendation of the manufacturer of the epoxy used.

F. Field Testing of Coating Applications.

All epoxy coating applications will be subject to field testing for compliance with these specifications. Any coating found not to be strictly in accordance with requirements shall be immediately remedied to the full satisfaction of the Engineer.

M-2.4.5 Clean-Up.

All cloths and waste materials which might constitute a fire hazard shall be placed in closed containers and disposed of off the site of work at the end of each day. Paint spots, oil, or stains upon adjacent surfaces shall be removed and the entire job left clean to the satisfaction of the Engineer.

M-2.5 Flow Measuring Weir Plate

The Contractor shall fabricate three 24-inch circular weir plates for the influent flow measurements as shown on the Mechanical Plans.

The Contractor shall verify the exact locations and configurations of the retainer with the Agency prior to installation.

M-2.6 Payment

The lump sum Bid price for "MECHANICAL WORK" shall be included, but not limited to furnish all labor, miscellaneous materials, fabrication and installation to provide a completely operable system.

M-3 CAST IRON SLIDE GATE ASSEMBLY**M-3.1 General**

The Contractor shall furnish and install three (3) self-contained cast iron slide gate assemblies and the appurtenances per Plans. The gates shall be cast iron, bronzed mounted, and the flush bottom closure type. The gates shall be suitable for storm water service and be designed for the following specification:

Location	Gate Size	Quantity	Operating Seating Head	Stem Dia.	Operator Type
	(in.)		(ft.)	(in.)	
Montebello Pkwy	24x24	1	8	1.5	EMO w/ bevel gear
Northside Dr.	24x24	1	12	1.5	EMO w/ bevel gear
Southside Dr.	24x24	1	10	1.5	EMO w/ bevel gear

The leakage allowable is 0.2 gallon per min (gpm) per foot of seating perimeter. No component shall be stressed beyond the following:

Maximum Allowable Combined Stress = 1/5 Tensile Strength

Maximum Allowable Combined Stress = 1/3 Yield Strength

The gate assemblies shall conform to the latest edition of the AWWA C560 Standard and as modified by the following specifications.

The cast iron slide gate supplied shall be manufactured by WATERMAN, Hydrogate or Agency approved equal.

The cast iron slide gate assembly shall include, but not be limited to the frame, disc, disc guides, wedges, seat faces, flush-bottom seal, thrust nut, stem, and yoke.

Gate manufacture shall provide stem guides and the mounting connection shall be done by per gate manufacturer.

M-3.2 Frame.

The frame shall be one-piece cast iron construction with all contact surfaces machined. Dovetailed grooves shall be machined on the front face of the frame for the fitting of the bronze seat facings. The back of the frame shall be machined and drilled for bolting onto the concrete backwall. The frame shall have integrally cast pads, machined to receive the top wedge seats.

M-3.3 Disc.

The slide disc shall be cast iron with integrally cast vertical and horizontal reinforcing ribs, and a reinforced nut pocket to receive the bronze thrust nut. Cast pads shall be drilled, tapped, and machined with a groove to receive the mounting tongue of the adjustable wedges. The disc shall have accurately machined tongues on each side extending its full length to fit into the guide grooves with a maximum allowable clearance of 1/16 inch. The back side of the disc shall have machined dovetailed grooves for the fitting of the bronze seat facings.

M-3.4 Disc Guides.

Guides shall be cast iron and be integrally cast with the frame, or dowelled and bolted to the frame. The guides shall be machined on all contact surfaces and a groove shall be accurately machined on the entire length of the guide to allow 1/16-inch maximum clearance between the guide groove and disc tongue. Cast pads shall be provided on the guide for the side wedge seats. The guides shall be of sufficient length to support at least one-half of the height of the slide disc when fully opened. The guides shall be capable of taking the thrust produced by water pressure and the wedging action without lateral movement or vibration.

M-3.5 Wedges.

Cast iron slide gate shall be equipped with top and side wedging devices to insure tight contact between the seat facings on the disc and frame when the gate is fully closed. Wedges shall be cast bronze, machined on their contact surfaces to give maximum contact, and wedging action. Wedges shall be fully adjustable and be attached to the gate disc with bronze fasteners. Side wedges shall be keyed to the gate disc to prevent rotation by means of a full-length tongue on the wedge fitted into a groove on the mounting pad of the disc. Top wedges shall consist of wedge hooks on the gate disc, which seat onto bronze loops keyed and bolted to the gate frame. All wedges shall be provided with a hold-down stud nut and adjusting screw with lock nut to retain the proper setting once adjusted.

M-3.6 Seat Faces.

Seat facings shall be extruded bronze, pneumatically impacted into machined dovetail grooves in the frame and slide disc to permanently lock them into place. Attachment by screws or other fasteners is not allowed. The installed seat facings shall be machined to a plane with a 63 micro-inch finish or better and maximum clearance between seating faces not to exceed 0.004 inch with gate fully closed.

M-3.7 Flush Bottom Closure.

The flush bottom closure shall consist of a wide resilient seal made of neoprene, attached to the bottom of the slide disc or invert frame with a stainless steel retainer plate and stainless steel screws. When the gate is closed, the seal is compressed against a machined cast iron surface between the disc and frame invert, thus creating an effective watertight seal along the invert.

M-3.8 Thrust Nut.

A thrust nut shall be provided for connecting the stem to the slide disc. The thrust nut shall be cast bronze, and be threaded to the stem and locked with a gib key secured by a stainless steel set screw. The square-backed thrust nut and slide disc nut pocket shall be constructed to prevent turning of the nut in the pocket while operating the gate.

M-3.9 Stem.

The operating non-rising stem shall be continuous length round bar stainless steel. Stem threading shall be machine-cut, left-hand 29-degree ACME threads with a surface finish of 63 micro-inch or better.

The minimum stem size required shall be as listed in the gate schedule and indicated on the Plans.

M-3.9.1 Stem Guide

The operating non-rising stem shall be continuous length round bar stainless steel. Stem threading shall be machine-cut, left-hand 29° ACME threads with a surface finish of 63 micro-inch or better. The number of stem guides required shall be as listed in the gate schedule and indicated on the Plans.

All stem guides and brackets shall be stainless steel with bronze bushings. Guides shall be adjustable in two directions and shall be constructed so that, when properly spaced, they will hold the stem in alignment and still allow enough play to permit operation per AWWA C560. Stem guide spacing shall be as recommended by the Plans on SHEET M-6, but in no case shall the unsupported stem length/radius of gyration (l/r) exceed 200. Stem guide brackets shall be secured to the wall by anchor bolts of sufficient strength and arrangement to prevent stem guide deflection due to either axial and/or radial stem loading caused by gate operation forces during manual operation, or caused by motor-operator locked rotor stall conditions.

Hardware assembly, mounting, and embedment requirements for stem guide(s) installation shall be determined per manufacturer recommendation.

M-3.10 Bevel Gear Support Structure.

The bevel gear support structure shall be fabricated by the gate manufacturer and must comply with the design details indicated in the Plans. The bevel gear support structure shall be mounted on the manhole structure housing the cast iron gate assembly. The gate manufacturer shall provide shop drawings for the bevel gear support structure for Agency review and approval prior to beginning construction.

M-3.11 Yoke.

The yoke shall be mounted on the machined pads provided on the upper ends of the guides. The yoke shall have a machined bearing surface for the pedestal mounting plate.

M-3.12 Pedestal Assembly.

The gate manufacturer shall provide the fabricated yoke mounting steel pedestals for the slide gate to support the installation of the bevel gear units as shown on the Plans. The gate manufacturer shall provide shop drawing for the pedestal design for the Agency review and approval prior to begin construction.

M-3.13 Materials

Materials used in the construction of the cast iron slide gate and appurtenances shall conform to the following requirements:

Part Description	Material	ASTM Standard
Frame	Cast Iron	A126 Class B
Disc	Cast Iron	A126 Class B
Disc Guide	Cast Iron	A126 Class B
Wedges (Top and Side)	Bronze	B584 C86500
Wedge Seats	Bronze	B584 C86500
Wedge Fasteners	Bronze	B98 C65500
Seat Faces	Bronze	B98 C65500
Flush Bottom Seal	Neoprene	D-2000
Seal Retainer	Stainless Steel 304	A276
Thrust Nut	Bronze	B584 C86500
Thrust Nut Key	Stainless Steel 304	A276
Stem	Stainless Steel 304	A276
Gate Assembly Fasteners	Stainless Steel 304	F593
Hex Nuts	Stainless Steel 304	F594
Yokes	Cast Iron	A126 Class B

M-3.14 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-3 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

M-4 ELECTRIC MOTOR OPERATORS AND APPURTENANCES**M-4.1 General**

The Contractor shall furnish and install three (3) electric motor operators (EMO) for the three 24"x24" gates complete with bevel gear units and the appurtenances.

The electric motor operator (EMO) shall include, but not be limited to, the electric motor, operator reduction gearing, position limit switches, torque limit switches, limit switch gearing, stem lift nut, declutch lever, auxiliary handwheel, automatic resetting overloads, AC reversing magnetic starter, transformer, 24-point terminal strip, and compartment heaters as a self-contained unit with a ductile iron or cast iron main housing. The operator shall be Limitorque MX-05 Series and outfitted with a V Series 1:1 bevel gearbox attachment, or an Agency approved equal.

M-4.2 Operational Requirements

The electric motor operator shall be capable of raising and lowering the gate with a non-rising stem at a rate of travel of 9 to 12 inches per minute.

M-4.3 Motor

The motor shall be an induction type, specifically designed for actuator service, and be of high starting torque, totally enclosed and nonventilated construction. The motor shall have anti-friction bearings and be permanently lubricated. The motor shall withstand jogging at 90 and 110 percent of nominal voltage without exceeding its temperature rating and shall meet NEMA standards. The motor shall be protected by overload device integral with the motor and shall be of the automatic resettable type. The motor shall have an internal electric heater. The motor shall be a unitized subassembly, independent of the power-gearing, allowing easy removal for replacement, repair, or rewinding. The motor shall be approved by a national independent testing laboratory (U.L., FM, CSA, or City of L.A.).

The motor shall comply with the following parameters:

Torque Rating :	220 Ft-lb
Voltage :	230 volts
Phase :	1
Frequency :	60 hertz
Speed :	52 RPM (nominal)
Time Rating:	15 minutes minimum
Number of Starts:	10 per minute
Insulation Class:	F
Ambient Temperature:	40 C minimum
Control Voltage:	120 volts
Heater Rating:	25 watts @ 120 volts

M-4.4 Operator Reduction Gearing

The operator power gearing shall be a multiple reduction unit consisting of spur, helical, or bevel gears and worm gearing. The spur, helical, or bevel gearing and worm shall be hardened alloy steel, while the worm gear shall be alloy bronze. Nonmetallic and aluminum gears are not acceptable. All gears and shafting shall be supported on anti-friction bearings. All power train gearing and bearings shall be grease or oil lubricated. Provisions shall be provided for inspection and relubrication without disassembly. Seals shall be provided on all shafting exit points of the gear case.

M-4.5 Stem Nut

The operator shall have a removable stem lift nut constructed of high strength bronze alloy. The stem nut supplied shall be internally threaded to mate with the gate stem supplied and shall have the same surface finish of 63 micro-inch or less.

M-4.6 Manual Operation

The motor gate operator shall be equipped with a side mounted handwheel for manual operation. The handwheel shall not rotate during motor operation and the motor shall not rotate during manual operation. A fused motor shall not prevent manual operation. When in the manual operating mode, the operator will automatically return to electric operation when the motor is energized. Changing from motor operation to manual hand wheel operation shall be accomplished by movement of a padlock able declutch lever, which mechanically disengages the motor and related gearing. The handwheel shall have an arrow and the word "OPEN" indicating required rotation and shall require no more than 80 pounds of rim effort at the maximum required torque.

M-4.7 Hammer Blow Device

The operator shall have a lost motion device, integral in the power gear train, which allows the motor to attain full speed before engaging the load with a hammer blow effect.

M-4.8 Position Limit Switch

Position limit switches shall be geared directly to the operator drive mechanism and remain synchronous with the gate position whether manually or electrically operated. Limit switch gears shall be bronze or stainless steel, and be grease lubricated and totally enclosed to prevent entrance of foreign matter. The limit switches shall be of the open contact type with a rotary wiping action and be infinitely adjustable, allowing for trip points from fully open to fully closed positions of gate travel. Limit switch contacts shall be heavy-duty, silver plated.

M-4.9 Torque Switch

The operator shall include an adjustable torque limiting switch that will interrupt the control circuit in both the opening and closing directions when an obstruction is encountered, resulting in torque overload. Switch contacts shall be silver plated. The torque switch shall have graduated dials for both opening and closing direction of gate travel, and each shall be independently adjustable with a limiter plate to prevent setting beyond operator output torque capability.

M-4.10 Reversing Magnetic Starter

The reversing magnetic starter coil shall be rated for 120 volts, and be capable of starting the motor.

M-4.11 Heater

The operator shall be supplied with at least one control compartment space heater rated at 20 to 25 watts at 120 volts and a motor heater rated at 25 watts at 120 volts.

M-4.12 Electrical Control Enclosure

The position limit switches, torque switches, starter, space heater, and terminal strips shall be housed in a single electrical enclosure compartment to provide single entry access for field servicing of the components. The compartment enclosure shall be hinged and sealed by O-ring and shall meet NEMA 4 weatherproof construction.

M-4.13 Electric Motor Operator Control Station

A pushbutton control station shall be furnished for the motor operator. The control station shall contain, as a minimum:

- One "OPENED" indicating light
- One "CLOSED" indicating light
- One "OPEN" pushbutton
- One "CLOSE" pushbutton
- One "STOP" pushbutton

"CLOSED" Indicating Light

The "CLOSED" (red) indicating light shall be off only when the gate is fully opened.

"OPENED" Indicating Light

The "OPENED" (green) indicating light shall be off only when the gate is fully closed.

All indicating lamps shall be removable from the front of the panel. Lamps shall be rated at 120 volt, 60 hertz, 1 phase. Control stations shall be weatherproof (NEMA 4).

The control station shall be directly mounted and integral with the electric actuator. Control stations shall be Limitorque SW320.

M-4.14 Protective Coating and Painting

All exposed ferrous metal surfaces of the cast iron slide gate assembly shall be coated with the manufacturer's recommended coal tar epoxy. Surfaces shall be prepared by abrasive blast cleaning to SSPC-SP-10 before shop-applying of primer and finished coats.

Touch-up coating for each gate: the supplier shall furnish sufficient resin and hardener to make one gallon of the coating to repair any damage to the shop-applied coating sustained during shipping and installation.

All exposed exterior surfaces of the gate operator and pedestal shall have a minimum of one prime coat and two finish coats of machinery enamel suitable for outdoor service.

M-4.15 Bevel Gear Operators

The EMO shall be furnished with a bevel gear operator. The bevel gear operator shall be reducer type with the specified gear ratio. The operator stem nut shall be shouldered in the drive sleeve to capture thrust forces within the thrust housing without transferring those forces to the torque housing. The bevel pinion and bevel gear shall be supported on anti-friction ball bearings. All gears shall be machined from high-strength alloy steel to ensure smooth operation with minimum backlash. The operator shall be permanently lubricated. The enclosure shall be cast iron sealed to NEMA 4. The operator shall be Limitorque V Series.

M-4.16 EMO Remote Controller

The EMO shall be furnished with a remote controller. The remote controller shall include NEMA 4X 316 stainless steel enclosure, digital position indicator, selector switch with "Local-Off-Remote" and "Open/Close", and shall be Limitorque.

M-4.17 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-4 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

M-5 ACTUATOR VAULTS AND APPURTENANCES

The Contractor shall furnish and install three actuator vaults to house the electric motor operators and other special piping assemblies as shown on the Plans. The vault shall be designed for HS-20 traffic loading and water tight. The Contractor shall submit a proposed design to meet all requirements in the specs for Agency review and acceptance.

The vault access hatches shall be sized to allow direct overhead access to all removable parts. Access hatches shall meet the requirement of HS-20 traffic loading. The hatches shall be spring assisted double hatch doors with fall protection chains, bars, or other acceptable provisions. The hatches shall be aluminum.

The minimum clearance between pipes, valves, flanges, walls, ladders, and other equipment shall be 1.5-feet. The minimum clearance between piping and floor shall be 10-inches.

The flow meter vault shall be provided with floor drain with brass shut off and copper float.

The vaults shall be placed on a 6-inch minimum crushed rock base.

All piping and conduit penetrations through actuator vault walls shall be watertight. Penetration holes shall be performed or cored out smooth without damaging the structure and mechanical seal such as Link-Seal, or Agency approved equal, shall be installed. Mechanical seal shall be suitable for use in a potentially corrosive environment.

M-5.1 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-5 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

M-6 WATER LEVEL SENSORS AND APPURTENANCES

The Contractor shall furnish and install water level sensors, transmitters and the appurtenances for the dry wells and water monitoring system as shown on the Plans.

M-6.1 Wheatstone Bridge Circuit Level Transmitter

The level transmitter shall be solid state semiconductor sensor, all housing parts 316 stainless steel including nut/washer, 316L stainless steel diaphragm, viton cable grommet and housing "O" ring, removable non-clogging nylon snub nose to protect sensing elements, 2-wire 4-20ma output with current limit of 30ma, 12-40VDC power supply with reverse polarity surge protection, loop resistance of 1400 ohms max at 40VDC, compensated 32 to 122°F, factory applied 20AWG polyurethane shielded cable (unspliced throughout entire run) and vented to atmosphere through the surface end of the cable, cable support bracket, reverse polarity surge protected, lightning protector, manufacturer approved intrinsically safe barrier for Class 1 Division 1 (Group A,B,C&D) operation, calibrated per basin water levels (0-35 feet of water), measurement of hydrostatic pressure via ion implanted silicon semiconductor chip with integral wheatstone bridge circuit, fully compatible with Ametek DMS controller. Level transmitter shall be Ametek model 575. Minimum lengths of the cable shall be 200 feet.

M-6.2 Laser Level Sensor

The laser level sensor shall be engineered to directly measure water level inside the dry wells from 1.5 to 100 feet with accuracy of 0.1 feet. The systems shall include but will not be limited to non-contact depth detection, communication cable, mounting bracket, and additional appurtenances to be installed at the location shown on the plans.

The laser level sensor shall utilize the Infrared spectrum 905 with beam divergence of 1 foot beam diameter at 328 feet. The sensor shall be rated for Class 1 Division 1, temperature range of -28° to 140°F, power input 12-24 VDC, current drawn of 150 mA during measuring and 40 mA on standby.

The laser level sensor shall be manufactured by Laser Technology Inc. TruSense S300 series. The minimum cable length shall be 200 feet.

M-6.3 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-6 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

M-7 WATER QUALITY MONITORING INSTRUMENTATION**M-7.1 General**

The Contractor shall furnish and install the water quality monitoring instrumentation to monitor the effectiveness of the water capturing and treatment systems. The monitoring system shall include two refrigerated samplers with a flow meter to take water sample of the influent and effluent flow for stormwater treatment system, and a pressure transducer to measure the runoff volume that bypass the stormwater diversion.

The installation shall be observed by a representative from the Agency's Stormwater Quality Division.

Please contact Frank Cheng at (626) 458-7123 at least 1 week prior to installation.

M-7.2 Refrigerated Sampler And The Accessories

The refrigerated sampling system shall be designed for indoor and outdoor applications include but not limited to refrigeration system, pumping system, area velocity flow meter, controller and backup battery supply.

The refrigerator cabinet shall be molded from polyester resin fiberglass and supported by a stainless steel frame with a UV-resistant gel coat to provide a smooth, non-porous finish for added protection and easy cleaning. The unit shall preserve the samples at the EPA-recommended 39°F (4°C) with an automatically controlled, built-in heater to ensure that samples won't freeze even when ambient temperatures drop to -20°F (29°C).

The pumping system shall be capable of providing a suction lift of 28 feet of pressure head and deliver water sample of 5.0 ml from 99 feet away utilizing a 3/8 inch Vinyl tubing. A 3/8 inch stainless steel strainer shall be installed at the tip of the suction tube to prevent debris from entering the system.

The area velocity flow meter shall use doppler technology to directly measure average velocity in the flow stream. The sensor shall be capable of measuring 0.25 to 10 feet of water with velocity up to 20 feet per second.

M-7.3 Portable Autosampler

The portable sampling system shall be designed for indoor and outdoor applications include but not limited to pumping system, area velocity flow meter, controller and backup battery supply.

The pumping system shall be capable of providing a suction lift of 28 feet of pressure head and deliver water sample of 5.0 ml from 99 feet away utilizing a 3/8

inch Vinyl tubing. A 3/8 inch stainless steel strainer shall be installed at the tip of the suction tube to prevent debris from entering the system.

The area velocity flow meter shall use doppler technology to directly measure average velocity in the flow stream. The sensor shall be capable of measuring 0.25 to 10 feet of water with velocity up to 20 feet per second.

M-7.4 Rain Gauge

The rain gauge shall be use a tipping bucket design for rainfall measurement. The rain gauge shall be 6-inch diameter orifice and shall be factory-calibrated to tip at either 0.01inch or 0.1 mm of rainfall.

The controller interface shall provide plug and play connection with compatible measuring devices such as rain gauge, and multi-parameter sondes from leading manufacturers.

M-7.5 Bypass Runoff Flow Measurement

Radar type level sensor and data logger with communication devices shall be used to measure the bypassed flow at the monitoring locations. All housing parts shall be 316 stainless steel. The cable shall be a rugged Hytrel cable that remains flexible even under harsh environmental conditions.

M-7.6 Water Quality Monitoring Equipment List

TABLE 1 – EQUIPMENT LIST ELA-1N-INF / ELA-1N-EFF

Description	Model / Part Number	QTY	Vendor/Quote Source
ISCO 6712FR Refrigerated Sampler (120V, 60Hz)	68-6710-072	2	Teledyne ISCO/MCRT
ISCO 750 Low Profile Area Velocity Flow Module (75 FT) and Low Profile Velocity Sensor Measure 10 FT Level Range	60-9004-051	1	Teledyne ISCO/MCRT
ISCO 4 Bottle Config Kit for 6712FR	60-5304-606	2	Teledyne ISCO/MCRT
ISCO 6712ci Modem (cellular) - CDMA w/ antenna	68-6710-148	1	Teledyne ISCO/MCRT
ISCO Sensor Mounting Plate	60-3253-077	1	Teledyne ISCO/MCRT
ISCO Stainless Steel Strainer (3/8 inch)	69-2903-138	2	Teledyne ISCO/MCRT
ISCO 3/8 inch vinyl suction line - 200 feet, SPA 491.	60-5304-491	1	Teledyne ISCO/MCRT
ISCO Tubing Coupler, 3/8 inch. One-piece, clamp less coupler made of stainless steel	60-3709-002	2	Teledyne ISCO/MCRT
ISCO SPA 1026-12 foot length (cut to length cable; base price + 1.19 per foot)	60-5314-026	1	Teledyne ISCO/MCRT

TABLE 2 – EQUIPMENT LIST ELA-1S-INF / ELA-1S-EFF

Description	Model / Part Number	QTY	Vendor/Quote Source
ISCO 6712FR Refrigerated Sampler (120V, 60Hz)	68-6710-072	2	Teledyne ISCO/MCRT
ISCO 750 Low Profile Area Velocity Flow Module (75 FT) and Low Profile Velocity Sensor Measure 10 FT Level Range	60-9004-051	1	Teledyne ISCO/MCRT
ISCO 4 Bottle Config Kit for 6712FR	60-5304-606	2	Teledyne ISCO/MCRT

TABLE 2 (cont'd) – EQUIPMENT LIST ELA-1S-INF / ELA-1S-EFF

Description	Model / Part Number	QTY	Vendor/Quote Source
ISCO 6712ci Modem (cellular) - CDMA w/ antenna	68-6710-148	1	Teledyne ISCO/MCRT
ISCO Sensor Mounting Plate	60-3253-077	1	Teledyne ISCO/MCRT
ISCO Stainless Steel Strainer (3/8")	69-2903-138	2	Teledyne ISCO/MCRT
ISCO 3/8 inch vinyl suction line - 200 feet, SPA 491.	60-5304-491	1	Teledyne ISCO/MCRT
ISCO Tubing Coupler, 3/8 inch. One-piece, clamp less coupler made of stainless steel	60-3709-002	2	Teledyne ISCO/MCRT
ISCO SPA 1026-12 foot length (cut to length cable; base price + 1.19 per foot)	60-5314-026	1	Teledyne ISCO/MCRT

TABLE 3 – EQUIPMENT LIST ELA-01-BYP

Description	Model / Part Number	QTY	Vendor/Quote Source
CR310 Data Logger w/WiFi	CR310-WiFi	1	Campbell Scientific/IEI
Radar Water Level Sensor, 114.8 ft Max (50 FT cable length?)	CS475A-L50-PT	1	Campbell Scientific/IEI
Texas Electronics Rain Gauge 0.01 inch (0.254 mm) Tip w/6 inches Orifice (w/ 25 ft cable)	TE525-L25-PT	1	Campbell Scientific/IEI
Rain Gage Mounting Kit	CM270	1	Campbell Scientific/IEI
Enclosures for battery & data logger ENC16/18 Weather Resistant 16 x 18 inch (can be mounted on a 4-10 inches pole)	ENC16/18-ES-SB-PM	1	Campbell Scientific/IEI
RV50 Cell Modem (Verizon US)	RV50-NA-V	1	Campbell Scientific/IEI
RV50 Mounting Kit	32252	1	Campbell Scientific/IEI
2 dBd 4G/3G Multiband Omnidirectional Antenna with Mounting Hardware	32262	1	Campbell Scientific/IEI
Surge Protection Kit, Type N to SMA, 700 to 2700 MHz	31317	1	Campbell Scientific/IEI
RG8 Antenna Cable with 2 Type N Male Connectors	COAXNTN-L12	1	Campbell Scientific/IEI
20W Solar Panel with Regulator 15 ft cable	SP20R-L15-PT-SM	1	Campbell Scientific/IEI
12VDC 12 Ah Sealed Lead Acid Battery w/mount	BP12	1	Campbell Scientific/IEI

TABLE 4 – EQUIPMENT LIST ELA-02-INF/ELA-02-EFF/ELA-02-BYP

Description	Model / Part Number	QTY	Vendor/Quote Source
ISCO 6712C Portable Sampler (AC Powered)	68-6710-071	2	Teledyne ISCO/MCRT
ISCO 750 Low Profile Area Velocity Flow Module (75 FT) and Low Profile Velocity Sensor Measure 10 FT level range	60-9004-051	1	Teledyne ISCO/MCRT
ISCO Sensor Mounting Plate	60-3253-077	1	Teledyne ISCO/MCRT
ISCO Stainless Steel Strainer (3/8")	69-2903-138	2	Teledyne ISCO/MCRT
ISCO 3/8 inch vinyl suction line - 200 feet, SPA 491.	60-5304-491	1	Teledyne ISCO/MCRT
ISCO Tubing Coupler, 3/8 inch. One-piece, clamp less coupler made of stainless steel	60-3709-002	2	Teledyne ISCO/MCRT
ISCO SPA 1026-12 foot length (cut to length cable; base price + 1.19 per foot)	60-5314-026	1	Teledyne ISCO/MCRT
Model 914 Battery-Backed Power Packs	68-3004-130	2	Teledyne ISCO/MCRT
ISCO 6712ci Modem (cellular) - CDMA w/ antenna	68-6710-148	1	Teledyne ISCO/MCRT
ISCO 12-Bottle Configuration for standard compact base w/ 12 glass 375-mL round bottles and PTFE lined caps, bottle retaining ring, carrier, and two discharge tubes.	68-6700-024	1	Teledyne ISCO/MCRT
CR310 Data Logger w/WiFi	CR310-WiFi	1	Campbell Scientific/IEI
Radar Water Level Sensor, 114.8 ft Max (140 FT cable length?)	CS475A-L140-PT	1	Campbell Scientific/IEI
Enclosures for battery & data logger ENC16/18 Weather Resistant 16 x 18 inch	ENC16/18-ES-SB-PM	1	Campbell Scientific/IEI

TABLE 4 (cont'd) – EQUIPMENT LIST ELA-02-INF/ELA-02-EFF/ELA-02-BYP

Description	Model / Part Number	QTY	Vendor/Quote Source
RV50 Cell Modem (Verizon US)	RV50-NA-V	1	Campbell Scientific/IEI
RV50 Mounting Kit	32252	1	Campbell Scientific/IEI
2 dBd 4G/3G Multiband Omnidirectional Antenna with Mounting Hardware	32262	1	Campbell Scientific/IEI
Surge Protection Kit, Type N to SMA, 700 to 2700 MHz	31317	1	Campbell Scientific/IEI
RG8 Antenna Cable with 2 Type N Male Connectors	COAXNTN-L12	1	Campbell Scientific/IEI
12VDC 12 Ah Sealed Lead Acid Battery w/mount	BP12	1	Campbell Scientific/IEI
Power Supply, 24 Vdc	29796	1	Campbell Scientific/IEI

TABLE 5 – EQUIPMENT LIST ELA-3A-INF/ELA-3A-EFF/ELA-3B-INF/ELA-3B-EFF

Description	Model / Part Number	QTY	Vendor/Quote Source
ISCO 6712C Portable Sampler (battery powered)	68-6710-071	3	Teledyne ISCO/MCRT
ISCO 720 Module and submerged probe with 75 FT cable, measures 10 FT Level Range	68-6700-068	1	Teledyne ISCO/MCRT
ISCO Stainless Steel Strainer (3/8")	69-2903-138	3	Teledyne ISCO/MCRT
ISCO 3/8 inch vinyl suction line - 200 feet, SPA 491.	60-5304-491	2	Teledyne ISCO/MCRT
ISCO Tubing Coupler, 3/8 inch. One-piece, clamp less coupler made of stainless steel	60-3709-002	3	Teledyne ISCO/MCRT
ISCO SPA 1026-12 foot length (cut to length cable; base price + 1.19 per foot)	60-5314-026	2	Teledyne ISCO/MCRT
ISCO Model 948 Lead-Acid Battery. Rechargeable, 12VDC, 45 amp-hours	68-3000-948	3	Teledyne ISCO/MCRT
ISCO 12-Bottle Configuration for standard compact base w/ 12 glass 375-mL round bottles and PTFE lined caps, bottle retaining ring, carrier, and two discharge tubes.	68-6700-024	3	Teledyne ISCO/MCRT
12VDC Sealed Lead Acid Battery, 75Ah, 0.197" Diameter Tab with Bolt Hole	26111701	3	Grainger

TABLE 6 – EQUIPMENT LIST ELA-04-INF/ELA-04-EFF/ELA-04-BYP

Description	Model / Part Number	QTY	Vendor/Quote Source
ISCO 6712C Portable Sampler (battery powered)	68-6710-071	2	Teledyne ISCO/MCRT
ISCO 750 Low Profile Area Velocity Flow Module (75 FT) and Low Profile Velocity Sensor Measure 10 FT Level Range	60-9004-051	1	Teledyne ISCO/MCRT
ISCO Sensor Mounting Plate	60-3253-077	1	Teledyne ISCO/MCRT
ISCO Stainless Steel Strainer (3/8")	69-2903-138	2	Teledyne ISCO/MCRT
ISCO 3/8 inch vinyl suction line - 200 feet, SPA 491.	60-5304-491	1	Teledyne ISCO/MCRT
ISCO Tubing Coupler, 3/8 inch. One-piece, clamp less coupler made of stainless steel	60-3709-002	2	Teledyne ISCO/MCRT
ISCO SPA 1026-12 foot length (cut to length cable; base price + 1.19 per foot)	60-5314-026	1	Teledyne ISCO/MCRT
ISCO 12-Bottle Configuration for standard compact base w/ 12 glass 375-mL round bottles and PTFE lined caps, bottle retaining ring, carrier, and two discharge tubes.	68-6700-024	1	Teledyne ISCO/MCRT
ISCO Model 948 Lead-Acid Battery. Rechargeable, 12VDC, 45amp-hours	68-3000-948	2	Teledyne ISCO/MCRT
12VDC Sealed Lead Acid Battery, 75Ah, 0.197" Diameter Tab with Bolt Hole	26111701	2	Grainger
CR310 Data Logger w/WiFi	CR310-WiFi	1	Campbell Scientific/IEI
Radar Water Level Sensor, 114.8 ft Max (140 FT cable length)	CS475A-L140-PT	1	Campbell Scientific/IEI
Enclosures for battery & data logger ENC16/18 Weather Resistant 16 x 18 inch	ENC16/18-ES-SB-PM	1	Campbell Scientific/IEI
12VDC Sealed Lead Acid Battery w/mount	BP12	1	Campbell Scientific/IEI

M-7.7 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-7 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

M-8 FLOW METER SENSORS**M-8.1 Non-Contact Flow Sensor**

The Contractor shall furnish and install seven new flow measuring systems capable of measuring water level and average velocity of the open channel. The systems shall include but will not be limited to non-contact velocity detection, non-contact depth detection, flow measurement during submerged conditions, bidirectional velocity measurements, data logger capabilities, and additional appurtenances as needed.

The flow sensors are to measure low and high flow. Six flow sensors are to be installed inside 72" manhole as shown on the Plans and one flow sensor is to be installed inside the existing RC box on Northside drive and Garfield avenue. The meters will measure flow going through a storm drain before the new pretreatment system as shown on the Plans.

The flow meter shall include a stainless steel bracket for wall mounting and shall also be able to removed by unlatching from the mounting bracket. The flow meter enclosure shall be IP68 waterproof rating. The flow meter shall detect water levels via ultrasonic waves and measure velocity readings using laser emission technology. The materials of construction shall be Conductive Carbon Filled ABS, SST, Conductive Kynar, Anodized Aluminum, and UV rated PVC. Flow accuracy shall be at $\pm 5\%$ of reading, Velocity accuracy shall be at $\pm 0.5\%$ and ± 0.1 ft/s reading, and level accuracy shall be at ± 0.02 ft for levels ≤ 1 ft and ± 0.04 ft for levels > 1 ft.

The flow sensors shall be Hach Flo-DAR AV Sensor with the optional submerged functionality.

M-8.2 Flow Meter Sensor Data Logger

The Contractor shall furnish and install seven new flow monitors for measuring and logging open channel flow. Flow monitoring equipment shall be Hach Company, Model FL1500.

Contractor shall install the flow sensor and data logger in strict accordance with the manufacturer's instructions and recommendation. Manufacturer's representative shall include a start-up service, basic operational training and certification of performance of the instrument by a factory-trained technician.

M-8.3 Payment

All cost for furnishing all labor, materials, tools, equipment, supplies, supervision, and incidental, for doing all the Mechanical Work shown on plans and required under Subsection M-8 for which no separate items are included in the Bid, shall be included in the lump sum Bid price for "MECHANICAL WORK".

PUBLIC WORKS

LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

SPECIAL PROVISIONS

SECTION S - SIGNING

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:

A handwritten signature in black ink, appearing to be "Mervin Moullic", written over a horizontal line.

1/22/19

Date

Reviewed By:

A handwritten signature in black ink, appearing to be "Dan Hite", written over a horizontal line.

1/23/19

Date

PART 2 - CONSTRUCTION MATERIALS

SECTION 215 – TRAFFIC SIGNING

215-1 GENERAL.....	S-1
215-1.1 Submittals	S-1
215-2 SIGNS	S-1
215-2.1 Material	S-1
215-2.2 Sign Identification.....	S-2
215-2.3 Anti-Graffiti	S-2
215-2.4 Panel Size and Thickness.....	S-2
215-3 SIGN POSTS	S-2
215-3.1 General.....	S-2
215-3.2 Material	S-2
215-3.3 Hardware.....	S-5

PART 3 - CONSTRUCTION METHODS

SECTION 315 – TRAFFIC SIGNING

315-1 SIGN POSTS	S-7
315-1.1 General.....	S-7
315-1.2 Maintenance of Existing Equipment	S-7
315-1.3 Coordination with Serving Utility	S-7
315-1.4 Damage to Existing Utility	S-8
315-1.5 Installation.....	S-8
315-1.6 Bracing.....	S-8
315-1.7 Sign Inventory.....	S-8
315-5 MEASUREMENT AND PAYMENT	S-9
FIGURE NO. 1	S-11

PART 2

CONSTRUCTION MATERIALS

Replace SECTION 215 – NOT USED with the following:

SECTION 215 – TRAFFIC SIGNING

215-1 GENERAL. All signing shall conform to the California Manual on Uniform Traffic Control Devices (California MUTCD), 2014 edition.

215-1.1 Submittals. The Contractor shall submit shop drawings for signs and sign post materials to the Engineer in accordance with Subsection 3-8 of the Standard Specifications for Public Works Construction.

The Contractor shall, at the end of the project, submit a table for sign inventory in accordance with Subsection 315-1.7 of the Special Provisions.

215-2 SIGNS.

215-2.1 Material.

215-2.1.1 Metal. The base metal shall be new aluminum alloy single-sheet stock of 6061-T6 or 5052-H38, conforming to ASTM Specification B209-02, and shall be free of all corrosion and dirt. The thickness shall be either 0.063-inches or 0.080-inches.

Sign panels shall be free of buckles, warps, dents, cockles, burrs, and defects resulting from fabrication. The surface of all sign panels shall be flat.

215-2.1.2 Sheeting.

1. ASTM Types III & IV, High-Intensity Prismatic sheeting shall be used on all warning, guide, and regulatory signs (except mast arm regulatory, critical warning signs such as horizontal alignment, advisory speed, speed reduction, and W4-2, W9-1, and W14-3 of the merging and passing category signs).

2. ASTM Type XI, Diamond-Grade DG3 sheeting shall be used on all mast arm street name, ground mounted street name, and mast arm regulatory signs.

3. ASTM Type XI, Diamond-Grade DG3 fluorescent-orange sheeting shall be used on all temporary traffic control signs.

4. ASTM Type XI, Diamond-Grade DG3 fluorescent-yellow sheeting shall be used on all critical warning signs such as horizontal alignment, advisory speed, speed reduction, and W4-2, W9-1, and W14-3 of the merging and passing category signs.

5. ASTM Type XI, Diamond-Grade DG3 fluorescent yellow green shall be used on all pedestrian crossings, bicycle crossings, and school zones.

215-2.2 Sign Identification. All signs shall be properly marked with individual serial numbers and ID legend.

A permanent serial number, and an identification legend reading: " LOS ANGELES COUNTY", shall be placed on the back of the sign. The identification shall be placed near the right-hand edge of the sign viewed from the rear and in an area not obscured by frame member or signpost. Shall be a minimum of 1-inch in height. The method of application shall receive prior approval by the Agency.

215-2.3 Anti-Graffiti. All signs shall be produced with premium anti-graffiti film and shall be marked with a "G2" on the bottom margin of the sign before applying the film.

215-2.4 Panel Size and Thickness.

Diamond shape less than 48"x48"x.063" no frame; 48"x48"x.080" no frame; 60"x60", 72"x72", and 96"x96"x.080" with frames.

Rectangle shape with length up to 47"x.063" no frame; 48" to 55"x.080" no frame.

Panel sizes shall be per the California MUTCD, 2014 Edition.

215-3 SIGN POSTS.

215-3.1 General.

215-3.2 Material. Steel posts shall conform to the Standard specification for hot rolled carbon sheet steel, structural quality, ASTM designation A1011, Grade 50. The average minimum yield strength after cold forming shall be 60,000 psi.

215-3.2.1 Shape. The cross section of the post shall be square tube formed of 7, 10, or 12 gauge steel, carefully rolled to size, and shall be welded directly in the corner by high frequency resistance welding and externally scarfed to agree with corner radii.

215-3.2.2 Finish. Signposts shall be manufactured from hot-dipped galvanized steel conforming to ASTM A653, G90, structural quality, Grade 50, Class 1. The corner weld shall be zinc coated after the scarfing operation. The steel shall also be coated with a chromate conversion coating and a clear organic polymer topcoat. Both the interior and exterior of the post shall be galvanized.

215-3.2.3 Cross Section. Perforated sign posts shall be one or more of the following sizes:

<u>Size</u>	<u>U.S.S. Gauge</u>	<u>Weight(lbs/foot)</u>
1 ½" x 1 ½"	12	1.70
1 ¾" x 1 ¾"	12	2.06
2" x 2"	12	2.42
2 ¼" x 2 ¼"	12	2.77
2 ½" x 2 ½"	12	3.14
2 ⅜" x 2 ⅜"	10	3.43
2 ½" x 2 ½"	10	4.01
3" x 3"	7	6.91

215-3.2.4 Holes. Holes shall be 7/16 inch in diameter \pm 1/64 inch on 1 inch centers on all four sides down the entire length of the post. On square tubing, holes shall be on centerline of each side in true alignment and opposite each other directly and diagonally.

215-3.2.5 Length. The length of each post shall be 12 feet \pm ¼" inch.

215-3.2.6 Telescoping Properties. The finished posts shall be straight and have a smooth, uniform finish. Consecutive post sizes shall be capable of a slip fit (telescoping) for not less than ten feet of their length without the necessity of matching any particular face to any other face. All holes and ends shall be free from burrs and ends shall be cut square.

215-3.2.7 Tolerances. Tolerances on outside sizes:

<u>Nominal Outside Dimensions</u>	<u>Outside Tolerances at All Sides at Corners</u>
1 1/2" x 1 1/2"	±.006"
1 3/4" x 1 3/4"	±.008"
2" x 2"	±.008"
2 1/4" x 2 1/4"	±.010"
2 1/2" x 2 1/2"	±.010"
2 3/16" x 2 3/16"	±.010"

Measurements from outside dimensions shall be made at least 2" from the end of tube.

Wall Thickness Tolerances: The permissible variation in wall thickness is +.011", - .005".

Convexity and Concavity. Measured in the center of the flat sides, tolerance in ± .010", determined at the corner.

Squareness of Sides and Twist:

Nominal Outside Dimensions	Squareness Tolerance	Twist Permissible in 3' Length
1 1/2" x 1 1/2"	±.009"	.050"
1 3/4" x 1 3/4"	±.010"	.062"
2" x 2"	±.012"	.062"
2 1/4" x 2 1/4"	±.014"	.062"
2 1/2" x 2 1/2"	±.015"	.075"
2 3/16" x 2 3/16"	±.014"	.062"

Straightness Tolerance. Permissible variation in straightness is 1/16" in 3 feet.

Corner Radii. Standard outside corner radius shall be 5/32" ± 1/64".

215-3.3 Hardware.

215-3.3.1 Drive Rivets. The drive rivets shall be made such that they can be used for fastening a wide variety of materials as a through fastener, clinching behind metal sheets, or fastening blind into wood and other materials of low density. The drive rivets shall be tamper-proof and shall have multi-grip capability.

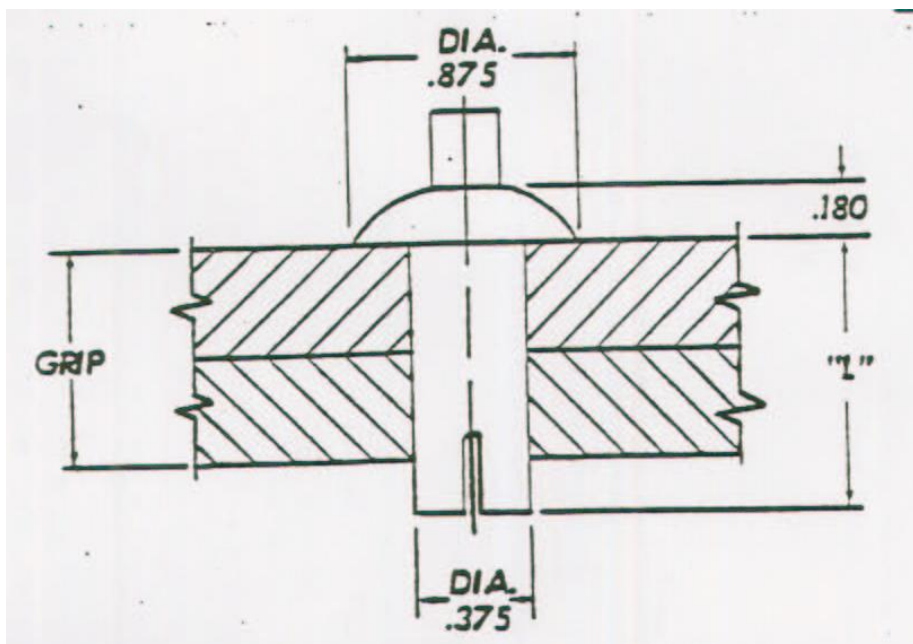
The drive rivets shall be easily installed using a common hammer or a small, lightweight pneumatic riveting hammer. Three blows of the set shall be sufficient to drive the pin easily and quickly. Drive rivets shall be removed by driving the pin through with a nail or punch. The rivet shall then be removed by prying under the head with a screwdriver or the head drilled or sheared off.

Drive rivets shall meet the following dimensions:

Head Diameter: 0.875"

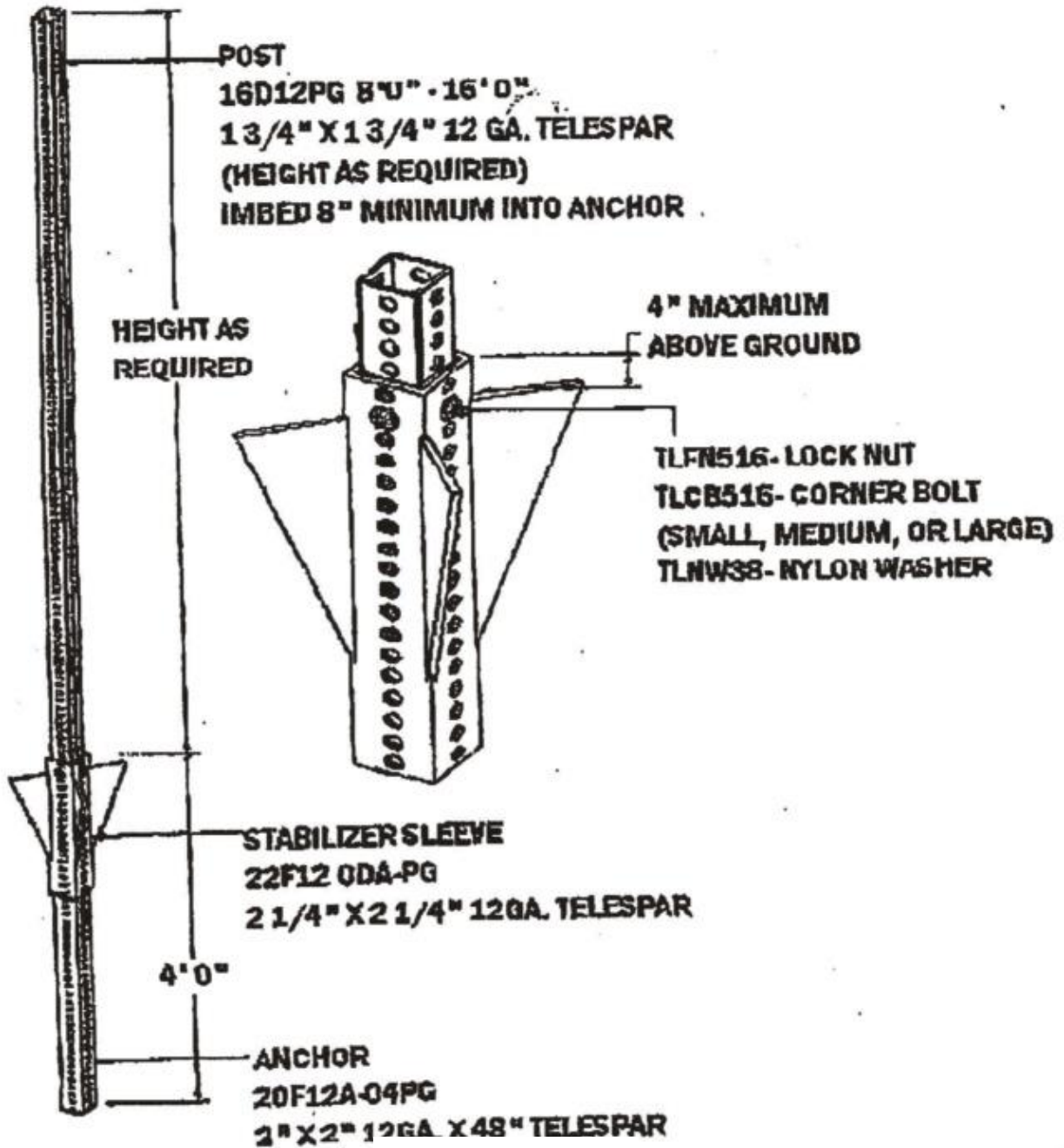
Pin Diameter: 0.375"

Head Thickness: 0.180"



The entire rivet shall be made of steel.

215-3.3.2 Multi-Directional Stabilizer Sleeve. The stabilizer sleeves shall meet the following and be available in various sizes to match the sign post.



PART 3

CONSTRUCTION METHODS

Add the following Section:

SECTION 315 – TRAFFIC SIGNING

315-1 SIGN POSTS.

315-1.1 General. The work shall consist of furnishing and installing, relocating, or removing one or more traffic signs as shown on the Plans.

Incidental parts that are not shown on the Plans or specified in the (California MUTCD), 2014 edition and are necessary to complete the work, shall be furnished and installed as though such parts were shown on the Plans or California MUTCD, 2014 edition.

315-1.2 Maintenance of Existing Equipment. The Contractor, during the progress of the Work, shall maintain existing traffic signing.

315-1.3 Coordination with Serving Utility.

315-1.3.1 General. The Contractor shall inspect the location of each post for safety clearances required. The Contractor shall be responsible for the necessary coordination with the serving utility.

The Contractor shall take the serving utility's schedule into account in preparing the construction schedule.

Coordination with the serving utility shall be shown as individual activities on the construction schedule.

As-Built plans shall be submitted to the Engineer for any signs not installed at the recommended locations.

315-1.3.2 Payment. Payment for coordinating with the serving utility shall be considered as included in the lump sum Bid price for "SIGNING AND STRIPING."

315-1.4 Damage to Existing Equipment.

Should any damage to existing equipment occur, which is not part of the work shown on the Plans, the Contractor shall immediately notify the Engineer and arrange for the immediate repair and restoration of service. The Contractor shall commence repairs or replacements within 24 hours of damaging the equipment or receiving approval of the equipment and materials by the Engineer, whichever takes longer. Equipment and materials used for repairs or replacement shall conform to Section 215 of the Special Provisions and be approved by the Engineer.

315-1.5 Installation. The square end of the post shall not be modified or pointed, but shall be capable of being driven into the ground by the using Agency with the use of an approved driving cap. See Figure 1 (Page S-11).

315-1.5.1 Installation Details.

A 2-1/2"x2-1/2"x18" sleeve, and 2-1/4"x2-1/4"x30" anchor shall be used in combination as the anchor for every sign post.

The anchor and sleeve combination shall be driven in with between 2" and 3" left above ground level.

The sign post shall slide 4" into the anchor.

Rivets with fiber washers shall be used to attach traffic signs to the sign posts.

Signs greater than 1,600 sq. in. shall be installed on a 2-1/2"x2-1/2" crashworthy telescopic galvanized tubular steel post with pre-punched holes along its length. The post shall be installed in a 3"x3"x36" anchor.

The minimum height of signs installed at the side of the road shall be 7 feet measured vertically from the bottom of the sign to the top of the curb.

315-1.6 Bracing. All signs shall be braced to the posts with a steel brace to prevent wind damage.

315-1.7 Sign Inventory.

315-1.7.1 General. The Contractor shall submit a table for sign inventory after completion of all signing installation.

315-1.7.2 Serial Number. All signs maintained by Los Angeles County shall be marked with individual serial numbers and ID legend “Los Angeles County” on the back of the signs.

315-1.7.3 Sign Inventory Table. The Contractor shall furnish a sign inventory table showing the signing installation for each sign and delineator. The following information shall be included:

- 1. Sign Type
- 2. Serial Number
- 3. GPS
- 4. Direction of Travel
- 5. Date of Installation

315-5 MEASUREMENT AND PAYMENT.

Identification legend markings as specified in Subsection 315-1.7.2 of these Special Provisions shall be considered as part of the sign panel.

Sign installation data including sign type, serial number, GPS coordinates, direction of travel and date of installation for each sign panel shall be considered as part of sign inventory table of the sign inventory as specified in Subsection 315-1.7.3 of these Special Provisions. Full assemblies for sign installation including drive rivets, bracing, straps and saddle brackets, screws, bolts, and washers as specified in Subsection 315-1.5 of these Special Provisions shall be considered as sign panel fastening hardware and shall be included with the sign panels.

Full assemblies for post installation including anchor and stabilizer sleeves as specified in Subsection 315-1.5 of these Special Provisions shall be considered as post installation hardware and shall be included with the posts.

Existing signs shown on the Plans to be removed shall include the removal of sign posts as necessary, unless other existing signs are to remain in place on the same post at the same location. All signs and posts removed shall become the property of the Contractor and shall be disposed of in accordance with the Specifications.

Full compensation for labor, materials, tools, equipment, and incidentals and for doing all work involved in the relocation, removal, and installation of roadside signs, complete in

place, as shown on the Plans, as specified in these Special Provisions, and as directed by the Engineer shall be included in the lump sum Bid price for “SIGNING AND STRIPING.”

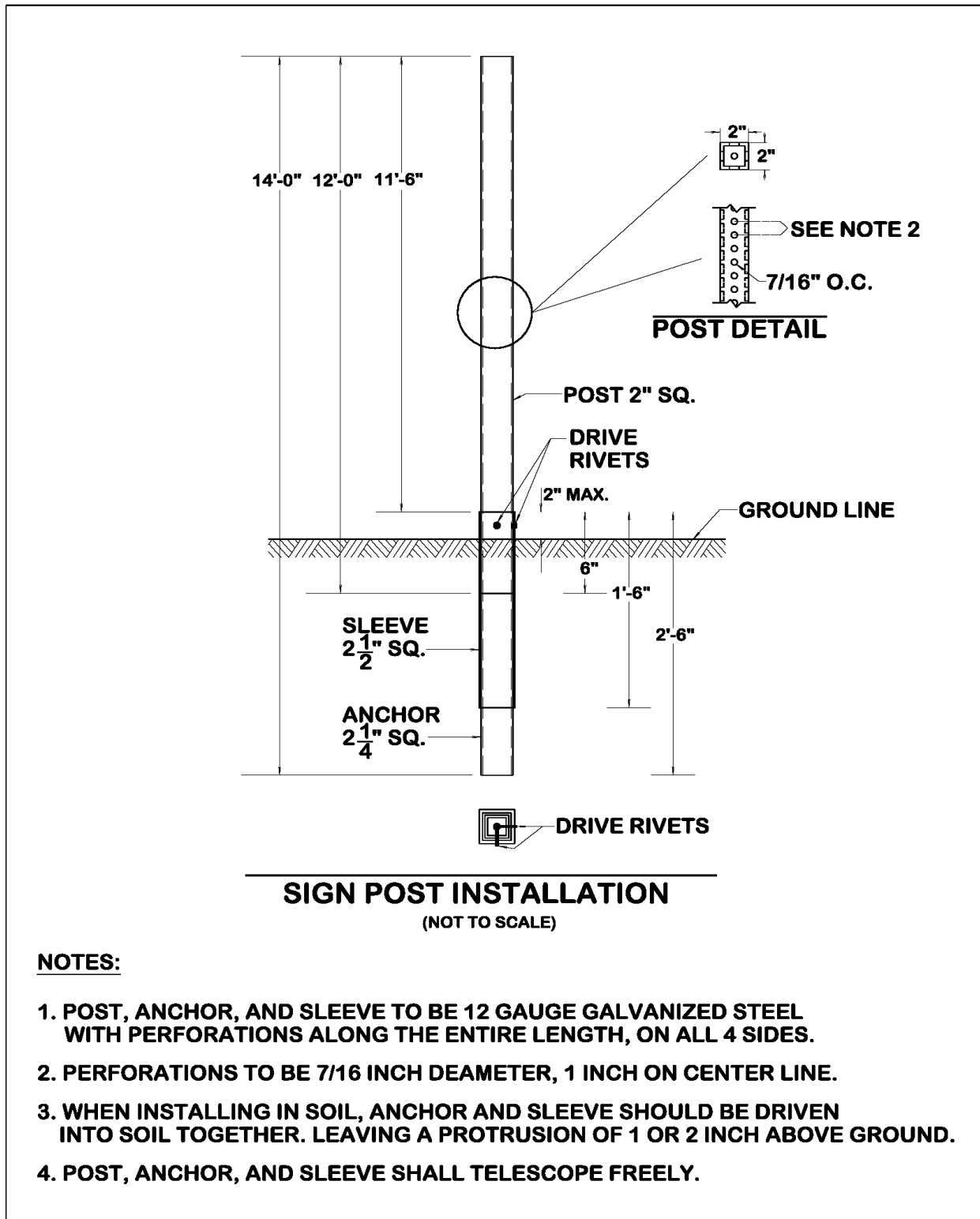


FIGURE 1

PUBLIC WORKS LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

SPECIAL PROVISIONS

SECTION SP - STRIPING AND PAVEMENT MARKINGS

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:



1/22/19

Date

Reviewed By:



1/23/19

Date

TABLE OF CONTENTS

PART 2 - CONSTRUCTION MATERIALS

SECTION 214 - TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

214-6 PAVEMENT MARKERS SP-1
214-6.1 Types of Markers SP-1
214-6.3 Non-Reflective Pavement Markers..... SP-1
214-6.4 Retroreflective Pavement Markers SP-2

PART 3 - CONSTRUCTION METHODS

SECTION 314 - TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

314-2 REMOVAL OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS..... SP-2
314-2.1 General..... SP-2
314-2.2 Measurement..... SP-3
314-2.3 Payment..... SP-3
314-4 APPLICATION OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS SP-3
314-4.1 General..... SP-3
314-4.2 Control of Alignment and Layout..... SP-4
314-4.3 Painted Traffic Striping and Curb and Pavement Markings SP-4
314-5 PAVEMENT MARKERS SP-4
314-5.5 General..... SP-4
314-5.5 Measurement..... SP-4
314-5.6 Payment..... SP-5

Figure 3B-102 (CA). Examples of Fire Hydrant Location Pavement Markers SP-6

PART 2 CONSTRUCTION MATERIALS

SECTION 214 - TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

214-6 PAVEMENT MARKERS.

214-6.1 Types of Markers. (Page 251 of the SSPWC)

Replace the first sentence of the first paragraph with the following:

Pavement markers shall conform to the following types as shown on 2018 Caltrans Standard Plans A20A through A20D.

Add the following:

The type or types to be installed shall be those required as shown on the respective “detail” on 2018 Caltrans Standard Plans A20A through A20D.

214-6.3 Non-Reflective Pavement Markers. (Page 252 of the SSPWC)

214-6.3.1 General.

Replace the first sentence with the following:

Non-reflective pavement markers shall be either ceramic or plastic.

214-6.3.3 Plastic Non-Reflective Pavement Markers.

Replace the entire subsection with the following:

Plastic non-reflective pavement markers shall be either polypropylene or ABS plastic.

214-6.4 Retroreflective Pavement Markers. (Page 253 of the SSPWC)**214-6.4.1 General.**

Replace the second sentence of the first paragraph with the following:

The exterior surface of the shell shall be smooth and the marker shall contain 1 or 2 methyl methacrylate prismatic reflector faces of the number, geometry, and color shown for the respective type on 2018 Caltrans Standard Plans A20A through A20D and as shown on the Plans.

Replace the first sentence of the sixth paragraph with the following:

The color of the reflector faces, when illuminated by the white light from a sealed-beam automobile headlight as defined in the Society of Automotive Engineers (SAE) Standard J 578, shall be clear, yellow, blue, or red color as shown for the respective type on 2018 Caltrans Standard Plans A20A through A20D.

PART 3 CONSTRUCTION METHODS

SECTION 314 - TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

314-2 REMOVAL OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.

314-2.1 General. (Page 471 of the SSPWC)

Replace the first sentence of the first paragraph with the following:

The Contractor shall a) remove existing painted traffic striping and pavement markings by wet sandblasting, and b) remove existing thermoplastic traffic striping and pavement markings by grinding.

Replace the second paragraph with the following:

Curb markings shall be painted over as shown on the Plans.

314-2.2 Measurement. (Page 471 of the SSPWC)

Replace the entire subsection with the following:

Removal of traffic striping and curb markings will be measured by the linear foot for each width of striping or each traffic line “detail” (as shown on 2018 Caltrans Standard Plans A20A through A20D), and for each type of material to be removed as listed on the Schedule of Prices in the Bid Proposal.

Removal of pavement markings will be measured by the square foot (as shown on 2018 Caltrans Standard Plans A24A through A24E) for each type of material to be removed as listed on the Schedule of Prices in the Bid Proposal.

314-2.3 Payment. (Page 472 of the SSPWC)

Replace the entire section with the following:

Payment for removal of traffic striping, curb markings and pavement markings shall be included in the lump sum Bid price for “SIGNING AND STRIPING.”

314-4 APPLICATION OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.**314-4.1 General.** (Page 472 of the SSPWC)

Add the following:

Striping and marking details (nomenclature) referenced on the Plans shall conform to the 2018 Caltrans Standard Plans referenced on the Plans and in Section G of the Special Provisions.

314-4.2 Control of Alignment and Layout.**314-4.2.1 General.**

Add the following:

Alignment and layout shall conform to the dimensions and details shown on the Plans.

314-4.3 Painted Traffic Striping and Curb and Pavement Markings.

(Page 472 of the SSPWC)

314-4.3.6 Measurement.

Replace the first paragraph with the following:

Painted traffic stripes will be measured by the linear foot along the line of the traffic stripes, without deductions for gaps in broken traffic stripes, as shown on the Plans and 2018 Caltrans Standard Plans A20A through A20D. Traffic line “details” which include one double traffic stripe, consisting of 2, 4-inch-wide yellow stripes separated by a 3-inch-wide black stripe, will be measured along the black stripe. Traffic line details which include 2 double traffic stripes will be measured along the center line between the 2 double stripes.

314-4.3.7 Payment.

Replace the first paragraph with the following:

Payment for painted traffic striping shall be included in the lump sum Bid price for “SIGNING AND STRIPING” for each traffic line “detail” as shown on 2018 Caltrans Standard Plans A20A through A20D regardless of the number, widths, and patterns of individual stripes involved in each traffic line detail.

314-5 PAVEMENT MARKERS.**314-5.1 General.** Add the following:

The Agency will furnish blue retroreflective raised pavement markers (RPMs) for the Contractor to install at each fire hydrant location. The Engineer will provide the RPMs to the Contractor. The Contractor shall furnish the adhesive and install an RPM at each location as shown on figure 3B-102 (CA) of the 2012 California MUTCD.

314-5.6 Measurement. (Page 478 of the SSPWC)

Replace the entire subsection with the following:

No separate measurement for payment will be made for pavement markers. For verification purposes only, the quantity of non-reflective, retroreflective, and recessed retroreflective pavement markers will be measured by the linear foot. The quantity of pavement markers per linear foot of traffic line “detail” as shown on the Plans and on 2018 Caltrans Standard Plans A20A through A20D shall be calculated as the total number of

markers required for the detail divided by the total length of the detail, without deductions for gaps in broken lines. The length of traffic line details that include one double traffic stripe, consisting of two 4-inch-wide yellow stripes or two rows of pavement markers, will be measured along the centerline between the two stripes or rows of pavement markers. The length of traffic line details that include two double traffic stripes will be measured along the centerline between the two double stripes.

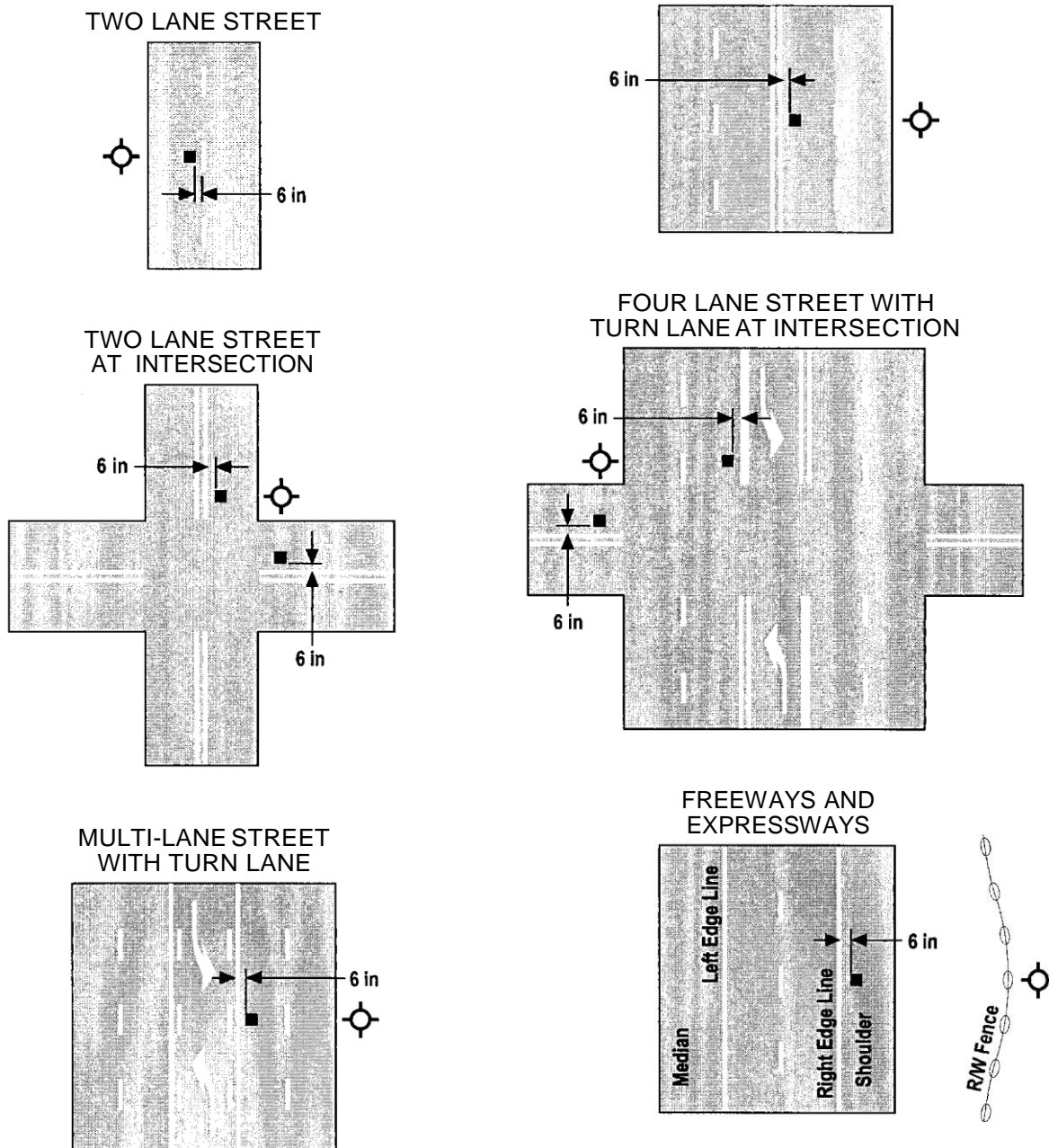
314-5.7 Payment. (Page 478 of the SSPWC)

Replace the entire subsection with the following:

No separate payment will be made for pavement markers. Payment for retroreflective, non-reflective, and retroreflective recessed pavement markers shall be considered as included in the respective traffic line “detail” as shown on 2018 Caltrans Standard Plans A20A through A20D and shall include furnishing and placing pavement markers, including adhesives, and establishing alignment and layout.

Payment for adhesive and installation of Agency-furnished RPMs shall be included in the lump sum Bid price for "SIGNING AND STRIPING."

Figure 3B-102 (CA). Examples of Fire Hydrant Location Pavement Markers



LEGEND



- Blue Retroreflective Raised Pavement Marker

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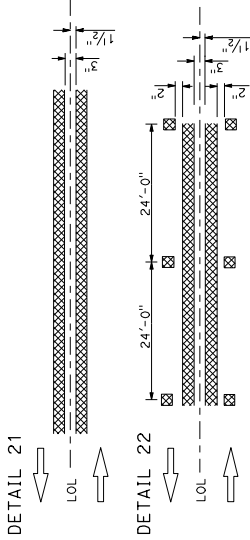
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Oliver J. Jarama
REGISTERED CIVIL ENGINEER

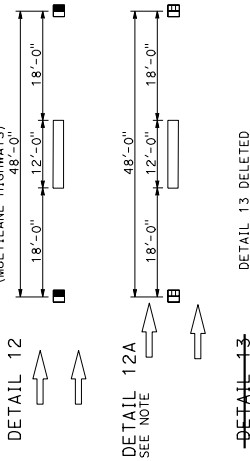
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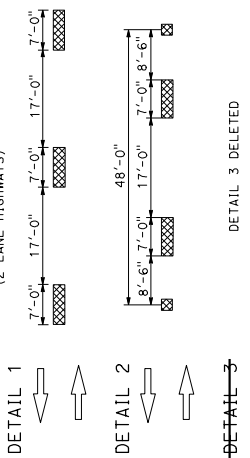
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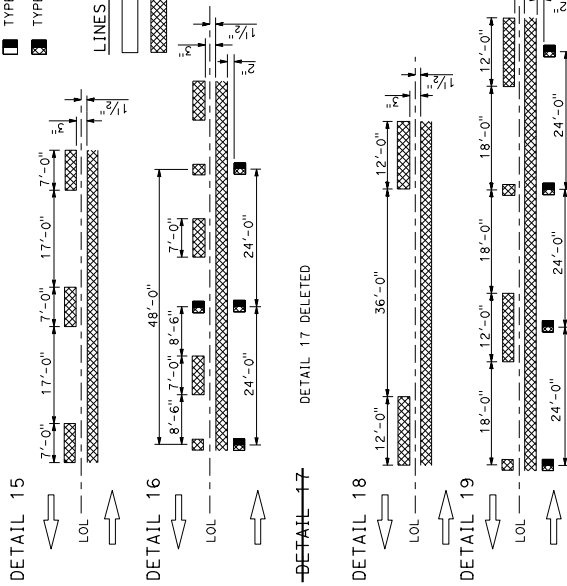
LANELINES (Cont)
(MULTILANE HIGHWAYS)



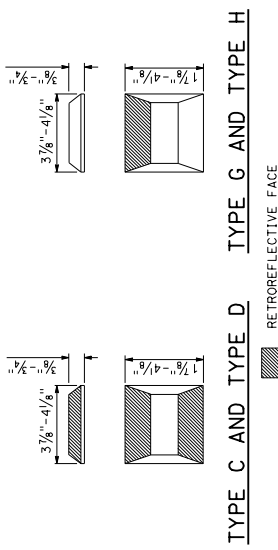
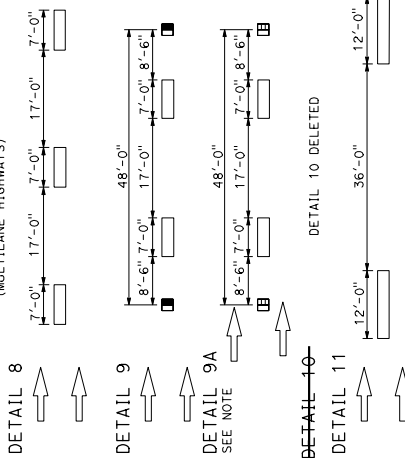
CENTERLINES
(2 LANE HIGHWAYS)



NO PASSING ZONES-ONE DIRECTION



LANELINES
(MULTILANE HIGHWAYS)



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**PAVEMENT MARKERS
AND TRAFFIC LINES
TYPICAL DETAILS**

NO SCALE

A20A

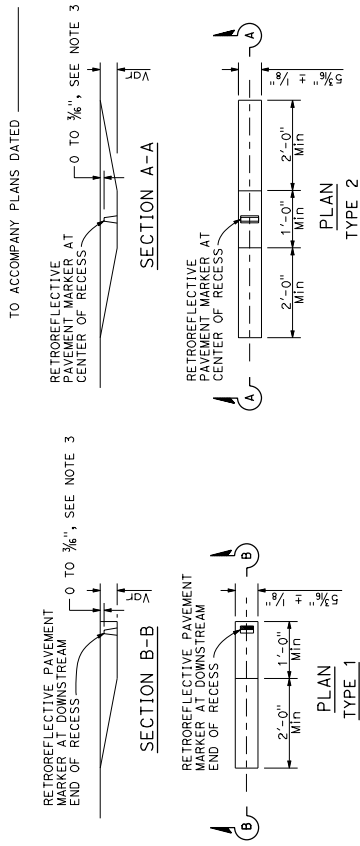
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DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET TOTAL SHEETS

Alfio Ferrara
REGISTERED CIVIL ENGINEER

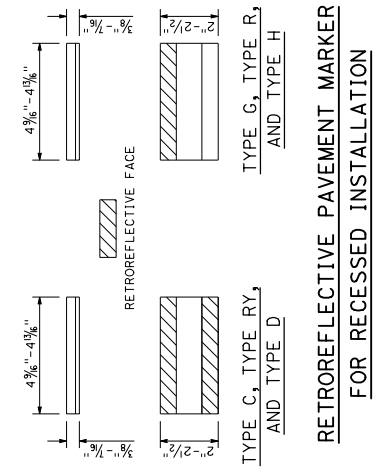
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REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
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CIVIL



RECESS DETAIL FOR RETROREFLECTIVE PAVEMENT MARKER

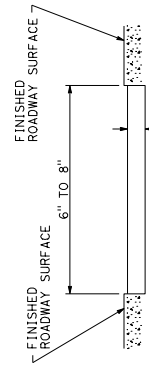
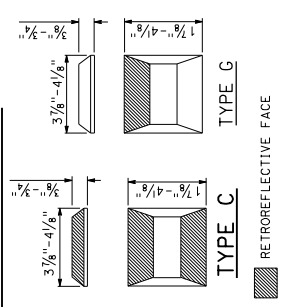
See Note 4



LEGEND

- MARKERS
- TYPE C RED-CLEAR RETROREFLECTIVE
 - TYPE G ONE-WAY CLEAR RETROREFLECTIVE
 - 6" YELLOW LINE

MARKER DETAILS

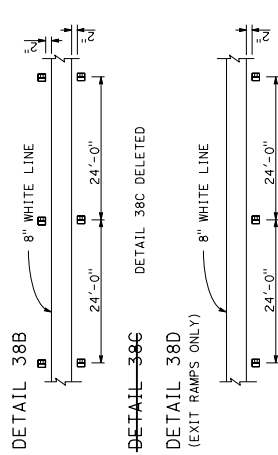
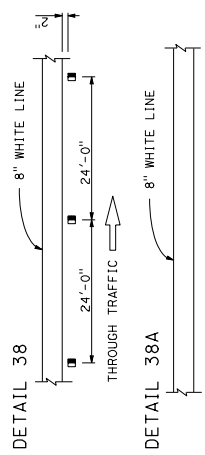


DETAIL FOR RECESSED TRAFFIC STRIPE

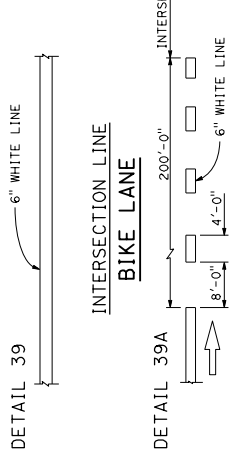
See Notes A and B.

- RECESSED NOTES:
- See typical traffic line details for pavement marking patterns.
 - See standard specifications for recess depth and recess striping material thickness.

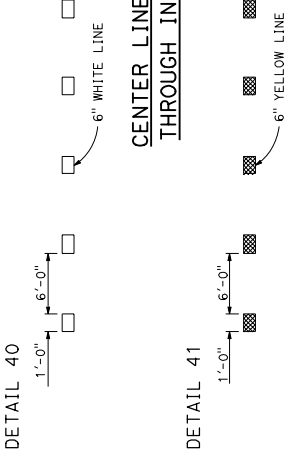
CHANNELIZING LINE



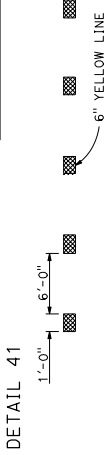
BIKE LANE



LANE LINE EXTENSIONS THROUGH INTERSECTIONS



CENTER LINE EXTENSIONS THROUGH INTERSECTIONS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINES AND TYPICAL DETAILS

NO SCALE

RSP A20D DATED OCTOBER 19, 2018. SUPERSEDES STANDARD PLAN A20D DATED MAY 31, 2018 - PAGE 15 OF THE STANDARD PLANS BOOK DATED 2018.

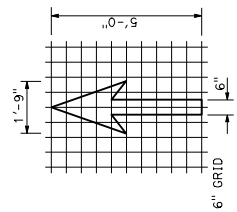
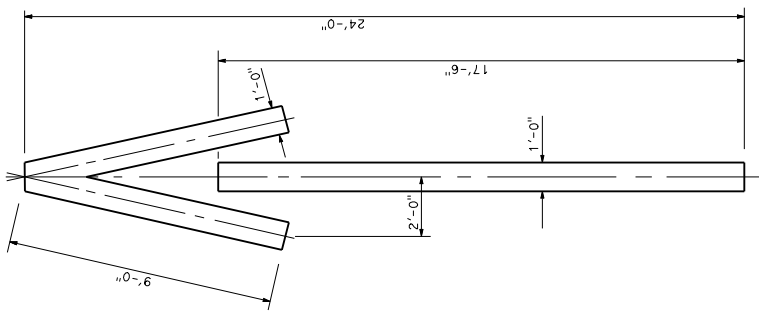
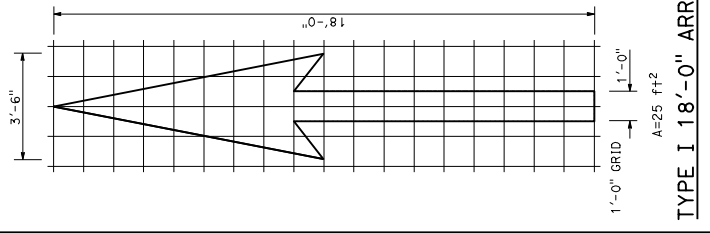
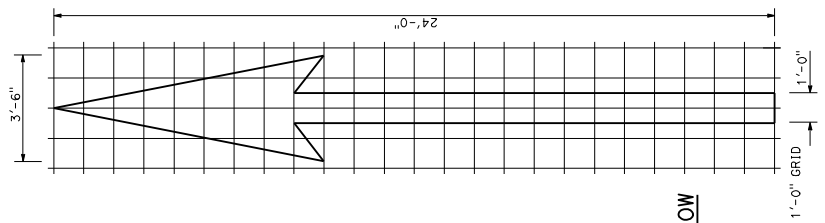
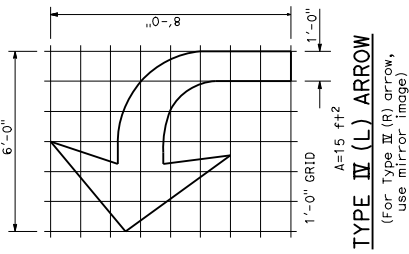
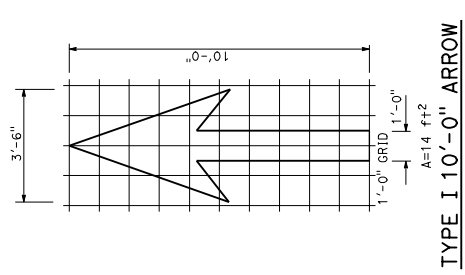
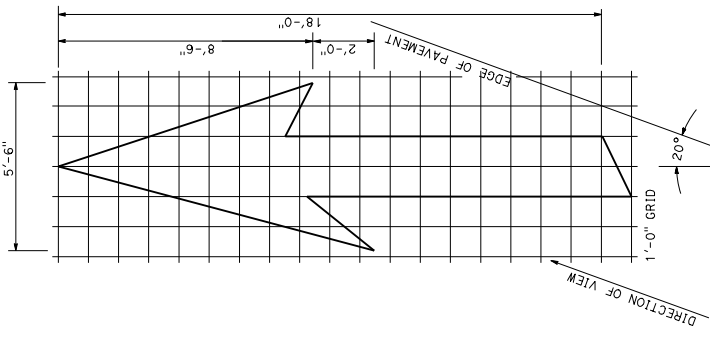
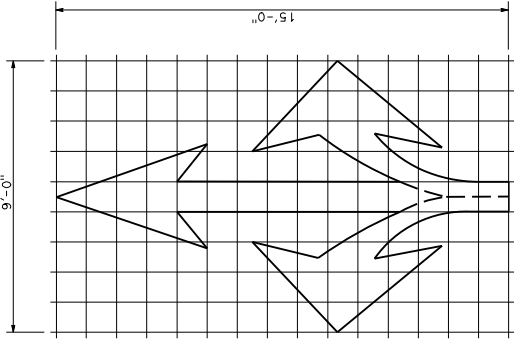
REVISED STANDARD PLAN RSP A20D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO. SHEETS

Alfonso Jesus
REGISTERED CIVIL ENGINEER

May 31, 2018
PLANS FOR THE
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
ON THESE SHALL NOT BE RESPONSIBLE FOR
THE ACCURACY OR COMPLETENESS OF ANY
COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER & ARCHITECT
Alfonso Jesus
No. CB0402
Exp. 3-31-19
STATE OF CALIFORNIA



NOTE:
Minor variations in dimensions may be accepted by the Engineer.

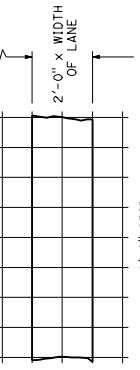
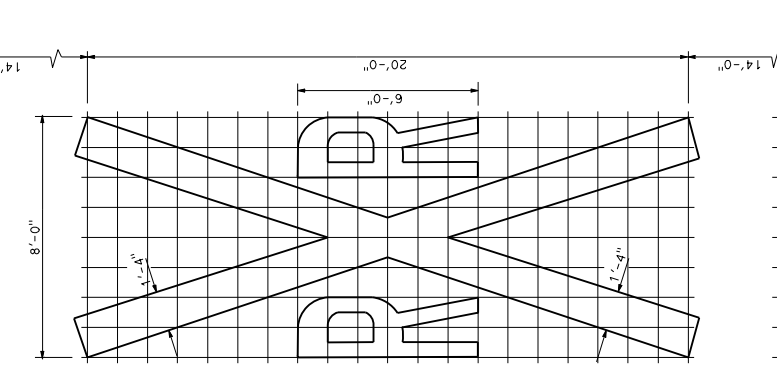
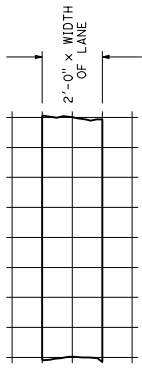
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
ARROWS**
NO SCALE

A 24A

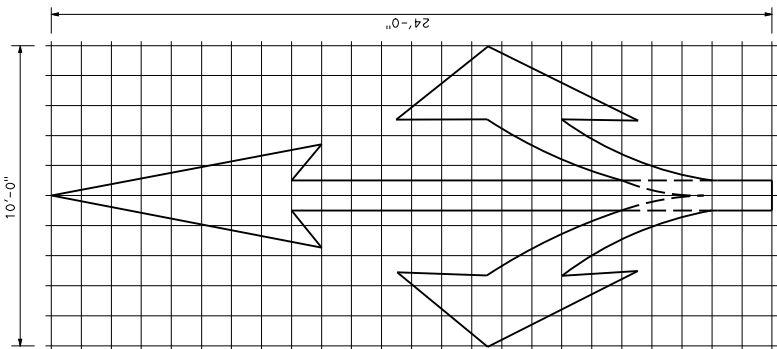
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO. SHEETS

REGISTERED CIVIL ENGINEER
Alfego Ferrouz
 No. CB0402
 Exp. 3-31-19
 STATE OF CALIFORNIA
 PROFESSIONAL ENGINEER & ARCHITECT

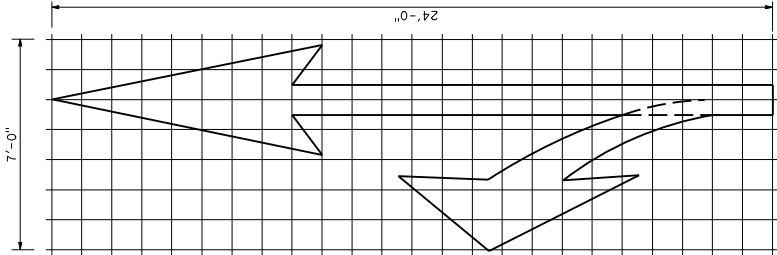
PLANS FOR PROJECT
 No. 3-31-19
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY INFORMATION CONTAINED HEREIN UNLESS SPECIFICALLY STATED OTHERWISE ON THIS SHEET.



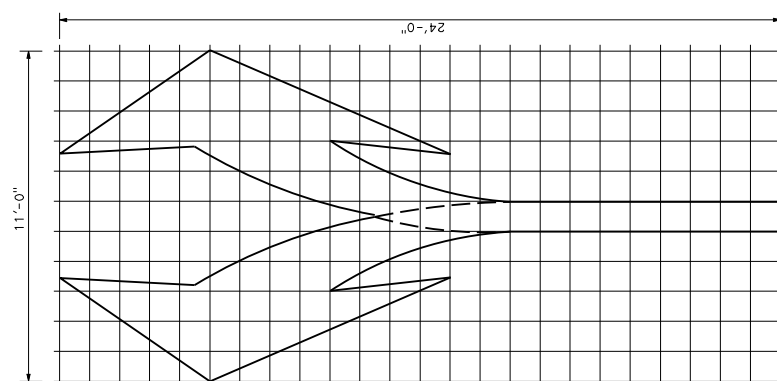
RAILROAD CROSSING SYMBOL
 * 70 ft± does not include the 2'-0" x variable width transverse lines.



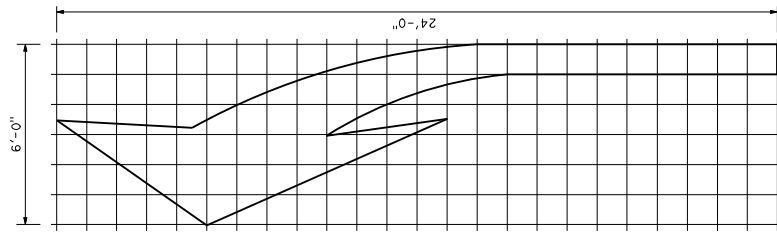
TYPE II (B) ARROW
 A=59 ft±
 1'-0" GRID



TYPE II (L) ARROW
 A=45 ft±
 1'-0" GRID
 (For Type I (R) use mirror image)



TYPE III (B) ARROW
 A=73 ft±
 1'-0" GRID



TYPE III (L) ARROW
 A=42 ft±
 1'-0" GRID
 (For Type III (R) use mirror image)

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**PAVEMENT MARKINGS
 ARROWS AND SYMBOLS**

NO SCALE

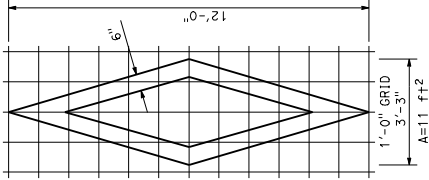
A 24B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO. SHEETS

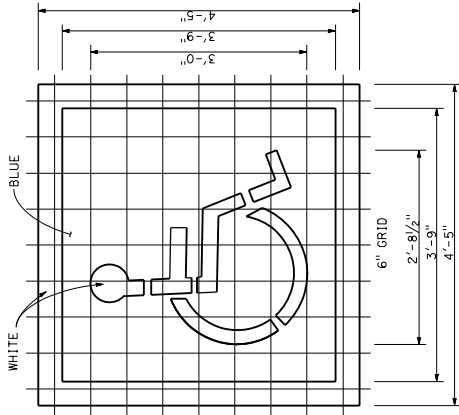
REGISTERED CIVIL ENGINEER
Alfonso J. Ferruz
 No. 33119
 STATE OF CALIFORNIA
 PROFESSIONAL ENGINEER & ARCHITECT

MAY 31, 2018
 BUSINESS DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE CONTENTS OF THIS PLAN SHEET.

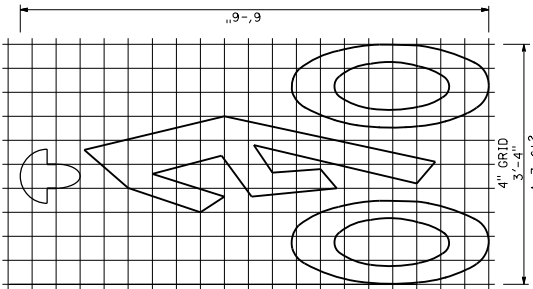
NOTE:
Minor variations in dimensions may be accepted by the Engineer.



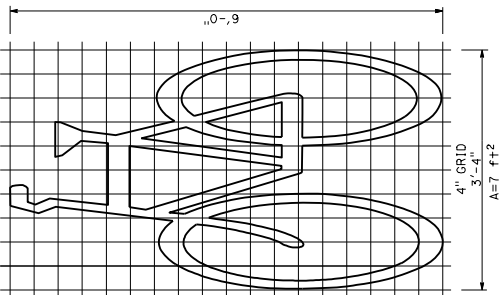
DIAMOND SYMBOL



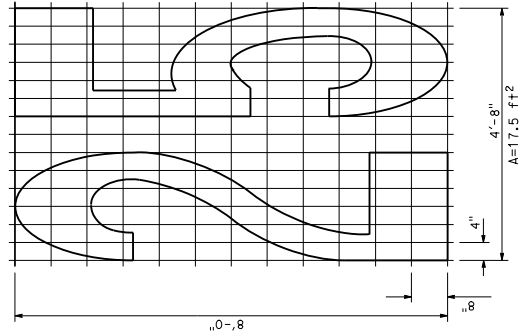
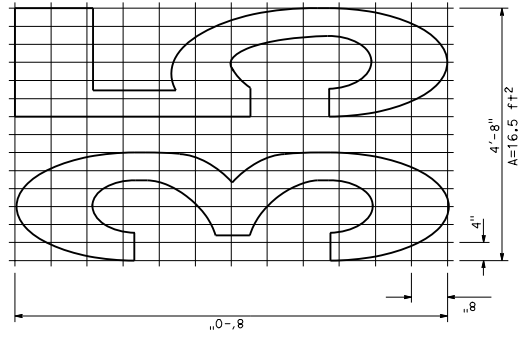
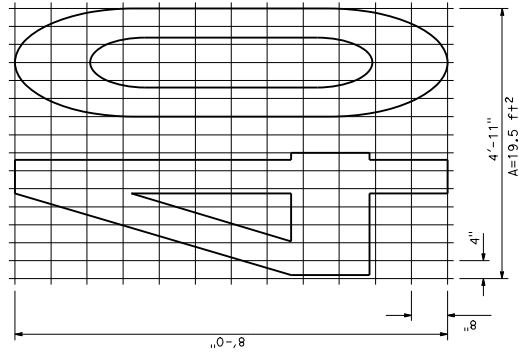
INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) MARKING



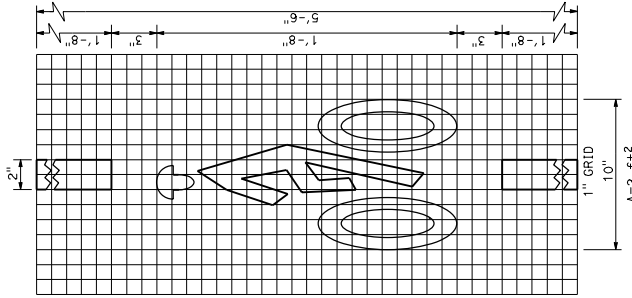
BIKE LANE SYMBOL WITH PERSON



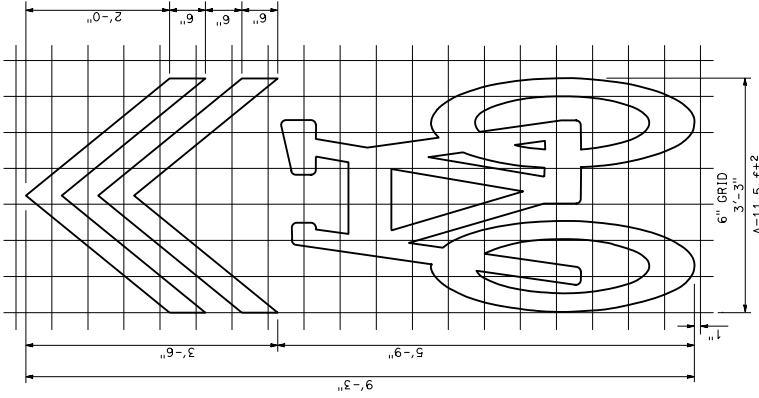
BIKE LANE SYMBOL WITHOUT PERSON



NUMERALS



BIKE LOOP DETECTOR SYMBOL



SHARED ROADWAY BICYCLE MARKING

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS SYMBOLS AND NUMERALS

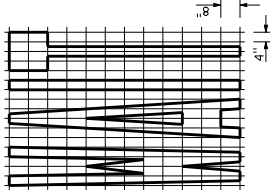
NO SCALE

A 24C

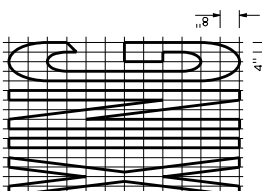
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO. SHEETS

REGISTERED CIVIL ENGINEER
Alfonso J. Lopez
 No. 31, 2018
 PLANS APPROVED BY
 THE STATE OF CALIFORNIA FOR ITS OFFICERS
 ON 05/31/2018. THE ENGINEER OR ARCHITECT
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR
 COPIES OF THIS PLAN SHEET.

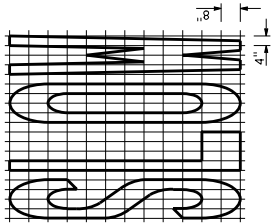
REGISTERED PROFESSIONAL ENGINEER & ARCHITECT
 ATT:G FERRAZ
 No. CB0402
 Exp. 3-31-19
 CIVIL
 STATE OF CALIFORNIA



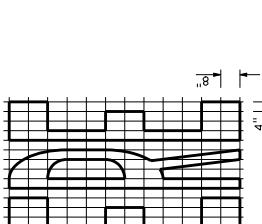
A=19 f+2



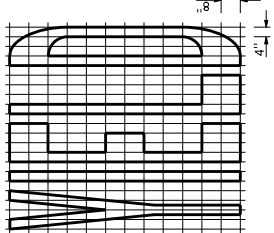
A=21 f+2



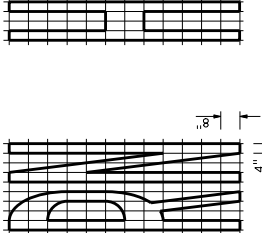
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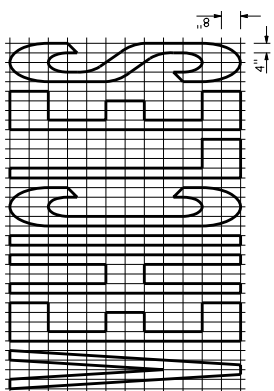
A=26 f+2



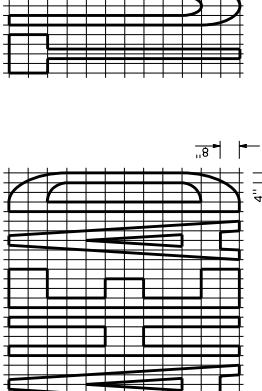
A=24 f+2



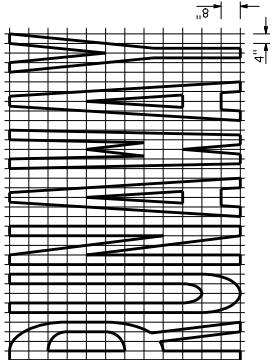
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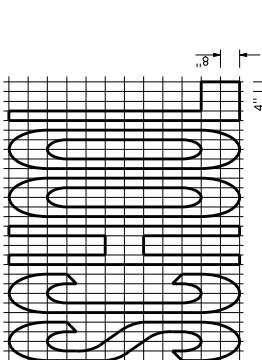
A=42 f+2



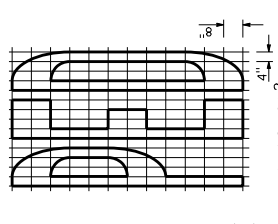
A=24 f+2



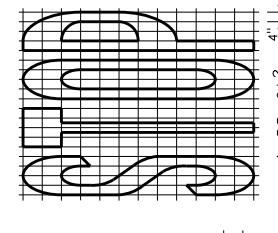
A=43 f+2



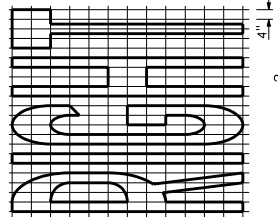
A=31 f+2



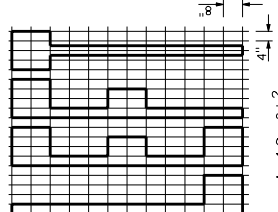
A=18 f+2



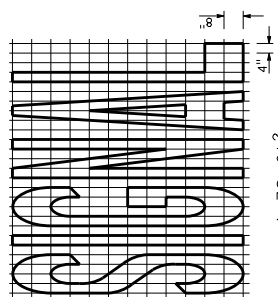
A=22 f+2



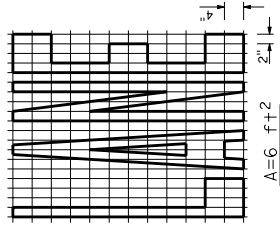
A=26 f+2



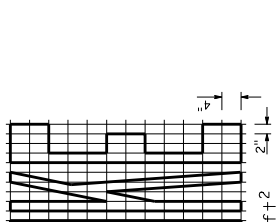
A=19 f+2



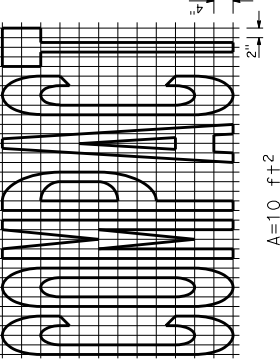
A=32 f+2



A=6 f+2



A=5 f+2



A=10 f+2

NOTES:

- If a message consists of more than one word, it must read "up", i.e., the first word must be nearest the driver.
- The space between words must be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
- Minor variations in dimensions may be accepted by the Engineer.
- Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.

WORD MARKINGS					
ITEM	f+2	ITEM	f+2	ITEM	f+2
XING	21	YIELD	24	BIKE	5
AHEAD	31	SCHOOL	35	SLOW	23
WAIT	19	SIGNAL	32	STOP	22
LANE	6	TURN	24	LEFT	19
RIGHT	26	HERE	26	VEHICLES	42

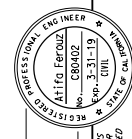
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**PAVEMENT MARKINGS
WORDS**

NO SCALE

A 24D

Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO. SHEETS



REGISTERED CIVIL ENGINEER
Aftig Ferooz
 October 19, 2018
 THIS STATE OF CALIFORNIA OFFICE OFFICER
 ON AGENTS SHALL NOT BE RESPONSIBLE FOR
 THE ACCURACY OR COMPLETENESS OF SCANNED
 COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED _____

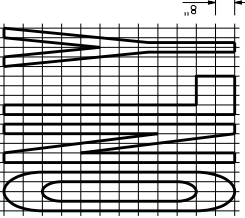
WORD MARKINGS		
ITEM	f+t2	ITEM
LANE	24	NO
POOL	23	BIKE
CAR	17	BUS
CLEAR	27	ONLY
KEEP	24	FNY
HGV	18	EXPRS
TRAIL	23	

NOTES:

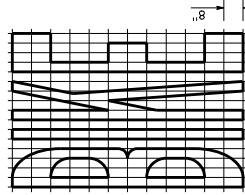
- If a message consists of more than one word, it must read "up", i.e., the first word must be nearest the driver.
- The space between words must be at least four times the height of the characters for low speed roads, but not more than twice the height of the characters for higher speed roads. The space may be reduced appropriately where there is limited space because of local conditions.
- Minor variations in dimensions may be accepted by the Engineer.
- Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
- The words "NO PARKING" pavement marking is to be used for parking facilities. For typical applications and markings, see Standard Plans A90A and A90B.
- The words "NO PARKING" shall be printed on a contrasting background and located so that it is visible to traffic enforcement officials.



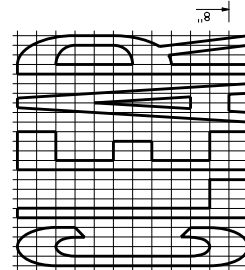
A=14 f+t2



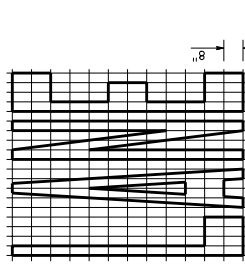
A=22 f+t2



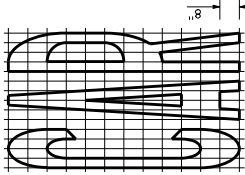
A=21 f+t2



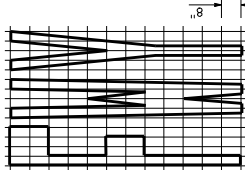
A=27 f+t2



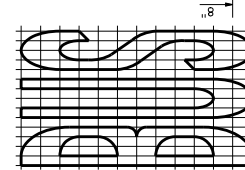
A=24 f+t2



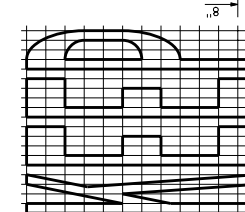
A=17 f+t2



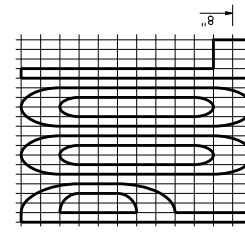
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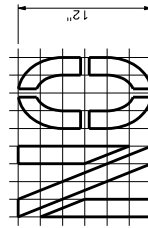
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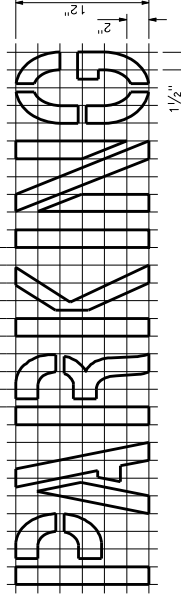
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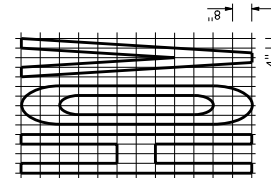
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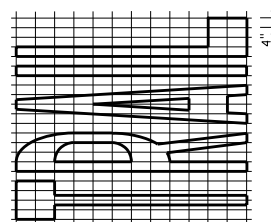
A=2 f+t2



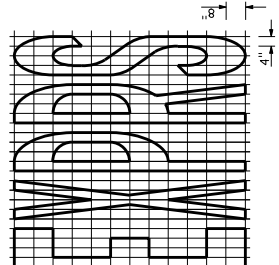
A=2 f+t2



A=18 f+t2



A=23 f+t2



A=30 f+t2

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**PAVEMENT MARKINGS
WORD MARKINGS**

NO SCALE

RSP A24E DATED OCTOBER 19, 2018 SUPERSEDES STANDARD PLAN A24E
DATED MAY 31, 2018 - PAGE 21 OF THE STANDARD PLANS BOOK DATED 2018.

REVISED STANDARD PLAN RSP A24E

PUBLIC WORKS LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

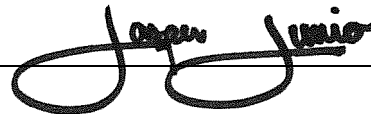
SPECIAL PROVISIONS

SECTION TC - TEMPORARY TRAFFIC CONTROL

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:



1/22/19

Date

Reviewed By:



1/22/19

Date

TABLE OF CONTENTS

PART 6 - TEMPORARY TRAFFIC CONTROL

SECTION 600 - ACCESS

600-1 GENERAL	TC-1
600-2 VEHICULAR ACCESS.....	TC-1

**SECTION 601 - TEMPORARY TRAFFIC CONTROL FOR
MAINTENANCE AND WORK ZONES**

601-1 GENERAL	TC-2
601-3 TEMPORARY TRAFFIC CONTROL (TTC) ZONE DEVICES.....	TC-2
601-3.1 General.....	TC-2
601-3.5 Signs and Signage.....	TC-3
601-3.7 Traffic Sign Enhancement Devices.....	TC-4
601-5 TRAFFIC LANE WIDTHS, CLEARANCES, AND OTHER REQUIREMENTS	TC-5
601-5.1 General.....	TC-5
601-9 STREET CLOSURES AND DETOURS.....	TC-5
601-10 PAYMENT	TC-6

PART 6 TEMPORARY TRAFFIC CONTROL

SECTION 600 - ACCESS

600-1 GENERAL. (Page 525 of the SSPWC)

Add the following:

At least 24 hours in advance of closing or restricting access to any property, the Contractor shall notify the owner or resident of said property. A copy of said notification shall be provided to the Engineer. The Contractor shall conduct its operations, including those of its subcontractors and suppliers, so as to provide reasonable access to the adjacent properties and have no greater length or quantity of work under construction than can be properly prosecuted with a minimum of inconvenience to the public and other contractors engaged on adjacent or related work.

600-2 VEHICULAR ACCESS. (Page 525 of the SSPWC)

Add the following:

Unless the Contractor makes other arrangements satisfactory to the Engineer and the owners, the following shall also apply to business establishments:

- a) For each establishment (such as, but not limited to, gas stations, markets and other "drive in" businesses) on the corner of an intersection which has a driveway (or driveways) on each intersecting street, the Contractor shall provide vehicular access to at least one driveway on each intersecting street unless otherwise approved in writing by the Engineer.
- b) For each establishment (such as, but not limited to motels, parking lots and garages) which has a one-way traffic pattern with the appropriate entrance driveway and exit driveway, the Contractor shall provide vehicular access to both the entrance driveway and the exit driveway.

SECTION 601 - TEMPORARY TRAFFIC CONTROL FOR MAINTENANCE AND WORK ZONES

601-1 GENERAL. (Page 525 of the SSPWC)

Add the following:

Street closures, detours, lane closures, signs, lights and other traffic control devices shall conform to the latest approved version of the California Manual on Uniform Traffic Control Devices (California MUTCD). The California MUTCD is available at the following address:

<http://www.dot.ca.gov/hq/traffops/engineering/mutcd/>

Unless otherwise approved by the Engineer, the Contractor shall allow passage of public transit coaches through the Work area at all times. For the Metropolitan Transportation Authority (Metro), the Contractor shall notify the Stops and Zones Representative, (213) 922-5190, at least 48 hours prior to construction at bus stop zones to allow Metro to temporarily abandon and relocate bus stop zones within the construction area.

Lips greater than one inch created during construction which is to remain overnight shall be ramped with temporary asphalt concrete at a slope not to exceed 1:1.

The roadway shall be cold milled and/or paved to full width at the end of each day.

601-3 TEMPORARY TRAFFIC CONTROL (TTC) ZONE DEVICES.

601-3.1 General. (Page 527 of the SSPWC)

Add the following:

The Contractor shall provide, install, and maintain all the traffic control devices including signing, striping, marking, barricades, delineators, flashing arrow signs, and other devices deemed necessary for the protection of the vehicular and pedestrian traffic throughout the Project area as required by these Specifications and as directed by the Engineer. The Project area shall include the construction area and areas required for the advance signing and transitions to and from the existing traffic control and the construction traffic control.

Traffic control devices shall conform to latest approved version of the California MUTCD, <http://www.dot.ca.gov/hq/traffops/engineering/mutcd/>, and the Standard Plans.

When no longer required, all temporary traffic control devices installed and/or covered by the Contractor shall be promptly removed and/or restored by the Contractor.

Any action on the part of the Engineer in directing the Contractor's attention to any inadequacy of the required devices and services or any action of the Agency to alleviate the Contractor's inadequacies shall not relieve the Contractor from its responsibility for public safety or abrogate its obligation to provide and maintain these devices and services. If the Contractor fails to provide and maintain these devices and services and the Agency is required to alleviate said condition, the total charges of labor, equipment and materials, including overhead and transportation, accrued by the Agency for such work will be deducted from any monies due the Contractor.

The Contractor shall be responsible for maintaining traffic control devices in their proper positions at all times. The Contractor shall replace, repair or clean such devices whenever necessary in order to ensure and preserve their appearance and functionality. The Contractor shall remove and dispose of all damaged barricades, including those furnished and placed by the Agency.

601-3.5 Signs and Signage. (Page 527 of the SSPWC)

601-3.5.1 General.

Add the following:

The Agency will furnish any necessary "No Parking" signs (signs) at no cost to the Contractor. Signs shall be installed by the Contractor after approval for such by the Engineer. Signs shall be installed for each construction activity or operation, unless such activities or operations will occur within 2 Working Days of each other. Signs shall be posted a minimum of 48 hours in advance of the start of each "No Parking" restriction.

601-3.5.2 Payment.

Replace the entire sentence with the following:

No separate or additional payment will be made for signs and signage. Payment shall be considered as included in the lump sum Bid price for "TRAFFIC CONTROL."

601-3.7 Traffic Sign Enhancement Devices. (Page 529 of the SSPWC)

601-3.7.5 Portable Changeable Message Signs (PCMS).

Replace the first paragraph with the following:

PCMS shall be furnished, placed, operated, and maintained at the locations shown on the TCP or as directed by the Engineer.

601-3.7.6 Flashing Arrow Signs.

Add the following:

Flashing arrow signs (flashing arrow installed, and maintained boards) shall be furnished, placed, operated, and maintained at the locations shown on the TCP or as directed by the Engineer.

601-3.7.8 Measurement.

Replace the second paragraph with the following:

Portable changeable message signs and flashing arrow signs will not be measured separately for payment.

601-3.7.9 Payment.

Replace the second paragraph with the following:

No separate or additional payment will be made for portable changeable message signs and flashing arrow signs. Payment shall be considered as included in the lump sum Bid price for "TRAFFIC CONTROL."

601-5 TRAFFIC LANE WIDTHS AND CLEARANCES. Revise to read as follows:

601-5 TRAFFIC LANE WIDTHS, CLEARANCES, AND OTHER REQUIREMENTS.

601-5.1 General. (Page 531 of the SSPWC)

Add the following:

Traffic lane requirements shall be as follows:

GARFIELD AVENUE AND OLYMPIC BOULEVARD:

For installation of traffic control devices during daylight working hours, the Contractor shall confirm with the latest approved version of the California MUTCD.

Traffic control shall be in conformance with the Traffic Control Plans included as a part of the Project Plans.

SOUTHSIDE DRIVE, NORTHSIDE DRIVE, MONTEBELLO PARKWAY, COOLIDGE WAY, AND SERVER AVENUE:

For installation of traffic control devices during daylight working hours, the Contractor shall confirm with the latest approved version of the California MUTCD.

May be reduced to one traffic lane for both directions controlled by flaggers during daylight working hours.

601-9 STREET CLOSURES AND DETOURS. The Contractor shall comply with all applicable State, County and City requirements for the closure of streets. The Contractor shall provide flag persons and watch persons as required to control traffic and advise 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.

At least 48 hours in advance of closing, or partially closing, or reopening, any street, alley, or other public thoroughfare, the Contractor shall notify the Police, Fire, traffic and engineering departments of jurisdictional agencies involved, and comply with their requirements. Proposed deviations from this procedure must first be approved in writing by the Engineer.

The Contractor shall submit in accordance with 3-8 of Section G its proposed schedules for street and lane closures, and its proposed methods for traffic control to comply with the requirements specified in 601-3.1 and 601-3.2. Key traffic control schedule activities and milestones shall be included in the Contractor's construction schedule as specified in 6-1 of Section G. This submittal shall be made sufficiently in advance of any rerouting or diversion of traffic by the Contractor to allow for review and approval of the proposed traffic control by the Agency. Street closure schedules must be submitted 20 Days prior to closing any street.

Where streets in which storm drain, waterline, or sewer line conduit is being constructed are to be closed to through traffic, it shall be understood that such closures shall apply only to the portions of such streets where construction is actually in progress. Unless otherwise specified, the Contractor shall provide access for local vehicular and pedestrian traffic on streets closed to through traffic.

Any street or alley, which intersects the street in which mainline conduit construction work is being done and for which traffic requirements are not otherwise specified, may be closed at its intersection with the Work provided that two adjacent streets are not closed simultaneously. However, where the street in which mainline conduit construction work is being done is the only access to a cul-de-sac or dead-end street or alley, vehicular access thereto shall be maintained at all times.

Where access to the Work sites involves passage through locked gates, the Contractor shall furnish its own locks in order to provide passage through the gates while maintaining security.

601-10 PAYMENT. Payment shall be considered as included in the lump sum Bid price for "TRAFFIC CONTROL" for:

- a) furnishing, installing, maintaining, and removing traffic control devices not specified as individual Bid items;
- b) furnishing, installing, maintaining, and removing temporary raised reflective markers;
- c) furnishing, installing, maintaining, and removing of steel plate covers;
- d) restoration of traffic striping and markings to their original condition;
- e) removal and disposal of damaged barricades, including those furnished by the Agency; and

- f) all other work required by Subsections 600 and 601, and the Traffic Control Plans not included as a separate Bid item

PUBLIC WORKS LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

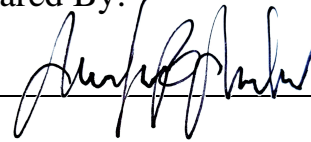
SPECIAL PROVISIONS

SECTION TS - TRAFFIC SIGNALS

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



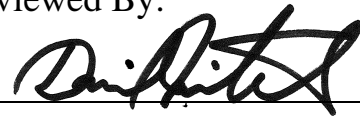
Prepared By:



1-22-19

Date

Reviewed By:



1/23/19

Date

TABLE OF CONTENTS

**PART 7 - STREET LIGHTING AND TRAFFIC
SIGNAL SYSTEMS**

SECTION 700 - MATERIALS

700-2 REFERENCE SPECIFICATIONSTS-1
700-3 COMMON COMPONENTSTS-1
700-3.3 Standards.....TS-1
700-5 TRAFFIC SIGNAL MATERIALSTS-2
700-5.9 Pedestrian Push Button AssembliesTS-2
700-5.16 Rectangular Rapid Flashing Beacon (RRFB)TS-2

SECTION 701 - CONSTRUCTION

701-1 GENERAL.....TS-4
701-17 TRAFFIC SIGNAL CONSTRUCTION.TS-4
701-17.14 Rectangular Rapid Flashing Beacon (RRFB).TS-4
701-19 PAINTING AND GALVANIZING.....TS-6

PART 7 STREET LIGHTING AND TRAFFIC SIGNAL SYSTEMS

SECTION 700 - MATERIALS

700-2 NOT USED. (Page 533 of the SSPWC)

Replace the entire subsection with the following:

700-2 REFERENCE SPECIFICATIONS. In addition to the requirements shown on the Plans, in the Standard Specifications, and in the Special Provisions, components shall conform, where applicable, to the following:

- a) “Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications,” February 2015, hereinafter referred to as the “TS Equipment Specifications.” The TS Equipment Specifications are posted at:

ftp://dpwftp.co.la.ca.us/pub/OSD/LACO_TSCES/LACO_TSCES_2015_2-10_FINAL.pdf

Wherever reference is made to regulations or codes, the reference shall be construed to mean the regulation or code that is in effect on the date of issuance of the Notice Inviting Bids for the Contract.

700-3 COMMON COMPONENTS.

700-3.3 Standards. (Page 533 of the SSPWC)

Replace the entire subsection with the following:

Standards shall conform to the Caltrans Standard Plans (2010 edition) and Caltrans Standard Specifications (2010 edition).

700-5 TRAFFIC SIGNAL MATERIALS.**700-5.9 Pedestrian Push Button Assemblies.** (Page 573 of the SSPWC)

Replace the entire subsection with the following:

Pedestrian push button assemblies shall conform to Section 86-1.02U, "Pedestrian Pushbutton Assemblies," of the Caltrans Standard Specifications (2018 edition).

Plastic housings shall not be used.

Add the following subsections:

700-5.16 Rectangular Rapid Flashing Beacon (RRFB).

700-5.16.1 General. A Rectangular Rapid Flashing Beacon (RRFB) is a device that provides a flashing indication to motorists that pedestrians are attempting to cross a roadway at a designated uncontrolled crossing. The RRFB will be installed as part of a sign assembly for a designated pedestrian uncontrolled crossing. All equipment shall be new, unused, not refurbished, and of the highest quality in durability and workmanship.

The overall system shall consist of two wireless pedestrian pushbuttons with warning placard, four single-sided or two double-sided RRFBs with pedestrian indicator lights, two solar panels, and a wireless controller capable of controlling the entire system. The pedestrian indicator lights shall be rectangular with a minimum area of 2 square inches.

The Contractor shall submit a complete Rectangular Rapid Flashing Beacon system without the Type 1 pole for acceptance testing at:

Los Angeles County Public Works Traffic Signal Shop
1525 Alcazar Street
Los Angeles, CA 90033

The Contractor shall make delivery arrangements with the Traffic Signal Shop 48 hours in advance by calling (626) 458-1704.

700-5.16.2 Flashing Beacon Requirements. As specified in the Federal Highway Administration Interim Approval Memorandum IA-11, each RRFB shall consist of two rectangular-shaped amber indications, each with a minimum size of approximately five inches wide by two inches high. These arrays will be facing vehicular traffic.

The LED light arrays shall operate in a "wig wag" pattern and flash 70 to 80 times per minute and shall have alternating but approximately equal periods of rapid pulsing light emissions and dark operation. During each of its 70 to 80 flashing periods per minute, one of the yellow indications shall emit two rapid pulses of light and the other shall emit three rapid pulses of light.

The intensity of light shall be certified to meet the minimum specifications of Society of Automotive Engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

An Additional LED array shall be directed towards pedestrians. This array shall be synchronized with the lights flashing for vehicles to provide an indication to pedestrians that the RRFB is active. The pedestrian array shall consist of multiple LEDs, rectangular in shape and a minimum of 2 square inches.

700-5.16.3 Beacon Operation. As specified in the Federal Highway Administration Interim Approval Memorandum IA-11, the RRFB shall be normally dark and flash only upon pedestrian activation and shall cease operation at a variable time after pedestrian activation.

700-5.16.4 Power. The RRFB shall be powered by a solar charging system capable of a minimum run time of 20 days without sunlight; based on 300 cycles per day and a 20 second activation time.

The solar panels shall come complete with all necessary components to mount the panels to a type 1 pole. The solar panels, including the mounting kit, shall weigh no more than 50 pounds.

700-5.16.5 Controller. The controller shall be capable for wireless communication for a minimum distance of 500 feet. The wireless communication shall ensure that all the RRFBs are flashing simultaneously after activated by a pedestrian. The controller shall allow for adjustable activation duration of five seconds to two minutes.

700-5.16.6 Pedestrian Activation. Pedestrian activation will take place using a pedestrian push button meeting current Americans with Disability Act requirements. A placard stating "PUSH BUTTON TO TURN ON WARNING LIGHTS" shall be included as a part of an integral system to mount the pedestrian push button.

700-5.16.7 Tamper/Weather Resistance. The cabinet and/or housing for any internal components, including but not limited to batteries, wiring, controller, and wireless communication devices, shall have a vandal/tamper resistance key lock, have a minimum environmental rating of NEMA 3R, and shall be constructed of aluminum.

SECTION 701 - CONSTRUCTION

701-1 GENERAL. (Page 574 of the SSPWC)

Add the following after the first paragraph:

At any given intersection, all Standards shall be erected; foundations, except foundations for controllers, shall be capped; and surfaces restored within 30 Working Days of commencing excavation or breaking concrete. This shall not extend the Contract duration beyond the number of Working Days specified in 6-3.1 of Section G.

701-17 TRAFFIC SIGNAL CONSTRUCTION.

Add the following subsection:

701-17.14 Rectangular Rapid Flashing Beacon (RRFB)

701-17.14.1 General. The contractor shall install a complete system and provide the complete installation of the furnished products in accordance with this specification. The exact locations where the products are to be installed are as shown on the plans and as directed by the Engineer. The contractor shall furnish all necessary material, equipment and labor to complete the installation to the satisfaction of this specification and to the Agency. All materials which the contractor intends to use shall meet with the approval of the Agency. All work and material shall be in conformance to the Standard Specifications for Public Works Construction (2018).

Upon award of the contract, contractor shall furnish to the Agency a standard drawing depicting the proposed manner of attaching the components to the modified Type 1 traffic signal standard as well as any other hardware not attached to the signal standard. The standard drawing shall depict all necessary detailing information to perform the installation. The standard drawing design shall be structurally sufficient to withstand 100 mph wind load. Visible conductors or conduits along the length of the standard are prohibited.

701-17.14.2 Installation Requirements. The manner of installation shall comply with all applicable guidelines published in the latest edition of California Manual on Traffic Control Devices. These guidelines include, but are not limited to, maintaining desired lateral and vertical clearances, including ADA lateral clearances. If the contractor is unable to comply with applicable guidelines, he shall be responsible to consult with the Agency. The mounting system shall be designed for installation on a Type 1 traffic signal standard. The mounting system shall accommodate two single-sided or one double-sided RRFB, solar power system, and controller without interference to double warning signs consisting of a 36 inch W11-2 mounted above the RRFB and a W16-7P mounted below the RRFB, while maintaining a 7 foot vertical clearance.

Each final constructed product shall have the sign assembly, solar panel and battery compartment attached to the modified Type 1 traffic signal standard in the manner depicted by the contractor submitted standard drawing. The contractor shall install each Type 1 traffic signal standard with its attached require hardware at the designated location in conformance with Caltrans Standard Plans and Specifications. The entire assembly shall be mounted on a contractor installed foundation for the Type 1 traffic signal standard also in conformance to Caltrans Standard Plans and Specifications, (2018 edition).

Operation time shall be furnished by the Agency (Traffic & Lighting Division).

As required by law, the contractor is responsible to contact Underground Service Alert to have all underground utilities marked. The contractor shall notify The Agency of any potential conflicts with underground utilities. The contractor is also responsible for contacting all affected utilities and providing them with utility notices.

The contractor's method of installation shall be such to minimize its negative effects to surrounding facilities. The contractor shall be responsible to restore affected facilities to pre existing conditions.

701-17.14.3 Acceptance. The contractor is required to provide The Agency with their intended plan and schedule concerning the required installations. Upon each installation, the contractor is required to inform The Agency of the installation, to obtain Agency inspection approval, and coordinate with the Agency's Operational Services Division personnel to be present prior to the turn on of the sign for acceptance of the system by calling the Traffic Signal Shop at (626) 458-1704. Following the acceptance of each installation, the contractor shall provide to the Agency a record of the exact location, date and time of each installation of the product. Only a completed product reflecting quality workmanship will be accepted.

701-17.14.4 Warranty/Support. It is the responsibility of the contractor to ensure that all equipment provided has been thoroughly tested prior to shipment and that each shipment conforms to this specification.

The minimum warranty for all equipment and materials shall be for a minimum period of five years from the operational date. The warranty shall cover the manufacturer's defects and parts, including batteries.

The contractor shall ensure appropriate technical support is provided to the Agency on an as-needed for two years either by telephone or in person. Technical support shall be provided at no additional cost.

The contractor shall ensure that it is capable of providing replacement parts to the Agency within 30-days of the request.

701-17.14.5 Payment. Payment for construction of Rectangular Rapid Flashing Beacons, including the presentation to the Agency, construction of the footing, standards, anchor assembly, push button assembly, all other components in accordance with these special provisions, and all other incidental materials and work required, shall be made at the lump sum Bid price for " TRAFFIC SIGNALS."

701-19 PAINTING AND GALVANIZING. (Page 590 of the SSPWC)

Delete the entire section.

PUBLIC WORKS

LOS ANGELES COUNTY

PROJECT ID NO. WMU0000010

SPECIAL PROVISIONS

SECTION LS - LANDSCAPING AND IRRIGATION

The following Special Provisions supplement and amend Part 8 of the Standard Specifications for Public Works Construction, 2018 Edition. As a reference convenience, these Special Provisions have been arranged into a format which parallels the Standard Specifications.



Prepared By:

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1/16/2019
Date

Reviewed By:
Stephen Zurek

2/14/2019
Date

TABLE OF CONTENTS

PART 8 - LANDSCAPING AND IRRIGATION

SECTION 800 - MATERIALS

800-1 LANDSCAPING MATERIALS.....	LS-1
800-1.1 Topsoil.....	LS-1
800-1.2 Soil Fertilizing and Conditioning Materials	LS-8
800-1.4 Plants	LS-10
800-1.5 Headers, Stakes, and Ties.....	LS-11
800-1.6 Weed Control.....	LS-11
800-1.7 Root Barriers	LS-11
800-1.8 Miscellaneous Improvements.....	LS-12
800-1.9 Landscape Submittals List	LS-17
800-2 IRRIGATION SYSTEM MATERIALS.....	LS-18
800-2.1 Pipe and Fittings.....	LS-18
800-2.2 Valves and Valve Boxes.....	LS-18
800-2.4 Sprinkler Equipment.....	LS-22
800-2.5 Irrigation Submittals List.....	LS-23
800-3 ELECTRICAL MATERIALS	LS-24
800-3.2 Conduit and Conductors	LS-24
800-3.3 Controller Unit.....	LS-25

SECTION 801 - INSTALLATION

801-1 GENERAL.....	LS-26
801-2 EARTHWORK AND TOPSOIL PLACEMENT	LS-27
801-2.1 General	LS-27
801-2.2 Topsoil Preparation and Conditioning.....	LS-27
801-2.3 Finish Grading.....	LS-28
801-4 PLANTING.....	LS-28
801-4.1 General	LS-28
801-4.5 Tree and Shrub Planting	LS-30
801-4.6 Plant Staking and Guying.....	LS-31
801-5 IRRIGATION SYSTEM INSTALLATION	LS-31
801-5.1 General	LS-31
801-5.2 Trench Excavation and Backfill	LS-35
801-5.3 Irrigation Pipeline Installation.....	LS-35
801-5.4 Installation of Valves, Valve Boxes, and Special Equipment.....	LS-38
801-5.5 Sprinkler Head Installation.....	LS-40

TABLE OF CONTENTS

801-5.6 Automatic Control System Installation	LS-42
801-5.7 Flushing and Testing	LS-43
801-6 MAINTENANCE AND PLANT ESTABLISHMENT	LS-44

SECTION 802 - DECOMPOSED GRANITE

802-1 GENERAL	LS-45
802-2 SUBMITTALS.....	LS-45
802-3 MATERIALS.....	LS-45
802-4 PLACEMENT.....	LS-46
802-4.1 General	LS-46
802-4.2 Subgrade.....	LS-46
802-4.3 Spreading and Compacting.....	LS-46

SECTION 803 – DECORATIVE BOULDERS

803-1 GENERAL	LS-46
803-2 SUBMITTALS.....	LS-46
803-3 MATERIALS.....	LS-47
803-3.1 General	LS-47
803-4 PLACEMENT.....	LS-47
803-4.1 General	LS-47
803-4.2 Subgrade.....	LS-47
803-4.3 Installation.....	LS-48

SECTION 804 – RIVER ROCK COBBLE

804-1 GENERAL	LS-48
804-2 SUBMITTALS.....	LS-48
804-3 MATERIALS.....	LS-48
804-3.1 General	LS-48
804-4 PLACEMENT.....	LS-49
804-4.1 General	LS-49
804-4.2 Subgrade.....	LS-49
804-4.3 Base	LS-49
804-4.4 Installation.....	LS-49

TABLE OF CONTENTS

SECTION 805 – BIOCHAR

805-1 GENERALLS-50
805-2 SUBMITTALS.....LS-50
805-3 MATERIALS.....LS-50
805-3.1 GeneralLS-50
805-4 PLACEMENT.....LS-50
805-4.1 GeneralLS-50
805-4.2 Subgrade.....LS-50
805-4.3 Installation.....LS-51

SECTION 806 – LANDSCAPE AND IRRIGATION PAYMENT

806-1 PAYMENTLS-51

PART 8 LANDSCAPING AND IRRIGATION

SECTION 800 - MATERIALS

800-1 LANDSCAPING MATERIALS.

800-1.1 Topsoil. (Page 591 of the SSPWC)

800-1.1.1 General.

Add the following:

a) Agronomic Soil Report.

- 1) Prior to the delivery of imported topsoil and bioswale soil to the Work site, the Contractor shall submit to the Engineer agronomic soil report(s) and growth (herbicide) test results in report form (test report) for every 150 cubic yards of soil. The test reports shall include the name, location, history and description of the source/site from which the soil was excavated and the depth of harvesting. If imported topsoil is obtained from more than one source/site, the Contractor shall submit the name and location of each source/site and submit test reports per source/site at the aforementioned frequency. Test reports shall be prepared specifically for the Project and shall be dated no earlier than the date of execution of the Contract. Soil test performance and test report submittal shall be shown as individual activities on the Contractor's baseline schedule in accordance with subsection 6-1 of Section G.

The Contractor shall submit the test reports in accordance with the following:

- i) If existing site soil is used for the Project, the Contractor shall submit test reports for the existing soil after the completion of the grading operations and prior to soil preparation. Soil shall be sampled at a minimum frequency of 1 test per acre of Project size. A minimum of 3 samples shall be tested for Projects less than 1 acre in size.

- ii) The Contractor shall submit the test reports in accordance with the following:
1. The Contractor shall submit test reports for the existing soil after the completion of the grading operations and prior to soil preparation. Soil shall be sampled at the locations identified on the Plans. Each location shall have two tests at the following depths: 0"-12" and 12"-24".
 2. Soil report shall include soil analysis and recommendations per the Water Efficient Landscape Ordinance California, section 492.5. The test reports shall be prepared by one of the following agronomic soils testing laboratories:

The test reports shall be prepared by one of the following agronomic soils testing laboratories:

Wallace Laboratory
365 Coral Circle
El Segundo, CA 90245
(310) 615-0116
Email: gaw@wlabs.net

Waypoint Analytical
4741 East Hunter Ave. Suite A,
Anaheim, CA 92807
(714) 282-8777
Email: supportca@waypointanalytical.com

- 2) Additional agronomic soils and growth testing may be required at any time during construction. Areas of testing shall be as directed by the Engineer.
- 3) Unless otherwise approved by the Engineer, soil samples shall be collected and sampled by the testing laboratory as a part of their services.

- 4) For imported topsoil, at the time of sampling 2 samples (one pint each) shall be collected by the testing laboratory. One sample shall be for testing and the other delivered to the following within one week of the date the sample was taken:

Los Angeles County Public Works
Design Division, 6th Floor
Attention: Stephen Zurek
900 S. Fremont Avenue
Alhambra, CA 91803

- 5) The report shall indicate soil analysis for plant growth suitability, including permeability rate, and recommendations for soil preparation in all planting areas and soil mix for backfill of planting container material.
- 6) The recommendations of the agronomic soil report(s) shall take precedence over the quantities of soil amendments and material mix specified in the backfill mix; and only when those recommendations exceed the minimum requirements specified.
- 7) Germination and growth of monocots and dicots shall not be restricted more than 20 percent without the addition of activated charcoal when compared to the reference soil. Total petroleum hydrocarbons shall not exceed 50 mg/kg when tested in accordance with modified EPA Test Method 8015. Total aromatic volatile organic hydrocarbons (benzene, toluene, xylene, and ethylbenzene) shall not exceed 0.5 mg/kg when tested in accordance with EPA Test Method 8020.
- 8) The Contractor shall not begin any planting work until the agronomic soil report(s) has been reviewed and approved by the Agency and field work has been proven to comply with approved soil report. This may be proven through additional soil testing with laboratory reports; material submittals/receipts; and/or, field observation.

800-1.1.2 Class “A” Topsoil.

Replace the entire subsection with the following:

Class “A” topsoil shall be imported from a source outside the limits of the Work selected by the Contractor and shall conform to the following requirements:

- a) Soil shall be free of roots, clods, pockets of coarse sand, noxious weeds, sticks, brush, litter, and stones larger than 1 inch in greatest dimension.
- b) Soil shall not be infested with nematodes or other undesirable disease-causing organisms
- c) Continuous, air-filled pore space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent on a dry weight basis.
- d) Mechanical Analysis and Permeability Rate(s). Topsoil shall be a sandy loam, loam, clay loam, or clay. The selection shall be made by the Engineer or else be similar to the Work site soil. The definition of soil texture shall be based on the United States Department of Agriculture (USDA) classification scheme. Gravel over 1/4 inch in diameter shall be less than 10 percent by weight. The hydraulic conductivity rate shall be not less than 1 inch per hour nor more than 10 inches per hour when tested in accordance with the USDA Handbook Number 60, Method 34b.
- e) Organic Matter Content. Organic matter (loss of ignition) shall be 3 to 5 percent by weight minimum based on the weight of the sample dried to constant weight at 100 to 110 °C, or as determined by the sulfuric acid test. Soil organic matter shall not cause toxicity or cause excessive reduction in the volume of soil due to decomposition. The carbon/nitrogen ratio shall be 9.5 to 10.5. When topsoil otherwise complies with the requirements but shows a slight deficiency in organic matter content, humus, peat moss or other approved organic matter may be incorporated when approved by the Engineer.
- f) pH. The soil pH range measured in the saturation extract (Method 21a, USDA Handbook Number 60) shall be 6.0 - 7.9.

- g) Fertility. The range of the essential elemental concentration in soil shall be as follows:

Ammonium Bicarbonate/DTPA Extraction

Parts Per Million (mg/kilogram)
Dry Weight Basis

Boron	0.2 - 1
Copper	0.1 - 5
Iron	2 - 35
Magnesium	50 - 150
Manganese	0.3 - 6
Molybdenum	0.1 - 2
Phosphorus	2 - 40
Potassium	40 - 220
Sodium	0 - 100
Sulfur	25 - 500
Zinc	0.6 - 8

- h) Salinity – Electrical Conductance. The salinity range measured in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 0.5-3.0 dS/m.
- i) Chloride. The maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 150 mg/kg (parts per million).
- j) Boron. The maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 1 mg/kg (parts per million).
- k) Sodium Absorption Ratio (SAR). The maximum SAR (Method 20b, USDA Handbook Number 60) shall be 3.
- l) Aluminum. Available aluminum measured with the ammonium bicarbonate/DTPA extraction shall be less than 3 parts per million.
- m) Calcium Carbonate Content. Free calcium carbonate (limestone) shall not be present.
- n) Heavy Metals. The maximum permissible elemental concentration in the soil shall not exceed the following:

- 1) Ammonium Bicarbonate/DTPA Extraction
Parts Per Million (mg/kilogram)
Dry Weight Basis

Arsenic	2
Cadmium	2
Chromium	10
Cobalt	2
Lead	30
Mercury	1
Nickel	5
Selenium	3
Silver	0.5
Vanadium	3

- 2) pH. If the soil pH is between 6 and 7, the maximum permissible elemental concentration shall be reduced 50 percent. If the soil is less than 6.0, the maximum permissible elemental concentration shall be reduced 75 percent. No more than three metals shall be present at 50 percent or more of the above values.

Add the following subsection:

800-1.1.5 Class “D” Bioswale Soil. Bioswale soil (soil) shall conform to subsection 800-1.1.2 except as follows:

- a) **Mechanical Analysis and Permeability Rate(s).** Bioswale soil shall consist of coarse sand and sandy loam topsoil. 10%-20% by volume of clay content can be present in the topsoil to provide cation exchange capacity (CEC). The percentage of the mix shall meet the hydraulic conductivity requirement below. Humus and compost can be added to increase the organic matter content as recommended per agronomic soils reports. All materials shall be free of wood, waste, coating such as clay, stone dust, carbonate, etc., or any other deleterious material. Hydraulic conductivity rate shall be 2-5 inches per hour when tested in accordance with the USDA Handbook Number 60, method 34b.

- b) Cations and Desirable Ranges. The range of the essential cation concentration in soil shall be as follows:

Calcium 65 – 80%
 Magnesium 10 – 15%
 Potassium 1 – 5%
 Sodium 0 – 1%
 Aluminum 0%

- c) Coarse Sand. Coarse sand shall consist of natural or manufactured granular materials, or a combination of thereof. It shall be free of deleterious materials. Coarse sand gradation shall conform to Portland Cement Concrete gradation of Table 200.1.5.5 of the Standard Specifications for Public Works Construction, 2018 Edition.

- d) Fertility. The range of the essential elemental concentration in soil shall be as follows:

Ammonium Bicarbonate/DTPA Extraction
 Parts Per Million (mg/kilogram)
 Dry Weight Basis

Boron	0.2 - 1
Copper	0.3 - 5
Iron	4 - 35
Magnesium	50 - 150
Manganese	0.6 - 6
Molybdenum	0.1 - 2
Phosphorus	10 - 40
Potassium	100 - 220
Sodium	0 - 100
Sulfur	25 - 500
Zinc	1 - 8

- e) **Organic Matter Content.** Organic matter content shall be 3 to 5 percent.

800-1.2 Soil Fertilizing and Conditioning Materials. (Page 591 of the SSPWC)**800-1.2.4 Organic Soil Amendment.**

Replace the entire subsection with the following:

Organic soil amendment shall conform to the following requirements:

- a) Humus material shall have an acid-soluble ash content of no less than 6 percent and no more than 20 percent. The organic matter content shall be 50 percent or more when determined on a dry weight basis.
- b) The pH shall be between 6 and 7.5.
- c) The salt content shall be less than 10 millimho/cm at 25 °C in a saturated paste extract.
- d) Boron content of the saturated extract shall be less than 1.0 part per million.
- e) Silicon content (acid-insoluble ash) shall be less than 50 percent.
- f) Calcium carbonate shall not be present if to be applied on alkaline soils.
- g) Composted wood products are conditionally acceptable (stable humus must be present). Wood-based products based on redwood or cedar are not acceptable. When applying nitrogen-stabilized wood shavings, fine grade with 1 percent nitrogen added per pound of shavings.
- h) Sludge-based materials are not acceptable.
- i) Carbon/nitrogen ratio shall be less than 25:1.
- j) Compost shall be aerobic without malodorous presence of decomposition products.
- k) The maximum particle size shall be 0.5 inch. Eighty percent or more shall pass a No. 4 sieve.
- l) Agricultural gypsum shall be composed of a minimum of 92 percent calcium sulfate particles of which a minimum of 85 percent by weight must pass a No. 100 sieve.

- m) Sulfur shall be 99 percent pure. Not more than 1 percent by weight shall be retained on a No. 8 sieve.
- n) Activated charcoal shall be suitable for agricultural use.
- o) Peat shall be free from alkali.
- p) The maximum total permissible pollutant concentrations in parts per million on a dry weight basis shall be as follows:

arsenic	20	molybdenum	20
cadmium	15	nickel	100
chromium	300	selenium	50
cobalt	50	silver	10
copper	100	vanadium	500
lead	200	zinc	200
mercury	10		

- q) Prepared backfill mix shall consist of the following:
 - 1) Imported top soil: 60 percent by weight.
 - 2) Humus soil amendment: compost, washed steer manure, mushroom compost, composted wood products (not including redwood or cedar): 40 percent by weight.
 - 3) Urea formaldehyde (38-0-0): 1/3 pound per cubic yard.
 - 4) Potassium sulfate (0-0-50): 1/3 pound per cubic yard.
 - 5) Triple superphosphate (0-45-0): 1/3 pound per cubic yard.
 - 6) Agricultural gypsum: 1 pound per cubic yard.

800-1.2.5 Mulch.

Replace the entire subsection with the following:

Mulch shall be medium to fine textured (3/4 inch to 2 inch) ground wood by-product or shredded bark mulch and shall be dark brown in color. Mulch shall be free of freshly-cut vegetation, seeds, inorganic material, heavy metals, and fungus. Contractor shall submit the name, supplier, and physical sample in a double-lined plastic bag for review and approval prior to use.

800-1.4 Plants. (Page 593 of the SSPWC)**800-1.4.1 General.**

Add the following:

The Contractor shall obtain approval from the Engineer and secure all plants required for the Project after issuance of the Notice to Proceed in accordance with subsection 6-1 of Section G.

The Contractor shall submit a list of plant materials (sizes and quantities), sample photographs of plants including size reference (e.g. known container size, yard sticks), and the name, address, contact person, and phone number of the nursery or nurseries where the plants are to be purchased.

Once the plant submittal has been approved by the Engineer, no plant substitutions will be allowed unless such substitutions are deemed necessary due to an unforeseen cause as approved by the Engineer.

Plant materials 15 gallons and larger in size will be inspected and tagged at the nursery by the Engineer no later than 2 weeks prior to the start of planting operations. The Contractor shall coordinate the tagging of plants with the nursery and the Engineer. The provisions of 4-3.3 of the Greenbook shall be applicable to the nursery location.

Plants 5 gallons in size and smaller will be inspected and approved at the Project site by the Engineer at the time of delivery.

Plants not approved by the Engineer shall be removed from the Project site and replaced with approved plants.

800-1.4.2 Trees and 800-1.4.3 Shrubs.

Replace the entire subsection with the following:

800-1.4.2 Trees and Shrubs. Refer to the list of plants and respective quantities shown on the Plans. The quantity listed shall only be used as a guide. The Contactor is responsible for providing all plants shown or implied on the Plans.

The plants sizes and conditions shown on the list of plants on the Plans conforms to the most current American Nursery Standards,

https://cdn.ymaws.com/americanhort.site-ym.com/resource/collection/38ED7535-9C88-45E5-AF44-01C26838AD0C/ANSI_Nursery_Stock_Standards_AmericanHort_2014.pdf.

One of each variety of plant shall be labeled with the proper botanical name, identifying genus, species and if applicable, cultivar or variety.

800-1.5 Headers, Stakes, and Ties. (Page 593 of the SSPWC)**800-1.5.3 Tree Stakes.**

Replace the first sentence of the first paragraph with the following:

Tree stakes shall be constructed of pressure-treated lodge pole pine, 2 to 2-1/2 inches in diameter.

Add the following subsections:

800-1.6 Weed Control. Weed control shall be through a physical, cultural, biological, or organic method. Chemical methods of weed control shall not be used, such as the use of glyphosate or a chemically related trans-locating herbicide.

Contractor shall provide the selected weed control process as a submittal for review and acceptance.

800-1.7 Root Barriers. Root barriers (barriers) shall conform to Note 11 of SPPWC Standard Plan 520. Barriers shall be approved by the Engineer prior to use. Barriers shall be installed per Plans. Root Control Barriers shall be manufactured by one of the following:

- a) Deep Root, model UB 18-2; Tel: (1) 415-781-9700
<http://www.deeproot.com/products/root-barrier/ub18-2.html#head>

- b) Villa Root Barrier, model Dual Purpose Panels; Tel: (1) 800-654-4067
<http://www.villarootbarrier.com/images/pdf-optimized/Dual%20Purpose.pdf>
- c) Century Products, model CP-18-2; Tel: (1) 714-632-7083
<http://centuryrootbarrier.com/product/root-barrier-panel-case-2/>

Barriers may be one continuous piece or be securely connected at splice points. Barriers shall be installed in accordance with the manufacturer's instructions and shall not be used as a form.

Backfill shall not be placed until barriers are in place upon completion of the adjacent work provided that adequate safety and warning devices are placed and maintained at each location. The area between the back of curb and the barriers shall be backfilled with topsoil per Plans.

Add the following subsection:

800-1.8 Miscellaneous Improvements. The following items are landscape materials and are part of the Project.

800-1.8.1 General. All furnishings under subsections 800-1.8.2 through 800-1.8.4 and all Paracourse Exercise Equipment under subsection 800-1.8.5 shall be from the same manufacturer.

800-1.8.2 Concrete Park Bench (with Conc. Footing in Planting Areas). Seven Foot Concrete Park Bench shall be manufactured by one of the following:

- a) Outdoor Creations, model 408SKB with anti-graffiti, armrest, skate deterrent, colors per plan; Tel: (1) 530-365-6106
<https://www.outdoorcreations.com/pdf/408SKB1448394253.pdf>
- b) Quick Crete Products, model Q1PS84B, modified w/(4) skate deterrents and 4" high by 6" wide center armrest by manufacturer, colors per plan; Tel: (1) 866-703-3434
<http://www.qcp-corp.com/detail/palm/718>

800-1.8.3 Concrete Picnic Table (and Concrete Picnic Table ADA Accessible). Concrete Picnic Tables shall be manufactured by one of the following:

- a) Outdoor Creations, model 107AC (ADA) & 107S both with anti-graffiti, colors per plan ; Tel: (1) 530-365-6106
<https://www.outdoorcreations.com/pdf/107AC1483986140.pdf>
<https://outdoorcreations.com/pdf/107S1457538516.pdf>
- b) Quick Crete Products, model Q-42FCS-ADA (ADA) & QR-42FC both with anti-graffiti, colors per plan; Tel: (1) 866-703-3434
<http://www.qcp-corp.com/detail/food-court-round/527/standard/337>
<http://www.qcp-corp.com/detail/food-court-round/527/standard/337#sizing-chart>

800-1.8.4 Concrete Trash Receptacle. Concrete Trash Receptacle shall be manufactured by one of the following:

- a) Outdoor Creations, model 506 with anti-graffiti, colors per plan;
Tel: (1) 530-365-6106
<https://outdoorcreations.com/pdf/5061497539979.pdf>
- b) Quick Crete Products, model QS-SC2651SDW with anti-graffiti, colors per plan;
Tel: (1) 866-703-3434
<http://qcp-corp.com/detail/santa-clara/1061>

800-1.8.5 Paracourse Exercise Equipment A-D. Concrete pad area surrounding paracourse exercise equipment shown on Plans were sized using the specific models for Greenfields to meet clear space area to operate equipment and compliant with accessibility requirements. If one of the alternative equipment shown below is selected, contractor shall provide corresponding dimensions of proposed concrete pad area for the selected manufacturer and specific models for review and approval before installation. Paracourse exercise equipment A-D shall be manufactured by one of the following, refer to Plans for quantity of equipment:

- a) Greenfields Outdoor Fitness, models: SGR2005-1-22: 4-Person Pendulum, Abs and Dips; SGR2005-1-42: 2-Person Upper Body Combo; SGR2005-1-48-W: 2-Person Accessible Chest Press; SGR2005-1-104N: 4-Person Leg Press;
Tel: (1) 888-315-9037
<https://gfoutdoorfitness.com/products-gallery/>

- b) Game Time, models: 13561-F: Sit-Up/Back Extension; 13272-F: Lat-Pull Down; 13271-F: Chest Press (Accessible); 13559-F: Leg Press; Tel: (1) 800-235-2440 <https://gametime.com/uploads/media/2018GTFitness.pdf>
- c) Landscape Structures, models: 192457: Elliptical; 192460: Pull-Up/dip; 205938: Hand cyler; 192463: Tai Chi Wheels; 192456: Chest/Back Press; 192461: Squat Press; Tel: (1) 888-438-6574 <https://www.playlsi.com/en/commercial-playground-equipment/freestanding-playground-equipment/outdoor-fitness-equipment/healthbeat/>

Contractor shall submit shop drawings for approval. Refer to manufacturer's specifications and Plans for installation.

800-1.8.6 Interpretive Sign. Interpretive Sign and pedestal shall be manufactured by one of the following:

- a) Izone Imaging, model Custom High Pressure Laminate; Tel: (1) 888-464-9663 <http://www.izoneimaging.com/what-you-need/outdoor/parks-and-open-spaces/>
- b) Fossil Graphics, model Custom High Pressure Laminate; Tel: (1) 800-244-9809 <https://fossilgraphics.com/specs>
- c) Gopher Sign Co., model Custom High Pressure Laminate; Tel: (1) 800-383-3156 <http://www.gophersign.com/products/imageloc-signs/>

Interpretive Signage artwork will be provided by the Agency as a file in jpg, Illustrator, or Photoshop digital format. Sign and graphic panel shall be fabricated and installed by the Contractor. Contractor to provide shop drawing for review and approval by the agency prior to fabrication and installation. Contractor shall also provide an 8" x 8" sample on the panel material (see below for material description of panel) showing a portion of the colored artwork graphic, that was provided by the Agency to the Contractor, for review by the Agency prior to final fabrication and installation.

- Frame material. All metal and weld joints to be powdercoat finished, color and material per construction material legend.
- Panel material. The panel shall be fused polycarbonate: vinyl inkjet print fused between two sheets of UV resistant polycarbonate (fpcs).

800-1.8.7 Pet Waste Station. Pet Waste Station shall be manufactured by one of the following:

- a) Belson Outdoors, models DP-1301-P (post); DP-1307 (cap); DP-1002-2 (bag dispenser); DP-1402-30 (bag refills); DP-1203 (sign); Tel: (1) 800-323-5664
<http://www.belson.com/Steel-DOGIPOT-Pet-Station>
- b) Zero Waste USA, model "JJB-010" (roll bag dispenser); "JJB-SIGN-L" (sign, w/text leash, clean up, law); "JJB-SP-8" (square stl post); (3) units of JJB009-MZW (2000 bags per case); Tel: (1) 800-789-2563
<https://www.zerowasteusa.com/Complete-Dog-Waste-Stations-Prodlist.html>
- c) ULINE, model "H2897" (roll bag dispenser); "H-2898" (sign, w/text leash, clean up, law); "H-1662" (square stl post); (10) units of "S-15585" (2000 bags per case); Tel: (1) 800-295-5510
https://www.uline.com/BL_8262/Dog-Waste-System

Contractor shall submit shop drawings for approval. Refer to manufacturer's specifications for installation.

800-1.8.8 Structural Cell Module System. Structural Cell Module System shall be manufactured by one of the following:

- a) Brentwood, models ST-18 & ST-24; Tel: (1) 610-374-5109
<https://www.brentwoodindustries.com/stormwater-management/stormtank-module/>
- b) CityGreen, model Stratavault 30 Series; Tel: (1) 888-999-3990
<http://citygreen.com/wp-content/uploads/2016/05/Citygreen-Stratavault-TechSheet-WEB.pdf>
- c) Deep Root, model 3X; Tel: (1) 800-458-7668
<http://www.deeproot.com/products/silva-cell.html>

800-1.8.9 Geotextile for Decomposed Granite, Decorative Boulders, River Rock Cobble, Structural Cell Module System, and as shown on the Plans. Geotextile shall be type 90N per SSPWC, table 213-5.2(A) nonwoven geotextile. Manufacturers shall be one of the following:

- a) Mirafi, model 140n; Tel: (1) 310-903-2120
<https://www.tencategeo.us/en-us/products/nonwoven-geotextiles/mirafi-n-series>

- b) US Fabrics, model US12NW; Tel: (1) 800-518-2290
<https://www.usfabricsinc.com/assets/pdf/products/us-120nw/us-120nw.pdf>
- c) Engineered Synthetic Products, model SKAPS GT-142; Tel: (1) 770-564-1857
<http://www.espsynthetics.com/wp-content/uploads/2016/05/GT142.pdf>

800-1.8.10 Geogrid for Structural Cell Module System. Geogrid shall be manufactured by one of the following:

- a) Mirafi, model Miragrid 2XT; Tel: (1) 706-693-2226
https://www.tencategeo.us/media/e19a2528-27fc-4e11-93ce-b86f31e41db4/VhsuHA/TenCate%20Geosynthetics/Documents%20AMER/Technical%20Data%20Sheets/Geogrid/Miragrid%20XT-Series/TDS_MG%20ALL.pdf
- b) Tensar, model Biaxial Geogrid BX1500; Tel: (1) 800-836-7271
<https://www.tensarcorp.com/Systems-and-Products/Tensar-Biaxial-BX-geogrids>
- c) Synteen, model SF20 biaxial geogrid; Tel: (1) 803-416-8336
<http://www.synteen.com/wp-content/uploads/2017/10/STF-Inc.-Data-Sheet-SF20-w-kN.pdf>

800-1.8.11 Pedestrian Bollard Lighting. Pedestrian bollard lighting shall be model and manufactured per Plan. Tel: (1) 844-279-8754

<https://www.firstlighttechnologies.com/wp-content/uploads/2018/07/2018-07-specs-PLB-v1.0.pdf>

Contractor shall submit shop drawings for approval. Refer to manufacturer's specifications and Plans for installation.

800-1.9 Landscape Submittals List.

Submit for approval in accordance with Section G, 3-8

Landscape Material Submittal List and Descriptive Literature.

Submit for acceptance, six (6) copies of completed forms:

Include the manufacturer's name and model numbers for all materials required under this contract, together with two (2) copies of descriptive literature for each of the items listed below. Contractor shall commence no work prior to receiving statement of acceptance of

landscape material submittal list and descriptive literature from the Agency. This list may not be comprehensive. The Contractor is responsible for all submittals to be used for completion of the Project. Submit items as follows:

- Agronomic Soil Reports, refer to subsection 800-1.1.1 a)
- Class "D" Bioswale Soil, refer to subsection 800-1.1.5
- Soil Fertilizing and Conditioning Materials, refer to subsection 800-1.2
- Mulch, refer to subsection 800-1.2.5
- Plants, refer to subsection 800-1.4
- Tree Stakes, refer to subsection 800-1.5.3
- Weed Control, refer to subsection 800-1.6
- Root Control Barriers, refer to subsection 800-1.7
- Concrete Park Bench (with Conc. Footing in Planting Areas), refer to subsection 800-1.8.2
- Concrete Picnic Table (and Concrete Picnic Table ADA Accessible), refer to subsection 800-1.8.3
- Concrete Trash Receptacle), refer to subsection 800-1.8.4
- Paracourse Exercise Equipment A-D, refer to subsection 800-1.8.5
- Interpretive Sign, refer to subsection 800-1.8.6
- Pet Waste Station, refer to subsection 800-1.8.7
- Structural Cell Modular System, refer to subsection 800-1.8.8
- Geotextile, refer to subsection 800-1.8.9
- Geogrid, refer to subsection 800-1.8.10
- Pedestrian bollard lighting, refer to subsection 800-1.8.11
- Decomposed Granite (DG), refer to section 802
- Decorative Boulders, refer to section 803
- River rock cobble, refer to section 804
- Biochar, refer to section 805

800-2 IRRIGATION SYSTEM MATERIALS.**800-2.1 Pipe and Fittings.** (Page 594 of the SSPWC)**800-2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings.**

Add the following:

- a) Pipe materials shall be as follows:
 - a. For mainline pipe, Class 315 PVC or Schedule 80 PVC shall be used. Pipe for reclaimed water shall be Schedule 200 PVC.
 - b. For lateral pipe, Schedule 40 PVC shall be used. Pipe for reclaimed water shall be purple.
- b) Threaded nipples shall be PVC Type II.

800-2.2 Valves and Valve Boxes. (Page 595 of the SSPWC)**800-2.2.2 Gate Valves.**

Replace the entire subsection with the following:

Gate valves shall be AWWA-approved, the same size as the pipe in which they are to be installed, and shall open to the left. Gate valves shall be packed with graphite braided stem packing.

- a) Refer to the Plans for the manufacturer's name and model number.
- b) Gate valves for sizes 2-inch and smaller shall conform to the following:
 - 1) 125 psi/8.6 bar saturated steam rated.
 - 2) Bronze body.
 - 3) Non-rising stem.
 - 4) Screw-in bronze bonnet.
 - 5) Solid bronze wedge.
 - 6) Equipped with a hand wheel.

- c) Gate valves for sizes 2-1/2 inches and larger shall conform to the following:
- 1) 125 psi/8.6 bar saturated steam rated.
 - 2) Iron body.
 - 3) Flanged joints.
 - 4) Outside screw and yoke.
 - 5) Bolted bonnet.
 - 6) Solid wedge.
 - 7) Equipped with an operating nut and handwheel.

800-2.2.4 Remote Control Valves.

Add the following:

- e) Refer to the Plans for the approved manufacturer's name(s), model number, and size. All valves furnished shall be from the same manufacturer.
- f) Valves shall be normally closed.
- g) Valves shall only have one piece diaphragms. "O" rings will not be allowed.
- h) Valves shall be completely serviceable from the top without removing the valve body from the mainline system.
- i) Identification tags for electrical remote control valves shall be manufactured from an ultraviolet light stabilized polyurethane material. The tags shall be hot-stamped with black letters on yellow background. The tags shall be numbered to match the programming shown on the Plans. One tag for each electric remote control valve shall be provided.

800-2.2.6 Quick-Coupling Valves and Assemblies.

Add the following:

Quick-coupling valves shall have a lockable lid with a rubber cover. Refer to the Plans for the approved manufacturer's name(s), model number, and size. All valves furnished shall be from the same manufacturer.

800-2.2.7 Valve Boxes.

Add the following:

An extension at the bottom shall be furnished and installed as necessary to adjust the height to conform to the details shown on the Plans and to meet actual field conditions. Valve boxes shall be manufactured by one of the following:

- a) Brooks Products, model 3-H MB series; Tel: (1) 909-947-7470
<http://www.brooksproductsnw.com/catalog/meterboxno03cat.pdf>
- b) Eisel Enterprises, model 3HL series; Tel: (1) 714-993-1706
http://eiselenterprises.com/water_series/ws3HL.pdf

Valve boxes shall conform to the following:

- a) Valve boxes for remote control valves shall be a minimum of 9-1/2 inches x 15-1/2 inches and shall have a hinged, cast iron locking lid. Lids shall be marked "RCV" with 3-inch high epoxy paint or cast letters.
- b) Valve boxes for flow meters and master control valves shall be a minimum of 9-1/2 inches x 15-1/2 inches and shall have a hinged, locking lid. Lids shall be marked "FM" and "MV" with 3-inch high epoxy paint or cast letters.
- c) Valve boxes for gate valves shall be an 8-inch diameter, adjustable concrete sleeve with a cast iron locking lid. Lid shall be marked "GV" with 3-inch high epoxy paint or cast letters.
- d) Valve boxes for quick coupler valves shall be a minimum of 9-1/2 inches x 15-1/2 inches and shall have a hinged, cast iron locking lid. Lids shall be marked "QCV" with 3-inch high epoxy paint or cast letters.

- e) Valve boxes for pressure regulator valves shall be a minimum of 9-1/2 inches x 15-1/2 inches and shall have a hinged, cast iron locking lid. Lids shall be marked “PRV” with 3-inch high epoxy paint or cast letters.
- f) Valve boxes for air relief and flush valves shall be round plastic with a locking lid. The inside diameter shall be a minimum of 9 inches. Lids shall be marked “ARV” and “FV” with 3-inch high letters using epoxy paint or by stamping into the surface. Valve boxes for air relief and flush valves shall be one of the following:
 - i. Carson Plastics (Oldcastle Enclosure Solutions), model 910;
Tel: (1) 877-250-5139
https://oldcastleenclosures.com/wp-content/uploads/2017/05/WA-Carson_910.pdf
 - ii. NDS Applied Engineering Products, model 112BCW
Tel: (1) 888-825-4716
<https://www.ndspro.com/10-round-box-cover-water-1.html#product-details>

Add the following subsections:

800-2.2.8 Check Valves and/or Anti-Drain Valves. Check valves and/or anti-drain valves shall conform to the following:

- a) Check valves shall be the vertical-type; the same size as the riser; and have a stainless steel spring-loaded (5 to 6 pounds) bronze-type poppet valve lined with a flat neoprene disc. Valve seats shall be tapered to sit against the disc.
- b) Horizontal check valves shall be constructed of bronze with a closing disc plate set on an angle. The disc holder shall contain a renewable composition disc and close tightly.
- c) Check valves shall be constructed of corrosion-free materials enclosed in a PVC housing with a stainless-steel spring and neoprene internal components, and be adjustable from 5 feet to 40 feet in elevation.

800-2.2.9 Pressure Regulator Valves. Pressure regulator valves shall be of all bronze construction and include a 3-1/2-inch diameter pressure gauge. The pressure gauge shall have a bottom connection, cast iron case, and a range of 0 to 200 pounds. Pressure regulator Valves shall be manufactured by one of the following:

- a) Watts, model LF223S Tel: (1) 978-689-6066
http://www.watts.com/pages/_products_details.asp?pid=6816
- b) Zurn, model 500XL Tel: (1) 855-663-9876
http://www.zurn.com/media-library/web_documents/pdfs/specsheets/reg-500xl-pdf

800-2.2.10 Air Relief Valves. Air relief valves shall be rust-proof materials, have a ½ inch MPT threading, and flow capacity of 6.5 GPM (390 GPH).

- a) All valves furnished shall be from the same manufacturer. Tel: (1) 800-458-3005;
<http://www.rainbird.com/landscape/products/dripDistribution/AirReliefValve.htm>

800-2.2.11 Master Valves. Master valves shall be manufactured by one of the following:

- a) Buckner/Superior, model 3200 Series Normally closed (size per plan)
Tel: (1) 800-997-0500 <https://www.bucknersuperior.com/product/3200-rw/>
- b) Griswold, model 2000 Series Normally closed (size per plan) Tel: (1) 949-559-6000
<http://griswoldcontrols.com/2000-series-heavy-duty-irrigation-valves/>
- c) Hunter, model IBV Series Normally closed (size per plan) Tel: (1) 949-559-6000
<https://www.hunterindustries.com/irrigation-product/valves/ibv>

800-2.2.12 Flow Meter/Sensor. Refer to the Plans for the approved manufacturer's name and model number. All flow meter/sensors shall be from the same manufacturer.
Tel: (1) 800-572-8608 <https://www.calsense.com/our-solutions/sensors/flow-meter/>

800-2.2.13 Rain Sensor. Rain sensor shall be manufactured per Plan, mounted to proposed antenna pole. Tel: (1) 800-572-8608
<https://www.calsense.com/our-solutions/sensors/tipping-rain-bucket/>

800-2.4 Sprinkler Equipment. (Page 595 of the SSPWC)

Delete the second sentence and add the following:

- a) Sprinkler heads must be per plan and current model in production for at least one year.
- b) Spray heads shall have an adjustable nozzle.

- c) Irrigation riser assemblies shall consist of an irrigation inlet which utilizes a triple-swing joint riser assembled in the field using Schedule 80 PVC threaded ells and Schedule 80, Type II PVC nipples (threaded at both ends) or galvanized steel of the same size as shown on the Plans for the irrigation head inlet. Street ells will not be allowed.
- d) Detectable type tracer/warning tape shall be blue, a minimum of 2 inches wide, printed with the words "Buried Water Line Below".
- e) Dripline shall be flexible, kink resistant, dual-layered, polyethylene tubing with heavy-duty check valves and factory-installed, inline pressure compensating emitters. The outer diameter shall be approximately 0.6 inch and the inner diameter shall be approximately 0.5 inch minimum.

800-2.4.1 Dripline.

Add the following:

- a) Dripline shall be flexible, kink resistant, dual-layered, polyethylene tubing with heavy-duty check valves and factory-installed, inline pressure compensating emitters. The outer diameter shall be approximately 0.6 inch and the inner diameter shall be approximately 0.5 inch minimum.
- b) Refer to the Plans for the approved manufacturer's name. All dripline furnished shall be from the same manufacturer and model. Tel: (1) 800-458-3005; <http://www.rainbird.com/landscape/products/dripline/XFseriesDripline.htm>

Add the following subsection:

800-2.5 Irrigation Submittals List.

- a) Submit for approval in accordance with Section G, 3-8
- b) Irrigation Material Submittal List and Descriptive Literature.

Submit for acceptance, six (6) copies of competed forms:

Include the manufacturer's name and model numbers for all materials required under this contract, together with two (2) copies of descriptive literature for each of the items listed below. Contractor shall commence no work prior to receiving statement of acceptance of irrigation material submittal list and descriptive literature from the Agency. This list may

not be comprehensive. The Contractor is responsible for all submittals to be used for completion of the Project. Submit items as follows:

- Pipe and Fittings, refer to subsection 800-2.1
- Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings, refer to subsection 800-2.1.3
- Gate Valves, refer to subsection 800-2.2.2
- Remote Control Valves, refer to subsection 800-2.2.4
- Quick-Coupling Valves and Assemblies, refer to subsection 800-2.2.6
- Valve Boxes, refer to subsection 800-2.2.7
- Check Valves and/or Anti-Drain Valves, refer to subsection 800-2.2.8
- Pressure Regulator Valves, refer to subsection 800-2.2.9
- Air Relief Valves, refer to subsection 800-2.2.10
- Master Valves, refer to subsection 800-2.2.11
- Flow Meter/Sensor, refer to subsection 800-2.2.12
- Rain Sensor, refer to subsection 800-2.2.13
- Sprinkler Equipment, refer to subsection 800-2.4
- Detectable type tracer/warning tape, refer to subsection 800-2.4 d)
- Dripline, refer to subsection 800-2.4.1
- Conduit and Conductors, refer to subsection 800-3.2
- Conduit, refer to subsection 800-3.2.1
- Controller Unit, refer to subsection 800-3.3
- Controller Enclosure, refer to subsection 800-3.3 b)
- Automatic irrigation control wire, refer to subsection 800-3.3 c)

800-3 ELECTRICAL MATERIALS.

800-3.2 Conduit and Conductors. (Page 596 of the SSPWC)

800-3.2.1 Conduit.

Replace the entire subsection with the following:

Conduit shall be HDPE or Schedule 80 PVC conforming to subsection q 700-3.5. Conduit shall be 1 inch in size unless otherwise shown on the Plans.

800-3.3 Controller Unit. (Page 596 of the SSPWC)

Add the following:

- a) Automatic controller units shall have the following features:
 - 1) The minimum number of stations required as shown on the Plans.
 - 2) Programmable for various schedules and equipped with the following features:
 - i) Each station shall be capable of operating at least 2 minutes to 60 minutes with incrementally variable timing periods for each station; automatic, semi-automatic and manual operation. Each station shall have an "OFF" or "OMIT" switch.
 - ii) Repeat switch allowing any and all stations to be repeated after completion of the initial watering schedule, or allowing repeat operations for any or all stations to be scheduled throughout a 24 hour day.
 - iii) "ON-OFF" switch for turning controller "OFF" during rainy weather, while allowing day and hour clocks to continue in operation.
 - iv) Capable of operating 24-volt electric valves.
 - v) 48-hour rain delay.
- b) The controller enclosure shall be vandal-resistant, weatherproof, able to house the controller(s), and conform to the following:
 - 1) Un-finished metal surfaces, except stainless steel, shall be shop-finished with an epoxy enamel coating system. Refer to the Plans for the required color. The finish shall be protected from damage during shipment and installation. The Contractor shall be responsible for repairs to areas of metal exposed by damage.
 - 2) Installation shall be with a lockable and tamper-proof pedestal housing.
- c) Automatic irrigation control wire shall consist of the following:
 - 1) Twenty-four volt wire to solenoid valves shall be direct-burial conductor-type UF #14 AWG copper, 3/64 inch thickness, with a PVC coating, and be UL- approved.

- 2) Common wires shall be white-coded and pilot wires shall be color-coded using a minimum of 8 different colors.
- d) Twenty-four volt valve solenoids shall be constructed of corrosion-proof stainless steel protected by solid epoxy resin. The coil shall operate one valve at 4,000 feet on a No. 14 wire. Solenoid valves shall not bleed to the atmosphere.

SECTION 801 - INSTALLATION

801-1 GENERAL. (Page 596 of the SSPWC)

Add the following:

- a) **Root Zone Protection.** The adjoining soil should be maintained at the same grade as the root zone before and after construction. No soil shall be in contact with the trunk of the tree above the root flare.

The Contractor shall protect the tree and root zone during construction by conforming to the following:

- 1) Chain link fencing with an access gate shall be furnished and installed to protect the root zone, subject to Engineer's review of site conditions. The location of the fencing shall be approved by the Engineer. Clippings from pruning mounded up to 3 feet high may be used to protect the root zone but must still effectively irrigate the root zone. Clippings shall be removed after construction is completed.
- 2) The root zone shall be irrigated with clean potable water.
- 3) No trenching or cutting of roots will be allowed in the root zone without the presence of the Engineer and a Certified Arborist. Pipes or cables shall be relocated outside the dripline of trees. Roots may be bored or tunneled under. Trenches shall be radial to the trunk. The same trench shall be used for multiple utilities unless otherwise approved by the Engineer.
- 4) Exposed and bridging tree roots shall be wrapped with 3 layers of burlap and kept moist. Trenches within driplines shall be closed within 24 hours of opening.
- 5) Work shall be accomplished with hand tools within the root zone. Heavy equipment shall not pass over the root zone.

- 6) Where lowering the grade is unavoidable, a maximum of 25 percent of the roots may be clean cut with a sharp tool at right angles to the roots. Roots greater than 1-1/2 inches in diameter shall not be cut without a Certified Arborist's assessment or report of tree conditions including the probability of survival, and the Engineer's approval.
- 7) No construction staging, storage and disposing of materials will be allowed within the root zone.
- 8) Light pruning in the presence of the Agency's Landscape Architect or a Certified Arborist may be performed to avoid damage to branches from construction vehicles or cranes.

801-2 EARTHWORK AND TOPSOIL PLACEMENT.

801-2.1 General. (Page 596 of the SSPWC)

Add the following:

Site grading shall include:

- a) Excavating, sloping, rounding tops and ends of excavations, erosion control, and loading, unloading, and stockpiling native and imported soils.
- b) Areas where changes of grade are shown on the Plans by contours, elevations, dimensions, or as otherwise noted.
- c) Compaction of planting areas a maximum of 75 to 85 percent relative compaction.
- d) Stockpiling of native topsoil for re-use.

801-2.2 Topsoil Preparation and Conditioning. (Page 596 of the SSPWC)

801-2.2.2 Fertilizing and Conditioning Procedures.

Delete the third paragraph and add the following:

- a) Planting areas shall include all sod, ground cover, vine, shrub and tree planting areas.

- b) All planting areas except slopes steeper than 3:1 shall be thoroughly cultivated to a depth of 12 inches using a ripper with teeth no wider than 12 inches on-center. Cultivation shall be performed in at least 2 directions at right angles.
- c) Prior to incorporating soil amendments, thoroughly moisten soil and grade all planting areas to within 0.1 of a foot of finished grades.
- d) During the cultivation process, irrigation equipment shall be protected from damage. The Contractor shall replace damaged irrigation equipment.
- e) Prior to cultivating existing soil, all vegetation not shown to remain, stumps, roots, rocks, stones larger than 1 inch in diameter, and all other deleterious material shall be removed.
- f) Where shown on the Plans, fumigate with a fumigant approved by the Engineer in accordance with the recommendations of the applicable regulatory agencies and the manufacturer.

801-2.3 Finish Grading. (Page 597 of the SSPWC)

Delete the second paragraph and add the following:

The finish grade of all planting areas where mulch is shown on the Plans shall be 3 inches below the adjacent paving, curbs and mowing strips. The finish grade of all sod areas shall be 1 inch below the adjacent paving, curbs and mowing strips. The Contractor shall furnish and place additional approved topsoil if so required to meet the aforementioned requirements.

801-4 PLANTING.

801-4.1 General. (Page 597 of the SSPWC)

Add the following:

- a) **Plants.** Plants shall not be allowed to dry out either before or during planting. Exposed roots shall be kept moist by means of wet sawdust, peat moss or burlap at all times during planting operations. Roots shall not be exposed to the air except while being placed in the ground. Wilted plants, whether in place or not, will not be accepted.

- b) Watering.** Plants shall be watered immediately after planting and in accordance with subsection 801-4.9.5.
- c) Mulching.** Trees, shrubs and ground covers shall be mulched in accordance with the following:
- 1) All ground cover areas shall receive 1-1/2 cubic yards per 1000 square feet. Stabilized slopes and slopes steeper than 3:1 shall not be mulched.
 - 2) Each container plant shall have a 3-inch layer of mulch placed in its watering basin.
 - 3) Except for sod or lawn areas, all planted areas shall have a 3-inch layer of mulch.
- d) Inspection.** In addition to the provisions of subsection 3-5 of Section G, the Contractor shall conform to the following:
- 1) Written notice requesting an inspection shall be submitted to the Engineer at least 10 Days prior to the anticipated date.
 - 2) Prior to scheduling an inspection for the purpose of determination of the completion of the Work by the Engineer as specified in subsection 3-13 of the Greenbook, and determination of the start of the Plant Establishment Period, the Contractor shall ensure that landscaping and irrigation improvements are placed in accordance with the Contract Documents, all plants in-place are in a healthy condition, landscaped areas are clean and free of weeds and debris, and the Work site is in a neat condition.
 - 3) The following inspections are required:
 - i) Inspections will be performed by the Engineer with the assistance of the Agency Landscape Architect.
 - ii) Plants (5 gallons and smaller) after delivery to the Work site.
 - iii) Plants and specimen plants (15 gallons and larger) at the source before delivery to the Work site.
 - iv) Plant locations on-site prior to excavation of plant pits.
 - v) Sod areas, fine graded, prior to seeding or sod installation.

- vi) Prior to the start of the 90-Day Plant Establishment Period.
- vii) During required fertilizer application within the Plant Establishment Period.
- viii) Upon completion of the 90-Day Plant Establishment Period.

801-4.5 Tree and Shrub Planting. (Page 598 of the SSPWC)

Replace the first paragraph with the following:

Plant containers up to and including 15-gallon shall be placed in planting pits having vertical sides; a width 2 times wider than the width of the root ball; and a height equal to that of the root ball.

Plant containers 24 inches and larger shall be placed in planting pits having vertical sides; a width 3 times wider than the width of the root ball; and a height equal to that of the root ball.

Planting pits for flat-sized plants are to be at least 6 inches x 6 inches x 6 inches.

Planting shall be in moistened soil.

Replace the fourth paragraph with the following:

Planting pits shall be backfilled with backfill mix. Backfill mix shall be placed at the bottom of pit and foot-tamped so that the plant rootball will be approximately 1 inch higher than the adjacent grade after settlement. The trunk flare of trees (increased diameter of trunk where roots and trunk meet) shall be visible. No soil shall be placed on top of the rootball.

Add the following to the fifth paragraph:

- h) Existing trees or shrubs shown on the Plans to be relocated (moved) or to be changed in elevation shall be moved utilizing a box of sufficient size to encompass the roots. Equivalent trees or plants of the same size may be furnished and planted by the Contractor in lieu of transplanting existing plants if so approved by the Engineer. Plants that die within the Plant Establishment Period shall be replaced by the Contractor.

801-4.6 Plant Staking and Guying. (Page 598 of the SSPWC)

Replace subsections 801-4.6.1 and 801-4.6.2 with the following:

Trees shall be staked in 2 locations at the time of planting by driving a stake at the outside edge of the rootball perpendicular to the prevailing winds. Fasten the tree to the upper end of each stake with tree ties in 2 places. Staking shall be uniform throughout the entire Project.

801-5 IRRIGATION SYSTEM INSTALLATION.**801-5.1 General.** (Page 601 of the SSPWC)

Add the following:

The Contractor shall adjust the location or alignment of the irrigation system to avoid existing utilities, signs, trees, and other interfering improvements as directed and approved by the Engineer.

a) Inspection. In addition to the provisions of subsection 3-5 of Section G, the following inspections will be performed in the presence of the Engineer with the assistance of the Agency Landscape Architect, prior to the final inspection specified in subsection 801-6 of these special provisions:

- 1) Pressure test before backfilling.
- 2) Marker locations for placement of irrigation heads prior to installation.
- 3) Irrigation system coverage test. The coverage test inspection shall be scheduled for and will be performed immediately after completion of the irrigation system and prior to the start of any planting. The entire irrigation system shall have been flushed clean and all heads and other irrigation equipment have been adjusted for proper operation, and the controller fully-operational and ready for automatic cycling prior to the coverage test. Necessary adjustments and additional work shall be completed prior to the start of planting.

b) “As-Built” Plans.

- 1) The Contractor shall provide and keep up-to-date a complete set of black line prints of the Plans (draft “as-built” Plans) which shall be annotated daily to show every change from the Plans and Specifications issued at the time of advertisement of the Contract and the exact locations, sizes and kinds of equipment installed.
- 2) The Contractor shall dimension from 2 permanent points of reference the location of all buried pipes and valves, any and all pilot wires to valves and controllers, and all electric service lines to controllers. Dimensions shall be taken prior to the backfilling of trenches.
- 3) Prior to the start of the plant establishment period specified on subsection 801-6 of these special provisions, the Contractor shall transfer the annotations from the aforementioned “draft as-built” Plans onto a clean set of black line prints (final “as-built” Plans). Annotations shall be neatly drafted in ink and shall be approved by the Engineer.

c) Controller Charts.

- 1) The Contractor shall provide 2 controller charts for each automatic controller supplied showing the area covered. The chart size shall be the maximum size the controller door will allow unless otherwise approved by the Engineer.
- 2) Controller charts shall be a reduced-size copy of the final “as-built” Plans of the irrigation system. However, in the event the controller sequence is not legible after the size is reduced, it shall be enlarged to a readable size.
- 3) Controller charts shall have a different color for each station showing the area of coverage.
- 4) When completed and approved, each chart shall be hermetically sealed between 2 pieces of plastic, each piece being a minimum of 20 mils thick.
- 5) Controller charts must be completed and approved prior to the final inspection of the irrigation system.

d) Point of Connection (to a dedicated irrigation water meter).

- 1) The Contractor shall construct an irrigation supply line from the water meter to the backflow prevention device.

- 2) The supply line shall be Type K copper pipe unless otherwise required by the water utility owner.
- 3) The supply line pipe size shall be the same as the backflow prevention device but no larger than the size of the water meter.

e) Point of Connection (to an existing supply line).

- 1) The Contractor shall construct an irrigation supply line to the existing cold water supply line where shown on the Plans.
- 2) Connections to existing cast iron, PVC, and/or galvanized pipe shall be by any of the following methods.
 - i) Pressure-rated 150-200 AWS-A21.10 cast iron fittings.
 - ii) Tapping sleeves.
 - iii) Cutting in a "tee."
 - iv) Threaded fittings.
 - v) Saddle with double-bale flattened, double-bronze straps.
 - vi) PVC fittings for solvent welding (PVC pipe only).
- 3) Irrigation supply line size shall be the same as the backflow prevention device unless otherwise shown on the Plans, but shall be no larger than the existing supply line.
- 4) The irrigation supply line shall be:
 - i) Type K copper pipe.
 - ii) Installed a minimum of 30 inches below finish grade as measured from the top of the pipe.
 - iii) Cut square on ends and all burs removed.
 - iv) Cleaned on the outside of pipe and on the insided of the fittings to a bright finish using a sand cloth.

- v) Coated with a paste-type non-corrosive solder flux.
 - vi) Connect to galvanized steel with a dielectric union or coupling.
- f) Pre-Completion Submittals.** The following items shall be submitted to the Engineer prior to final inspection and acceptance of the irrigation system:
- 1) Two sets of operation and maintenance manuals.
 - 2) Two controller charts for each controller installed.
 - 3) One 5-foot valve wrench where 2-1/2 inch and larger gate valves are installed.
 - 4) Two key couplers to match quick coupling valves installed.
 - 5) 10 percent additional of each type check and anti-drain valves installed.
 - 6) Two keys for opening each type lock lid valve box installed.
 - 7) Two extension keys to operate manual control valves.
 - 8) Two keys for each controller installed.
 - 9) Handheld Remote Control Unit as shown on the Plans.
 - 10) Two keys to operate lock lid quick coupling valves.
 - 11) Two sets of wrenches for servicing and adjusting each type irrigation head installed.
 - 12) 10 percent additional of each "Type" irrigation head installed.
 - 13) 8 percent minimum up to 12 percent maximum additional of each type of irrigation dripline and/or distribution tubing provided in unopened 100 foot roll units of factory sealed packaging.
 - 14) As-Built Plans reviewed and approved by the Engineer.

801-5.2 Trench Excavation and Backfill. (Page 601 of the SSPWC)

Delete the second paragraph and add the following:

The work shall be scheduled so excavations are left open and exposed for a minimum period of time. Backfill shall begin immediately after piping and conduit are laid in place, and have been tested and approved.

801-5.3 Irrigation Pipeline Installation. (Page 602 of the SSPWC)**801-5.3.2 Steel Pipelines.**

Add the following:

- a) Main lines (upstream of RCV) shall be constructed 30 inches below grade as measured from top of pipe.
- b) Lateral lines (downstream of RCV) shall be constructed 18 inches below grade as measured from top of pipe.
- c) Lines installed on grade.
- d) Lines installed as detailed or as shown on the Plans.
- e) Change of direction shall be made by the installation fittings. Springing or bending, and street ells or close nipples, will not be allowed.
- f) Burrs shall be removed.
- g) Threaded seal tape shall be applied on all threaded joints.

801-5.3.3 Plastic Pipeline.

Add the following:

- a) Main lines (upstream of RCV) shall be constructed 30 inches below grade (minimum 36 inches under roadways), as measured from the top of the pipe.
- b) Lateral lines (downstream of RCV) shall be constructed 18 inches below grade (minimum 24 inches under roadways), as measured from the top of the pipe.

- c) The bottom of the trench shall be free of rocks, clods and other sharp-edged objects. If rocks over 1 inch in size are encountered at the bottom of the trench or within the backfill 4 inches or less above the top of the pipe, the Contractor may remove the rocks or place 4 inches of sand below and above the pipe.
- d) A No. 12 gauge copper identification wire shall be placed at the bottom of the trench for all mainline PVC pipe to provide a continuous electrical conductor between gate valves. Each end shall be wrapped around the valve body and up to the ground surface, inside the valve box, and loop back with 2 feet of wire free. Ends shall be scraped clean.
- e) In addition to the identification wire, detectable tracer/warning tape shall be placed in the trench 12 inches above the pipe while backfilling. The tracer/warning tape shall be electronically detectable.
- f) Plastic pipe assemblies.
 - 1) Cut the pipe square. Remove burrs from the inside end. The outside end shall be chamfered 10 to 15 degrees.
 - 2) Clean and dry the pipe and fitting.
 - 3) Check the dry fit. The pipe end must be between 1/3 to 3/4 of the fitting socket depth.
 - 4) Dissolve the inside socket surface by brushing with primer. Use a scrubbing motion to assure penetration.
 - 5) Dissolve the surface of the male end of the pipe to be inserted into the socket to the depth of the fitting socket by brushing liberally with a coat of primer. Ensure the entire surface is well dissolved.
 - 6) Brush the inside of the socket surface with primer. Immediately apply solvent cement liberally to the male end of the pipe without delay.
 - 7) Also apply solvent cement lightly to the inside of the socket, using straight outward strokes to keep out excess filler solvent. Immediately apply a second coat of cement to the pipe end.
 - 8) While both the inside socket surface and the outside surface of the male end of the pipe are soft and wet with solvent cement, forcefully bottom the male end of the

pipe in the socket, giving the male end a 1/4 turn if possible. The pipe must go to the bottom of the socket. Hold the joint together until both soft surfaces are firmly gripped for at least 30 seconds.

- 9) After assembly, wipe excess cement from the pipe at the end of the fitting socket. A properly constructed joint will show a bead around its entire perimeter.
 - 10) Do not disturb the joint for 30 minutes until initial setup of the cement occurs.
 - 11) Snake the pipe from side to side of the trench bottom to allow for expansion and contraction. One additional foot per 100 feet of pipe shall be the minimum allowance for snaking.
 - 12) Center load the pipe with a small amount of backfill to prevent arching and whipping under pressure. Leave joints exposed, for inspection during the pressure test. No water will be permitted in the pipe until the above has been accomplished and a period of at least 24 hours has elapsed for solvent weld setting and curing.
- g) Plastic pipe fittings and connections.
- 1) A Schedule 40 female adaptor shall be used with a Schedule 80 threaded nipple on one end when connecting solvent welded pipe to threaded joints.
 - 2) 45-degree fittings shall be used at all changes in depth of the pipe. Couplings shall be of the same material and wall thickness as the pipe used.
 - 3) Thread seal tape shall be applied on all threaded joints. Connections shall be screwed hand-tight followed by 1/2 turn by a wrench.
 - 4) The minimum length of PVC nipples shall be 4 inches.

801-5.4 Installation of Valves, Valve Boxes, and Special Equipment. (Page 603 of the SSPWC)

Delete the fifth and sixth paragraphs.

Add the following:

a) Gate Valves.

- 1) Shutoff valves shall be installed as shown on the Plans.
- 2) A concrete valve box with a cast iron locking lid shall be installed at every gate valve. The valve box shall be centered over the valve operating nut.

b) Quick-Coupling Valves, Couplers, and Hose Swivels.

- 1) Within 10 feet of where a quick-coupling valve is installed, the Contractor shall paint a 3-inch diameter yellow-mark on the adjacent pavement, curb, or mow strip.

c) Check Valves and/or Anti-Drain Valves.

- 1) Vertical-type check valves shall be installed on vertical risers where shown on the Plans.
- 2) Horizontal-type check valve units shall be sized as, and installed in a valve box where, shown on the Plans.

Vertical or horizontal anti-drain valves shall be installed where shown on the Plans and adjusted for site conditions to prevent irrigation head drainage.

d) Pressure Regulator Valves.

- 1) Installation shall conform to the details shown on the Plans. The valve pressure shall be set at 10 pounds per square inch over the highest recorded working pressure with the system in operation.
- 2) Pressure gauges equipped with a gauge cock shall be installed upstream of each pressure regulator valve.

e) Pressure Relief Valves.

- 1) Valves shall be installed in a concrete box with a cast iron hinged lockable lid. Valve pressure shall be set at 10 pounds per square inch over the highest recorded working pressure with the system in operation.
- 2) Pressure gauges equipped with a gauge cock shall be installed upstream of each pressure regulator valve.
- 3) A strainer of the same size as the pressure relief valve shall be installed in a valve box upstream of each pressure relief valve.

f) Valve Boxes.

- 1) Installation shall conform to the details shown on the Plans.
- 2) Valve boxes shall be installed near paved walk/surfaces wherever possible. Valve boxes shall be installed square to, and 12 inches from, the edge of pavement, walk or concrete curb.
- 3) Bricks shall be furnished and installed around the base of each box.
- 4) A minimum clearance of 1 foot between each valve box shall be provided wherever their location is clustered.
- 5) Valve boxes shall be installed 3 inches above finish grade in planting areas, 1 inch above finish grade in sod areas, and set to finish grade in paved areas.
- 6) Galvanized wire mesh (1/4-inch sieve size) shall be placed between the valve and crushed rock and extend 3 inches up each side of the valve box.
- 7) 3/4-inch crushed rock conforming to subsection 200-1.2.1, 8 inches thick, shall be placed below valve boxes.

g) Backflow Preventer and Strainer Units.

- 1) Units shall be installed level horizontally and flush vertically.
- 2) Backflow preventers shall conform to and be installed in accordance with the Los Angeles County Department of Public Health requirements, http://www.publichealth.lacounty.gov/eh/EP/cross_con/cross_con_backflow.htm

- 3) A strainer shall be installed on the upstream side of all vacuum breakers except the atmospheric-type.
- 4) The Contractor shall arrange and provide for an initial backflow device inspection test. Inspection shall be performed by an inspector that is certified by Los Angeles County, Department of Public Health, Cross-Connection and Water Pollution Control program (except for the atmospheric-type). The Contractor shall be responsible to register copies of the completed backflow device inspection certification with the serving water utility and the Los Angeles County Department of Public Health. Copies of all completed backflow device inspection certifications provided to the aforementioned agencies shall be submitted to the Engineer.

801-5.5 Sprinkler Head Installation. (Page 604 of the SSPWC)

801-5.5.1 General.

Add the following:

Sprinkler heads shall be sourced from one manufacturer for each type of head.

801-5.5.2 Location, Elevation, and Spacing.

Delete the last four paragraphs and add the following:

The Contractor shall:

- a) Place irrigation heads in planting areas on temporary nipples or on risers extending 2 inches above the ground surface. After the sod is established and the ground has settled around the heads, lower the top of each head to a position level with the finish grade.
- b) Space irrigation heads 2 feet from the edge of adjacent impermeable paving.
- c) Adjust all spray nozzles to provide even balance between each lateral system.
- d) Adjacent to paving and curbs:
 - 1) Install irrigation heads 1 inch below adjacent paving and curbs;
 - 2) Install on heavy duty high pop-up stems with screw-adjustable nozzles.

- 3) Install on PVC high-pop risers with screw-adjustable shrub nozzles.
- e) Install irrigation heads in shrub/groundcover areas 1-1/2 inches above finished grade.
- f) Install brass screw-adjustable head on Schedule 80 PVC nipples 6" above grade in all other shrub areas.
- g) Utilize triple swing joints for all risers on irrigation heads. Use threaded Schedule 80 PVC nipples with PVC. Assemble in the field only.
- h) Not exceed the maximum spacing shown on the Plans during installation.

Add the following subsection:

801-5.5.5 Drip Irrigation System.

- a) Dripline tubing installation shall conform to the following. The Contractor shall:
 - 1) Coordinate with plant material installation for location and orientation of planting layout.
 - 2) Verify the dripline inlet pressure shown on the Plans.
 - 3) Place dripline tubing to the depth shown, and in conformance with, the details shown on the Plans.
 - 4) Install air relief assemblies in each remote control valve at high elevation points along the system as shown on the Plans.
 - 5) Flush all PVC piping and dripline tubing prior to making connections.
 - 6) Open the control valves and flush the system with a full-head of water after the new dripline tubing is in place and connected, and all necessary diversion work has been completed.
- b) Drip emitter installation shall conform to the following. The Contractor shall:
 - 1) Ensure that the drip emitter system flex hose tubing aligns with the planting layout.

- 2) Provide irrigation via distribution tubing from the flex hose to all plant materials shown on the Plans.
- 3) Install the drip emitter system in conformance with the details shown on the Plans.

801-5.6 Automatic Control System Installation. (Page 605 of the SSPWC)

Add the following as the second sentence of the second paragraph:

Installation shall conform to the details shown on the Plans.

Add the following to the second paragraph:

- a) Controller Enclosures. Controller enclosures shall be set on the foundation in a vertical position and installed in accordance with the manufacturer's recommendations. Silicone sealant shall be installed around the bottom of the enclosure and in the top of the conduit between and around electrical wires.
- b) Grounding. Irrigation controllers shall be grounded. Grounding shall be to a metal cold water pipe whenever available. If not available, grounding shall consist of 2, 5/8-inch diameter driven copper-clad steel rods driven not less than 6 feet apart to a minimum depth of 8 feet below grade. The grounding system location shall be approved by the Engineer prior to installation.
- c) Remote pump start relay. Controller shall be connected to activate a remote pump start relay to operate the pump during the irrigation cycle as shown on the Plans and/or if determined as necessary by the Engineer.

Delete the last sentence of the third paragraph.

Replace the third sentence of the fourth paragraph with the following:

Conductors shall conform to subsection 800-3.2.2 of these special provisions.

Delete the last sentence of the fourth paragraph.

Add the following as the fourth sentence of the fifth paragraph:

Wiring installed in concrete, masonry, or where exposed to moisture, weather or damage, shall be installed in a galvanized steel conduit.

Add the following to the fifth paragraph:

- d) 24-Volt Wires (Splicing). No field splicing between the controller and a remote control valve will be allowed. Factory splices in a wire roll will be allowed.
- e) 24-Volt Wires (End Splicing). The ends of control and common wires shall be spliced as specified in subsection 701-17.4.2.
- f) When wires from more than one controller are in a common trench, the wires from the individual controllers shall be bundled together separately with one wrap of tape.

Add the following after the first sentence of the sixth paragraph:

Common wires shall be coated white. Pilot wires shall be color-coated using a minimum of 8 different colors

801-5.7 Flushing and Testing. (Page 606 of the SSPWC)

801-5.7.1 General.

Add the following:

Underground mains upstream of control valves and lead-in connections to irrigation system shall be flushed by utilizing a flush-out assembly or quick-coupler valve at the lowest elevation shown on the Plans.

Laterals downstream of control valves shall have the risers in-place and the trench backfilled with the joints exposed prior to flushing. Laterals shall be flushed one at a time starting at the one nearest to the water source and progress toward the end of the supply main.

Add the following subsection:

801-5.7.5 Water Main Disinfection. Water mains shall be disinfected only if used for potable water purposes. Disinfection procedures shall be in accordance with subsection 306-8.9.4.3.

801-6 MAINTENANCE AND PLANT ESTABLISHMENT. (Page 607 of the SSPWC)

Replace the second sentence of the fifth paragraph with the following:

The plant establishment period shall be for a period of **90 Days** and will be extended by the Engineer if the planted areas are improperly maintained, appreciable plant replacement is required, or other corrective work becomes necessary.

Add the following as the sixth paragraph:

The Contractor shall perform the following during the plant establishment period:

- a) Keep all plants and planting areas watered, trash-free, and weed-free.
- b) Control insects and fungi using appropriate insecticides and fungicides.
- c) Apply fertilizer in the presence of the Engineer at the beginning of the plant establishment period and after 30 Days.
- d) Apply commercial fertilizer, analysis 10-6-4, at the rate of 10 pounds per 1000 square feet uniformly over all shrub, ground cover and lawn areas except for slopes steeper than 3:1.
- e) Apply soil conditioner-fertilizer, controlled release (12-8-8) at the rate of 20 pounds per 1000 square feet uniformly over all shrub, ground cover and lawn areas.
- f) Repair planting areas.
- g) Fill depressions caused by erosion, vehicles, bicycles or foot traffic with topsoil and level.
- h) Re-seed damaged sod areas.

- i) Replace all plant materials which, for any reason, die, are unhealthy or are damaged. Trees or other plant materials that die-back and lose the form and size as originally specified shall be replaced even if they have taken root and are growing after the die-back. Replacement shall be made with the same tree or plant as originally specified or shown on the Plans.
- j) Prior to completion, cultivate all ground cover and shrub areas. Contractor shall adhere to the final accepted agronomic soil report(s) recommendations including the application of all fertilizers and amendments as identified in the final agronomic soil report(s).

SECTION 802 - DECOMPOSED GRANITE

802-1 GENERAL. Decomposed Granite shall be derived from the crushing and screening of naturally friable granite. Soil stabilizer shall be thoroughly blended into the decomposed granite by mechanical means at the rate of 15 pounds per ton. Mixing shall be performed by the supplier prior to delivery to the Work site.

802-2 SUBMITTALS. In accordance with Section G, 3-8, submit the following for approval by the Agency:

- a) Three samples of decomposed granite in quart-size clear plastic bags, sieve test results (ASTM C136), and gradation chart from the supplier.
- b) Manufacturer's product information for the soil stabilizer.

802-3 MATERIALS. Decomposed granite shall conform to the following gradation and be uniformly graded in accordance with ASTM C136.

Sieve Size	Percent Passing
1/2"	100
3/8"	90-100
No. 4	50-100
No. 30	25-55
No. 100	10-20
No. 200	5-18

Soil stabilizer shall be a colorless, non-toxic organic binder in powder form suitable for landscape use. Soil stabilizer shall be manufactured by one of the following:

- a) “Stabilizer” by Stabilizer Solutions; Tel: (1) 800-336-2468
<http://www.stabilizersolutions.com/products/stabilizer-landscape/>
- b) “Natrecil” by Gail Materials; Tel: (1) 951-667-6102
<http://www.gailmaterials.net/natrecil-stabilized-decomposed-granite-crushed-aggregate-stone>
- c) “PHP Organic Binder” by TMT Enterprises, Inc., ; Tel: (1) 408-432-9040
<http://www.tmtenterprises.net/product-php.php>

802-4 PLACEMENT.

802-4.1 General. The Contractor shall construct a 3-foot by 3-foot sample, for review and approval by the Engineer, at the Project site using the materials proposed for the Work. Decomposed granite for the Work shall not be placed on the Project prior to approval of the sample by the Engineer.

802-4.2 Subgrade. The subgrade shall be prepared in accordance with subsection 301-1 immediately prior to placement of decomposed granite.

The subgrade shall conform to the lines, grades, and cross sections shown on the Plans. The subgrade shall be compacted to 90 percent relative density. The finished subgrade shall be within 1/4 inch plus or minus of the required elevations when measured with a 10-foot straightedge.

No placement of surfacing material shall occur until the subgrade has been approved by the Engineer.

802-4.3 Spreading and Compacting. Decomposed granite material shall be evenly spread in a maximum of 2-inch lifts. Each lift shall be compacted to a relative compaction of not less than 90 percent and result in a smooth surface.

After placement, final compaction shall not begin less than 6 hours nor more than 72 hours after placement. Water shall be applied as necessary to result in the full-depth of decomposed granite being moist. After a period of 6 hours, compact the final lift by making 4 passes with a 2 to 5 ton double drum roller. Allow for a curing period of 4 days prior to use.

The finished surface shall be smooth and uniform and conform to the lines, grades, and cross sections shown on the Plans.

SECTION 803 – DECORATIVE BOULDERS

803-1 GENERAL. “DECORATIVE BOULDERS” shall be granitic in origin.

803-2 SUBMITTALS. In accordance with Section G, 3-8, submit the following:

- a) Photos and product information sheet for decorative boulders per Plans.

803-3 MATERIALS.

803-3.1 General. Decorative boulders shall be manufactured by one of the following:

- a) Southwest Boulder and Stone, type: Sierra Boulders; Tel: (1) 760-466-3277
<https://www.southwestboulder.com/t/categories/boulders?page=4>
- b) KRC Rock, type: Desert Marble; Tel: (1) 800-KRC-ROCK
<https://www.krcrock.com/product-page/desert-marble>
- c) Sepulveda Building Materials, type: Mountain Grey Boulder Tel: (1) 800-394-4726
http://www.sepulveda2.com/catalog_sepulveda/show_product_info.php?product=32

803-4 PLACEMENT.

803-4.1 General. The Contractor shall construct a mock-up sample of the placement of typical boulder layout at the location shown on Plans for boulders for review and approval by the Engineer. Decorative boulders shall not be placed prior to approval of the sample by the Engineer.

803-4.2 Subgrade. The subgrade shall be prepared in accordance with subsection 301-1 prior to placement of decorative boulders.

The subgrade shall conform to the lines, grades, and cross sections shown on the Plans.

Decorative boulders shall not be placed until the subgrade has been approved by the Engineer.

803-4.3 Installation. Decorative boulder shall be placed such that one-third of the diameter is below the adjacent finish grade.

Placement shall be approved by the Engineer must occur before proceeding with planting and irrigation installation.

SECTION 804 – RIVER ROCK COBBLE

804-1 GENERAL. “RIVER ROCK COBBLE” shall be granitic in origin.

804-2 SUBMITTALS. In accordance with subsection Section G, 3-8, submit the following for approval by the Agency:

- a) Photos and product information sheet for river rock cobble per Plans.
- b) Provide 2’ by 2’ sample mock-up for approval by the Engineer prior to installation, at the Project site.

804-3 MATERIALS.

804-3.1 General.

- a) River rock cobble.
 1. Shape and color to be as follows:
 - i.) Rock shall be oval and smooth with no sharp edges, approximately 6 to 8 inches in length. Flat or needle shapes will not be acceptable.
 - ii.) The color shall be predominantly white and black with small amounts of pink, brown, and gray.
 - iii.) Cement Mortar shall be Class A.
 2. River rock cobble shall be manufactured by one of the following:
 - i.) Southwest Boulder and Stone, model: Sierra Cobble;
Tel: (1) 760-466-3277
<https://www.southwestboulder.com/products/sierra-cobble>

- ii.) KRC Rock, model: Riverside Cobble; Tel: (1) 800-KRC-ROCK
<https://www.krcrock.com/product-page/riverside-cobble>
- iii.) Sepulveda Building Materials, model: Mountain Grey Cobbles
Tel: (1) 800- 394-4726
http://www.sepulveda2.com/catalog_sepulveda/show_product_info.php?product=339

804-4 PLACEMENT.

804-4.1 General. The Contractor shall construct a mock-up sample of the placement of typical river rock cobble layout at the location shown on Plans for review and approval by the Engineer. River rock cobble shall not be placed prior to approval of the sample by the Engineer.

804-4.2 Subgrade. Grade all areas to receive river rock to a level of 6 inches below the adjacent pavement surface. Where no grades are shown, grade between existing or fixed controls (such as walks, curbs) and elevations shown to provide a smooth continual plane. The subgrade shall be prepared in accordance with subsection 301-1 prior to placement of river rock cobble and base material per Plans.

The subgrade shall conform to the lines, grades, and cross sections shown on the Plans.

Base material shall not be placed until the subgrade has been approved by the Engineer.

804-4.3 Base. The base shall be prepared in accordance with subsection 301-1 prior to placement of decorative boulders.

The base shall conform to the lines, grades, and cross sections shown on the Plans.

River rock cobble shall not be placed until the base has been approved by the Engineer.

804-4.4 Installation. The surfaces of the river rock cobble shall be cleaned of adhering dirt and clay by spraying water and allowed to dry prior to placement. River rock cobble shall be hand placed.

Placement shall be approved by the Engineer must occur before proceeding with planting and irrigation installation.

SECTION 805 –BIOCHAR

805-1 GENERAL. “BIOCHAR” shall be derived from wood-based biomass through a pyrolysis process.

805-2 SUBMITTALS. In accordance with subsection 3-8 of Section G, submit the following for approval by the Agency:

- a.) Physical sample and material data sheet for “BIOCHAR” per Plans.

805-3 MATERIALS.

805-3.1 General.

Wood-base biomass and biochar shall be from free from hazardous waste, toxins, vegetation inhibitors, debris, and delirious materials. Biochar shall comply with the following criteria:

- a) The pyrolysis temperature shall be between 400 to 700 degrees Celsius.
- b) Ash content in the biochar shall be below 2.5%.
- c) Phosphorus content in the produced biochar shall be below 0.5 mg/g of dry biochar.
- d) Maximum biochar particle size shall not exceed 1 mm.
- e) Minimum of 35% biochar particles shall pass #60 sieve.

805-4 PLACEMENT.

805-4.1 General. The Contractor shall uniformly mix biochar with Class D Bioswale soil with the rate specified on Plan LS within the area designated for Structural Cell Module System. Mixing operation shall be done prior to placing Class D Bioswale soil in the excavated areas.

805-4.2 Subgrade. The subgrade shall be prepared in accordance with subsection 301-1 prior to placement of biochar mixture.

The subgrade shall conform to the lines, grades, and cross sections shown on the Plans.

Biochar mixture shall not be placed until the subgrade has been approved by the Engineer.

805-4.3 Installation. The biochar shall be installed to conform to the lines, grades, and cross sections shown on the Plans.

Placement shall be approved by the Engineer must occur before proceeding with planting and irrigation installation.

SECTION 806 – LANDSCAPE AND IRRIGATION PAYMENT

806-1 PAYMENT. Payment will be made at the lump sum Bid price for “LANDSCAPE AND IRRIGATION”. The lump sum Bid price shall include all landscape Work as shown in the Plans and specified here in the Special Provisions, Section LS – Landscaping and Irrigation.

LOS ANGELES COUNTY PUBLIC WORKS

AGREEMENT

Project Name: EAST LOS ANGELES SUSTAINABLE MEDIAN
STORMWATER CAPTURE PROJECT

Project ID No.: WMU0000010

This Agreement, made and entered into this ____ day of _____, 20____,
by and between the COUNTY OF LOS ANGELES, hereinafter called the Agency and
_____, hereinafter called the
Contractor.

WITNESSETH:

1. Contractor's Services.

The Contractor, in consideration of the promises of the Agency hereinafter set forth, hereby agrees to furnish all tools, equipment, labor and material (except as specified in the Contract Documents hereinafter referred to), necessary to perform and complete in a good and workmanlike manner the construction of a storm drain system, dry wells, filtration units, infiltration galleries, and other incidental and appurtenant work on medians located in the unincorporated communities of East Los Angeles under Project ID No. WMU0000010 and said work to be performed and completed in accordance with this Agreement, including the following "Contract Documents" which are hereby incorporated by reference into this Agreement and made a part hereof as though fully set forth herein:

- a. Addendum(s) No(s). 1 (through __) for Project ID No. WMU0000010.
- b. Bid Proposal for Project ID No. WMU0000010 submitted by the Contractor.
- c. Special Provisions for Project ID No. WMU0000010.
- d. Plans for Project ID No. WMU0000010.
- e. Standard Plans published by the Los Angeles County Public Works, 2000 Edition.
- f. Standard Plans for Public Works Construction, 2012 Edition.
- g. Standard Specifications for Public Works Construction ("Greenbook"), 2018 Edition.
- h. Notice Inviting Bids for Project ID No. WMU0000010.
- i. Instructions to Bidders dated January 2019.

2. Prevailing Wage Rates.

The Contractor agrees to comply with the provisions of Sections 1771 and 1774 of the California Labor Code pertaining to the payment of prevailing wage rates, and to require each of its subcontractor to so comply. Pursuant to Section 1775 of the California Labor Code, the Contractor, and any of its subcontractor, shall forfeit to the Agency, and the Agency will withhold from any monies due the Contractor, the amount of any penalties, as determined by the Labor Commissioner, to be assessed for non-payment of prevailing wage rates.

Attached hereto (Exhibit A), State Prevailing Wages 2018-1, and made a part hereof, are the prevailing rate of per diem wages determined by the Labor Commissioner.

3. Payroll Records.

The Contractor agrees to comply with the provisions of Section 1776 of the California Labor Code pertaining to payroll records and will be responsible for compliance by its subcontractor(s).

4. Employment of Apprentices.

The Contractor agrees to comply with the provisions of Section 1777.5 of the California Labor Code relating to the employment of apprentices by the Contractor and its subcontractor(s).

5. Hours of Labor.

The Contractor agrees to comply with Sections 1810 through 1815 of the California Labor Code pertaining to the hours of labor and payment for such.

Pursuant to Section 1813 of the California Labor Code, the Contractor and any of its subcontractor, shall forfeit to the Agency, and the Agency will withhold from any monies due the Contractor, the amount of twenty-five dollars (\$25) for each worker employed in the execution of the Contract by the Contractor or any of its subcontractor for each calendar day 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 Sections 1810 through 1815 of the California Labor Code.

6. Workers' Compensation Insurance Certification.

The Contractor, as required by Section 1861 of the California Labor Code, agrees to the following statement:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."

7. Assignment of Rights, Title, and Interest.

The Contractor agrees to comply with, and be responsible for compliance by its subcontractor with, the provisions of Section 7103.5 of the California Public Contract Code as follows:

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

8. County Lobbyist Ordinance.

The Contractor and each County lobbyist or County lobbying firm as defined in Los Angeles County Code Section 2.160.010, retained by the Contractor, shall fully comply with the County Lobbyist Ordinance, Los Angeles County Code Chapter 2.160. Failure on the part of the Contractor or any County lobbyist or County lobbying firm retained by the Contractor to fully comply with the County Lobbyist Ordinance shall constitute a material breach of the Contract upon which the Agency may immediately terminate or suspend the Contract.

9. Employment of Aliens.

The Contractor shall warrant that it fully complies with all laws regarding employment of aliens and others, and that all of its employees performing services hereunder meet the citizenship or alien status requirements contained in Federal statutes and regulations including, but not limited to, the Immigration Reform and Control Act of 1986 (P.L. 99-603). When requested by the Engineer, this warrant shall be in writing to the Agency. The Contractor shall obtain, from all covered employees performing services hereunder, all verification and other documentation of employment eligibility status required by Federal statutes and regulations as they currently exist and as they may be hereafter amended. The Contractor shall retain such documentation for all covered employees for the period prescribed by law. The Contractor shall indemnify, defend, and hold harmless, the Agency, its officers and employees from employer sanctions and

any other liability which may be assessed against the Contractor or the Agency or both in connection with any alleged violation of Federal statutes or regulations pertaining to the eligibility for employment of persons performing services under the Contract.

10. Prohibition Against Use of Child Labor.

The Contractor shall not knowingly supply to the Agency any products, goods, supplies or other personal property produced or manufactured in violation of child labor standards set by the International Labor Organization through its 1973 Convention Concerning Minimum Age for Employment.

The Contractor shall upon request by the Agency, identify the country/countries of origin of any products, goods, supplies or other personal property supplied to the Agency.

The Contractor shall upon request by the Agency, provide to the Agency the manufacturer's certification of compliance with all international child labor conventions.

Should the Agency discover that any products, goods, supplies or other personal property supplied by Contractor to County are produced in violation of any international child labor conventions, Contractor shall immediately provide an alternative, compliant source of supply.

Failure by Contractor to comply with the provisions of this clause will be grounds for immediate termination of this Agreement and award to an alternative Contractor.

11. Termination for Default.

The Agency may, by written notice to the Contractor, terminate the Contractor's right to proceed with the Work (or the separable part of the Work), if the Contractor refuses or fails (i) to commence the Work within the time required by the Contract, (ii) to prosecute the Work or any separable part with the diligence that will ensure completion within the time specified in the Contract, including any authorized extension, (iii) to provide sufficient and properly skilled workers or proper materials or equipment to complete the Work in an acceptable manner and without delay, (iv) to promptly pay its subcontractor, employees, and material suppliers, (v) to perform any of the Contractor's other obligations under this Contract, (vi) to complete the Work within the time specified in the Contract, or (vii) if the Contractor assigns or subcontracts any part of the Work without the Board's consent. Items (i) - (vii) inclusive are hereinafter referred to as "events of default". In this event, the Agency may take over the Work and complete it by Contract or otherwise, and may take possession of and use any material and equipment on the Work site necessary for completing the Work. The Contractor

and the Surety shall be liable for any damages to the Agency resulting from events of default, whether or not the Contractor's right to proceed with the Work is terminated. This liability includes any increased costs incurred by the Agency in completing the Work.

The Contractor's right to proceed will not be terminated because of delays, nor will the Contractor be charged with damages under this subsection, if:

- a. the delay in completing the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor (examples of such causes include: (i) acts of God, (ii) acts of the public enemy, (iii) acts of the Agency in either its public or Contractual capacity, (iv) acts of another Contractor in the performance of a Contract with the Agency, (v) fires, (vi) floods, (vii) epidemics, (viii) quarantine restrictions, (ix) strikes, (x) freight embargoes, (xi) unusually severe weather, or (xii) delays of subcontractor or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and its subcontractor or suppliers); and,
- b. the Contractor, within 14 calendar days from the beginning of any delay (unless extended by the Agency), notifies the Agency in writing of the causes of the delay. The Agency will ascertain the facts and the extent of the delay. If, in the judgment of the Agency, the findings warrant such action, the time for completing the Work may be extended by Change Order. The findings of the Agency will be final and conclusive on the parties.

If the Agency terminates the Contractor's right to proceed with the Work for any of the events of default, the Agency may serve written notice upon the Surety on its Faithful Performance Bond. The Surety shall, within 5 days, assume control and perform the Work as successor to the Contractor. If the Surety assumes any part of the Work, it shall take the Contractor's place in all respects for that part.

If the Surety does not assume control and perform the Work within 5 days after receiving notice of cancellation, or fails to continue to comply, the Agency may exclude the Surety from the Work site.

In the event of termination of its right to proceed, the Contractor will be paid for the value of the Work completed as of the date of the termination subject to the other terms of the Contract. For Contract Unit Price Bid items, the Contractor will be paid for the quantity of the item constructed. For lump sum Bid items, the Contractor will be paid for the percentage of the item constructed. No payment will be made for items not constructed in accordance with the Plans and Specifications. The amount of any prior progress payments, and any applicable Liquidated Damages will be withheld and

deducted from any amounts due the Contractor. The amounts of outstanding Stop Notices or Labor Compliance notices to withhold will be withheld until the Stop Notices or notices to withhold are resolved as provided by law.

If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Agency.

The rights and remedies of the Agency in this subsection are in addition to any other rights and remedies provided by law or under this Contract. Time is of the essence for all delivery, performance, submittal, and completion dates in this Contract.

12. Termination for Convenience.

The Board may, whenever the interests of the Agency so require, terminate the Contract, in whole or in part, for the convenience of the Agency. The Agency will give written notice of the termination to the Contractor specifying the part of the Contract terminated and the date termination becomes effective.

The Contractor shall incur no further obligations in connection with the terminated Work, and, on the date set in the notice of termination, the Contractor shall stop Work to the extent specified. The Contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated Work. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated Work. The Agency may direct the Contractor to assign the Contractor's right, title, and interest under the terminated orders or subcontracts to the Agency. The Contractor must still complete the Work not terminated by the notice of termination and may incur obligations as are necessary to do so.

The Agency may require the Contractor to transfer title and deliver to the Agency, in the manner and to the extent directed by the Agency, the fabricated or un-fabricated parts, Work in process, completed Work, supplies, and other material produced or acquired for the Work terminated and other property that, if the Contract had been completed, would be required to be furnished to the Agency. The Contractor shall, upon direction of the Agency, protect and preserve property in the possession of the Contractor in which the Agency has an interest. If the Agency does not exercise this right, the Contractor shall use its best efforts to sell such supplies and manufacturing materials for the benefit of the Agency.

If the parties are unable to agree on the amount of a termination settlement, the Agency will pay the Contractor the following amounts:

- a. For Contract Work performed before the effective date of termination, the total (without duplication of any items) of:
 - (i) the cost of work completed in accordance with the Plans and Specifications based on the quantity constructed and the Contract Unit Price or lump sum Bid price of the respective Bid item less prior progress payments, and any applicable Liquidated Damages and any other deductions or withholds to which the Agency may be entitled to in accordance with applicable law, including the amounts of outstanding Stop Notices or labor compliance notices to withhold shall be withheld until the Stop Notices or notices to withhold are resolved as provided by law.
 - (ii) the cost of settling and paying terminated subcontracts and orders that are properly chargeable to the terminated portion of the Work; and
- b. The reasonable costs of effectuating the settlement of the Work terminated, including:
 - (i) accounting, clerical, and other expenses reasonably necessary for the preparation of termination settlement bids and supporting data;
 - (ii) the termination and settlement of subcontracts (excluding the amounts of such settlements); and
 - (iii) storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

13. Termination for Improper Consideration.

The Agency may, by written notice to the Contractor, immediately terminate the right of the Contractor to proceed under the Contract if it is found that consideration, in any form, was offered or given by the Contractor, either directly or through an intermediary, to any Agency officer, employee or agent with the intent of securing the Contract or securing favorable treatment with respect to the award, amendment or extension of the Contract or the making of any determinations with respect to the Contractor's performance pursuant to the Contract. In the event of such termination, the Agency shall be entitled to pursue the same remedies against the Contractor as it could pursue in the event of default by the Contractor.

The Contractor shall immediately report any attempt by an Agency officer or employee to solicit such improper consideration. The report shall be made either to the Agency manager charge with the supervision of the employee or to the County Auditor-Controller's Employee Fraud Hotline at (213) 974-0914 or (800) 544-6861.

Among other items, such improper consideration may take the form of cash, discounts, service, the provision of travel or entertainment, or tangible gifts.

14. Agency's Quality Assurance Plan.

The Agency will evaluate the Contractor's performance under the Contract on not less than an annual basis. Such evaluation will include assessing the Contractor's compliance with the requirements of the Contract Documents. Contractor deficiencies which the Agency determines are severe or continuing, and that may place performance of the Contract in jeopardy if not corrected, will be reported to the Board. The report will include improvement/corrective action measures taken by the Agency and the Contractor. If improvement does not occur consistent with the corrective action measures, the Agency may terminate the Contract or impose other penalties as specified in the Agreement.

15. Resolution of Construction Claims.

Claims shall be resolved in accordance with Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3 of the Public Contract Code. All claims shall be in writing and shall include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment.

For claims of less than \$50,000, the Agency will respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the Agency may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to mutual agreement of the Agency and the Contractor. The Agency's written response to the claim, as further documented, will be submitted to the Contractor within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

For claims of over \$50,000 and less than or equal to \$375,000, the Agency will respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the Agency may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to mutual agreement of the Agency and the Contractor. The Agency's written response to the claim, as further documented, will be submitted to the Contractor within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

If the Contractor disputes the Agency's written response, or the Agency fails to respond within the time prescribed, the Contractor may so notify the Agency, in writing, either within 15 days of receipt of the Agency's response or within 15 days of the Agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the Agency will schedule a meet and confer conference within 30 days for settlement of the dispute.

If following the meet and confer conference the claim or any portion remains in dispute, the Contractor may file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits its written claim until the time the claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

The following procedures apply for all civil actions filed to resolve claims subject to this subsection:

- a. Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court will submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.
- b. (1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 [Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure] shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and

such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by State or County funds.

(3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of trial de novo.

c. The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

16. County Child Support Compliance Program.

The Contractor shall acknowledge that the County has established a goal of ensuring that all individuals who benefit financially from the Agency through Contracts are in compliance with their court-ordered child, family, and spousal support obligations in order to mitigate the economic burden otherwise imposed upon the County and its taxpayers.

As required by the County's Child Support Compliance Program (County Code Chapter 2.200) and without limiting the Contractor's requirements under the Contract to comply with all applicable provisions of law, the Contractor warrants that it is now in compliance, and shall during the duration of the Contract, maintain compliance with employment and wage reporting requirements as required by the Federal Social Security Act(42 USC Section 653a) and California Unemployment Insurance Code-Section 1088.5, and shall implement all lawfully served Wage and Earnings Withholdings Orders or Child Support Services Department (CSSD) Notices of Wage and Earnings Assignment for Child, Family, or Spousal Support, pursuant to Code of Civil Procedure Section 706.031 and Family Code Section 5246(b).

17. Termination for Failure to Comply with Child Support Compliance Program Requirements.

If the CSSD finds that a Contractor is not in compliance with a lawfully served earnings assignment order or income withholding order, as self-certified in the Contract, CSSD will send notice to the contracting department for commencement of termination or debarment procedures. Further, CSSD will enter the name of the non-compliant Contractor in the Child Support Compliance Program Intranet website at <http://cssd.lacounty.gov/compliance-program/>.

18. Termination for Breach of Warranty to Maintain Compliance with the County's Child Support Compliance Program.

Failure of the Contractor to maintain compliance with the requirements of the County Child Support Compliance Program shall constitute default under the Contract. Without limiting the rights and remedies available to the Agency under any other provisions of the Contract, failure of the Contractor to cure such default within 90 calendar days of written notice shall be grounds upon which the Agency may terminate the Contract and/or pursue debarment of the Contractor pursuant to County Code Chapter 2.202.

19. Defaulted Property Tax Reduction Program.

The Contractor shall acknowledge that the County has established a goal of ensuring that all individuals who benefit financially from the Agency through Contracts are current in paying their property tax obligations (secured and unsecured roll) in order to mitigate the economic burden otherwise imposed upon the County and its taxpayers, or are exempt therefrom.

As required by the County's Defaulted Property Tax Reduction Program, "Defaulted Tax Program" (County Code Chapter 2.206), and without limiting the Contractor's requirements under the Contract to comply with all applicable provisions of law, and unless the Contractor qualifies for an exemption or exclusion, the Contractor warrants and certifies that to the best of its knowledge it is now in compliance, and during the term of the Contract, will maintain compliance with Los Angeles County Code 2.206.

20. Termination for Breach of Warranty to Maintain Compliance with the County's Defaulted Property Tax Reduction Program.

Failure of the Contractor to maintain compliance with the requirements of the County's Defaulted Tax Program shall constitute default under the Contract. Without limiting the rights and remedies available to the Agency under any other provisions of the Contract, failure of the Contractor to cure such default within 10 business days of written notice shall be grounds upon which the Agency may terminate the Contract and/or pursue debarment of the Contractor pursuant to County Code Chapter 2.202.

21. Recycled Paper.

Consistent with the Board policy to reduce the amount of solid waste deposited at the County landfills, the Contractor shall use recycled paper to the maximum extent possible throughout the duration of the Contract.

22. Contractor Responsibility and Debarment.

- a. A responsible Contractor is a Contractor who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity and experience to satisfactorily perform the Contract. It is the Agency's policy to conduct business only with responsible Contractors.
- b. The Contractor is hereby notified that, in accordance with Chapter 2.202 of the County Code, if the Agency acquires information concerning the performance of the Contractor on this or other Contracts which indicates that the Contractor is not responsible, the Agency may, in addition to other remedies provided in the Contract, debar the Contractor from bidding or proposing on, or being awarded, and/or performing work on County or Agency Contracts for a specified period of time, which generally will not exceed 5 years but may exceed 5 years or be permanent if warranted by the circumstances, and terminate any or all existing Contracts the Contractor may have with the Agency.
- c. The Agency may debar a Contractor, if the Board of Supervisors in its discretion, finds, that the Contractor has done any of the following: (i) violated any term of a Contract with the County, the Agency, or a nonprofit corporation created by the County; (ii) committed an act or omission which negatively reflects on the Contractor's quality, fitness, or capacity to perform a Contract with the County, the Agency, any other public entity, or a nonprofit corporation created by the County, or engaged in a pattern or practice which negatively reflects on same; (iii) committed an act or offense which indicates a lack of business integrity or business honesty, or (iv) made or submitted a false claim against the County, the Agency, or any other public entity.
- d. If there is evidence that the Contractor may be subject to debarment, the Agency will notify the Contractor in writing of the evidence which is the basis for the proposed debarment and will advise the Contractor of the scheduled date for a debarment hearing before the Contractor Hearing Board.
- e. The Contractor Hearing Board will conduct a hearing where evidence on the proposed debarment is presented. The Contractor and/or the Contractor's representative shall be given an opportunity to submit evidence at that hearing. After the hearing, the Contractor Hearing Board shall prepare a tentative proposed decision, which shall contain a recommendation regarding whether the Contractor should be debarred, and, if so, the appropriate length of time of the debarment. The Contractor and the Agency shall be provided an opportunity to object to the tentative proposed decision prior to its presentation to the Board of Supervisors.

- f. After consideration of any objections, or if no objections are submitted, a record of the hearing, the proposed decision and any other recommendation of the Contractor Hearing Board shall be presented to the Board of Supervisors. The Board of Supervisors shall have the right to modify, deny, or adopt the proposed decision and recommendation of the Contractor Hearing Board.
- g. If a Contractor has been debarred for a period longer than 5 years, that Contractor may, after the debarment has been in effect for at least 5 years, submit a written request for review of the debarment determination to reduce the period of debarment or terminate the debarment. The Agency may, in its discretion, reduce the period of debarment or terminate the debarment if it finds that the Contractor has adequately demonstrated one or more of the following: (i) elimination of the grounds for which the debarment was imposed; (ii) a bona fide change in Agency-ship or management; (iii) material evidence discovered after debarment was imposed; or (iv) any other reason that is in the best interests of the Agency.
- h. The Contractor Hearing Board will consider a request for review of a debarment determination only where (i) the Contractor has been debarred for a period longer than 5 years; (ii) the debarment has been in effect for at least 5 years; and (iii) the request is in writing, states one or more of the grounds for reduction of the debarment period or termination of the debarment, and includes supporting documentation. Upon receiving an appropriate request, the Contractor Hearing Board will provide notice of the hearing on the request. At the hearing, the Contractor Hearing Board shall conduct a hearing where evidence on the proposed reduction of debarment period or termination of debarment is presented. This hearing shall be conducted and the request for review decided by the Contractor Hearing Board pursuant to the same procedures as for a debarment hearing.
- i. The Contractor Hearing Board's proposed decision shall contain a recommendation on the request to reduce the period of debarment or terminate the debarment. The Contractor Hearing Board shall present its proposed decision and recommendation to the Board of Supervisors. The Board of Supervisors shall have the right to modify, deny, or adopt the proposed decision and recommendation of the Contractor Hearing Board.
- j. These terms shall also apply to subcontractor of the Contractor.

23. Jury Service Program.

- a. General. This Contract is subject to the provisions of the Contractor Employee Jury Service Ordinance ("Jury Service Program") as codified in Sections 2.203.010 through 2.203.090 of the Los Angeles County Code.

- b. **Written Employee Jury Service Policy.** Unless the Contractor has demonstrated to the Agency's satisfaction either that the Contractor is not a "Contractor" as defined under the Jury Service Program (Section 2.203.020 of the County Code) or that the Contractor qualifies for an exception to the Jury Service Program (Section 2.203.070 of the County Code), the Contractor shall have and adhere to a written policy that provides that its employees shall receive from the Contractor, on an annual basis, no less than five days of regular pay for actual jury service. The policy may provide that employees deposit any fees received for such jury service with the Contractor or that the Contractor deduct from the employee's regular pay the fees received for jury service.

For purposes of this subsection, "Contractor" shall mean a person, partnership, corporation or other entity which has a Contract with the Agency or a subcontract with an Agency Contractor and has received or will receive an aggregate sum of \$50,000 or more in any 12-month period under one or more Agency Contracts or subcontracts. "Employee" shall mean any California resident who is a full time employee of the Contractor. "Full time" means 40 hours or more worked per week, or a lesser number of hours if the lesser number is a recognized industry standard and is approved as such by the Agency. If the Contractor uses any subcontractor to perform services for the Agency under the Contract, the subcontractor shall also be subject to the provisions of this subsection. The provisions of this subsection shall be inserted into any such subcontract agreement and a copy of the Jury Service Program shall be attached to the agreement.

- c. **Change in Contractor Status.** If the Contractor is not required to comply with the Jury Service Program when the Contract commences, the Contractor shall have a continuing obligation to review the applicability of its "exception status" from the Jury Service Program, and the Contractor shall immediately notify the Agency if the Contractor at any time either comes within the Jury Service Program's definition of "Contractor" or if the Contractor no longer qualifies for an exception to the Program. In either event, the Contractor shall immediately implement a written policy consistent with the Jury Service Program. The Agency may also require, at any time during the Contract and at its sole discretion, that the Contractor demonstrate to the Agency's satisfaction the Contractor either continues to remain outside of the Jury Service Program's definition of "Contractor" and/or that the Contractor continues to qualify for an exception to the Program.
- d. **Noncompliance.** The Contractor's noncompliance with this subsection may constitute a material breach of the Contract. In the event of such material breach, the Agency may, in its sole discretion, terminate the Contract and/or bar the Contractor from the award of future Agency Contracts for a period of time consistent with the seriousness of the breach.

24. Federal Earned Income Credit Notification.

The Contractor shall notify its employees, and shall require each subcontractor to notify its employees, that they may be eligible for the Federal Earned Income Credit under the Federal income tax laws. Such notice shall be provided in accordance with the requirements set forth in Internal Revenue Service Notice 1015.

25. Safely Surrendered Baby Law.

The Contractor shall notify and provide to its employees, and shall require each subcontractor to notify and provide to its employees, a fact sheet regarding the Safely Surrendered Baby Law, its implementation in the County, and where and how to safely surrender a baby. The fact sheet is available on the Internet at www.babysafela.org for printing purposes.

The Contractor acknowledges that the County places a high priority on the implementation of the Safely Surrendered Baby Law. The Contractor understands that it is the County's policy to encourage all County Contractors to voluntarily post the County's "Safely Surrendered Baby Law" poster in a prominent position at the Contractor's place of business. The Contractor shall also encourage its subcontractor, if any, to post this poster in a prominent position in the subcontractor's place of business. The County's Department of Children and Family Services will supply the Contractor with the poster to be used.

26. Indemnification.

Notwithstanding any other provision in this Agreement, The Contractor shall indemnify, defend and hold harmless the County, its Special Districts, elected and appointed officers, employees, agents and volunteers ("County Indemnitees") from and against any and all liability, including but not limited to demands, claims, actions, fees, costs and expenses (including attorney and expert witness fees), arising from and/or relating to this Contract, except for such loss or damage arising from the sole negligence or willful misconduct of the County Indemnitees.

27. Cancellation of or Changes in Insurance.

The Contractor shall provide the Agency with, or the Contractor's insurance policies shall contain a provision that the Agency shall receive, written notice of cancellation or any change in the insurance required in the Specifications, including insurer, limits of coverage, term of coverage, or policy period. The written notice shall be provided to the Agency at least ten (10) days in advance of cancellation for non-payment of premium and thirty (30) days in advance for any other cancellation or policy change. Failure to provide written notice of cancellation or any change in the insurance required in the Specifications may constitute a material breach of the Contract, in the sole

discretion of the Agency, upon which the Agency may suspend or terminate the Contract.

28. Failure to Maintain Insurance.

The Contractor's failure to maintain or provide acceptable evidence that it maintains the insurance required in the Specifications shall constitute a material breach of the Contract, upon which the Agency may immediately withhold payments due to the Contractor, and/or suspend or terminate the Contract. The Agency, at its sole discretion, may obtain damages from the Contractor resulting from said breach. Alternatively, the Agency may purchase the insurance required in the Specifications and, without further notice to the Contractor, deduct the premium cost from sums due to the Contractor or pursue reimbursement from the Contractor.

29. Compliance with County's Zero Tolerance Policy on Human Trafficking.

Contractor acknowledges that the County has established a Zero Tolerance Policy on Human Trafficking, prohibiting contractors from engaging in human trafficking.

If the Contractor or a member of the Contractor's staff is convicted of a human trafficking offense, the County shall require that the Contractor or member of Contractor's staff be removed immediately from performing services under the Contract. County will not be under any obligation to disclose confidential information regarding the offenses other than those required by law.

Disqualification of any member of Contractor's staff pursuant to this paragraph shall not relieve Contractor of its obligation to complete all work in accordance with the terms and conditions of this Contract.

30. Compliance with Fair Chance Employment Practices

Contractor shall comply with fair chance employment hiring practices set forth in California Government Code Section 12952, Employment Discrimination: Conviction History. Contractor's violation of this paragraph of the Contract may constitute a material breach of the Contract. In the event of such material breach, the Agency may, in its sole discretion, terminate the Contract.

31. Consideration of Hiring County Employees Targeted for Layoff.

Should the Contractor, or any subcontractor performing more than \$250,000 of the Contract Price, require additional or replacement personnel to perform services under this Contract other than the performance of a skilled trade, the Contractor or subcontractor shall give first consideration for such employment openings to qualified County employees who are targeted for layoff or qualified former County employees who are on a re-employment list.

Should the Contractor, or any subcontractor performing more than \$250,000 of the Contract Price, require additional or replacement personnel to perform a skilled trade not covered by an existing union hiring agreement under this Contract, the Contractor is encouraged to consider for such employment openings qualified County employees who are targeted for layoff or qualified former County employees who are on a re-employment list. In no event shall the Agency be liable for any cost, delay or impact claims arising out of efforts to hire such present and former County employees.

32. Consideration of Hiring Participants in GAIN and GROW Programs.

Should the Contractor require additional or replacement personnel after the effective date of the Contract, the Contractor shall give consideration for any such employment openings to participants in the County Department of Public Social Services (DPSS) Greater Avenues for Independence (GAIN) and General Relief Opportunities for Work (GROW) Programs who meet the Contractor's minimum qualifications for the open position. DPSS will refer GAIN/GROW participants by job category to the Contractor.

33. County Equal Employment Opportunity (EEO) Provisions.

During the performance of this Contract, the Contractor agrees as follows:

1. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor certifies and agrees that all persons employed by such firm, its affiliates, subsidiaries, or holding companies are and will be treated equally by the firm without regard to or because of race, color, religion, sex or national origin and in compliance with all antidiscrimination laws of the United States of America and the State of California.
2. In all advertisements for labor or other personnel, or requests for employment of any nature, the Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
3. The Contractor shall deal with its subcontractor without regard to or because of race, color, religion, sex or national origin.
4. The Contractor shall comply with current Federal employment and reporting requirements for County funded construction Contracts. Specifically, the Contractor shall make a good faith effort to comply with Federal employment goals for minority

and female employment. The Contractor shall report minority and female employment data on the Federal form provided by the Agency.

This form shall be submitted to the Engineer before the start of construction and twice annually by March 1 and September 1 of each year. Each failure to submit this form by due date will result in a Contractor penalty of \$200, which shall be deducted from any monies due the Contractor.

5. The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the Agency, advising the said labor union or worker's representative of the Contractor's commitments under this subsection.
6. The Contractor shall allow the Agency access to its employment records during regular business hours to verify compliance with these provisions when so requested by the Agency.
7. The Contractor agrees that if the Agency finds that any of the above provisions have been violated, the same shall constitute a material breach of the Contract upon which the Agency may determine to cancel, terminate or suspend the Contract. While the Agency reserves the right to determine independently that the antidiscrimination provisions of the Contract have been violated, in addition, a determination by the Federal Equal Employment Opportunity Commission or the California Fair Employment and Housing Commission that the Contractor has violated Federal or State antidiscrimination laws may constitute a finding by the Agency that the Contractor has violated the antidiscrimination provisions of the Contract.
8. The Contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex or national origin cannot result. The Contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The Contractor's obligation extends further to ensuring that its employees are not assigned to perform their services at any location, under the Contractor's control, where the facilities are segregated. This obligation extends to all Contracts containing the equal opportunity clause regardless of the amount of the Contract. The term "facilities," as used in this section, means waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, wash rooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees; *Provided*, that separate or single-user restrooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of non-discrimination clause.

At its option, and in lieu of canceling, terminating or suspending the Contract, the County may impose damages for any violation of the antidiscrimination provisions of this subsection, in the amount of \$200.00 for each violation found and determined. The County and the Contractor specifically agree that the aforesaid amount shall be imposed as liquidated damages, and not as a forfeiture or penalty. It is further specifically agreed that the aforesaid amount is presumed to be the amount of damages sustained by reason of any such violation, because, from the circumstances and the nature of the violation, it is impracticable and extremely difficult to fix actual damages.

9. The Contractor shall include the provisions of the foregoing paragraphs 1 through 8 in every subcontract over \$10,000.00, so that such provisions will be binding upon each subcontractor performing work required by the Contract.

34. County Preference Programs.

The Contractor is subject to the provisions of the County's ordinances entitled "Local Small Business Enterprise Preference Program," "Disabled Veteran Business Enterprise Preference Program," and "Social Enterprise Preference Program" as codified in Chapters 2.204, 2.211, and 2.205 of the Los Angeles County Code.

The Contractor shall not knowingly and with the intent to defraud, fraudulently obtain, retain, attempt to obtain or retain, or aid another in fraudulently obtaining or retaining or attempting to obtain or retain certification as a Local Small Business Enterprise, Disabled Veteran Business Enterprise, or Social Enterprise.

The Contractor shall not willfully and knowingly make a false statement with the intent to defraud, whether by affidavit, report, or other representation, to a County official or employee for the purpose of influencing the certification or denial of certification of any entity as a Local Small Business Enterprise, Disabled Veteran Business Enterprise, or Social Enterprise.

If the Contractor has obtained County certification as a Local Small Business Enterprise, Disabled Veteran Business Enterprise, or Social Enterprise, by reason of having furnished incorrect supporting information or by reason of having withheld information, and which knew, or should have known, the information furnished was incorrect or the information withheld was relevant to its request for certification, and which, by reason of such certification has been awarded this Contract to which it would not otherwise have been entitled, shall:

- a. Pay to the Agency any difference between the Contract Price and what the Agency's costs would have been if the Contract had been properly awarded;
- b. In addition to the amount described above, be assessed a penalty in an amount of not more than 10 percent of the amount of the Contract; and
- c. Be subject to the provisions of Chapter 2.202 of the Los Angeles County Code (Determinations of Contractor Non-Responsibility and Contractor Debarment).

The above penalties shall also apply if the Contractor is no longer eligible for certification as a result in a change of their status and the Contractor failed to notify the State and the County's Internal Services Department (Purchasing & Contracts) of this information.

35. Audits and Records.

The Contractor shall maintain all data and records pertinent to the Work performed under the Contract, in accordance with generally accepted accounting principles, and shall preserve and make available all data and records until the expiration of 4 years from the date of final payment under the Contract, or for such longer period, if any, as is required by applicable statute or by other provisions of the Contract. The authorized representatives of the Agency shall have access to all such data and records for such time period to inspect, audit and make copies thereof during normal business hours. The Contractor shall covenant and agree that it shall require any subcontractor utilized in the performance of the Contract to permit the authorized representatives of the Agency, to similarly inspect and audit all data and records of said subcontractor relating to the performance of said subcontractor under the Contract for the same time period.

36. County Maintained Contractor Performance History Databases.

The County maintains databases that track/monitor contractor performance history. Information entered into such databases may be used for a variety of purposes, including determining whether a bidder is responsible for the purposes of a future County contract.

IN WITNESS WHEREOF, the Agency has, by order of its Board of Supervisors, caused this Contract to be signed by the County Director of Public Works or her designee and the Contractor has signed the same on the day, month, and year hereinabove first written.

MARK PESTRELLA
DIRECTOR OF PUBLIC WORKS
COUNTY OF LOS ANGELES

By _____
Deputy Director

APPROVED AS TO FORM

MARY C. WICKHAM
County Counsel

a corporation

By _____
Deputy

By _____
President

Print Name

By _____
Secretary

Print Name

IV:
ALL SIGNAUTRES MUST BE WITNESSED BY NOTARY
(Attach appropriate acknowledgment)

**LOS ANGELES COUNTY PUBLIC WORKS
BOND FOR FAITHFUL PERFORMANCE**

KNOW ALL MEN BY THESE PRESENTS:

That we, XXXXXX, as principal, and _____
as surety, are held and firmly bound unto the COUNTY OF LOS ANGELES, State of California, in the sum of XXX AND 100
Dollars (\$ 000), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves,
jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas said principal has been awarded and is about to enter into a
written Contract with the County of Los Angeles for the work described in PIN# WMU0000010, East Los Angeles Sustainable
Median Stormwater Capture Project which is attached hereto, made a part hereof, and to which reference is hereby made for all,
and is required by said County to give this bond in connection with the execution of said Contract;

NOW, THEREFORE, if the said principal shall well and truly do and perform all of the covenants and
obligations of said Contract on principal's part to be done and performed at the times and in the manner specified therein, then
this obligation shall be null and void, otherwise it shall be and remain in full force and effect. No premature payment by said
County to said principal shall exonerate any surety unless the Board of Supervisors of said County shall have actual notice that
such payment is premature at the time it is ordered by said Board, and then only to the extent that such payment shall result in
loss to such surety, but in no event more than the amount of such premature payment.

It is agreed, that any alterations in the work to be done, or increase or decrease of the material to be furnished, which
may be made pursuant to the terms of said Contract shall not in any way release either the principal or surety hereunder, nor shall
any extensions of time granted under the provisions of said Contract release either the principal or surety, and notice of such
alterations or extensions of the Contract is hereby waived by the surety. The provisions of Section 2845 of the Civil Code are not
a condition precedent to the SURETY'S obligation hereunder and are waived by the SURETY.

WITNESS our hands this _____ day of _____, 20 _____

a corporation

Surety

By _____ President

Print Name

By _____ Secretary

Print Name

ALL SIGNATURES MUST BE WITNESSED BY NOTARY
(Attach appropriate acknowledgment)

**LOS ANGELES COUNTY OF PUBLIC WORKS
PAYMENT BOND
(FOR LABOR AND MATERIAL)**

KNOW ALL MEN BY THESE PRESENTS:

That we, XXXXXX, as principal, and _____ as surety, are held and firmly bound unto the COUNTY OF LOS ANGELES, State of California, in the sum of XXX AND 100 Dollars (\$ 000), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas said principal has been awarded and is about to enter into a written Contract with the County of Los Angeles for the work described in PIN# WMU0000010, East Los Angeles Sustainable Median Stormwater Capture Project which is attached hereto, made a part hereof, and to which reference is hereby made for all, and is required by said County to give this bond in connection with the execution of said Contract;

NOW, THEREFORE, if said principal, as Contractor in said Contract, or principal's subcontractor, fails to pay any of the persons referred to in Section 9100 of the Civil Code of the State of California for labor performed, skills or other necessary services bestowed, site improvement made, equipment leased, or appliances, equipment implements, machinery, materials, power, provender, provisions, teams, or trucks furnished or used in, upon, for, or about the performance of the work Contracted to be done, or for amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, said surety shall pay for the same, in an amount not exceeding the sum specified above; and if suit is brought upon this bond, a reasonable attorney's fee to be fixed by the court. This bond is executed pursuant to the provisions of Ch 5 of Div 4, Pt 6, Tit 3, of the Civil Code of the State of California, and shall inure to the benefit of any of the persons referred to in said Civil Code Section 9100, as it now exists or may hereafter be amended, so as to give a right of action to such persons or their assigns in any suit brought upon this bond. No premature payment by said County to said principal shall exonerate any surety unless the Board of Supervisors of said County shall have actual notice that such payment is premature at the time and it is ordered by said Board, and then only to the extent that such payment shall result in loss to such surety, but in no event more than the amount of such premature payment.

It is agreed, that any alterations in the work to be done, or increase or decrease of the material to be furnished, which may be made pursuant to the terms of said Contract shall not in any way release either the principal or surety hereunder, nor shall any extensions of time granted under the provisions of said Contract release either the principal or surety, and notice of such alterations or extensions of the Contract is hereby waived by the surety. The provisions of Section 2845 of the Civil Code are not a condition precedent to the SURETY'S obligation hereunder and are waived by the SURETY.

WITNESS our hands this _____ day of _____, 20 _____

Surety

_____ a corporation

By _____ President

_____ Print Name

By _____ Secretary

_____ Print Name

ALL SIGNATURES MUST BE WITNESSED BY NOTARY
(Attach appropriate acknowledgment)