

**PLANS, SPECIFICATIONS AND
CONTRACT DOCUMENTS**

**ATLANTIC BOULEVARD CORRIDOR
IMPROVEMENTS**

**[INSERT PUBLIC WORKS PROJECT NUMBER]
[INSERT FEDERAL PROJECT NUMBER IF APPLICABLE]**

FUNDED BY _____



CITY OF COMMERCE

2535 COMMERCE WAY
COMMERCE, CA. 90040
TEL: (323) 722-4805

Prepared Under the Supervision of:
Maryam Babaki, P.E.
Director of Public Works and Development Services

Prepared and Issued by:
Public Works and Development Services Department
Engineering Division

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BKF ENGINEERS

Date Issued:
9/17/18

BIDS DUE: [INPUT BID DUE DATE/TIME]

[Non-Mandatory/Mandatory] Pre-Bid Meeting: [INPUT PRE-BID MEETING DATE/TIME]

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SECTION 00100
NOTICE INVITING SEALED BIDS

PUBLIC NOTICE IS HEREBY GIVEN that the CITY OF COMMERCE, referred to as "CITY", invites sealed bids for the above stated project and will receive such bids at Commerce City Hall in the Office of the City Clerk, 2535 Commerce Way, Commerce, California 90040 by the due date of **[INPUT BID DUE DATE/TIME]**. The bids will be opened in Council Chambers shortly after the due date and read aloud.

1. BID DOCUMENTS:

Electronic files of the Plans, Specifications and Contract Documents are available for download on the City website at: <http://ca-commerce.civicplus.com/bids.aspx> Hard copy of the bid package will not be mailed.

2. [REDACTED] PRE-BID MEETING:

There will be a [REDACTED] pre-bid meeting which will be held at the **[INPUT MEETING LOCATION ADDRESS]** on **[INPUT MEETING DATE/TIME]**. Please RSVP in writing via e-mail to Okan Demirci at okan.demirci@transtech.org. Please include company name, email address and phone number.

3. SCOPE OF WORK:

- Construction of raised median
- Installation of landscape and irrigation along median
- Installation of uplighting along median
- Installation of traffic signal at the intersection of Atlantic Boulevard and Jillson Street
- Upgrading street lights
- Removal and replacement of roadway pavement (including removal and replacement of PCC underlain and pavement as shown on Construction Plans)
- Installation of bus shelters
- Construction of ADA compliant curb ramps
- Adjust to grade all utility valves, vaults, and manholes.

4. LOCATION OF WORK:

Atlantic Boulevard – From Washington Boulevard Intersection to Como Street

5. SCHEDULE OF WORK:

Contractor shall follow below schedule of work.

Atlantic Blvd Corridor Improvements

Below is the anticipated durations for the Team to complete the Tasks and provide the Deliverables as delineated in Exhibit 'A' for **Atlantic Blvd Corridor Improvements Project**. The durations are

for the time required by the Design Team and do not include any review time by the City of Commerce or other Stakeholders. A more detailed schedule work can be generated if deemed necessary.

6. ESTIMATED COST OF WORK:

Estimated cost is \$4,130,000

7. BID BOND:

Bids must be accompanied by a bid bond, made payable to the City of Commerce for an amount no less than ten percent (10%) of the bid amount.

8. CONTRACTORS LICENSE:

Contractor shall have a valid California General Contractor License, **[INPUT REQUIRED CA CONTRACTOR LICENSE]**, at the time of bid, at the time of award and during the performance of the work.

9. FEDERALLY FUNDED PROJECT:

[IF FEDERALLY FUNDED PROJECT, INPUT BELOW SPECIFICATIONS]

This is a federally funded project. Federal Labor Standards Provisions, including prevailing wage requirements of the Davis-Bacon and Related Acts will be enforced. Any contract entered into pursuant to this notice will incorporate the provisions of the State Labor Code. Compliance with the prevailing rates of wages and apprenticeships employment standards established by the State Director of Industrial Relations and the Federal government will be required. This is a Federally funded project and Davis-Bacon will be enforced, and where the State and Federal wage rates are applicable, the higher of the two will be used.

10. DBE:

All bidders are required to comply with all applicable competitive bidding and labor compliance laws including, but not limited to, active solicitation of subcontract bids from minority-owned businesses, women-owned businesses, and businesses owned by disabled veterans. Bidders are advised that, as required by Federal law, the State has established a statewide overall DBE goal. This contract is considered to be a part of the statewide overall DBE goal. The City is required to report to Caltrans on DBE participation for all Federal-aid contracts each year so that attainment efforts may be evaluated. This project is subject to Federal Funding Requirements and has a DBE Goal of **[INPUT DBE GOAL IF APPLICABLE]**.

11. CALIFORNIA PREVAILING WAGE

Bidder agrees to comply with California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815 to the performance of its work on this project. Specifically, the Bidder agrees to:

1. Pay all workers not less than the general prevailing rate of per diem wages for work of similar character in the locality in which the public work is performed.
2. Pay all workers not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in this chapter.
3. Adhere to the compliance measures outlined in LC 1775(b) for any second tier subcontractors that the contractor chooses to use on this project.
4. If requested, submit certified payroll records to the City on a weekly basis. Records shall be provided no later than 5 days following the last day of each workweek.

Comply with the applicable requirements and joint apprenticeship standards as required by LC 1777.5.

Contractor shall complete and sign non-collusion affidavit form and all other required forms included in the specifications.

Bids must be prepared on the approved Proposal forms in conformance with the Instructions to Bidders and submitted in a sealed envelope plainly marked on the outside.

No bid will be accepted from a Contractor who has not been licensed in accordance with the provisions of the Business and Professions Code. The successful Contractor and his subcontractors will be required to possess business licenses from the City.

Any contract entered into pursuant to this notice shall become effective or enforceable against the City only when the formal written contract has been duly executed by the appropriate officers of the City. The City reserves the right to reject any or all bids, to waive any irregularity, and to take all bids under advisement for a period of sixty (60) calendar days.

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 subcontractors, 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. Section 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 work's contract or subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

This project is subject to the requirements of SB 854.

No prime 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.

No prime 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.

The bid proposal must include a print out from the DIR registration website showing that the prime contractor and each subcontractor is currently registered.

No bid proposals will be accepted nor any contract entered into with a prime contractor without proof of registration as required above. [Unless within the limited exceptions from this requirement for bid proposals only under Labor Code Section 1771.1(a)]

The prime contractor will be required to post job site notices regarding Labor Code compliance as described in 8 California Code of Regulation section 16451(d).

If there are any questions regarding this project, please contact, via e-mail:

Okan Demirci
City of Commerce
E: okan.demirci@transtech.org

By order of the City Council of the City of Commerce, California

LENA SHUMWAY, City Clerk

Dated: [INPUT ISSUE DATE]

Scheduled for publishing in the Commerce Comet on:
[INPUT 1ST NEWSPAPER PUBLISH DATE], [INPUT 2ND NEWSPAPER PUBLISH DATE].

END OF SECTION

SECTION 00200

INSTRUCTIONS TO BIDDER'S

1. GENERAL

Bidder shall examine these instructions carefully and be responsive to conditions with which must be complied with prior to bid. Bidders shall be aware of the requirements of codes referenced in the Bidding Requirements and in the Contract Documents.

2. BID DOCUMENTS

Electronic files of the Plans, Specifications and Contract Documents are available for download on the City website at: <http://ca-commerce.civicplus.com/bids.aspx> Hard copy of the bid package will not be mailed.

3. [REDACTED] PRE-BID MEETING

There will be a [REDACTED] pre-bid meeting which will be held at the [INPUT MEETING LOCATION ADDRESS] on [INPUT MEETING LOCATION DATE/TIME]. Please RSVP in writing via e-mail to Okan Demirci at okan.demirci@transtech.org. Please include company name, email address and phone number.

4. PROPOSAL FORMS

Bids shall be submitted in writing on forms provided by the City. All information requested therein must be clearly and legibly set forth in the manner and form indicated. The City will not consider any proposal not meeting these requirements.

5. DELIVERY OF PROPOSAL

Bids must be prepared on the approved bid forms in conformance with the Instructions to Bidders and submitted in a sealed envelope plainly marked on the outside: **"ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS– Do Not Open With Regular Mail"**. Bids may be mailed or delivered by messenger to: City of Commerce, Attn: Purchasing Division of Finance, 2535 Commerce Way, City of Commerce, California 90040. Sealed bids for the project shall be submitted on or before: **[INPUT BID DUE DATE/TIME], AT WHICH TIME THEY WILL BE PUBLICLY OPENED. *Late proposals will not be considered.***

6. BID BOND

Proposals must be accompanied by a proposal guarantee consisting of a bid bond payable to the City in the amount not less than ten percent (10%) of the total amount bid. Any proposal not accompanied by such a guarantee will not be considered. If a bidder to whom a contract is awarded fails or refuses to execute the contract documents or furnish the required insurance policies and bonds as set forth in those documents, the proposal guarantee shall be forfeited to the City. The proposal guarantees of all bidders will be held until the successful bidder has properly executed all contract documents.

7. EXAMINATION OF SITE

Bidders shall examine the site of the work and acquaint themselves with all conditions affecting the work. By submitting a bid, the Bidder shall be held responsible to have personally examined the site, to have carefully read the specifications, and to have satisfied itself as to its ability to meet all the difficulties attending the execution of the proposed contract before the delivery of this proposal, and agrees that if awarded the contract, will make no claim against the City based on ignorance or misunderstanding of the specifications, site conditions and/or contract provisions.

8. PRE-BID INQUIRIES

All questions regarding this bid shall be directed via email, no later than **[INPUT PRE BID INQUIRY DEADLINE DATE/TIME]**, to Okan Demirci, Project Manager (Consultant) at okan.demirci@transtech.org. **It is the responsibility of the bidder to confirm transmission of correspondence.**

9. HAZARDOUS MATERIALS ABATEMENT – CERTIFICATION/REGISTRATION

If Contractor performs abatement work, Contractor must be certified for abatement work by the Contractors' State License Board and be registered by the Department of Industrial Relations, CAL-OSHA, pursuant to Title 8, California Code of Regulations, Section 341.6. If Contractor subcontracts the abatement work, Contractor need not be certified or registered for asbestos abatement, but the subcontractor must be listed in the Bid Form and must be certified by the Contractors State License Board and registered by the Department of Industrial Relations, CAL-OSHA, pursuant to Title 8, California Code of Regulations, Section 341.6.

10. AFFIRMATIVE ACTION

The City hereby notifies all qualified bidders that it will affirmatively insure that qualified minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the basis of race, color, national origin, ancestry, sex, religion, or handicap in consideration for an award. Attention is directed to the provisions of Section 1777.5 (Chapter 1411, Statutes of 1968) and 1777.5 of the Labor Code concerning the employment of apprentices by the Contractor's or any such subcontractors under hire. The bidders and the selected Contractor's shall not allow discrimination in employment practices on the basis of race, color, national origin, ancestry, sex, religion, or handicap.

11. CARTWRIGHT ACT REQUIREMENTS

In entering into a public works contract, or a subcontract, to supply goods, services, or materials pursuant to a public works contract, the Contractor's, or subcontractor's, 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. Section 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 work's contract or subcontract. This assignment shall be made and become effective at the time the awarding body

tenders final payment to the Contractor's, without further acknowledgment by the parties.

12. CONSTRUCTION SCHEDULE

In accordance with the provisions of Section 6-1.1 of the Standard Specifications for Public Works Construction ("Greenbook"), latest edition, and/or as may be provided for within the herein Special Provisions, after notification of award and prior to start of any work, the Contractor's shall submit to the Engineer for approval its proposed Construction Schedule. The selected Contractor shall complete the project within **[INPUT CONSTRUCTION DURATION]** of City's issuance of a Notice to Proceed.

13. WORKING HOURS

Working hours for this project will be:

Day Work: 7:00 am - 4:00 pm, Monday - Friday

No work will be allowed on City observed holidays and weekends without prior approval by Director of Public Works and Development Services. Night work is not allowed, unless directed and approved by Director of Public Works and Development Services.

14. WITHDRAWAL OF PROPOSALS

A proposal may be withdrawn by a written request signed by the bidder. Such requests must be delivered to the City's designated official prior to the bid opening hour stipulated in the Notice Inviting Bids. Proposals may not be withdrawn after the bid opening hour stipulated in the Notice Inviting Bids without forfeiture of the proposal guarantee. The withdrawal of a proposal will not prejudice the right of the bidder to submit a new proposal, providing there is time to do so.

15. IRREGULAR PROPOSALS

Unauthorized conditions, limitations, or provisions attached to a proposal will render it irregular and may cause its rejection. The completed proposal forms shall be without interlineations, alterations, or erasures. Alternative proposals will not be considered unless specifically requested. No oral, telegraphic, or telephonic proposal, modification, or withdrawal will be considered.

16. DISQUALIFICATION OF BIDDERS

In the event that any bidder acting as a prime Contractor has an interest in more than one proposal, all such proposals will be rejected, and the bidder will be disqualified. This restriction does not apply to subcontractors or suppliers who may submit quotations to more than one bidder, and while doing so, may also submit a formal proposal as a prime Contractor.

17. DISCREPANCIES AND MISUNDERSTANDINGS

Before submitting a Proposal, Bidders must satisfy themselves by personal examination of the work site, Plans, Specifications, and other contract documents, and by any other means as they may believe necessary, as to the actual physical

conditions, requirements and difficulties under which the work must be performed, and fully inform themselves as to all existing conditions and limitations, and shall include in the Proposal, the cost of all items necessary in the completion of the project. The Bidder shall not be allowed any extra compensation by reason of any matter or thing, concerning that which such the Bidder might have fully informed them prior to the bidding. No bidder shall at any time after submission of a proposal make any claim or assertion that there was any misunderstanding or lack of information regarding the nature or amount of work necessary for the satisfactory completion of the job.

Any errors, omissions, or discrepancies found in the Plans, Specifications, or other contract documents shall be called to the attention of the City. Should a Bidder find any ambiguity, inconsistency or error in the plans and project manual, or be in doubt as to their meaning, the Bidder shall notify the City, in writing as specified in the Notice Inviting Bids Section. Issues requiring clarification will be addressed in a written addendum response, sent to each Bidder, person or firm recorded by the City as having attended the mandatory pre-bid meeting. Any addenda issued by the City during the time of bidding are to be included in the proposal from the Bidder, and shall become a part of the Bid documents. The Bidder shall acknowledge receipt of addenda on the proposal form in the space provided.

18. SOLE SOURCE PROVISIONS

In accordance with Section 3400 of the California Public Contract Code, no materials or equipment is intended to be identified as "sole source". All material and equipment is specifically identified as is **or approved equal**. Bidders are encouraged to propose alternates for evaluation by the City as being equal to that specified in the contract documents.

19. PERMITS AND LICENSES

The Contractor's shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. The Contractor's shall pay for and obtain a City Business License. Permit Fees will be reimbursed per Contact Allowance Item.

20. CONTRACTOR'S LICENSE LAW

Bidder may only bid on work for which Bidder is properly licensed by the Contractors' State License Board. No contract will be awarded to a bidder who is not licensed in accordance with the law under the provisions of Division III, Chapter 9, of the California Business and Profession Code at the time of the award.

Bidders shall comply with and require all subcontractors to comply with all Federal, State and City Contractor's License Laws and be duly registered and licensed there under as required. Joint venture Bidders must possess a joint venture license. Each party to a joint venture shall be properly licensed for the Work of this Project.

Contractor shall have a valid California General Contractor License, **[INPUT REQUIRED CA LICENSE CLASSIFICATION]**, at the time of bid, at the time of award and during the performance of the work.

21. EMPLOYMENT OF UNDOCUMENTED ALIENS

Pursuant to Section 6101 of the Public Contract Code, the City may not award a public works contract to a bidder or contractor, nor shall a bidder or contractor be eligible to bid for or receive a public works contract, who has, in the preceding five years, been convicted of violating a state or federal law respecting the employment of undocumented aliens.

22. CONTRACT BONDS

The successful Bidder is required to provide and pay for a performance and a payment bond. These bonds shall cover the faithful performance (100%) of the Contract for Construction and the payment of all obligations (100%) arising there under, in such form as the City may prescribe and with such sureties as they may approve. The successful Bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his Power of Attorney indicating the monetary limit of such power.

The City reserves the right to reject any proposed bonding company without stating cause. In this event the successful Bidder shall provide an alternate bonding company whose selection is acceptable to the City.

Bonds shall conform to state statutes regarding performance bond and labor and material payment bond with amount shown on each part equal to 100% of the total amount payable by terms of the Contract for Construction. The surety company shall be licensed to do business in the state in which the project is located and shall be acceptable to the City. Bond amount shall be increased to include any Change Order(s) added to the contract to 100% total value amount of each Change Order. Bonds will be recorded along with a copy of the construction contract in the County Recorder Records by the General Contractor's with written proof submitted to the City.

23. INSURANCE

All bidders must be able to provide proof with bid submittal of a minimum of **\$2,000,000** general/public liability insurance and additional **\$5,000,000** umbrella / excess liability insurance. At time of contract, the City shall be named as "additional insured" on all policies required and contractor shall provide Additional Insured Endorsement as evidence of such. The liability insurance coverage values shall be:

- Public Liability and Property Damage Insurance in an amount of not less than **TWO MILLION DOLLARS (\$2,000,000)**;
- Products/Completed Operations Hazard Insurance in an amount of not less than **FIVE MILLION DOLLARS (\$5,000,000)**;

- Comprehensive Automobile Liability Insurance in an amount of not less than TWO MILLION DOLLARS (\$2,000,000);
- Contractual General Liability Insurance in an amount of not less than TWO MILLION DOLLARS (\$2,000,000);

A combined single limit policy with aggregate limits in an amount of not less than Five MILLION DOLLARS (\$5,000,000) shall be considered equivalent to the said required minimum limits set forth herein above.

The City of Commerce requires a separate Certificate of Endorsement that enforces the general liability statement: "Additional insured endorsement names the City of Commerce as additional insured." The certificate should indicate that their insurance is primary and noncontributory.

Proof of Worker's Compensation Insurance is required.

Automobile and lease vehicle insurance; owned, not owned and hired. Insurance to include bodily injury, sickness and death of any person and property damage owned and un-owned per occurrence.

24. SOCIAL SECURITY ACT

The successful Bidder agrees to comply with and to require all of his subcontractor's to comply with all the provisions of the Act of Congress approved August 14, 1935, known and cited as the "Social Security Act" and also the provisions of the act of the State Legislature approved, and known as the State Unemployment Compensation Law and all other laws and regulations pertaining to labor and workmen and all amendments to such data, and the Contractor further agrees to indemnify and hold harmless the City of Commerce of and from any and all claims and demands made against it by virtue of the failure of the Contractor's or any subcontractor's to comply with the provisions of any or all of said acts and amendments.

25. SALES AND USE TAX

The successful Bidder agrees to comply with and to require all of his subcontractors to comply with all the provisions of applicable state sales excise tax law and compensation use tax law and all amendments to same. The successful Bidder further agrees to indemnify and hold harmless the City of Commerce of and from any and all claims and demands made against virtue of the failure of the Contractor or any Subcontractor to comply with the provisions of any or all said laws and amendments. No mention shall be made in the proposal of Sales Tax, Use Tax, or any other tax, as all amounts bid will be deemed and held to include any such taxes which may be applicable.

26. WAIVER OF LIENS

The successful Bidder (General Contractor) is responsible for the payment of all bills for labor and materials furnished by the subcontractor, the suppliers, and the General Contractor on this project. The General Contractor shall deliver to the City

unconditional Lien Waivers and/or Releases from himself and from each of his subcontractors and suppliers, and at such time he shall certify that he is submitting such lien waivers for all subcontractors and suppliers involved. If any liens are filed against the City property, the City may, at its option, demand General Contractor immediately provide a bond in accordance with state statutes.

27. LEGAL RESPONSIBILITIES

All proposals must be submitted, filed and executed in accordance with State and Federal laws relating to bids for contracts of this nature whether the same or expressly referred to herein or not. Any bidder submitting a proposal shall by such action thereby agree to each and all of the terms, conditions, provisions, and requirements set forth, contemplated, and referred to in the Plans, Specifications, and other contract documents, and to full compliance therewith.

28. DISADVANTAGED BUSINESS ENTERPRISE (DBE)

This project is subject to Title 49 CFR 26.13(b): The contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of contract or such other remedy as the recipient deems appropriate. Take necessary and reasonable steps to ensure that DBEs have opportunity to participate in the contract (49 CFR 26).

29. FEDERAL REQUIREMENTS AND FORMS

This is a federally funded project. Federal Labor Standards Provisions, including prevailing wage requirements of the Davis-Bacon and Related Acts will be enforced. Any contract entered into pursuant to this notice will incorporate the provisions of the State Labor Code. Compliance with the prevailing rates of wages and apprenticeships employment standards established by the State Director of Industrial Relations and the Federal government will be required. This is a Federally funded project and Davis-Bacon will be enforced, and where the State and Federal wage rates are applicable, the higher of the two will be used.

30. AWARD OF CONTRACT TO LOWEST RESPONSIBLE BIDDER MANDATORY

The right is reserved to reject any and all bids and waive any irregularity in any bid received. Award of the Contract, if awarded, will be to the lowest responsible and responsive bidder whose Bid Form complies with all requirements prescribed. Such award, if made, will be made within 60 days after opening of bids.

If lowest responsible Bidder refuses or fails to execute the Contract, Director of Public Works and Development Services may award the Contract to the second lowest responsible Bidder. Such award, if made, will be made within 75 days after opening of bids.

If second lowest responsible Bidder refuses or fails to execute the Contract, Director of Public Works and Development Services may award the Contract to the third lowest responsible Bidder. Such award if made, will be made within 90 days after opening of bids.

The above time periods within which award of Contract may be made are subject to extension of such further period as may be agreed upon in writing between Department of Public Works and Development Services and the Bidder concerned.

When Project is segregated into more than one prime Contract, and a Bidder upon one of the prime Contracts fail or refuses to execute the Contract, then the time for award of such Contract will be extended as provided by this Article, and the time for award of each of the other segregated prime Contracts will be extended by an equivalent length of time, if required.

31. CALIFORNIA PREVAILING WAGE

Bidder agrees to comply with California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815 to the performance of its work on this project. Specifically, the Bidder agrees to:

1. Pay all workers not less than the general prevailing rate of per diem wages for work of similar character in the locality in which the public work is performed.
2. Pay all workers not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in this chapter.
3. Adhere to the compliance measures outlined in LC 1775(b) for any second tier subcontractors that the contractor chooses to use on this project.
4. If requested, submit certified payroll records to the City on a weekly basis. Records shall be provided no later than 5 days following the last day of each workweek.
5. Comply with the applicable requirements and joint apprenticeship standards as required by LC 1777.5.

32. EMPLOYMENT OF APPRENTICES

Attention is directed to the provisions in Section 1777.5 of the California Labor Code concerning employment of apprentices by the Contractor's or any subcontractor's under him. The Contractor and any subcontractor under him shall comply with the requirements of said section in the employment of apprentices; however, the Contractor shall have full responsibility for compliance with said Labor Code section for all apprentice occupations, regardless of any other contractual or employment relationships alleged to exist.

33. SUBCONTRACTS

Bidders' attention is directed to other provisions of the Subletting and Subcontracting Fair Practices Act, beginning with Public Contract Code Section 4100, related to penalties for failure to comply with the Act by using unauthorized subcontractors or by making unauthorized substitutions. The Contractor is required to perform, with its own organization, Contract work amounting to at least twenty percent (20%) of the

Contract Price. Failure to meet these requirements will result in disqualifying of the bid or termination of the contract. This provision supersedes any other provisions which specified a different subcontract requirement.

Proposed subcontractor's names, a general description of the work to be performed by each subcontractor's and the dollar amount for each subcontractor shall be submitted with the bid.

END OF SECTION

SECTION B. BIDDER'S PROPOSAL

BIDDER SHALL COMPLETE AND SUBMIT ALL DOCUMENTS AND PAGES IN SECTION "B. BIDDER'S PROPOSAL"

BID PROPOSAL FORM

ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS

BIDDER SHALL COMPLETE AND SUBMIT ALL DOCUMENTS AND ATTACHMENTS AS REQUIRED

SUBMITTED BY: _____
(Bidder's Name)

In accordance with the City of Commerce's Notice Inviting Sealed Bid Proposals, the undersigned BIDDER, hereby proposes to furnish all materials, equipment, tools, labor, and incidentals required for the above stated project as set forth in the Plans, Specifications, and contract documents therefore, and to perform all work in the manner and time prescribed therein.

BIDDER declares that this proposal is based upon careful examination of the work site, Plans, Specifications, Instructions to Bidders, and all other contract documents. If this proposal is accepted for award, BIDDER understands that failure to enter into a contract in the manner and time prescribed will result in forfeiture to the City of Commerce of the guarantee accompanying this proposal.

BIDDER understands that a bid is required for the entire work. The contract will be awarded on the prices shown on the bid schedule. It is agreed that the unit and/or lump sum prices bid include all appurtenant expenses, taxes, royalties and fees. In the case of discrepancies in the amounts bid, unit prices shall govern over extended amounts, and words shall govern over figures.

If awarded the Contract, the undersigned further agrees that in the event of the BIDDER'S default in executing the required contract and filing the necessary bonds and insurance certificates within ten working days after the date of the City of Commerce's notice of award of contract to the BIDDER, the proceeds of the security accompanying this bid shall become the property of the City of Commerce and this bid and the acceptance hereof may, at the City of Commerce's option, be considered null and void.

DELIVERED TO: City of Commerce
Attn: Purchasing Division of Finance
2535 Commerce Way
City of Commerce, California 90040

Bid shall be submitted in a sealed envelope and plainly marked on the outside "**ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS- Do Not Open With Regular Mail**".

BID DUE DATE: **[INPUT BID DUE DATE/TIME]**. *Late proposals will not be considered.*

BID SCHEDULE

To the City of Commerce City Council, herein called the "Council": Pursuant to and in compliance with your Notice Inviting Bids and the other documents' relating thereto, the undersigned bidder, having familiarized himself with the work as per the paragraph, "Discrepancies and Misunderstandings," contained in the "INSTRUCTIONS TO BIDDERS" section, and with the terms of the contract, the local conditions affecting the performance of the contract, and the cost of the work at the place where the work is done, and with the drawings and specifications and other contract documents, hereby proposes and agrees to perform, within the time stipulated, the contract, including all of its component parts, and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required for this contract in the City of Commerce, all in strict conformity with the Contract Documents on file at the office of the City Clerk of said City, per the following bid schedules:

BID SCHEDULE					
Bid Item	Description	Quantity	Unit	Unit Cost	Total Cost
1	MOBILIZATION	1	LS		
2	REMOVE CURB AND GUTTER	501	LF		
3	RELOCATE EXISTING SIGN	5	EA		
4	REMOVE ASPHALT CONCRETE PAVEMENT	2,445	CY		
5	UNCLASSIFIED EXCAVATION (AB & NATIVE SOIL)	2,502	CY		
6	REMOVE PCC PAVEMENT	606	CY		

BID SCHEDULE					
Bid Item	Description	Quantity	Unit	Unit Cost	Total Cost
7	REMOVE PCC CROSS GUTTER	2,105	SF		
8	INSTALL CITY OF COMMERCE MONUMENT SIGN	1	EA		
9	CLASS 2 AGGREGATE BASE	1,417	CY		
10	HOT MIX ASPHALT (TYPE A)	5,286	TON		
11	FULL DEPTH ASPHALT CONCRETE	22	TON		
12	8" CONCRETE CURB (WITH DOWELS)	5,110	LF		
13	PROJECT INFORMATION SIGN	2	EA		
14	CURB RAMPS	18	EA		
15	BUS SHELTER	4	EA		
16	SIGNING AND STRIPING	1	LS		
17	TRAFFIC CONTROL	1	LS		

BID SCHEDULE					
Bid Item	Description	Quantity	Unit	Unit Cost	Total Cost
18	BMPS	1	LS		
19	ADJUST SANITARY SEWER MANHOLE	2	EA		
20	ADJUST WATER VALVE TO GRADE	5	EA		
21	ARAM (ASPHALT RUBBERIZED AGGREGATE MEMBRANE)	19,260	SY		
22	RECONSTRUCT PCC CROSS GUTTER	2,105	SF		
23	RECONSTRUCT PCC PAVEMENT (FOR TRENCHES AND SAWCUT)	11	CY		
24	CONSTRUCTION SCHEDULE	1	EA		
25	FIELD OFFICE, CLASS A	1	EA		
26	WATER POLLUTION CONTROL	1	LS		
27	ADJUST GAS VALVE TO GRADE	1	EA		
28	CONSTRUCT SURVEY MONUMENT	1	EA		

BID SCHEDULE					
Bid Item	Description	Quantity	Unit	Unit Cost	Total Cost
29	PRE AND POST CONSTRUCTION SURVEY (CURB RAMPS)	1	EA		
30	IMPORTED BORROW	1,173	CF		
31	MTK – 18" x 200' ROLL + S&H (\$260/ROLL + \$20/ROLL S&H)	28	EA		
32	TRUNCATED DOMES	96	SF		
33	TRAFFIC SIGNAL	1	LS		
34	REMOVE EXISTING STREET LIGHT POLE AND COBRAHEAD LUMINAIRE. INSTALL NEW AMERON TYPE 1-C1 SERIES STREET LIGHT POLE AND ACORN POST TOP DECORATIVE LUMINAIRE WITH EYE LEDIOC ACORN LAMP	30	EA		
35	REMOVE EXISTING MAST ARM AND COBRAHEAD LUMINAIRE. INSTALL NEW ACORN POST TOP DECORATIVE LUMINAIRE WITH EYE LEDIOC ACORN LAMP	3	EA		
36	INSTALL #8 WIRE CONNECTING PULLBOXES TO NEW ACORN POST TOP DECORATIVE LUMINAIRES	39	EA		
37	REPLACE METAL HALIDE LAMPS WITH NEW EYE LEDIOC ACORN LAMP RETROFIT KIT	39	EA		
38	INSTALL #5 PULLBOX AT MAIN CONDUIT LINE	39	EA		
39	INSTALL NEW 3" PVC SCHEDULE 40 CONDUIT	6,000	LF		

BID SCHEDULE					
Bid Item	Description	Quantity	Unit	Unit Cost	Total Cost
40	INSTALL #8 CONDUCTOR CIRCUIT INTO NEW CONDUIT	6,000	LF		
41	SITE PREP. - TOP SOIL IMPORT	520	CY		
42	SITE PREP. - SOIL GRUBBING, TESTING & AMENDING	13,980	SF		
43	CONSTRUCTION - CONCRETE UNIT PAVER, CONCRETE BASE	280	CY		
44	CONSTRUCTION - CONCRETE UNIT PAVERS	8200	SF		
45	ELECTRICAL - POCS AND PEDESTAL METERS	5	LS		
46	ELECTRICAL - LIGHT FIXTURES AND LIGHTING CONTROL SYSTEM	1	LS		
47	IRRIGATION - WATER POC - NEW	5	EA		
48	IRRIGATION - CONTROLLERS WITH WIRING & SENSORS	5	EA		
49	IRRIGATION - RP BACKFLOW WITH ENCLOSURE	5	EA		
50	IRRIGATION - VALVE BOX ASSEMBLIES AND QUICK COUPLERS	1	LS		

BID SCHEDULE					
Bid Item	Description	Quantity	Unit	Unit Cost	Total Cost
51	IRRIGATION - MAINLINE AND SLEEVING	1	LS		
52	IRRIGATION - DRIP AND BUBBLER IRRIGATION SYSTEM	1	LS		
53	PLANTING - 36" BOX TREES	29	EA		
54	PLANTING - BTF PALMS	43	EA		
55	PLANTING - 5 GALLON SHRUBS	1,320	EA		
56	PLANTING - 1 GALLON SHRUBS	610	EA		
57	PLANTING - 3" DEPTH WOOD MULCH	13,980	SF		
58	PLANTING - 90 DAY MAINTENANCE	3	MON THL Y		
TOTAL BID AMOUNT IN NUMBERS					\$

TOTAL BID AMOUNT IN WORDS: _____

In the case of discrepancies in the amount of bid, unit prices shall govern over extended amounts, and words shall govern over figures.	
Full compensation for the items listed to the right as Items A, B, C, D and E are considered as inclusive in each Bid Item listed above in the Base Bid Schedule and Additive Alternate Bid Schedule as applicable, and no additional and/or separate compensation will be allowed.	A. Mobilization / Demobilization
	B. Traffic Control
	C. NPDES, WVECP, and Best Management Practices (BMPs), Public Convenience and Safety
	D. Construction Staking by Land Surveyor
	E. Clearing and Grubbing
The bid prices shall include any and all costs, including labor, materials, appurtenant expenses, taxes, royalties and any and all other incidental costs to complete the project, in compliance with the Bid and Contract Documents and all applicable codes and standards.	
All other work items not specifically listed in the bid schedule, but necessary to complete the work per bid and contract documents and all applicable codes and standards are assumed to be included in the bid prices.	
A bid is required for the entire work, that the quantities set forth in the Bid Schedule are to calculate total bid amount, and that final compensation under the contract will be based upon the actual quantities of work satisfactorily completed.	

EXAMINATION OF SPECIFICATIONS AND SITE OF WORK

The Bidder declares that he/she has carefully read and examined the project plans, specifications, bid documents, and he/she has made a personal examination of the site (indicate name of the person, representing the bidder, who inspected the site and date below) and that he/she understands the exact scope of the Project.

Name of Person who inspected the site: _____

Date of Inspection: _____

ADDENDA ACKNOWLEDGMENT

The Bidder acknowledges receipt of the following Addenda and has included their provisions in this Proposal:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

REQUIRED DOCUMENTS

- ☐ BID PROPOSAL FORM
- ☐ BID BOND FORM
- ☐ PROPOSED SUBCONTRACTORS FORM
- ☐ BIDDER QUALIFICATION FORM
- ☐ BIDDER INFORMATION FORM
- ☐ NON COLLUSION AFFIDAVIT
- ☐ ONE ORIGINAL and TWO COPIES

SIGNATURE

IN WITNESS WHEREOF, BIDDER executes and submits this proposal with the names, titles, hands, and seals of all aforementioned principals.

Legal Name of Bidder: _____

Federal I.D. No.: _____ Contractor's License No.: _____

License Expiration Date: _____ License Classification: _____

Business Address _____
(Street and/or P.O. Box)

(City) (State) (Zip)

E-Mail Address: _____

Business Telephone No.: _____ Facsimile No.: _____

SIGN HERE -----> _____
Signature of Bidder - Print Name and Title of Bidder

Executed this _____ day of _____, 20__ at _____, California.

Subscribed and sworn to this _____ day of _____, 20__.

NOTARY PUBLIC _____

END OF SECTION

BID BOND FORM

ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS

KNOW ALL MEN BY THESE PRESENTS

that _____

_____,
as BIDDER, AND _____,

as SURETY, are held and firmly bound unto the City of Commerce, in the penal sum of _____ dollars

(\$ _____), which is ten percent (10%) of the total amount bid by BIDDER to the City of Commerce for the above stated project, for the payment of which sum, BIDDER and SURETY agree to be bound, jointly and severally, firm by these presents. THE CONDITIONS OF THIS OBLIGATION ARE SUCH that, whereas BIDDER is about to submit a bid to the City of Commerce for the above stated project, if said bid is rejected, or if said bid is accepted and a contract is awarded and entered into by BIDDER in the manner and time specified, then this obligation shall be null and void, otherwise it shall remain in full force and effect in favor of the City of Commerce. IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seals this _____ day of _____, 20_____.

BIDDER* _____

SURETY* _____

*Provide BIDDER/SURETY name, address and telephone number and the name, title, address and telephone number for authorized representative.

Subscribed and sworn to this _____ day of _____, 20_____.

NOTARY PUBLIC _____

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PROPOSED SUBCONTRACTORS FORM

In compliance with the provisions of Section 4100 through 4114, inclusive, of the Public Contract Code, and any amendments thereto, each bidder shall set forth in its bid, the name and location of the place of business of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one half of 1 percent of the Contractor's total bid; and the portion of the work which will be done by each subcontractor under this act. The Contractor shall list only one subcontractor for each portion as is defined by the Contractor.

No	Name, address, and phone number of subcontractors, suppliers, and vendors	Name portion of work, materials, and/or equipment	Contractor's License #	DIR #	Dollar Amount	% of Total Bid Amount
1					\$	%
2					\$	%
3					\$	%
4					\$	%
5					\$	%
6					\$	%
7					\$	%

8		\$			%	
9		\$			%	
10		\$			%	
11		\$			%	
12		\$			%	
13		\$			%	
14		\$			%	
15		\$			%	
16		\$			%	
17		\$			%	
Total		\$			%	

Note: The prime contractor is required to perform, with its own organization, contract work amounting to at least [INPUT MINIMUM PRIME CONTRACTED WORK % REQUIRED] of the Contract Price.

END OF SECTION

BIDDER QUALIFICATION FORM

The bidder is required to state what work of a similar character to that included in the proposed contract he has successfully performed and give references which will enable the City Council to judge of his responsibility, experience, skill, business and financial standing.

The following are the names, addresses, and telephone numbers for three public agencies for which BIDDER has performed similar work with public agency within the past three years.

Additional pages supporting this portion of the proposal may be attached.

Reference 1			
Project Name:			
Type of Work:			
Year Completed:			
Contract Amount:			
Name/ Address of Owner/Agency:			
Reference Contact:	Name:	Title:	Tel:

Reference 2			
Project Name:			
Type of Work:			
Year Completed:			
Contract Amount:			
Name/ Address of Owner/Agency:			
Reference Contact:	Name:	Title:	Tel:

Reference 3			
Project Name:			
Type of Work:			
Year Completed:			
Contract Amount:			
Name/ Address of Owner/Agency:			
Reference Contact:	Name:	Title:	Tel:

Reference 4			
Project Name:			
Type of Work:			
Year Completed:			
Contract Amount:			
Name/ Address of Owner/Agency:			
Reference Contact:	Name:	Title:	Tel:

Reference 5			
Project Name:			
Type of Work:			
Year Completed:			
Contract Amount:			
Name/ Address of Owner/Agency:			
Reference Contact:	Name:	Title:	Tel:

END OF SECTION

BIDDER INFORMATION FORM

BIDDER certifies that the following information is true and correct:

Bidder's Name _____

Form of Legal Entity (i.e., individual, partnership, corporation, etc.)

If a Corporation, State of Incorporation (i.e., Calif.) _____

Business Address _____

Telephone _____

State Contractor's License No. and Class _____

Original Date Issued _____ Expiration Date _____

The following are the names, titles, addresses, and phone numbers of all individuals, firm members, partners, joint ventures, and/or corporate officers having a principal interest in this proposal:

The date(s) of any voluntary or involuntary bankruptcy judgments against any principal having an interest in this proposal are as follows:

All current and prior DBA'S, alias, and/or fictitious business names for any principal having an interest in this proposal are as follows:

Previous contract performance history:

Was any contract terminated previously:_____

If the answer to the above is "yes", provide the following information:

Contract/project name and number: _____

Date of termination:_____

Reason for termination:_____

Owner's name:_____

Owner contact person and tel. no.:_____

IN WITNESS WHEREOF, BIDDER executes and submits this proposal with the names, titles, hands, and seals of all aforementioned principals this _____ day of _____, 20____.

BIDDER _____

Subscribed and sworn to this _____ day of _____, 20____.

NOTARY PUBLIC_____

END OF SECTION

NON-COLLUSION AFFIDAVIT FORM

_____, being first duly sworn, deposes and says
(Name of Affiant)

that he/she is _____ of _____
(Title) (Name of Bidder)

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

Executed this _____ day of _____, 20_____ at _____.
(City, County and State)

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

By: _____

Title: _____

Page intentionally left blank

FAITHFUL PERFORMANCE BOND FORM

ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS

KNOW ALL MEN BY THESE PRESENTS that _____

_____, as CONTRACTOR

and _____, as SURETY,

are held and firmly bound unto the City of Commerce, in the penal sum of

_____ dollars (\$ _____),

which is one-hundred percent (100%) of the total contract amount for the above stated project, for the payment of which sum, CONTRACTOR and SURETY agree to be bound, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that, whereas CONTRACTOR has been awarded and is about to enter into a Contract with the City of Commerce for the above stated project, if CONTRACTOR faithfully performs and fulfills all obligations under the contract documents in the manner and time specified therein, then this obligation shall be null and void, otherwise it shall remain in full force and effect in favor of the City of Commerce; provided that any alternations in the obligations or time for completion made pursuant to the terms of the contract documents shall not in any way release either CONTRACTOR or SURETY, and notice of such alternations are hereby waived by SURETY.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seal this

_____ day of _____, 20_____.

CONTRACTOR*

SURETY*

*Provide CONTRACTOR/SURETY name, address and telephone number and the name, title, address and telephone number for authorized representative.

Subscribed and sworn to this _____ day of _____, 20_____.

NOTARY PUBLIC _____

MATERIAL AND LABOR BOND FORM

ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS

KNOW ALL MEN BY THESE PRESENTS that _____
_____, as CONTRACTOR
and _____, as SURETY, are
held and firmly bound unto the City of Commerce, in the penal sum of
_____ dollars (\$ _____),
which is one-hundred percent (100%) of the total contract amount for the above stated project, for
the payment of which sum, CONTRACTOR and SURETY agree to be bound, jointly and severally,
firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that, whereas CONTRACTOR has been
awarded and is about to enter into a Contract with the City of Commerce for the above stated
project, if CONTRACTOR faithfully performs and fulfills all obligations under the contract documents
in the manner and time specified therein, then this obligation shall be null and void, otherwise it shall
remain in full force and effect in favor of the City of Commerce; provided that any alternations in the
obligations or time for completion made pursuant to the terms of the contract documents shall not in
any way release either CONTRACTOR or SURETY, and notice of such alternations are hereby
waived by SURETY.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seal this

_____ day of _____, 20____.

CONTRACTOR* _____

SURETY* _____

* Provide CONTRACTOR/SURETY name, address and telephone number and the name, title,
address and telephone number for authorized representative.

Subscribed and sworn to this _____ day of _____, 20____.

NOTARY PUBLIC _____

SECTION C. SPECIFICATIONS

PART 1 – GENERAL PROVISIONS

The General Provisions which shall apply to this Contract shall be those set forth in the Standard Specifications for Public Works Construction, Latest Edition, except as amended herein, published by Building News, Inc., 3055 Overland Avenue, Los Angeles, California 90034, hereinafter referred to as "Greenbook".

The "Greenbook" is referred to and by this reference made a part hereof as though set forth at length. The Contractor shall comply with the "Greenbook" in addition to the general conditions set forth in these General and Special Provisions of the Contract Documents.

2-1 AWARD AND EXECUTION OF THE CONTRACT.

ADD the following SUBSECTION: "**2-1.1 REGISTRATION OF CONTRACTORS.** Only a contractor licensed in accordance with the provisions of Chapter 9, Division 3, of the Business and Professions Code, AND registered with the Department of Industrial Relations (DIR) to bid on public works contracts shall be permitted to submit a bid for and subsequent enter into a contract with the City for any public improvement.

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, or engage in the performance of any public works contract with the City unless currently registered and qualified to perform work pursuant to Section 1725.5 of the Labor Code."

2-3 SUBCONTRACTS.

ADD the following SUBSECTION: "**2-3.4 REGISTRATION OF SUBCONTRACTORS.** Only a subcontractor licensed in accordance with the provisions of Chapter 9, Division 3, of the Business and Professions Code, AND registered with the Department of Industrial Relations (DIR) to bid on public works contracts shall be permitted to submit a bid for and subsequent enter into a contract with the City for any public improvement."

6-9 LIQUIDATED DAMAGES.

DELETE the SECTION in its ENTIRETY and **REPLACE** with the following: "Failure of the Contractor to complete the Work within the time allowed will result in damages being sustained by the Agency. Liquidated damages shall accrue starting on the 1st day after expiration of the working days through the day of Contract acceptance.

The City of Commerce shall specify the amount for liquidated damages, as allowed per Public Contract Code §7203. For each consecutive calendar day in excess of the time specified for the completion of Work, as adjusted in accordance with SECTION 6-6 DELAYS AND EXTENSIONS OF TIME, the Contractor shall pay to the Agency, or have withheld from monies due it, \$3,000 per calendar day.

7-2 LABOR.

ADD the following SUBSECTION: **"7-2.5 COMPLIANCE MONITORING AND ENFORCEMENT.** Any contract with the City of any public improvement shall be subject to compliance monitoring and enforcement by the DIR in accordance with Section 1771.4 of the Labor Code.

9-3.2 PARTIAL AND FINAL PAYMENT

The text of Subsection 9-3.2 of the Standard Specifications is hereby deleted and replaced with the following:

The closure date for the purpose of making partial progress payments will be the last working day of each month. The Contractor will prepare the partial payment invoice with measurement of the work performed through the closure date and submit it to the City for approval.

When work is complete, the Contractor will determine the final quantities of the work performed and prepare the final progress payment, and submit it to the Engineer for approval.

It will take a minimum of thirty-five (35) calendar days from the date of approving the Contractor's invoice to make the payment to the Contractor. However, payments will be withheld pending receipt of any outstanding reports required by the contract documents, or legal release of filed Stop Payment Notices against the Contractor. In addition, the final progress payment will not be released until the Contractor returns the control set of Plans and Specifications showing the asbuilt conditions.

Five (5%) retention will be deducted from all progress payments. The Contractor will make a payment request for the retained amount, for approval by the City, upon field acceptance of the work by the City Engineer. The City Engineer upon field acceptance and receipt of the final as-built plans and any other reports or documents required to be provided by the Contractor will process a recommendation to the City Council for acceptance of the work. Not less than thirty-five (35) calendar days from the City Council acceptance of the work, the Contractor's final payment will be made provided Stop Payment Notices or other claims have not been filed against the Contractor and/or the City by material suppliers, sub-contractors, other governmental agencies, and private property owners. Until these Stop Payment Notices are released and claims are resolved the stop payment/claim amount will be withheld from the final payment.

The Contractor, however, may receive interest on the retention for the length of construction, or receive the retention itself as long as the retention is substituted with escrow holder surety or equal value.

At the request and expense of the Contractor, surety equivalent to the retention may be deposited with the State Treasurer, or a State or Federally chartered bank, as the escrow agent, who will pay such surety to the Contractor upon satisfactory completion of the contract.

Pursuant to PCC § 22300, the Contractor may substitute securities for retention monies held by the City or request that the City place such monies into an escrow account. The Contractor is notified, pursuant to PCC § 22300, that any such election will be at the Contractor's own expense and will include costs incurred by the City to accommodate the Contractor's request.

Progress payment paid by the City as contemplated herein, will be contingent upon the Contractor submitting, in addition to any additional documents, an updated Contract Schedule, Field Quantity Sheet and Certified Payroll Records in the form prescribed by these Contract Documents. Failure of the Contractor to submit an acceptable additional documents described above will result in the City withholding partial payment, without liability to the City, until such an acceptable updated Contract Schedule is submitted. Nothing herein will allow the Contractor to suspend or slow progress of the Work.

A City Council resolution established a Project Payment Account, encumbered money in the current budget, and assigned that money to the Project Payment Account which is the sole source of funds available for payment of the Contract Sum. Contractor understands and agrees that Contractor will be paid only from this special fund and if for any reason this fund is not sufficient to pay Contractor, Contractor will not be entitled to payment. The availability of money in this fund, and City's ability to draw from this fund, are conditions precedent to City's obligation to make payments to Contractor.

PART 2 – SPECIAL PROVISIONS

[INPUT SPECIAL PROVISIONS AS APPLICABLE]

APPENDIX A. SAMPLE CONTRACT TO BE EXECUTED

CITY OF COMMERCE
STANDARD CONTRACT
ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS
IN THE CITY OF COMMERCE, CALIFORNIA

THIS AGREEMENT is made and entered into this XX day of MONTH 20_18_, by and between the CITY OF COMMERCE, a Municipal corporation (the "CITY") and CONTRACTOR NAME HERE ("CONTRACTOR").

RECITALS

WHEREAS, the CITY duly advertised a Notice Inviting Bids to be submitted on or before (the "PROJECT");

WHEREAS, on Month XX, 2018, the City Council accepted the bid of CONTRACTOR as the lowest responsible, responsive bid received and directed that a written contract be entered into with CONTRACTOR for the PROJECT.

NOW, THEREFORE, in consideration of the promises and the mutual covenants and agreements herein contained, the parties do hereby agree as follows:

ARTICLE I. CONTRACT DOCUMENTS.

The CONTRACT DOCUMENTS for the PROJECT shall consist of the Notice Inviting Sealed Bids, the Instructions to Bidders, Bidders Proposal, Addendums, General Specifications and all referenced specifications, details, standard drawings, and appendices, together with this Contract and all required bonds, and insurance certificates. All of the "Contract Documents" are intended to complement the other documents so that any work called for in one, and not mentioned in the others, or vice versa, is to be executed the same as if mentioned in all of said documents. The CONTRACT DOCUMENTS are incorporated herein by this reference and made part hereof as though they were fully set forth herein.

ARTICLE II. THE WORK.

For and in consideration of the payments and agreements to be made and performed by CITY, CONTRACTOR agrees to furnish all materials and perform all work required for the PROJECT and to fulfill all other obligations as set forth in the CONTRACT DOCUMENTS.

ARTICLE III. COMPENSATION.

CONTRACTOR hereby agrees to receive and accept the total amount of ENTER AMOUNT HERE, which is based on performing all of the work shown on Bidders Proposal as full compensation for furnishing all materials, performing all work, and fulfilling all obligations hereunder. Said compensation shall cover all expenses, losses, damages, and consequences arising out of the nature of the work during its progress or prior to its acceptance including those for well and faithfully completing the work and the whole thereof in the manner and time specified in the CONTRACT

DOCUMENTS, and also including those arising from actions of the elements, unforeseen difficulties or obstructions encountered in the prosecution of the work, suspension or discontinuance of the work, and all other unknowns or risks of any description connected with the work. CITY shall herein retain five percent (5%) of said price until said time as the provisions of Article XII herein have been met.

ARTICLE IV. UNDOCUMENTED WORKERS.

CONTRACTOR hereby promises and agrees to comply with all of the provisions of Federal and/or State law as the same shall apply to this PROJECT pertaining to the employment of unauthorized aliens as defined therein. Should CONTRACTOR so employ unauthorized aliens for the performance of work and/or services covered by this Contract, and should the Federal Government impose sanctions against the CITY for use of unauthorized aliens, CONTRACTOR hereby agrees to, and shall, reimburse CITY for the cost of all such sanctions imposed, together with any and all costs, including attorneys' fees, incurred by the CITY in connection therewith.

ARTICLE V. NOTICE TO PROCEED.

CONTRACTOR shall commence work on the date specified in the Notice to Proceed to be issued to CONTRACTOR by the CITY and shall complete work on the PROJECT within sixty (60) calendar days from the commencement thereof.

ARTICLE VI. DISCOVERY OF HAZARDOUS OR LATENT CONDITIONS.

- A. CONTRACTOR shall, without disturbing the condition, notify CITY in writing as soon as CONTRACTOR, or any subcontractor, agent or employees have knowledge and reporting is possible, of the discovery of any of the following conditions:
1. The presence of any material that the CONTRACTOR believes is hazardous waste, as defined in Section 25117 of the Health and Safety Code;
 2. Subsurface or latent physical conditions at the site differing from those indicated in the specifications; or,
 3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.
- B. Pending a determination by the CITY of appropriate action to be taken, CONTRACTOR shall provide security measures (e.g., fences) adequate to prevent the hazardous waste or physical conditions from causing bodily injury to any person.
- C. CITY shall promptly investigate the reported conditions. If CITY, through the City Engineer or his/her designee, and in the exercise of its sole discretion, determines that the conditions do materially differ, or do involve hazardous waste, and will cause a decrease or increase in the CONTRACTOR's cost of or time required for performance of any part of the work, then CITY shall issue a change order.
- D. In the event of a dispute between CITY and CONTRACTOR as to whether the conditions materially differ or involve hazardous waste or cause a decrease or increase in the

CONTRACTOR's cost of, or time required for performance of any part of the work, CONTRACTOR shall not be excused from any schedule completion date, and shall proceed with all work to be performed under the Contract. CONTRACTOR shall retain any and all rights which pertain to the resolution of disputes and protests between the parties.

ARTICLE VII. INDEMNIFICATION.

CONTRACTOR shall assume the defense of and indemnify and save harmless the CITY, its elective and appointive boards, officers, agents and employees, from all claims, loss, damage, injury and liability of every kind, nature and description, directly or indirectly arising from the performance of CONTRACTOR's work under this Contract; and from any and all claims, loss, damage, injury and liability, howsoever the same may be caused, resulting directly or indirectly from the nature of the work covered by the Contract; provided:

- (a) That CITY does not, and shall not, waive any rights against CONTRACTOR which it may have by reason of the aforesaid hold-harmless agreement because of the deposit with CITY by CONTRACTOR, of any of the insurance policies hereinafter described herein.
- (b) That the aforesaid hold-harmless agreement by CONTRACTOR shall apply to all damages and claims for damages of every kind suffered, or alleged to have been suffered, by reason of any of the aforesaid operations of CONTRACTOR or any subcontractor, regardless of whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

ARTICLE VIII. PERFORMANCE BOND.

CONTRACTOR, before commencing said PROJECT, shall furnish and file with CITY, a performance bond, or bonds in the sum of one hundred percent (100%) of the Contract price thereof conditioned upon the faithful performance of this Contract and upon the payment of all labor and materials furnished in connection with this Contract.

ARTICLE IX. INSURANCE REQUIREMENTS.

Prior to commencing work hereunder, CONTRACTOR shall provide the CITY with proof of insurance naming the CITY and each of its directors, officers, agents, and employees as additional-named insureds on a policy or policies of insurance providing and maintaining the coverages set forth in the Insurance Schedule attached hereto as Exhibit A. CITY shall have the right to hold the policies and policy renewals, and CONTRACTOR shall promptly furnish to CITY all renewal notices and all receipts of paid premiums. In CITY may make proof of loss if not made promptly by CONTRACTOR.

ARTICLE X. LIQUIDATED DAMAGES.

See Section 6-9 Liquidated Damages of the General Provisions

ARTICLE XI. COMPLIANCE WITH APPLICABLE LAWS.

CONTRACTOR hereby promises and agrees to comply with all of the provisions of all applicable state and federal laws in connection with the performance of its obligations under this Contract.

ARTICLE XII. NOTICE OF COMPLETION.

Upon completion of the PROJECT and acceptance of same by the City Council, the CITY Administrator shall have cause to be recorded a Notice of Completion with the office of the Los Angeles County Recorder; and, after thirty-five (35) days from the date said Notice of Completion is recorded, the Director of Finance of CITY shall release the funds retained pursuant to Article III hereof; provided there have been no mechanics' liens or stop notices filed against said work which have not been paid, withdrawn or eliminated as liens against said work.

ARTICLE XIII. NON-ASSIGNABILITY.

This Contract shall not be assignable, either in whole or in part, by the CONTRACTOR.

ARTICLE XIV. CUMULATIVE REMEDIES.

The provisions of this Contract are cumulative and in addition to and not in limitation of any rights or remedies available to CITY.

ARTICLE XV. ATTORNEY'S FEES.

If either party to this Contract is required to initiate or defend, or is made a party to, any action or proceeding in any way connected with this agreement, the party prevailing in the final judgment in such action or proceeding, in addition to any other relief which may be granted, shall be entitled to reasonable attorney's fees and costs. Attorney's fees shall include reasonable costs for investigating such action.

IN WITNESS WHEREOF the parties hereto have caused this Contract to be executed on the date first above written by their respective officers duly authorized in that behalf.

CITY OF COMMERCE

CONTRACTOR NAME

By: _____
Oralia Rebollo, Mayor

By: _____
Name, Title

ATTEST:

APPROVED AS TO FORM:

By: _____
Lena Shumway
City Clerk

By: _____
Eduardo Olivo,
City Attorney

EXHIBIT A INSURANCE REQUIREMENTS

On or before beginning any of the work called for by any term of this Contract, CONTRACTOR, at its own cost and expense, shall carry, maintain for the duration of this Contract, and provide proof thereof that is acceptable to CITY of its procurement of the insurance specified below from insurers and under forms of insurance satisfactory in all respects to CITY. Such insurance shall not be in derogation of CONTRACTOR's obligations to provide indemnity under this Contract.

1. Comprehensive General Liability and Automobile Liability Insurance Coverage.

CONTRACTOR shall carry and maintain Comprehensive General Liability and Automobile Liability Insurance which provides the following:

Minimum coverage: Bodily injury limits of \$2,000,000 for each person and \$2,000,000 for each occurrence; property damage limits of \$2,000,000 for each occurrence, \$5,000,000 aggregate.

Products/Completed Operations Hazard Insurance in an amount of not less than FIVE MILLION DOLLARS (\$5,000,000);

A combined single limit policy with aggregate limits in an amount of not less than Five MILLION DOLLARS (\$5,000,000) shall be considered equivalent to the said required minimum limits set forth herein above.

If a Commercial General Liability Insurance form or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the work to be performed under this Contract or the general aggregate limit shall be at least twice the required occurrence limit. Such coverage shall include but shall not be limited to, protection against claims arising from bodily and personal injury, including death resulting therefrom, and damage to property resulting from activities contemplated under this Contract, including the use of owned and non-owned real property and automobiles. Insurance coverage shall not be subject to any type of pollution exclusion or owned property exclusions.

2. Automobile Liability.

CONTRACTOR shall carry and maintain Automobile Liability Insurance which provides a minimum coverage of at least \$5,000,000 per accident for bodily injury and property damage.

3. Worker's Compensation.

CONTRACTOR shall carry and maintain worker's compensation in the amount of \$1,000,000 as required by the California Labor Code for all persons employed directly or indirectly in connection with this Contract by CONTRACTOR. To the extent that CONTRACTOR utilizes any subcontractor for the performance of any part of the work under this Contract, CONTRACTOR shall require and assure that such subcontractor also carry and maintain worker's compensation as required by the California Labor Code for all persons directly or indirectly in connection with this Contract.

4. Additional Insureds.

The CITY, its officers, agents and employees must be named as additional insureds or as additional loss payees in all insurance policies required by this Contract. An endorsement to this effect shall be delivered to CITY prior to the commencement of any work. Satisfaction of any deductible requirement shall be the responsibility of CONTRACTOR. Such insurance shall be primary and noncontributory with any other insurance maintained by the CITY.

5. Notice of Cancellation.

CONTRACTOR agrees to oblige its insurance agent or broker and insures to provide CITY with a thirty (30) day notice of cancellation (except for nonpayment for which a ten (10) day notice is required) or nonrenewal of coverage for each required coverage.

6. Severability Clause.

Each of the policies of insurance shall contain a clause substantially as follows:

The insurance afforded by this policy applies separately to each insured against whom a claim or suit is made or suit is brought, except with respect to the limit of the insurer's liability.

7. Qualifications of Insurer.

All policies of insurance shall be issued by an insurance company acceptable to CITY and authorized to issue said policy in the State of California.

8. Approval of Insurer.

The insurance carrier providing the insurance shall be chosen by CONTRACTOR subject to approval by CITY, provided that such approval shall not be unreasonably withheld.

9. Payment of Premiums.

All premiums on insurance policies shall be paid by CONTRACTOR making payment, when due, directly to the insurance carrier, or in a manner agreed to by CITY.

10. Evidence of Insurance and Claims.

CONTRACTOR shall provide certificates of insurance to CITY as evidence of insurance coverage required herein, along with a waiver of subrogation endorsement for workers' compensation. The Agency's Risk Manager must approve insurance certificates and endorsements prior to commencement of performance. Current certification of insurance shall be kept on file with the CITY at all times during the term of this Contract. The CITY reserves the right to require complete, certified copies of all required insurance policies, at any time.

APPENDIX B. APPLICABLE FEDERAL WAGE DECISION

Current Wage Decision is provided at the time of the bid advertisement. Bidders shall download updated Wage Decision 10 days prior to Bid Opening, which will be applicable to the contract. Wage Decision can be downloaded from <http://www.wdol.gov/dba.aspx>. On the web site, select the following: State: CALIFORNIA, County: LOS ANGELES, Construction Type: HIGHWAY.

General Decision Number: CA170033 08/04/2017 CA33

Superseded General Decision Number: CA20160033

State: California

Construction Types: Building, Heavy (Heavy and Dredging) and Highway

County: Los Angeles County in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2017
1	01/27/2017
2	02/17/2017
3	03/10/2017
4	03/31/2017
5	05/12/2017
6	05/26/2017
7	06/02/2017
8	07/07/2017
9	07/14/2017
10	07/28/2017
11	08/04/2017

ASBE0005-002 07/04/2016

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems).....	\$ 38.37	20.13
Fire Stop Technician (Application of Firestopping Materials for wall openings		

and penetrations in walls,
 floors, ceilings and curtain
 walls).....\$ 26.15 17.31

 ASBE0005-004 07/04/2016

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)....	\$ 18.38	10.82

 BOIL0092-003 10/01/2012

	Rates	Fringes
BOILERMAKER.....	\$ 41.17	28.27

 * BRCA0004-007 05/01/2017

	Rates	Fringes
BRICKLAYER; MARBLE SETTER.....	\$ 39.91	15.45

*The wage scale for prevailing wage projects performed in
 Blythe, China lake, Death Valley, Fort Irwin, Twenty-Nine
 Palms, Needles and 1-15 corridor (Barstow to the Nevada
 State Line) will be Three Dollars (\$3.00) above the
 standard San Bernardino/Riverside County hourly wage rate

 BRCA0018-004 06/01/2016

	Rates	Fringes
MARBLE FINISHER.....	\$ 29.20	12.93
TILE FINISHER.....	\$ 24.53	11.08
TILE LAYER.....	\$ 35.89	16.24

 BRCA0018-010 09/01/2016

	Rates	Fringes
TERRAZZO FINISHER.....	\$ 28.53	12.27
TERRAZZO WORKER/SETTER.....	\$ 35.57	13.14

 CARP0409-001 07/01/2016

	Rates	Fringes
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CARPENTER

(1) Carpenter, Cabinet Installer, Insulation Installer, Hardwood Floor Worker and acoustical installer.....	\$ 39.83	15.50
(2) Millwright.....	\$ 40.90	15.50
(3) Piledrivermen/Derrick Bargeman, Bridge or Dock Carpenter, Heavy Framer, Rock Bargeman or Scowman, Rockslinger, Shingler (Commercial).....	\$ 40.53	15.50
(4) Pneumatic Nailer, Power Stapler.....	\$ 40.09	15.50
(5) Sawfiler.....	\$ 39.83	15.50
(6) Scaffold Builder.....	\$ 31.60	15.50
(7) Table Power Saw Operator.....	\$ 40.93	15.50

FOOTNOTE: Work of forming in the construction of open cut
sewers or storm drains, on operations in which horizontal
lagging is used in conjunction with steel H-Beams driven or
placed in pre- drilled holes, for that portion of a lagged
trench against which concrete is poured, namely, as a
substitute for back forms (which work is performed by
piledrivers): \$0.13 per hour additional.

CARP0409-002 07/01/2008

	Rates	Fringes
Diver		
(1) Wet.....	\$ 663.68	9.82
(2) Standby.....	\$ 331.84	9.82
(3) Tender.....	\$ 323.84	9.82
(4) Assistant Tender.....	\$ 299.84	9.82

Amounts in "Rates" column are per day

CARP0409-005 07/01/2015

	Rates	Fringes
Drywall		
DRYWALL INSTALLER/LATHER....	\$ 40.40	15.03
STOCKER/SCRAPPER.....	\$ 10.00	7.17

CARP0409-008 08/01/2010

	Rates	Fringes
Modular Furniture Installer.....	\$ 17.00	7.41

* ELEC0011-004 07/31/2017

	Rates	Fringes
ELECTRICIAN (INSIDE ELECTRICAL WORK)		
Journeyman Electrician.....	\$ 42.85	3%+27.37
ELECTRICIAN (INTELLIGENT TRANSPORTATION SYSTEMS Street Lighting, Traffic Signals, CCTV, and Underground Systems)		
Journeyman Transportation Electrician.....	\$ 42.90	3%+27.32
Technician.....	\$ 31.09	3%+27.32

FOOT NOTE:

CABLE SPLICER & INSTRUMENT PERSON: Recieve 5% additional per hour above Journeyman Electrician basic hourly rate.
TUNNEL WORK: 10% additional per hour.

SCOPE OF WORK - TRANSPORTATION SYSTEMS

ELECTRICIAN:

Installation of street lights and traffic signals, including electrical circuitry, programmable controllers, pedestal-mounted electrical meter enclosures and laying of pre-assembled multi-conductor cable in ducts, layout of electrical systems and communication installation, including proper position of trench depths and radius at duct banks, location for man holes, pull boxes, street lights and traffic signals. Installation of underground ducts for electrical, telephone, cable television and communication systems. Pulling, termination and splicing of traffic signal and street lighting conductors and electrical systems including interconnect, detector loop, fiber optic cable and video/cable.

TECHNICIAN:

Distribution of material at job site, manual excavation and backfill, installation of system conduits and raceways for electrical, telephone, cable television and communication systems. Pulling, terminating and splicing of traffic signal and street lighting conductors and electrical systems including interconnect, detector loop, fiber optic cable and video/data.

* ELEC0011-005 07/31/2017

COMMUNICATIONS & SYSTEMS WORK (excludes any work on Intelligent Transportation Systems or CCTV highway systems)

	Rates	Fringes
Communications System		
Installer.....	\$ 30.73	14.00
Technician.....	\$ 32.18	3%+27.32

SCOPE OF WORK The work covered shall include the installation, testing, service and maintenance, of the following systems that utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for TV monitoring and surveillance, background foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems SCADA (Supervisory control/data acquisition PCM (Pulse code modulation) Inventory control systems Digital data systems Broadband & baseband and carriers Point of sale systems VSAT data systems Data communication systems RF and remote control systems Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems Background-Foreground Music Intercom and Telephone Interconnect Systems Sound and Musical Entertainment Systems Nurse Call Systems Radio Page Systems School Intercom and Sound Systems Burglar Alarm Systems Low-Voltage Master Clock Systems Multi-Media/Multiplex Systems Telephone Systems RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems Television Monitoring and Surveillance Systems Video Security Systems Video Entertainment Systems Video Educational Systems CATV and CCTV

E. Security Systems, Perimeter Security Systems, Vibration Sensor Systems Sonar/Infrared Monitoring Equipment, Access Control Systems, Card Access Systems

*Fire Alarm Systems

1. Fire Alarms-In Raceways: Wire and cable pulling in raceways performed at the current electrician wage rate and fringe benefits.
2. Fire Alarms-Open Wire Systems: installed by the Technician.

* ELEC1245-001 06/01/2017

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer..\$ 55.49		3%+17.65

(2) Equipment specialist
 (operates crawler
 tractors, commercial motor
 vehicles, backhoes,
 trenchers, cranes (50 tons
 and below), overhead &
 underground distribution
 line equipment).....\$ 44.32 3%+17.65
 (3) Groundman.....\$ 33.89 3%+17.65
 (4) Powderman.....\$ 49.55 3%+17.65

HOLIDAYS: New Year's Day, M.L. King Day, Memorial Day,
 Independence Day, Labor Day, Veterans Day, Thanksgiving Day
 and day after Thanksgiving, Christmas Day

 ELEV0018-001 01/01/2017

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 52.21	31.585

FOOTNOTE:

PAID VACATION: Employer contributes 8% of regular hourly
 rate as vacation pay credit for employees with more than 5
 years of service, and 6% for 6 months to 5 years of service.
 PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day,
 Labor Day, Veterans Day, Thanksgiving Day, Friday after
 Thanksgiving, and Christmas Day.

 ENGI0012-003 07/01/2016

	Rates	Fringes
OPERATOR: Power Equipment		
(All Other Work)		
GROUP 1.....	\$ 39.95	23.35
GROUP 2.....	\$ 40.73	23.35
GROUP 3.....	\$ 41.02	23.35
GROUP 4.....	\$ 42.51	23.35
GROUP 5.....	\$ 41.86	23.35
GROUP 6.....	\$ 41.83	23.35
GROUP 8.....	\$ 42.84	23.35
GROUP 9.....	\$ 42.19	23.35
GROUP 10.....	\$ 42.96	23.35
GROUP 11.....	\$ 42.31	23.35
GROUP 12.....	\$ 43.13	23.35
GROUP 13.....	\$ 43.23	23.35
GROUP 14.....	\$ 43.26	23.35
GROUP 15.....	\$ 43.34	23.35
GROUP 16.....	\$ 43.46	23.35
GROUP 17.....	\$ 43.63	23.35
GROUP 18.....	\$ 43.73	23.35
GROUP 19.....	\$ 43.84	23.35
GROUP 20.....	\$ 43.96	23.35
GROUP 21.....	\$ 44.13	23.35

GROUP 22.....	\$ 44.23	23.35
GROUP 23.....	\$ 44.34	23.35
GROUP 24.....	\$ 44.46	23.35
GROUP 25.....	\$ 44.63	23.35
OPERATOR: Power Equipment (Cranes, Piledriving & Hoisting)		
GROUP 1.....	\$ 43.20	22.15
GROUP 2.....	\$ 43.98	22.15
GROUP 3.....	\$ 44.27	22.15
GROUP 4.....	\$ 44.41	22.15
GROUP 5.....	\$ 44.63	22.15
GROUP 6.....	\$ 44.74	22.15
GROUP 7.....	\$ 44.86	22.15
GROUP 8.....	\$ 45.03	22.15
GROUP 9.....	\$ 45.20	22.15
GROUP 10.....	\$ 46.20	22.15
GROUP 11.....	\$ 47.20	22.15
GROUP 12.....	\$ 48.20	22.15
GROUP 13.....	\$ 49.20	22.15
OPERATOR: Power Equipment (Tunnel Work)		
GROUP 1.....	\$ 41.80	23.35
GROUP 2.....	\$ 42.58	23.35
GROUP 3.....	\$ 42.87	23.35
GROUP 4.....	\$ 43.01	23.35
GROUP 5.....	\$ 43.23	23.35
GROUP 6.....	\$ 43.34	23.35
GROUP 7.....	\$ 43.46	23.35

PREMIUM PAY:

\$3.75 per hour shall be paid on all Power Equipment Operator work on the following Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton

Workers required to suit up and work in a hazardous material environment: \$2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

SEE ZONE DEFINITIONS AFTER CLASSIFICATIONS

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes loed, lull or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes loed, lull or similar

types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dum jack; Screening and conveyor machine operator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (Skid steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator (small portable); Drilling machine operator, small auger types (Texoma super economatic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Hydra-hammer-aero stomper; Micro Tunneling (above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo form setter operator; Power sweeper operator; Rock Wheel Saw/Trencher; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 5: Equipment Greaser (Grease Truck/Multi Shift).

GROUP 6: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator; Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter (concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1

drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 8: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar; Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled); Concrete mixer operator (paving); Crushing plant operator; Drill Doctor; Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator; Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Mobark Chipper or similar; Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; Rock Drill or similar types; Rotary drill operator (excluding caisson type); Rubber-tired earth-moving equipment operator (single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bending machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); trenching Machine with Road Miner attachment (over 6 ft depth capacity): Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 9: Heavy Duty Repairman

GROUP 10: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9

cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator; Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 11: Heavy Duty Repairman - Welder Combination, Welder - Certified.

GROUP 12: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less tha 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth- moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self- loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 13: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 14: Canal liner operator; Canal trimmer operator; Remote- control earth-moving equipment operator (operating a second piece of equipment: \$1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 15: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 18: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 19: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 21: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

GROUP 22: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

GROUP 23: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 24: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 25: Concrete pump operator-truck mounted; Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid,

Caterpillar and similar type, over 50 cu. yds. struck)

CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up

to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo form setter operator

GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy Duty Repairman

GROUP 7: Tunnel mole boring machine operator

ENGINEERS ZONES

\$1.00 additional per hour for all of IMPERIAL County and the portions of KERN, RIVERSIDE & SAN BERNARDINO Counties as defined below:

That area within the following Boundary: Begin in San Bernardino County, approximately 3 miles NE of the intersection of I-15 and the California State line at that point which is the NW corner of Section 1, T17N,m R14E, San Bernardino Meridian. Continue W in a straight line to that point which is

the SW corner of the northwest quarter of Section 6, T27S, R42E, Mt. Diablo Meridian. Continue North to the intersection with the Inyo County Boundary at that point which is the NE corner of the western half of the northern quarter of Section 6, T25S, R42E, MDM. Continue W along the Inyo and San Bernardino County boundary until the intersection with Kern County, at that point which is the SE corner of Section 34, T24S, R40E, MDM. Continue W along the Inyo and Kern County boundary until the intersection with Tulare County, at that point which is the SW corner of the SE quarter of Section 32, T24S, R37E, MDM. Continue W along the Kern and Tulare County boundary, until that point which is the NW corner of T25S, R32E, MDM. Continue S following R32E lines to the NW corner of T31S, R32E, MDM. Continue W to the NW corner of T31S, R31E, MDM. Continue S to the SW corner of T32S, R31E, MDM. Continue W to SW corner of SE quarter of Section 34, T32S, R30E, MDM. Continue S to SW corner of T11N, R17W, SBM. Continue E along south boundary of T11N, SBM to SW corner of T11N, R7W, SBM. Continue S to SW corner of T9N, R7W, SBM. Continue E along south boundary of T9N, SBM to SW corner of T9N, R1E, SBM. Continue S along west boundary of R1E, SMB to Riverside County line at the SW corner of T1S, R1E, SBM. Continue E along south boundary of T1S, SBM (Riverside County Line) to SW corner of T1S, R10E, SBM. Continue S along west boundary of R10E, SBM to Imperial County line at the SW corner of T8S, R10E, SBM. Continue W along Imperial and Riverside county line to NW corner of T9S, R9E, SBM. Continue S along the boundary between Imperial and San Diego Counties, along the west edge of R9E, SBM to the south boundary of Imperial County/California state line. Follow the California state line west to Arizona state line, then north to Nevada state line, then continuing NW back to start at the point which is the NW corner of Section 1, T17N, R14E, SBM

\$1.00 additional per hour for portions of SAN LUIS OBISPO, KERN, SANTA BARBARA & VENTURA as defined below:

That area within the following Boundary: Begin approximately 5 miles north of the community of Cholame, on the Monterey County and San Luis Obispo County boundary at the NW corner of T25S, R16E, Mt. Diablo Meridian. Continue south along the west side of R16E to the SW corner of T30S, R16E, MDM. Continue E to SW corner of T30S, R17E, MDM. Continue S to SW corner of T31S, R17E, MDM. Continue E to SW corner of T31S, R18E, MDM. Continue S along West side of R18E, MDM as it crosses into San Bernardino Meridian numbering area and becomes R30W. Follow the west side of R30W, SBM to the SW corner of T9N, R30W, SBM. Continue E along the south edge of T9N, SBM to the Santa Barbara County and Ventura County boundary at that point which is the SW corner of Section 34. T9N, R24W, SBM, continue S along the Ventura County line to that point which is the SW corner of the SE quarter of Section 32, T7N, R24W, SBM. Continue E along the south edge of T7N, SBM to the SE corner to T7N, R21W, SBM. Continue N along East side of R21W, SBM to Ventura County and Kern County boundary at the NE corner of T8N, R21W. Continue W along the Ventura County and Kern County boundary to the SE corner of T9N, R21W. Continue North along the East edge

of R21W, SBM to the NE corner of T12N, R21W, SBM. Continue West along the north edge of T12N, SBM to the SE corner of T32S, R21E, MDM. [T12N SBM is a think strip between T11N SBM and T32S MDM]. Continue North along the East side of R21E, MDM to the Kings County and Kern County border at the NE corner of T25S, R21E, MDM, continue West along the Kings County and Kern County Boundary until the intersection of San Luis Obispo County. Continue west along the Kings County and San Luis Obispo County boundary until the intersection with Monterey County. Continue West along the Monterey County and San Luis Obispo County boundary to the beginning point at the NW corner of T25S, R16E, MDM.

\$2.00 additional per hour for INYO and MONO Counties and the Northern portion of SAN BERNARDINO County as defined below:

That area within the following Boundary: Begin at the intersection of the northern boundary of Mono County and the California state line at the point which is the center of Section 17, T10N, R22E, Mt. Diablo Meridian. Continue S then SE along the entire western boundary of Mono County, until it reaches Inyo County at the point which is the NE corner of the Western half of the NW quarter of Section 2, T8S, R29E, MDM. Continue SSE along the entire western boundary of Inyo County, until the intersection with Kern County at the point which is the SW corner of the SE 1/4 of Section 32, T24S, R37E, MDM. Continue E along the Inyo and Kern County boundary until the intersection with San Bernardino County at that point which is the SE corner of section 34, T24S, R40E, MDM. Continue E along the Inyo and San Bernardino County boundary until the point which is the NE corner of the Western half of the NW quarter of Section 6, T25S, R42E, MDM. Continue S to that point which is the SW corner of the NW quarter of Section 6, T27S, R42E, MDM. Continue E in a straight line to the California and Nevada state border at the point which is the NW corner of Section 1, T17N, R14E, San Bernardino Meridian. Then continue NW along the state line to the starting point, which is the center of Section 18, T10N, R22E, MDM.

REMAINING AREA NOT DEFINED ABOVE RECIEVES BASE RATE

 ENGI0012-004 08/01/2015

	Rates	Fringes
OPERATOR: Power Equipment		
(DREDGING)		
(1) Leverman.....	\$ 49.50	23.60
(2) Dredge dozer.....	\$ 43.53	23.60
(3) Deckmate.....	\$ 43.42	23.60
(4) Winch operator (stern		
winch on dredge).....	\$ 42.87	23.60
(5) Fireman-Oiler,		
Deckhand, Bargeman,		

Leveehand.....	\$ 42.33	23.60
(6) Barge Mate.....	\$ 42.94	23.60

IRON0377-002 07/01/2016

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 28.33	20.64
Ornamental, Reinforcing and Structural.....	\$ 34.75	29.20

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval
Reserve-Niland,
Edwards AFB, Fort Irwin Military Station, Fort Irwin Training
Center-Goldstone, San Clemente Island, San Nicholas Island,
Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine
Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base,
Naval Post Graduate School - Monterey, Yermo Marine Corps
Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LABO0300-001 07/01/2017

	Rates	Fringes
Brick Tender.....	\$ 31.36	17.82

LABO0300-003 07/03/2017

	Rates	Fringes
LABORER (TUNNEL)		
GROUP 1.....	\$ 39.04	18.24
GROUP 2.....	\$ 39.36	18.24
GROUP 3.....	\$ 39.82	18.24
GROUP 4.....	\$ 40.51	18.24
LABORER		
GROUP 1.....	\$ 32.34	19.07
GROUP 2.....	\$ 32.89	19.07
GROUP 3.....	\$ 33.44	19.07
GROUP 4.....	\$ 34.99	19.07
GROUP 5.....	\$ 35.34	19.07

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick if performed by a worker performing any other phase of demolition work, and the cleaning of lumber; Fire watcher, limber, brush loader, piler and debris handler; Flag person; Gas, oil and/or water pipeline laborer; Laborer, asphalt-rubber material loader; Laborer, general or construction; Laborer, general clean-up; Laborer, landscaping; Laborer, jetting; Laborer, temporary water and air lines; Material hose operator (walls, slabs, floors and decks); Plugging, filling of shee bolt holes; Dry packing of concrete; Railroad maintenance, repair track person and road beds; Streetcar and railroad construction track laborers; Rigging and signaling; Scaler; Slip form raiser; Tar and mortar; Tool crib or tool house laborer; Traffic control by any method; Window cleaner; Wire mesh pulling - all concrete pouring operations

GROUP 2: Asphalt shoveler; Cement dumper (on 1 yd. or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute handler, pouring concrete, the handling of the chute from readymix trucks, such as walls, slabs, decks, floors, foundation, footings, curbs, gutters and sidewalks; Concrete curer, impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways and similar type heavy construction; Gas, oil and/or water pipeline wrapper - pot tender and form person; Guinea chaser; Headerboard person - asphalt; Laborer, packing rod steel and pans; Membrane vapor barrier installer; Power broom sweeper (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer(lead); Tank scaler and cleaner; Tree climber, faller, chain saw operator, Pittsburgh chipper and similar type brush shredder; Underground laborer, including caisson bellower

GROUP 3: Buggymobile person; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri-pak-it machine; Gas, oil and/or water pipeline wrapper, 6-in. pipe and over, by any method, inside and out; High scaler (including drilling of same); Hydro seeder and similar type; Impact wrench multi-plate; Kettle person, pot person and workers applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operator of pneumatic, gas, electric tools, vibrating machine, pavement breaker, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's backup person, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard and guideline setter;

Tamper, Barko, Wacker and similar type; Trenching machine, hand-propelled

GROUP 4: Asphalt raker, lute person, ironer, asphalt dump person, and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), grinder or sander; Concrete saw person, cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laborer, asphalt- rubber distributor boot person; Laser beam in connection with laborers' work; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid gas, air, or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No-joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzle person), water blasting, Porta Shot-Blast

GROUP 5: Blaster powder, all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power; Toxic waste removal

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Batch plant laborer; Changehouse person; Dump person; Dump person (outside); Swamper (brake person and switch person on tunnel work); Tunnel materials handling person; Nipper; Pot tender, using mastic or other materials (for example, but not by way of limitation, shotcrete, etc.)

GROUP 2: Chucktender, cabletender; Loading and unloading agitator cars;; Vibrator person, jack hammer, pneumatic tools (except driller); Bull gang mucker, track person; Concrete crew, including rodder and spreader

GROUP 3: Blaster, driller, powder person; Chemical grout jet person; Cherry picker person; Grout gun person; Grout mixer person; Grout pump person; Jackleg miner; Jumbo person; Kemper and other pneumatic concrete placer operator; Miner, tunnel (hand or machine); Nozzle person; Operating of troweling and/or grouting machines; Powder person (primer house); Primer person; Sandblaster; Shotcrete person; Steel form raiser and setter; Timber person, retimber person, wood or steel; Tunnel Concrete finisher

GROUP 4: Diamond driller; Sandblaster; Shaft and raise work

LABO0300-005 01/01/2017

	Rates	Fringes
Asbestos Removal Laborer.....	\$ 31.88	16.82

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos- containing materials and toxic waste by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers and assembly of decontamination stations.

LABO0345-001 07/02/2017

	Rates	Fringes
LABORER (GUNITE)		
GROUP 1.....	\$ 41.08	17.39
GROUP 2.....	\$ 40.13	17.39
GROUP 3.....	\$ 36.59	17.39

FOOTNOTE: GUNITE PREMIUM PAY: Workers working from a Bosn'n's Chair or suspended from a rope or cable shall receive 40 cents per hour above the foregoing applicable classification rates. Workers doing gunite and/or shotcrete work in a tunnel shall receive 35 cents per hour above the foregoing applicable classification rates, paid on a portal-to-portal basis. Any work performed on, in or above any smoke stack, silo, storage elevator or similar type of structure, when such structure is in excess of 75'-0" above base level and which work must be performed in whole or in part more than 75'-0" above base level, that work performed above the 75'-0" level shall be compensated for at 35 cents per hour above the applicable classification wage rate.

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Rodmen, Nozzlemen

GROUP 2: Gunmen

GROUP 3: Reboundmen

LABO1184-001 07/01/2017

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		
(1) Drilling Crew Laborer...	\$ 34.65	13.20
(2) Vehicle Operator/Hauler.	\$ 34.82	13.20

(3) Horizontal Directional		
Drill Operator.....	\$ 36.67	13.20
(4) Electronic Tracking		
Locator.....	\$ 38.67	13.20
Laborers: (STRIPING/SLURRY SEAL)		
GROUP 1.....	\$ 35.86	16.21
GROUP 2.....	\$ 37.16	16.21
GROUP 3.....	\$ 39.17	16.21
GROUP 4.....	\$ 40.91	16.21

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

* LABO1414-001 08/02/2017

	Rates	Fringes
LABORER		
PLASTER CLEAN-UP LABORER....	\$ 32.50	18.29
PLASTER TENDER.....	\$ 35.05	18.29

Work on a swing stage scaffold: \$1.00 per hour additional.

* PAIN0036-001 07/01/2017

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County).....	\$ 27.59	13.94
(2) All Other Work.....	\$ 31.12	13.94

REPAINT of any previously painted structure. Exceptions: work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities.

PAIN0036-006 10/01/2016

	Rates	Fringes
DRYWALL FINISHER/TAPER		
Antelope Valley North of the following Boundary: Kern County Line to Hwy. #5, South on Hwy. #5 to Hwy. N2, East on N2 to Palmdale Blvd., to Hwy. #14, South to Hwy. #18, East to Hwy. #395.....	\$ 32.05	16.82
Remainder of Los Angeles County.....	\$ 37.18	17.99

PAIN0036-015 06/01/2016

	Rates	Fringes
GLAZIER.....	\$ 41.70	21.13

FOOTNOTE: Additional \$1.25 per hour for work in a condor, from the third (3rd) floor and up Additional \$1.25 per hour for work on the outside of the building from a swing stage or any suspended contrivance, from the ground up

PAIN1247-002 05/01/2017

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 32.35	14.56

* PLAS0200-009 08/02/2017

	Rates	Fringes
PLASTERER.....	\$ 41.26	14.46

PLAS0500-002 07/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 33.30	23.33

 PLUM0016-001 07/01/2017

	Rates	Fringes
PLUMBER/PIPEFITTER		
Plumber and Pipefitter		
All other work except		
work on new additions and		
remodeling of bars,		
restaurant, stores and		
commercial buildings not		
to exceed 5,000 sq. ft.		
of floor space and work		
on strip malls, light		
commercial, tenant		
improvement and remodel		
work.....	\$ 49.28	21.61
Work ONLY on new additions		
and remodeling of bars,		
restaurant, stores and		
commercial buildings not		
to exceed 5,000 sq. ft. of		
floor space.....	\$ 47.76	20.63
Work ONLY on strip malls,		
light commercial, tenant		
improvement and remodel		
work.....	\$ 36.91	18.96

 PLUM0078-001 07/01/2016

	Rates	Fringes
PLUMBER		
Landscape/Irrigation Fitter.	\$ 44.16	25.19
Sewer & Storm Drain Work....	\$ 44.16	25.19

 * ROOF0036-002 08/01/2017

	Rates	Fringes
ROOFER.....	\$ 37.07	16.17

FOOTNOTE: Pitch premium: Work on which employees are exposed to pitch fumes or required to handle pitch, pitch base or pitch impregnated products, or any material containing coal tar pitch, the entire roofing crew shall receive \$1.75 per hour "pitch premium" pay.

 SFCA0669-013 04/01/2017

DOES NOT INCLUDE THE CITY OF POMONA, CATALINA ISLAND, AND THAT

PART OF LOS ANGELES COUNTY WITHIN 25 MILES OF THE CITY LIMITS
OF LOS ANGELES:

	Rates	Fringes
SPRINKLER FITTER.....	\$ 39.07	15.84

SFCA0709-005 07/01/2015		

THE CITY OF POMOMA, CATALINA ISLAND, AND THAT PART OF LOS
ANGELES COUNTY WITHIN 25 MILES OF THE CITY LIMITS OF LOS
ANGELES:

	Rates	Fringes
SPRINKLER FITTER (Fire).....	\$ 42.93	24.04

SHEE0105-002 07/01/2016		

LOS ANGELES (South of a straight line between gorman and Big
Pines including Catalina Island)

	Rates	Fringes
SHEET METAL WORKER		
(1) Light Commercial: Work on general sheet metal and heating and AC up to 4000 sq ft.....	\$ 24.76	9.51
(2) Modernization : Excluding New Construction - Under 5000 sq. ft. Does not include modification, upgrades, energy management, or conservation improvements of central heating and AC equipment.....	\$ 41.86	26.88

SHEE0105-003 07/01/2016		

LOS ANGELES (South of a straight line drawn between Gorman and
Big Pines)and Catalina Island, INYO, KERN (Northeast part, East
of Hwy 395), MONO ORANGE, RIVERSIDE, AND SAN BERNARDINO COUNTIES

	Rates	Fringes
SHEET METAL WORKER		
(1) Commercial - New Construction and Remodel work.....	\$ 41.86	26.88
(2) Industrial work including air pollution		

control systems, noise
 abatement, hand rails,
 guard rails, excluding
 aritechtrual sheet metal
 work, excluding A-C,
 heating, ventilating
 systems for human comfort...\$ 41.86 26.88

 SHEE0105-004 07/01/2017

KERN (Excluding portion East of Hwy 395) & LOS ANGELES (North
 of a straight line drawn between Gorman and Big Pines including
 Cities of Lancaster and Palmdale) COUNTIES

	Rates	Fringes
SHEET METAL WORKER.....	\$ 32.38	26.99

 TEAM0011-002 07/01/2017

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 29.59	27.74
GROUP 2.....	\$ 29.74	27.74
GROUP 3.....	\$ 29.87	27.74
GROUP 4.....	\$ 30.06	27.74
GROUP 5.....	\$ 30.09	27.74
GROUP 6.....	\$ 30.12	27.74
GROUP 7.....	\$ 30.37	27.74
GROUP 8.....	\$ 30.62	27.74
GROUP 9.....	\$ 30.82	27.74
GROUP 10.....	\$ 31.12	27.74
GROUP 11.....	\$ 31.62	27.74
GROUP 12.....	\$ 32.05	27.74

WORK ON ALL MILITARY BASES:

PREMIUM PAY: \$3.00 per hour additional.

[29 palms Marine Base, Camp Roberts, China Lake, Edwards AFB,
 El Centro Naval Facility, Fort Irwin, Marine Corps
 Logistics Base at Nebo & Yermo, Mountain Warfare Training
 Center, Bridgeport, Point Arguello, Point Conception,
 Vandenberg AFB]

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Truck driver

GROUP 2: Driver of vehicle or combination of vehicles - 2
 axles; Traffic control pilot car excluding moving heavy
 equipment permit load; Truck mounted broom

GROUP 3: Driver of vehicle or combination of vehicles - 3
 axles; Boot person; Cement mason distribution truck; Fuel

truck driver; Water truck - 2 axle; Dump truck, less than 16 yds. water level; Erosion control driver

GROUP 4: Driver of transit mix truck, under 3 yds.; Dumpcrete truck, less than 6-1/2 yds. water level

GROUP 5: Water truck, 3 or more axles; Truck greaser and tire person (\$0.50 additional for tire person); Pipeline and utility working truck driver, including winch truck and plastic fusion, limited to pipeline and utility work; Slurry truck driver

GROUP 6: Transit mix truck, 3 yds. or more; Dumpcrete truck, 6-1/2 yds. water level and over; Vehicle or combination of vehicles - 4 or more axles; Oil spreader truck; Dump truck, 16 yds. to 25 yds. water level

GROUP 7: A Frame, Swedish crane or similar; Forklift driver; Ross carrier driver

GROUP 8: Dump truck, 25 yds. to 49 yds. water level; Truck repair person; Water pull - single engine; Welder

GROUP 9: Truck repair person/welder; Low bed driver, 9 axles or over

GROUP 10: Dump truck - 50 yds. or more water level; Water pull - single engine with attachment

GROUP 11: Water pull - twin engine; Water pull - twin engine with attachments; Winch truck driver - \$1.25 additional when operating winch or similar special attachments

GROUP 12: Boom Truck 17K and above

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information

on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

APPENDIX C. PROJECT PLANS

ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS
City Project No. ; Federal Project No.

E. SPECIAL PROVISIONS

(Prepared by: BKF Engineers)

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK"
PART 1-GENERAL PROVISIONS (Sections 1-9)

FILE 02, E. SPECIAL PROVISIONS, GREEN BOOK, Sections 1-9

Atlantic Boulevard Corridor Improvement
City Project No. ; Federal Project No.

SECTION E

SPECIAL PROVISIONS

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK"

PART 1

GENERAL PROVISIONS

(Sections 1-9)

This Section of the Technical Specifications is in accordance with the Standard
Specifications for
Public Works (Green Book Standard Specifications), 2015 Edition with modifications herein.

This Section E applies to all project work.

FILE 02, E. SPECIAL PROVISIONS, GREEN BOOK, Sections 1-9

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FILE 02, E. SPECIAL PROVISIONS, GREEN BOOK, Sections 1-9

PART 1 – GENERAL PROVISIONS

SECTION 1 – TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

1-2 TERMS AND DEFINITIONS

ADD the following:

Acceptance: The formal written acceptance by Agency of an entire contract or portion of the work that has been completed in all respects in accordance with the plans and specifications and any modifications thereof previously approved.

Agency: City of Commerce

Board: City Council of the City of Commerce

City: City of Commerce

County: County of Los Angeles

Calendar Day: A calendar day shall be all days in the calendar year including all holidays, Saturday and Sunday.

Working Day: A work day shall be as defined as any day within the period between the date of the start of the Contract time as specified in section 6-1 and the date of field acceptance of the Work by the Engineer, and as specified in section A through D of the Contract Documents.

Contract Completion Date: The calendar date established by adding the Time for Completion of the Work to the Notice to Proceed date.

Federal Agencies: Whenever, in the specifications, reference is made to any Federal agency or officer, the reference shall be deemed made to any agency or officer succeeding in accordance with law to the powers, duties, jurisdiction and AGENCY of the agency or officer mentioned.

1-3 ABBREVIATIONS

Add the following:

Each abbreviation signifies the following:

Abbreviation	Term
AAMA	American Architectural Manufacturers Association
AAN	American Association of Nurserymen.
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials.
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AGA	American Galvanizers Association
AGA	American Gas Association
AISC	American Institute of Steel Construction.
AISI	American Iron and Steel Institute.
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute.
APA	APA — The Engineered Wood Association (formerly American Plywood Association)
APHA	American Public Health Association.
API	American Petroleum Institute.
APWA	American Public Works Association.
AREA	American Railway Engineering Association.
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARI	Air-Conditioning and Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	ASME International (formerly American Society of Mechanical Engineers)
ASSE	American Society of Safety Engineers
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (formerly American Society for Testing and Materials)
AWG	American Wire Gage.

AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association (formerly American Wood-Preservers' Association)
AWS	American Welding Society.
AWWA	American Water Works Association.
BHMA	Building Hardware Manufacturers Association
BNSF	Burlington Northern Santa Fe Railway
Cal/EPA	California Environmental Protection Agency

Abbreviation	Term
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CBC	California Building Code
CEC	California Electrical Code
CPUC	California Public Utilities Commission
EPA	U.S. Environmental Protection Agency
IEEE	Institute of Electrical and Electronics Engineers
OSHA	Occupational Safety and Health Administration
PCI	Precast/Prestressed Concrete Institute
SDI	Steel Deck Institute
SCAQMD	South Coast Air Quality Management District
SSPWC	Standard Specifications for Public Works Construction
UL	Underwriters Laboratories Inc.
UPRR	Union Pacific Railroad

Additional abbreviations are included in the Caltrans Standard Plans A10A and RSP A10B.

Some of the symbols for units of measurement used in the specifications and in the Summary of Quantities and Prices are defined as follows. The symbols for other units of measurement used in the specifications are as defined in the various specifications and tests referenced in the specifications.

Symbols as used in the Specifications	Symbols as used in the Summary of Quantities and Prices	Definition
A	-	amperes
	ACRE	acre
	CF	cubic foot
	CY	cubic yard
Deg		Degree
	EA	Each
F		Fahrenheit
g	-	gram
ksi	-	kips per square inch
	GAL	gallon
HRS / h	HR	hour
	LBS	pounds

Symbols as used in the Specifications	Symbols as used in the Summary of Quantities and Prices	Definition
	LS	lump sum
	LF	linear foot
in		inch
	MI	mile
	MO	month
pcf	-	pounds per cubic foot
s	-	second
-	STA	station (100 feet)
	SF	square foot
	SY	square yard
ton	TON	2,000 pounds
W	-	watt
V	-	volt
	YR	year

SSP: Caltrans Standard Special Provision

RSS: Caltrans Revised Standard Specification

SECTION 2 – SCOPE AND CONTROL OF THE WORK

2-3 SUBCONTRACTS

2-3.3 Status of Subcontractors. *ADD the following:*

The CONTRACTOR shall be fully responsible and liable for the products and actions of all subcontractors and suppliers of any tier, and shall include in each subcontract any provisions necessary to make all of the provisions of this Contract fully effective. The CONTRACTOR shall provide all necessary plans, specifications, schedules, and instructions to its suppliers and subcontractors to enable them to properly perform their work. The CONTRACTOR shall submit executed copies of all subcontracts entered into pursuant to this Contract to the Agency within sixty (60) calendar days from issuance of a Notice to Proceed, and within thirty (30) calendar days after subcontract formation if the subcontract is entered into after the initial 60-day period.

2-5 PLANS AND SPECIFICATIONS

2-5.1 General. *ADD the following:*

2-5.1.1 Standard Specifications

Unless specifically noted otherwise, references to the "Standard Specifications" or "Greenbook" shall mean the 2015 Edition of the Standard Specifications for Public Works and otherwise modified herein.

References to the "Caltrans Standard Specifications" shall mean the 2015 Edition of the California Department of Transportation Standard Specifications with amendments as provided with the Contract Documents; "Revised Standard Specifications", with the following exceptions: References to Caltrans Standard Specifications Sections 2 thru 9 shall not apply to the work of the Contract. The Contract Documents and Specifications, and Special Provisions of this Contract shall be substituted for any references to Caltrans Standard Specifications Sections 2 thru 9. Caltrans Standard Specifications Section 1 – Definitions and Terms shall apply only to the requirements of the Special Provisions and Plans.

The Standard Specifications set forth above will control the general provisions, construction materials, and construction methods for this contract, except as

amended by the Plans, Special Provisions, or other contract documents. The following Special Provisions are supplementary and in addition to the provisions of the Standard Specifications, unless otherwise noted. ONLY THOSE SECTIONS REQUIRING MODIFICATIONS, AMENDMENTS, SPECIFYING OF OPTIONS, OR ADDITIONS ARE CALLED OUT.

2-5.1.2 Standard Plans

Unless specifically noted otherwise, references to the following Standard Plans, current as of the date of the Bid Advertisement, are as follows:

- a. County of Los Angeles Standard Plans, herein after referred to as the County of Los Angeles Standard Plans.
- b. Standard Plans for Public Works Construction, promulgated by Public Works Standards, Inc, 2012 Edition, herein after referred to as the SPPWC Standard Plans.
- c. California Department of Transportation Standard Plans, 2015 Edition, herein after referred to as Caltrans Standard Plans.
- d. Southern California Edison – Underground Structures Standards (UGS) herein after referred to as UGS. The latest edition is available on the Southern California Edison (SCE) Website: www.sce.com

As a convenience to the Contractor, some of the Agency Standard Plans referenced in the Plans have been included in the Project Appendices.

2-5.3 Submittals.

2-5.3.1 General. ADD the following:

CONTRACTOR shall review, approve, and submit to Agency all working and shop drawings, product data, samples, or similar submittals required by this Contract, or that are necessary for its proper completion in a sequence that causes no delay in the Work, or in the work of Agency or any other Agency contractor. CONTRACTOR shall review all working and shop drawings, product data, samples, or similar submittals prepared by it and its subcontractors and suppliers at any tier, shall check for completeness and compliance with the contract requirements, and shall check that the work depicted by the submittal has been coordinated with other work.

By submitting working and shop drawings, alternative construction methods, product data, samples, or similar submittals, CONTRACTOR represents that it

has determined and verified all related materials, measurements, and construction criteria, and that it has checked and coordinated the information contained within its submittals with the requirements of the Work and this Contract.

CONTRACTOR shall not be relieved of responsibility for any deviation from the requirements of this Contract by Agency's approval of shop and working drawings, product data, samples, plans, programs, schedules, or similar submittals unless CONTRACTOR has specifically informed Agency at the time of submittal, in writing, of the deviation and Agency has given written approval of the specific deviation. CONTRACTOR shall not be relieved of its responsibility for errors or omissions in working and shop drawings, product data, samples, plans, programs, schedules or similar submittals by Agency's approval of the submittal.

CONTRACTOR shall not deviate from approved working and shop drawings, product data, samples, or similar submittals without Agency's written approval.

CONTRACTOR shall not commence any portion of the Work requiring submission of shop or working drawings, product data, samples, or similar submittals until the required submittal has been approved by Agency.

CONTRACTOR shall direct specific attention, in writing or on resubmitted shop and working drawings, product data, samples, or similar submittals, to revisions other than those required by Agency on previous submittals.

Specific requirements for the submittal of shop and working drawings, product data and samples are contained in the Special Provisions and the Technical Specifications.

Full compensation for furnishing all working and shop drawings, product data and samples shall be considered as included in the prices paid for the Contract items of Work to which such drawings relate and no additional compensation will be allowed.

2-5.3.2. Work Drawings. *ADD the following:*

Working drawings may consist of drawings, diagrams, schedules, or other data prepared by CONTRACTOR, or any subcontractor of any tier, manufacturer, supplier or distributor, as are necessary to adequately control the Work or to illustrate or detail some portion of the Work. No change shall be

made by CONTRACTOR in any working or shop drawing after it has been approved by Agency.

Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, or other information furnished by CONTRACTOR to illustrate materials, products, systems, or equipment for some portion of the Work.

Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work shall be judged.

Working drawings, product data, samples, and similar submittals shall not modify any Contract requirement, except as expressly allowed by this Contract. The purpose of their submittal is to demonstrate, for those portions of the Work for which submittals are required, the way CONTRACTOR proposes to comply with Contract requirements.

2-5.3.3. Shop Drawings. *ADD the following:*

The CONTRACTOR shall submit two (2) legible paper copies and one Adobe Acrobat "pdf" file, on a labeled compact disk of complete and detailed working and shop drawings to the Agency. Such drawings shall include but not be limited to:

- Fabrication and erection drawings, schedule drawings and manufacturer's scale drawings. If requested by the Agency, CONTRACTOR shall furnish calculations and information substantiating the details shown on the drawings satisfactory to the Agency.
- Plans for temporary structures, and for such other work as may be required for construction, which does not become an integral part of the completed project. The CONTRACTOR shall submit the calculations and other information needed to describe in detail the temporary structures or systems and their intended use.

The CONTRACTOR shall submit two (2) copies and one Adobe Acrobat "pdf" file, copied to a labeled compact disk or USB flash drive, any supporting data such as manufacturers' literature, calculations, diagrams, etc. for all items that are 8.5" x 11" size.

The Adobe Acrobat "pdf" files of the drawings and supporting data for the same submittal shall be copied to the same compact disk. Each file name of the pdf files on the disk shall include a clear and concise description of the file contents such that the file does not need to be opened to determine the nature of document. E-mail transmission of pdf submittal files is not acceptable.

Time for Submittals

The CONTRACTOR shall submit drawings, data and schedules sufficiently in advance of construction requirements, and as indicated. Unless otherwise specified, the CONTRACTOR can assume that the Agency will review and return all submittals within twenty (20) calendar days after receipt of a complete submittal. For purposes of calculating the number of anticipated review days, any submittal received by Agency at the designated delivery office after 1:00 PM shall be considered to have been received on the next working day. Incomplete submittals will be identified as unacceptable and un-reviewed with comments describing the deficiencies, and the Agency will retain all copies.

Variations

If drawings show variations from contract requirements because of standard shop practice or for any other reason, such variations shall be described on the Submittal Transmittal form of the submittal.

- The Agency may approve or reject any or all variations.
- If variations result in an adjustment to the contract price or time for performance, the adjustment shall be subject to approval by the Agency.
- Failure to describe variations shall not relieve the CONTRACTOR from the responsibility of executing the work in accordance with the Contract, even though such drawings have been accepted.

Corrections

If corrections to the submitted drawings are required, each print will be marked "MAKE CORRECTIONS NOTED" or "AMEND AND RESUBMIT" and the required corrections will be explained. One (1) copy will be returned for correction by the CONTRACTOR.

Re-submittals

Re-submittals will be handled in the same manner as first submittals, and the same review time shall apply.

- Specific attention shall be directed to any revisions to the previously submitted drawings other than those requested by the Agency on the previous submittals by an accompanying letter or on the resubmitted drawings.
- If any corrections or review notations shown on the returned drawings constitute a change of contract requirements, the Agency shall be notified in accordance with the Change Request notice provisions of the General Conditions, and prior to proceeding with any changed work.

Acceptance

If accepted by the Agency, each copy of the drawing will be stamped and dated indicating acceptance. One paper copy or pdf copy will be returned.

The approval of drawings and schedules by the Agency will be general and shall not be construed as:

- Permitting any departure from the contract requirements,
- Offering relief from the responsibility for any errors, or omissions including details, dimensions, and materials, or
- Approving departures from details furnished by the Engineer, except as otherwise provided in the Technical Specifications.

Changes

When working and shop drawings have been completed to the satisfaction of the Agency, the construction shall be carried out in accordance with such drawings, and no changes shall be made thereon except upon written direction from the Engineer. During execution of the work, the CONTRACTOR shall use only copies of drawings and data sheets that are either stamped "MAKE CORRECTION NOTED" or "NO EXCEPTIONS TAKEN" and bear the Agency's approval stamp and other notations.

Damages

The CONTRACTOR shall take responsibility for, and bear all cost of, damages that may result from ordering material or from proceeding with work before approval by the Agency.

Payment

The CONTRACTOR shall receive no separate payment from the Agency for complying with the above requirements and is presumed to have allocated such costs to its bid prices.

2-5.3.4 Supporting Information

Cover Letter Submittals shall be accompanied by a "Submittal Transmittal" form neatly and properly filled out, in a style and format acceptable to the AGENCY. At a minimum, the transmittal form shall contain:

- Submittal identification (tracking) number,
- Submittal description,
- Referenced Technical Specifications and/or Contract Drawings,
- Contract number and project name, and
- Name of the CONTRACTOR and Subcontractor originating drawing.

2-5.3.5 Request for Information

Add the following:

The Agency, in response to an inquiry from CONTRACTOR, may provide written instructions consistent with the intent of and reasonably inferable from the contract documents to make certain requirement(s) of the drawings or plans clearly understood. Drawing clarifications/plan clarifications may be sketches, drawings, or in narrative form, and will not change any requirement of the drawings or plans.

In the event that CONTRACTOR, subcontractor or supplier, at any tier, determines that some portion of the drawings, specifications or other contract documents requires clarification or interpretation by the Agency, CONTRACTOR shall submit a Request for Information (RFI) in writing to Agency. Requests for Information may only be submitted by CONTRACTOR and shall only be submitted on the Request for Information form provided by Agency.

CONTRACTOR shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from Agency.

If Agency determines that a submitted RFI is not a Request for Information within the meaning of this Contract, it will be identified as a non-conforming RFI, and returned to CONTRACTOR, un-reviewed as to content.

Non-conforming RFIs include:

1. RFIs that do not include a detailed statement of the clarification requested.
2. When the RFI form is used as a CONTRACTOR request for a Change in the Work.
3. When the RFI form used as a request for additional payment.
4. When the RFI form used to request additional contract time.
5. When the RFI includes multiple unrelated issues in one RFI; instead, use one RFI for each issue.
6. RFIs that request information that is clearly shown on the Plans, Specifications, Change Orders, other Contract Documents, answered RFIs, Submittals, and prior project-related communications.
7. RFIs that request information of an item that is clearly not part of the Contract Work.
8. Questions about coordination of work with the City, the County, a separate contractor, utility company, property owner or other entity.
9. RFIs that request information from the Agency not related to a clarification or interpretation of the Contract Documents.

Non-conforming RFIs will be processed by the Agency at the CONTRACTOR's expense. Upon receipt of a non-conforming RFI, the Agency will return the RFI to the CONTRACTOR unanswered, and will include a notation that the RFI is "non-conforming."

In the Request for Information CONTRACTOR shall set forth its own interpretation or understanding of the requirement along with the reasons why it has reached such an understanding. Each page of the attachments to the RFI shall bear the RFI number and the subcontractor name in the lower right corner. RFIs may be submitted only on regular work days.

The CONTRACTOR shall endeavor to keep the number of RFIs to a minimum by thoroughly examining all Plans, Specifications, Change Orders, answered RFIs, Submittals, and prior project-related communications to insure that the requested information does not already exist. RFIs that request information available in the Contract Documents or previously-issued communications will be declared a "non-conforming RFI" and returned unanswered by the Agency.

Responses to Requests for Information shall be issued within five (5) working days of receipt of the request from CONTRACTOR unless Agency determines that a longer period of time is necessary to provide an adequate response. If a longer period of time is determined necessary by Agency, Agency will, within five (5) working days of receipt of the request notify CONTRACTOR of the anticipated response time. The five (5) working days referred to herein will start on the date stamped received "In From Contractor" by Agency and depends on the date stamped "Out to Contractor" by Agency. If CONTRACTOR submits a Request for Information on an activity with five (5) working days or less of float on the current project schedule, CONTRACTOR shall mark the Request for Information as "Critical." CONTRACTOR shall not be entitled to any time extension due to the time it takes Agency to respond to such critical request provided that Agency responds within the five (5) working days set forth above.

Responses from Agency will not change any requirement of the Contract documents unless so noted in the response to the Request for Information. In the event CONTRACTOR believes that a response to a Request for information will cause a change to the requirements of the Contract, CONTRACTOR shall immediately give written notice to Agency shall not proceed with the work indicated by the reply to the RFI until authorized to proceed by the Agency. Failure to give such written notice shall waive CONTRACTOR's right to seek additional time or cost.

Any RFI reply that the CONTRACTOR believes does not adequately answer the question shall be the subject of a new RFI which references the previous RFI reply using the previous RFI number and reply date.

2-7 SUBSURFACE DATA

Add the following:

Where Agency has included or referred to soil boring information, utility investigation, or other data about the existing site conditions in the Contract, they are included for CONTRACTOR's information only and Agency does not guarantee the accuracy of the information contained therein.

2-9 SURVEYING

2-9.2 Survey Service

Add the following:

The Agency will provide construction staking for this project except as provided herein. The CONTRACTOR shall mark and lay out removal limits, limits of work, and wheelchair ramps in the field at the CONTRACTOR's expense. If such work cannot be determined from existing features, the Engineer will provide assistance as needed. Payment for said work shall be included in other items of work and no additional compensation will be allowed therefore.

To maintain survey centerline ties, the CONTRACTOR shall notify the Engineer two (2) working days prior to the removal of a curb return or wheelchair ramp.

The Agency shall supply one set of construction stakes for each item of construction (except as noted above) as deemed necessary by the Engineer. **Any additional construction stakes requested for the convenience of the CONTRACTOR shall be paid for by the CONTRACTOR at a rate of \$370 per hour.**

The CONTRACTOR is responsible for maintaining a safe and orderly job site per OSHA standards. **Any delays incurred by the survey crew which are caused by interference of the CONTRACTOR's operations, equipment or materials shall be paid for by the CONTRACTOR at a rate of \$370 per hour.**

The CONTRACTOR shall furnish traffic control as necessary to provide a work area free of public and construction traffic for construction surveys any monument preservation. Traffic control shall conform to the requirements of the "Watch Area Traffic Control Handbook" (WATCH), the Plans and these Special Provisions. Payment to provide Traffic Control for Survey shall be included in other items of work and no additional compensation will be allowed therefore.

Stakes and marks set by the Agency shall be carefully preserved by the CONTRACTOR. If such stakes and marks are destroyed or damaged, they will be replaced at the Agency's earliest convenience. The CONTRACTOR will be charged for the cost of necessary replacement or restoration of stakes and marks which, in the judgment of the Agency, were carelessly or willfully destroyed or damaged by the CONTRACTOR's operations. This charge will be deducted from any monies due or to become due the CONTRACTOR.

The CONTRACTOR shall be responsible for proper scheduling of survey requests. The CONTRACTOR shall also be responsible for notifying the Engineer if the job site will not be "ready" for the requested staking at least two hours prior to the scheduled survey crew arrival time. Any significant on-site delays incurred by the survey crew, resulting from the CONTRACTOR or job site not being "ready" for the staking that was requested, at the time requested, shall be paid for by the CONTRACTOR at a rate of \$370 per hour. If the survey crew arrives at the job site at the time scheduled, but is instructed by the CONTRACTOR to leave and return at a later time, and the CONTRACTOR did not provide at least a two hour reschedule notice, the CONTRACTOR will be charged an amount equivalent to one hour at a rate of \$370 per hour.

Any on-site delays, cancellations, or reschedules, and reasons therefore, incurred by the survey crew will be tracked by the Survey Party Chief on the Construction Staking Request form.

- The Agency considers the site "ready" if it is clear of obstructions, removals and moving equipment in the length requested on the Construction Staking Request form. The site may be deemed not "ready" by the Survey Party Chief if the above conditions are not met or if personal safety is questionable.

Clarification of Survey work within Caltrans Jurisdiction: The Agency will provide POST (after Construction) survey verification for Americans with Disability Act (ADA) compliance as specified in Technical Specification F of this contract. The CONTRACTOR is responsible for performing PRE (before Construction) verification of the existing facilities for conformance with ADA compliance. The CONTRACTOR will be charged at a rate of \$370 per hour for POST verification survey for items not in compliance which requires re-verification.

2-12 SPECIAL NOTICES

Add the following:

All notices and other communications concerning this Contract shall be written in English, shall bear the number assigned to this Contract. Notices and other communications may be delivered personally, by private package delivery, by FAX, or by regular, certified, or registered mail.

The names of the authorized representatives for each of the parties and their addresses to which communications and correspondence should be delivered will be established and made known to the other party at the pre-construction meeting.

A notice to Agency will be effective only if it is delivered to Agency's Authorized Representative at the address to be made known to CONTRACTOR at the pre-construction meeting.

A notice to CONTRACTOR will be effective only if it is delivered to CONTRACTOR's Authorized Representative at the address to be made known to Agency at the pre-construction meeting.

Any notice document or other submission identified to be submitted to a property owner, other agency, City, railroad owner or operator, utility company, or any other third party, shall be submitted to the Agency, who will forward the notice document or submittal to the other entity, and who will return the response to the CONTRACTOR. When scheduling its work, the CONTRACTOR shall add seven (7) days to any specified time frames for submissions of notices or submittals to other entities for the Agency's Authorized Representative to facilitate the submission.

When the Contract Documents require that the CONTRACTOR "coordinate with" or "contact" a property owner, other agency, City, railroad owner or operator, utility company, or any other third party, or representatives of those other entities, the CONTRACTOR shall first contact the Agency, who will facilitate the communications with the other entities, will arrange meetings, and coordinate inspections and interface between the other entity and the CONTRACTOR.

SECTION 3 – CHANGES IN WORK

3-1 CHANGES REQUESTED BY THE CONTRACTOR

3-1.1 General

Add the following:

CONTRACTOR may make a written request to Agency to modify the Contract based upon the receipt of, or the discovery of, information that the CONTRACTOR believes

changes the scope of work, price, schedule, level of performance, or other facet of the Contract.

CONTRACTOR shall first notify Agency in writing within seven (7) calendar days after receipt of or the discovery of information, or the occurrence of an event, or any actions of Agency or its agents, that CONTRACTOR believes will cause a change to the scope of work, price, schedule, level of performance, or other facet of the Contract. The notice shall state the reason(s) for the CONTRACTOR's belief that a change has occurred and the nature of the additional costs that it believes it will incur. Such notice shall be submitted prior to the submission of a Change Request.

CONTRACTOR shall deliver a document entitled "Change Request" to Agency within thirty (30) calendar days after receipt of, or the discovery of, information (other than receipt of a "Change Notice") that CONTRACTOR believes will cause a change to the scope of work, price, schedule, level of performance, or other facet of the Contract.

All Change Requests, and any Claims based thereon including any request or claim for cumulative impact costs or delay costs shall be deemed waived unless notice is provided to Agency as stated above within seven (7) calendar days after receipt of or the discovery of information, or the occurrence of an event, or any actions of Agency or its agents, and unless a Change Request is delivered to Agency within the thirty (30) calendar days specified herein.

The Change Request shall include information necessary to substantiate the effect of the change and any impacts to the work, including any change in schedule or Contract Price, and shall include all existing cost and schedule supporting documentation or a description of anticipated documentation. In addition, the Change Request shall contain a detailed description of the proposed adjustment to the Contract Price or currently approved progress schedule, or both, and shall reference any other provisions of the Contract that will require modification because of the change. If a Change Request proposes an adjustment in the Contract Price, CONTRACTOR shall submit a complete breakdown of costs including detailed pricing information and back up for all work and any impacts thereto contemplated by the change.

The unavailability of all information necessary to quantify the change shall not excuse the timely submission of the Change Request. CONTRACTOR shall supplement the Change Request with additional information or documentation, as it becomes available. If Agency has not received sufficient substantiating documentation or

information within a reasonable time after receipt of the Change Request, such insufficiency may be grounds to deny the Change Request.

If a Change Request or portions thereof are acceptable to Agency, Agency will issue a Contract Change Order consistent therewith. If a Change Request or portions thereof are not acceptable to Agency, Agency shall notify the CONTRACTOR in writing.

Any request by CONTRACTOR to modify the contract must first be submitted to Agency and proceed as a Change Request pursuant to these provisions. The CONTRACTOR may submit the matter as a Claim only if, 1) the Change Request has been denied by Agency in whole or in part, or 2) the Change Request has not been resolved within ninety (90) days after receipt by Agency.

In the event of a dispute, CONTRACTOR shall proceed with the Work without delay, as directed by Agency.

3-2 CHANGES INITIATED BY THE AGENCY

3-2.1 General

Add the following:

Agency may, at any time during performance of the Contract notify CONTRACTOR of changes to the Contract by issuing a Change Directive to that effect. CONTRACTOR shall, within fifteen (15) calendar days after receipt of such Change Directive, provide to Agency a written response identifying any proposed adjustment in Contract Price, including any adjustment for impact costs and/or schedule delays or schedule modifications to perform the changes identified in the Change Directive, unless another time period for response is specified in the Change Directive.

If Agency directs CONTRACTOR to perform additional work, the basis for compensation for such work shall be either, or a combination of: 1) an increase or decrease in the quantity of Contract items, 2) a negotiated lump sum price, or 3) force account work, as determined by Agency. Upon agreement with the CONTRACTOR, Agency shall issue an appropriate Change Order.

If the CONTRACTOR and Agency cannot agree on the appropriate adjustment to the Contract Price or schedule, CONTRACTOR may either accept Agency's determination or identify and submit the matter as a Claim. In the event of a dispute, CONTRACTOR shall proceed with the Work without delay as directed by Agency.

3-4 CHANGED CONDITIONS

Add the following:

3-4.1 Hazardous Materials

The CONTRACTOR shall submit Cal-OSHA Material Safety Data Sheets (MSDS) no later than ten (10) days after Notice to Proceed for all hazardous materials that it intends to bring onto the project site, including but not limited to: asphalts, solvents, adhesives, epoxy resins, roofing, sealants and bonding agents. If the CONTRACTOR later determines that it needs to bring hazardous materials onto the project site, it shall submit the MSDS no later than ten (10) days before the material's planned use.

The CONTRACTOR shall comply with the requirements within Caltrans Section 14 Standard Specifications and of the Project SSPs for Aerially Deposited Lead, Yellow Paint, Asbestos Pipe, and Treated Wood Waste, within the Project area.

3-5 DISPUTED WORK

3-5.1 Claims

3-5.1.1 Claim Defined

"Claim" means a separate demand by CONTRACTOR for (a) a time extension, (b) payment of money or damages arising from work done by, or on behalf of, CONTRACTOR pursuant to the Contract and payment of which is not otherwise expressly provided for or that CONTRACTOR is not otherwise entitled to as determined by the Agency in response to a CONTRACTOR Change Request, or (c) an amount the payment of which is disputed by Agency.

3-5.1.1 Claim Requirements

CONTRACTOR shall submit to Agency a Notice of Claim within seven (7) calendar days after receipt of or the discovery of information, or the occurrence of an event, or any actions of Agency or its agents, that CONTRACTOR believes will result in a Claim. The Notice of Claim shall state the reason(s) for the Claim and the nature of the additional costs that it believes it will incur. Such notice shall be submitted prior to the submission of the Claim documentation described below, unless the Claim is submitted within the seven (7) day period for providing notice.

1. Any submittal intended by the CONTRACTOR to be evaluated by Agency as a Claim shall be entitled "Claim."
2. All claims shall be submitted by the CONTRACTOR within thirty (30) days after the date of the event giving rise to the Claim, such as, for example, the denial by Agency of a Change Request, the failure of Agency to respond to a Change Request within ninety (90) days after receipt of required substantiating information and documentation, or the issuance by Agency of a disputed Change Order. Any Claim not submitted within the specified thirty (30) days shall be deemed waived.
3. Claims shall be in writing and must be submitted with all documents necessary to substantiate the Claim. A Claim must state in as much detail as possible the basis for the Claim and the additional compensation or extra time to which CONTRACTOR believes it is entitled. If the Claim is silent regarding entitlement to extra time, CONTRACTOR shall be entitled to no extra time in connection with the Claim. If the Claim is silent regarding additional compensation, CONTRACTOR shall be entitled to no additional compensation in connection with the Claim.
4. CONTRACTOR must notify the Agency promptly in writing of any changes in its previously submitted estimates of additional compensation or extra time, and the notification must state the reasons for the changes.
5. No Claims shall be filed later than the date of final payment.
6. All Claims and any amendments thereto shall include the fully executed certification set forth below. Any Claim submitted without a fully executed certification shall be rejected by Agency and returned to the CONTRACTOR.

I, _____, BEING THE _____ (must be an officer)

OF _____ (Contractor), DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, AND DO PERSONALLY CERTIFY AND ATTEST THAT I HAVE THOROUGHLY REVIEWED THE ATTACHED CLAIM FOR ADDITIONAL COMPENSATION AND/OR EXTENSION OF TIME, AND KNOW ITS CONTENTS, AND SAID CLAIM IS MADE IN GOOD FAITH; THE SUPPORTING DATA IS TRUTHFUL AND ACCURATE; THAT THE AMOUNT REQUESTED ACCURATELY REFLECTS THE CONTRACT ADJUSTMENT FOR WHICH THE CONTRACTOR BELIEVES THE OWNER IS LIABLE; AND, FURTHER, THAT I AM FAMILIAR WITH CALIFORNIA PENAL CODE AND CALIFORNIA GOVERNMENT CODE PERTAINING TO FALSE CLAIMS, AND FURTHER KNOW AND UNDERSTAND THAT SUBMISSION OR CERTIFICATION OF A FALSE CLAIM MAY LEAD TO FINES, IMPRISONMENT, AND/OR OTHER LEGAL CONSEQUENCES.

By _____

3-5.1.3 Claim Review

Agency shall respond in writing to CONTRACTOR's Claim within forty-five (45) calendar days after Agency's receipt of the Claim or Agency may request in writing, within thirty (30) days of receipt of the Claim, any additional information or documentation supporting the Claim that the CONTRACTOR must submit before the Claim can be fully evaluated.

The Agency's written response to the Claim, as further documented, shall be submitted to CONTRACTOR within fifteen (15) days after receipt of the further information or documentation, or within a period of time no greater than that taken by the CONTRACTOR in producing the additional information, whichever is greater.

3-5.1.4 Claim Settlement Conference

If CONTRACTOR disputes Agency's written response, or if Agency fails to respond within the time prescribed, CONTRACTOR may so notify agency, in writing, either within fifteen (15) days of receipt of Agency's response or within fifteen (15) days of Agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and discuss settlement of the issues in dispute. Upon a demand, Agency shall schedule a claim settlement conference within thirty (30) days for possible settlement of the dispute.

The claim settlement conference shall be structured and attended as described below, or as mutually agreed prior to the conference.

Attendance by: Authorized representative of the Agency
Agency's Construction Program Director, referred to here as an "officer," Authorized representative of the CONTRACTOR, Principal or officer of the CONTRACTOR, Authorized representative of any involved subcontractor, Principal or officer of any involved subcontractor, and Support Staff: The authorized representatives of the parties may each have a maximum of two support staff also attend the conference and give part of the presentation and answer questions.

Agenda:

- 1.) Authorized representative of the Claimant briefly presents its Claim orally to the attendees. Handouts and exhibits summarizing the Claim and the issues are permitted. At least one complete copy of the Claim and all supporting documents shall be available in the meeting room.
- 2.) Authorized representative of the Agency briefly presents its defense of the Claim orally. Handouts and exhibits are permitted. At least one complete copy of previously transmitted rebuttals to the Claim by Agency shall be available in the
- 3.) The principals / officers of each party are allowed to ask questions of the presenters once all parties have made their presentations.
- 4.) The Authorized representatives of the parties are excused from the meeting room, and the principals / officers attempt to reach a settlement of the Claim.
- 5.) Authorized representatives and support staff may be recalled to the meeting room to answer questions, or clarify statements or facts.
- 6.) If an agreement is reached, it is reduced to writing and the principals / officers of the parties sign the agreement before the meeting is ended.
- 7.) If an agreement is not reached, the parties can either agree to a second session, within five (5) days, or agree that settlement of the Claim or any portion is not possible.

Following the claim settlement conference, if the Claim or any portion remains in dispute, CONTRACTOR may file a Government Code claim as provided in Chapter 1 (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 Government Code claim must be filed shall be tolled from the time CONTRACTOR submits its written Claim pursuant to the above provisions until the time the Claim is denied as a result of the claim settlement process, including any period of time utilized by the claim settlement process.

The above procedures do not apply to Government Code claims for tort damages and are not intended, and shall not be construed, to change the time for filing such claims.

Add the following:

3-6 REJECTED WORK

All work that has been rejected shall be remedied, or removed and replaced by CONTRACTOR in a manner acceptable to Agency, and no compensation will be made for such removal, replacement or remedied work.

Any work performed outside of the limits of Work shown on the drawings or established by Agency, or any extra work done without written authorization of Agency will not be paid for. Upon order of Agency such unauthorized work shall be remedied, removed or replaced at CONTRACTOR's expense.

If CONTRACTOR fails to comply promptly with any such order of Agency, Agency may cause the rejected or unauthorized work to be removed, replaced, or remedied by its own or other forces, and to deduct the costs thereof from any moneys due to CONTRACTOR and/or through a deductive contract change order.

SECTION 4 – CONTROL OF MATERIALS

4-1 MATERIALS AND WORKMANSHIP

4-1.3 Inspection Requirements

4-1.3.1 General

Add the following:

The CONTRACTOR is responsible for all Quality Control testing and inspections. The test results and inspections shall ensure that all materials incorporated into the project are in compliance with the contract requirements. Testing frequencies shall be in accordance with Project Quality Management Plan (QMP) (which is included in the Project Appendices), "Frequency Tables" Exhibit 16-R of the Caltrans Local Assistance Procedures Manual or in accordance with the frequency specified in elsewhere the Special Provisions, whichever is the most stringent. If testing

frequencies for an element of work are not identified in any contract document, CONTRACTOR shall recommend a frequency of testing, subject to approval of the Engineer, and/or a minimum of ten (10) days prior to starting the element of work.

The AGENCY may perform independent quality assurance testing and inspections (in addition to the Quality Control testing and inspections that are required to be performed by the CONTRACTOR) to verify accuracy and compliance with the contract requirements.

For work within City Right-of-Way, testing methods will be in accordance with Project Quality Management Plan (QMP), "Testing Procedures" (Local Assistance Procedures Manual (LAPM), Exhibit 16-S), which is included in Project Appendices, for the CONTRACTOR's reference, but the CONTRACTOR shall be responsible for attaining the latest edition in effect at the time of bid advertisement. Sampling locations and testing frequencies shall be in accordance with Project Quality Management Plan (QMP), "Frequency Tables" (LAPM, Exhibit 16-R), which is included in Project Appendices, and/or the contract specifications. For fabricated or manufactured material inspection, checks and test shall be done according to Table 6-2.2, Inspection of Fabricated and Manufactured Materials, of the Caltrans Construction Manual.

The CONTRACTOR shall notify the Engineer at least two (2) full working days prior to commencement of any construction requiring testing.

For work within the Caltrans Right-of-Way, testing methods shall be in accordance with Chapter 6, Sampling and Testing, of the Caltrans Construction Manual, which is included in Project Appendices, for the CONTRACTOR's reference, but the CONTRACTOR shall be responsible for attaining the latest edition in effect at the time of bid advertisement.

All material testing for the drainage facilities shall be provided by the CONTRACTOR in accordance with the number, location, and frequency requested by the AUTHORITY. The CONTRACTOR shall notify the Engineer a minimum of two (2) full working days prior to D-Load testing of RCP for verification of test results.

4-1.3.2 Inspection by the Agency

Add the following:

Agency may perform independent quality assurance testing and inspections to verify accuracy and compliance with the contract requirements. Agency shall at all times

have access to the Work and shall be furnished every reasonable facility for verifying that the materials and workmanship conform to the requirements of the Contract. Agency may test and inspect, either at CONTRACTOR's, subcontractor's or supplier's facility, all components, subsystems or workmanship prior to assembly of such components into the Work and prior to acceptance of the Work by Agency, as defined in Section 6 of the General Provisions. Following such testing and inspection, Agency will issue a deficiency list to CONTRACTOR listing those items that fail to comply with the Contract. Agency may either reject or require correction of defective material, workmanship, or nonconformity to this Contract. CONTRACTOR shall, at its own expense, make available tools, pits, hoists, scaffolds, platforms, other equipment, facilities, drawings, and assistance as may be necessary for inspections or tests by the Agency.

Costs of the Agency quality assurance testing and inspections shall be borne by Agency and shall not be a part of the Contract Price. Costs of Agency quality assurance testing required because of failed tests and Agency re-inspection costs caused by non-compliant work shall be charged to CONTRACTOR. The Agency's performance of, or the failure to perform, such inspections or tests shall not relieve CONTRACTOR of any responsibility for complete Contract performance. Where shop inspection is required by the terms of the Contract, CONTRACTOR shall notify Agency at least ten (10) days prior to the requirement for a shop / source inspection so that Agency may elect to perform Agency quality assurance inspections at the same time as the CONTRACTOR's QC inspector.

Add the following:

4-1.10 Long Lead Materials and Equipment

Upon receipt of the Notice to Proceed from the AGENCY, the CONTRACTOR, within fourteen (14) days, shall submit the materials list for approval. Subsequent to the AGENCY's approval of the list of materials, the CONTRACTOR shall order traffic signal equipment and poles and all other materials with long lead times. The Engineer shall be furnished with documentation on the vendor's or supplier's letterhead or order acknowledgement form, verifying that the order for the long lead time material or equipment has been received and accepted by the vendor.

The following list is intended to summarize the materials with long lead times. The durations are estimates, provided for the CONTRACTOR's convenience, are not guaranteed to be accurate, and the listing may not include all long lead items.

Signals & Lighting

- Signal poles & Mast arms (16-20 weeks)
- Controller cabinets (16-20 weeks)
- Street light poles (16-20 weeks)
- Bus Shelters (shelters, benches, trash receptacles) (16 to 20 weeks)
- Banner poles (16- 20 weeks)
- Branding sign poles (16-20 weeks)

Add the following:

4-2 RECYCLING OF MATERIALS

The City of Commerce has adopted Ordinance No. 618, which requires recycling. A minimum of 50% of the solid waste generated by the project must be diverted from landfills by recycling. The CONTRACTOR shall submit a monthly report with weights of all demolition materials and their ultimate disposition. The Construction and Demolition Waste Management Plan Form, to be used, is included.

No additional compensation shall be allowed for the development and execution of the Construction and Demolition Waste Management Plan, tracking of waste disposal, or recycling or disposal fees.

SOLID WASTE DISPOSAL AND RECYCLING REPORT - INSTRUCTIONS

Section 1: To be completed by the contractor

Project Name: Give a brief description of the project.

Type of Work: Enter a general work description, e.g. "AC Grinding" Widening, Reconstruction, Overlay

Ongoing Report: Checking this box means this is a report for a continuing project. More monthly reports will follow.

Final Report: Checking this box means this is the last report before contract acceptance.

Project Number: Enter Project Number

Report for Month/Year: The month/year for which data was collected [Note: A separate report is needed for each month].

Company Information: Contractor Name, Phone Number, Fax Number, Street Address, City, State and Zip

Contractor Certification: I certify under penalty of perjury that the information provided in this form is complete and accurate.

Contractor should verify the data entered on this form, then sign the report and print your name, title, and date.
Return this report to the project engineer by the 10th of the following month or within 15 days of final work.

Section 2: To be completed by the contractor

To count towards diversion, "solid waste" is defined as including any solid waste which would normally be disposed of at a disposal facility (PRC Section 41781 (b))

NAME AND LOCATION OF RECYCLING OR DISPOSAL FACILITY (or enter "reused" for materials generated and reused on this job)

Each address should be checked as either landfill or recycler. When using a recycling facility that exists inside a landfill, check recycler and do not check landfill. When the solid waste is generated and reused on the job, the word "Reused" should be entered in place of the address.

TYPE OF MATERIAL: Please enter a number for each activity one per line:
1 = Source-Separated Materials Recycling; 2 = On-Site Reuse; 3 = Mixed Debris Recycling; 4 = Reuse of Salvageable Items; 5 = Disposal at Landfill; 6 = Transfer Station; 7 = Other [Describe the activity when "Other" is selected]

AMOUNT TAKEN TO LANDFILL (Tons): Enter the amount of any solid waste, in tons, that is generated on this project and taken to a landfill and attach copies of weight tickets.

AMOUNT DIVERTED FROM LANDFILLS TO A RECYCLING FACILITY (Tons): Enter the amount of any solid waste, in tons, that is generated on this project and taken to a recycling facility and attach copies of weight tickets.

Solid waste from this job that is used in other projects, given to other agencies (county, city etc.) or given to private individuals for reuse will be entered as taken to a recycling facility. In this case, check the activity as "Other" and describe who gets the solid waste in the row for other activity. (e.g. given to county, city or developer)

AMOUNT GENERATED AND THEN REUSED ON THIS JOB (Tons): Enter the amount of any solid waste, in tons, that is generated on this project and reused.

TOTAL (TONS) Total amount taken to landfill + amount recycled + amount reused.

% DIVERTED Total recycled + total reused + total tons x 100

These conversion factors may be found at the California Integrated Waste Management Board's (CIWMB) web site at:
<http://www.ciwmb.ca.gov/LOI/Inventory/DSG/Appendix.html#Conversion>

Section 3: To be completed by the project engineer

I have reviewed the information submitted in this report for completeness.

Project engineer please review the report. If the form is complete, sign and print your name, phone number, and date.
Discuss and resolve with the contractor any deficiency on the form.

The project engineer shall submit the completed form to the appropriate City representative by the 20th of the following month or within 30 days of final work.

FILE 02, E. SPECIAL PROVISIONS, GREEN BOOK, Sections 1-9

Public Improvement
DAILY/WEEKLY SOLID WASTE RECYCLING REPORT

Use your daily weight receipts to fill in the table below and submit receipts attached with this form.

Project Name:

Contractor:

Project No.

Subcontractor:

Month/Year:

Material	Recycled		Reused		Disposed (tons)	Total Quantity Generated	Facility Used/Destination
	Volume	Weight	Volume	Weight			
Example: Dirt 10yd³ = 18,000lbs	NA	5 tons	10yd³	9.5 tons	10 tons	24.5 tons	Recycle - Azusa Land Reclamation Reuse - on job site for grading Dispose - Puente Hills Landfill
Asphalt 1yd³ = 1,360lbs							
Brick 1yd³ = 3,024lbs							
Building Materials (ceiling tile, fixtures, etc.)							
Cardboard, paper 1yd³ = 1000lbs							
Carpet/Carpet Padding 1yd³ = 84.4lbs							
Concrete 1yd³ = 1,656lbs							
Dirt 10yd³ = 18,000lbs							
Glass 1yd³ = 2,160lbs							
Green Waste 40yd³ = 4,320lbs							
Gypsum/Dry Wall 1yd³ = 3,834lbs							
Metals 1yd³ = 800lbs							
Mixed C&D (commingled, recyclable)							
Plastic 1yd³ = 22,560lbs							
Rock 1yd³ = 2,570lbs							
Roofing 1yd³ = 418.5lbs							
Tile (ceramic) 1yd³ = 1,214lbs							
Wood (lumber, doors, etc.) 1yd³ = 328.5lbs							
Refuse	NA	NA	NA	NA			
Other							
Totals							

Total Recycled _____ + Total Reused _____ = _____ + Total Quantity Generated _____ x 100 = _____ %

**PUBLIC IMPROVEMENT
DAILY/WEEKLY SOLID WASTE RECYCLING REPORT**
Project Name: (Insert Name)
Project No.: (Insert Number)

Month/Year: _____

Page ____ of ____

Type of Material: _____

Contractor/Subcontractor: _____

Date	Name & Location of Recycling Facility	Tons
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Week Total		

Contractor is to submit the report weekly with delivery ticket.

Public Improvement
DAILY SOLID WASTE RECYCLING REPORT
Project Name: (Insert Name)

Project No.: (Insert Number)

Date: _____

Contractor: _____

Subcontractor: _____

Month/Year: _____

Material	To Landfill (Tons)	Recycled (Tons)	Reused (Tons)	Disposed (tons)	Total Quantity Generated (Tons)	Facility Used/Destination
	A	B	C	A+B	A+B+C	
	Weight	Weight	Weight	Weight	Weight	
Example: Dirt	5 tons	5 tons	9.5 tons	10 tons	24.5 tons	Recycle - Asute Land Reclamation Reuse - On Job Site for Grading Dispose - Puente Hills Landfill
Asphalt Concrete						
Brick						
Building Materials (ceiling tile, fixtures, etc.)						
Cardboard, paper						
Carpet/Carpet Padding						
Concrete (PCC)						
Dirt						
Glass						
Green Waste						
Gypsum/Dry Wall						
Metals						
Mixed C&D (commingled, recyclable)						
Plastic						
Rock						
Roofing						
Tile (ceramic)						
Wood (lumber, doors, etc.)						
Refuse		NA	NA	NA		
Other						
Totals						

Use your daily weight receipts to fill in the table below and submit receipts attached with this form.

Total Recycled ____ + Total Reused ____ = ____ + Total Quantity Generated ____ x 100 = ____ %

SECTION 5 – UTILITIES

5-6 COOPERATION

Add the following:

The CONTRACTOR shall provide coordination with all the utility companies involved and shall provide protection from damage to their facilities. The CONTRACTOR shall be responsible for repair or replacement to said facilities made necessary by its failure to provide required protection.

The CONTRACTOR shall notify all utility agencies and owners of all facilities within the area of construction as directed by the notification requirements as provided herein, or a minimum of five (5) work days in advance of performing any work within said area.

The CONTRACTOR shall protect all utilities and other improvements which may be impaired during construction operations. It shall be the CONTRACTOR's responsibility to ascertain the actual location of all existing utilities, including service laterals, and other improvements indicated on the drawings that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The CONTRACTOR shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be directed by the Engineer.

If in the course of construction the CONTRACTOR damages a sewer lateral or water lateral, it shall be responsible to completely expose said lateral from the main line to the point of connection at private property to verify integrity of all joints to the satisfaction of the Inspector. This shall not be considered to be extra work and no extra costs shall be allowed therefore.

Utility Construction Scheduling

The CONTRACTOR shall coordinate all service disruptions and shutdowns with respective utility agencies.

The CONTRACTOR must be aware each utility must have its own construction window and may or may not work concurrently with another utility. The CONTRACTOR will coordinate with each utility company. Concurrent utility construction shall be verified with the respective utility companies.

Lead time prior to construction, as listed below, may be required for each utility company. It is anticipated that each utility will require several mobilizations to complete their work as the CONTRACTOR completes his work. Should the construction of these utilities exceed the allotted time, the CONTRACTOR may be entitled to an extension of time in accordance with Subsection 6-6.2, "Extension of Time," of the Standard Specifications and these Special Provisions, but no additional compensation shall be allowed.

It is anticipated that the following utility activities will require coordination between the CONTRACTOR and each respective utility company.

(a) Payment for construction, relocation, modification or adjustment of these utility lines shall be the responsibility of the respective utility companies, unless otherwise indicated elsewhere in these Special Provisions or on the Plans.

(b) The CONTRACTOR shall coordinate all service disruptions and shutdowns with respective utility companies or agencies through the Resident Engineer. The Resident Engineer shall be made aware of any communication from the utility company representatives directly to the CONTRACTOR.

(c) The CONTRACTOR shall allocate the following amount of time, and additional lead time prior to construction, for the construction of the utility lines. Scheduling and coordination of street construction with the respective utilities is the responsibility of the CONTRACTOR.

(d) Each utility must have their own construction window and may or may not work concurrently with another utility. The CONTRACTOR shall coordinate its work and the work of the other utility companies with each utility company. Concurrent utility construction shall be verified with the respective utility companies.

Utility Contacts - Notification Duration

Utility Owner	Contact	Address	Notification Duration (working days)	Phone
AT&T	Anna Limas	600 E Green Street Room 300-03, Pasadena, CA 91101		(626) 308-4966
California Water Service	Philip Delgado	5243 E Sheila St, Commerce, CA 90640		(323) 263-4145
City of Vernon	Brandon Aroujo	4305 Santa Fe Ave, Vernon, CA 90058		(323) 583-8811 Ext. 237
City of Vernon – Gas	Anthony Serrano	4305 Santa Fe Ave, Vernon, CA 90058		(323) 583-8811

Charter	George Alvarez	4781 Irwindale Ave, Irwindale, CA 91706		(626) 430-3335
County Sanitation District	Koesen L Lipock	P.O. Box 4998, Whittier, CA 90601		(562) 908-4288
Exxon Mobile Pipeline Co. (Torrance Logistics PBF Energy)	Eleanor Marx	12851 E 166 th St. Cerritos, CA 90703		(310) 212-2914
Matrix Oil	Emilio Rodriquez	P.O. Box 2900, Long Beach, CA 90801-2900		(562) 365-9506
Plains All American Pipeline	Becky Sitton	5900 Cherry Ave, Long Beach, CA 90805		
Southern California Edison	Kim Gurule	1444 E. McFadden Ave, Santa Ana, CA 92705		(714) 796-9932
Southern California Gas (Distribution)	Kito Singleton	701 N Bulls Rd, Compton, CA 90221		(310) 605-7963
Southern California Gas (Transmission)	Estefania Sanchez	9400 Oakdale Ave, Chatsworth, CA 91311		(818) 701-4546
Sunesys	Joshua Valdez	226 N Lincoln Ave, Corona, CA 92882		(951) 278-0400
Verizon	Dean Boyers	2400 N Glenville Dr, Richardson, TX 75082		(972) 729-6322

Lead time (Notification time) prior to construction, as listed above, is required for each utility company.

The CONTRACTOR shall comply with the following requirements when working around underground hazardous utilities:

- 1.) The CONTRACTOR shall not trench or excavate within the area a utility is known to carry a hazardous substance exists until its location has been determined by excavation or other proven methods acceptable to the Engineer. The intervals between exploratory excavations or location points shall be sufficient to determine the exact location of the line. Unless otherwise directed by the Engineer, excavation for underground hazardous utilities shall be performed by the CONTRACTOR.

- 2.) If it is determined that the horizontal or vertical clearance between the utility known to carry hazardous substances and the construction limit is less than 12 inches (18 inches if scarifying), the CONTRACTOR shall confer with its owner. Unless the owner elects to relocate the line or take it out of service, the CONTRACTOR shall not excavate until the line has been completely exposed within the limits of construction by the Owner.
- 3.) Once the physical location of the utility known to carry hazardous substances has been determined, the CONTRACTOR, in cooperation with and with the concurrence of the utility owner, shall determine how to protect and/or support the utility from damage before proceeding with the work.
- 4.) During all excavation and trenching operations, the CONTRACTOR shall exercise extreme caution and protect the utilities from damage.
- 5.) The CONTRACTOR shall notify the Engineer, the public agency maintaining records for the jurisdiction in which the Project is located and the owner, if known, whenever previously unidentified or unknown underground utilities are encountered so that the location can be accurately established and made a part of permanent substructure records.

Full compensation for protecting underground hazardous utilities as specified, identified or noted on the Plans shall be considered as included in the prices bid for the various items of work.

5-6.1 Utility Construction Coordination

It is anticipated that the following concurrent utility activities will require coordination between the CONTRACTOR and each respective utility company. Work performed by the utility companies (and their contractors), outside of the CONTRACTOR's work limits or traffic staging set-up areas necessary for connections, plugs, joins, etc., will be the responsibility of the utility company to set-up a work zone.

Water Service

California Water service owns and operates water mains within the project limits. It is anticipated that water valves will require to adjusted to grade. Prior to excavating or construction within 10-feet horizontally of any water main line the CONTRACTOR shall notify the California Water Services Representatives and the Resident Engineer. When work operations occur in the near vicinity of abandoned water mains, the CONTRACTOR shall

confirm the nature of its abandonment with the California Water Services representative prior to removing any pipe.

The CONTRACTOR will be required to protect in place the existing constructed water lines within the project limits, as shown on the plans or as directed by the Engineer.

The CONTRACTOR shall adjust to grade existing California Water Service facilities, including, but not limited to, valve boxes and covers, meters etc. within the project limits. The CONTRACTOR shall coordinate with California Water Service prior to making these adjustments and if needed provide California Water Service and its contractor the time and space should they decide to make the adjustments. CONTRACTOR to protect in place existing California Water Service utilities.

City of Commerce Sewer (maintained by the County of Los Angeles Sewer Maintenance Division)

The City of Commerce owns and operates gravity sewer systems within the project limits. The CONTRACTOR shall reconstruct, or adjust to grade existing City of Commerce sewer manholes as indicated on the Street Improvement Plans. The existing City of Commerce sewer facilities is to remain in place as shown on the plans and shall be protected in place.

The CONTRACTOR shall protect in place existing concrete manholes and adjust rims to final design grade as shown on plans.

The CONTRACTOR shall notify Los Angeles County Sewer Maintenance Division when construction activities limit access to sewer manholes.

Los Angeles County Sanitation District

The Los Angeles County Sanitation District owns and operates gravity sewer systems within the project limits.

When County Sanitation District's (CSD) manholes must be adjusted to the final design grade, the work shall be done by CSD in conjunction with the CONTRACTOR as described below and detailed in the Street Improvement Plans.

The CONTRACTOR shall fill and/or pave directly over the manhole frame and cover to final grade. The CONTRACTOR shall remove the pavement and/or fill as required for CSD to raise the manhole to final grade. Pavement and/or fill shall be removed to a minimum depth of not less than 6 inches below final grade and 12 inches around the manhole if the cover plate is more than 6 inches below final grade. CSD shall raise the manhole and set the

frame and cover to final grade. The CONTRACTOR shall backfill and compact and complete the pavement around the manhole.

The CONTRACTOR shall be responsible for traffic maintenance as necessary to protect the public from danger as the work is being performed.

Southern California Edison - Electric

Southern California Edison (SCE) owns and operates electric facilities within the project limits. (SCE) will be removing existing street lights, and overhead wires, underground conduits, duct banks, meters, cabinets and other facilities.

The street light removal work by SCE will be phased. CONTRACTOR shall coordinate with SCE and provide the required notice and work area such that SCE can complete its work at times and in a manner that does not impact the project schedule.

Relocation of power poles and overhead wires will be phased. CONTRACTOR shall coordinate with SCE and provide the required notice and work area such that SCE can complete its work at times and in a manner that does not impact the project schedule.

When working above SCE existing utilities, the CONTRACTOR shall maintain minimum cover over the existing and newly-installed conduit of 30 inches.

Project will also require installation of new underground services and facilities as shown on the improvement plans. The CONTRACTOR shall furnish and install materials (conduit, fittings, vaults, handholes, etc.) for new SCE services in accordance with the improvement plans and SCE final design plans. The CONTRACTOR will be responsible to coordinate with, and obtain the final SCE design plans prior to starting work on SCE facilities. The CONTRACTOR must be approved by SCE to work on SCE new and existing facilities. All work shall be in accordance with SCE standards and requirements.

Southern California Gas

Southern California Gas Company (SCG) operates and maintains high/medium/low pressure gas distribution lines within the project site. The CONTRACTOR shall adjust to grade existing Southern California Gas facilities, including, but not limited to, valve covers, frames, and meters boxes, etc. within the project limits. The CONTRACTOR shall coordinate with Southern California Gas prior to making these adjustments and if needed provide Southern California Gas and its contractor the time and space should they decide to make the adjustment.

When working above SCG existing utilities, the CONTRACTOR shall maintain minimum cover over gas distribution lines a minimum of 30 inches or depth of existing cover, whichever is less.

Existing Utilities – General Requirements

1. Existing utilities are located within the limits of work. The CONTRACTOR shall confirm locations of all utilities and protect them in place or relocate as required.
2. The Agency has endeavored to locate and show on the Plans the approximate locations of all private and public utilities and facilities to be encountered during construction. However, it is possible that, during the work, unknown substructures requiring relocation or protection may be encountered. Such unknown substructures will generally fall into two classes:
 - i. Class I – Those requiring relocation or protection at the expense of the owner, and
 - ii. Class II – Those requiring relocation or protection at the expense of the Agency.

For Class I utilities, the CONTRACTOR shall provide time and working space for protection or relocation activities and may be entitled to an extension of time for completion and/or extra compensation in accordance with the Contract terms.

For Class II utilities, the Agency will make arrangements for the protection or relocation by the owner, or by the CONTRACTOR, or by others. In the event either the protection or the relocation is to be accomplished by the CONTRACTOR, the procedures of Section 3.1, Change Requested by the CONTRACTOR, shall be used. In the event protection or relocation is accomplished by the owner or by others, the CONTRACTOR shall provide time and working space and may be entitled to an extension of time for completion and additional costs in accordance with the Contract terms.

1. In the event any such unknown substructures should be disturbed or damaged due to failure of the CONTRACTOR's exercising reasonable care, the CONTRACTOR shall at once make the necessary emergency repair at no cost to the utility owner or Agency.
2. Where facilities are specified or shown on the Plans, "To be Relocated by Others," the Agency will issue the utility owner a "Notice to Relocate," or by City agreement with owner, require the CONTRACTOR to relocate. In the event of a delay in relocation, which in the judgment of the Engineer cannot reasonably be foreseen, and which affects the CONTRACTOR's completion date after all reasonable remedies for keeping work on schedule have been exhausted by CONTRACTOR including, but not limited to work-arounds, work simplification, and alternative construction methods,

3. Engineer may allow extra time to the CONTRACTOR in accordance with the Contract terms.
4. The CONTRACTOR shall protect facilities shown on the Plans, "To Be Relocated By Others," in both original and relocated positions and any damage to such facilities shall be immediately repaired to the utility owner's satisfaction at no cost to the Agency.
5. Prior to the commencement of work, the CONTRACTOR shall verify the location and depth of all utilities, including service laterals and service connections, which have been indicated on the Plans marked by the respective owners and which may affect or be affected by its operations.
6. All utilities designated on the Plans to be protected in place shall be carefully uncovered if located within the lines of excavation and time shall be allowed for the Engineer to field check the location of such utilities to make certain that they will not interfere with construction. In the event a utility conflict exists, the Agency will either arrange for utility owner to relocate the utility or adjust grade and/or alignment of the proposed improvements.
7. In the event any such facility should be disturbed or damaged, the CONTRACTOR shall at once make repairs to the satisfaction of the owner, or arrange with the owner to make repairs, at no cost to the Agency. Any delays or reconstruction of improvements resulting from the CONTRACTOR's failure to verify utility locations and depths shall be made at the CONTRACTOR's expense.
8. The CONTRACTOR's attention is directed to the utility notification service provided by UNDERGROUND SERVICE ALERT (USA). USA member utilities will provide the CONTRACTOR with the locations of their substructures in the construction area when the CONTRACTOR gives at least two (2) working days' notice to Underground Service Alert by calling 1-800-422-4133. The CONTRACTOR shall call USA prior to any work (such as backfilling, resurfacing, paving) over substructures to allow utility owners to locate and/or obtain accurate "ties" on their manholes, valve covers, meter boxes, etc.

Relocated Utility Locations

The Agency has endeavored to show on the Plans the approximate locations of all private and public utilities and facilities that will be relocated prior to and during the CONTRACTOR's construction activities. The CONTRACTOR shall be responsible for

verifying both existing and not-yet-installed utility locations prior to commencing work in an area. The CONTRACTOR shall coordinate and install its work in a manner that provides space in which the utility companies may install their not-yet-installed facilities. In the event that the CONTRACTOR fails to verify and coordinate the location of not-yet-installed utilities indicated on the Plans, any extra work necessary for utilities to install their facilities shall be at the CONTRACTOR's expense.

Permanent Utility Service

CONTRACTOR shall make all arrangements with utility owners and make provisions for installation and connection of all permanent utility services that are necessary for the Work, such as, but not limited to, natural gas, electricity, water, sewer, and telephone. All costs for such installation and connection, as well as the utility service costs for utilizing permanent utilities prior to acceptance of the Work by Agency shall be considered as included in the prices of the related items of work.

Measurement and Payment

Payment for Coordination with Utility Company Work and Work by Others as specified herein will not be measured separately for payment. Full compensation for conforming to these requirements, including utility construction scheduling, coordination, cooperation, utility verification, utility company requirements, and permanent utility services, shall be considered to be included in the various contract items of work involved, and no separate payment will be made therefor.

SECTION 6 – PROSECUTION, PROGRESS, AND ACCEPTANCE OF WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK

6-1.1 Construction Schedule

Add the following:

6-1.1.1 Order of Work

The CONTRACTOR shall be responsible to obtain all permits, rights of entry; and prepare and have approved the project schedule, material submittals, shop drawing; and have all BMP's and investigative activities complete and in-place; and have all traffic control and project information signage in-place; and have all other project requirements approved and in-place; and have materials on-hand prior to commencement of the construction activities. The CONTRACTOR is directed to the

drawings, including but not limited to Stage Construction Plans, for further clarification of the sequencing of work tasks and activities. The following order of work is intended to identify the progression of work and the guidelines and restrictions that the CONTRACTOR must follow in order to perform his work. The CONTRACTOR is permitted to propose modifications to the order of work under the terms and conditions noted in the Contract Documents.

- 1.) PRE-CONSTRUCTION: The following work tasks are scheduled to be performed by others prior to the issuance of the Limited Notice to Proceed (LNTP) or the Notice to Proceed (NTP) to the CONTRACTOR.
 - a. Utility Relocations: The Utility agencies will relocate their facilities within the project limits to accommodate the proposed roadway widening and construction improvements as presented in section 5 – Utilities of these General Provisions. As part of the CONTRACTOR's preliminary investigations, the CONTRACTOR shall obtain copies of the final Utility Agency Record" drawings to be used to substantiate the field investigation.
- 2.) LNTP or NTP: The CONTRACTOR shall notify "Dig Alert" and perform field investigations (pot-holing) of underground facilities before performing any demolition work.
- 3.) The CONTRACTOR shall perform field pot-hole investigation directly under the proposed foundations of traffic signal pole, street lighting poles, and banner poles prior to placing material orders for these items.
- 4.) The Contractor shall coordinate with all Utilities Agencies to establish work windows and other coordination efforts to schedule work activities to avoid delays in the progression of work.
- 5.) Access to all properties, businesses, and facilities shall be maintained; temporary closures of any access must be approved by the City, and scheduled with the Property Owner and/or tenant. The CONTRACTOR shall schedule any temporary access closures with the City and Property Owner in a manner as described herein.
- 6.) The Contractor shall follow the stage construction plans as provided in the contract documents. Any deviation in the stage construction must be approved by the Engineer and must be prepared under the direction of a registered Civil Engineer licensed in the State of California.

- 7.) The CONTRACTOR shall maintain at least one lane of travel open in both directions at all times.
- 8.) The CONTRACTOR shall maintain access to properties and businesses at all times.
- 9.) All lane closures shall be in accordance with the City Special Provisions, Traffic Control Plans; the current California MUTCD, the project Traffic Maintenance Plan (TMP), and other specifications addressing control of traffic as provided herein or referenced in these Contract documents.
- 10.) NIGHT TIME work shall be as directed per the Contract Documents. The CONTRACTOR shall adhere to setback requirements and noise monitoring limits as prescribed in the Contract.
- 11.) The CONTRACTOR will be provided some flexibility in the progression of work within the City's jurisdiction of the Contract work. Specifically, the CONTRACTOR may elect to construct all Portland Cement Concrete segments, prior to completing the Asphalt pavement segments. The CONTRACTOR shall clearly define the work plan and scheduling of work to be reviewed and approved by the Engineer.
- 12.) The CONTRACTOR shall make every effort to limit the disruption of traffic flow specifically at intersections under control of traffic signals. All detours shall be clearly marked and approved by the Engineer. It is recommended that work at signalized intersection be performed at night to further limit disruption to traffic.
- 13.) The CONTRACTOR shall stage the work such that impacts to the public are minimized. Work near schools or school routes shall be limited to off-school hour schedules. Work near Churches should be avoided during weekend services. Work adjacent to trucking operations shall be coordinated such that closures and restricted access are limited. The CONTRACTOR is directed to section "COOPERATION AND COLLATERAL WORK" for additional information specific to notification of residents and businesses.
- 14.) Within areas of asphalt pavement work, the CONTRACTOR shall place the final surface lift in one continuous manner to facilitate smoothness of the pavement surface. The CONTRACTOR shall describe in his/ her work plan his/her approach on how the final pavement surface will be constructed, and identify limitations such as but not limited to: control of surface drainage, traffic control, work area limitations, dust control, temporary pavement markings,

pavement transitions, and ADA access. The work plan shall be approved by the Engineer.

6-1.1.2 Schedule: General Submittal Requirements

The CONTRACTOR shall submit three (3) paper copies of each specified schedule submittal item and an electronic copy on a labeled compact disk for all schedule submittals including but not limited to the baseline schedule, schedule updates, schedule revisions, recovery schedules, Time Impact Evaluations, and mitigation plans.

The electronic copy shall be a full data set of all schedule data fields, layouts, views and filters such that Agency will be able to restore, open, display, modify and print schedule information and reports in the same manner as the CONTRACTOR utilizing the CPM scheduling software. The compact disk containing the electronic copy of the schedule shall also contain an Adobe Acrobat PDF file of each of the paper reports submitted with each schedule, with file names that clearly identify each report using the report title.

6-1.1.3 CPM Schedule Total Float

Total float is the amount of time between a schedule activity's early and late start dates, or between its early and late finish dates in the CPM schedule. The total float value is also the number of days by which a part of the work in the schedule may be delayed from its planned early start and finish dates without necessarily extending the Contract Time. A baseline schedule with negative float will not be accepted. All schedules specified herein shall be calculated using the "retained logic" method. The "progress override" or "actual dates" methods shall not be used.

Neither Agency nor the CONTRACTOR owns schedule float; the Project owns any available float. As such, total float and project float is considered an expiring resource available to both parties on a non-discriminatory basis.

Pursuant to the float sharing requirements as set forth above, use of float suppression techniques by the CONTRACTOR such as unsupported preferential sequencing, unreasonable lead/lag logic restraints, extended or unreasonable activity durations, or constrained dates shall be cause for rejection of the baseline schedule and any revisions or updates.

6-1.1.4 Constraint Start and Completion Activities

The schedule shall clearly identify the activities illustrating accomplishment of the time(s) for completion of the Project set forth in the Contract. Specified milestone and final completion dates, and start date restrictions, must be adhered to and shall be clearly identified in the schedule through the use of separate activities appropriately named.

Contract Milestone constrained dates may not be changed without the written consent of the Agency.

Contract work start restrictions shall be constrained by "Start No Earlier Than" constraints. Contract completion milestones shall be constrained by "Finish No Later Than" constraints. "Mandatory", "Start On", and "Finish On" constraints shall not be used.

The number of calendar days between NTP and Contract Completion date ("Contract Time") shall be the number of days in the Agreement, and as subsequently modified by Change Order. Number of calendar days between NTP and Contract Completion shall be identified within the schedule with the use of a hammock activity using a calendar-day calendar, and such number of days shall be equal to the Contract Time. Milestone completion activities with contractually required durations shall be treated in a similar manner with separate hammock activities for each milestone.

6-1.1.5 Early Completion Schedule

Should the CONTRACTOR submit a baseline schedule, or any schedule update or revised schedule, that shows completion dates earlier than the contract date as specified in the Agreement, Agency, upon acceptance of the schedule, and at its discretion, may adjust by change order the contract dates consistent with the early completion milestone dates in the CONTRACTOR's schedule. No additional compensation shall be provided to the CONTRACTOR for such adjustments to the contract milestones. In the event that Agency elects to not adjust the milestones, the amount of time between the contract milestone date and the early finish date of such milestone shall be considered project float and is subject to the provisions contained in this Special Condition. Impact to the early completion date caused by Agency will not be considered as a basis for a time extension or entitlement to extended overhead compensation unless all available float has been consumed.

6-1.1.6 Baseline Schedule

The CONTRACTOR shall prepare and submit for acceptance by Agency, a detailed CPM Schedule within forty-five (45) days after NTP. The schedule shall present an orderly and realistic plan for completion of the work, in conformance with all contract requirements. The data date of the baseline schedule shall be the date of NTP.

If the submitted baseline schedule is rejected (marked "amend and resubmit"), the CONTRACTOR shall resubmit the Schedule within fourteen (14) days after receipt of rejection notice. The CONTRACTOR shall make corrections to the schedule necessary to comply with contract requirements and shall revise the schedule to address and incorporate all review comments from the Agency's review of the baseline schedule. The CONTRACTOR shall provide a line-by-line response to all Agency comments from the review of the baseline schedule.

The baseline schedule submission shall include the following items.

- 1.) Graphic reports:
 - a. Detailed bar chart with critical path activities identified with a contrasting color on 11"x17" landscape oriented paper.
 - b. Summary bar chart on 8-1/2"x11" landscape oriented paper.
 - c. Include an Adobe PDF "printed" file of the reports copied to the CD containing the electronic schedule files.
- 2.) Printed tabular schedule reports on 8-1/2"x11" portrait oriented paper:
 - a. Activity listing report showing all schedule activities, sorted by activity number.
 - b. Milestone Summary Report listing Completion and Interim Milestones and dates.
 - c. Precedence report showing activity predecessors and successors sorted by activity number.
 - d. Total float report, sorted by total float, then early start.
 - e. Early start report grouped by area, level, and location codes, and sorted by early start date.
 - f. Include an Adobe PDF "printed" file of the reports copied to the CD containing the electronic schedule files.
- 3.) Baseline Schedule Narrative that describes the basis, assumptions, planned sequence of work operations, production rates, equipment, resources, constraints, etc. used to develop the baseline CPM schedule.
- 4.) Narrative schedule report with any resubmitted Baseline Schedule including:
 - a. Description of the changes made to the schedule to comply with the Agency review comments.

- b. Description of any changes, additions or deletions made to the schedule by the CONTRACTOR that were not associated with the Agency review comments.
- c. Reasons for not complying with any of the Agency review comments.
- d. Include an Adobe PDF "printed" file of the narrative report copied to the CD containing the electronic schedule files.

The exact format, style and data contained on each report are subject to the review and acceptance of the Engineer. The CONTRACTOR shall make minor changes to format, style and data contained in each report before the next submission when requested by the Engineer.

6-1.1.7 Detailed Requirements for All Schedules

The baseline schedule shall have sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. It shall depict how the CONTRACTOR plans to complete the work involved and shall show all activities that defines the critical path. The baseline schedule and all other required schedules shall be time-scaled and shall comply with the following general requirements.

Activity descriptions shall be clear and concise and shall identify the location of the work task if identical work tasks occur in other locations. Utilizing activity codes to differentiate between identically described tasks is not acceptable.

All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor.

The level of detail of the schedule shall be a function of the complexity of the work involved. The total number of activities shall be subject to acceptance by the Agency. Construction activities shall represent the continuous work of a single crew in a defined work area or location and have duration of no longer than fifteen (15) work days, without prior acceptance by the Agency. Non-construction activities (such as submittal preparation and review, procurement, and fabrication) may have reasonable durations in excess of fifteen (15) work days.

If requested by the Engineer, the CONTRACTOR shall furnish a written explanation of the CONTRACTOR's determination of durations for activities. Such explanation shall include the number of crews, crew composition, estimated production units per crew hour, number of shifts per day, number of hours in a shift and the number of workdays. If requested by the Engineer, the CONTRACTOR shall provide a list of the

major items of construction equipment intended for use on the Contract's operations including types, number of units, unit capacities and the proposed time each piece of equipment will be on the project, keyed to the activities on which the equipment will be used.

Activities shall be included representing the procurement of each major item or type of material or equipment, including separate activities for preparation of the submittal, Agency review and approval, placement of the order, delivery time, and inspection at the job site.

Agency-furnished materials and equipment, if any, shall be identified as separate activities.

Dependencies (logical relationships) between activities shall be shown. Logical relationships other than finish-to-start relationships and the use of lead or lag relationships shall be kept to a minimum and only used when that is the most reasonable method for depicting the relationship between the tasks. The CONTRACTOR shall provide a complete explanation of the use of logical relationships other than finish-to-start relationships when requested by the Engineer.

Activities for Agency review and acceptance of submittals and shop drawings for all contract-required material and equipment shall be included. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates. The CONTRACTOR shall be responsible for all impacts resulting from late submittal or re-submittal of shop drawings and other items.

Time shall be included for Quality Control testing required by the contract documents by the CONTRACTOR, Agency Quality Assurance testing (when specified), delivery of spare parts, submittal of operating and maintenance manuals, developing punch lists, completing punch list items, and clean-up for the work included in any completion milestone or contract completion.

The interface with the work of other contractors and agencies such as, but not limited to, utility companies, shall be indicated and activities included showing work by others that is related to work tasks of the CONTRACTOR. Durations of the work tasks performed by others shall be those indicated in the contract documents, or if not specified, the duration provided by the Engineer.

Detailed subcontractor's work activities shall be shown. When requested by Agency,

CONTRACTOR shall submit, on subcontractor letterhead, a statement by the subcontractor certifying that the subcontractor concurs with the CONTRACTOR's incorporation into the baseline schedule of the subcontractor's related schedules, including activity durations.

The CONTRACTOR is permitted to use any reasonable work breakdown structure (WBS), acceptable to the Engineer, to develop the schedule and group and organize the work activities for reporting purposes. The CONTRACTOR shall implement and utilize activity WBS code values and code names requested by the Engineer that Agency may require to produce desired schedule reports for its purposes. The CONTRACTOR's proposed WBS structure for the schedule and the Engineer's requirements for activity coding shall be discussed, as necessary.

It is anticipated that the CONTRACTOR will need to utilize multiple schedule "Calendars" within the schedule and assign activities based on their associated available work days and work times. Activities that are required to be performed on other than normal work days, during night shifts, and other special days and times shall be assigned to appropriate Calendars. Work tasks that cannot be performed on certain days or time periods should be assigned to appropriate Calendars that do not include those "black-out" days. All Calendars utilized by the CONTRACTOR shall include in the Calendar Name a prefix using the Project's five-digit Contract Number.

The number of critical path or near-critical path activities shall be kept to a minimum. The baseline schedule's critical and near-critical activities shall not exceed twenty percent (20%) of the total number of activities contained in the baseline schedule. Near-critical activities are defined as those having a total float value that is ten (10) or fewer work days more than the total float value of the schedule's longest path. If the CONTRACTOR believes that it is necessary to exceed that percentage, it shall submit a formal request to the Engineer with its baseline schedule submission explaining the need to exceed the limit.

Failure by the CONTRACTOR to include any element of work required for performance of the Contract or failure to properly sequence the work shall not excuse the CONTRACTOR from completing all work within the Contract Time.

Normal weather conditions shall be considered and included in the planning and scheduling of all work influenced by high or low ambient temperatures and/or precipitation to ensure completion of all work within the Contract Time.

6-1.3 Pre-Construction Meeting

Prior to issuance of Notice to Proceed (NTP), a pre-construction meeting will be held at a time and place to be designated by notice from the Agency. At this meeting, detailed procedures will be discussed for handling the following items:

- Authorized Representatives
- Correspondence
- Notices
- Change requests and change directives
- Change orders Submittals Approvals
- Progress payments
- Schedules
- Community relations
- Coordination with Agency and Utility Companies
- Coordination with other agencies
- Inspection plans
- Requests for Information (RFI) Other pertinent agenda items

6-1.4 Project Meetings

Agency will schedule and preside over all meetings (including but not limited to weekly, preproduction, periodic, and special meetings) throughout the progress of the Work. Agendas for the meetings may include, but are not necessarily limited to, discussions of performance observations, problems, conflicts, schedules, delivery schedules, supplier fabrication, quality standards, Contract modifications, and any other topics that Agency determines to be relevant to the project. CONTRACTOR attendance at these meetings is mandatory.

6-1.5 Publicity Releases

No copies, sketches, computer graphics or graphs, including graphic artwork, are to be released by CONTRACTOR to any other person or agency except after prior written approval by Agency, except as necessary for the performance of services under this Agreement.

All media and press releases, including graphic display information to be published in newspapers, magazines, on web sites, etc., are to be handled by Agency.

The CONTRACTOR, its subcontractors and their respective employees are not authorized to release project information of any kind to the public. All public inquiries are to be directed to the Agency for a response. Information required by duly

authorized regulatory agencies shall be handled as described elsewhere in the contract documents.

CONTRACTOR shall not use Agency's name, photographs of the project, or any other publicity pertaining to the project in any professional publication, magazine, trade paper, newspaper, seminar, internet web site, or other medium without the express written consent of Agency.

6-2 PROSECUTION OF THE WORK

6-2.1 Agency Holidays

The following days are defined as CITY Holidays for establishing normal scheduled workdays and for use in the CPM schedule.

Event

New Year's Holiday

Memorial Day

Independence Day

Labor Day

Thanksgiving Holiday

Day After Thanksgiving

Christmas Holiday

If any of the above holidays falls on a Saturday or Sunday, the declared holiday observance date shall be used.

6-6 DELAYS AND EXTENSIONS OF TIME

6-6.2 Extension of Time

Add the following:

The CONTRACTOR is solely responsible for requesting a time extension for any change, delay, or disruption that, in the opinion of the CONTRACTOR, impacts the critical path of the Current Schedule and qualifies as an excusable delay by the terms of the Contract. Time extensions will be granted only to the extent that the change, delay, or disruption that impacts the critical path is beyond the control and without fault or negligence of the CONTRACTOR or any subcontractor. The CONTRACTOR shall not be entitled to an extension in Contract Time, or additional cost related to time extensions, until all total float and project float, if available, is used or consumed

and performance or completion of the work extends beyond the corresponding Contract completion date.

The CONTRACTOR may be entitled to a compensable time extension for Agency-caused delays that are not concurrent with CONTRACTOR-caused or other excusable but non-compensable delays (i.e., weather). The CONTRACTOR may be entitled to a non-compensable time extension for AUTHORITY-caused delays that are concurrent with CONTRACTOR or other excusable but non-compensable delays.

In the event that a delay, as defined by the contract documents impacts a contract milestone or the contract completion date, the CONTRACTOR shall cooperate with the Agency and will assist by preparing a mitigation plan, including proposed revised schedules, so that the impact can be mitigated. The CONTRACTOR shall also include a detailed cost breakdown of the labor, equipment and material the CONTRACTOR would expend to mitigate the Agency delay. The CONTRACTOR shall submit its mitigation plan to Agency within fifteen (15) days from the date of the request by Agency for such a mitigation schedule.

Agency will not consider any time extension request unless the requirements of this Section 6-1.1, "Construction Schedule," of the Standard Specification and these Special Provisions, are met. AUTHORITY will not be responsible or liable to the CONTRACTOR for any constructive acceleration due to the failure of the CONTRACTOR to comply with the submission requirements and justification requirements of this contract for time extension requests.

Failure of the CONTRACTOR to perform in accordance with the Current Schedule shall not be excused by submittal of time extension requests.

6-6.4 Written Notice and Report

Add the following:

When the CONTRACTOR becomes aware of circumstances that it considers a change to the contract (including change notices and force account directives), the CONTRACTOR shall prepare and submit an Impacted Schedule demonstrating the delay or impact to the schedule through a Time Impact Evaluation (TIE). The TIE shall include both a written narrative and schedule diagrams (fragnets) depicting how the changed work affects other schedule activities. The Impacted Schedule diagram shall show how the CONTRACTOR proposes to incorporate the changed work in the Current Schedule and how it impacts, if any, the critical path activities of the Current Schedule. The CONTRACTOR is also responsible for requesting time extensions

based on the TIE's demonstrated impact on the critical path work. The diagram must be tied to the main sequence of schedule activities to enable Agency to evaluate the impact of the changed work to the scheduled critical path. The CONTRACTOR shall submit the TIE within thirty (30) days of recognition of such change to the contract. Refer to the Section 3, "Changes in Work," for Change Request submission requirements. When the CONTRACTOR makes a request for time, it shall follow both these Special Conditions and the General Conditions notice and submission requirements.

The submission of a TIE with an Impacted Schedule shall follow the same specified process and procedures for preparation, submission and acceptance of a Schedule Revision. A time extension request by the CONTRACTOR that does not include a TIE justifying the requested time will be rejected.

The CONTRACTOR shall be responsible for all costs associated with the preparation of TIE's, and the process of incorporating the schedule revisions into the current schedule update. The CONTRACTOR shall provide AUTHORITY with three (3) copies of each TIE.

If the CONTRACTOR does not submit a TIE, for a specific issue, following the requirements of this Section 6-1.1, "Construction Schedule," of the Standard Specification and these Special Provisions, it is mutually agreed that the CONTRACTOR does not require a time extension for said issue and that CONTRACTOR waives any rights to claim a time extension based on said issue in the future.

6-7 TIME OF COMPLETION

6-7.1 General

Add the following:

Time is of the essence in this Contract. CONTRACTOR's failure to perform Work, deliver goods, or provide services on time and in accordance with the accepted progress construction schedule shall be a material breach of this Contract.

Time periods measured in days shall be computed by excluding the day upon which the period begins to run and including the last day of the period unless the last day is Saturday, Sunday, or an Agency holiday, in which case the period shall run until, and shall include, the next day that is not a Saturday, Sunday, or Agency holiday. All time

periods measured in days shall be based upon calendar days unless specified otherwise.

A "working day" or "work day" is defined to mean any day not a Saturday, Sunday, or Agency holiday.

6-8 COMPLETION, ACCEPTANCE, AND WARRANTY

6-8.1 Completion

Add the following:

When CONTRACTOR considers that all of the Work, or any discrete portion of the Work covered under this Contract has reached final completion, CONTRACTOR shall so inform Agency in writing. If necessary and required, acceptance tests on the Work or discrete portion thereof will be performed as set forth in the Special Provisions and the Technical Specifications. Agency will prepare a punch list covering any part of the Work that fails to pass the acceptance tests or is otherwise unacceptable and will reject such work. CONTRACTOR shall proceed immediately to correct or replace unsatisfactory, incomplete or unacceptable work. For items of work not completed by CONTRACTOR, Agency may proceed to have the items corrected or completed using Agency or third party forces. The costs of such corrections shall be deducted from compensation due CONTRACTOR and/or by a deductive Contract change order.

Unless otherwise stipulated, title to such rejected work and risk of loss shall remain with CONTRACTOR, and CONTRACTOR shall have the responsibility and bear all costs to correct all defects or damage. All acceptance testing of Work which has been rejected previously shall be at CONTRACTOR's expense and costs incurred by Agency to perform such re-tests shall be deducted and withheld by Agency from payments otherwise due to CONTRACTOR.

6-8.1.1 As-Built Construction Drawings

Add the following:

Drawings showing all approved changes made during construction which differ from the approved drawing set for construction, shall be furnished by CONTRACTOR prior to the acceptance of the Work. Final construction drawings submitted to Agency shall be in the form of redlined drawings clearly and neatly indicating all changes made

with the approval of Agency and other field changes made which reflect the as-built condition of the Contract Work. During the construction period, redlined construction drawings shall be maintained by CONTRACTOR and made available to Agency for review on a daily basis.

Unsatisfactorily maintained as-built construction drawings can be grounds for withholding of all or a portion of monthly progress payments until the redlined drawings are made current by the CONTRACTOR.

6-8.2 Acceptance

Add the following:

Final acceptance of all of the Work or the particular discrete portion deemed complete will occur after successful completion of all testing, corrections of deficiencies, punch list items, and Agency's determination that the Work conforms in all respects to all the Contract requirements.

Agency shall inform CONTRACTOR of such acceptance of the Work by issuing a final certificate stating that the Work has been completed in accordance with the Contract requirements and is accepted under the terms and conditions thereof. Acceptance of the Work will be made by Agency only upon issuance of said certificate. After Agency has accepted the Work, CONTRACTOR will be relieved of the duty of maintaining and protecting the accepted Work and will not be required to perform any further work thereon; and CONTRACTOR shall be relieved of its responsibility for injury to persons or property or damage to the work that occurs after formal acceptance by Agency. Such final acceptance of the Work shall not relieve CONTRACTOR from responsibility for errors, improper fabrication, non-conformance to a Contract requirement, latent defects, or for deficiencies within CONTRACTOR's control. Unless otherwise stipulated, all warranties begin with the date of such final acceptance. Coincident with such final acceptance, Agency will record a Notice of Completion with the County Recorder.

6-8.2.1 Partial Acceptance

Agency retains the right to direct CONTRACTOR to complete a portion of the Work at a time different than that specified in the Contract or reflected in the currently approved progress schedule. Such direction will be in writing. If such direction modifies the amount of compensation or time required for the completion of the Work, a change order will be issued. The following will apply if Agency accepts, pays for, takes title to and occupies the portion of the Work so accepted:

- CONTRACTOR will be relieved of maintenance responsibility for that portion of the Work
- CONTRACTOR's warranty on that portion of the Work will commence.

6-8.3 Warranty

Add the following:

The CONTRACTOR is responsible for all warranty-covered repair work during the warranty period as specified above. The CONTRACTOR shall provide at its own expense, all spare products and tools required for repairs. To the extent practicable, the Agency will allow the CONTRACTOR or its designated representative to perform such work. When warranty repairs are required, Agency and the CONTRACTOR's representative shall agree on the most appropriate remedy to be performed within a reasonable time. If the CONTRACTOR fails to remedy any failure or defect within a reasonable time, Agency shall have the right to replace, repair, or otherwise remedy the failure or defect at the CONTRACTOR's expense. At its discretion, Agency may also perform such work if it deems necessary to do so to meet its operational commitments or other requirements. The CONTRACTOR shall reimburse Agency of all expenses for such work. The CONTRACTOR shall reimburse the Agency for such work within sixty (60) days of receipt of warranty claim.

Any materials, parts or components that are used for replacement under the initial warranty period shall be warranted again for the total original warranty period of the replaced particular material, part or component.

6-9 LIQUIDATED DAMAGES

If the Work is not completed by CONTRACTOR in the time specified, as that time may be extended as authorized elsewhere in the Contract, it is understood that Agency will suffer damage; and, it being impracticable and extremely difficult to determine the amount of actual damage, it is agreed that CONTRACTOR shall pay as fixed and liquidated damages, and not as a penalty, the sum set forth in the Agreement and/or the Special Provisions for each calendar day of delay until the Work is completed and accepted, and CONTRACTOR and its surety shall be liable for the amount thereof.

SECTION 7 – RESPONSIBILITIES OF THE CONTRACTOR

7-2 LABOR

7.2.2 Prevailing Wages

Add the following:

Pursuant to appropriate Sections of the Labor Code of the State of California, the Director of the California Department of Industrial Relations has ascertained the general prevailing rate of wages (which rate includes employer payments for health and welfare, vacation, pension, and similar purposes) applicable to the Work to be performed under this Contract, for straight time, overtime, Saturday, Sunday and holiday work. Said prevailing wage rates have been adopted by the AGENCY and are incorporated herein by reference. These wage rates are available through the California State Department of Industrial Relations, <http://www.dir.ca.gov/DLSR/PWD/Southern.html>. The CONTRACTOR shall post a copy of the prevailing wage rates at the jobsite or material staging area. In addition, minimum wage rates for the region in which the work is to be done have been predetermined by the U.S. Secretary of Labor and are available at the Agency's Offices or on the internet at www.access.gpo.gov/davisbacon/. If there is a difference in the Federal and State minimum wage rates for similar classifications of labor, the CONTRACTOR and any subcontractor shall not pay less than the highest wage rates.

Workmen employed in the work must be paid at the rates at least equal to the prevailing wage rates as adopted. If CONTRACTOR uses a craft or classification not shown on the prevailing wage determinations, the CONTRACTOR may be required to pay the wage rate of that craft or classification most closely related to it as shown in the general determinations effective at the time of Contract award.

The Agency shall require that any class of laborers or mechanics, including apprentices and trainees, which are not listed in the General Wage Determinations and which are to be employed under this Contract, shall be classified conformably to such wage determinations. In the event the Agency does not concur in the CONTRACTOR's proposed classification or reclassification of a particular class of laborers and mechanics (including apprentices and trainees) to be used, the question, accompanied by the recommendation of the Agency, shall be referred to the State Director of Industrial Relations for determination.

Liability for Unpaid Wages

In the event of any violation of the clause set forth in the Department of Labor Regulations, the CONTRACTOR and any subcontractor responsible therefor shall be

liable for the unpaid wages. Pursuant to section 1775 of the Labor Code of the State of California, in the event that any workman employed on this public works project is paid less than the amount specified in the General Prevailing Wage Determinations or less than is required, relative to overtime, the CONTRACTOR and any subcontractor responsible therefore shall be liable to the affected workman for the unpaid wages. In addition, such CONTRACTOR and subcontractor shall be liable to the State of California or the Agency for liquidated damages. Such liquidated damages shall be computed with respect to each individual workman found to be underpaid and shall be in the amount of \$50 per calendar day that a workman was underpaid.

Withholding for Unpaid Wages and Liquidated Damages

The Agency may upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the CONTRACTOR or subcontractor under any such contract or any other Federal contract with the same prime CONTRACTOR, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime CONTRACTOR, such sums as may be determined to be necessary to satisfy any liabilities of such CONTRACTOR or subcontractor for unpaid wages and liquidated damages as provided in the Department of Industrial Relations.

Retention and Submission of Labor Records

In the performance of the work specified in this Contract, the prime CONTRACTOR shall be responsible for compliance with California Labor Code pertaining to payroll records. CONTRACTOR and all of its subcontractors of any tier shall maintain all payrolls and basic payroll records during the course of the work and shall preserve them for a period of four (4) years from the completion of the Contract. Such records shall contain the names of all employees, their address, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. These records shall be made available by the CONTRACTOR or any of its subcontractors of any tier for inspection, copying, or transcription by authorized representatives of the Agency or the Department of Labor, and the CONTRACTOR or any of its subcontractors of any tier shall permit such representatives to interview employees during working hours on the job.

Weekly Submission of Certified Payroll Records.

The CONTRACTOR will submit weekly a copy of all payrolls to the Agency as required in these "Labor Provisions." The copy shall be accompanied by a statement signed by the employer or its agent indicating that the payrolls are correct and

complete, that the wage rates contained therein are not less than those determined by the State Director of Industrial Relations and that the classifications as set forth for each laborer or mechanic conform to the work performed. A submission of the "Weekly Statement of Compliance," which is required under this Contract, shall satisfy this requirement. The prime CONTRACTOR shall be responsible for the submission of copies of payrolls of all subcontractors. The CONTRACTOR will make the records required under the labor standard clauses of the contract available for the inspection by authorized representatives of the Agency, and will permit such representatives to interview employees during working hours on the job.

- 1.) The Agency shall obtain from the CONTRACTOR and each subcontractor a certified copy of each weekly payroll within seven (7) days after the regular payroll date. Following a review by the Agency for compliance with State and Federal labor laws, the payroll copy shall be retained at the project site for later review, if required by other agencies.
- 2.) CONTRACTOR may use the State of California, "Optional Payroll Form," which provides for all the necessary payroll information and certifications.
- 3.) If, on or before the 20th of the month, the CONTRACTOR has not submitted satisfactory payroll records covering its work and the work of all subcontractors for all payroll periods ending on or before the 6th of that month, such payrolls will be considered to be delinquent. Regardless of the number of delinquent payrolls, an amount equal to 10% (but not less than \$1,000 or more than \$10,000) shall be deducted from the progress payment estimate. Deductions will be made separately for each estimate period in which a new delinquency appears and will be continued until payrolls have been submitted.
- 4.) If the CONTRACTOR employs apprentices or trainees under approved programs, it shall include a notation on the first weekly certified payrolls submitted to the Agency that their employment is pursuant to an approved program and shall identify the program.

Final Labor Summary. The CONTRACTOR and each subcontractor shall furnish to the Agency, upon the completion of the contract, a summary of all employment, indicating for the completed project, the total hours worked and the total amount earned.

Final Certificate. Upon completion of the contract, the CONTRACTOR shall submit to the AUTHORITY, with the voucher for a final payment for any work performed under the contract, a Certification concerning wages and classifications for laborers and mechanics, including apprentices and trainees employed on the project, in the following form:

The undersigned, CONTRACTOR on

(Contract No.)

hereby certifies that all laborers, mechanics, apprentices and trainees employed by the Contractor or by a subcontractor performing work under the contract on the project have been paid wages at rates not less than those required by the contract provisions, and that the work performed by each such laborer, mechanic, apprentice or trainee conformed to the classifications set forth in the contract or training program provisions applicable to the wage rate paid.

Signature and Title

7-3 LIABILITY INSURANCE

Add the following:

Refer to Article IX of the Agreement between the Agency and the CONTRACTOR for the general insurance terms and conditions.
General Liability, Employer's Liability, Railroad Protective Liability, and Automobile Liability insurance policies, certificates of insurance, and insurance policy endorsements furnished pursuant to this Agreement shall include, The City of Commerce, its officers, agents, elected officials, and employees, as an additional insureds.

7-5 PERMITS

The CONTRACTOR shall be responsible for complying with all requirements set forth in the permits / agreements obtained by Agency for the project are included in Project Appendices. The CONTRACTOR shall pay all charges required to comply with the conditions outlined in the permits. Copies of the AGENCY-acquired permits (listed below). Full compensation for complying with these permit requirements shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

The CONTRACTOR shall comply with all requirements of the permits / agreements that are identified to be completed by or performed by the "City," "AGENCY," "AGENCY's Contractor" or similar term with the same meaning. The CONTRACTOR shall satisfy all submittal or notification requests or requirements listed in the permits or agreements,

through the Engineer. The CONTRACTOR shall be responsible for obtaining necessary permit riders or extensions at the AGENCY's request.

a.) Caltrans Encroachment Permit issued to the Agency

A State of California Department of Transportation (Caltrans) Encroachment Permit was obtained by the Agency. However, the CONTRACTOR shall submit to Caltrans, a signed application requesting a separate permit authorizing the CONTRACTOR to perform the work within Caltrans right-of-way on behalf of the Agency. The CONTRACTOR shall pay all charges, fees and bonds for this permit. The application shall be made to the State of California, Department of Transportation, 100 South Main St., Los Angeles, CA 90012, Attn: Office of Permits.

Unless otherwise authorized by the State Encroachment Permit, all work within Caltrans right-of-way shall be performed in accordance with the latest State of California Department of Transportation Standard Specifications and/or in accordance with Agency requirements set forth in the Contract Documents.

Although many parts of the Contract Documents identify the "AGENCY" as the inspection, review and acceptance party, the use of the term Agency in those instances may also mean review and acceptance by the Agency and/or Caltrans. The Agency shall be the CONTRACTOR's single point of contact for administration of the Contract. Unless otherwise instructed by the Agency, all submissions requiring Caltrans' approval shall be submitted to the Agency and The Agency will forward the submission to Caltrans

The Contract plans and specifications supersede the plans and specifications included in the package submitted for the Caltrans permitting process (and included as part of Project Appendices).

b.) Los Angeles County Flood Control District Permit PCFL 201301893 (included in the Project Appendices)

c.) State Water Resources Control Board Notice of Intent (NOI) issued to the AGENCY / City (included in SWPPP in the Project Appendices)

- 1.) General Permit to Discharge Storm Water Associated with Construction Activity
- 2.) National Pollutant Discharge Elimination System (NPDES) General Permit

- d.) Railroad (included in the Project Appendices)
 - 1.) BNSF Roadway Surfacing Agreement
 - 2.) UP RR Right-of-Entry Agreement (UPRR Folder No. 2797-81)

7.5.2 Contractor-Acquired Permits

The CONTRACTOR shall apply for and obtain all other permits and licenses (not identified in section 7.5.1) required to perform the work and will include the cost of the required permits and licenses in the bid price. Full compensation for complying with these permit requirements shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

7.5.3 Contractor-Mitigation Measures

The project conditions of approval and the mitigation measures have been imposed upon the Project and must be satisfied and/or complied with in connection with, prior to or as part of the performance of the Work. These Project Mitigation Measures include, but not limited to, all permits and the Mitigation Monitoring Program (in the Project Appendices).

CONTRACTOR shall coordinate its activities and the activities of all Subcontractors in full compliance with the Mitigation Monitoring Program and shall be responsible to cause all Mitigation Monitoring Program to be satisfied.

All costs associated with adhering to the Mitigation Monitoring Program shall be considered included in the various contract items of work and no additional compensation will be allowed therefore.

7.5.4 Americans with Disabilities Act Requirements

CONTRACTOR shall comply with all current Americans with Disabilities Act requirements.

- 1.) References to ADAAG or the ADA Accessibility Guidelines refer to the ADA [Americans with Disabilities Act] Accessibility Guidelines for Buildings and Facilities, adopted 7/23/04 by the U.S. Access Board, reflecting current amendments by the U.S. Department of Transportation, available at www.access-board.gov.

- 2.) References to USDOT ADA Standards refer to the U.S. Department of Transportation ADA Standards for Transportation Facilities, effective 11/29/06, available at www.access-board.gov.
- 3.) References to USDOJ ADA Standards are to the U.S. Department of Justice ADA Standards for Accessible Design, 2010, available at www.access-board.gov.

If CONTRACTOR identifies any work requirement that differs from or conflicts with the current ADA requirements noted above, it shall bring such discrepancy to the attention of the Engineer prior to beginning that work. The Engineer will reply with direction as to how the CONTRACTOR shall proceed.

7-7 COOPERATION AND COLLATERAL WORK

7-7 COOPERATION AND COLLATERAL WORK

4th paragraph, DELETE in its entirety and SUBSTITUTE with the following:

Nothing in the Contract shall be interpreted as granting to the Contractor exclusive occupancy of the site of the project. The Contractor must ascertain to his own satisfaction the scope of the project and the nature of any other contracts that have been or may be awarded by the Agency in the construction of the project, to the end that the Contractor may perform this Contract in the light of such other constraints, if any.

It is anticipated that work by other contractors, municipalities and utility companies may be in progress adjacent to and within the limits of this project during progress of the work on this contract. Progress schedules for other work/contracts, if available, may be inspected by the CONTRACTOR upon approval by the Engineer. Such progress schedules are tentative and cannot be guaranteed accurate.

It is anticipated that construction projects including but not limited to the following may be in progress concurrently with this project:

- 1.) Southern California Edison street lighting and power pole relocations
- 2.) Caltrans Interstate 710 Pavement Rehabilitation Project, from Interstate 105 to Interstate 10.
- 3.) BNSF railroad crossing modification

The CONTRACTOR shall be aware of Section 5-1.20A, within the Caltrans SSPs of these Project Special Provisions, for possible construction near the Project area.

The Contractor shall not cause any unnecessary hindrance or delay to any other contractor working on or adjacent to the project. If the performance of any Contract for the project is likely to be interfered with by the simultaneous performance of some other contract or contracts, the Engineer will decide which contractor shall cease work temporarily and which contractor shall continue or whether the work under the contracts can be coordinated so that the contractors may proceed simultaneously. On all questions concerning conflicting interest of contractors performing related work, the decision of the Engineer shall be binding upon contractors concerned and the Agency, the Engineer, the Agency Representative, and each of their officers, employees, and agents shall not be responsible for any damages suffered or extra costs incurred by the Contractor resulting directly or indirectly from the award of performance or attempted performance of any other contract or contracts on the project or caused by a decision or omission of the Engineer respecting the order of precedence in the performance of the contracts.

If, through acts of neglect on the part of the Contractor, any other contractor or any subcontractor shall suffer loss or damage on the Work, the Contractor agrees to settle with such other contractor or subcontractor by agreement or arbitration, if such other contractor or subcontractor will so settle. If such other contractor or subcontractor shall assert any claim against the Agency, the Engineer, the Agency Representative, or their consultants on account of any damage alleged to have been so sustained, the Agency will notify the Contractor. To the maximum extent permitted by law, all obligations of the Contractor stated in Subsection 7-3.2 shall apply in the case of the assertion of any such claims or liabilities against the Agency, the Engineer, the Agency Representative and each of their officers, employees, and agents against any such claim.

The CONTRACTOR shall cooperate with all private business property owners affected by the PROJECT. The CONTRACTOR shall notify with printed notifications (in English and Spanish language), at least 1 month prior to commencement of any work on the project to all agencies, firms, hospitals, Bus Transit Authorities, schools, stores, utilities, and waste disposal services fronting or effected by the work. A second notification in person and with printed notification (in English and Spanish Language) shall be presented at least ten (10) working days prior to commencing work. Additional, printed notifications (in English and Spanish language) shall be given not less than five (5) working days prior to performance of any work which will restrict property access, close or partially close the street, or which will restrict or disallow street parking. All schools and churches shall receive seven (7) working days notification prior to performing any work which will restrict property access.

The CONTRACTOR shall coordinate with school district for pick-up and drop-off of school children, Bus Transit for pick-up and drop-off of riders, waste disposal collection, the postal service to ensure delivery of mail, and churches for weekly or special activities.

The printed notices shall contain a general description of the work to be done and the date that the work is done. The notices shall also include a statement that parking will be restricted as called for on the "NO PARKING" signs to be posted along the street. All public notices must be reviewed and approved by the Resident Engineer and City prior to its distribution.

The CONTRACTOR shall also post printed "NO PARKING -TOW AWAY" signs at one-hundred-foot (100') maximum spacing along each side of the affected streets for four (4) working days prior to the commencement of the street improvement work. The CONTRACTOR shall document the day, date and time the "NO-PARKING" signs were posted. Posting of signs on trees and utility poles will not be allowed.

The signs shall contain the day, date, hours, and vehicle code that parking will be prohibited on that particular street, CVC 22651L and CVC 22654D. The signs shall be removed immediately upon completion of work that will prohibit parking.

The CONTRACTOR'S attention is directed to "Utilities," of these Special Provisions. Several utility companies will be performing work concurrent with work on this Project. The CONTRACTOR shall cooperate with these utilities and allow them sufficient time and working space to complete their work.

The CONTRACTOR shall be responsible for coordinating with other agencies and entities during construction. Notifications related to construction scheduling with the respective agencies and entities is the responsibility of the CONTRACTOR. Except in the case of an emergency, all notifications shall be through the AGENCY. The CONTRACTOR shall notify the AGENCY, at least ten (10) working days prior.

1.) City of Commerce Coordination

City of Commerce
2535 Commerce Way
City of Commerce, CA 90040
Attn: Director of Public Works

2.) Fire & Police notification.

For construction staging/detours
Los Angeles County Sheriff's

Department
5019 E. 3rd St.
Los Angeles, CA 90022
(323) 264-4151

For construction staging/detours:
Los Angeles County Fire Authority
(323) 881-2411

For inspection scheduling:
Fire Department Inspectors
Monday-Friday: 8 a.m. - 10 a.m.
(323) 720-9913

- 3.) **United States Postal Service.** If existing mailboxes need to be relocated, the CONTRACTOR shall notify the United States Postal Service / Post Master (USPS), of the need to remove / relocate mail boxes from the existing location and coordinate such work with the USPS. If coordination is necessary for temporary mailbox relocation during construction or blocking of access to mailboxes, the CONTRACTOR shall be responsible for notifying the USPS of work impacting mailboxes.

The CONTRACTOR shall coordinate with other contractors that may have work within the project limits, which have authorization to perform work. The CONTRACTOR shall provide work windows, and schedule his work such that both the progression of the Project work and the progression of the other contractor's work can be performed with minimal interruption. Any disputes of work schedules shall be brought to the attention of the AGENCY for resolution.

7-8 WORK SITE MAINTENANCE

Add the following:

7-8.1 General

7-8.1.1 Contractor's Work Area, Clean-up and Debris Removal

The CONTRACTOR shall comply with the CITY of Commerce's codes and regulations for maintain the project site clean and debris free. CONTRACTOR shall:

- 1.) Initiate and maintain a specific program to prevent accumulation of debris on-site and along access roads and haul routes. Maintain areas under CONTRACTOR's control free of waste materials, debris, excess vegetation, weeds, and rubbish. Maintain site in a clean and orderly condition.
- 2.) Provide suitable covered containers for deposit of debris and rubbish. Dispose of accumulation of extraneous materials, prohibit overloading of trucks to prevent spillages on access and haul routes and provide periodic inspection of haul routes to enforce requirements.
- 3.) Schedule periodic collection and disposal of debris. Provide additional collections and disposals of debris whenever the periodic schedule is inadequate to prevent accumulation.

CONTRACTOR shall remove debris from closed or remote spaces prior to closing the space, control cleaning operations to minimize dust and other particulates and immediately remove clay and earth which adhere to the paved surface of the roadway. Remove by hand scraping, washing, sweeping, and/or other method(s) which will leave a clean non-skid surface without impairing, injuring or loosening the surface.

CONTRACTOR shall remove waste materials, debris, vegetation, and other rubbish, as directed by the AGENCY's Representative, and dispose of off-site in an approved disposal site or recycling center.

7-8.1.2 Construction Water

Construction water is necessary for the completion of the Contract work for trench and earthwork compaction, dust control, and other purposes. The CONTRACTOR shall secure water sources and supply facilities to complete all items of work in this Contract. The CONTRACTOR shall pay all costs associated with the development of construction water supply, including, but not limited to, securing availability, usage charges, service connections, taps, meters, pipelines, valves, tanks, reservoirs, fees, and related items necessary to obtain, transport or supply of construction water. Water usage will be metered and payment of actual water bill shall be the CONTRACTOR's responsibility.

The CONTRACTOR shall coordinate directly with the applicable water supplying Agency regarding water availability, rates, points of connection, etc. The AGENCY

assumes no responsibility for water service interruptions, flow rates, and all other items related to construction water usage.

Payment for DEVELOP WATER SUPPLY, including all labor, materials, equipment, and tools required to develop construction water supply including, but not limited to, applying and paying applicable fees and charges, shall be considered as included in various bid prices, and no additional compensation will be allowed therefor.

The CONTRACTOR shall, whenever possible and not in conflict with other requirements of the Contract, minimize the use of water during construction of the project. Watering equipment shall be kept in good working order; water leaks shall be repaired promptly; and washing of equipment, except when necessary for safety or for the protection of equipment, shall be discouraged. Water used for construction purposes such as dust control, compaction, cleaning streets, etc., may be reclaimed water.

7-8.1.3 Construction Power

The CONTRACTOR shall provide portable power plants and/or connection to existing electrical distribution system for construction needs. The source of existing power should be Southern California Edison Company (SCE). Prior to connecting to existing system, the CONTRACTOR shall obtain permit from AGENCY for installation of temporary power pole and/or system, and arrange for required inspections and coordinate temporary meter installation with AGENCY and SCE.

7-8.1.4 Construction Communication

The CONTRACTOR shall arrange telephone or cell phone service so that the CONTRACTOR can be reached, at all times, and shall provide the AGENCY with a list of CONTRACTOR'S Personnel Directory for the project. CONTRACTOR shall pay Service Company charges for local telephone service and construction related toll charges. CONTRACTOR is responsible for collecting toll charges made by unauthorized personnel.

7-8.1.5 Construction Sanitation

The CONTRACTOR shall furnish and maintain portable toilet units in a clean, operable and sanitary condition for use by construction personnel. CONTRACTOR shall place units in conformance with applicable laws, codes and regulations.

7-8.4 Storage of Equipment and Materials

Add the following:

7-8.4.3 Delivery, Unloading and Storage of Materials and Equipment

The CONTRACTOR shall be completely responsible for all delivery, unloading and storage activities required for the completion of work under the contract.

CONTRACTOR shall be solely responsible for all products, equipment and materials delivery to Work site and in off-site storage. The CONTRACTOR shall develop and implement procedures necessary to ensure protection of products, equipment and materials upon delivery and during construction. The CONTRACTOR shall:

- 1.) Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
- 2.) Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- 3.) Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- 4.) Provide MSDS information to the Engineer upon delivery to project site.
- 5.) Determine and comply with manufacturer's instructions and recommendations for product handling. Have manufacturer's written instructions and recommendations on hand at the project site and make available to the Engineer upon request.
- 6.) Deliver products to Work site in undamaged condition, in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Maintain packaged materials with seals unbroken and labels intact until time of use. Products will be subject to rejection if they do bear required identification or are unsuitably packaged.

7-8.6.3.1 Best Management Practices (BMPs)

The CONTRACTOR shall designate a Qualified SWPPP Practitioner (QSP), with qualifications as defined by Construction General Permit (CGP) Order No. 2009-0009-DWQ, who will be responsible for compliance with CGP requirements on the

project at all times. A QSP is a person responsible for non-storm water and storm water visual observations, sampling and analysis.

The CONTRACTOR shall be responsible throughout the duration of the Contract for installing, construction, inspecting, maintaining, removing and disposing of BMPs for wind erosion control, tracking control, erosion and sediment control, non-storm water control, and waste management and materials pollution control. Unless otherwise directed by the Engineer, the CONTRACTOR shall be responsible for BMP implementation and maintenance throughout any temporary suspension of the Work.

7-8.6.5 Stormwater Permits

The CONTRACTOR shall comply with the stormwater requirements during construction and post-construction that have already taken effect, or will take effect in the future, and are as listed:

1. Los Angeles County Municipal Separate Storm Sewer System (MS4) (Order No. R4-2012-0175) NPDES Permit No. CAS004001
2. Construction General Permit (Order No. 2009-0009-DWQ)

7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

Add the following:

7-9.1 Restoration of Existing Conditions

It is anticipated that the CONTRACTOR will impact existing underground features during the construction of the roadway improvements. The CONTRACTOR shall restore the impacted features to certified conditions or better upon demobilization.

Prior to the commencement of work, the CONTRACTOR shall meet with the Engineer to photograph and document the existing conditions. The existing conditions include, but not limited to, existing roof drain culverts in the sidewalk that outlet through the curb and painted curb.

7-9.2 Tree Restoration

During performance of Work under this Contract, The CONTRACTOR shall adhere to the tree removal policy of the jurisdiction within whose boundaries the Work takes

place. Trees which are required to be removed in order to construct the project will be shown on the plans and jointly marked in the field by the Agency and the CONTRACTOR, as trees to be removed.

These will be the only trees whose removal by the CONTRACTOR shall be permitted by the terms of the Contract and the costs therefor shall be deemed to be included in the appropriate pay items of the Contract. Trimming or removal of any trees not specifically designated on the plans shall only be allowed upon review, conditioning and approval by the Agency.

7-9.3 Existing Landscape and Irrigation Restoration

It is anticipated that the CONTRACTOR will impact existing landscaping and irrigation during the construction and forming for the street improvements. The CONTRACTOR shall restore the impacted areas to certified conditions or better upon demobilization.

Prior to the commencement of work, the CONTRACTOR shall meet with the Engineer to photograph and document the existing conditions. The existing condition includes, but not limited to, existing tree and planting species and irrigation systems.

Landscaping and Irrigation Restoration, in the disturbed areas, shall be restored to certified conditions, with replace-in-kind planting species and irrigation materials, or better, prior to demobilization. With Engineer's approval, the replace-in-kind plantings maybe of lesser maturity than existing. If damaged by the CONTRACTOR, the irrigation system, once repaired, shall be tested for full automatic operation with the Engineer present.

If the CONTRACTOR re-plants existing trees or shrubs, the CONTRACTOR shall obtain approval from the Engineer's arborist to verify health and survival of tree/shrubs. If the existing tree/ shrub is deemed as damaged, by the AGENCY or his representative, the CONTRACTOR shall replace the tree with the same in-kind species, at the CONTRACTOR's expense.

The CONTRACTOR shall also provide topsoil, mulch, and all other landscaping treatments, to the thickness, per the existing condition and for the viability of the restored landscaping. Plant maintenance and establishment period shall apply to these areas also.

Add the following:

7-9.4 Transit (Bus) Stop Coordination

Three separate agencies provide transit service along Atlantic Boulevard within the project site. The CONTRACTOR as part of his work shall be required to coordinate with the transit agencies to provide temporary bus stop closures and for the coordination of proposed bus stop shelters and appurtenances. The CONTRACTOR shall contact the appropriate agencies within the proper notification period as specified. The CONTRACTOR shall allow appropriate time as specified to allow the transit agency to provide early notification of temporary closures, and relocate/remove bus signs or equipment, as necessary. The CONTRACTOR shall provide the transit agency the duration of the CONTRACTOR's work, and when the stop can be re-opened for use. Bus stops equipment not claimed by the Transit agency maybe the property of the City of Commerce, and the CONTRACTOR shall coordinate work items with the City (Agency) for all transit stop closures required as part of the CONTRACTOR's work.

Transit Agency Contact Information:

City of Commerce Transportation Department

Contact: Claude McFerguson

Phone: (323) 887-4419

Notification: Provide 10 days notification for bus stop closures/ Re-routing

City of Montebello Transit

Contact: Transit Operations Supervisor Richard Aparicio

Phone: (323) 558-1625 ext. 204

Notification: Provide Three (3) weeks notification for bus stop closure/ Re-routing

Metro

Contact: Transit Operations

Phone: (323) 558-1625

Notification: Provide Three (3) weeks notification for bus stop closure/ Re-routing

Add the following:

7-9.5 Newspaper Stands

CONTRACTOR shall contact owner of newspaper stands, racks, or pay stations, within the project area. The owner information should be provided on the facility either by phone number or permit number. If the facility is abandoned or no contact information is provided on the facility, the CONTRACTOR shall contact the Agency

for disposition of the facility. If directed by the Agency to dispose of the facility the CONTRACTOR shall assume ownership and dispose of off the project site at a legal dumping site, or recycling center.

The CONTRACTOR shall protect the newspaper stands from damage or vandalism prior to collection of the facility by the owner.

Full compensation for all Protection and Restoration of Existing Improvements, including coordination, documentation, and testing, shall be considered as included in other items of work and shall not be paid for separately. No additional compensation will be allowed.

7-10 PUBLIC CONVENIENCE AND SAFETY

Add the following

7-10.1 General

CONTRACTOR shall so conduct its operations as to offer the least possible obstruction and inconvenience to the public and shall have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public. Unless otherwise provided in the Contract, all public traffic shall be permitted to pass through the Work with as little inconvenience or delay as possible. Where possible, such traffic shall be routed on new or existing paved surfaces. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by CONTRACTOR at its expense. Existing traffic signal and highway lighting systems shall be kept in operation for the benefit of the traveling public during progress of the Work, and other forces will continue routine maintenance of existing systems.

Unless expressly permitted in the Technical Specifications, construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limitations set forth in Division 15 of the Vehicle Code, shall not be operated over completed or existing treated bases, surfacing, pavement or structures in any areas within the limits of the project.

When entering or leaving roadways carrying public traffic, CONTRACTOR's equipment, whether empty or loaded, shall in all cases yield to public traffic. The CONTRACTOR shall install signs, lights, flares, barricades, and other facilities for the sole convenience and direction of public traffic and shall furnish competent

flaggers or a uniformed police officer whose sole duties shall consist of directing the movement of public traffic through or around the Work.

Work shall be performed in such a manner as to eliminate unnecessary noise, obstructions and other annoyances to occupants. The CONTRACTOR will not encumber premises with materials, equipment, and/or parking of cars. CONTRACTOR shall store materials, equipment and park cars in designated or approved areas.

Full compensation for compliance with all public convenience and public safety requirements of the Contract Documents shall be considered as included in the prices paid for the Contract items of Work and no additional compensation will be allowed.

7-10.2 Traffic Control

7-10.2.2 Traffic Control Plan (TCP)

Delete this section in its entirety and add the following:

The Stage Construction Plans (SC Plans) and other Plans indicate the traffic management and control measures and detours necessary to construct the project in accordance with the various stages of the project indicated by the Order of Work in Section 6-1.1.1 of these General Provisions.

It is anticipated that the CONTRACTOR will have to make modifications to the traffic management and traffic control indicated by the SC Plans and other traffic and staging plans included with these Project Documents to address its detailed planning and scheduling of the work, and if the CONTRACTOR's means and methods alter the staging and phasing of the work or the SC Plans. Any deviations from, or modifications to the SC Plans or other Project Document traffic and staging plans shall be made by a professional Civil Engineer, registered in the State of California, and shall be at the expense of the CONTRACTOR. The cost of any additional traffic management and control measures and detours not indicated are considered to be incidental to the performance of the items of work and no additional compensation will be made for such traffic management and control measures and detours. The CONTRACTOR shall amend, submit to the ENGINEER and obtain approval from ENGINEER, participate in meetings, provide supplemental information and data to the Agency, Caltrans and other approving authorities, for any modifications to the SC Plans and other Contract Document traffic and staging plans and contract

requirements affecting traffic control and traffic management. Submission of proposed modifications to those documents shall be made no less than twenty (20) days prior to implementation of the revised traffic control schemes proposed by the CONTRACTOR. The CONTRACTOR shall not proceed with the execution of the revisions to the SC Plans and other Project Document traffic and staging plans without prior written approval of the Engineer.

7-10.2.3 Construction Area Traffic Control Devices

7-10.2.3.1 General

This section sets forth requirements concerning flagging and traffic handling equipment and devices used in carrying out stage construction of the project.

Attention is directed to Part 6 of the CA MUTCD. Nothing in this section is to be construed as to reduce the minimum standards in these manuals.

7-10.2.3.2 Roadway Flaggers

Flaggers while on duty and assigned to traffic control or to give warning to the public that the highway is under construction and of any dangerous conditions to be encountered as a result thereof, shall perform their duties and shall be provided with the necessary equipment in conformance with Part 6 of the MUTCD and of the MUTCD California Supplement. The equipment shall be furnished and kept clean and in good repair by the CONTRACTOR at the CONTRACTOR's expense.

7-10.2.4 Traffic Handling Equipment and Devices

7-10.2.4.1 General

In addition to the requirements in Part 6 of the MUTCD and of the MUTCD California Supplement, all devices used by the CONTRACTOR in the performance of the work shall conform to the provisions in this section.

Traffic handling equipment and devices damaged from any cause during the progress of the work shall be repaired, including painting if necessary, or replaced by the CONTRACTOR at the CONTRACTOR's expense.

When traffic control devices furnished by the CONTRACTOR are no longer needed for controlling traffic, they shall be removed from the site of the work.

The exact placement of traffic handling equipment and devices may need to be adjusted to avoid concrete joint lines. The CONTRACTOR shall be responsible for identifying the locations in which there is a conflict prior to the beginning of each phase of construction. The CONTRACTOR shall propose an alternative layout. The alternative layout shall be approved by the ENGINEER prior to implementation. The alternative design shall be included in the prices paid for STAGE CONSTRUCTION/TRAFFIC CONTROL and no additional compensation will be allowed therefor.

Whenever the term "hours of darkness" is used in the specifications it shall be deemed to mean the hours of darkness as defined in Division 1, Section 280, of the California Vehicle Code. Retroreflective sheeting shall conform to the requirements in ASTM Designation: D 4956 and to the Special Provisions.

7-10.2.4.2 Barricades

Barricades shall conform to the details shown on the plans and shall be as specified in this section.

Barricades shall be constructed of lightweight commercial quality materials, as approved by the ENGINEER. Stay bracing for "A" frame designs shall not be rigid.

Markings for barricade rails shall be alternate orange and white stripes. The entire area of orange and white stripes shall be Type II, super engineering grade, retroreflective sheeting. The color of the orange retroreflective sheeting shall conform to PR No. 6, Highway Orange, of the Federal Highway Administration's Color Tolerance Chart. Retroreflective sheeting shall be placed on rail surfaces in such a manner that no air bubbles or voids are present between the rail surface and retroreflective sheeting. The predominate color for barricade components other than rails shall be white, except that unpainted galvanized metal or aluminum may be used.

Owner identification shall not be imprinted on the reflectorized face of any rail, but may be imprinted elsewhere.

Ballasting shall be by means of sand filled bags placed on the lower parts of the frame or stays, but shall not be placed on top of the barricade nor over any reflectorized barricade rail face facing traffic.

If the barricades are displaced or are not in an upright position, from any cause, the barricades shall immediately be replaced or restored to their original location, in an upright position, by the CONTRACTOR.

7-10.2.4.3 Flashing Arrow Signs

Flashing arrow signs shall be finished with commercial quality flat black enamel and shall be equipped with yellow or amber lamps that form arrows or arrowheads as required. Each lamp shall be provided with a visor and the lamps shall be controlled by an electronic circuit that will provide between 30 and 45 complete operating cycles per minute in each of the displays and modes specified. The control shall include provisions for dimming the lamps by reducing the voltage to 50 percent, ± 5 percent, for nighttime use. Type I signs shall have both manual and automatic photoelectric dimming controls. Dimming in both modes shall be continuously variable over the entire dimming range.

Flashing arrow signs shall conform to the following legibility requirements. The minimum legibility distance is the distance at which flashing arrow signs shall be legible at noon on a cloudless day and at night by persons with vision of or corrected to 20/20.

Type	Min. Size	Min. Number of Panel Lights	Min. Legibility Distance
I	48" x 96"	15	One mile
II	36" x 72"	13	$\frac{3}{4}$ mile

Flashing arrow signs shall be capable of being operated in 4 different display modes as follows.

The display to be used shall be as directed by the Engineer:

- 1.) Pass Left Display
- 2.) Pass Right Display
- 3.) Simultaneous Display
- 4.) Caution Display

Flashing arrow signs shall also be capable of operating in one or both of the following modes, at the option of the CONTRACTOR:

- 1.) Flashing Arrow Mode
- 2.) Sequential Mode

In the flashing arrow mode, all lamps forming the arrowhead and shaft shall flash on and off simultaneously.

In the sequential mode, either arrowheads or arrows shall flash sequentially in the direction indicated.

In the simultaneous display mode, the lamps forming both right and left arrowheads and the lamps of the arrow shaft (center 3 on Type I signs) shall flash simultaneously. On Type II signs, the lamps forming the right and left arrowhead, except the center lamp, may be continuously illuminated while the lamps forming the shaft and the center lamp of the arrowheads flash on and off simultaneously.

In the caution display mode, a combination of lamps not resembling any other display or mode shall flash.

Each flashing arrow sign shall be mounted on a truck or on a trailer and shall be capable of operating while the vehicle is moving and shall be capable of being placed and maintained in operation at locations as shown on the plans, as specified or as directed by the Engineer. Flashing arrow signs shall be mounted to provide a minimum of 7 feet between the bottom of the sign and the roadway.

Trailers on which flashing arrow signs are mounted shall be equipped so that they can be leveled and plumbed.

Electrical energy to operate the sign shall be obtained from the vehicle on which the sign is mounted or from a generating plant mounted on the vehicle. Regardless of the source, the supply of electrical energy shall be capable of operating the sign in the manner specified.

7-10.2.4.4 Portable Delineators

Portable delineators, including the base, shall be composed of a material that has sufficient rigidity to remain upright when unattended and shall be either flexible or collapsible upon impact by a vehicle. The base shall be of such shape as to preclude roll after impact. The base shall be of sufficient weight or shall be anchored in a manner such that the delineator shall remain in an upright position. Ballast, if used for the bases of portable delineators, shall be sand or water.

If the portable delineators are displaced or are not in an upright position, from any cause, the delineators shall immediately be replaced or restored to their original location, in an upright position, by the CONTRACTOR.

The vertical portion of the portable delineators shall be of a fluorescent orange or predominantly orange color. The posts shall be not less than 3 inches in width or diameter. The minimum height shall be 36 inches above the traveled way.

A minimum of 2 retroreflective bands, each not less than 3 inches wide, shall be mounted a minimum of 1 1/2 inches apart and at a height on the post so that one retroreflective band will be between 2.5 feet and 3 feet above the roadway surface.

Retroreflective bands shall be white and shall be fabricated from flexible reflective sheeting as specified. The retroreflective bands shall be visible at 1,000 feet at night under illumination of legal high beam headlights, by persons with vision of or corrected to 20/20.

Only one type of portable delineator shall be used on the project. The type of portable delineator proposed for use on the project shall be submitted to the Engineer for approval prior to placement on the project.

7-10.2.4.5 Construction Area Signs

The term "Construction Area Signs" shall include all temporary signs required for the direction of public traffic through or around the work during construction. Construction area signs are shown in or referred to in Part 6 of the MUTCD and of the MUTCD California Supplement. Construction area signs shall be installed at the locations shown on the plans as directed by the Engineer.

Construction area signs designated as stationary mounted on the plans shall conform to the provisions in Section 7-10.2.4.5A, Stationary Mounted Signs, and construction area signs designated as portable signs on the plans shall conform to the provisions in Section 7-10.2.4.5B, Portable Signs. Construction area signs not designated as stationary mounted nor as portable on the plans shall be, at the CONTRACTOR's option, either stationary mounted or portable signs conforming to the provisions in Sections 7-10.2.4.5A or 7-10.2.4.5B.

All construction area signs shall conform to the dimensions, color and legend requirements of the plans, Part 6 of the MUTCD, Part 6 of the MUTCD California Supplement, and these Special Provisions. All sign panels shall be the product of a commercial sign manufacturer. Sign panels for all construction area signs shall be visible at 500 feet and legible at 300 feet, at noon on a cloudless day and at night under illumination of legal low beam headlights, by persons with vision of or corrected

to 20/20, except that the nighttime requirement shall not apply to fabric sign panels for portable signs.

The CONTRACTOR may be required to cover certain signs during the progress of the work. Covers for construction area signs shall be of sufficient size and density to completely block out the message so that it is not visible either during the day or at night. Covers shall be fastened securely to prevent movement caused by wind action.

7-10.2.4.5.1 Stationary Mounted Signs

Stationary mounted signs shall be installed on wood posts or square perforated steel tube posts with a break-away base in the same manner shown on the plans for installation of roadside signs, except as follows:

1. Back braces and blocks for sign panels will not be required.
2. The height to the bottom of the sign panel above the edge of traveled way shall be at least 7 feet.
3. 2. Construction area sign posts may be installed on above ground temporary platform sign supports as approved by the Engineer, or the signs may be installed on existing lighting standards or other supports as approved by the Engineer. When construction area signs are installed on existing lighting standards, holes shall not be made in the standards to support the sign.

The number of posts required for sign installation shall be as shown on the plans or, when not shown on the plans, shall be determined by the area of the sign or combination of signs to be installed. A single post shall be used where both the length and width are less than 48". Double posts shall be used where either the length or the width exceeds 48".

Sign panel fastening hardware shall be commercial quality.

7-10.2.4.5.2 Portable Signs

Each portable sign shall consist of a base, standard or framework and a sign panel. The units shall be capable of being delivered to the site of use and placed in immediate operation.

Sign panels for portable signs shall conform to the provisions for sign panels for stationary mounted signs in Section -7-10.2.4.5A, Stationary Mounted Signs, or shall be Type VI retroreflective sheeting, or shall be cotton drill fabric, flexible industrial

nylon fabric or other approved fabric. Fabric signs shall not be used during the hours of darkness. Size, color and legend requirements for portable signs shall be as described for stationary mounted sign panels in Section 7-10.2.4.5A. The height to the bottom of the sign panel above the edge of traveled way shall be at least one foot.

If portable signs are displaced or overturned, from any cause, during the progress of the work, the CONTRACTOR shall immediately replace the signs in their original locations.

7-10.2.4.6 Channelizers

Channelizer posts shall be orange in color.

Channelizers shall have affixed white retroreflective sheeting as specified. The retroreflective sheeting shall be 3" x 12" in size. The retroreflective sheeting shall be visible at 1,000 feet at night under illumination of legal high beam headlights, by persons with vision of or corrected to 20/20.

The channelizer bases shall be cemented to the pavement with hot melt bituminous adhesive or rapid set type epoxy adhesive in conformance with the manufacturer's instructions. Channelizers shall be applied only on a clean, dry surface.

In areas of new construction where the markers are protected from all traffic, including the CONTRACTOR's vehicles, standard set epoxy adhesive for pavement markers may be used. The protection from all traffic shall be for at least 3 hours after marker placement when the pavement surface temperature is 55° F or above, at least 24 hours when the temperature is between 40° F and 55° F, and at least 48 hours when the temperature is 40° F or below.

Channelizers shall be placed on the alignment and location shown on the plans, or directed by the Engineer. The channelizers shall be placed uniformly, straight on tangent alignment and on a true arc on curved alignment. All layout work necessary to place the channelizers to the proper alignment shall be performed by the CONTRACTOR.

If the channelizers are displaced or fail to remain in an upright position, from any cause, the channelizers shall immediately be replaced or restored to their original location, by the CONTRACTOR.

7-10.2.4.7 Temporary Railing (Type K)

Temporary railing (Type K) shall consist of interconnected new or undamaged used precast concrete barrier units as shown on the plans. Exposed surfaces of new and used units shall be freshly coated with a white color paint prior to their first use on the project.

CONTRACTOR shall include the cost of 20-foot and 10-foot K-Rail segments, based on the Stage Construction Plans (SC) included in the Bid Plans.

Temporary railing (Type K) may have the CONTRACTOR's name or logo on each panel. The name or logo shall not be more than 4 inches in height and shall be located not more than 12 inches above the bottom of the rail panel.

Temporary railing (Type K) shall be set on firm, stable foundation. The foundation shall be graded to provide a uniform bearing throughout the entire length of the railing.

Abutting ends of precast concrete units shall be placed and maintained in alignment without substantial offset to each other. The precast concrete units shall be positioned straight on tangent alignment and on a true arc on curved alignment.

At the CONTRACTOR'S discretion, threaded rods or dowels shall be bonded in holes drilled in the existing concrete. After removal of the temporary railing (Type K), all threaded rods or dowels shall be removed to a depth of at least one inch below the surface of the concrete. The resulting holes shall be filled with mortar and shall be cured by either the water method or by the curing compound method. The Engineer's approval of any CONTRACTOR-requested modifications to the Temporary Railing (Type K) installation shall not be grounds for a change order request or time extension request by the CONTRACTOR.

Each rail unit placed within 10 feet of a traffic lane shall have a reflector installed on top of the rail. Reflectors shall be as specified in the Special Provisions, and adhesive shall conform to the reflector manufacturer's recommendations. A Type P marker panel shall also be installed at each end of railing installed adjacent to a two lane, two way highway and at the end facing traffic of railing installed adjacent to a one way roadbed. If the railing is placed on a skew, the marker shall be installed at the end of the skew nearest the traveled way. The CONTRACTOR shall furnish the Type P marker panels.

When temporary railings (Type K) are removed, any area where temporary excavation or embankment was used to accommodate the temporary railing shall be restored to its previous condition or constructed to its planned condition.

7-10.2.4.8 Traffic Cones

Traffic cones shall be fluorescent and of good commercial quality, flexible material suitable for the purpose intended. The outer section of the portion above the base of the cone shall be translucent and be of a highly pigmented fluorescent orange polyvinyl compound. The overall height of the cone shall be at least 28 inches and the bottom inside diameter shall be not less than 10.5 inches. The base shall be of sufficient mass and size or shall be anchored in a manner that the traffic cone will remain in an upright position.

During the hours of darkness traffic cones shall be affixed with retroreflective cone sleeves. The retroreflective sheeting of sleeves on the traffic cones shall be visible at 1,000 feet at night under illumination of legal high beam headlights, by persons with vision of or corrected to 20/20. Retroreflective cone sleeves shall conform to one of the following:

- 1.) Removable flexible retroreflective cone sleeves shall be fabricated from the retroreflective sheeting specified, have a minimum height of 13 inches and shall be placed a maximum of 3 inches from the top of the cone. The sleeves shall not be in place during daylight hours;
- 2.) Permanently affixed semitransparent retroreflective cone sleeves shall be fabricated from the semitransparent retroreflective sheeting specified, have a minimum height of 13 inches, and shall be placed a maximum of 3 inches from the top of the cone. Traffic cones with semitransparent retroreflective cone sleeves may be used during daylight
- 3.) Permanently affixed double band retroreflective cone sleeves shall have 2 white retroreflective bands. The top band shall be 6 inches in height, placed a maximum of 4 inches from the top of the cone. The lower band shall be 4 inches in height, placed 2 inches below the bottom of the top band. Traffic cones with double band retroreflective cone sleeves may be used during daylight hours.

The type of retroreflective cone sleeve used shall be at the option of the CONTRACTOR. Only one type of retroreflective cone sleeve shall be used on the project.

7-10.2.4.9 Portable Changeable Message Signs

Each portable changeable message sign unit shall consist of a controller unit, a power supply and a structural support system, all mounted on a trailer. The unit shall be assembled to form a complete self-contained portable changeable message sign which can be delivered to the site of the work and placed in immediate operation. The complete message sign unit shall be capable of operating in an ambient air temperature range of 4° F to 158° F and shall not be affected by unauthorized mobile radio transmissions. The trailer shall be equipped so that it can be leveled and plumbed.

The message displayed on the sign shall be visible from a distance of 1,500 feet and shall be legible from a distance of 750 feet, at noon on a cloudless day, by persons with vision of or corrected to 20/20. The sign panel shall be 3 line matrix and shall display not less than 7 characters per line. Sign messages to be displayed shall be as approved by the Engineer.

The sign face shall be flat black and shall be protected from glare of the sun by a method which does not interfere with the clarity of the sign message. The sign shall be raised and lowered by means of a power driven lifting mechanism.

The matrix sign shall be capable of complete alphanumeric selection.

Lamp matrix type signs shall be equipped with an automatic dimming operational mode that automatically compensates for the influence of a temporary light source or other abnormal lighting conditions. The sign shall have manual dimming operation modes of 3 or more different lamp intensities.

Matrix signs not utilizing lamps shall be either internally or externally illuminated at night.

The controller shall be an all solid state unit containing all the necessary circuitry for the storage of at least 5 preprogrammed messages. The controller shall be installed in a location allowing the operator to perform all functions from one position. A keyboard entry system shall be provided to allow an operator to generate an infinite number of additional messages over the preprogrammed stored messages. The keyboard shall be equipped with a security lockout feature to prevent unauthorized use of the controller.

The controller shall contain a nonvolatile memory to hold the keyboard created messages in memory during periods when the power is not activated. The controller shall provide for a variable message display rate which allows the operator to match the information display to the speed of the approaching traffic. The flashing off time shall be operator adjustable within the control cabinet.

Full operation height shall be with the bottom of the sign at least 7 feet above the ground and the top no more than 14.5 feet above the ground.

After initial placement, portable changeable message signs shall be moved from location to location as directed by the Engineer.

Portable changeable message signs shall be furnished, placed, operated, and maintained at locations shown on the plans, as specified, or as designated by the Engineer.

7-10.2.4.10 Temporary Traffic Stripes and Pavement Markings

Temporary traffic stripes and pavement markings shall be removed by any method that does not materially damage the existing pavement. Pavement marking images shall be removed in such a manner that the old message cannot be identified. Where grinding is used, the pavement marking image shall be removed by grinding a rectangular area. The minimum dimensions of the rectangle shall be the height and width of the pavement marking. Residue resulting from removal operations shall be removed from pavement surfaces by sweeping or vacuuming before the residue is blown by the action of traffic or wind, migrates across lanes or shoulders, or enters into drainage facilities.

Temporary traffic stripes shall be removed before any change is made in the traffic pattern

7-10.2.5 Temporary Pavement Markers

Temporary pavement markers, including underlying adhesive, shall be removed by such methods that will cause the least possible damage to the pavement or surfacing. Damage to the pavement or surfacing caused by pavement marker removal shall be repaired by the CONTRACTOR at the CONTRACTOR's expense by methods acceptable to the Engineer.

During the removal of ceramic type pavement markers, screens or other protective devices shall be furnished to contain any fragments.

Fragments resulting from the removal of pavement markers shall be removed from the highway before the lane or lanes are opened to public traffic.

7-10.2.6 Temporary Signing

7-10.2.6.1 Construction Project Information and Funding Identification Sign

The CONTRACTOR shall furnish and install a total of two (2), Type H, 84 inch by 78 inch Construction Project Information and Funding Identification signs at locations designated by the Engineer, one sign for each direction of travel, before starting major construction activities visible to roadway users. Upon completion of the project, the CONTRACTOR shall remove and dispose of Construction Project Information and Funding Identification signs. Manufacturing details entitled "Atlantic Boulevard Reconstruction Project" for Construction Project Information and Funding Identification signs are available at:

<http://www.dot.ca.gov/hq/traffops/engineering/control-devices/projectinfosigns.htm>

The CONTRACTOR shall coordinate with the Agency for design requirements including: agency logos, temporary mounting system, and exact locations.

The CONTRACTOR shall submit shop drawings of the sign, posts, and foundation, in accordance with the Special Provisions. The CONTRACTOR shall refer to Technical Specifications, Signage, for materials and construction methods when preparing the shop drawings.

7-10.4 Safety

7-10.4.1 Work Site Safety

7-10.4.1.1 General

Add the following:

The CONTRACTOR shall promptly and fully comply with, carry out and shall without separate charge therefore to the Agency enforce compliance with the safety and first aid requirements stated herein, prescribed by applicable laws and regulations and those prescribed by an official or representative charged with the enforcement thereof. The CONTRACTOR shall take such other measures as may be necessary so that work shall be done in a safe manner and that the safety and health of

employees and the people of local communities are safeguarded. Compliance with these conditions by subcontractors is the responsibility of the CONTRACTOR.

The CONTRACTOR, its sub-tier contractors, suppliers, and employees have the obligation to comply with all Agency Health, Safety and Environmental Compliance (HSEC) department requirements, as well as all federal, state, and local regulations pertaining to scope of work, contracts or agreements with the Agency including California Department of Transportation safety requirements and special provisions. Additionally, manufacturer requirements are considered incorporated by reference as applicable to this scope of work.

Observance of repeated unsafe acts or conditions, serious violation of health and safety standards, non-conformance of Agency health, safety and environmental compliance (HSEC) requirements, or disregard for the intent of these safety specifications to protect people and property, by the CONTRACTOR may be reason for termination for cause, of agreements with the Agency, at the sole discretion of the Agency.

The Agency shall be immediately notified of any of the following types of incidents:

- Damage to Agency projects or property (or incidents involving third party property damage);
- Reportable and/or Recordable injuries (as defined by the U. S. Occupational Safety and Health Administration);
- Incidents impacting the environment, i.e. spills or releases on Agency projects or property.

Notifications shall be made to Agency representatives, employees and/or agents. This includes incidents occurring to subcontractors, vendors, visitors, or members of the general public that arise from the performance of Agency contract work. A comprehensive investigation and written report shall be submitted to Agency's Engineer within 24 hours of the incident.

A serious injury or incident may require a formal incident review and report to be submitted by the CONTRACTOR at the discretion of the Agency's Engineer. The incident review and investigation shall be conducted within seven (7) calendar days of the incident and a written incident report submitted within ten (10) days of the incident. The serious incident report shall include action taken for the welfare of the injured, a status report of the injured, causation factors leading to the incident, a root

cause analysis, and a detailed recovery plan that identifies corrective actions to prevent a similar incident, and actions to enhance safety awareness.

A serious incident includes, but is not limited to, an injury or illness to one or more employees, occurring in a place of employment or in connection with any employment, which requires inpatient hospitalization for a period in excess of twenty-four hours for other than medical observation, or in which an employee suffers the loss of any member of the body, or suffers any serious degree of physical disfigurement, or property damage that causes disruption of operations, delay of work schedule, causes a serious injury, causes third party or other property damage, or requires emergency services.

The CONTRACTOR shall establish and maintain adequate First Aid facilities at locations close to work areas, and mark such locations with signs of adequate size and composition. CONTRACTOR shall also ensure that at least one CPR/first aid trained employee for every fifteen (15) employees on site. At no time shall less than two (2) CPR/first aid trained employees be on site during operational hours. Training records or certificates for initial and renewal CPR/ first aid training shall be forwarded to the Agency no later than ten (10) days following Notice to Proceed.

7-10.4.4 Hazardous Substances

Add the following:

CONTRACTOR shall be responsible for the disposal of all excess materials generated during the performance of this Contract including any hazardous materials removal which is part of the Work. Hazardous materials must be deposited in approved locations in accordance with all laws and regulations. When any material is to be disposed of outside the project area, other than a public disposal site, CONTRACTOR shall first obtain a written permit from the property owner on whose property the disposal is to be made and he shall file with Agency said permit or a certified copy thereof together with a written release from the property owner absolving Agency from any and all responsibility in connection with the disposal of material and said property, and before any material is disposed of on said property, CONTRACTOR shall obtain written permission from Agency to dispose of the material at the location designated in said permit.

The CONTRACTOR shall comply with the requirements within Caltrans Section 14 Standard Specifications and of the Project SSPs for Aerially Deposited Lead, Yellow Paint, Asbestos Pipe, and Treated Wood Waste, within the Project area.

Add the following:

7-10.4.4.1 Aerially Deposited Lead

Aerially Deposited Lead is defined as lead deposited within the unpaved areas of the project Right of Way, primarily due to vehicle emissions. Materials with total levels of lead greater than the Total Threshold Limit Concentration (TTLC), or solubility levels as established by the California Waste Extraction Test (WET) greater than the Solubility Threshold Limit Concentration (STLC) established by the California Code of Regulations shall be considered hazardous pursuant to the California Code of Regulations. The materials with aerially deposited lead are not regulated under the Federal Resource Conservation and Recovery Act (RCRA).

Provisions of this section shall be made a part of every subcontract executed pursuant to this contract. Excavation, transportation, placement and handling of soils containing aerially deposited lead shall result in no visible dust. The CONTRACTOR shall have a water truck available at all times while performing earthwork, excavation or grubbing activities in work areas containing aerially deposited lead at hazardous levels.

Once the CONTRACTOR has completed the placement of materials containing aerially deposited lead, in accordance with the plans, as specified in these Special Provisions, the CONTRACTOR shall have no responsibility for such materials in place and shall not be obligated for further cleanup, removal or remedial actions for such materials.

Excavation, reuse, and disposal of material with aerially deposited lead shall be in accordance with all rules and regulations of agencies including, but not limited to, the following:

- United States Department of Transportation (US DOT)
- United States Environmental Protection Agency (USEPA)
- California Department of Health Services (DHS)
- California Environmental Protection Agency (Cal EPA)
- Department of Toxic Substances Control (DTSC)
- Regional Water Quality Control Board (RWQCB)
- South Coast Air Quality Management District (SCAQMD)
- California Division of Occupational Safety and Health Administration (CAL OSHA)

The CONTRACTOR shall prepare a project specific Lead Compliance Plan to prevent or minimize exposure to potentially hazardous levels of lead, and submit the Plan to the Engineer at least fifteen (15) days prior to beginning any work in areas containing Aerially Deposited Lead. The CONTRACTOR's attention is directed to the California Code of Regulations and the Occupational Safety and Health Guidance Manual published by National Institute of Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), and USEPA for elements of the site safety plan. The Health and Safety Plan shall contain as a minimum but not be limited to: identification of key personnel for the project, job hazard analysis for work assignments, summary of risk assessment, air monitoring plan, personal protective equipment, delineation of work zones on site, decontamination procedures, general safe work practices, security measures, emergency response plans and worker training.

The Lead Compliance Plan shall utilize monitoring and exposure standards based on Construction Standards of the California Code of Regulations and as a minimum shall contain a description of activities, specific means employed to achieve compliance, report of the technology considered, schedule for implementation of the program, a work practice program, administrative control schedule, description of arrangements for information transfer between contractors concerning potential exposure to lead and other relevant information. The Lead Compliance plan shall be approved by the CONTRACTOR's Certified Industrial Hygienist before submission to the Engineer. The plan shall be submitted to the Engineer for review and acceptance at least fifteen 15 days prior to beginning any work in areas containing aerially deposited lead.

Prior to performing any work in areas containing lead, personnel who have no prior training or are not current in their training status, including the Agency personnel, and the Agency's consultant's personnel, shall complete a safety training program provided by the CONTRACTOR, which meets the requirements of the California Code of Regulations.

Personal protective equipment, training, and medical surveillance required by the CONTRACTOR's Health and Safety Plan shall be supplied to the Agency personnel by the CONTRACTOR.

7-10.4.4.2 Asbestos and Hazardous Substances

When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the CONTRACTOR encounters materials which the CONTRACTOR reasonably believes to be asbestos or a hazardous substance as defined in the California Code of Regulations, and the asbestos or hazardous substance has not been rendered harmless, the CONTRACTOR may continue work in unaffected areas reasonably believed to be safe. The CONTRACTOR shall immediately cease work in the affected area and report the unanticipated condition to the Engineer in writing.

Pursuant to California Health and Safety Code, a DTSC certified waste hauler must transport hazardous waste to an appropriate waste disposal facility. Waste profiling and manifesting shall conform to the requirements in accordance with Health and Safety Code.

In the event underground asbestos pipes or hazardous materials not indicated to be removed are encountered during prosecution of the Work, CONTRACTOR shall immediately, and before disturbing such conditions, notify the Agency in writing of such discovery.

The Agency shall promptly investigate the conditions, and if it finds the conditions to be materially different or to involve hazardous waste, and cause a decrease or increase in the CONTRACTOR'S cost of, or the time required for, performance of any part of the work, Agency shall issue a Change Order. If a dispute arises between the Agency and the CONTRACTOR whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the CONTRACTOR'S cost of, or time required for, performance of any part of the work, the CONTRACTOR shall not be excused from any scheduled completion date provided for by this Contract, but shall proceed with all work to be performed under this Contract; provided, however, the CONTRACTOR shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

Material that the CONTRACTOR believes may be material that is hazardous waste as defined in the Health and Safety Code, and that is required to be removed by the Agency, shall be transported to a Class I, II or III disposal site in accordance with the provisions of existing law.

7-10.5 Security and Protective Devices

7-10.5.1 General

Add the following:

7-10.5.1.1 Security

CONTRACTOR shall provide and be responsible for all security at the job site that is required to protect its material and equipment and all Work in place. CONTRACTOR shall also be responsible for providing all security and traffic control required by any Agency having jurisdiction in the area where Work is being performed.

7-10.5.1.2 Storage and Protection Requirements

CONTRACTOR shall develop and implement procedures necessary to ensure protection of products, equipment and materials after delivery to Work site. CONTRACTOR shall be solely responsible for all products stored on site and in off-site storage and shall:

1. Protect stored products from damage.
2. Store products to allow for inspection and measurement of quantity or counting of units.
3. Store materials in a manner that will not endanger any Project structures.
4. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
5. Determine and comply with product manufacturer's written instructions for handling products.
6. Determine and comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Maintain packaged materials with seals unbroken and labels intact until time of use. Products will be subject to rejection if they do not bear required identification or are unsuitably packaged.
8. In event of damage, promptly make replacements and repairs to packaging and contents, as acceptable to Engineer, at no change in Contract Sum and Contract Time.

7-11 PATENT FEES AND ROYALTIES

Delete in its entirety and substitute with the following:

The CONTRACTOR shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the Work and shall hold harmless, indemnify, and defend the Agency, the Engineer, the Agency Representative and each of their officers, employees, and agents from all claims, suits or actions of every nature for or on account of the use of any patented materials, equipment devices, or processes.

7-13 APPLICABLE LAW AND JURISDICTION

Add the following:

This Contract incorporates provisions required by the laws of the State of California and the Federal Government. It shall be the CONTRACTOR's responsibility to determine the applicability of State and Federal laws, rules and regulations to the work to be performed under this Contract.

This Contract shall be governed by California law. Any lawsuit or legal action arising from this Contract shall be commenced and prosecuted in the courts of Los Angeles County, California.

The CONTRACTOR shall keep itself informed of, comply with, and shall cause all of its agents, employees, suppliers and subcontractors of any tier, to observe and comply with all applicable Federal, State, and local laws, regulations, and policies.

If the contract to be awarded is subject to a financial assistance contract between the Agency and the U.S. Department of Transportation and/or the Federal Highway Administration (identified in the Invitation for Bids), the CONTRACTOR shall keep itself informed of, comply with, and shall cause all of its agents, employees, suppliers and subcontractors of any tier, to observe and comply with all applicable terms and conditions prescribed for third party contracts by the U.S. Department of Transportation (DOT) and/or the Federal Highway Administration (FHWA).

SECTION 8 – FACILITIES FOR AGENCY PERSONNEL

8-2 FIELD OFFICE FACILITIES

8-2.1 Class "A" Field Office

Replace the section with the following:

The CONTRACTOR shall furnish and maintain a Class A Field Office for the exclusive use of the Engineer and his staff in accordance with the provisions of Section 8-2.1, "Class "A" Field Office," of the Standard Specifications. The sanitary facility provided by the CONTRACTOR shall be maintained in a clean, neat and sanitary fashion at all times and shall be for the exclusive use of the Engineer and his staff. All sanitary paper products required for the sanitary facility shall be supplied by the CONTRACTOR and shall be considered as included in the Contract unit price bid.

In addition, the Field Office shall be a minimum of 225 square feet, shall be provided with air conditioning, and a facsimile machine with a separate phone line and a copying machine capable of photocopying 11"x17" size paper for the exclusive use of the Engineer and his staff for the entire duration of the Project.

CONTRACTOR shall be aware that theft and vandalism at the job site may be a problem. CONTRACTOR shall be responsible for the security of the Class A Field Office.

If for any reason the air conditioning, phone, copier, facsimile machine, any office furniture, and/or sanitary facility is vandalized, stolen, or in need of repair, the CONTRACTOR, upon receipt of written notice by Engineer, shall have a maximum of five (5) working days to replace or repair the above items to full working order. If CONTRACTOR fails to comply within the five (5) working days specified, the City may at its option withhold monthly progress payments until Class A Field Office is returned to full and complete working order.

CONTRACTOR shall meet with the Engineer prior to construction (and at any other time circumstances warrant), and together, shall mutually agree to a location for the field office.

Full compensation for conforming with the requirements of CLASS A FIELD OFFICE shall include, but not limited to, the following:

- a. supply office, air conditioning, and sanitary facility,
- b. furnish office,
- c. service office,
- d. supply utilities for office (electricity and phone)

- e. service and maintain sanitary facility - weekly
- f. facsimile machine (separate phone line),
- g. copying machine (11"x17"),
- h. remove office from job site at the completion of the PROJECT
- i. security,
- j. all labor, tools, equipment, materials, and incidentals necessary to furnish facility
- k. complete and in place

SECTION 9 – MEASUREMENT AND PAYMENT

9-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK

9.1.2 Methods of Measurement

Add the following:

9.1.2.1 Final Pay Quantities

When an item of work is designated as (F) in the "Bid Proposal", 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 (F) in the "Bid Proposal" 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 case of discrepancy between the quantities shown in the "Bid Proposal" 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 "Bid Proposal".

9-2 LUMP SUM WORK

After the last paragraph, add the following:

The CONTRACTOR shall follow the Special Provisions table of contents for listing component parts. Each line item shall be identified by number and title of major Specifications section. The installed value of each major item of work and each subcontracted item of work shall be listed as a separate line item to serve as a basis for computing values for progress payments. The CONTRACTOR shall round off values to nearest dollar and coordinate listings with progress schedule. Component listings shall each include a directly proportional amount of CONTRACTOR's overhead and profit.

Add the following Subsection:

9-2.1 Schedule of Values

The CONTRACTOR shall furnish the Agency a cost break-down for all contract lump sum items. Cost break-down tables shall be submitted to the Agency Representative for approval within fifteen (15) Working Days after the Contract has been approved. Cost break-down tables will be approved, in writing, by the Agency Representative before any partial payment will be made for the applicable items involved.

Cost break-downs shall be completed and furnished on 8-1/2" x 11" paper. CONTRACTOR's standard form will be considered upon request.

The CONTRACTOR shall determine the quantities required to complete the Work shown on the Plans. The quantities and their values shall be included in the cost break-downs submitted to the Agency Representative for approval. The CONTRACTOR shall be responsible for the accuracy of the quantities and values used in the cost break-downs submitted for approval.

The sum of the amounts for the line items of work listed in each cost break-down table for each lump sum item shall be equal to the contract lump sum price bid. Overhead and profit shall be included in each individual line item of work listed in a cost break-down table.

No adjustment in compensation will be made in the contract lump sum prices due to differences between the quantities shown in the cost break-downs furnished by the CONTRACTOR and the quantities required to complete the Work as shown on the plans and as specified in these Special Provisions.

9-3 PAYMENT

9-3.1 General.

Add the following:

When an item of Work is specified on the plans or included in the Contract Documents and is not listed in the "Bid Proposal" in the Bidders Proposal, the cost of such Work shall be considered to be included in the cost of the other Work that is listed and no additional compensation will be allowed therefore.

Add the following Subsections.

9-3.1.1 Application for Payment.

The CONTRACTOR shall use City Invoice for Progress Payment Form if available; the Agency Representative will furnish the form to the CONTRACTOR.

The CONTRACTOR shall type required information, follow bid items and bid prices in accepted Bidder's proposal for unit price contract, execute certification by signature of authorized officer, use data on accepted Bid Items for lump sum contract, provide dollar value in each column for each line item for portion of work performed, list each authorized Change Order number and dollar amount and adjusted Contract Price, and obtain Owner's Representative concurrence on invoiced amounts prior to submittal for payment.

The CONTRACTOR shall follow these submittal procedures: Submit original and one (1) copy of each Application for Payment at times stipulated in Subsection 9-3.2 "Partial and Final Payment"; submit under transmittal letter; include submittal date, project title and number and submit updated Progress Schedule with Application for verification of progress. Incomplete application for payment will be rejected.

When Agency Representative requires substantiating information, the CONTRACTOR shall submit data justifying line item amounts in question.

The CONTRACTOR shall provide one copy of data with cover letter for each copy of submittal, show application number and date, and line item by number and description.

9-3.2 Partial and Final Payment

Add the following Subsection:

9-3.2.1 Agency's Right to Withhold Certain Amounts and Make Application Thereof.

In addition to the amount which the Agency may retain under the above article on progress payments, the Agency may withhold a sufficient amount or amounts from any payment otherwise due to the CONTRACTOR as in the Agency's judgment may be necessary to cover:

- a.) Payments which may be past due and payable for just claims against the CONTRACTOR or any Subcontractors for labor or materials furnished in or about the performance of the Work on the project under this Contract.
- b.) Estimated or actual costs for correcting defective work not remedied.
- c.) Amounts claimed by the Agency as forfeiture due to delay or other offsets.
- d.) Any other amounts the Agency is authorized to withhold under the Contract Documents or under applicable law.

The Agency may apply such withheld amount or amounts to the payment of such claims in its discretion. In so doing, the Agency shall be deemed the agent of the CONTRACTOR and any payments so made by the Agency shall be considered as a payment made under the Contract by the Agency to the CONTRACTOR, and the Agency shall not be liable to the CONTRACTOR for such payment made in good faith. Such payments may be made without prior judicial determination of the claim or claims. The Agency will render to the CONTRACTOR a prior account of such funds disbursed in behalf of the CONTRACTOR.

9-3.4 Mobilization

Add the following:

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; for securing and submitting pre-NTPC obligations; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract work items on the project site.

Mobilization shall include, but not be limited to, the following items:

- a.) Moving on to the site of all CONTRACTOR's plant and equipment required.
- b.) Installing temporary construction power and wiring.
- c.) Establishing fire protection system.
- d.) Providing and maintaining on-site sanitary facilities and portable water facilities, as required.
- e.) Arranging for and erection of CONTRACTOR's work and storage yard.
- f.) Submittal of all required insurance certificates and bonds, including subcontractors.
- g.) Obtaining all required permits.
- h.) Posting all OSHA required notices, prevailing wage rates and establishment of safety programs.
- i.) Having the CONTRACTOR's Superintendent present at the job site full-time.
- j.) Southern California Edison Fees
- k.) California Water Fees for, but not limited to, Irrigation Services and Fire Hydrant Assemblies.
- l.) All other work and operations which must be performed or costs incurred prior to beginning work on the various contract items

Payment

The Mobilization bid item shall not exceed five percent (5%) of the Contract Price. Payments for mobilization will be made as follows:

When the monthly progress payment total amount earned to date, not including the amount earned for mobilization, is 5 percent or more of the total Contract Price, 50 percent of the contract item price for mobilization or 5 percent of the original contract amount, whichever is the lesser, will be included in the progress payment invoice as the mobilization pay item earned to date figure.

No payments for the mobilization pay item will be made unless the CONTRACTOR has submitted its proposed Preliminary 120-day Schedule. Payments for the mobilization pay item in excess of 10% of the mobilization pay item amount will not be made unless the CONTRACTOR has submitted and obtained AGENCY's acceptance of its proposed Preliminary 120-day Schedule. Payments for the mobilization pay item in excess of 50% of the mobilization pay item amount will not be made unless the CONTRACTOR has submitted and obtained Agency's acceptance of its proposed Baseline Schedule.

When the monthly progress payment total amount earned to date, not including the amount earned for mobilization, is 10 percent or more of the total Contract Price, the total amount earned for mobilization shall be 70 percent of the contract item price for mobilization or 7 percent of the original contract amount, whichever is the lesser, and that amount will be included in the progress payment invoice as the mobilization pay item earned to date figure.

When the monthly progress payment total amount earned to date, not including the amount earned for mobilization, is 20 percent or more of the total Contract Price, the total amount earned for mobilization shall be 90 percent of the contract item price for mobilization or 9 percent of the original contract amount, whichever is the lesser, and that amount will be included in the progress payment invoice as the mobilization pay item earned to date figure.

When the monthly progress payment total amount earned to date, not including the amount earned for mobilization, is 50 percent or more of the total Contract Price, the total amount earned for mobilization shall be 100 percent of the contract item price for mobilization will be included in the progress payment invoice as the mobilization pay item earned to date figure.

Other item eligible for progress payments, within the Caltrans right-of-way, are listed in Section 9-1-16C of the Project Caltrans SSPs.

9-4 PROJECT ITEM MEASUREMENT & PAYMENT

9-4.1 Mobilization. Payment for MOBILIZATION shall be at the Contract Unit Price per LUMP SUM (LS) and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in mobilization as specified in these Special Provisions, and as directed by the Engineer.

9-4.2 Construction Schedule. Payment for CONSTRUCTION SCHEDULE shall be at the contract unit price per LUMP SUM and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, including determining the baseline schedule and all future updates/revisions, and for doing all the work involved in CONSTRUCTION SCHEDULE as specified in these Special Provisions, and as directed by the Engineer.

9-4.3 Field Office, Class A. Payment for FIELD OFFICE, CLASS A shall be at the contract unit price per MONTH and shall include all labor, tools, equipment,

materials, and incidentals necessary to furnish facility complete and in place, rent (if applicable), applying and paying applicable utility fees and charges, and shall be considered as included in the Contract MONTH price paid for FIELD OFFICE, CLASS A and no additional compensation will be allowed therefor.

9-4.4 Water Pollution Control. Payment for WATER POLLUTION CONTROL shall be at the contract unit price per LUMP SUM and shall include full compensation for preparation of the WPCP, revisions to the WPCP, testing, implementation, and WPCP maintenance, which may include sediment traps, check dams, fiber rolls, silt fences, storm drain inlet protections, and all appurtenances, as indicated on the AGENCY approved CONTRACTOR prepared Water Pollution Control Plan, and all other related costs for labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place, necessary to perform all the work involved in WATER POLLUTION CONTROL, Best Management Practices (BMPs), and Water Pollution Control Plan (WPCP), and as directed by the City, complete in place, conforming to the requirements herein, and as directed by the Engineer.

9-4.5 Remove Curb and Gutter. Payment for REMOVE CONCRETE CURB AND GUTTER shall be made at the Contract Unit Price per LINEAR FOOT (LF) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to, sawcutting, excavation, removals, haul away and disposal of existing concrete curb and gutter within the limits as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.6 Relocate Existing Sign. Payment for RELOCATE EXISTING SIGN shall be made at Contract Unit Price per EACH (EA) and shall include compensation for furnishing all labor, tools, materials, equipment, and incidentals necessary to accomplish the work as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.7 Remove Asphalt Concrete Pavement. Payment for REMOVE ASPHALT CONCRETE PAVEMENT shall be made at the Contract Unit Price per CUBIC YARD (CY) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to, sawcutting, removals, haul away and disposal of existing asphalt concrete pavement within the limits as shown on the plans, as specified in the Standard Specifications, these Technical

Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.8 Unclassified Excavation. Payment for UNCLASSIFIED EXCAVATION (AB & NATIVE SOIL) shall be at the contract unit price per CUBIC YARD (CY) and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, for all roadway excavation, hauling, placing, compaction, export, stockpiling, disposal fees, removing the existing pavement section of aggregate base and native soil for the construction of the proposed pavement, saw cutting, existing AC and PCC pavement section removal, including base materials, disposal of material, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

Measurement of Unclassified Excavation shall be based on the theoretical volume it occupied prior to being excavated (i.e. volume based on measurement between existing/original topographic ground elevations and finished grade elevations as shown on the approved plans). The Agency may employ any approximate measurement methods it deems appropriate to determine the amount of progress payments. Placement and compaction of excavated materials as unclassified fill shall be considered incidental to Unclassified Excavation, and no additional compensation shall be allowed therefore.

Unclassified Excavation shall only be paid for once for a given volume of material and no additional compensation shall be allowed for additional moving or stockpiling.

Unclassified Excavation shall only be paid for once for a given volume of material and no additional compensation shall be allowed for additional moving or stockpiling. materials, tools, equipment, and incidentals and for doing all the work involved, including hazardous waste management while excavating, stockpiling, transporting, placing, and disposing of material containing hazardous waste concentrations of Type Z-2 aerially deposited lead (ADL), excavation of the contaminated soils, disposal of material per an Agency accepted Lead Compliance Plan, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

9-4.9 Remove PCC Pavement. Payment for REMOVE PCC PAVEMENT shall be made at the Contract Unit Price per CUBIC YARD (CY) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to, sawcutting, grinding, excavation, removals, haul away

and disposal of existing concrete pavement along Atlantic Boulevard between Washington Boulevard and Jillson Street, along the trenches to install electrical conduit from the median to the sidewalk for median lighting, and along the Atlantic Boulevard Project Corridor under the existing asphalt concrete pavement within the limits estimated based on the *Geotechnical Report dated December 27, 2017, prepared by GeoAdvantec Inc.*, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor. Removal of PCC pavement will be required for the construction of the structure pavement section of the road and median concrete curb, and planting of trees and plants.

9-4.10 Class 2 Aggregate Base. Payment for CLASS 2 AGGREGATE BASE shall be at the contract unit price per CUBIC YARD and shall include full compensation for all labor, materials, tools, equipment, incidentals and for doing all work involved, complete in place, including scarification of native soil as recommended in the *Geotechnical Report dated December 27, 2017, prepared by GeoAdvantec Inc.*, subgrade preparation, furnishing, hauling, placing, spreading, shaping, and compacting the aggregate materials, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.11 Hot Mix Asphalt (Type A). Payment for HOT MIX ASPHALT (TYPE A) shall be at the contract unit price per TON and shall include full compensation for all labor, materials, tools, equipment, incidentals and for doing all work involved, complete in place, including subgrade preparation, furnishing, hauling, placing, spreading, shaping, compacting the asphalt concrete, tack coat, prime coat, redwood headers, utility adjustments, and as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.12 Imported Borrow. Payment for IMPORTED BORROW shall be paid as the item description of IMPORTED BORROW at the Contract Unit Price per CUBIC YARD (CY) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to grading, shaping, soil testing, compacting or consolidating, over-excavation, soil preparation requirements to satisfy soil moisture content requirements or other work that is required under this section, as shown on the plans, and no additional compensation will be allowed therefor.

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9-4.13 Full Depth Asphalt Concrete. Payment for FULL DEPTH ASPHALT CONCRETE shall be paid at the contract unit price per TON, and shall include full compensation for conforming to the requirements of this Section, for furnishing all labor, tools, materials, equipment and incidentals, application of tack coat, furnishing, placing and compacting asphalt concrete, all as necessary to complete the work, as shown on the Plans and as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.14 8" Concrete Curb (with dowels). Payment for 8" CONCRETE CURB (WITH DOWELS) shall be paid as the item description CONSTRUCT CURB AND GUTTER (WITH DOWELS), TYPE A1-8, (per SPPWC Standard Plan 120-2) at the contract unit price per LINEAR FOOT; and shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, including subgrade preparation, forming, finishes, curing, joints, moisture barrier, anchoring and dowel placement with epoxy per standard and for doing all work involved, complete in place, as shown on the Plans and Standard Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.15 Curb Ramp. Payment for CONSTRUCT CURB RAMP (per SPPWC Standard Plan 111-5) shall be at the Contract Unit Price per EACH (EA) and shall include full compensation for subgrade preparation, forming, grinding of existing pavement at gutter edge as needed to join elevations, finishes, curing, joints, ramp side slopes, grooves, retaining curbs, hand railing, curb ramp curb and gutter, detectable warning surface (truncated domes), and moisture barriers and for furnishing all labor, materials, tools, equipment, incidentals and for doing all work involved, complete in place, as shown on the Plans and Standard Plans, as specified in the Standard Specifications, and these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.
Curb Ramp area shall be measured from BCR to ECR.

9-4.16 Bus Shelter. Payment for BUS SHELTER shall be at the Contract Unit Price per EACH (EA) and shall include full compensation for furnishing and installing, the shelter, bus stop bench, 30 gallon perforated metal trash receptacle, solar panels, LED lighting, electrical system, End Wall Map Case/Bus Schedule Holder, hardware, appurtenances, testing the lighting/electrical, and for labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place, necessary to perform the items of work, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.17 Signing & Striping. Payment for SIGNING AND STRIPING shall be at the contract price per LUMP SUM (LS), and shall include full compensation for removing, furnishing and installing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place, including: removing and installing of pavement markers, signage, sign poles, relocation of signage, painting traffic stripes and pavement markings and applying thermoplastic stripes and pavement markings as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.18 Traffic Control. Payment for TRAFFIC CONTROL shall be at the contract unit price per LUMP SUM and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing, placing, maintaining, repairing, replacing and removing barricades, flashing arrow signs, portable delineators, portable flashing beacons, construction areas signs, channelizers, telescoping flag trees, traffic cones, portable changeable message signs; temporary K-rails (10-foot and 20-foot segments) temporary traffic stripes and pavement markings, and temporary pavement markers; temporary pavement; temporary safety fence, chain link fence and gates with privacy fence screen; temporary lighting; utility adjustments; and for doing all the work involved in Traffic Control as shown on the plans, as specified in these Special Provisions, and as directed by the Engineer, and no additional compensation will be allowed therefor.

The cost of furnishing all flaggers, including transporting flaggers, to provide for passage of public traffic through the work area will be borne by the CONTRACTOR and included in the prices paid for TRAFFIC CONTROL and no additional compensation will be allowed therefor.

Construction area signs, shown on the plans, and those signs required for traffic control system for lane closures, unless otherwise specified, will be included in the prices paid for TRAFFIC CONTROL and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing construction area signs required for the direction of public traffic through or around the work and for erecting or placing, maintaining (including covering and uncovering as needed) and, when no longer required, removing construction area signs at locations shown on the plans.

Removing, salvaging, reconstructing, relocating or resetting of roadside signs will be considered as included in the prices paid for TRAFFIC CONTROL and no additional compensation will be allowed therefor.

The cost for the Construction Project Information and Funding Identification signs shall be included in the price paid for TRAFFIC CONTROL and no additional compensation will be allowed therefor.

No separate payment will be made for removing temporary traffic stripes and pavement markings and full compensation therefor will be considered as included in the prices paid for TRAFFIC CONTROL and no additional compensation will be allowed therefor.

No separate payment will be made for removing, salvaging, reconstructing, relocating or resetting the various types of fence and full compensation therefor will be considered as included in the prices paid for STAGE CONSTRUCTION/TRAFFIC CONTROL and no additional compensation will be allowed therefor.

TRAFFIC CONTROL shall be considered complete and eligible for payment when all improvements affecting public traffic are complete and accepted.

9-4.19 Best Management Practices (BMPs) Payment for BEST MANAGEMENT PRACTICES (BMPs) shall be at the contract unit price per LUMP SUM (LS) and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing, construction, inspecting, maintaining, removing and disposing of BMPs for wind erosion control, tracking control, erosion and sediment control, non-storm water control, and waste management and materials pollution control. Unless otherwise directed by the Engineer, the CONTRACTOR shall be responsible for BMP implementation and maintenance throughout any temporary suspension of the Work.

9-4.20 Adjust Sanitary Sewer Manhole to Grade. Payment for ADJUST SANITARY SEWER MANHOLE TO GRADE shall be at the contract unit price per EACH (EA) and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, including adjustment of frames and covers to grade, adjustments to vaults that are part of the manhole as required, adjustment rings, complete in place, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.21 Adjust Water Valve to Grade. Payment for ADJUST WATER VALVE TO GRADE, shall be made at the Contract Unit Price per EACH (EA) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the

requirements herein, including but not limited to compacting or consolidating, over-excavation, soil preparation requirements to satisfy soil moisture content requirements, replacement of asphalt concrete or other work that is required under this section, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.22 Adjust Gas Valve to Grade. Payment for ADJUST GAS VALVE TO GRADE, shall be made at the Contract Unit Price per EACH (EA) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to compacting or consolidating, over-excavation, soil preparation requirements to satisfy soil moisture content requirements, replacement of asphalt concrete or other work that is required under this section, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.23 Landscape and Irrigation. Payment for LANDSCAPE AND IRRIGATION, shall be made at the Contract Unit Price as itemized on the Bid Schedule and will be considered full compensation for, but not limited to, furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, and shall include trenching to install remove and replace irrigation system on asphalt concrete pavement, concrete and or landscaped areas, including but not limited to, materials and related appurtenances, clean-up operations, excavation, backfilling, compaction, re-establishing the turf, asphalt concrete pavement or concrete pavement within the limits as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

9-4.24 Palm Tree Accent Light Fixture. Payment for PALM TREE ACCENT LIGHT FIXTURE shall be at the contract unit price per EACH and shall include full compensation for: light fixture, housing, component module, face trim, optical module, lens, electrical components, concrete encasement, and for furnishing all labor, materials, tools, equipment, incidentals and for doing all work involved, complete in place, as shown on the Plans and Standard Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

9-4.25 Palm Tree Accent Light Electrical Installation. Payment for PALM TREE ACCENT LIGHT ELECTRICAL INSTALLATION shall be at the contract unit price per LUMP SUM and shall include full compensation for: trenching, backfill, hand holes, pull boxes, photocells, service enclosures, conduit, sweeps, wiring, and for furnishing all labor, materials, tools, equipment, incidentals and for doing all work involved, complete in place, as shown on the Plans and Standard Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

9-4.26 Median Concrete Pavers. Payment for MEDIAN CONCRETE PAVERS shall be at the contract unit price per SQUARE FOOT and shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, including joint sand, thin-set mortar, concrete base, and subgrade compaction, and for doing all work involved complete in place, as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

9-4.27 Traffic Signal. Payment for TRAFFIC SIGNAL, will be made at the Contract Unit Price per LUMP SUM (LS) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, including but not limited to installing the new traffic signal and its appurtenances, controller and service cabinets, signal poles and foundations, signal heads and equipment, safety lighting system, conduit, conductors, pull boxes, EVP system, video detection system, advance loop detection, fiber optic cable and pull boxes, maintaining operation of existing traffic signal system, Southern California Edison scheduling and coordination, utility and pull box modifications and adjustments, as specified in the Standard Specifications and these Technical Provisions, as approved by the Engineer and no additional compensation will be allowed therefor.

9-4.28 Street Lighting. Payment for STREET LIGHTING shall be at the Contract Unit Price as itemized on the Bid Schedule and shall include full compensation for all labor, materials, tools, equipment, coordination with SCE, and incidentals and for doing all the work involved, complete in place, including: removing, furnishing and installing, and salvaging, foundations, pull boxes, conduit, standards and poles, luminaires, conductors, wiring, service, and testing as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, no additional compensation will be allowed therefor.

9-4.29 Remove PCC Cross Gutter. Payment for REMOVE PCC CROSS GUTTER shall be made at the Contract Unit Price per SQUARE FOOT (SF) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and

incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to, sawcutting, excavation, removals, haul away and disposal of existing concrete sidewalk, access ramp and curb ramp within the limits as shown on the plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor. Portion of the cross gutter shall be removed from nearest joint to joint.

9-4.30 Reconstruct PCC Cross Gutter Payment for Reconstruct PCC Cross Gutter will be made at the Contract Unit Price per SQUARE FOOT (SF) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to, grading, excavation and backfill, disposal, base preparation, subgrade preparation, forming, concrete installation, concrete protection and replacement of damaged or marked concrete, as shown on the Plans, as specified in the Standard Specifications and these Special Provisions, as approved by the Engineer and no additional compensation will be allowed therefor. Cross gutter shall be installed from nearest joint to joint, adjust height if necessary to conform to existing cross gutter and/or curb and gutter.

9-4.31 Reconstruct PCC Pavement (For Trenches and Sawcut) Payment for the reconstruction PCC pavement along the trenches to install the electrical conduit for median lighting and one (1) foot sawcut to install raised median will be made at the Contract Unit Price per CUBIC YARD (CY) and will be considered full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved, complete in place, conforming to the requirements herein, including but not limited to, grading, excavation and backfill, disposal, base preparation, subgrade preparation, forming, concrete installation, concrete protection and replacement of damaged or marked concrete, as shown on the Plans, as specified in the Standard Specifications and these Special Provisions, as approved by the Engineer and no additional compensation will be allowed therefor.

9-4.31 Asphalt Rubber and Aggregate Membrane (ARAM). Payment for ASPHALT RUBBER AND AGGREGATE MEMBRANE or ARAM shall be paid at the contract unit price per SQUARE YARD (SY) and shall include full compensation for all labor, materials, tools, equipment, incidentals and for doing all work involved in placing ARAM, and the installation of Joint Sealant along the longitudinal delineation between the two differing structural pavement sections to reduce and slow down the longitudinal crack, complete in place, including furnishing, mixing, hauling, placing, spreading, shaping, and compacting the asphalt rubber, coated aggregate, pavement preparation, sweeping, rock dust blotter, protection of utility facilities, as shown on the

Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer. ARAM shall have a minimum thickness of 3/8-inch.

9-4.32 Install City of Commerce Monument Sign. Payment for MONUMENT SIGN per details provided in the Construction Plans shall be at the contract unit price per EACH and shall include full compensation for all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place, including: furnishing and installing monument sign, concrete foundations, cables, fasteners, straps, and all appurtenances as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

9-4.33 Construct Survey Monument. Payment for establishing CONSTRUCT SURVEY MONUMENT, as designated for re-establishment of existing or new, shall be at the contract unit price per EACH and shall include full compensation for all labor, materials, tools, equipment, including necessary excavation and backfill, adjustments to proper elevation, concrete, rebar, granular material, appurtenances, and incidentals and for doing the work involved in Survey Monuments, complete in place, as shown on the Plans, as specified in the Standard Specifications and as directed by the Engineer.

9-4.34 Pre & Post Construction Survey (Curb Ramps). Pre & Post Construction Survey, required for curb ramp (which also includes passageways) construction within Caltrans right-of-way only, will be paid for as PRE/POST CONSTRUCTION SURVEY (CURB RAMPS) and shall be at the contract unit price per EACH curb ramp and shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, surveying the curb ramps for layout prior to construction, verifying ADA compliant requirements for slopes and widths, re-surveying after corrections, documentation and reporting per Caltrans requirements, and for doing all work involved in Pre & Post Construction Survey for each curb ramp location, complete in place, as shown on the Plans, per Caltrans requirements, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

Pre/Post Construction Survey (Curb Ramps) shall only be paid for once for a given curb ramp, regardless of the number of times the curb ramp is surveyed, and shall include at least one pre construction and one post construction survey, and no additional compensation shall be allowed for additional surveying.

9-4.35 Project Information Sign. Payment for PROJECT INFORMATION SIGNS shall be at the contract price per LUMP SUM, and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the

work involved in PROJECT INFORMATION SIGN, including engineering design for sign sizing and layout, structural support calculations, shop drawings, fabrication, excavation, backfill, concrete foundation, posts, installation, maintenance, refacing, relocating, and removal, complete in place, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer.

If the sign is moved to another location, no additional payment will be made to the CONTRACTOR for relocation or reinstallation of the same sign.

9-4.36 MKT – 18" x 200' ROLL + S&H. Payment for MKT – 18" x 200' ROLL +S&H shall be paid at the contract unit price per EACH (EA) and shall include full compensation for all labor, materials, tools, equipment, incidentals and for doing all work involved in placing and installing the MKT, complete in place, including furnishing, hauling, protection of utility facilities, placing as shown on the Plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer. ARAM shall have a minimum thickness of 3/8-inch.

9-4.37 Type III-CF Service Cabinet. Payment for TYPE III-CF SERVICE CABINET shall be at the contract price per LUMP SUM, and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in placing and installing TYPE III-CF SERVICE CABINET, including conduit, trenching, and backfill for Southern California Edison Company service from power source to proposed Type III-CF service enclosures/cabinets, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer.

9-4.38 Truncated Domes. Payment for TRUNCATED DOMES shall be at the Contract Unit Price per SQUARE FOOT and shall include full compensation and for furnishing all labor, materials, tools, equipment, incidentals and for doing all work involved, complete in place, as shown on the Plans and Standard Plans, as specified in the Standard Specifications, and these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

**PROPOSAL FOR
ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS**

TO THE HONORABLE MAYOR AND MEMBERS OF THE COUNCIL OF NORWALK:

In compliance with the annexed Notice Inviting Sealed Bids, the undersigned hereby proposes and agrees to perform all the work, and improvements therein described, and to furnish all labor, material, equipment and incident insurance necessary therefore, in accordance with the plans and specifications therefore which are on file in the office of the City Engineer of the City of Commerce; and the undersigned agrees to perform the work and improvements therein mentioned to the satisfaction of and under the supervision of the City Engineer of the City of Norwalk duly appointed, and further agrees to enter into a contract therefore in the time, form and manner provided by law at the following prices with the undersigned that the time within which the aforementioned work must be completed by the undersigned is fixed at **SIXTY (60) WORKING DAYS**, starting from and after the date of execution of the contract agreement, via:

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
1.	1 LS	Mobilization		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Lump Sum		
2.	501 LF	Remove Curb and Gutter		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Linear Foot		
3.	5 EA	Relocate Existing Sign		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	-	_____
		Per Each		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
4.	2,445 CY	Remove Asphalt Concrete Pavement		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Cubic Yard		
5.	2,502 CY	Unclassified Excavation (AB & Native Soil)		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Cubic Yard		
6.	606 CY	Remove PCC Pavement		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Cubic Yard		
7.	2,105 SF	Remove PCC Cross Gutter		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Square Foot		
8.	1 EA	Install City Of Commerce Monument Sign		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Each		
9.	1,417 CY	Class 2 Aggregate Base		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Cubic Yard		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
10.	5,286 TON	Hot Mix Asphalt (Type A)		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Ton		
11.	22 TON	Full Depth Asphalt Concrete		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Ton		
12.	5,110 LF	8" Concrete Curb (With Dowels)		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Linear Foot		
13.	2 EA	Project Information Sign		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Each		
14.	18 EA	Curb Ramp		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Each		
15.	4 EA	Bus Shelter		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Each		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
16.	1 LS	Signing & Striping		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Lump Sum		
17.	1 LS	Traffic Control		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Lump Sum		
18.	1 LS	BMPs		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Lump Sum		
19.	2 EA	Adjust Sanitary Sewer Manhole to Grade		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Each		
20.	5 EA	Adjust Water Valve to Grade		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Each		
21.	19,260 SY	ARAM (Asphalt Rubberized Aggregate Membrane)		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Square Yard		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
22.	2,105 SF	Reconstruct PCC Cross Gutter		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Square Foot		
23.	11 CY	Reconstruct PCC Pavement (For Trenches and Sawcut)		
		_____ Dollars		
		& _____		
		_____ Cents		
		Per Cubic Yard		
24.	1 EA	Construction Schedule		
		_____ Dollars		
		& _____ Cents	\$ _____	\$ _____
		Per Each	_____	_____
25.	1 EA	Field Office, Class A		
		_____ Dollars		
		& _____	\$ _____	\$ _____
		_____ Cents	_____	_____
		Per Each		
26.	1 LS	Water Pollution Control		
		_____ Dollars		
		& _____		
		_____ Cents		
		Per Lump Sum	\$ _____	\$ _____
27.	1 EA	Adjust Gas Valve To Grade		
		_____ Dollars		
		& _____	\$ _____	\$ _____
		_____ Cents	_____	_____
		Per Each		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
28.	1 EA	Construct Survey Monument		
		_____ Dollars		
		& _____	\$ _____	\$ _____
		_____ Cents	_____	_____
		Per Each		
29.	1 EA	Pre & Post Construction Survey (Curb Ramps)		
			\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____		
		_____ Cents		
		Per Each		
30.	1,173 CY	Imported Borrow		
		_____ Dollars		
		& _____	\$ _____	\$ _____
		_____ Cents	_____	_____
		Per Cubic Yard		
31.	28 EA	MKT – 18" x 200' Roll + S&H (\$260/ROLL + \$20/ROLL S&H)		
		_____ Dollars	\$ _____	\$ _____
		& _____	_____	_____
		_____ Cents		
		Per Each		
32.	96 SF	Truncated Domes		
		_____ Dollars		
		& _____	\$ _____	\$ _____
		_____ Cents	_____	_____
		Per Square Foot		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
33.	1 LS	Traffic Signal _____ Dollars & _____ _____ Cents Per Lump Sum	\$ _____ _____	\$ _____ _____
34.	30 EA	Remove Existing Street Light Pole and Cobrahead Luminaire. Install New Ameron Type 1-C1 Series Street Light Pole and Acorn Post Top Decorative Luminaire with Eye Ledloc Acorn Lamp _____ Dollars & _____ _____ Cents Per Each	\$ _____ _____	\$ _____ _____
35.	3 EA	Remove Existing Mast Arm and Cobrahead Luminaire. Install New Acorn Post Top Decorative Luminaire with Eye Ledloc Acorn Lamp. _____ Dollars & _____ _____ Cents Per Each	\$ _____ _____	\$ _____ _____
36.	39 EA	Install #8 Wire Connecting Pullboxes to New Acorn Post Top Decorative Luminaires _____ Dollars & _____ _____ Cents Per Each	\$ _____ _____	\$ _____ _____

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
37.	39 EA	Replace Metal Halide Lamps with New Eye Ledioac Acorn Lamp Retrofit Kit _____ Dollars & _____ Cents Per Each	\$ _____ _____	\$ _____ _____
38.	39 EA	Install #5 Pullbox at Main Conduit Line _____ Dollars & _____ Cents Per Each	\$ _____ _____	\$ _____ _____
39.	6,000 LF	Install New 3" PVC Schedule 40 Conduit _____ Dollars & _____ Cents Per Linear Foot	\$ _____ _____	\$ _____ _____
40.	6,000 LF	Install #8 Conductor Circuit Into New Conduit _____ Dollars & _____ Cents Per Linear Foot	\$ _____ _____	\$ _____ _____
41.	520 CY	Site Preparation – Top Soil Import _____ Dollars & _____ Cents Per Cubic Yard	\$ _____ _____	\$ _____ _____
42.	13,980 SF	Site Preparation – Soil Grubbing, Testing, & Amending _____ Dollars & _____ Cents Per Square Foot	\$ _____ _____	\$ _____ _____

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
43.	280 CY	Construction – Concrete Unit Paver, Concrete Base	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Cubic Yard		
44.	8,200 SF	Construction – Concrete Unit Pavers	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Square Foot		
45.	5 LS	Electrical – POCs and Pedestal Meters	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Lump Sum		
46.	1 LS	Electrical – Light Fixtures And Lighting Control System	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Lump Sum		
47.	5 EA	Irrigation – Water POC - New	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Each		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
48.	5 EA	Irrigation – Controllers With Wiring & Sensors	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Each		
49.	5 EA	Irrigation – RP Backflow With Enclosure	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Per Each		
50.	1 LS	Irrigation – Valve Box Assemblies and Quick Couplers	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Lump Sum		
51.	1 LS	Irrigation – Mainlines & Pipe Sleeving	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Lump Sum		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
52.	1 LS	Irrigation – Drip and Bubbler Irrigation System	\$ _____	\$ _____
		_____ Dollars	_____	_____
		& _____ Cents		
		Lump Sum		
53.	29 EA	Planting – 36" Box Trees		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Each		
54.	43 EA	Planting – BTF Palms		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Each		
55.	1,320 EA	Planting – 5 Gallon Shrubs		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Each		
56.	610 EA	Planting – 1 Gallon Shrubs		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Each		

ITEM	APPROX QUANTITY	ITEM WITH UNIT PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL
57.	13,980 SF	Planting – 3" Depth Wood Mulch		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Square Foot		
58.	3 MONTHLY	Planting – 90 Day Maintenance		
		_____ Dollars	\$ _____	\$ _____
		& _____ Cents	_____	_____
		Per Each Month		
59.				

TOTAL AMOUNT FOR THIS PROJECT IN WORDS AND FIGURES

_____ \$ _____

In case of discrepancy between words and figures, the words shall prevail.

Accompanying this proposal or bid, find _____ in the amount of _____ which said amount is not less than ten percent (10%) of the aggregate of the proposal or bid, as required by the Notice Inviting Sealed Bids.

The undersigned further agrees, in case of award to him, or it, to the execution of the contract for the within described work and improvements within ten (10) days, excluding weekends and holidays, following award of contract, said work will be commenced within fifteen (15) days after the date of execution of the contract and thereafter diligently prosecuted to completion within the period.

ATLANTIC BOULEVARD CORRIDOR IMPROVEMENTS
City Project No. ; Federal Project No.

F. SPECIAL PROVISIONS

(Prepared by: BKF Engineers)

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK"

PART 2-CONSTRUCTION MATERIALS (Section 200s)

PART 3-CONSTRUCTION METHODS (Section 300s)

PART 6-TEMPORARY TRAFFIC CONTROL (Section 600s)

PART 7-STREET LIGHTING AND TRAFFIC SIGNAL SYSTEMS (Section 700s)

PART 8-LANDSCAPING AND IRRIGATION (Section 800s)

FILE 03, F. SPECIAL PROVISIONS, GREEN BOOK, Sections 200s, 300s, 600s, and 800s

Atlantic Boulevard Corridor Improvement

**SECTION F
SPECIAL PROVISIONS**

**STANDARD SPECIFICATIONS FOR PUBLIC WORKS
CONSTRUCTION "GREEN BOOK"**

**PART 2 - CONSTRUCTION MATERIALS
(Section 200s),**

**PART 3 – CONSTRUCTION METHODS
(Section 300s)**

**PART 6– TEMPORARY TRAFFIC CONTROL
(Section 600s)**

**PART 7– STREET LIGHTING AND TRAFFIC SIGNALS
(Section 700s)**

and

**PART 8– LANDSCAPING AND IRRIGATION
(Section 800s)**

This Section of the Technical Specifications is in accordance with the Standard
Specifications for
Public Works (Green Book Standard Specifications), 2015 Edition with modifications herein.

This Section F applies to all work items within the City of Commerce right of way and all other areas not specifically addressed within other sections of these technical specifications.

FILE 03, F. SPECIAL PROVISIONS, GREEN BOOK, Sections 200s, 300s, 600s, and 800s

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PART 2 – CONSTRUCTION MATERIALS

SECTION 200 – ROCK MATERIALS

200-2 UNTREATED BASE MATERIALS.

200-2.1 General. Replace this section with the following:

Subbase (AS) shall conform to Caltrans Standard Specification Section 25, "AGGREGATE SUBBASES" Class 2. Refer to Caltrans Specifications in Section G of these Special Provisions.

Aggregate Base (AB) shall conform to Caltrans Standard Specification Section 26, "AGGREGATE BASES" per class specified on the plans. Refer to Caltrans Specifications in Section G of these Special Provisions.

Crushed Miscellaneous Base (CMB) shall conform to Caltrans Class 2 Aggregate Base.

Rework and compact the subgrade soils, and placing back well-compacted layers of base.

For work within the City Right-of-Way, submittals to Caltrans and their labs are not required. The Contractor shall still submit materials for Agency approval.

SECTION 201 – CONCRETE, MORTAR, AND RELATED MATERIALS

201-1 PORTLAND CEMENT CONCRETE

201-1.1 General. Replace this section with the following:

Portland cement structures for the roadway drainage shall conform to the provisions in Subsection 303-1, "Concrete Structures," of the Standard Specifications, these Special Provisions and the details shown on the plans and shall include:

1. Manholes
2. Other Minor Structures

For concrete used in non-precast structures, cement shall be Type II and conforming to the requirements for sulfate exposure, with a maximum water/cement materials ratio in accordance with American Concrete Institute (ACI) 318.

Other Concrete Items

Portland cement concrete for the construction of (PCC) curb ramps, cross gutter, curbs, curb and gutters, and sidewalks shall of the class, compressive strength, and other requirements prescribed in the Standard Specifications Section 201, "Concrete, Mortar and Related Materials," Table 201-1.1.2(A).

201-2 REINFORCEMENT FOR CONCRETE

201-2.2 Steel Reinforcement. Add the following:

Reinforcing steel shall be grade 60-billet steel conforming to ASTM A 615.
SECTION 202 – MASONRY MATERIALS

Add the following section:

202-4 CONCRETE INTERLOCKING PAVERS.

202-4.1 General. Add the following:

Concrete pavers shall meet the requirements set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units. The average compressive strength shall be 8,000 psi with no individual unit under 7,200 psi. The average water absorption shall be 5 percent with no unit greater than 7 percent when tested in accordance with ASTM C 140. Pigment shall conform to ASTM C 979.

Concrete pavers shall be "Castle Cobble" 60 mm, color 'Tuscan' by Angeles Paving Stones (951-328-9115) or approved equal.

SECTION 203 – BITUMINOUS MATERIALS

203-6 ASPHALT CONCRETE

203-6.1 General. Replace this section with the following:

Asphalt Concrete Pavement shall conform to Caltrans Standard Specification Section 39, "Hot Mix Asphalt" and Section 92, "ASPHALTS." Refer to Caltrans Specifications in Section G of these Special Provisions. For work within the City Right-of-Way, submittals to Caltrans and their labs are not required. The Contractor shall still submit materials for Agency approval.

203-11 ASPHALT RUBBER HOT MIX (ARHM) WET PROCESS

203-11.1 General. Add the following paragraph:

All references to Asphalt Rubber Hot Mix and ARHM shall be interchangeable with references to Rubber Hot Mix Asphalt or RHMA between the Plans and the Specifications.

203-11.3 Composition and Grading. Add the following paragraph:

Asphalt rubber hot mix (ARHM) shall be Type ARHM-GG-B per Table 203-11.3(A) of the Standard Specifications.

Recycled asphalt products (RAP) will not be permitted for the final lift/layer of rubberized asphalt concrete wearing course.

Aggregate produced from slag resulting from any steel-making process or from air-cooled iron blast furnace slag shall not be used on this project.

203-11.6 Mix Designs and Certifications. Add the following paragraph:

The Contractor shall submit a copy of the asphalt concrete mix design, a sample of the asphalt concrete, a sample of the aggregate, and a sample of the paving asphalt (PG 64-16) to the Engineer or its designated laboratory a minimum of two weeks prior to the start of construction.

The Contractor shall make modifications to the proposed mix design as required by the Engineer or its designated laboratory to insure that the proposed asphalt concrete mix will meet the minimum stability ("S") values. No asphalt concrete shall be placed until such time as the Engineer has tested and/or approved the Contractor's proposed asphalt concrete mix design.

The asphalt used shall be PG 64-16, conforming to Subsection 203-1, "Paving Asphalt," of the Standard Specifications. Any proposed change to the viscosity grade shall be submitted to the Engineer by the contractor 48 hours prior to beginning work.

Contractor shall pay for any failed chemical analysis tests. The test for natural rubber content in the material shall be ASTM D297, paragraph 53.

203-12 ASPHALT RUBBER AND AGGREGATE MEMBRANE (ARAM).

203-12.1 General. Add the following paragraph:

All references to Asphalt Rubber and Aggregate Membrane or ARAM shall be interchangeable with references to Rubberized Stress Absorbing Membrane Interlayer or SAMI-R between the Plans and the Specifications.

203-12.2 Materials.

203-12.2.2 Screenings. Add the following:

Screenings shall be medium gradation per Table 203-12.2.2(A).

SECTION 206 – MISCELLANEOUS METAL ITEMS

206-5 METAL RAILINGS

206 – 5.1 Metal Hand Railing Materials

Unless otherwise specified, bolts, nuts and washers shall be galvanized in accordance with Section 210-3, "Galvanizing," of the Standard Specifications. Expansion anchors and anchor bolts shall be of Type 304 stainless steel.

Materials shall be smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

206-6 CHAIN LINK FENCE

206-6.1 General. Add the following:

Chain link fence and gates shall be replaced in kind (dimension, materials, and color) as the existing fence to be removed and shall have a ten (10) year warranty for the fabric and post structures and finish.

Portland cement concrete for the fence footings shall be of the class, compressive strength, and other requirements as specified in the Standard Specifications Section 201, "Concrete, Mortar and Related Materials," Table 201-1.1.2(A), with Type II cement.

206-6.3 Chain Link Fabric. Replace the first sentence with the following:

Chain Link Fabric shall be replaced in kind.

SECTION 215 – MISCELLANEOUS MATERIALS

215-1 BUS STOP SHELTER

215-1.1 Shelter.

The bus stop shelter shall be a 13-foot Dome Roof Bus Shelter manufactured by Tolar Shelters Model 13NALD-GL 1934-00COMM, or approved equal. The following features shall apply unless otherwise shown on the plans:

- Roof dimensions: 12-feet, 7 7/8-inches by 4-feet, 8-inches
- Height: 7-feet 3-inches to bottom of roof perimeter
- The roof design features two circular shapes running horizontally. One is used as a rain gutter; the other houses the electrical wiring for electric in the roof.

- The one-piece roof is welded from four lengths of aluminum extrusion, no snap together corners will be allowed.
- Two roof beams are welded to the roof perimeter for placement of the supporting legs. These beams also house the lighting in those units.
- Roof beams are pre-drilled to facilitate field installation.
- The powder coated aluminum roof panels are attached using flat bars and rubber gaskets, secured with Tek screws or approved equivalent. No silicone sealer is required.
- Decorative wire grid fascia at the roofline perimeter in lieu of walls adds structural support.
- Two 3-inch steel pipe legs support the roof at each end of the structure. Four adjustable shoes allow for up to 12-inches grade variation.
- Bronze tint Lexan Thermoclear roof panels or approved equivalent
- 3/8-inch bronze tint tempered safety glass panels at the rear and ½ end walls – held in place with stainless steel support assemblies which anchor to the concrete pad or sidewalk
- ASTM A-36 grade 3-inch schedule 40 pipe for structural steel members and 6063-T6 grade aluminum extrusion with a minimum thickness of 1/8-inch.
- Adjustable leveling shoes
- All of the structure's metal surfaces shall have durable RAL-9005 Jet Black baked powder coat finish, 4 - 5 ml thick application.
- The shelter shall have all hardware and ground anchors necessary for site installation.
- The shelter shall carry a 1-year warranty.

215-1.2 Shelter Solar Power

The bus stop shelter shall have Urban Solar Corporation RMS solar illumination, or approved equal, providing dusk to dawn LED illumination in the shelter roof. LED luminaires, batteries and solar panels shall be integrated with an intelligent programmable energy control module (ECM) which regulates the charging of the battery bank and switches on the power to the LEDs. The ECM shall be factory programmed to provide variable calendar based lighting profiles (on time duration and intensity) to match the available solar insolation and City's preferences. The main system components shall be as follows:

PV Array (solar module)

- The PV array shall be mounted to a metal framework.
- The solar panel array size shall provide enough solar charging for the system to operate dusk till dawn, at a specific brightness level, year round.

Batteries

- The battery bank shall have three 18 amp-hour 12 Volt cells. The batteries shall be sealed, lead acid, rechargeable, and provide a minimum of 5 days autonomy (i.e. the system could operate for a minimum of 5 days with absolutely no solar).

Luminaires

- The LED luminaires shall be high power white LEDs. The luminaires shall be driven well below their maximum power rating to increase efficiency and extend life of the luminaire.

Energy Control Module (ECM) - lighting system central control

- ECM shall control battery charging and regulate the power to the LED luminaires.
- ECM shall monitor the system performance to ensure the batteries will not be damaged by over-charging, and will turn off the LEDs if the battery voltage falls below the low voltage disconnect (LVD) setting. Once the batteries have been sufficiently charged above the LVD, the ECM will turn the LEDs back on again.
- The ECM shall be factory programmed for a specific operation profile based on the City's requirements for LED on-time and brightness level, the geographical location, and solar array size. The ECM shall have a calendar based approach, where the LED light levels and on-times can be optimized for maximum performance year round.

215-1.3 Bus Stop Bench

The bench within the bus stop shelter shall be an 8' perforated metal bench with no vagrant bars and no back, by Tolar or approved equal. The following features shall apply unless otherwise shown on the plans:

- Legs shall be constructed from 1.25-inch diameter schedule 40 pipe.
- Horizontal supports shall be constructed from 3/4-in diameter schedule 40 pipe.
- Seat is formed from 12 gage galvanized perforated steel with 1/4-inch holes on 3/8-inch centers, staggered.
- Finish shall be durable RAL-9005 Jet Black baked powder coating, 4 - 5 ml thick application.
- Bench shall be secured to the concrete with four 1/2-inch diameter Hilti Kwik Bolt TZ
- Expansion anchor bolts or approved equivalent.

215-1.4 End Wall Map Case/Bus Schedule Holder

The Map Case/Bus Schedule Holder mounted within the bus stop shelter, at the downstream end wall, shall have the following features unless otherwise shown on the plans:

- Aluminum frame with 1/4-inch thick clear tempered safety glass panel display area
- Display area 33-inch Height by 22-inch Width
- Case shall be held in place at the shelter end legs
- Display area shall be secured with Tamper-Pruf fasteners or equivalent
- The 19-inch by 77-inch end wall shall be fabricated from wire 1 1/8-inch wire grid

- Finish shall be durable RAL-9005 Jet Black baked powder coating, 4 - 5 ml thick application.

215-2 METAL TRASH RECEPTACLE

215-2.1 General.

The Metal Trash Receptacle, by Tolar or approved equal, shall ~~per~~be perforated and have the following features unless otherwise shown on the plans:

- The trash receptacle shall be pedestal mounted
- Overall unit size is 28 7/16-inch by 22 1/4-inch
- 30 gallon capacity body shall be formed from 14 gage galvanized steel with 1/4-inch holes on 3/8-inch centers, staggered.
- Hinged spun metal lid with a 6-inch diameter opening
- 5 3/8-inch steel pedestal base and spun lid are formed from 11 gage steel.
- Finish shall be durable RAL-9005 Jet Black baked powder coating, 4 - 5 ml thick application.
- The pedestal shall be secured to concrete using four 1/2-inch diameter Hilti Kwik Bolt TZ
- Expansion anchor bolts or approved equivalent.

215-3 MTK

215-3.1 General.

The MTK Paving Fabric, by Tencate or approved equal, shall have the following features unless otherwise shown on the plans:

- The roll dimensions will be 18 inches x 200 foot per roll
- See Appendix A for details and additional features of paving fabric membrane

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PART 3 – CONSTRUCTION METHODS

SECTION 300 - EARTHWORK

Add the following:

Attention is directed to the geotechnical report (included in the Project Appendices).

Records of geotechnical investigation as listed above are shown solely for the convenience of the Contractor, and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout such areas, or any part thereof, or that unlooked-for developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

300-1 CLEARING AND GRUBBING.

300-1.3 Removal and Disposal of Materials.

300-1.3.1 General. Replace the entire subsection with the following:

Unless otherwise stated on the Plans or Specifications, all material removed from the Work shall become the property of the Contractor and shall be disposed of in a lawful manner. Burning shall not be permitted on the site. The Contractor shall conform to the following requirements:

In order to protect the public streets from deterioration due to hauling of materials, the Contractor shall submit, prior to the Pre-Construction Meeting, for approval, a proposed route for hauling of materials for disposal. Upon approval, the Contractor shall strictly adhere to that route, unless written permission from the Engineer is obtained to change the route.

Prior to making removals, the Contractor shall meet with the Engineer to verify the limits of removals, locations of joins, to establish smooth joins and to ensure proper drainage. The Contractor may make minor changes in the location of joins and the limits of removals, provided a smooth join and proper drainage can be achieved and has obtained prior written approval from the Engineer.

The Contractor shall avoid, to the fullest extent possible, contamination of any drainage system.

The Contractor shall make effort to recycle concrete, steel, and other excavated materials. The Contractor shall be responsible for recycling and for obtaining a suitable disposal site for the material not suited for recycling, and pursuant to Section 300-2.6, "Surplus Material," of the Standard Specifications, shall, upon request, file with the Engineer the written consent of the owner of the property upon which he intends to dispose of such material.

Any concrete crushing of the removed concrete is not allowed at the job site at any time. Saw cutting shall conform to the provisions of Section 7-8, "Work Site Maintenance" (with special regard to 7-8.1, "General," 7-8.2, "Air Pollution Control," 7-8.3, "Noise Control," and 7-8.6, "Water Pollution Control") and 300-1.3, "Removal and Disposal of Materials," of the Standard Specifications and these Special Provisions.

The existing pavement structural section contains an unknown thickness of Portland Cement Concrete (PCC) pavement beneath varying asphalt concrete pavement thicknesses of 2.5 inches to 4 inches. PCC pavement was encountered at several locations during the geotechnical field exploration specifically between Washington Boulevard and Como Street. The Contractor shall anticipate pavement removal which includes the composite pavement structural section of AC pavement between 2.5 inches to 4 inches over PCC pavement between 2 inches to 4 feet.

The Contractor shall notify the Engineer, in accordance with Section 3-4, "Changed Conditions," of the Standard Specifications, of any changed conditions or material differing from that represented in the Contract which the Contractor believes to be hazardous waste.

All combustible waste materials resulting from any construction operation of this contract shall be removed from the site as directed by the Engineer.

Limits. The Contractor shall meet with the Inspector prior to making removals to verify the limits of removals and the locations of joins, to establish smooth joins and to assure proper drainage. The Contractor may make minor changes in the location of joins and the limits of removals, provided a smooth join and proper drainage shall be achieved and it has obtained prior written approval from the inspector.

300-1.3.2 Requirements. Add the following sentence to subparagraphs (b) and (c):

All concrete removed shall be hauled off the Work site no later than the calendar day following the day that the removal is performed.

The existing concrete pavement to be removed to construct the new pavement section shall be removed to the depth required by the new pavement section, or as directed by the Engineer. Areas along Atlantic Boulevard that do not consist of the PCC underlain, the subgrade shall be scarified and compacted as directed in the *Geotechnical/Pavement Engineering Report* in the appendices.

Add the following subparagraphs (d) and (e):

(d) Monitoring Well. The Contractor shall notify the well utility owner and the City three (3) months in advance of monitoring well removals, abandonments, adjustments or relocations. The Contractor shall comply with the abandonment practices of the utility owner. Notification and coordination shall be considered incidental to other items of work and no additional compensation will be allowed.

(e) Miscellaneous Removals and Relocations. The work under this item shall include all removals and relocations not specifically listed in the Proposal or otherwise covered by these Specifications, including all necessary removals, relocations, and restorations of walls, plants, hardscape, signs, and other items, whether shown on the Plans or not, and as necessary to complete the improvements. Contractor shall be responsible to review the project site prior to bidding and to include all such work, whether or not shown on the plan, in CLEARING AND GRUBBING.

300-1.4 Payment. Replace with the following:

(a) Clearing and Grubbing. Payment for CLEARING AND GRUBBING shall be included in the contract price for DEMOLITION.

(b) Pavement. Payment for REMOVE PAVEMENT SECTION shall be included in the contract price for UNCLASSIFIED EXCAVATION.

300-2 UNCLASSIFIED EXCAVATION

300-2.1 General. Replace the first paragraph with the following:

Unclassified Excavation shall include removing, hauling, and disposing all materials below the existing base to the depth necessary for the proposed improvements, as indicated on the plan, or directed by the Engineer. The Contractor shall be responsible to meet grades shown on the plan, including removal of excess excavation, import of top soil and structural backfill, as applicable. Excavated material shall be used to balance earthwork within the project as Unclassified Fill, otherwise all remaining spoils shall be considered as Export Material. No additional compensation shall be allowed for excavated material used for fill. The City neither warrants nor implies that there will be an earth balance on this project.

Groundwater was not encountered in the borings during the field exploration. The primary geotechnical consideration was the base layer should be underlain by compacted subgrade soils. It is recommended that the upper 12 inches of subgrade soils below the base layer be scarified, moisture-conditioned, and compacted. The subgrade soils shall be moisture-conditioned to the moisture content between the optimum and 2 percent above the optimum moisture content, and compacted to at least 95 percent of the maximum dry density obtained per ASTM D1557.

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

301-1 SUBGRADE PREPARATION.

301-1.2 Preparation of Subgrade. Add the following:

Prior to the start of construction, the following shall be performed:

- All utilities shall be located in the field and protected in place as shown on the plans or directed by the Engineer.
- Utility owners shall be notified prior to any excavation work as specified herein.
- Medians, planters, and other unpaved areas within the proposed limits shall be initially stripped of all vegetation and debris, and the material shall be removed from the site.

In areas where existing subgrade requires fill or stabilization to reach compaction densities the contractor shall do the following, as directed by the Engineer:

Prior to placing of fill, the exposed subgrade surface shall be:

- Scarified to a depth of 12 inches or as directed by the Engineer
- Moisture-conditioned to 2 percent above optimum moisture content.
- Compacted to at least 95 percent relative compaction.

Fill shall be compacted by:

- Placing in loose layers less than 8 inches thick.
- Moisture-conditioning to above optimum content.
- Compacting to at least 95 percent relative compaction.

The compacted basement soils, under proposed pavement section, shall be firm, hard and unyielding.

- Scarified and recompactd to a depth of 12 inches or as directed by the Engineer
- Compacted to at least 95 percent relative compaction.

Import Material to be used for Fill, as directed by the Engineer shall meet the following characteristics:

Maximum particle size (inches): 2
Maximum liquid limit (%): 30
Maximum plasticity index (%): 10
Maximum percentage passing the #200 sieve (%): 30

Minimum R-value: 40
Minimum sand equivalent: 30

Beneath the structural pavement base material, the Contractor shall scarify the upper 12 inches of existing subgrade and compact to 95 percent, or as directed by the Geotechnical Engineer.

Along the landscape area, the Contractor shall scarify the upper 12 inches of the existing subgrade prior to placing fill and top soil, or as directed by the Landscape Architect.

301-1.6 Adjustment of Manhole Frame and Cover Sets to Grade. Replace the entire subsection with the following:

Work shall include the removal or furnishing of grade rings as necessary to adjust the manhole to grade. Where existing manhole is to be adjusted within the proposed roadway prism, a traffic rated manhole cover shall be used. Adjustment of manhole to grade shall conform to the requirements of the owner (City or Utility Company) for the manhole being adjusted.

In the case of Portland Cement Concrete, structure frames shall be set to finish grade before concrete pouring. Repaving required as a result of reconstructing or adjusting the frames and covers of all manholes, vaults, and other structures shall be the responsibility of the Contractor and the cost thereof shall be included in the bid item for pavement.

301-1.7 Payment. Replace the entire subsection with the following:

301-1.7 Adjust to Grade – Water Valve Box and Lids and Gas Valves Box and Lids

Adjustment of valve boxes and lids to grade within street paving areas shall conform to the Standards and Specifications of all applicable utility companies. The Contractor shall contact applicable utility companies for the latest standards and requirements. All adjustments of valve box and lids shall be inspected and approved by applicable utility companies.

Work under this item shall include tying out the location of the valve box, protecting the existing valve box during construction and adjusting the valve box and lids to final finished surface grade and all other work items as required for performing the work complete and in place. Items damaged during construction shall be replaced in accordance with the latest standards and requirements at the Contractor's expense.

Add the following subsection:

301-1.8 Payment.

(a) Subgrade Preparation. Payment for SCARIFY AND RECOMPACT 12 INCHES AT 95% RELATIVE is considered included in the other payment items for asphalt concrete and jointed plain concrete pavement and no separate payment will be made for this work.

(b) Pull Boxes. Payment for ADJUST PULL BOX TO GRADE shall be included in the contract price for TRAFFIC SIGNAL SYSTEM or STREET LIGHTING (CONTRACTOR) or PALM TREE ACCENT LIGHT ELECTRICAL INSTALLATION or the system in which the pull box is part of, and no additional compensation will be allowed.

301-2 UNTREATED BASE.

301-2.1 General. Add the following:

Placement of Aggregate Base shall conform to Caltrans Standard Specification Section 26, "AGGREGATE BASES" with a minimum relative compaction of 95 percent. Refer to Caltrans Specifications in Section G of these Special Provisions

SECTION 302 – ROADWAY SURFACING

302-5 ASPHALT CONCRETE PAVEMENT

302-5.1 General. Add the following:

Any changes in elevation of the pavement of 1 inch or more that will remain overnight shall be ramped with temporary AC pavement. All trenches and travel lanes must be paved with temporary AC until permanent pavement has been constructed.

The existing AC layer of the roadway section should be entirely removed and replaced with at least 4-inches of new AC. AC of the roadway section should be constructed with the required thickness as shown on the Plans and the Geotechnical Report. The proposed roadway will attain straight grade slopes at 2% minimum from lip of gutter to the centerline, unless noted otherwise on the Construction Plans.

302-5.4 Tack Coat. Add the following paragraph:

Tack Coat shall be applied between base and surface courses when the surface course is not placed immediately after the base course, and to existing horizontal and vertical concrete surfaces against which paved surfaces where new asphalt concrete overlaps or abuts existing pavement. Tack Coat shall be as specified in Section 302-5.4, "Tack Coat" of the Standard Specification. There shall be no separate payment for Tack Coat.

302-5.9 Measurement and Payment. Delete the first paragraph and substitute the following:

Damage to the adjacent curb, gutter, or dike shall be removed and replaced to the satisfaction of the engineer and at the Contractor's expense.

Included in this item is the adjustment to grade of other utility appurtenances within the pavement not specifically listed for payment. No separate payment will be made for adjustment of such utilities. Adjustment of manholes to grade is included in separate bid items.

- a.) Temporary Pavement. There shall be no payment for furnishing installation, maintenance, removal or disposal of temporary AC pavement, including ramping, and all costs thereof shall be included in STAGE CONSTRUCTION/TRAFFIC CONTROL and no additional payment will be allowed.

302-6 PORTLAND CEMENT CONCRETE PAVEMENT

Replace the entire section with the following:

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302-6.1 General.

PCC Removal

The proposed pavement section underlain by PCC requires at least 4 inches of new asphalt concrete. Therefore to replace 4 inches of new AC with adjustments of the centerline elevations of the project, partial grinding of the underlying PCC will be required to meet this pavement section thickness. The CONTRACTOR will field verify the amount of PCC that needs to be grinded/shaved prior to new AC placement. Construction of landscape medians, tree wells, trenching across Atlantic Boulevard for the electrical conduit for median lighting, irrigation system and plants will require full removal of the existing PCC slab.

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PCC Repairs

CONTRACTOR to observe and detect for any concrete flaws. Damaged areas and cracks on the underlying PCC layer shall be repair prior to placing the new AC. Cracks wider than 1/6-inch should be sealed, loose pieces removed and patched, spalls repaired, and broken slabs or punch outs replaced. If any localized deep failure area is observed in the PCC slab after removal of the existing AC, the entire PCC pavement section within the localized failed area should be completely removed and replaced with a full depth asphalt concrete section, recommendations provided in the Geotechnical report, or the same thickness of the PCC slab.

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302-10 ASPHALT RUBBER AND AGGREGATE MEMBRANE (ARAM)

302-10.1 General

Add the following:

Prior to the ARAM application, pavement shall be free of dirt, water, oil, and other foreign materials, including thermoplastic pavement markings. Broom or air-clean the surface as necessary.

Surface preparation for surface overlays shall include patching or crack sealing of failed or distressed existing pavement. Potholes, cracks greater than 1/4- inch, and/or local distresses related to structural or subgrade failures, shall be repaired.

To mitigate reflective cracking from the existing PCC slab under the new AC, and interlayer of ARAM should be applied on the exposed surface of the underlying PCC slab prior to placing the new AC. The ARAM should include 3/8 inches stone with placement from lip of gutter to lip of gutter.

Concrete Spall Repair in Areas to be overlaid: The Contractors shall repair all spalled concrete in existing pavement, as shown on the plans or as directed by the Engineer. The perimeter of the repair shall be sawed a minimum of 1 1/2 inch deep or shall be cut with approved tools to this depth. The deteriorated material shall be removed to a depth where the existing material is firm or cannot be easily removed with a geologist pick. The pavement shall be cleaned and a bituminous tack coat in conformance with Section 203, "Bituminous Materials," shall be applied. The removed area shall be filled with asphalt concrete with a minimum Marshall stability of 1,200 lbs. and maximum flow of 20. The material shall be compacted with equipment approved by the Engineer until the material is dense and no movement or marks can be noted. The material shall not be placed in lifts over 4 inches in depth. This method of repair applies only to pavement to be overlaid.

Failed Concrete Repair in Areas to be overlaid: The existing concrete to be removed, as determined by the Engineer, shall be freed from the pavement to remain unless jackhammers are used for the complete removal. This shall be accomplished by sawing through the complete depth of the slab one foot inside the perimeter of the final removal limits or outside the load transfer devices, whichever is greater. In this case, the limits of removal would be located on joints. The pavement between the perimeter of the pavement removal and the saw cut shall be removed with a jackhammer. Where the perimeter of the removal limits is not located on the joint, the perimeter shall be saw cut 2 inches in depth or 1/4 the slab thickness, whichever is less. Again, the concrete shall be saw cut the full depth of the pavement 6 inches inside the removal limits. The pavement inside the saw cut shall be broken by methods suitable to the Contractor; however, if the material is to be wasted on the site, it shall be reduced to a maximum size designated by the Engineer. The Contractor's removal operation shall not cause damage to cables, utility ducts,

pipelines, or drainage structures under the pavement. Any damage shall be repaired by the Contractor at no expense to the Agency. The replacement pavement structural section shall be per the pavement section of the surrounding widened pavement.

SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION

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Add the following:

Vertical or horizontal position of structures as shown on the Plans or as described in these Specifications shall not vary more than 1/2 inch from true position. Elevation at inlet lips shall not vary more than 1/4 inch from elevation shown on the plans.

All earthwork shall be done in accordance with Section 300, "Earthwork," of the Standard Specifications and these Special Provisions.

Concrete shall be in accordance with Sections 201, "Concrete, Mortar, and Related Materials."

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTION, ACCESS RAMPS, AND DRIVEWAYS.

303-5.1 Requirements.

303-5.1.1 General. Add the following:

Work referring to the SPPWC Standard Plans:

The construction of (PCC) curb ramps, curbs, curb and gutters, cross gutters, local depressions, sidewalks, bus pads, and driveways shall be in conformance with and 303-5, "Concrete Curbs and Sidewalks," of the Standard Specifications.

The placement of aggregate base material, as specified in the standard details, under concrete work shall not be paid for separately but shall be included in the corresponding items of work.

Modify height to match existing curb & gutter at the join point and match top of sidewalk where the sidewalk is adjacent to curb.

All grading associated with the construction of sidewalk, curb, curb & gutter, cross gutters, ramps, and driveways shall be included in the unit bid price of the corresponding item.

8 inch concrete curb shall be anchored with #4 steel dowels per SPPWC Standard Plan No. 120-2. Spacing of dowels shall conform to SPPWC Standard Plan No. 120-2.

PCC cross gutter shall be 8-inches per SPPWC Standard Plan No. 122-2. The Modify height if necessary to conform to existing cross gutter. The PCC cross gutter shall be constructed from nearest joint to joint.

Work referring to Caltrans Standard Plans

The construction of (PCC) curb ramps, island passageways, curbs, curb and gutters, cross gutters, sidewalks, and driveways shall be in conformance with Section 73, "Concrete Curbs and Sidewalks," of the Caltrans Standard Specifications."

Included in the construction of curbs, curb and gutters, and cross gutters is the placement of Lean Concrete Base (LCB) as required and no extra payment will be made for this LCB material.

(PCC) curb ramps shall be 4-inches thick.

303-5.5 Finishing

303-5.5.5 Alley Intersections, Access Curb Ramps, and Driveways.

Add the following:

The Contractor shall be responsible to protect all new concrete work from being etched, scratched or otherwise marked following replacement thereof. If new concrete work is marked, the Contractor shall replace it at its expense and no extra costs will be allowed.

All Curb, Curb and Gutter, Cross Gutters, Sidewalks, Curb Ramps, Local Depressions, and Driveways shall be constructed true to the line and grade shown on the Plans.

Curb and Gutter, Sidewalks, Curb Ramps, Local Depressions, and Access Driveways will be rejected for any of the following reasons:

- 1.) Deviation from grade greater than 1/8 inch.
- 2.) Fluctuations, undulations, or imperfections in PCC surfaces such as rock pockets, honeycombing, blisters, voids, or other defects.
- 3.) PCC surfaces with any cracks.
- 4.) Concrete used that does not meet the requirements set forth in Section 201-1, "Portland Cement Concrete," of the Standard Specifications.
- 5.) PCC 28-day compressive strength of less than 3,250 psi.

Rejected sections of curb, curb and gutter, PCC cross gutters, local depressions, and/or driveways shall be removed to the nearest joint, and reconstructed at no additional cost to the City.

303-5.9 Measurement and Payment. Add the following:

See Section 9, "Measurement and Payment," of the Special Provisions Section E for Measurement and Payment. The following clarifies additional items paid for or included in other items.

Curb and curb & gutter transitions to match existing will be measured and paid for as the standard Concrete Curb and Gutter of the type adjacent to the transitions.

Repainting of colored curb (top and face), where colored curb has been removed due to new curb construction, any other repainting of curb, such as address numbers or the delineation of parking restriction locations, shall be included in the cost of Concrete Curb and Gutter.

No additional compensation shall be included for sawcutting, removal, and reconstruction of adjacent pavement areas removed, excavated, or damaged for the placement of forms or for fitting in extruder machinery during the construction of curb and gutter, but shall be included in the cost of curb and gutter.

SECTION 304 – METAL FABRICATION AND CONSTRUCTION

304-3 CHAIN LINK FENCE

304-3.2 Fence Construction. Add the following:

Chain Link Fence construction shall be in accordance with the requirements of Section 80 "Chain Link Fence" and Section 80-4 "Chain Link Fence" of the Caltrans Standard Specifications.

Portland cement concrete shall be of the class, compressive strength, and other requirements prescribed Section 201, "Concrete, Mortar, and Related Materials," of the Standard Specifications.

SECTION 309 – MONUMENTS

309-1 DESCRIPTION

Delete subsection in its entirety and replace with the following:

The work is to be performed at City of Commerce.

The Sign Contractor shall perform all work necessary to furnish, deliver and install all items shown on the Design Intent Drawings and specified herein, including preparation of digital files, type fonts and camera-ready art for use in production. The fabricator shall be responsible for developing all signs based on the typical concepts shown in the drawings, including typographical refinements such as margins, kerning, leading, line breaks and spacing, necessary to complete the work.

Refer to separate Sign Location Map and Message Schedule in drawing package for specific sign locations and quantities.

Instruction Relating To Existing Conditions:

The Sign Contractor shall take measurements at the site and shall check all measurements and grades on the contract drawings or subsequent drawings. Such information given on the contract drawings and in the specifications relative to existing conditions has been obtained from sources believed to be reliable, but shall be subject to verification in the field. The contractor must field verify exact locations and conditions for each sign and notify the Owner in writing, of any discrepancies, omissions, or clarifications as they affect sign design or location.

Examination Of Site Documents:

Before submitting a proposal, the Sign Contractor should carefully examine the Design Intent Drawings and Construction Specifications, visit the site and fully inform themselves as to all existing conditions and limitations. Should any discrepancies or omissions from the drawings and specifications be found, or should there be any doubt as to their meaning, he should notify the Owner at once, in writing.

Sign Contractor shall participate in a pre-production conference with the Owner's representative and the Design to review the contract requirements, clarify the scope and nature of the work as outlined in the Drawings and Specifications, to establish clear lines of responsibility and checkpoints for the performance of the work.

Workmanship And Materials:

The Sign Contractor shall have been continuously engaged in fabrication of similar work for a minimum of five (5) years. The Sign Contractor shall warrant and guarantee that none but experienced workmen will be employed on the work and that all items fabricated and/or provided by him shall be of the best of their respective kinds. The Sign Contractor certifies that he is able to furnish sufficient forces to ensure prosecution of the work in accordance with approved progress schedules and that he can furnish a work force that can work in harmony with all elements of labor employed in the work and at the site of the work.

Protection Of Work And Property:

The Sign Contractor shall be responsible for the work until it is acceptable by the Owner, and the Sign Contractor shall cover and protect all items from damage during transportation, storage and installation. If any loss or damage occurs prior to acceptance by the Owner, the Sign Contractor shall promptly repair or replace the part or parts lost or damaged, as directed by the Owner, at no cost to the Owner.

The Sign Contractor shall also be responsible for any loss or damage to the Owner's property and to the property of others due to operations under Contract and shall make good, at his own expense and to the complete satisfaction of the Owner, such loss or damage.

The Sign Contractor shall package materials and supplies in biodegradable packing whenever possible.

Supervision:

The Sign Contractor shall provide all necessary supervision by a person especially qualified and experienced in handling the work covered in his proposal. This individual and his qualifications shall be satisfactory to and approved by the Owner. The Sign Contractor shall consult with the Graphic Designer should any error or inconsistency develop in the drawings and specifications and if there is any doubt, in no case shall the Sign Contractor proceed with the work without approval. The Sign Contractor shall be entirely responsible for the proper laying-out of his work and for any damages that may occur because of his errors or inaccuracies.

Coordination:

The Sign Contractor shall coordinate all activities related to the work with the Owner's designated site superintendent. It shall be the Sign Contractor's responsibility to meet any construction schedules required by the General Contractors due to related site work.

The Sign Contractor shall also be responsible for coordinating his work with that of all other trades at the job site and for coordinating excavations as necessary to protect below-grade utilities, irrigation lines, telephone lines, and cable TV lines.

The Sign Contractor shall coordinate with Landscape Architect regarding the proposed monument sign location and any conflicting trees, shrubs, plants, etc.

Guarantee and/or Warranty:

The Sign Contractor shall agree to bring all portions of work to entire completion free of all defects in materials and workmanship for a period of one (1) year from the date of final acceptance of the completed work by the Owner. Digital prints to be warranted for a minimum 5 years against fading cracking, chipping and peeling.

Defects include but are not limited to: electrolytic decomposition; oxidation; dislocation of fasteners, anchors, welds or any other connecting devices; de-lamination; pitting of surfaces or finishes; non-adhesion; warping, canning or other distortions of uniform surfaces; fading or discoloration.

The Sign Contractor also guarantees, within a reasonable time after receipt of written notice thereof, to make good any defects in materials and/or workmanship which may develop within such period for which materials and workmanship are warranted, and to pay or cause to be paid for any damage to other work resulting therefrom, which may develop during the period of one (1) year from the date of final acceptance of the completed work by the Owner.

309-2 MATERIALS

Delete subsection in its entirety and replace with the following:

Materials: Basic

1.) Aluminum:

1. Extrusions and rolled material shall have a strength and durability no less than that which is specified in ASTM B 221 for alloy 6063-T5. Sheets shall have a strength and durability no less than that which is specified in ASTM B 209 for alloy 5052-H32. All exposed aluminum shall have a quality finish suitable for painting.
2. Material shall be of highest visual grade, free of mill marks, nicks, pits, gouges and other imperfections.
3. All welds shall be continuous. Where appropriate, exceptions may be granted as part of the shop drawing review. Welding shall be of the correct type to minimize permanent distortion of flat surfaces. Visible welds are to be filled and ground smooth. Welds shall comply with standards established by the American Welding Society, and the Aluminum Association.
4. All visible parts shall be ground smooth and filled before painting so that no grinding abrasions are apparent and there is no distortion of the intended form.
5. All aluminum shall be of sufficient gauge to prevent warping and canning. Warped or canned sign faces or backs shall be unacceptable.
6. Aluminum cabinets shall be welded and finished so as to appear seamless.
7. Where aluminum is in contact with concrete, the aluminum material shall be coated with coal tar epoxy.
8. All seams shall be water-tight.

9. Use Matthews Paint System (or equivalent with Owner approval).
10. Unless indicated otherwise, all exposed, unpainted aluminum shall be clear-coated (gloss).

2.) Steel:

1. All steel material shall adhere to specifications A.1 through A.5 above.
2. All exposed steel shall be urethane coated. Use a high solids, low VOC, two-component aliphatic urethane semi-gloss enamel formulated for use in commercial and industrial applications where color retention and a durable long-lasting coating is required. Apply 3 coats minimum for a dry film thickness of 5 mils.
3. Unless otherwise indicated on the Design Intent Drawings, sheet metal shall be 18 gauge aluminum for letter faces and 24 gauge for letter returns for reverse channel letterforms.
4. Unless otherwise specified, Tube Steel shall conform to ASTM A501 Grade B; Steel Pipe shall conform to ASTM A53 Grade B; Steel rolled shapes shall conform to ASTM A36.

3.) Bronze:

1. Bronze letters shall be #280 Architectural bronze (Muntz metal) with horizontal brushed finish; clear coat polyurethane with UV inhibitors. Use adhesion promoter as required for metal application.
2. Cast bronze shall be lead and mercury free alloy Navy G 88-8-0-4; clear coat with Matthews VOC high solids clear polyurethane with UV inhibitors. Use adhesion promoter as required for metal application.

4.) Miscellaneous Metal:

1. All metal materials shall be new stock, free from defects impairing strength, durability or appearance, and of such gauge to prevent warping or canning.
2. Surface finish shall be smooth, free of extrusion marks or imperfections. Alloy selected must meet structural requirements of the specific application.
3. Metal materials shall be painted as follows
 - a. Shop prime coat: zinc chromate primer for steel; acid wash primer for aluminum.
 - b. Acrylic urethane with semi-gloss finish, minimum 2 mil thick.

5.) Acrylic:

1. As referred to in this document, acrylic shall include Plexiglas, Lexan and any other plastic material that may be specified in the Design Intent Drawings.
2. Acrylic material shall be new stock free from defects, and manufactured by Rohm & Haas or approved equivalent.
3. All work or cut edges shall be free of saw marks and chips and shall be polished mechanically with an appropriate compound. Flame polishing shall not be acceptable. Edges shall be square to the face.
4. Where acrylic parts meet or are joined in any manner, surface planes shall be flush and free from gaps.

6.) Adhesive:

1. Type and usage shall be as recommended by the manufacturer for the particular conditions and project requirements.
 - a. Identify each type and usage on Shop Drawings.
 - b. Include data describing method of application.
2. Adhesives that will fade, discolor, or delaminate as result of exposure to ultraviolet light or heat, or that change the color of or deteriorate the condition of the materials to which they are applied shall not be used. Adhesives must not be seen from public view.

7.) Inks, Paints and Lacquers:

1. Inks, paints and lacquers required shall be of the type made for the surface material on which applied and recommended by manufacturer.
 - a. Identify each type and usage on Shop Drawings.
 - b. Include data describing method of application.
2. Products that will deface, discolor or delaminate as a result of exposure to ultraviolet light source or heat therefrom shall not be used.
3. Prepare surfaces per manufacturer's specifications prior to painting. Include, as a part of this work, prime coats (such as Matthews One-Coat 74-734 and Matthews Metal Pre-Treatment 74-735) and other surface pre-treatments (such as zinc chromate or acid wash), where recommended by the manufacturer for inks, paints and lacquers. Porous material should be filled sanded smooth and primed prior to painting unless indicated otherwise.
4. All paint shall be spray applied. Concrete surfaces may be rolled or brushed provided there are no streaks or uneven textures. Pretreatment of surfaces and spray application of paint shall be performed in accordance with manufacturer's specifications with anti-graffiti coating.

5. Inks, paints and lacquers shall be applied without pinholes, scratches, peeling, application marks, etc.
 - a. Back lighted or internally illuminated panels containing defects that cause light leaks in surface areas intended to be opaque will not be accepted.
6. All paint for metal signage, unless otherwise specified, shall be acrylic polyurethane with ultraviolet (UV) inhibitors and formulated for exterior use in colors specified on the Design Intent Drawings or as otherwise specified by the Graphic Designer. Paint is to be the highest quality recommended by the manufacturer for specific surfaces. Apply paint to the manufacturer's recommended thickness for highest durability. For steel surfaces, see section 4.01, B.
 - a. Allow paint to fully cure (at least 10 days) before applying any vinyl legends to prevent bubbling or peeling during the curing process.
7. Paint is to be applied to all interior and exterior surfaces, visible and non-visible, and edges of metal parts and components unless otherwise noted and approved.
8. All finish coats should be satin unless otherwise specified or approved as part of the Shop Drawings.

8.) Letterforms and Spacing:

1. All letterforms, typestyles and spacing shall be as specified on Design Intent Drawings.
2. Letterforms with rounded positive or negative corners resulting from the cutting/fabricating process will not be accepted. Corners of fabricated letterforms must be as sharp as intended in the typefont.

9.) Graphics/Artwork:

1. All graphic images shall be accurately reproduced. Lettering that approximates typestyles shall not be acceptable. Camera-ready or computer-generated layouts and patterns are to be approved for all signs by the Graphic Designer prior to production.
2. All colors in final product shall match those specified in Design Intent drawings. If a color is not specified in the drawings, Sign Contractor shall submit sample of reproduction color for approval. Colors are not to be matched to the example graphics shown in the drawings, either on-screen or in pre-production print.

10.) Hardware, Fasteners and Gaskets:

1. All exposed hardware shall match adjacent surfaces unless specifically noted otherwise.

2. All dissimilar metals shall be separated with 3M Scotchrap™ All Weather Corrosion Protection Tape to prevent electrolysis. Surface to be prepared with Scotchrap™ Pipe Primer before applying tape.
 3. In addition to the tape in (2) above, stainless steel screws or fasteners shall be used to secure ferrous to non-ferrous metals.
 4. Unless otherwise specified in the Design Intent Drawings, screws shall be flathead metal. Exposed screws shall be countersunk, and screw heads shall be finished to match the surrounding sign finish and color. Exact locations, sizes, and centers of screws shall be noted on the Shop Drawings.
 5. All exposed bolt and screw heads accessible to the public shall be tamper resistant and shall be specified in shop drawing submittal.
- 11.) LED (Light Emitting Diode illumination):
1. Sign Contractor shall use highest quality LED by Nichia, CREE, or equivalent. Minimum life span for White – 50,000 hours; Blue – 50,000 hours; Red – 100,000 hours.
 2. Adequate cooling / venting for LED's and power supply should be used per manufacturer's recommendations to prevent over heating.
 3. LED's should be arranged to provide even color and lighting with no hot spots or dark areas.
 4. Cabinets and acrylic faces shall be fabricated in a way to eliminate gaps and prevent all light leaks.
- 12.) Acrylic Stucco Sto® Textured Silicone-enhanced Coating:
1. Prime surface with StoSilco Prime.
 2. Use Sto elastomeric product StoSilco Flex 1.0 granule size.
 3. Integral color to match color specs indicated I Design Intent Drawings.
 4. Follow manufacturer's recommended procedures for preparation and application of each product. Inconsistencies in surface appearance will be unacceptable.
- 13.) Concrete:
1. Concrete footings for freestanding signs shall be approved structural footing mix (1" rock) and prepared per manufacturer's specifications, with a 28-day compressive strength of not less than 3,500 pounds per square inch. Unless indicated otherwise, footings shall be reinforced with #4 steel re-bar at 12" on center. Provide details in Shop Drawings. Finish of exposed concrete sign base shall be as indicated on Design Intent Drawings and shall be free of any form impressions.

2. Concrete Specifications:

- a. Codes and Standards: ACI 301 "Specifications for Structural Concrete for Buildings"; ACI 311 "Recommended Practice for Concrete Inspection"; ACI 318 "Building Code Requirements for Reinforced Concrete"; ACI 347 "Recommended Practice for Concrete Formwork"; ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete"; Concrete Reinforcing Steel Institute "Manual of Standard Practice"; comply with applicable provisions except as otherwise indicated. Comply with Building Code requirements which are more stringent than the above. Perform testing as specified in Division 1.
 - b. Portland Cement: ASTM C 150. Type as specified on the Drawings unless otherwise approved by the Structural Engineer.
 - c. Aggregates:
 - 1) Footings: STM C 33, regular concrete.
 - 2) Flat sheets or Pre-Cast Panels: Use 3/8" pea gravel.
 - d. Water: Clean, drinkable.
 - e. Air-Entraining Admixture: ASTM C 260 per approved mix design.
 - f. Water-Reducing Admixture: ASTM 494. Type A per approved mix design.
 - g. Reinforcing Bars: ASTM A 615. Grade 60.
 - h. Welded Wire Fabric: ASTM A 185: flat sheets only.
3. Concrete to be painted should be primed with anti-graffiti. Follow manufacturer's recommendations for surface preparation.
4. Concrete Caps, Moldings and Pavers:
Precast concrete moldings by CDI (Concrete Designs, Inc.), or equivalent.
5. Acrylic Stucco Finish:
- a. 20/30 aggregate unless otherwise specified.
 - b. Sherwin Williams 2320 Kypros
- 14.) Fast-curing Anchoring Adhesives:
1. Install per IAPMO UES ER-263. See drawings for installation requirements.
 2. Continuous special inspection is required during the installation of the threaded sign pins to the existing limestone.

Electrical Fixtures:

1.) LED Lighting

2.) Automatic Time Switch:

1. Where specified, Sign Contractor shall furnish and install a Time Switch for automatic on-off control of sign lighting. Time Switch shall be INTERMATIC ET70000C series or equal.
2. The electronic Time Switch shall be a solid state digital type capable of distributing set points on independent daily schedules throughout a 7 day time period. The Time Switch shall provide for 5 weekday program entry for typical 5/2 day load control. The Time Switch shall provide astronomic programming and momentary or interval programming for any or all circuits independently. The Time Switch shall provide full year control by providing automatic leap year and daylight saving time adjustment. The Time Switch shall also provide holiday or special day control requirements by providing up to 99 holiday schedules.
3. Where specified, Sign Contractor shall furnish and install a Photo Control for "On-Off" control of sign lighting. Photo Control shall be INTERMATIC K4000 series or equal.

3.) Light Fixtures:

1. Unless otherwise noted in the drawings, Sign Contractor shall specify the light fixtures to be used and shall provide cut-sheets and supplemental information (e.g., color, size, mounting detail) for Owner and/or Architect approval.

4.) Ground Lighting:

1. Use Kim vault light fixture LTV32 WW, 70MH120 unless indicated otherwise on the drawings.
2. Position fixtures to provide even illumination across face of sign.

309-3 CONSTRUCTION

Delete subsection in its entirety and replace with the following:

Electrical Service:

Within one (1) week after award of Contract, Sign Contractor shall provide Owner with a list of (a) load requirements (amperage/voltage) for all electrical sign components, (b) specific locations for each concealed J box location and (c) location and size of all transformers and access panels for servicing and wiring of signs.

OR

Owner shall provide conduit and electrical service within ten feet of each sign location, including junction boxes and dedicated sign circuits as indicated on the electrical drawings. Sign Contractor shall configure the electrical components of signs so as not to exceed the power available at each location. Prior to completion of fabrication, Sign Contractor shall be responsible for verifying that adequate power is available to each location. If adequate power is not available, Sign Contractor shall *at no additional cost*, adjust sign electrical components as necessary to operate signs using the actual service available at each location.

Sign Contractor shall extend conduit and wiring provided at each sign location into the sign structure through the sign footing or other concealed pathway, including any below-grade junction boxes. Electrical runs shall be internalized in sign components, columns, and mounting structures with hollow metal components when available. Visible external electrical fixtures or conduit shall not be allowed. Where field conditions prevent concealment of conduit, sign contractor is to use least visible route. Such exposed conduit will be painted to match background. Electrical cut-off switches shall be flush with the sign surface and on the sign surface facing away from the street or pedestrian entrance unless otherwise indicated on the Design Intent Drawings. Switch plates shall be finished to match surrounding surface.

Sign Contractor shall be responsible for effecting the final connection of the electrical components to the electrical service and assuring that the electrical fixtures for each sign are operational.

Sign Contractor shall use Underwriter's Laboratory-approved components, and UL-approved labels shall be affixed to all electrical fixtures.

Sign Contractor shall be responsible for coordinating with the Owner, contractor and their subcontractors as necessary for expeditious performance of all electrical work related to signage.

Service-disconnect switches shall be in waterproof boot, installed in custom fabricated, flush mounted switch plate, and positioned away from the street.

Construction:

Signs must be of durable rust-inhibited materials that are appropriate and complementary to the building.

All formed metal, such as letterforms, shall be fabricated using full-weld construction unless otherwise noted and approved. Formed metal sign components shall be bent on a continuous curve without apparent elbows or kinks.

Dissimilar metals shall be separated with non-conductive 3M Scotchrap™ All Weather Corrosion Protection Tape to prevent electrolysis and secured with stainless steel fasteners as required.

Paint colors must be reviewed and approved by the Owner. Color coatings shall exactly match the colors specified on the approved plans.

Joining of materials (e.g., seams) shall be finished in such a way as to be tight, secure and unnoticeable (i.e., butted seams). Overlapped seams shall be considered unacceptable. Visible welds shall be continuous and ground smooth. Rivets, screws, and other fasteners that extend to visible surfaces shall be flush, filled, and finished so as to be unnoticeable.

Finished surfaces of metal shall be free from canning and warping. Flat surfaces shall have faces of such flatness that when measured from corner to corner along the diagonal, the maximum deviation from the nominal plane of surface shall not exceed 1/16" for measured distances up to 5'-0".

All sign finishes shall be free of dust, orange peel, drips, and runs and shall have a uniform surface conforming to the highest standards of the industry.

All lighting must match the exact specifications of the approved Design Intent Drawings.

Brightness of signs shall be even and consistent in intensity, coverage, and color both within signs and between signs of similar lighting technique and subject to approval by Owner.

All conduit, raceways, crossovers, wiring, ballast boxes, transformers, and other equipment necessary for sign connection shall be concealed. All bolts, fastenings and clips shall consist of enameling iron with porcelain enamel finish; stainless steel, anodized aluminum, brass or bronze; or carbon-bearing steel with painted finish. No black iron materials will be allowed.

Underwriter's Laboratory-approved labels shall be affixed to all electrical fixtures. Fabrication and installation of electrical signs shall comply with all national and local building and electrical codes.

Location of all openings for conduit sleeves and support in sign panels and building walls shall be indicated by the Sign Contractor on drawings submitted to the Owner. Sign Contractor shall install same in accordance with the approved drawings.

In no case shall any manufacturer's label be visible from normal viewing angles.

Sign permit stickers should be affixed so as not to be visible from the street.

All access panels shall be waterproof and concealed from public view. Panels shall be inset so that outer surface of panel aligns flush with outer surface of sign to which it is attached. Attachment shall be by means of counter sunk flat head screws (tamper proof where accessible to public). Paint finish screw heads to match surrounding color.

Metal below grade or in contact with grade-level concrete shall be coated with coal tar epoxy.

All metal interior surfaces of internally illuminated sign cabinets to be painted white.

Anti-graffiti coating or film to be applied to all signs accessible to the public. Specify brand of anti-graffiti coating and provide cut sheet along with Shop Drawings showing where protection is applied.

Sign Contractor shall construct signage in such a manner that illuminated forms and cabinets shall be free of lighting leaks.

Installation:

Schedule:

All dates for sign installation must be approved in advance and coordinated with the Owner.

Location and Placement:

- 1.) Letters shall be carefully spaced and accurately set in place, both vertically and horizontally, with overall inscription to conform to the Design Intent Drawings and approved templates and patterns.
- 2.) Locations for each ground sign shall be staked by the Sign Contractor. Staked locations must be approved by the Owner or his designated representative prior to installation.
- 3.) Sign installation shall be coordinated with other work on the site as outlined in Section 2, herein.
- 4.) Unless other arrangements are agreed upon by the Owner or his representative, all sign locations must be marked and labeled on site with sign identification number for approval prior to installation.
- 5.) All signs must be installed level, plumb and true in relationship to architecture, adjacent installations, and/or established reference points.
- 6.) Installation shall be done in a manner to withstand all actions imposed by wind, water and other environmental forces.

Installation Conditions:

- 7.) Working areas are to be left clean and orderly every day during the period of installation. All work is to be coordinated with the General Contractor and other trades working on the site.
- 8.) In case of damage to landscaping material, irrigation lines, or other underground or aboveground equipment, the Owner and/or General Contractor shall be notified and the repairs shall be made to his satisfaction. All damaged material shall be repaired and left in the same condition as it was found. All grades are to be restored to the original condition.
- 9.) All installations are to comply with approved Shop Drawings.

Traffic Control:

- 10.) Sign Contractor to prepare a Traffic Control Plan to Owner's requirements, and shall furnish the Owner with the name and phone number of the individual responsible for the implementation and maintenance of traffic control.
- 11.) Prior to the start of construction, the Sign Contractor is required to submit the traffic control plan for the project to the City Engineer for approval.
- 12.) Any subsequent changes in the traffic control plan also require the approval of the City Engineer prior to the implementation of the proposed changes to traffic control.

Adjustments And Repairs:

The Sign Contractor shall repair, or remove and replace with new materials, all damaged units and units not complying with Contact Documents as approved by the Graphic Designer, at no additional cost to the Owner.

Cleaning:

Prior to final inspection and acceptance by the Owner, the Sign Contractor shall remove all protective coatings and stickers, clean metal and painted surfaces in accordance with manufacturer's recommendations, and remove debris from the work site.

Maintenance:

Prior to final payment, the Sign Contractor shall provide to the Owner written instructions for proper maintenance of all signs and signage elements. Instructions shall address periodic cleaning, service access, replacement procedures, and painting. Where applicable, color specifications shall also be provided.

309-5 SUBMITTALS

Production Schedule:

The sign fabricator is to submit a Production Schedule to Owner for approval prior to any work beginning, including and accounting for contractor's full scope of services, appropriate lead times for all products ordered as part of this work, and including installation of all approved signs to completion of work. Fabricator should designate all expected deliverable dates, including all Submittals and Samples as noted in this section, and allowing for appropriate review time by Owner. Once agreed upon with Owner, the Fabricator is responsible for meeting all schedule milestones, and if not able to do so, must notify the Owner of any issues as they arise and prior to any approved deadlines.

Samples:

All rejected samples, shop drawings, patterns, artwork, engineering, etc. must be revised and re-submitted to the Graphic Designer until approval is obtained. A full set of final plans

must be approved and stamped by the Owner and/or Graphic Designer prior to permit application or sign fabrication.

Samples shall be labeled on the backside with the Project Name, the Submittal # (i.e. 1,2 etc.), the Design Intent Sign Type designation (i.e. P2, V1, etc.), a description (i.e. paint to match DE3544 semi-gloss with anti-graffiti coating, etc.). Sign Contractor shall submit three (3) complete sets of samples of the following to the Owner for approval prior to fabrication:

- 1.) Typical pop-through letter in specified material and finish, as required.
- 2.) Material samples for each designated paint color and surface finish including:
 - a. Stem:
First Article of 1 complete stem and all leaves welded and paint finished.
 - b. Metal:
Submit actual production sections showing coating color and finish for aluminum and steel (4 samples per color on 4"x 4" squares)
 - c. Acrylics:
Submit samples of clear lexan back panel acrylic / plastic materials for the various applications in their finished state and data describing the materials and finishes.
 - d. Acrylic Stucco:
Integral color silicone enhanced textured elastomeric coating. Sto ® or equivalent.
 - e. Sealant / Silicone:
Submit sample of sealant and silicone where color match is required.
 - f. Stone travertine and Grout
2" x 2" sample of each color and 1/4" x 2" sample of each grout color.
 - g. Integral Color Concrete:
Submit 4"x4" color sample.
 - h. Letter:
First article with LED lights located to show even illumination.
 - i. Inks, Paints and Lacquers:
Submit (4) 4" x 4" square samples per finish.
 - j. Other materials:
Submit as required.
 - k. Anti-Graffiti Coating/Film:
Samples of anti-graffiti coatings on finished surfaces.

3.) Internal Illumination:

Provide sample of internal illumination using same lighting type and size as specified in Design Intent drawings. Sample to show proposed lighting techniques using actual materials and finishes as specified in Design intent drawings. Sample to demonstrate balanced light intensity and spread across all illuminated elements to owner's satisfaction.

- a. Additional samples for timesteps, materials and finishes as required.
- b. Cut-sheets and supplemental information for each type of LED light fixture to be utilized.
- c. Prototypes as required.

The above samples, when approved, shall establish standards for materials, colors, finishes and quality of workmanship. Completed work shall exactly match the standards established by the approved samples, or work will be rejected.

Shop Drawings:

Sign Contractor is responsible for obtaining Architectural Drawings from Owner or his representatives upon award of contract. Within two (2) weeks after award of Contract, Sign Contractor shall provide Owner with locations, sizes and treatments of access panels and backings required for signs. Such information along with estimated sign weights should be represented on the Architectural Drawings and submitted along with a feed letter specifying electrical requirements for signs (see Section 4.01) to Owner and his representatives.

Where insufficient structural support for signs occurs, the Sign Contractor is responsible for coordinating with Owner and his representatives.

Sign Contractor shall submit three (3) complete sets of fully dimensioned Shop Drawings to the Owner for approval prior to fabrication or email PDF files to all parties responsible for reviewing the Drawings. The cover shall state the initial submittal date and subsequent revision dates, and identify the package as Submittal 1, Submittal 2, etc. If the Shop Drawings are broken into components and submitted at different times, then in addition, the cover will identify which sign types are included in each submittal. The Shop Drawing shall include a table of contents listing each sign type alphabetically and where it can be found within the drawings.

The Shop Drawing submittal shall incorporate all stated elements of the Design Intent Drawings, the stamped engineering calculations, and the specifications outlined in Sections 4 and 5 herein. The shop drawings are expected to include additional details that are not shown on the Design Intent Drawings (see C and D below). It is not acceptable for the Sign Contractor to copy/repackage Graphic Solutions Design Intent Drawings and label them as "shop drawings." All such submittals shall be rejected.

Any Digital Files of the Design Intent Drawings requested by the Sign Contractor will be sent as is (Mac Illustrator CS3 or PDF. Procurement of type fonts as well as corrections and or

adjustments to Digital Files necessary to gain approval of Shop Drawings and Production Art is the sole responsibility of the Sign Contractor.

The Design Intent Drawings show typical or representational copy. Fabricator's Shop Drawings shall show actual copy in scale (minimum 1 1/2" scale), for each sign face with its message using correct typographic size, leading, kerning and fonts as specified in the Design Intent Drawings. Fabricator is responsible for obtaining all necessary fonts/typefaces required to display each sign face layout accurately as a representation of final production. Fabricator is responsible for all translations that they are accurate in accordance with ADA & any local Building Code Requirements.

Shop Drawings shall establish the actual detail of all manufactured or fabricated items and shall include specifications for the paint system to be used for signage/graphics as well as specifications for all required electrical fixtures and components. Drawings shall also indicate proper relation to existing work, reflect all structural engineering requirements, and incorporate changes of design or construction, as directed by the Owner, to suit actual field conditions. In addition, drawings shall indicate internal structural supports; adhesives; exact location and treatment of seams and joints; thickness of materials; exact location of access panels and safety switches; footing details; and details of installation, including sign attachments. Scaled drawings will show each sign type in elevation and plan dimensioning its position in relationship to the architectural or landscape setting. If a sign type occurs in several different settings, drawings will show each unique condition.

Shop drawings shall also indicate the source and location of electrical service for each sign installation, as well as complete specifications for all electrical fixtures and components.

All shop drawings and construction details must be fully dimensioned. Use 1-1/2" = 1'-0" minimum for construction details.

Sign Contractor must continue to revise rejected plans and resubmit until approval is obtained. For initial submittal and re-submittals, the Sign Contractor shall work from *one set* of drawings (i.e., this one set of drawings must incorporate all previous revisions/adjustments).

Drawings not in compliance with all of these requirements shall be rejected. A complete Shop Drawing set and Sign Schedule containing all signs with all revisions/adjustments shall be provided by the Sign Contractor to each party responsible for reviewing installed signs prior to the punch list date.

Message Schedule:

Whether or not a message schedule is provided with bid drawings, the Sign Contractor shall be responsible for submitting for approval, along with Shop Drawings, a complete message schedule listing each sign and its copy. The Sign Contractor shall be responsible for updating and distributing the schedule as quantities, messages or other attributes change. As a minimum the schedule should include the following columns of information: sign type ID number; sign description; single/double faced; message (for each face); illuminated/non-illuminated. The schedule should be an Excel document and include a header with the

name of the job and the issuing party and a footer with page numbers and the date and revision number.

If Message Schedule is provided, Sign Contractor shall alert Owner and Graphic Designer of any discrepancies between the Schedule and messages being prepared for signs. Approval must be received for all messages prior to fabrication.

Patterns And/Or Photo-Ready Art:

Prior to fabrication, Sign Contractor shall submit full-size letter form and work spacing patterns of all graphics for approval by the Graphic Designer, and include installation / attachment methods as required.

Sign Contractor shall submit patterns and/or digital art for other elements as may be requested by the Graphic Designer.

Sign Contractor shall be responsible for submitting signs to and gaining approval from all local, state and federal authorities having jurisdiction over the project. Any changes resulting from this process must be reviewed and approved by the Owner and the Graphic Designer prior to fabrication.

If Sign Schedule is provided, Sign Contractor shall alert Owner and Graphic Designer of any discrepancies between the Schedule and messages being prepared for signs. Approval must be received for all messages prior to fabrication.

Engineering Calculations:

Stamped engineering calculations may be provided for some sign types. The Sign Contractor shall be responsible for reviewing these and determining if any additional engineering will be required for these sign types and for resolving any discrepancies that may exist between the engineering and the details of the Design Intent Drawings.

The Sign Contractor shall be responsible for obtaining and paying for structural engineering calculations for any sign types that have not been engineered and for any additional structural engineering that may be required in connection with the work. If engineering affects the size and shape of the intended forms as shown on the Bid Drawings, the Sign Contractor must notify the General Contractor prior to submittal of Shop Drawings. Engineering is to be submitted to the Owner for approval in conjunction with shop drawing submittal.

First-Article/Prototype Signs:

Fabricator to provide one (1) full-scale and fully functional prototype for each sign type described in the Design Intent Drawings prior to fabrication of full program. The prototype shall show sample of fabrication techniques and lighting quality as specified in the Design Intent Drawings. Prototypes shall be fabricated from actual materials and production methods intended to be used in the finished product, including all necessary attachment hardware, sign posts, accessories, and material finishes and coatings. Signs shall include

finished front and back of sign. Fabricator shall indicate locations for any power conduit and access panels if required.

Prototype signs shall be displayed in their correct orientation, with all assemblies shown, and free-standing if finished sign is required to do so.

If any exceptions are made to the prototype sign, whether for safety or cost, fabricator shall notify all parties and make clearly understood such exceptions.

Owner reserves the right to reject any prototype not meeting expectations and request a new prototype be made to the specifications noted herein without additional cost incurred to the project. Full production and fabrication of the sign program may not proceed until approval of all prototypes by Owner.

As-Built Drawings:

One complete set of drawings reflecting the as-built condition of all signs shall be submitted to the Owner within 30 days of acceptance of the work. This set of drawings shall incorporate all details of the work—references to previous drawings or submittals are not acceptable. If Shop Drawings were broken into separate packages, the As Built Drawings must include a comprehensive cover that identifies each sub-package and a comprehensive table of contents that lists all signs alphabetically showing which sub-package and page they can be found on.

SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

314-4 THERMOPLASTIC TRAFFIC STRIPING AND PAVEMENT MARKINGS

314-4.4.1 General

Add the following:

Crosswalks and limit lines shall be thermoplastic.

The installation of traffic stripes includes placement of raised pavement markers when called for on the plans.

314-5 PAVEMENT MARKERS

314-5.1 General

Add the following:

Establish the alignment for placing pavement markers.

Do not place pavement markers over longitudinal or transverse joints in the pavement surface.

Place pavement markers when the pavement surface is dry.

Before placing pavement markers, remove undesirable material from the pavement surface, including dirt, curing compound, grease, oil, loose or unsound layers, and paint.

Regardless of the pavement's age or type, clean the surface by abrasive blast cleaning except where you apply hot melt bituminous adhesive on clean asphalt concrete or on a new clean seal coat.

Apply pavement markers to the pavement with bituminous adhesive, flexible bituminous adhesive, standard set epoxy, or rapid set epoxy adhesive except:

1. Apply pavement markers in pavement recesses with flexible bituminous adhesive
2. Do not use epoxy adhesive to apply plastic non-reflective pavement markers

Comply with the manufacturer's installation instructions for the type of adhesive used. Completely cover the pavement surface or bottom of the pavement marker with the adhesive without leaving any voids. Place the marker into position and firmly apply pressure until contact is made with the pavement. Apply enough adhesive such that it protrudes around the marker's edges after pressing it into place.

Place retroreflective pavement markers such that each retroreflective face is perpendicular to a line parallel to the roadway centerline.

The Engineer determines when the adhesive has set long enough for newly installed pavement markers to bear traffic.

Add the following section:

SECTION 315 – MISCELLANEOUS MATERIALS

315-1 BUS STOP SHELTER & TRASH RECEPTACLE

325-1.1 Installation.

The Bus Stop Shelter and solar lighting, Bench, and Trash Receptacle shall be installed per manufacturer's recommendation. This section's installation instructions shall be used if no manufacturer recommendations are provided for the bus shelter. All proprietary materials below may be substituted by approved equals.

ROOF PANEL INSTALLATION

- 1.) There is a film on both sides of the Lexan panel. Examine the panel and note which surface is to be faced externally. Remove film from both sides of Lexan panel. Install edge into groove as shown in Fig 1. Press the panel over the top and into groove on opposite side. There should be a 1/2-inch gap between panels. Press down firmly so the panel contacts the roof bow at its top.
- 2.) See Fig 2. Place the pressure bands with the two rubber bulb seals over the center joints. There can be a short gap at either end. Use the TEKS screws #14 x 1 1/2-inch(3 per bow) & #14 x 1 1/2-inch(2 per bow) to secure the pressure rib to the roof bow. The TEKS screw is self-drilling and tapping. A 3/8-inch nut driver with suitable power tool should be used.

PROCEDURE:

1. Install center screw first-be sure band is centered. Use the #14 x 1 1/2-inch TEKS screw.
 2. Install next screws down; use the #14 x 1 1/2-inch TEKS screws.
 3. Press band down and install bottom screws, use the longer #14 x 1 1/2-inch TEKS screws.
- 3.) See Figure 3. Slip the 55-inch long rubber J-channel over one edge of the curved 3-inch wide band. This band is used at each end of the roof. The edge of the band without the J-channel will be aligned to the outer edge of the last bow and on top of the 1/4-inch square bead. Use 5 of the TEKS screws per each of these bands.

PROCEDURE:

1. Install center screw first-be sure band is centered. Use the #14 x 1 1/2-inch TEKS screw.
2. Install next screws down; use the #14 x 1 1/2-inch TEKS screws.
3. Press band down and install bottom screws, use the longer #14 x 1 1/2-inch TEKS screws.

ROOF INSTALLATION

- 1.) Slide the four 18-inch long shoes into the four support posts.
- 2.) Raise the roof (weight-175 pounds) and position the dual post assemblies under the roof crossbeams. The roof should overhang the dual post assemblies more toward the street. Note that the tabs near the top of the posts must face opposite end of roof. The dual post assembly with the access hole near the bottom must be placed at the right back of the shelter.
- 3.) Insert and tighten eight (8) each 3/8-16 x 1-inch Hex Head Bolts, 3/8-inch Lockwashers and 3/8-inch Flatwashers at the top of each dual post assembly.
- 4.) Level the roof by placing a carpenter's level on the roof's gutter. The roof height can be increased if desired. Drill a .50(1/2-inch) diameter hole completely through the shoe. Install and tighten the 1/2-13 x 4-inch Hex Head Bolt at each post. Use the self-locking hex nut to secure. The small 1/4 diameter may be used initially to level the roof. Drill a .221-inch (#2) diameter hole through the shoe.

Hammer in a drive screw #14 x 3/4-inch long completely through the shoe. However it is not required that this drive screw be used.

- 5.) Install the fascia wire grid assemblies with the 3/8-16 x 1 1/4-inch Hex Head Bolts, 3/8-inch-16Hex-nuts, 3/8-inch Lockwashers and 3/8-inch Flatwashers.
- 6.) Plumb the support posts and secure each shoe with anchors as per manufacturer's Anchoring Instructions.

315-2 MKT

315-2.1 Installation.

Prior to the MKT installation, PCC shall be free of dirt, water, oil, and other foreign materials. Broom or air-clean the surface as necessary.

Surface preparation for surface overlays shall include patching or crack sealing of failed or distressed existing pavement. Potholes, cracks greater than 1/4- inch, and/or local distresses related to structural or subgrade failures, shall be repaired. Severally spalled or other distressed areas must be repaired according with accepted paving practices. Portland cement concrete pavement slabs should be stable. Excessively subsided joints or faulted joints should be repaired by applying a thin hot mix leveling course. If a leveling course is used, crack sealing is not necessary. Note: Commercial crack filler expands under the heat of an overlay and therefore the crack should be filled level or just below the existing pavement surface.

Center the roll over the joint or crack to be treated with the release paper attached. Allow for a material overrun of 2 to 3 inches beyond each end of the crack to ensure a waterproof seal. Cut the membrane with utility knife. Install the TenCate® MTK by removing release paper. In the case of Portland cement concrete, transverse joint strips shall be applied before longitudinal joint strips to minimize the chance of the membrane peeling. On longitudinal joints allow 2 to 3 inches overlap in the direction of traffic. Material should be laid smooth and adhere well to the existing pavement by rolling the membrane with a pickup truck or pneumatic roller. A stiff broom can also be used to aid adhesion.

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For additional installation information see Appendix A and see specs from Tencate or approved equal.

PART 6 – TEMPORARY TRAFFIC CONTROL

SECTION 601 – WORK AREA TRAFFIC CONTROL

Add the following:

The Stage Construction Plans (SC Plans) and other Plans indicate the traffic management and control measures and detours necessary to construct the project in accordance with the various stages of the project of these General Provisions. The Plans do not necessarily show all forms of traffic control measures, temporary lane closures, temporary access locations, and night time and off-hours traffic control measures required for the CONTRACTOR to perform all aspects of the work.

601-1 GENERAL

Add the following:

In addition to the requirements in Part 6 of the MUTCD and of the MUTCD California Supplement, all devices used by the CONTRACTOR in the performance of the work shall conform to the provisions in this section.

Traffic handling equipment and devices damaged from any cause during the progress of the work shall be repaired, including painting if necessary, or replaced by the CONTRACTOR at the CONTRACTOR's expense.

When traffic control devices furnished by the CONTRACTOR are no longer needed for controlling traffic, they shall be removed from the site of the work.

The exact placement of traffic handling equipment and devices may need to be adjusted to avoid concrete joint lines. The CONTRACTOR shall be responsible for identifying the locations in which there is a conflict prior to the beginning of each phase of construction. The CONTRACTOR shall propose an alternative layout. The alternative layout shall be approved by the ENGINEER prior to implementation. The alternative design shall be included in the prices paid for STAGE CONSTRUCTION/TRAFFIC CONTROL and no additional compensation will be allowed therefor.

During construction, the posted speed will be reduced from 40 mph to 25 mph. Traffic control devices will be placed according to the reduced posted speed.

CONTRACTOR to coordinate work to be done at intersections and allow traffic movements at all times during construction. CONTRACTOR to provide at least one 12' lane in each directions at all times.

Whenever the term "hours of darkness" is used in the specifications it shall be deemed to mean the hours of darkness as defined in Division 1, Section 280, of the California Vehicle

Code. Retroreflective sheeting shall conform to the requirements in ASTM Designation: D 4956 and to the Special Provisions.

601-1.2 Barricades

Barricades shall conform to the details shown on the plans and shall be as specified in this section.

Barricades shall be constructed of lightweight commercial quality materials, as approved by the ENGINEER. Stay bracing for "A" frame designs shall not be rigid.

Markings for barricade rails shall be alternate orange and white stripes. The entire area of orange and white stripes shall be Type I, engineering grade, or Type II, super engineering grade, retroreflective sheeting. The color of the orange retroreflective sheeting shall conform to PR No. 6, Highway Orange, of the Federal Highway Administration's Color Tolerance Chart.

Retroreflective sheeting shall be placed on rail surfaces in such a manner that no air bubbles or voids are present between the rail surface and retroreflective sheeting. The predominate color for barricade components other than rails shall be white, except that unpainted galvanized metal or aluminum may be used.

Owner identification shall not be imprinted on the reflectorized face of any rail, but may be imprinted elsewhere.

Ballasting shall be by means of sand filled bags placed on the lower parts of the frame or stays, but shall not be placed on top of the barricade nor over any reflectorized barricade rail face facing traffic.

If the barricades are displaced or are not in an upright position, from any cause, the barricades shall immediately be replaced or restored to their original location, in an upright position, by the CONTRACTOR.

601-1.3 Construction Area Signs

The term "Construction Area Signs" shall include all temporary signs required for the direction of public traffic through or around the work during construction.

Construction area signs are shown in or referred to in Part 6 of the MUTCD and of the MUTCD California Supplement. Construction area signs shall be installed at the locations shown on the plans as directed by the Engineer.

Construction area signs designated as stationary mounted on the plans shall conform to the provisions in Section 7-10.2.4.5A, Stationary Mounted Signs, and construction area signs designated as portable signs on the plans shall conform to the provisions in Section 710.2.4.5B, Portable Signs. Construction area signs not designated as stationary mounted nor as portable on the plans shall be, at the CONTRACTOR's

option, either stationary mounted or portable signs conforming to the provisions in Sections 7-10.2.4.5A or 7-10.2.4.5B.

All construction area signs shall conform to the dimensions, color and legend requirements of the plans, Part 6 of the MUTCD, Part 6 of the MUTCD California Supplement, and these Special Provisions. All sign panels shall be the product of a commercial sign manufacturer.

Sign panels for all construction area signs shall be visible at 500 feet and legible at 300 feet, at noon on a cloudless day and at night under illumination of legal low beam headlights, by persons with vision of or corrected to 20/20, except that the nighttime requirement shall not apply to fabric sign panels for portable signs.

The CONTRACTOR may be required to cover certain signs during the progress of the work. Covers for construction area signs shall be of sufficient size and density to completely block out the message so that it is not visible either during the day or at night. Covers shall be fastened securely to prevent movement caused by wind action.

The CONTRACTOR shall clean all construction area sign panels at the time of installation and as often thereafter as the Engineer determines to be necessary, but at least once every four (4) months.

Used signs with the specified sheeting material will be considered satisfactory if they conform to the requirements for visibility and legibility and the colors conform to the requirements in Part 6 of the MUTCD and of the MUTCD California Supplement. A significant difference between day and nighttime retroreflective color will be grounds for rejecting signs.

To properly provide for changing traffic conditions and damage caused by public traffic or otherwise, the CONTRACTOR shall be prepared to furnish on short notice additional construction area sign panels, posts and mounting hardware or portable sign mounts. The CONTRACTOR shall maintain an inventory of the commonly required items at the jobsite or shall make arrangements with a supplier who is able, on a daily basis, to furnish the items on short notice.

601-1.4 Channelizers

Channelizer posts shall be orange in color.

Channelizers shall have affixed white retroreflective sheeting as specified. The retroreflective sheeting shall be 3" x 12" in size. The retroreflective sheeting shall be visible at 1,000 feet at night under illumination of legal high beam headlights, by persons with vision of or corrected to 20/20.

The channelizer bases shall be cemented to the pavement with hot melt bituminous adhesive or rapid set type epoxy adhesive in conformance with the manufacturer's instructions. Channelizers shall be applied only on a clean, dry surface.

In areas of new construction where the markers are protected from all traffic, including the CONTRACTOR's vehicles, standard set epoxy adhesive for pavement markers may be used. The protection from all traffic shall be for at least 3 hours after marker placement when the pavement surface temperature is 55° F or above, at least 24 hours when the temperature is between 40° F and 55° F, and at least 48 hours when the temperature is 40° F or below.

Channelizers shall be placed on the alignment and location shown on the plans, or directed by the Engineer. The channelizers shall be placed uniformly, straight on tangent alignment and on a true arc on curved alignment. All layout work necessary to place the channelizers to the proper alignment shall be performed by the CONTRACTOR.

If the channelizers are displaced or fail to remain in an upright position, from any cause, the channelizers shall immediately be replaced or restored to their original location, by the CONTRACTOR.

601-1.5 Temporary Railing (Type K)

Temporary railing (Type K) shall consist of interconnected new or undamaged used precast concrete barrier units as shown on the plans. Exposed surfaces of new and used units shall be freshly coated with a white color paint prior to their first use on the project. Each temporary railing (Type K) unit will have a span length of 10-feet or 20-feet.

Temporary railing (Type K) may have the CONTRACTOR's name or logo on each panel. The name or logo shall not be more than 4 inches in height and shall be located not more than 12 inches above the bottom of the rail panel.

Temporary railing (Type K) shall be set on firm, stable foundation. The foundation shall be graded to provide a uniform bearing throughout the entire length of the railing.

Abutting ends of precast concrete units shall be placed and maintained in alignment without substantial offset to each other. The precast concrete units shall be positioned straight on tangent alignment and on a true arc on curved alignment.

At the CONTRACTOR'S discretion, threaded rods or dowels shall be bonded in holes drilled in the existing concrete. After removal of the temporary railing (Type K), all threaded rods or dowels shall be removed to a depth of at least one inch below the surface of the concrete. The resulting holes shall be filled with mortar and shall be cured by either the water method or by the curing compound method. The

Engineer's approval of any CONTRACTOR-requested modifications to the Temporary Railing (Type K) installation shall not be grounds for a change order request or time extension request by the CONTRACTOR.

Each rail unit placed within 10 feet of a traffic lane shall have a reflector installed on top of the rail. Reflectors shall be as specified in the Special Provisions, and adhesive shall conform to the reflector manufacturer's recommendations. A Type P marker panel shall also be installed at each end of railing installed adjacent to a two lane, two way highway and at the end facing traffic of railing installed adjacent to a one way roadbed. If the railing is placed on a skew, the marker shall be installed at the end of the skew nearest the traveled way. The CONTRACTOR shall furnish the Type P marker panels.

When temporary railings (Type K) are removed, any area where temporary excavation or embankment was used to accommodate the temporary railing shall be restored to its previous condition or constructed to its planned condition.

601-1.6 Temporary Traffic Stripes and Pavement Markings

Temporary traffic stripes and pavement markings shall be removed by any method that does not materially damage the existing pavement. Pavement marking images shall be removed in such a manner that the old message cannot be identified. Where grinding is used, the pavement marking image shall be removed by grinding a rectangular area. The minimum dimensions of the rectangle shall be the height and width of the pavement marking. Residue resulting from removal operations shall be removed from pavement surfaces by sweeping or vacuuming before the residue is blown by the action of traffic or wind, migrates across lanes or shoulders, or enters into drainage facilities.

Temporary traffic stripes shall be removed before any change is made in the traffic pattern.

601-1.7 Temporary Pavement Markers

Temporary pavement markers, including underlying adhesive, shall be removed by such methods that will cause the least possible damage to the pavement or surfacing. Damage to the pavement or surfacing caused by pavement marker removal shall be repaired by the CONTRACTOR at the CONTRACTOR's expense by methods acceptable to the Engineer.

During the removal of ceramic type pavement markers, screens or other protective devices shall be furnished to contain any fragments.

Fragments resulting from the removal of pavement markers shall be removed from the highway before the lane or lanes are opened to public traffic.

601-1.8 Sand Barrel (Crash Cushions)

Sand barrels will be placed to cover all blunt-end objects such as the end of the temporary railing (Type K). During construction, the posted speed will be reduced from 40 mph to 25 mph. Therefore the layout of the sand barrels will comply with 25 mph installation standard found in the Appendix. Each array will include a minimum of 6 barrels. Sand barrels shall be installed at the locations shown on the plans as directed by the Engineer.

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PART 7 – STREET LIGHTING AND TRAFFIC SIGNAL SYSTEMS

SECTION 700– MATERIALS

212-3 ELECTRICAL MATERIALS.

212-3.2 Conduit and Conductors.

212-3.2.1 Conduit. *Delete and replace with the following:* Conduit and sweeps shall be Schedule 40 PVC, gray in color, and specifically manufactured for use as electrical installation. The conduits shall be sized twice the diameter of the wire bundle to be carried within. All ends of conduit in valve and pull boxes shall be sealed using a waterproof material that can be easily removed from the conduit openings for the purpose of pulling wire through the conduit.

212-3.2.2 Conductors. *Add the following.* All wire splices shall be made using a direct burial waterproof wire connection, Pen-Tite or approved equal. Low voltage control wires shall have a single solid copper conductor with colored PVC coating. The pilot control wires shall be color-coded a specific color per controller and the common wires color coded white with a stripe matching the color of the pilot wires.

The electrical system shall be installed in accordance with the National Electrical Code most recently adopted by the City. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 bolt. Pilot wires shall be a different color wire for each automatic controller. Install in accordance with valve manufacturer's specifications and wire chart. In no case shall wire be sized less than #14.

212-3.3 Controller Unit. Add the words "16 gauge stainless steel" between the words "weatherproof" and "enclosure" in the third sentence of the section.

Add the following:

Solar powered controllers, where specified, require no AC power to function and shall generate sustaining power using only ambient light without the use of external solar panels. The controller shall operate on minimum light requirements and shall be able to function properly, even in shady conditions.

| SECTION 307 – STREET LIGHTING AND TRAFFIC SIGNAL SYSTEMS

Delete the entire Section 307, and replace with Section 86, "ELECTRICAL SYSTEMS", of the

Caltrans Standard Specification and the Specifications in Section G of these Special Provisions and the Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition.

86 ELECTRICAL SYSTEMS

86-1 GENERAL

The following additions and amendments are made to Section 86 of the above Specifications.

The numbering of the subsections for the purpose of these additions and modifications refers to the corresponding numbering of subsections of the above Standard Specifications.

86-1.01 SUMMARY. *Add the following:*

The work consists of, but is not limited to, the following:

The work includes furnishing and installing traffic signal at the intersection of Atlantic Boulevard at Jillson Street within City right-of-way, as shown on the plans:

The work consists of installing new CONTRACTOR furnished Type "332" traffic signal controller cabinet and new Model 170E-ATC traffic signal controller, as shown on plans. The work to be performed under installation of traffic signal contract generally consists of, but not limited to, the installation of new conductors and conduits, pull boxes, traffic signal controller cabinets, service equipment enclosure, emergency vehicle preemption, traffic signal poles and mast arms with safety lighting, pedestrian push buttons and posts, vehicle heads, and pedestrian countdown heads,

Existing street lighting shall be removed and by SCE. Street lighting removal items include poles, luminaires, and foundations. SCE is responsible for installing temporary street light luminaires on new, relocated power poles, foundations and conductors. The Contractor is responsible for installing ultimate conduit, pull boxes, poles, foundations, conductors, and luminaires along the following street segments:

Atlantic Boulevard from Washington Boulevard to Como Street.

The contractor shall coordinate with SCE for the removal of the temporary street lighting luminaires when the new street lighting system is installed and functioning properly. The work includes project coordination with the following:

- Various Contractors responsible for future projects, on-going projects and planned projects that will be under construction simultaneously while this project is under construction in the field
- Southern California Edison (SCE)
- City's public works Building Contractor
- City's Traffic Department Staff
- City's Inspector

The installation of the electrical systems shall comply with the Caltrans Transportation Electrical

Equipment Specifications (TEES), latest edition, and any subsequent errata. The TEES and Errata 1 has been included in the Project Appendices, as a convenience to the Contractor, but the Contractor is responsible for having the latest edition.

86-1.01A Field Conditions and Locations. *Add the following:*

Proper judgment must be exercised in executing work so as to secure the best possible installation in the space available and in order to overcome problems caused by space limitations or special conditions encountered in the field.

In the event changes are necessary due to unforeseen conditions, such changes shall be made by the CONTRACTOR only after approval by the ENGINEER or his/her assigned representative. Such changes shall be at no extra cost provided the change is ordered prior to conduits or other items being installed and no extra materials are required.

86-1.04 EQUIPMENT LIST AND DRAWINGS. *Add the following:*

The Contractor is required to submit to the Engineer "Record Drawings" prints prior to the City's accepting the installations. The prints shall indicate in red all deviation from the contract plans, such as: Location of poles, pull boxes and runs, depths of conduit, number of conductors, and other appurtenant work, for future reference.

86-1.07 SCHEDULING OF WORK. *The first sentence of the first paragraph of Section 86-1.07 of the Caltrans Standard Specifications is amended as follows:*

"The first order of work and prior to ordering the equipment, must be to submit a list of equipment/materials, including but not limited to, traffic signal pull boxes, traffic signal controllers, traffic signal controller equipment, traffic signal cabinets, and service enclosures to the Engineer for review and approval. Shop Drawings shall be approved by the City prior to ordering the equipment. The second order of work must be to place the order for the electrical equipment."

Add the following:

Within 7 working days of the Order to Proceed, the Contractor shall furnish the CITY with 3 copies of a written timetable showing the proposed Schedule of Work, including material order and delivery dates and the timing for both underground and overhead installations along the project area. The Schedule of Work is to be approved by the CITY before any construction begins.

The Schedule of Work shall include the schedules of other ongoing improvement projects, future improvement projects, and/or projects that shall be complete prior to construction within the project limits. CONTRACTOR shall refer to the project plans for future improvement projects and projects that shall be complete prior to construction. CONTRACTOR shall coordinate with City's representative and the "other" project's Contractor to determine each project schedule.

In addition to the schedule of work, the CONTRACTOR shall submit traffic control plans for the proposed improvements at each intersection and/or corridor within 7 working days of the Order to Proceed.

Above ground signal work shall not commence until such time that the CONTRACTOR notifies the ENGINEER or his/her assigned representative in writing, of the date that all electrical materials and equipment are received. The ENGINEER or his/her assigned

representative shall verify the CONTRACTOR's notification in writing. Said work shall start within 15 days after said date.

No materials or equipment shall be stored at the job site until receipt of said notification by the ENGINEER or his/her assigned representative. The job site(s) shall be maintained in neat and orderly condition at all times.

86-2.03 FOUNDATIONS

86-2.03A General. *Add the following:*

Foundations shall be located and installed as shown on the plans, or as directed by the Engineer. No foundation shall be located within three feet of a fire hydrant.

When a foundation is to be abandoned, it shall be removed completely.

Portland Cement Concrete for foundations shall conform to Section 90-1, "General" of the Concrete section of the Caltrans Standard Specifications and shall contain not less than 700 pounds of cement per cubic yard and shall attain a compressive strength not less than 3,000 psi at 7 days. Contractor shall submit three copies of the certified P.C.C. mix design to the Engineer prior to placement.

Add the following section:

86-2.03C Rotor Drill Concrete

Rotor drilling concrete shall consist of rotor drilling holes through concrete foundations as shown on the plans and in conformance with these Technical Specifications.

The holes shall be rotor drilled by dry drilling methods that will not shatter or damage the concrete adjacent to the holes.

Conduits entering traffic signal controller cabinets shall be installed per "Conduit Entrance Detail" as shown on the plans. The existing foundation shall be "chipped out" as necessary to install the conduit. The foundation shall be repaired with concrete to match the existing.

86-2.04 STANDARDS, POLES, STEEL PEDESTALS, AND POSTS. *Add the following:*

The CONTRACTOR shall furnish and install Ameron model 5B121 street light poles with the Fillmore Mix 66 per the specification sheet included in the Project Appendices or City approved equal. Each street light pole shall have a height of 21 feet and be furnished with an 8 feet decorative mast arm, an "M" scroll assembly, and two (2) Ameron Banner Saver Brackets per street light pole, model BASPL30PRO, Black-PA (RAL-9005 Jet Black) or City approved equal.

The street light foundations shall be installed per the foundation details provided in the plan sheet set. The CONTRACTOR shall be responsible for meeting all foundation design criteria set forth on the foundation detail sheet.

86-2.05 CONDUIT. *Add the following:*

All conduit shall be jacked or bored under existing sidewalk and pavement unless noted otherwise on the plan and in these Specifications or as directed by the ENGINEER or his/her assigned representative. In unimproved areas, conduit can be installed per the "Trenching in Pavement Method".

All conduits to be installed underground shall be schedule 80 PVC as shown on plans. Conduit size is as shown on the plans.

Rigid steel conduit shall be the rigid metallic type with zinc coating meeting the testing requirements established by ASTM Designation: A239. Pull ropes shall be installed in empty conduits for future use, and shall be a soft fiber type of not less than 0.5-inch diameter. Conduit for street crossings shall be 3-inch schedule 80 PVC, as shown on plans.

The Contractor shall furnish and install street lighting conduit and conductors from the service pedestal to the street lights per the circuit wiring diagrams. Conduit between traffic signal controller cabinets and adjacent pull boxes or proposed splice boxes/vaults shall be 3-inch or 4-inch schedule 80 PVC as shown on plans.

Conduit sweeps entering traffic signal controller cabinet foundations shall be 90 degrees. When conduit is placed in a trench (not in pavement or under Portland cement concrete sidewalk), after the bedding material is placed and the conduit is installed, the trench shall be backfilled with commercial quality concrete, containing not less than 15.6 lbs. / cu ft. of Portland cement, to not less than 4 inches above the conduit before additional backfill material is placed.

After cables/conductors have been installed, the ends of conduits terminating in pull boxes, fiber optic splice boxes/vaults, service equipment; other closures and controller cabinets shall be sealed with an approved type of sealing compound.

All conduits shall be cleaned with a mandrel or cylindrical soft bristled brush and blown out with compressed air until all foreign material is removed immediately prior to sealing empty conduits or installing cables. Cleaning shall be performed in the presence of the ENGINEER or his/her assigned representative. The ends of conduits shall be sealed with an approved sealing compound.

86-2.05C Installation. *Add the following:*

Conduit bends, except factory bends, shall have a radius of not less than the manufacturer's recommended minimum bend radius. Where factory bends are not used, conduit shall be bent, without crimping or flattening, using the longest radius practicable.

Conduit sweeps entering traffic signal controller cabinet foundations shall be 90 degrees.

Rigid metal conduit to be used as a drilling or jacking rod shall be fitted with a suitable drill bit for the size hole required.

All existing non-metallic conduit to be extended or modified shall be of like (same) material with bell bushings.

Conduits shall be placed a minimum of 36 inches below surrounding sidewalk or ground surface in sidewalk and 42 inches below finished grade in unpaved parkway areas. Conduit runs are shown schematically in the desired locations. Field conditions at the time of construction may dictate minor changes to facilitate the CONTRACTOR'S work. Such minor changes will not constitute extra work. Actual installation shall be done in the most direct manner or as directed by the ENGINEER or his/her assigned representative. Conduits in sidewalk or parkway area shall be placed adjacent to the back of sidewalk unless otherwise approved by the ENGINEER or his/her assigned representative.

Where sidewalk is to be removed in the course of construction, it shall be saw cut along and removed at the nearest scoring line or joint for the full width of sidewalk. The minimum depth of sawcuts shall be 1-inch. Replacement sidewalk over conduit trenches shall be 4 inches thick and shall match surrounding sidewalk in surface color, texture and finish. The cost of repairing damaged sidewalk shall be considered included in the various Bid Items and no additional compensation will be allowed therefor.

Existing signal and interconnect conduit to be reused shall be inspected and cleaned according to Section 86-2.05C, "Installation," of the Caltrans Standard Specification. The cost for cleaning existing inspecting and cleaning interconnect conduits shall be considered included in the contract bid contract bid items for the various conduits and no additional compensation will be allowed therefor.

Existing signal and interconnect conduit to be reused shall be cleaned with cylindrical wire brush, verified using the proper size mandrel and blown out with compressed air. Both old and new cables shall be pulled into the conduit as a unit or as directed by the ENGINEER or his/her assigned representative. The cost for cleaning existing signal and interconnect conduits shall be considered included in the contract bid contract bid items for the various conduits and no additional compensation will be allowed therefor.

In the event that existing conduit designated for reuse for new conductors are found to be unsuitable for reuse, the CONTRACTOR shall install new conduit at the unit price(s) in the "Cost Break-Down" sheet, on an alignment designated by the ENGINEER or his/her assigned representative. CONTRACTOR shall notify and obtain approval by the ENGINEER or his/her assigned representative in writing prior to performing the work.

Conduit shall be jacked or bored in paved areas where trenching cannot be performed unless otherwise noted on the plans.

Conduit trenches shall be backfilled with native soil and compacted to not less than 90 percent average density. Also, conduit trenches shall be a minimum of 12 inches wide to allow for proper compaction. The CONTRACTOR shall coordinate with the ENGINEER or his/her assigned representative to determine the conduit trenching areas.

Full compensation for trenching conduit including backfill shall be considered included in the contract bid items for the various conduits and no additional compensation will be allowed therefor.

Add the following section:

86-2.05D Conduit Sealing Plugs

Except as otherwise noted, all conduits shall have their ends sealed with commercial preformed plugs which prevent the passage of gas, dust, and water into these conduits. Sealing plugs shall be installed within each pull box, cabinet, or building.

Sealing plugs shall be removable and reusable. Plugs sealing conductors or cables shall be the split type that permits installation or removal without removing conductors or cables.

Sealing plugs used to seal fiber optic conduits shall be capable of withstanding a pressure of 5 PSI.

A sealing plug that seals an empty conduit shall have an eye or other type of capturing device (on the side of the plug that enters the conduit) to attach onto the pull rope, so the pull rope will be easily accessible when the plug is removed.

Full compensation for conduit sealing plugs shall be considered included in the contract bid items for the various conduits and no additional compensation will be allowed therefor.

Add the following section:

86-2.05E Certificates of Compliance, Materials Receiving Inspection and Manufacturer's

Data

In conformance with the provisions in Section 86-1.05, "Certificate of Compliance," of the Caltrans Standard Specification. A Certificate of Compliance shall be furnished to the ENGINEER or his/her assigned representative for each type of non-metallic conduit (Schedule 80 PVC) furnished. The certificate shall also certify that the non-metallic conduit (Schedule 80 PVC) complies with the requirements of these Technical Specifications, and shall include the resin material cell classification, unit mass of pipe, average pipe stiffness and date of manufacture.

Conduit, when delivered to the site, which exhibits damage in excess of 10 percent of the conduit wall thickness, may be rejected by the ENGINEER or his/her assigned representative. Conduit exhibiting damage which does not meet the manufacturer's recommendations for usable conduit may also be rejected by the ENGINEER or his/her assigned representative. Conduit sections may be repaired if approved by the ENGINEER or his/her assigned representative. Replacement or repair of rejected conduit shall be borne at the CONTRACTOR'S expense.

Two copies of the manufacturer's product technical specification information shall be furnished to the ENGINEER or his/her assigned representative at least two weeks subsequent to the start of the scheduled delivery.

Two copies of the manufacturer's test data for the delivered shipment shall be furnished to the ENGINEER or his/her assigned representative at the time of the delivery.

Add the following section:

86-2.05F Directional Boring Method

Conduits shall be installed by the directional boring method at locations as shown on the plans, street crossings and at locations approved by the ENGINEER or his/her assigned representative. Trenching may be used per the approval of the ENGINEER or his/her assigned representative. All pull boxes or fiber optic splice boxes/vaults shall be located at the locations shown on the plans unless approved otherwise by the ENGINEER or his/her assigned representative.

Minimum depth of conduit below finished grade in pavement areas shall be 18-inches and 36- inches below finished grade in unpaved parkway areas, unless noted otherwise on plans.

A listing of materials (composition and strength) and methods used in directional boring shall be submitted for the ENGINEER or his/her assigned representative to review.

The diameter of the boring tool shall not exceed 1.5 times the outside diameter of the conduit. Mineral slurry or wetting solution shall only be used to lubricate the boring tool and to stabilize the soil surrounding the boring path. Mineral slurry or wetting solution shall be water based and environmental safe.

Residue from directional boring operations shall be handled in the same manner as residue from slot cutting operations described in Section 86-5.01A (5), "Installation Details," of the Caltrans Standard Specification.

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

The directional boring equipment shall be equipped with a tension measuring device that indicates the amount of tension exerted on conduit during conduit pulling operations. Slurry cement backfill and warning tape, as shown on the plans for trench installations of conduit, are not required where the directional boring method is used. Tracer wire shall be attached to the uppermost conduit prior to conduit installation. A representative of the CONTRACTOR must be in direct charge and control of the directional boring operation at all times.

The ENGINEER or his/her assigned representative shall be notified in writing two (2) working days in advance of starting directional boring operations. The location and equipment to be used in the boring operation shall be included in the advance notice to the ENGINEER or his/her assigned representative. Directional boring shall only be performed in the presence of the ENGINEER or his/her assigned representative unless otherwise notified in writing by the ENGINEER or his/her assigned representative.

Full compensation for directional boring shall be considered included in the contract bid items for the various conduits and no additional compensation will be allowed therefor.

86-2.06 PULL BOXES. *Add the following:*

Where the sump of an existing pull box is disturbed by the CONTRACTOR'S operation, the sump shall be reconstructed as shown on Caltrans Standard Plan RSP ES-8A and RSP ES-8B. Pull box lids containing traffic signal conductors only shall be labeled "TRAFFIC SIGNAL", as shown on plans.

Pull box lids containing signal interconnect cable for the traffic signal communications shall be labeled "INTERCONNECT", as shown on plans.

Pull box lids containing street lighting conductors only, where voltage is under 600V, shall be labeled "STREET LIGHTING", as shown on the plans.

Pull box lids containing street lighting conductors only, where voltage is above 600V, shall be labeled "STREET LIGHTING-HIGH VOLTAGE", as shown on the plans.

Pull boxes shall be provided with Fiberlyte lids. Plastic pull box covers shall not be used.

Pull boxes shall be Christy Model N36 Electrical Box or approved equal.

The pull boxes shown on the plans are to be installed as a minimum.

The maximum distance between pull boxes shall be 500-feet, unless shown otherwise on plans. The CONTRACTOR may, at his/her own expense, install additional pull boxes to facilitate the work with the approval of the ENGINEER or his/her assigned representative. The locations of all pull boxes on the plans are schematic. The ENGINEER or his/her assigned representative will approve the final location of all pull boxes.

Pull boxes shall not be installed in any part of a driveway, wheelchair ramp or other traveled way unless specified by the ENGINEER or his/her assigned representative.

Pull box locations shown on the plans is diagrammatic only. Pull boxes shall be placed with their longest dimension adjacent to and parallel to the back of curb unless otherwise approved by the ENGINEER or his/her assigned representative. Pull boxes shall be installed near the back of sidewalk unless approved by the ENGINEER or his/her assigned representative.

Grout will be required in the bottom of pull boxes. The bottom is to be smoothed and sloped with a PVC pipe in the bottom to allow for drainage.

Pull boxes shall be provided with hold-down bolts. Pull boxes shall be provided with factory installed knockouts that will permit the installation of signal interconnect conduit through the sidewalls.

86-2.11 SERVICE. *Add the following:*

Service shall conform to the provisions of Section 86-2.11, "Service" of the Caltrans Standard Specifications, Los Angeles County Department of Public Works Traffic Signal Control equipment Specifications, latest edition, and these Technical Specifications.

CONTRACTOR shall provide conduit, trench, and backfill for Southern California Edison Company service from power source to the proposed Type III-BF service enclosures/cabinets.

The Type III-BF service cabinet shall include by-pass test switches, circuit breakers and contactors for intersection, safety lighting and internally illuminated street name signs (I.S.N.S.). Two Type V photoelectric control (PEC) units shall be provided, one for luminaries and one for

I.S.N.S. The Type III-BF service cabinet finish color shall be anodized aluminum.

CONTRACTOR shall make all arrangements with the Southern California Edison Company for service, as appropriate. The CONTRACTOR shall be responsible for all service details, expenses (except invoices) and scheduling far in advance of need. The City will pay SCE invoices, prepare and sign application for service.

CONTRACTOR shall modify existing Type III-BF enclosures/cabinets as required in order to provide full power to the facilities as shown on the plans.

CONTRACTOR shall notify the ENGINEER in writing at least 15 working days in advance of the date on which they desire any service connections or disconnects to be made. The CONTRACTOR shall be entitled to no extension of time or other compensation for any delay to this operation resulting from his failure to give the prescribed notification.

The eleventh paragraph of Section 86-2.11 of the Caltrans Standard Specifications is amended as follows:

"It shall be the CONTRACTOR's responsibility to verify the location of and to make arrangements for and to pay for all costs to provide the necessary connection for the traffic signal and lighting system."

86-2.14 TESTING. *Add the following:*

Testing shall conform to the provisions in Section 86-2.14C, "Functional Testing" of the Caltrans Standard Specification, Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition, and these Technical Specifications. During the test period, the CITY shall maintain the system or systems.

The fifth paragraph in Section 86 2.14C, "Functional Testing", of the Caltrans Standard Specification is amended to read:

"Except for new or modified lighting circuits and sign illumination systems, the local agency will maintain the system or systems during the test period and will pay the cost of electrical energy for the operation of all of the facilities that are undergoing testing. The cost of any

necessary maintenance performed by the State or local agency, except electrical energy, shall be at the CONTRACTOR'S expense and will be deducted from any moneys due, or to become due, the CONTRACTOR."

The functional test for each lighting system shall consist of not less than 14 days. If unsatisfactory performance of the system develops, the conditions shall be corrected and the test shall be repeated until the 14 days of continuous, satisfactory operation is obtained.

During the test period, the CITY or its representative will maintain the system or systems. The cost of any maintenance necessary, except electrical energy and maintenance due to damage by public traffic, shall be at the CONTRACTOR'S expense and will be deducted from any moneys due, or to become due, the CONTRACTOR.

The sixth paragraph in Section 86 2.14C, "Functional Testing", of the Caltrans Standard Specification is amended to read:

"A shutdown of the electrical system resulting from damage caused by public traffic or from a power interruption shall not constitute discontinuity of the functional test."

Testing of traffic signal equipment including controller units, fully wired cabinets, and auxiliary equipment shall be performed by the City Signal Maintenance Contractor (Siemens) or an approved alternative contractor. Any testing subsequent to rejection of the equipment for failure to comply with specification requirements, and all scheduling, transportation of the units to be tested, and other constraints of Section 86-2.14C, "Functional Testing," of the Caltrans Standard

Specification is amended to read:

"Any testing costs shall be paid by the CONTRACTOR."

Delete the entire Section 86-3, "CONTROLLER ASSEMBLIES" and Replace with the following:

86-3 CONTROLLER ASSEMBLIES

CONTROLLER ASSEMBLIES shall conform to the provisions in the Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition, and these Technical Specifications.

86-3.01 CONTROLLER ASSEMBLIES

Controller assemblies shall be installed by the CONTRACTOR.

Model 170E-ATC Controller Assemblies consist of a Model 170E-ATC controller unit, a wired cabinet, and all auxiliary equipment required to control the system.

Controller cabinets shall be installed with new CONTRACTOR furnished Type "332" cabinets as shown on plans. Controller assemblies shall be installed at the locations shown on plans.

The cabinet shall be wired to operate the number of phases indicated on the plans.

The CONTRACTOR shall make all field wire connections as directed by the ENGINEER.

The CONTRACTOR shall arrange to have a signal technician, qualified to work on the controller assembly, and employed by the controller manufacturer or his/her representative, present at the time the equipment is turned on.

86-3.02 BATTERY BACKUP SYSTEM (BBS)

86-3.02A General

Battery Backup System shall be furnished and installed by the CONTRACTOR.

Battery Backup Systems shall be installed at the locations shown on plans.

This work includes assembling and installing a BBS.

86-3.02B Mounting/Configuration

Battery Backup System mounting/configuration shall use and conform to the MODEL 332 CABINET, EXTERNAL BATTERY CABINET OPTION listed in the Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition.

The CONTRACTOR shall furnish and install a NEMA 3R rated externally mounted cabinet on the side of existing/proposed traffic signal cabinets (Type 332) as shown on plans.

The externally mounted cabinet shall be weather proof with door a handle, lock and key.

All externally mounted cabinet locks and keys shall be the identical.

In order to provide connectivity between the equipment within the externally mounted cabinet and the Type 332 cabinet, the CONTRACTOR shall drill holes (approximately 1.5-inch diameter) within each cabinet (at the same location) and shall provide weatherproofing to prevent any water leakage entering either cabinet. Exact location of the holes shall be determined in the field on a case by case basis, and approved by the ENGINEER or his/her representative prior to construction.

The CONTRACTOR shall provide NEMA 3R rated externally mounted cabinets shop drawings/product specifications for the ENGINEER or his/her assigned representative's written approval prior to ordering the equipment.

86-3.03 CONTROLLER CABINETS

The CONTRACTOR shall furnish and install Type 332 Controller Cabinets at locations as shown on plans.

The Type 332 Cabinet shall house the Model 170E-ATC controller, fiber patch panels, fiber distribution units, Ethernet switches, duplex outlets, power supplies, fans, surge protectors (ZoneIT Model No. 25302 or approved equal) with connectors and appurtenances per manufacturer's requirements.

The CONTRACTOR shall deliver the salvage existing controller cabinets to a location directed by the CITY or COUNTY OF LOS ANGELES.

The CONTRACTOR shall construct each controller cabinet foundation as shown on the plans for Type 332 Cabinets (including furnishing and installing anchor bolts), and shall make all field wire connections as directed by the ENGINEER or his/her representative.

Cabinet construction shall conform to the provisions in Section 7.2.2, "MODEL 33x CONTROLLER CABINETS", of the Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition, and these Technical Specifications.

The CONTRACTOR shall arrange to have a signal technician, qualified to work on the controller cabinet accessories.

The CONTRACTOR shall provide the cabinet accessories shop drawings/product specifications for the ENGINEER or his/her assigned representative's approval prior to ordering the equipment.

86-4.01D Light Emitting Diode Signal Module

Delete and replace this section with the following:

Light Emitting Diode Signal Module shall conform to the provisions in the Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition, and these Technical Specifications.

86-4.03I Light Emitting Diode Pedestrian Signal Modules

Delete and replace this section with the following:

Light Emitting Diode Pedestrian Signal Module shall conform to the provisions in the Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition, and these Technical Specifications.

86-6 LIGHTING

Add the following:

The street lighting system shall include the following components:

1. Light Emitting Diode (LED) luminaires

2. Luminaire foundations
3. Lighting conductors
4. Lighting pull boxes
5. Schedule 80 PVC conduit

The Contractor shall furnish and install LED luminaires with luminaire wattage as shown on the plans.

86-6.02 LED LUMINAIRES

Add the following:

The CONTRACTOR shall furnish and install the GE Evolve LED street light head model ERS2- E3-D1-7-40-2-BLCK.

The Contractor shall furnish and install street light pole with single 8" decorative arm model 5B121. (See Appendix 2).

86-7 REMOVING, REINSTALLING, OR SALVAGING ELECTRICAL EQUIPMENT

Add the following:

The CONTRACTOR shall deliver all salvageable electrical materials to the City of Commerce to location as directed by the ENGINEER.

The CONTRACTOR shall provide the equipment, as necessary, to safely unload and stockpile the material. A minimum of 2 working day notice shall be given to the ENGINEER or his/her assigned representative prior to delivery.

Full compensation for removing and salvaging electrical equipment shall be considered as included in the unit contract price paid for various demolition items and shall be full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

86 ELECTRICAL SYSTEMS

86-1 GENERAL

Section 86 of the current Standard Specifications and Standard Plans of the Caltrans Standard Specifications (2010).

The following additions and amendments are made to Section 86 of the above Specifications.

The numbering of the subsections for the purpose of these additions and modifications refers to the corresponding numbering of subsections of the above Standard Specifications.

86-1.01 SUMMARY

Section 86 includes specifications for installing, modifying, and removing electrical systems.

The locations of electrical system elements shown are approximate; the Engineer determines the final location.

86-1.02 REGULATIONS AND CODE

Electrical equipment must comply with 1 or more of the following:

1. ANSI
2. ASTM
3. EIA
4. NEMA
5. NETA
6. UL

Materials and workmanship must comply with:

1. FCC
2. ITE
3. NEC
4. NRTL
5. Public Utilities Commission, General Order No. 95, "Rules for Overhead Electrical Line Construction"
6. Public Utilities Commission, General Order No. 128, "Rules for Construction of Underground Electric Supply and Communication Systems"

86-1.03 SCHEDULE OF VALUES

Determine quantities required to complete work. Submit the quantities as part of the schedule of values.

Provide a schedule of values for each lump sum bid item. The schedule of values must include type, size, and installation method for:

1. Conduit
2. Pull boxes
3. Conductors and cables
4. Service equipment enclosures
5. Luminaires and lighting fixtures
- 5.

86-1.04 EQUIPMENT LIST AND DRAWINGS

Within 15 days of Contract approval, submit for review a list of equipment and materials that you propose to install. The list must include:

1. Name of manufacturer
2. Dimensions
3. Item identification number
4. List of components

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The list must be supplemented by 2 copies of data, including:

1. Schematic wiring diagrams
2. Scale drawings of cabinets showing location and spacing of shelves, terminal blocks, and equipment, including dimensions
3. Operation manual Electrical equipment constructed as shown will not require detailed drawings and diagrams.

Furnish 3 sets of computer-generated cabinet schematic wiring diagrams.

The cabinet schematic wiring diagram must be placed in a heavy duty plastic envelope and attached to the inside of the door of each cabinet.

Prepare diagrams, plans, and drawings using graphic symbols in IEEE 315, "Graphic Symbols for Electrical and Electronic Diagrams."

86-1.05 CERTIFICATE OF COMPLIANCE

Submit a certificate of compliance for all electrical material and equipment.

86-1.06 MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS

86-1.06A General

Keep existing electrical system or authorized temporary replacement in working order during the progress of the work. Shutdown is allowed for alteration or removal of the system. Traffic signal shutdown must be limited to normal working hours. Lighting system shutdown must not interfere with the regular lighting schedule. Notify the Engineer before performing work on the existing system.

Notify the local traffic enforcement agency before traffic signal shutdown.

If lane closures are specified, traffic signal system shutdowns must be limited to the hours allowed for lane closures.

Where an existing or temporary system is being modified and the work is not described but the

Engineer considers it necessary to keep the system in working order, the work is change order work.

The Department or local agency will:

1. Continue the operation and maintenance of existing electrical facilities
2. Continue to provide electrical energy to operate existing electrical facilities
3. Repair or replace existing facilities damaged by traffic
4. Pay for electrical energy to operate existing or new facilities undergoing the functional tests specified in section 86-2.14C.

Verify location and depth of existing detectors, conduits, pull boxes, and other electrical facilities before using tools or equipment that may damage those facilities or interfere with an electrical system.

Notify the Engineer immediately if existing facility is damaged by your activities. Repair or replace damaged facility promptly. If you fail to complete the repair or replacement, promptly, the Department will repair or replace and deduct the costs.

Replace damaged detectors within 24 hours at your expense. If you fail to complete the repair within 24 hours, the Department will repair and deduct the repair costs.

If the roadway remains open to traffic while an existing lighting system is modified:

1. Keep the existing system in working order
2. Make the final connection so the modified circuit is in operation by nightfall

Keep temporary electrical installations in working order until no longer required.

During traffic signal system shutdown, place W3-1, "Stop Ahead," and R1-1, "Stop," signs in each direction to direct traffic through the intersection. For 2-lane approaches, place 2 R1-1 signs.

Use a minimum size of 30 inches for the R1-1 sign.

Cover signal faces when the system is shut down overnight. Cover temporary W3-1 and R1-1 signs when the system is turned on.

86-1.07 SCHEDULING OF WORK

The first order of work must be to place the order for the electrical equipment. Furnish the Engineer a statement from the vendor that the order for the electrical equipment has been received and accepted by the vendor. Submit the statement as an informational submittal.

Except service installation and service equipment enclosure, do not work above ground until all materials are on hand to complete the electrical work at each location. Schedule work to allow each system to be completed and ready for operation before opening the corresponding section of the roadway to traffic.

Do not pull conductors into conduit until:

1. Pull boxes are set to grade
2. Metallic conduit is bonded and grounded

86-2 MATERIALS AND INSTALLATION

86-2.01 EXCAVATING AND BACKFILLING

Dispose of surplus excavated material.

Backfill placed in conduit trenches outside the hinge point of slopes and not under pavement must be compacted to a minimum relative compaction of 90 percent. Compact backfill, within hinge points and in areas where pavement is to be constructed, to a minimum relative compaction of 95 percent.

Backfill trenches and restore sidewalk, pavement, and landscaping at 1 intersection before starting excavation at another intersection. Restrict closure for excavation on a street or highway to 1 lane at a time.

86-2.02 REMOVING AND REPLACING IMPROVEMENTS

Replace or reconstruct underlying material damaged by your activities. Replacement material must be of equal or better quality than the material replaced.

If a part of a square or slab of concrete sidewalk, curb, gutter, or driveway is broken or damaged, the entire square or slab must be removed and reconstructed.

Cut the outline of concrete sidewalk or driveway to be removed:

1. Using a power-driven saw
2. On a neat line
3. To a 0.17-foot minimum depth

86-2.05 CONDUIT

Use conduits to run the conductors except for overhead and where conductors are run inside poles.

You may use a larger size conduit than specified as long as you use it for the entire length between outlets. Do not use reducing coupling.

New conduit must not pass through existing foundations for standards.

86-2.05A Material

Conduit and conduit fitting must be UL or NRTL listed and comply with the requirements shown in the following table:

Conduit and Conduit Fitting Requirements

Type 1	Hot-dip galvanized rigid steel conduit and conduit couplings must comply with UL 6 and ANSI C80.1. Zinc coating testing must comply with copper sulfate test requirements in UL 6. Conduit couplings for rigid steel conduit must be electrogalvanized.
Type 2	Hot-dip galvanized rigid steel conduit must comply with requirements for Type 1 conduit and be coated with PVC or polyethylene. Exterior thermoplastic coating must have a minimum thickness of 35 mils. Internal coating must have a

	minimum thickness of 2 mils. Coated conduit must comply with UL 6; NEMA RN 1; or NRTL PVC-001.
Type 3	Rigid nonmetallic PVC conduit must comply with UL 651. Type A extruded rigid PVC conduit and extruded rigid HDPE conduit must comply with UL 651A. Coilable, smooth-wall, continuous length HDPE conduits must comply with UL 651B. Install at underground locations only.
Type 4	Waterproof flexible metal conduit must consist of conduit with a waterproof nonmetallic sunlight-resistant jacket over an inner flexible metal core. Type 4 conduit must be UL listed for use as the grounding conductor.
Type 5	Intermediate steel conduit and conduit couplings must comply with UL 1242 and ANSI C80.6. Zinc coating testing must comply with copper sulfate test requirements in UL 1242. Conduit couplings for intermediate rigid steel conduit must be electrogalvanized. Type 5 conduit must only be used if specified.

Bonding bushings to be installed on metal conduit must be insulated and either galvanized or zinc alloy type.

Fittings for steel conduit and for watertight flexible metal conduit must be UL listed at UL 514B.

86-2.05B Use

Install Type 1 conduit on all exposed surfaces and at the following locations:

1. In concrete structures
2. Between a structure and nearest pull box

Exposed conduit installed on painted structure must be painted the same color as the structure.

Change or extend existing conduit runs using the same material. Install pull box if an underground conduit changes from the metallic type to Type 3.

Minimum trade size of conduit must be:

1. 1-1/2 inches from electrolier to adjacent pull box
2. 1 inch from pedestrian push button post to adjacent pull box
3. 2 inches from signal standard to adjacent pull box
4. 3 inches from controller cabinet to adjacent pull box
5. 2 inches from overhead sign to adjacent pull box
6. 2 inches from service equipment enclosure to adjacent pull box
7. 1-1/2 inches if unspecified

Two conduits must be installed between a controller cabinet and the adjacent pull box.

86-2.05C Installation

Whether shop or field cut, ream ends of conduit to remove burrs and rough edges. Make cuts square and true. Slip joints and running threads are not allowed for coupling conduit. If a standard coupling cannot be used for coupling metal type conduit, use a threaded union coupling that is UL or NRTL listed. Tighten couplings for metal conduit to maintain a good electrical connection through conduit run.

Cut Type 3 conduit with tools that will not deform the conduit. Use solvent weld for connections.

Cut Type 2 conduit with pipe cutters; do not use hacksaws. Coated conduit must be threaded with standard conduit-threading dies. Tighten conduit into couplings or fittings using strap wrenches or approved groove joint pliers.

Protect shop-cut threads from corrosion under the standards shown in the following table:

Shop-Cut Thread Protection

Steel conduit and conduit couplings	ANSI C80.1
Electrical intermediate metal conduit and conduit couplings	ANSI C80.6

Paint conduits. Apply 2 coats of authorized unthinned zinc-rich primer of organic vehicle type.

Do not use aerosol cans. Paint the following parts of conduits:

1. All exposed threads
2. Field-cut threads before installing conduit couplings to steel conduit
3. Damaged surfaces on metal conduit

Do not remove shop-installed conduit couplings.

Damaged Type 2 conduit or conduit coupling must be wrapped with at least 1 layer of 2-inchwide, 20-mil-minimum-thickness PVC tape as specified in ASTM D 1000, with a minimum tape overlap of 1/2 inch. Before applying the tape, conduit or fitting must be cleaned and painted with 1 coat of rubber-resin based adhesive as recommended by the tape manufacturer. You may repair damaged spots in the thermoplastic coating by painting over with a brushing type compound supplied by the conduit manufacturer instead of the tape wrap.

The ends of Types 1, 2, or 5 conduit must be threaded and capped with standard pipe caps until wiring is started. The ends of Types 3 and 4 conduit must be capped until wiring is

started. If caps are removed, replace with conduit bushings. Fit insulated bonding bushings on the end of metal conduit ending in pull box or foundation. Bell or end bushings for Type 3 conduit must be nonmetallic type.

Conduit bends, except factory bends, must have a radius of not less than 6 times the inside diameter of the conduit. If factory bends are not used, bend the conduit without crimping or flattening using the longest radius practicable. Bend conduits as shown in the following table:

Conduit-Bending Requirements

Type 1	By equipment and methods recommended by the conduit manufacturer.
Type 2	Use standard bending tool designed for use on thermoplastic coated conduit. Conduit must be free of burrs and pits.
Type 3	By equipment and methods recommended by the conduit manufacturer. Do not expose conduit to direct flame.
Type 5	By equipment and methods recommended by the conduit manufacturer.

Install pull tape in conduit that is to receive future conductors. The pull tape must be a flat woven lubricated soft fiber polyester tape with a minimum tensile strength of 1,800 lb and have printed sequential measurement markings every 3 feet. At least 2 feet of pull tape must be doubled back into the conduit at each end.

Existing underground conduit to be incorporated into a new system must be cleaned with a mandrel or cylindrical wire brush and blown out with compressed air.

Install conduit to a depth of not less than 30 inches below finished grade, except in sidewalk and curbed paved median areas, where it must be at least 18 inches below grade. You may lay conduit on existing pavement within new curbed median.

Conduit coupling must be a minimum of 6 inches from the face of the foundation.

Place a minimum of 2 inches of sand bedding in the trench before installing Type 2 or Type 3 conduit. Place a minimum of 4 inches of same material over conduit before placing additional backfill material.

Conduit runs located behind curbs may be installed in the street, within 3 feet of, and parallel with the face of the curb by the trenching in pavement method as specified in section 86-2.05C.

Pull boxes must be located behind the curb or at the locations shown.

Obtain authorization before disturbing pavement. If an obstruction is encountered, obtain authorization to cut small holes in the pavement to locate or remove the obstruction. If jacking or drilling method is used, keep jacking or drilling pit 2 feet away from edge of pavement.

Pavement must not be weakened or subgrade softened from excess water use.

Conduit used for drilling or jacking must be removed; install new conduit for completed work. If a hole larger than the conduit is pre-drilled and you install conduit by hand or by equipment and method recommended by the conduit manufacturer, you may install Type 2 or Type 3 conduit under the pavement.

If trenching in pavement method is specified, conduit installation under pavement that is not a freeway lane or freeway to freeway connector ramp, must comply with the following:

1. Use Type 3 conduit. Place conduit under pavement in a trench approximately 2 inches wider than the outside diameter of conduit, but not exceeding 6 inches in width. Trench depth must not exceed the greater of 12 inches or conduit trade size plus 10 inches, except that at pull boxes the trench may be hand dug to required depth. The top of the installed conduit must be a minimum of 9 inches below finished grade.
2. Trenching installation must be completed before placing final pavement layer.
3. Cut pavement to be removed with a rock cutting excavator. Minimize shatter outside the removal area.
4. Place conduit in the bottom of the trench and backfill with minor concrete. Minor concrete must contain a minimum of 590 lb of cementitious material per cubic yard. If the trench is in asphalt concrete pavement and pavement overlay is not placed, backfill the top 0.10 foot of the trench with minor HMA.
5. Backfill trenches, except for the top 0.10 foot, by the end of each day. The top 0.10 foot must be filled within 3 days after trenching.

Conduit installed beneath railroad tracks must be:

1. Type 1 or 2
2. 1-1/2-inch minimum diameter
3. Placed a minimum depth of 42 inches below the bottom of the rail.

If jacking or drilling method is used, construct jacking pit to a minimum of 13 feet from the centerline of track at the near side of jacking pit. Cover jacking pit with substantial planking if left overnight.

Conduit ending in a standard or pedestal must not extend more than 3 inches vertically above the foundation and must be sloped toward the handhole opening. Conduit entering through the side of a nonmetallic pull box must end inside the box within 2 inches of the wall and 2 inches above the bottom and be sloped toward the top of the box to facilitate pulling of conductors.

Conduit entering through the bottom of a pull box must end 2 inches above the bottom and be located near the end walls to leave the major portion of the box clear. At the outlet, the conduit must enter from the direction of the run.

Underground conduit runs, including under sidewalks, that are adjacent to gasoline service stations or other underground gasoline or diesel storage, piping, or pumps and that lead to a

controller cabinet, circuit breaker panel, service, or enclosure where an arc may occur during normal operations must be sealed if the conduit is within the limits specified in the NEC for Class 1, division 1. Use Type 1 or Type 2 conduit for these runs.

Conduit for future use in structures must be threaded and capped. Conduit leading to soffit, wall, or other lights or fixtures below pull box grade must be sealed and made watertight, except where conduit ends in a No. 9 or No. 9A pull box.

Support for conduit in or on a wall or bridge superstructure must comply with the following:

1. Construct precast concrete conduit cradles using minor concrete and commercial quality welded wire fabric. Minor concrete must contain a minimum of 590 lb of cementitious material per cubic yard. The cradles must be moist cured for a minimum of 3 days. Bond precast concrete cradles to the structure with one of the following epoxy adhesives:
 - 1.1. Epoxy adhesive for bonding freshly-mixed concrete to hardened concrete.
 - 1.2. Rapid set epoxy adhesive for pavement markers.
 - 1.3. Standard set epoxy adhesive for pavement markers.
2. Use pipe sleeve or form an opening for conduit through the bridge superstructure concrete. Sleeve or opening through either prestressed member or conventionally reinforced precast member must be:
 - 2.1. Transverse to the member.
 - 2.2. Through the web.
 - 2.3. Not more than 3 inches maximum gross opening in concrete.
3. Where conduits pass through the abutment concrete, wrap conduit with 2 layers of asphaltfelt building paper securely taped or wired in place. Fill the space around the conduit that runs through the bridge abutment wall with mortar except the proportion of cementitious material to sand must be 1 to 3. Fill the space around the conduits that run through the abutments after prestressing is completed.
4. Run surface-mounted conduit straight and true, horizontal or vertical on the wall, and parallel to walls on ceilings or other similar surfaces. Support conduit at a maximum of 5-foot intervals or closer where necessary to prevent vibration or unsightly deflection. The supports must include galvanized malleable iron conduit clamps and clamp backs secured with expansion anchorage devices as specified for concrete anchorage devices. Threaded studs must be galvanized and be of the largest diameter that will pass through the mounting hole in conduit clamp.
5. Where pull boxes are placed in conduit runs, the conduit must be fitted with threaded bushings and bonded.
6. Mark the location of conduit end in structure, curb, or wall with a "Y" that is a minimum of 3 inches tall, directly above conduit.

86-2.05D Expansion Fittings

Install expansion fitting where the conduit crosses an expansion joint in a structure. Each expansion fitting for metal conduit must include a copper bonding jumper having the ampacity specified in NEC.

Each expansion-deflection fitting for expansion joints of 1-1/2-inch movement rating must be watertight and include a molded neoprene sleeve, a bonding jumper, and 2 silicon bronze or zinc-plated iron hubs. Each fitting must allow a minimum of 3/4-inch expansion, contraction, and lateral deflection.

86-2.06 PULL BOXES

You may use a larger standard size pull box than that described.

86-2.06A Materials

Pull box, cover, and extension for installation in ground or sidewalk area must be precast reinforced concrete or nonconcrete material. Nonconcrete material must:

1. Be fire resistant with a burn rate no greater than 0.3 inch per minute per 0.1 inch of thickness when tested under ASTM D 635
2. Show no significant change in physical properties with exposure to weather
3. Be dense, free of voids or porosity, and gray or brown in color

Nonconcrete pull box must comply with the following:

1. Top dimensions must not exceed the bottom dimensions by more than 1 inch.
2. Extension must be of the same material as the pull box and attached to the pull box to maintain the minimum combined depths as shown.
3. Cover must not fail and must not deflect more than 1/4 inch when a vertical force of 1,500 lb is applied through a 1/2-by-3-by-6-inch steel plate to a nonconcrete cover on the pull box.

Center the steel plate on the cover with its longitudinal axis coinciding with the longitudinal axis of the cover.

Nonconcrete pull boxes must be of sufficient rigidity that when a designated concentrated force is applied perpendicularly to the midpoint of one of the long sides at the top while the opposite long side is supported by a rigid surface, it must be possible to remove the cover without the use of tools. The designated concentrated force must be 150 lb for a No. 3-1/2 pull box and must be 100 lb for a No. 5 or No. 6 pull box.

If a transformer or other device must be placed in a nonmetallic pull box, include recesses for a hanger.

Secure cover, except ceiling pull box cover, with 3/8-inch hold down bolts, cap screws, or studs, washers, and brass stainless steel or other noncorroding metal nut. Stainless steel hardware must have an 18 percent chromium content and an 8 percent nickel content.

Traffic pull box must be provided with steel cover and special concrete footing. Steel cover must have an embossed nonskid pattern.

Traffic pull box and cover must have a vertical proof-load strength of 25,000 lb. Comply with Federal Specification RR-F-621 and distribute the 25,000 lb load through a 9-by-9-by-2-inch steel plate. You must be able to place the load anywhere on the box and cover for 1 minute without causing cracks or permanent deformations.

No. 3-1/2(T) and No. 5(T) traffic pull box must be reinforced with a galvanized Z bar welded frame and cover similar to that shown for No. 6(T) pull box. Frame must be anchored to the box with 1/4 by 2-1/4 inch concrete anchors. Four concrete anchors must be included for No. 3- 1/2(T) pull box; one placed in each corner. Six concrete anchors must be included for No. 5(T) and No. 6(T) pull boxes; one placed in each corner and one near the middle of each of the longer sides.

Hold down screws must be 3/8-inch hex flange cap screws of Type 316 stainless steel. Nut must be zinc-plated carbon steel, vibration resistant, and have a wedge ramp at the root of the thread. Nut must be spot welded to the underside or fabricated with galvanized Z-bar pull box frame.

Steel cover must be countersunk approximately 1/4 inch to accommodate the bolt head. When tightened, the bolt head must not exceed more than 1/8 inch above the top of the cover. A 1/4- inch tapped hole and brass bonding screw must be included.

Concrete placed around and under traffic pull boxes must be minor concrete.

86-2.06B Cover Marking

Marking must be clearly defined, uniform in depth, and parallel to either the long or short sides of the cover.

Marking letters must be between 1 to 3 inches high.

Before galvanizing steel or cast iron cover, apply marking by one of the following methods:

1. Use cast iron strip at least 1/4 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover with 1/4-inch flathead stainless steel machine bolts and nuts. Peen bolts after tightening.
2. Use sheet steel strip at least 0.027 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover by spot welding, tack welding, or brazing, with 1/4-inch stainless steel rivets or 1/4-inch roundhead stainless steel machine bolts and nuts. Peen bolts after tightening.
3. Bead weld the letters on cover such that the letters are raised a minimum of 3/32 inch.

86-2.06C Installation and Use

Space pull boxes no more than 200 feet apart. You may install additional pull boxes to facilitate the work.

Pull box in ground or sidewalk area must be installed as follows:

1. Embed bottom of the pull box in crushed rock.
2. Place a layer of roofing paper on the crushed rock.
3. Place grout over the layer of roofing paper. Grout must be 0.50 to 1 inch thick and be sloped toward the drain hole.
4. Make a 1-inch drain hole in the center of the pull box through the grout and roofing paper.
5. Place grout between the pull box and the pull box extension, and around conduits.

Reconstruct the sump of an existing pull box if disturbed by your activities. Remove old grout and replace with new if the sump was grouted.

After installation of traffic pull box, install the steel cover and keep it bolted down when your activities are not in progress at the pull box. When the steel cover is placed for the final time, the cover and Z bar frame must be cleaned of debris and tightened securely.

86-2.08 CONDUCTORS AND CABLES

86-2.08A General

Conductor must be copper wire that complies with ASTM B 3 and B 8.

Wire size must comply with the requirements shown in the following table:

Wire Size Requirements

Conductor usage	Requirement
In loop detector lead-in cable	ASTM B 286
Everywhere except in loop detector lead-in cable	AWG ^a

^aExcept conductor diameter must not be less than 98 percent of specified AWG diameter.

Conductors and cables must have clear, distinctive, and permanent markings on the outer surface throughout its length. The markings must include the manufacturer's name or trademark, insulation type letter designation, conductor size, voltage, and temperature rating, and for cables, it must also include number of conductors.

86-2.08B Conductor Identification

Conductor insulation must be a solid color with a permanent stripe as specified below. The solid color must be homogeneous through the full depth of insulation. Identification stripe must be continuous throughout the length of conductor. For conductor sizes No. 2 and larger, the insulation may be black and the ends of the conductors must be taped for a minimum length of 20 inches with electrical insulating tape of the required color. Conductor identification must comply with the requirements in the following table:

Conductor Identification

Circuit	Signal phase or function	Identification			Size
		Insulation color ^j		Band Symbols ^f	
		Base	Stripe ^a		
Lighting Control	Ungrounded to PEU	Blk	None	C1	14
	Switching leg from PEU unit or SM transformer	Red	None	C2	14
Service	Ungrounded-line 1 (signals)	Blk	None	NBR ^e	6
	Ungrounded-line 2 (lighting)	Red ^h	None	NBR ^e	8
Arch Lighting	Underground-line 1	Blk	None	AL-1	10
	Underground-line 2	Red	None	AL-2	10
Grounded and Common	Pedestrian push buttons	Wht	Blk	NBR	14
	Signals and Multiple lighting	Wht	None	NBR	10
	Flashing Beacons and sign lighting	Wht	None	NBR	12
	Lighting Control	Wht	None	C-3	14
	Service	Wht	None	NBR	14
Spares		Blk	None	NBR	14

NBR = No band required PEU=Photoelectric unit

^a On overlaps, insulation is striped for 1st phase in designation. e.g., phase (2+3) conductor is striped as for phase 2.^b Band for overlap and special phases as required.^c "S" if circuit is switched on line side of service equipment by utility.^d Band conductors in each pull box and near ends of termination points.^g Ungrounded conductors between service switch and flasher mechanism must be black and banded.^h Black acceptable for size No. 2 and larger. Tape ends for 20 inches with indicated color.ⁱ Color Code: Yel-Yellow, Brn-Brown, Blu-Blue, Blk-Black, Wht-White, Ora-Orange, Pur-Purple.**86-2.08C Circuit Conductors**

Circuit conductors must be UL or NRTL listed and rated for 600 V(ac) operation. Insulation for

No. 14 to No. 4 conductors must be one of the following:

1. Type TW PVC as specified in ASTM D 2219

2. Type THW PVC
3. Type USE, RHH, or RHW cross-linked polyethylene

Minimum insulation thickness for the insulation types shown must comply with the following table:

Insulation Thickness

Insulation type	Conductor Size	Insulation thickness (mils)
USE, RHH, or RHW	No. 14 to No. 10	39
	No. 8 to No. 2	51
THW or TW	No. 14 to No. 10	27
	No. 8	40
	No. 6 to No. 2	54

Insulation for No. 2 and larger conductor must be one of the types listed above or Type THWN. Conductor for wiring wall and soffit luminaire must be stranded copper with insulation rated for use at temperatures up to 125 degrees C.

86-2.09 WIRING

Solder conductors by hot iron, pouring, or dipping method, connectors and terminal lugs for conductor sizes No. 8 and smaller. Do not perform open-flame soldering.

86-2.09B Installation

Use a UL- or NRTL-listed inert lubricant for placing conductors in conduit.

Pull conductors into conduit by hand, using pull tape specified in section 86-2.05C. Do not use winches or other power-actuated pulling equipment.

If adding new conductors or removing existing conductors, remove all conductors, clean the conduit under section 86-2.05C, and pull all conductors in the conduit as 1 unit.

If traffic signal conductors are run in a lighting standard containing street lighting conductors from a different service point, you must encase the traffic signal conductors or the lighting conductors with a flexible or rigid metal conduit for a length until the 2 types of conductors are no longer in the same raceway.

If less than 10 feet above grade, enclose temporary conductors in flexible or rigid metal conduit.

Leave slack for each conductor as shown in the following table:

Conductor Slack Requirements

Location	Slack (feet)
Signal standard	1
Lighting standard	1
Signal and lighting standard	1
Pull box	3
Splice	3
Standards with slip base	0

After conductors are installed, seal ends of conduits with an authorized sealing compound.

To form a watertight seal, tape the ends of spare conductors and conductors ending in pull boxes.

Conductors and cables inside a fixture or cabinet must be neatly arranged and tied together by function with self-clinching nylon cable ties or enclosed in a plastic tubing or raceway.

Identify conductors for signal overlap phase as specified for vehicle signals in the table titled "Conductor Identification."

Permanently identify conductors by function. Place identification on each conductor or each group of conductors forming a signal phase at each pull box and near the end of the conductors.

Label, tag, or band conductors by mechanical methods. Identification must not move along the conductors.

86-2.09C Connectors and Terminals

Connectors and terminals must be UL- or NRTL-listed crimp type. Use a manufacturer-recommended tool for connectors and terminals to join conductors. Comply with MIL-T-7928.

Terminate stranded conductors smaller than No. 14 in crimp style terminal lugs.

86-2.10 BONDING AND GROUNDING

Secure all metallic components, mechanically and electrically, to form a continuous system that

is effectively grounded.

Bonding jumper must be copper wire or copper braid of the same cross sectional area as a No. 8 or larger to match the load. Equipment grounding conductors must be color coded as specified in NEC or be bare.

Attach bonding jumper to the standard as shown in the following table:

Bonding Jumper Attachment

Standard type	Requirements
Standard with handhole and traffic pull box lid cover	Use UL-listed lug and 3/16-inch diameter or larger brass or bronze bolt. Run a jumper to the conduit or bonding wire in adjacent pull box. Grounding jumper must be visible after the standard is installed and mortar pad is placed on foundation.
Standard without handhole	Use UL-listed ground clamp on each anchor bolt.
Slip base standard	Use UL-listed ground clamp on each anchor bolt or attach UL-listed lug to bottom slip base plate with 3/16-inch diameter or larger brass or bronze bolt.

Ground 1 side of the secondary circuit of step-down transformer.

Ground metal conduit, service equipment, and grounded conductor at the service point as specified by NEC and service utility, except grounding electrode conductor must be No. 6 or larger.

Equipment bonding and grounding conductors are required in conduits. Run a No. 8 minimum bare copper wire continuously in a conduit system. The bonding wire must be sized as specified in the NEC.

Ground electrode must be:

1. 1 piece
2. 10-foot minimum length of one of the following:
 - 2.1. Galvanized steel rod or pipe not less than 3/4 inch in diameter
 - 2.2. Copper clad steel rod not less than 5/8 inch in diameter
3. Installed as specified in NEC
4. Bonded to service equipment using one of the following:
 - 4.1. Ground clamp
 - 4.2. Exothermic weld
 - 4.3. No. 6 or larger copper conductor

On wood pole, metallic equipment mounted less than 8 feet above ground surface must be grounded.

Bond metallic conduit in nonmetallic pull box using bonding bushing or bonding jumper.

Bond metallic conduit in metal pull box using bonding bushings and bonding jumpers connected to bonding wire running in the conduit system.

86-2.11 SERVICE

86-2.11A General

Electrical service installation and materials must comply with service utility requirements.

If service equipment is to be installed on a utility-owned pole, you must furnish and install conduit, conductors, and other necessary material to complete the service installation. The service utility will decide the riser and equipment position.

Install service equipment early on to allow service utility to schedule its work before project completion.

Furnish each service with a circuit breaker that simultaneously disconnects all ungrounded service entrance conductors.

Circuit breakers must:

1. Be quick-break on either automatic or manual operation
2. Have operating mechanism that is enclosed and tripfree from operating handle on overload
3. Be trip indicating
4. Have frame size plainly marked
5. Have trip rating clearly marked on operating handle
6. Have overload tripping of breakers not influenced by ambient temperature range of - 18 to 50 degrees C
7. Be internal trip type
8. Be UL or NRTL listed and comply with UL 489 or equal
9. Have minimum interrupting capacity of 10,000 A, rms, if used as service disconnect

Service equipment enclosure must be a NEMA 3R enclosure with a dead-front panel and a hasp with a 7/16-inch hole for a padlock. Enclosure must be field marked as specified in the NEC to warn qualified persons of potential electric arc flash hazards.

Service equipment enclosure, except Types II and III, must be galvanized or have a factory-applied rust-resistant prime coat and finish coat.

Types II and III service equipment enclosures must be manufactured from one of the following:

1. Galvanized sheet steel
2. Sheet steel plated with zinc or cadmium after manufacturing
3. Aluminum

Overlapping exterior seams and doors must comply with requirements for NEMA 3R enclosures in the NEMA Enclosure Standards.

If an alternative design is proposed for Type II or III service equipment enclosure, submit plans and shop drawings to the Engineer for authorization before manufacturing.

Except for falsework lighting and power for your activities, when you submit a written request, the Engineer will arrange:

1. With the service utility to complete service connections for permanent installations and the Department will pay all costs and fees required by the service utility. Submit request at least 15 days before service connections are required.
2. For furnishing electrical energy. Energy used before Contract completion will be charged to you, except cost of energy used for public benefit as ordered will be paid by the Department or local authorities.

Payment for furnishing and installing Department-owned or permanent service poles, service equipment, conduit, conductors, and pull boxes, including equipment, conduit, and conductors placed on utility-owned poles, is included in the payment for the of electrical work involved. If the service point is indeterminate and is shown as "approximate location" or "service point not yet established," the labor and materials required for making the connection between the service point, when established, and the nearest pull box shown is change order work.

PART 8 – LANDSCAPING AND IRRIGATION

SECTION 800 – MATERIALS

800-1 LANDSCAPING MATERIALS

Add the following:

Summary

A. Provide trees, shrubs and groundcover as shown on the Plans, as specified herein and as needed for a complete and proper installation. The Plans are diagrammatic. All plant material locations shown are approximate. The Landscape Architect has prepared the plant legend on the Plans only as a convenience to the Contractor and assumes no responsibility for its accuracy. The Contractor is to verify all quantities and sizes. Contractor shall inform City immediately of any discrepancies between quantities and symbols shown.

Quality Assurance

- 1.) Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- 2.) Plant materials shall be certified by State or Federal Depts. of Agriculture, be free from hazardous insects or apparent disease, and be thoroughly rooted but not root-bound or overgrown in containers.

- 3.) Plant materials shall be furnished in the quantities and/or spacing specified and shall be of the genus, species and size indicated in the plant legend of the Plans. Substitution of any such indicated plant materials shall not be permitted unless specifically approved by the Landscape Architect. Landscape Architect shall select and tag all plant material in 20" box size or larger.

800-1.1 Topsoil

800-1.1.2 Class "A" Topsoil

Delete first and second paragraph of the section replace with the following:

Topsoil shall be Class A, as designated in the 'Green Book', and shall be deemed suitable for use by City. At least fifteen (15) days prior to use the proposed source of topsoil must be submitted to City for approval. Contractor shall submit a written request for approval which shall be accompanied by a written report of a testing agency registered by the State for agricultural soil evaluation which states that the proposed source complies with 'Green Book' specifications for topsoil designated Class A.

800-1.1.3 Imported Borrow

Contractor shall collect soil and send to an agronomic soil testing lab for a fertility analysis that shall include testing for organic matter content, p.H., salinity, N-P-K, EC, texture and shall contain recommendations for amendments, leaching, and fertilizing. The report shall be followed in with preparation of the soil and prior to any planting. Contractor shall give City Representative and Landscape Architect copies of the report along with a list of products Contractor intends to use to amend soil per report.

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800-1.2 Soil Fertilizing and Conditioning Materials

800-1.2.1 General

Add the following:

Fertilizer shall be of type and quantity specified herein or as recommended by soil testing laboratory.

800-1.2.3 Commercial Fertilizer

Delete subsection in its entirety and replace with the following:

Commercial fertilizer shall be in bio-degradable packet form, shall be controlled release, and shall gradually release nutrients over a 12 month period. Each packet shall have a chemical analysis of 20% N (nitrogen), 10% P (phosphoric acid), and

5% K (water soluble potash). Quantity of packets shall be as recommended by manufacturer or as specified in Soils Report.

800-1.2.4 Organic Soil Amendment

Add the following at the beginning of the section:

Soil amendment shall be of type and quantity specified herein or as recommended by soil testing laboratory.

800-1.4 Plants

800-1.4.2 Trees

800-1.4.2.1 Palm Trees

Summary

Provide palm trees as shown on the Plans, as specified herein and as needed for a complete and proper installation. The Plans are diagrammatic. All tree locations shown are approximate. The Landscape Architect has prepared the plant legend on the Plans only as a convenience to the Contractor and assumes no responsibility for its accuracy. The Contractor is to verify all quantities and sizes. Contractor shall inform Owner immediately of any discrepancies between quantities and symbols shown.

Quality Assurance

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

Trees shall be certified by State or Federal Depts. of Agriculture, be free from hazardous insects or apparent disease, and shall have a minimum root mass as specified in 2.2 below.

Trees shall be furnished in the quantities and/or spacing specified and shall be of the genus, species and size indicated in the plant legend of the Plans. Substitution of any such indicated plant materials shall not be permitted unless specifically approved by the Landscape Architect. Landscape Architect shall select and tag all trees of Four (4'-0") Bare Trunk Feet (BTF) or greater.

Transplanting of field grown, ball & burlap palm trees shall be performed between March 15 and October 15 unless otherwise directed by City Engineer.

The roots of each palm tree or clump of trees shall be balled in a manner approved by the Landscape Architect or Owner. The diameter and depth of each root ball shall be a minimum of 12 inches larger than the trunk diameter at the ground line. Exposed root balls shall be kept covered with wet burlap or canvas until the trees are planted.

Maintenance and Guarantee

Maintenance shall begin at final inspection and acceptance of installation by Owner, and extend for a period of 60 days. Palm trees shall be watered as necessary to maintain the trees in a healthy condition. Trash, weeds and debris within the basins, including the basin walls, shall be removed and disposed of in a lawful manner.

All palm trees shall be guaranteed for a period of one (1) year.

Replacements: All palm trees deteriorating or dying within the guarantee period shall be replaced, and approved by Owner, with trees of the same size and species as specified, with a new warranty commencing on date of replacement, and at no cost to Owner. Removed unsuitable palm trees shall be disposed of in a lawful manner at Contractor's expense.

Inspection by Owner and Contractor shall be made at the end of the 60 day maintenance period and the guarantee periods. Contractor shall set-up a time with Owner for these inspections and shall make corrections to the installation resulting from these inspections promptly and at no expense to owner.

Related Work in Other Sections (Including But Not Limited To)

A. Landscape Planting in Sections 329000

Delivery, Storage and Handling

Palm trees shall be field dug, transported to the site and planted on the same day or shall be stored and maintained on-site until planting can be completed. Before each palm tree is planted, dead fronds and frond stubs shall be removed from the trunk. In addition, green fronds shall be removed up to 2 rows of fronds away from the center growth. Fronds and frond stubs shall be removed at the trunk in a manner that will not injure the tree trunk. The 2 remaining rows of fronds shall be tied in an upright position with light hemp or manila rope. Palm trees shall not be dragged during transplanting operations and the trunks shall be protected from injury.

800-1.5 Headers, Stakes, and Ties

800-1.5.3 Tree Stakes

Delete subsection in its entirety and replace with the following:

Tree stakes and guys shall be of types specified in Detail Drawings.

Add the following:

800-1.6 Backfill

Backfill material for the palm tree planting holes shall be plaster sand.

800-1.7 Root Stimulant

Mycor Palm Saver 6-3-6 or equal, root stimulant shall be applied at time of planting per manufacturers specifications.

800-1.8 Miscellaneous Materials

Provide other materials not specifically described but required for a complete and proper installation as selected by the Contractor subject to the approval of the City.

800-2 IRRIGATION SYSTEM MATERIALS

Add the following:

Summary:

The Contractor shall furnish all necessary labor, materials and equipment required to complete the work of installing a fully functioning landscape irrigation system in accordance with the Plans and these specifications. All materials and components used shall be new and without flaws or defects and of quality and performance as specified. Prior to installation of any irrigation work, the Contractor shall submit for approval by the City a list of all materials and components the Contractor proposes to use.

Should the Contractor propose to use material(s) or components other than those shown on the Plans, the Contractor shall submit in writing, to the City a request to deviate from the Plans. Samples of the material(s) or components shall accompany the request in order to assist City in the evaluation of the proposed substitution. The burden of proof shall be borne by the Contractor.

The Plans are diagrammatic. All irrigation equipment shall be located in approximate areas shown. Conflicts with existing conditions or proposed plantings shall be resolved in the field. Contractor shall notify City of conflicts which the resolution of which, in the Contractor's judgment, would cause a substantial deviation from the design intent, would pose a public threat or hazard, or would increase project cost.

Quality Assurance:

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

Guarantee:

All work shall be guaranteed against all defects in workmanship, materials, and equipment for one (1) year from date of final inspection. All problems related to these defects and called to the attention of the Contractor by the City during this period, shall be corrected by Contractor within 14 days of notification at no charge to City.

City shall have the right to make emergency repairs without relieving the Contractor of his guarantee obligation. If any site trips by Landscape Architect are required by City during guarantee period because of irrigation system problems, Landscape Architect shall be paid in advance by Contractor at a rate of \$225.00/hour. This guarantee also covers sinking of trenching below adjacent grade, and breaking or settlement of paving and other structures and planting due to sinking of trenching.

800-2.1 Pipe and Fittings

Delete Subsection 800-2.1.3 Plastic Pipe for Use with Solvent Weld Socket or Threaded Fittings its entirety and substitute with the following:

800-2.1.3 Plastic Pipe

All materials and equipment shall be new and of domestic manufacture when practicable.

1.) Rigid PVC pipe and fittings:

1. All pipe shall be NSF-IPS extruded 100% Polyvinyl Chloride, Type I, Grade II, Class 1120 material. It shall be marked with date of extrusion, manufacturer's name, size, PVC 1120, or pressure rating in P.S.I. and comply with ASTM D2411; solvent weld sockets.
2. All plastic fittings shall be molded, type I/II, Schedule 40, NSF approved and comply with ASTM D2466. All couplings shall be made from taper-reamed extruded stock.
3. All solvent shall be as recommended by manufacturer and comply with ASTM D2564 and SCAQMD Rule 1168/316a.

2.) Flexible PVC pipe and fittings

1. All pipe shall be extruded from flexible vinyl chloride conforming to ASTM D2287 and be algae-resistant type.

2. All plastic fittings shall be molded, Type I/II, Schedule 40, NSF approved and comply with ASTM D2466.
3. All solvent shall be "IPS Weld-on 2795" or approved equal, and comply with SCAQMD Rule 1168/316a.

3.) Polyethylene pipe and fittings

1. All pipe shall be extruded from 100% Union Carbide #7510 material and conforming to ASAE standard 5435.

Delete Subsection 800-2.1.4 Plastic Pipe for Use with Rubber Ring Gaskets its entirety and substitute with the following:

800-2.1.4 Brass Pipe

1. All pipe shall be IPS standard weight 85% red brass conforming to ASTM B43. Fittings shall be with standard 125-pound cast bronze threaded fittings.

800-2.1.4 Copper Pipe

Delete subsection in its entirety and replace with the following:

- 1.) Copper pipe and fittings buried away from building:
 1. All pipe shall be Type K, ASTM B88 annealed with wrought copper fittings, lead-free soldered joints, and/or compression joints.
- 2.) Copper pipe and fittings above grade:
 1. All pipe shall be type L, ASTM B88 annealed with wrought copper fittings, lead-free soldered joints, and/or compression joints.

800-2.3 Backflow Prevention Device

- 1.) Backflow Prevention device shall be of the type and size indicated on the Plans. Device shall meet standards set by state of California, California Administrative Code, Title 17 - 'Regulations Relating to Cross Connections'.
- 2.) Backflow Prevention device shall be fitted with resilient seated test cocks, and with resilient seated shut-off valves capable of isolating the device from the rest of the irrigation system.
- 3.) All risers, unions, elbows and nipples shall be red brass, bronze or copper.

800-2.4 Sprinkler Equipment

Add the following:

Sprinkler heads shall be of the type and size as shown on the Plans.

Add the following:

800-2.5 Integral Dripline System Components

Integral dripline components: the dripline shall be 'Techline CV' pressure compensating dripline as manufactured by Netafim Irrigation, Inc. Dripper flow rate and spacing shall be as indicated on drawings.

1. Techline CV fittings: all Techline CV connections shall be made with approved Techline CV insert fittings.
2. Soil staples: all on-surface/under mulch Techline CV installations shall be held in place with jute staples spaced evenly every 3' - 5' on center, and with two staples on each change of location.
3. Line flushing valves: all Techline systems shall be installed with Netafim automatic line flushing valves. Techline CV zones do not require an automatic line flushing valve but must have a manual flushing port(s) in the position that an automatic flush valve would be positioned. Flushing valves shall be installed in 6" round valve boxes

800-2.6 Individual Drip Meters

Drip emitters, either as separate components or inserted in polyethylene tubing during manufacture, shall be of the type and flow amount as shown on the Plans.

Soil staples: all on-surface/under mulch drip tubing installations shall be held in place with jute soil staples spaced evenly every 3' - 5' on center, and with two staples on each change of location.

800-2.7 Controls

- 1.) Each automatic controller shall be of the type and size as indicated on the Plans.
- 2.) Controller housing shall be of the type and size as shown on the Plans.
- 3.) Control wire: All wiring to be used for connecting the automatic controller to the automatic valves shall be Type UF-600V, 14 ga solid copper, PVC insulation, single conductor, UL 493 approved and listed for direct burial use. Each conductor pilot or "hot" wire shall be black or color coded with the common wire being white.

800-3 ELECTRICAL MATERIALS

800-3.1 General

All work shall comply with the 2016 California Electrical Code (CEC) with City amendments or other authorities have jurisdiction.

It is the intent of these plans and specifications that a complete and workable electrical installation be provided for the equipment described or shown as being in this contract. Provide labor and tools necessary and install apparatus, materials, and equipment in a fashion complying with all applicable codes, including items required but not necessarily shown, such as lamps, couplings, hangers, brackets, clamps, boxes, connectors, and hardware.

Examine all contract documents and verify all dimensions and conditions, such as cabinets, beams, furring, door swings, ducts, pipes, ceilings and bring any discrepancies to the attention of the general contractor prior to commencing any work. Switches, controls, access doors on electrical equipment, shall be installed so as to be readily accessible for operating, servicing, maintaining and repairing.

Refer to mechanical drawing and other manufacturer's information wiring diagrams for items and devices to be furnished, installed and/or connected by electrical contractor for a complete and operable heating, ventilating and air conditioning system and other equipment. Verify exact location of equipment and conduit termination at equipment with mechanical, plumbing and manufactures sub-contractor. Provide conduits and junction boxes for control wiring and thermostats and other control devices. The contractor shall extend wiring from local disconnect switches to all motors.

The electrical drawings are diagrammatic in nature and indicate the location of outlets and equipment and the circuit arrangement of the required wiring, and though not necessarily indicating the actual routes of conduits, the drawings shall be followed as closely as proper coordination with the work of other trades and space will permit. Simplify installation wherever possible but subject to approval of the engineer for visual and structural reasons. It is not within the scope of the drawings to show necessary offsets, bends, pull boxes and obstructions. The drawings are not intended to be scaled and the electrical contractor shall refer to the architectural construction drawings for dimensions.

Exact location of equipment and outlets shall be verified in field. Coordinate installation of electrical system with that of all other trades. Prior to completion of affected work, electrical contractor shall instruct the owner on the use and maintenance of the electrical system. Contractor shall include all the electrical equipment, light luminaires to be relocated within 20 feet radius both horizontal and vertical from where the devices are shown on the drawings.

Erect and maintain suitable barriers, protective devices, lights and warning signs where required for the protection of the public and employees about the building.

Entrance to rooms, if any, and other guarded locations that contain live parts shall be marked with a conspicuous warning sign forbidding unqualified persons to enter.

The contractor shall x-ray the slab, if existing, and take precautions to fully investigate the location of all conduits installed within the slab prior to coring for all the floor. Contractor shall note if there is a methane barrier at ground level floor and avoid penetrations.

When concrete work is included in the scope of work, the materials, proportioning, mixing, conveying, placing, curing and protection of the concrete work shall be in accordance to "ACI" standard 301.

All materials shall be new and of the highest quality, and shall meet with the full approval of the owner and its representatives.

All materials and equipment shall be new and shall bear the underwriter's label (UL) and/or meet the standards of a city approved testing agency. Materials and equipment shall be installed in the manner for which they are designed and approved. All documentation related to the ul listing shall be provided to the electrical inspector as needed and shall be provided as part of close out documentation.

Shop drawings and/or project data sheets, and/or submittals shall be provided to the engineer and owner for review and approval. Submittals and/or product data sheets shall include pictures and shall indicate all materials, ratings, dimensions and finishes.

Substitutions of specified materials shall be made only with written approval of the owner or engineer.

Contractor shall receive, store, and install all electrical items as designated by the project. Equipment shall be protected from weather and damage for length of project.

If required, shutdown of electrical service to building or work area shall be done only with prior written approval by the owner. The contractor shall submit shutdown request in writing (14) working days prior to desired date/time to facilities management services. Written approval and confirmation will be provided by the owner.

If required, shutdown of electrical panels that interferes with the operation of any existing areas to remain in service shall not be done during normal operating hours and shall be done only with prior written approval by the owner. The contractor shall submit shutdown request in writing (7) working days prior to desired date/time to facilities managements services. Written approval and confirmation will be provided

by the owner. Contractor shall provide all necessary work and material including off-hours labor required to avoid shutdown of these areas during normal operating hours.

Contractor shall maintain, on the job, a set of prints on which all changes in location or runs shall be carefully indicated. These prints shall be delivered to the engineer for review. All changes shall be incorporated into the final record cad drawings by contractor. Electronic cad files shall be provided to owner at completion of project as part of close out documentation.

The contractor shall keep all parts of the building and site free from any accumulations of rubbish or waste materials caused by his workmen, and shall remove such accumulations from the building, site and property. Job site shall be cleaned at the end of each working day.

Contractor shall obtain and pay for all necessary electrical permit and fees.

All work performed and materials of contract shall be fully guaranteed for a period of one (1) year from the date of final acceptance. Lighting fixture ballasts/drivers shall be guaranteed for two (2) years.

800-3.2 Conduit and Conductors

800-3.2.1 Conduit

Add the following:

Conduit/fittings/boxes:

- 1.) EMT conduit shall comply with ANSI C80.3 and UL 97.
- 2.) PVC Sch 40 conduit shall comply with ANSI/UL 651
- 3.) RGS conduit shall comply with ANSI C80.1 and UL 6.
- 4.) Liquid tight flexible metal conduit shall comply with UL 360.
- 5.) Fittings for metal conduit shall comply with NEMA FB 1 and UL 514B.
- 6.) Sheet metal outlet and device boxes to comply with NEMA OS 1 and UL 514A.
- 7.) Sheet metal pull and junction boxes to comply with NEMA OS 1.
- 8.) Floor boxes shall be listed and labeled as defined in NFPA 70.
- 9.) Hangers/supports to comply with NECA 1 and NECA 101.

800-3.2.1 Conductors

- 1.) All conductors to be copper and comply with NEMA WC70/ICEA S-95-658
- 2.) Use THHN/THWN-2 wires for all feeders and branch circuit wiring. Size per CEC 250-122.
- 3.) Provide #12 awg minimum, unless specifically noted otherwise on the drawings
Provide solid conductors for #10 awg and smaller and stranded conductors, #8 awg and larger.

Add the following:

800-3.4 Grounding/Bonding

- 1.) Components of grounding/bonding system shall comply with NFPA 70 and
- 2.) UL467.
- 3.) All conductors to be copper wire insulated for 600v with solid conductors complying with ASTM B3 and stranded conductors complying with ASTM B8.
- 4.) Connectors shall be listed and labeled by an NRTL acceptable to the authorities having jurisdiction for applications in which used.

800-3.5 Lighting/Lighting Controls

- 1.) Furnish and install lighting fixtures/controls of the type specified on the electrical and architectural drawings.
- 2.) Contractor to provide a complete, working system for lighting/lighting controls, including, but not limited to hardware, accessories, and equipment that meets the design intent on plans. Verify all requirements with vendor prior to bid.
- 3.) Provide appropriate mounting hardware for the ceiling type indicated on the architect's drawings.
- 4.) Provide appropriate ballasts/drivers for light fixtures indicated on drawings to accomplish the required controls.
- 5.) Lamps of the type indicated by the fixture schedule shall be furnished and installed by the contractor.

800-3.6 Disconnects

- 1.) Disconnects to comply with NEMA ICS 2, general purpose, Class A requirement.
- 2.) Toggle type manual control switch to have arc-resisting body with quick make and break capability.
- 3.) Safety switch type to have heavy-duty, horsepower rated, single-throw knife switch with quick-make and quick-break capability. For fusible switch, fuse shall be ul listed rejection type per NFPA 70 requirements.
- 4.) Size, fusing and number of poles as indicated on drawings.

800-3.7 Electrical Equipment (panelboard, transformer, switchboard)

- 1.) All internal bus bars, windings, and the like shall be copper. Aluminum is not acceptable as part of any switchboard, distribution board, panel, transformer or other like equipment.
- 2.) Sizes and requirements of electrical equipment shall be provided as indicated on drawings.
- 3.) For interior applications a NEMA Type 1 enclosure shall be provided.
- 4.) For exterior applications a NEMA Type 3R enclosure shall be provided whether or not indicated on drawings.
- 5.) Panelboards shall comply with NEMA PB 1.
- 6.) Panelboard branch overcurrent protective devices shall be bolt-on circuit breakers. For existing panelboard installations, the branch overcurrent protective devices shall match existing in type and AIC rating.
- 7.) Switchboards shall comply with NEMA PB 2.
- 8.) Transformers shall comply with NEMA TP 1.

Add the following:

800-4 HARDSCAPE MATERIALS

800-4.1 Concrete Unit Pavers

Provide all Interlocking Concrete Paving as shown on the Plans, as specified herein and as needed for a complete and proper installation.

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Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

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The section includes:

Concrete paver units
Class II road base
Sand bed and sand joint filler
Edging

Concrete unit pavers shall comply with the ASTM C936/C936M-13—Standard Specification for Solid Concrete Interlocking Paving Units.

Manufacturers:

a.) Provide Belgard 'Dublin Cobble' 60mm pavers in 'Toscana' color as specified on the Plans. Substitutions not accepted unless approved by City.

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a.) Belgard; Product: 60mm Dublin Cobble Pavers, Color = 'Toscana'

b.) Substitutions: Not permitted unless approved by City

Materials Bedding and Joint Sand:

a.) Provide bedding and joint sand as follows:

1. Bedding shall be Type "S" mortar on concrete substrate.
2. Concrete substrate shall be 520C-2500 concrete base placed over existing concrete roadway.
3. Joint sand shall be Techniseal 'ProSeries' HP Next Gel, or approved equal, polymeric joint sand.

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800-4.2 Concrete Formwork

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Provide all concrete Formwork as needed for a complete and proper installation.

It shall be the Contractor's sole responsibility to design, construct and maintain forms and shoring; true to line, grade and configurations shown on the Plans, and so as to provide finish concrete within the tolerances stated in Section 03300.

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All pipe sleeves, anchors, bolts, inserts, supports, ties and other embedded items in connections with concrete construction shall be secured in position prior to placing concrete.

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Related Work In Other Sections (Including But Not Limited To)

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a.) Cast-in-Place Concrete in Section 03 30 00.

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Materials

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1.) Lumber: WCLIB Standard Grading Rules No. 16, Douglas fir, Larch, coast region, grade-stamped "Utility and better".

2.) Plywood: U.S. Product Standard PS 1 for Softwood Plywood, Construction and Industrial, grade-stamped, "B-B Plyform" Class II Ext. DFPA for concealed surfaces, "HDO-Ext." for exposed-to-view faces or faces to be painted, 5/8 inch thick for 12 inch stud spacing, 3/4 inch thick for 16 inch and greater stud spacing. Furnish largest practicable sizes to minimize number of joints.

3.) Form Ties and Spreaders: Combination type, prefabricated, steel, of sufficient tensile strength and external bearing area, capable of adjustment, and of such design that when formwork is stripped no metal shall remain closer than 1 inch from face of concrete. No cone ends will be permitted on face of concrete in exposed-to-view surfaces. No wire ties or wood spreaders will be permitted.

4.) Nails: Common wire, steel.

800-4.3 Cast-in-Place Concrete

Provide all Regular Weight Aggregate (150 pcf density) Cast-in-Place Concrete as shown on the Plans, as specified herein and as needed for a complete and proper installation.

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

Related Work In Other Sections (Including But Not Limited To)

1.) Concrete Form Work in Section 03 11 00.

Products

Form Release Agent

Provide colorless mineral oil which will not stain concrete or impair natural bonding characteristics of coating intended for use on concrete.

Concrete Mix

Provide concrete, class 520-A-2500 (street paving) and class 520-C-2500 (other than street paving) with the following characteristics:

1.) Compressive strength at 28 days: 2500 psi

2.) Slump: 3" max. (street paving), 4" max. (other than street paving)

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- 3.) Water: Clean and potable. In conventionally reinforced concrete work, water shall not contain more than 1,000 PPM of chlorides calculated as Cl, nor more than 1,000 PPM of sulfates calculated as SO₄.
- 4.) Cement: Type II low alkali Portland cement conforming to ASTM C150
- 5.) Aggregates: Aggregates shall be non-reactive and conform to ASTM C289.

Use only such additives as are recommended in the mix design and approved by Owner and governmental agencies having jurisdiction.

Expansion Joint Filler and Sealants.

- 1.) Pre-molded Joint Filler: Pre-formed expansion joint filler (Bituminous Type) shall conform to ASTM D994, Non-extruding and resilient filler (Bituminous Type) shall conform to ASTM D1751, Non-extruding and resilient filler (Non-bituminous Type) shall conform to ASTM D1752.
- 2.) Polystyrene Joint Filler: Expanded polystyrene shall have a flexural strength of 35 psi and a compressive yield strength of between 16 and 40 psi at 5 percent compression. Hardboard facing shall be 1/8" min. thickness conforming to Federal Specs. LLL-B-810.
- 3.) Two-part Polyurethane Sealant: Sealant shall be placed in accordance with State Specifications 8030-61J-01 and manufacturer's directions.
- 4.) Pre-formed Elastomeric Sealant: Sealant shall conform to ASTM D268 and placed per manufacturer's directions. Any seal which has a minimum uncompressed width, measured at any point in the height of the seal, less than that designated by the manufacturer, shall not be used.
 - a.) Pavers: Listed in 2.1.A
 - b.) Sub-base: Class II aggregate
 - c.) Bedding Sand: Clean river or bank sand 80% passing 2.5 mm
 - d.) Joint Sand: Polymeric joint sand
 - e.) Edging: 'Snapedge' or equal

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SECTION 801 – INSTALLATION

SECTION 801—INSTALLATION

801-4 PLANTING

801-4.1 General

Add the following:

801-4.1.2 Soil Testing

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A soil test shall be performed prior to soil preparation. Contractor shall submit a soils analysis report with recommendations from a licensed laboratory to City prior to beginning work. Recommendations from soils lab shall be followed prior to any planting, if recommendations deviate from specifications herein.

801-4.1.3 Soil Preparation

- 1.) Imported topsoil, fill dirt and amended soil, as per specifications for planted areas, shall be clean, free of weeds, rocks and debris, and must have a pH range of 5.6 to 7.6 and an ECE less than 4.0 MMHOS/CM, as determined by soil analysis, and shall be thoroughly incorporated into existing soil.
- 2.) Finish grade shall conform to overall drainage pattern and be 1.5" below surface of adjacent paving, and, in no event, be less than 6" below building ground floor slab elevation.
- 3.) Before and during preliminary and final grading, all weeds and grasses shall be sprayed with a non-selective herbicide, as per manufacturer's specifications. Contractor shall obtain approval by the City prior to application of any herbicide, insecticide, fungicide or other chemicals to be used on site. At least ten (10) days after the herbicide is applied, or as per manufacturer's specifications, planters shall be cleared and grubbed and the debris shall be disposed of off-site at Contractors expense.
- 4.) All planting areas shall be tilled to a depth of 10" below grade. All rocks and debris more than 2" in diameter shall be removed from the site.
- 5.) Soil amendments shall be spread evenly over site as recommended in soils report, and tilled into native soil as specified in D above.
- 6.) Finish grade shall be a smooth, even and uniform plane without abrupt change of surface, and shall conform to the Plans. Grading shall be done when soil is at optimum moisture content for working.

801-4.3 Layout and Plant Location

- 1.) Contractor shall examine the areas and conditions under which work of this section will be performed. Contractor shall correct conditions detrimental to timely and proper completion of the Work, not proceeding until unsatisfactory conditions are corrected.
- 2.) Prior to execution for planting, or placing of any stakes, Contractor shall locate all utilities, electrical cables, conduits, sprinkler lines, heads, valves and valve control wires so that proper precautions may be taken not to damage any such

improvements. In the event of any conflict between plant locations and any such improvements, Contractor shall promptly notify Landscape Architect. If this procedure is not followed, Contractor shall assume full responsibility for any on-site adjustments necessary to make the installation perform adequately at no additional cost to City.

801-4.5 Tree and Shrub Planting

Delete subsection in its entirety and replace with the following:

- 1.) Plants shall not be permitted to dry-out before or during the planting process. Spot trees and shrubs as shown on the Plans. All trees require root barriers as per the details on the Plans and the General Planting Notes.
- 2.) Tree and shrub pits shall be 1.5 times as wide and as deep as the plant container.
- 3.) Tree pits shall be dug square with leveled bottoms.
- 4.) Fill planting hole with water and allow to drain.
- 5.) Backfill material shall be a thoroughly blended mixture of one (1) part Type 1 soil amendment and two (2) parts native soil. Gro-Power tablets, or approved equal, shall be planted with all container plants as per manufacturer's instructions and
- 6.) Detail Drawings.
- 7.) All plants shall be properly root-pruned, centered in pits, and set so that, when settled, they will be level with final surrounding grade.
- 8.) A 3" high berm shall be constructed around the perimeter of each plant pit. The pit shall be then filled with water, allowed to soak, and filled again. Prior to installation of drip irrigation tubing these berms shall be raked level with the surrounding grade.
- 9.) Following completion of planting and drip irrigation, a 3" minimum layer of Type 1 mulch, per the 'Green Book', shall be applied to all planter surfaces as shown on the Plans. Mulch shall be packaged in bales or bags unless City or Landscape Architect approves a bulk source in advance of delivery to the Site.

801-4.6 Staking and Guying

Add the following:

All trees shall be staked or guyed immediately after the tree is planted, as per detail, and taking care that the root ball of the tree is not injured.

Add the following:

801-4.10 Clean Up

Upon completion of the contracted work, Contractor shall remove all rubbish, trash and debris resulting from the operations, remove unused equipment and implements of service, and leave the entire area involved in a neat and acceptable condition such as to meet the approval of the City.

801-4.11 Palm Tree Planting

Site Conditions

Contractor shall examine the areas and conditions under which work of this section will be performed. Contractor shall correct conditions detrimental to timely and proper completion of the Work, not proceeding until unsatisfactory conditions are corrected.

Prior to execution for planting, or placing of any stakes, Contractor shall locate all utilities, electrical cables, conduits, sprinkler lines, heads, valves and valve control wires so that proper precautions may be taken not to damage any such improvements. In the event of any conflict between plant locations and any such improvements, Contractor shall promptly notify Landscape Architect. If this procedure is not followed, Contractor shall assume full responsibility for any on-site adjustments necessary to make the installation perform adequately at no additional cost to Owner.

Soil Testing

A soil test shall be performed prior to soil preparation. Contractor shall submit a soils analysis report with recommendations from a licensed laboratory to Owner prior to beginning work. Recommendations from soils lab shall be followed prior to any planting, if recommendations deviate from specifications herein.

Soil Preparation

A. Imported topsoil, fill dirt and amended soil, as per specifications for planted areas, shall be clean, free of weeds, rocks and debris, and must have a pH range of 5.6 to 7.6 and an ECE less than 4.0 MMHOS/CM, as determined by soil analysis, and shall be thoroughly incorporated into existing soil.

Finish grade shall conform to overall drainage pattern and be 1.5" below surface of adjacent paving, and, in no event, be less than 6" below building ground floor slab elevation.

Before and during preliminary and final grading, all weeds and grasses shall be sprayed with a non-selective herbicide, as per manufacturer's specifications.

Contractor shall obtain approval by the Owner prior to application of any herbicide, insecticide, fungicide or other chemicals to be used on site. At least ten (10) days after the herbicide is applied, or as per manufacturer's specifications, planters shall be cleared and grubbed and the debris shall be disposed of offsite at Contractors expense.

Planting

Palm trees shall not be permitted to dry-out before or during the planting process. Spot trees as shown on the Plans.

Tree and shrub pits shall be 3 times as wide and as deep as the root ball. Tree pits shall be dug square with leveled bottoms.

Fill planting hole with water and allow to drain.

Backfill material shall be loosened native soil.

All trees shall be centered in pits, and set so that, when settled, they will be level with final surrounding grade.

A 6" high berm shall be constructed around the perimeter of each tree pit after planting. The pit shall be then filled with water, allowed to soak, and filled again.

Following completion of planting, a 3" minimum layer of Type 1 mulch, per the 'Green Book', shall be applied to all planter surfaces as shown on the Plans. Mulch shall be packaged in bales or bags unless Owner or Landscape Architect approves a bulk source in advance of delivery to the Site.

Staking and Guying

All trees shall be staked or guyed immediately after the tree is planted, as per detail, and taking care that the root ball of the tree is not injured.

Clean-Up

Upon completion of the contracted work, Contractor shall remove all rubbish, trash and debris resulting from the operations, remove unused equipment and implements of service, and leave the entire area involved in a neat and acceptable condition such as to meet the approval of the Owner.

801-5 IRRIGATION SYSTEM INSTALLATION

801-5.1 General

Delete in its entirety and replace with the following:

- 1.) Piping layout indicated on the drawings is diagrammatic only. Route piping to avoid plants and structures.
- 2.) All pipe and equipment shall be installed in planted areas. If shown in paved areas on the drawing it is for clarity only unless noted otherwise on the Plan. Piping shown in paved areas shall be installed in sleeves according to detail on the Plans.
- 3.) Irrigation pipes and equipment shall be installed so as not to prevent or make difficult planting and construction shown on construction and planting plans.
- 4.) Actual location of automatic controller(s) shall be verified with Landscape Architect.
- 5.) Contractor shall provide record drawings to the City and Landscape Architect upon completion of the system. These drawings shall be done on a reproducible media and shall clearly show all locations of control valves, gate valves, quick coupler valves, check valves, backflow preventers, and automatic controllers by triangulated dimensions from fixed objects such as walks and building corners. These drawings shall be approved by the Landscape Architect before final payment is issued to Contractor.
- 6.) An operating chart shall be provided to the Landscape Architect upon completion of the system. This chart shall clearly show each area that each station of the controller operates (in case of more than one controller, provide an operating chart for each controller). This chart shall be done in the following manner:
 1. Reduce record drawings to a size that will fit on the inside of the controller door.
 2. Color, with contrasting colors, the areas covered by each valve. Use colored pencils or ink markers.
 3. Obtain Landscape Architect's approval of chart.
 4. Laminate chart in 10 mil plastic.

Site Location:

- 1.) Contractor shall examine the areas and conditions under which work of this section will be performed. Contractor shall correct conditions detrimental to timely and proper completion of the work. Contractor shall not proceed until unsatisfactory conditions are corrected.
- 2.) Point of connection: This is shown at its approximate location on the Plans. Exact location must be verified on site.

- 3.) If conditions are encountered during the course of work that are in conflict with the Plans, Landscape Architect shall be notified immediately before any work is done. If this procedure is not followed, Contractor shall assume full responsibility for any on-site adjustments necessary to make the system operate adequately at no additional cost to City or Landscape Architect.

Assemblies:

These shall be set forth on detail drawings. If details are absent for specific assemblies, these assemblies shall be done in accordance with Contractor's recommendations after these recommendations are discussed with the Landscape Architect. Teflon tape or dope shall be used on all male pipe threads of control valve, swing joints and backflow assemblies.

801-5.2 Trench Excavation and Backfill

Delete in its entirety and replace with the following:

- 1.) Large specimen plants shall be planted prior to trenching.
- 2.) Contractor shall hand trench around roots to pipe grade when roots two inches in diameter or greater are encountered. Minimum width of any trench shall be four inches, or 1.5 times the diameter of pipe, whichever is greater. Backfill and re-compact over any excavation. If rock is encountered, excavate four inches deeper and backfill to pipe grade with well-graded sand. Keep trenches even and free of obstructions and debris that may damage pipe. Do not mix sub-soil with top-soil.
- 3.) Sand encasement for all irrigation pipe, direct burial control wire and electrical conduit shall be plaster or mortar sand per section 200 of the Standard Specifications, with a minimum sand equivalent of 50.

801-5.3 Irrigation Pipeline Installation

801-5.3.1 General

Add the following:

All pressure pipe 4" diameter and smaller shall have the correct sized concrete thrust block installed at every abrupt change of alignment; at ball valves, at tees, elbows and crosses, and at ends of pipe runs or wherever the field engineer deems one to be necessary. Thrust blocks are to be installed per standard drawings or APWA standards and sized accordingly for the size of pipe.

801-5.3.3 Plastic Pipeline

Add the following after the third paragraph:

Pipe primer shall be used per manufacturer's specifications prior to the use of the pipe cement for every solvent welded joint. Under no circumstances shall any 'Red-Hot' type of two in one (primer & solvent) pipe cement be used anywhere on the project. Only heavy bodied, medium setting PVC cement in conjunction with the appropriate pipe primer shall be allowed on the project.

No solvent shall be used from cans that have been opened overnight.

Where pipes of dissimilar metals are joined, connection shall be made with dielectric fitting.

801-5.7 Flushing and Testing

801-5.7.1 General

Add the following:

Pressure and non-pressure lines shall be thoroughly flushed before installation of equipment and heads.

801-5.7.2 Pipeline Pressure Test

801-5.7.2.1 General

Add the following:

All pressure lines shall be tested under hydrostatic pressure of 125 psi and all non-pressure lines under existing static pressure for a minimum of 4 hours.

If leaks develop, repair and repeat pressure test until system is water tight.

Add the following:

801-2.4 Backfilling

- 1.) Pressure lines and control wiring shall have a minimum cover of 21".
- 2.) Non-pressure lines shall have a minimum of 15" cover unless otherwise noted.
- 3.) Under vehicle bearing paving, all piping shall have a minimum cover of 30" from bottom of paving. Under pedestrian bearing paving, all piping shall have a minimum cover of 18" from bottom of paving.

- 4.) All piping under asphalt or concrete paving shall be installed in sleeves. No hydraulic driving shall be permitted under paving. If contractor is unable to locate any sleeve, he shall notify Landscape Architect immediately.
- 5.) Initial backfill (first 6") shall be plaster or mortar sand per section 200 of the Standard Specifications, with a minimum sand equivalent of 50.
- 6.) Backfill shall be compacted in lifts of no more than 6" in height and to a density comparable to adjacent grade.
- 7.) Top of backfill shall conform to adjacent grades without sunken areas, humps or other irregularities.

801-6 MAINTENANCE AND PLANT ESTABLISHMENT

Add the following:

Maintenance shall begin at final inspection and acceptance of installation by City, and extend for a period of 90 days. Maintenance shall include keeping installation clean and free of weeds, trash and debris as well as maintaining plant material.

All plant material shall be guaranteed for a period of six (6) months. All specimen material 20" box size and larger shall be guaranteed for a period of one (1) year.

Replacements: All plant material deteriorating or dying within the guarantee period shall be replaced as many times as necessary, and approved by City, with plant material the same size and species as specified or as directed by landscape architect, with a new warranty commencing on date of replacement, and at no cost to City.

Inspection by City and Contractor shall be made at the end of the 90 day maintenance period and the guarantee periods. Contractor shall set-up a time with City for these inspections and shall make corrections to the installation resulting from these inspections promptly and at no expense to City.

Adjustments

- 1.) All back drainage of heads shall be stopped with "Valcon ADV" check valves, or approved equal, in riser. Adjust to minimize pressure loss.
- 2.) Heads shall be flushed and adjusted to prevent over spray onto adjacent paving and/or structures as much as possible.

Drip Irrigation

- 1.) Layout: Layout drip tubing after plants have been planted and in such a manner so that the tubing will pass each plant, as per detail on the Plans. If Netafim, or equal, product with pre-inserted emitters during manufacturing, has been specified contractor shall space the tubing per the on center dimensions stated on the Plans.
- 2.) Cutting: The drip tubing shall be cut so as to leave a smooth and even square end with no burrs.
- 3.) Compression & Barb Coupling joints:
 1. Remove any burrs from both the inside and outside of the tubing and the fittings.
 2. Remove dirt, grease and moisture from tubing and fitting.
 3. Force tubing into or over fittings with a constant circular motion so that tubing is fully seated in or on fitting.
- 4.) Punching holes:
 1. Holes, for installation of emitters, should be made with a punch of the correct size and as recommended by the manufacturer of the emitters specified on the Plans.
 2. Plans.
 3. Holes should be made when the hose or tubing is cool; if necessary, cold water shall be run through the hose/tubing prior to punching.
 4. Use a steady twisting motion when punching holes in hose/tubing and maintain a 90 degree angle to the hose/tubing with the punching tool.
- 5.) Stapling: Loosely fix drip tubing to grade with 6" steel jute staples so that tubing will lay flat and be covered entirely by mulching. Do not make the staples so tight that they crimp the tube. Use just enough staples to hold tubing in position or to maintain proper spacing.

Completion and Clean-Up

Upon completion of the drip and spray irrigation system, and prior to mulching, Contractor shall demonstrate the system for City Representative from the irrigation controller by turning on each station and pointing it out on the corresponding color coded chart required in Section 3.2 – F. Contractor shall leave the entire job area in a neat and acceptable condition such as to meet the approval of the City.

Add the following:

801-9 HARDSCAPE INSTALLATION

801-9.1 Concrete Pavers

801-9.1.1 Examination—Site Conditions

Contractor shall examine the areas and conditions under which this work will be performed. Contractor shall correct conditions detrimental to timely completion of the Work, not proceeding until unsatisfactory conditions are corrected.

801-9.1.2 Preparation

- 1.) Verify old roadway concrete base is swept of all dirt and debris prior to forming and pouring concrete substrate concrete.
- 2.) Establish final height of pavers including slope factors and install forms and necessary to restrain concrete substrate.
- 3.) Install concrete substrate on top of old concrete roadway and float finish to proper level. After minimum cure time of 3 days strip forms and sweep substrate of dust and debris in preparation of interlocking pavers.
 - 1.) Verify that substrate is level or to correct gradient, smooth, capable of supporting pavers and imposed loads, and ready to receive work of this Section.
 - 2.) Verify gradients and elevations of substrate are correct.

801-9.2 Preparation

- 1.) Remove any existing impediments
- 2.) Excavate to grade & compact subgrade to 90%

801-9.3 Installation

- 1.) Install and compact 4" Class II base to indicated slope, if any
- 2.) Install and align 'Snapedge' to specified dimensions on Plans
- 3.) Place ¾" bedding sand and screed to grade
- 4.) Install paving units to grade and to manufacturer's written instructions
- 5.) Place & sweep in jointing sand & compact
- 6.) Backfill to finish grade against paver edging

801-9.1.3 Installation

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- 1.) Mix and spread Type "S" mortar evenly over the concrete substrate.
- 2.) Lay pavers in wet mortar in pattern approved by Owner. Place units hand tight without using hammers. Make horizontal adjustments to placement of laid pavers with rubber hammers as required.
- 3.) Provide joints between pavers from 1/16" to 3/16" wide. No more than 5% of the joints shall exceed 1/4" wide to achieve straight bond lines.
- 4.) Joint bond lines shall not deviate more than 1/2" over 50 ft. from string lines.
- 5.) Fill gaps at the edges with cut pavers or edge units as necessary to complete pattern on ends.
- 6.) Cut pavers to be placed along the edging with a masonry saw.
- 7.) Adjust bond pattern at pavement edges such that cutting of edge pavers is minimized. All cut pavers shall be no smaller than 1/3 of a whole paver.
- 8.) Press pavers during installation into wet mortar so that paver area is a continuous smooth surface.
- 9.) After a minimum of 2 days curing time, spread and sweep dry joint sand into joints continuously until full.
- 10.) Remove excess sand from surface and follow manufacturer's directions for wetting and cleaning pavers to complete joint sand installation.

801-9.1.4 Field Quality Control

- 1.) The final surface tolerance from grade elevations shall not deviate more than 3/8" under a 10 ft. straightedge.
- 2.) The surface elevation of pavers shall be 1/8" to 1/4" above adjacent drainage inlets, concrete collars or channels.
- 3.) Lippage: No greater than 1/8" difference in height between adjacent pavers.

801-9.1.5 Sealing

- 1.) Sweep paver surface clean and seal with Techni-Seal EV protectant per manufacturer's specifications.

801-9.2 Concrete Formwork

801-9.2.1 Construction

- 1.) Form all concrete work, except where placing directly upon or against earth or base course or other sub-grade.

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- 2.) Erection: Construct forms so as to prevent displacement or movement of formwork during placing of concrete. Joinery shall not allow undue leakage of mortar. Chamfer external corners with $\frac{3}{4} \times \frac{3}{4}$ inch chamfer strips, except where specifically shown otherwise. Construction shall permit removal of formwork without damaging concrete.

801-9.2.2 Removal

- 1.) Formwork not supporting weight of concrete, such as sides of beams, walls and similar items, may be removed 24 hours after placing.
- 2.) Formwork supporting weight of concrete shall not be removed in less than 14 days, unless approved otherwise by the Structural Engineer.
- 3.) Backfill: Do not backfill or otherwise superimpose a load against walls before 5 days after placing of concrete.
- 4.) Release of Forms: Use softwood wedges to release form faces from concrete. Do not pry with metal tools.

801-9.3 Cast-in-Place Concrete

Contractor shall examine the areas and conditions under which work of this section will be performed. Contractor shall correct conditions detrimental to timely and proper completion of the Work, not proceeding until unsatisfactory conditions are corrected.

Final Preparation Of Sub-Grades

Thoroughly scarify and sprinkle the entire area to be paved. Compact to a smooth, hard, even surface at 95 percent minimum relative compaction to receive the aggregates.

Placement Of Base Course

Base (where required):

- 1.) Spread the specified coarse aggregate to a thickness providing the compacted thickness shown on the Plans.
- 2.) Compact to 95 percent minimum relative compaction.
- 3.) Moisten substrate to minimum depth of 18".

Forming

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Place and secure forms to correct location, dimension and profile and brace adequately so that after placement, concrete will conform to the lines and grades shown on the Plans.

Inserts And Imbedded Items.

Coordinate the various trades who are required to fasten work to the structure, or are required to insert therein any sleeve, box, bolt anchor or other rough hardware.

Provide every facility for setting all required items accurately in the forms.

Conduits and sleeves:

- 1.) Locate so as not to reduce the strength of construction. Do not place pipes, except conduits, in slabs less than 3.5" thick.
- 2.) In placing conduits in slabs on earth, place below the reinforcement and encase in concrete by increasing the thickness of the slab locally to at least 3" of concrete around the conduit on all sides.

801-9.3.1 Construction

- 1.) Upon completion of base course and formwork, install reinforcement as shown on the Plans.
- 2.) Transit-mix the concrete in accordance with ASTM C94.
- 3.) Contractor shall furnish a certificate of compliance signed by the manufacturer identifying the cement and stating that the concrete complies with all requirements.
- 4.) Do not use concrete that has stood over 30 minutes after leaving the mixer, or concrete that is not placed within 60 minutes after water is introduced into the mix.
- 5.) Placing concrete:
 - a. Place concrete in accordance with ACI 301.
 - b. Remove rejected concrete from the Site.
 - c. Do not disturb reinforcement or formwork components during concrete placement.
- 6.) Deposit and consolidate concrete in a continuous operation within the limits of construction joints until the placing of a panel or section is completed. Consolidate each layer of concrete immediately after placement, being careful not to disturb formwork.
 - a. Bring surfaces to the correct level with a straightedge, and then strike off.
 - b. Smooth the surface leaving it free of bumps and hollows.
- 7.) Do not sprinkle water on the plastic surface. Do not disturb the surface prior to the start of the finishing operation.

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8.) Construction joints:

- a. Locate construction joints where indicated on the Plans.

9.) Expansion joints:

- a. Locate expansion joints where indicated on the Plans, filled to the full depth with expansion joint material.
 b. In curbs, locate ½" thick joint at the beginning and end of curves.
 c. In curbs and paving, hold down ½" and seal exposed joints with Deck-O-Seal, or approved equal, flexible joint sealant, color as indicated on the Plans.

- 10.) Curing and protection: Beginning immediately after placement, protect concrete from premature drying, excessively hot or cool temperatures, rain and mechanical injury.

801-9.3.2 Removal

Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety.

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801-10 ELECTRICAL SYSTEM INSTALLATION

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801-10.1 Conduit/fitting/boxes:

- 1.) All conduits inside building shall be electrical metallic tubing (EMT) unless if subject to damage. Exposed conduit subject to physical damage shall be rigid galvanized steel conduit. Subject to physical damage is defined as below 8 feet above finished floor or grade.
- 2.) All conduits below grade shall be PVC Sch 40 and buried to depth per NEC (T 300.5)
- 3.) Flexible liquid tight metal conduit shall be used only for final connections to light fixtures and rotating machines. Length shall be a maximum of 6 feet.
- 4.) The use of metal-clad cable (MC), armored cable (AC), or non-metallic sheathed cable (NM or NMC) is not permitted unless approved by owner and engineer.
- 5.) Unless otherwise shown or specified, conduit shall be concealed in walls or above finished ceiling.
- 6.) Concealed conduit shall be run in as direct a line as possible. Bends shall be of long sweep type.
- 7.) Exposed conduit shall be run parallel to, or at right angles with the lines of the building. Bend shall be free from dents or flattening. Conduit shall be supported and securely fastened.
- 8.) Conduit shall be installed as a complete system before wire or conductors are pulled in.
- 9.) Conduit shall be installed entirely free from other piping, valves or other mechanical equipment, and shall not be installed within 6 inches of hot water or steam piping or heating flues.
- 10.) Pockets or traps in all conduit runs where moisture may collect shall be avoided. Where dips are unavoidable, a pull box shall be located at each low point in order to provide a means of drainage.
- 11.) The conduit system and conducting wire enclosures shall be securely bonded together so that for every conducting component is provided with a low resistance path to ground.
- 12.) Double locknuts shall be used for securing conduit at a box or cabinet unless a threaded hub is provided as part of the box or cabinet.

- 13.) Running threads shall not be used on conduit for connection at couplings.
- 14.) Where 2 lengths of conduit must be coupled together, and it is impossible to screw both lengths into an ordinary coupling, then the "Erickson" type of coupling must be used in order to provide a rigid joint that will be both mechanically and electrically effective
- 15.) Protect conduit from damage and the entrance of water and foreign matter during the construction period. Watertight stoppers or caps shall be installed immediately after the conduit is installed, removed only when wire is to be installed.
- 16.) Thoroughly clean the inside of conduits to ascertain foreign materials are removed before pulling wire or cable.
- 17.) Coupling and connectors used on electric metallic tubing shall be set screw type, compression for 2" and larger.
- 18.) Conduit shall be terminated with suitable bushings or equivalent devices which shall protect the enclosed wires from abrasion at the ends. Insulated bushings shall be used on conduit 1-1/4" size and larger.
- 19.) Conduit sizes shall be minimum of 3/4" and in accordance with the requirements of the "CEC".
- 20.) In each conduit without conductors, provide one #12 TW pull string with a tag identifying location of opposite end.
- 21.) Provide sleeves, nipples, and couplings required for the installation of conduit.
- 22.) Sleeves shall project 2" above floor.
- 23.) Flexible conduit shall be provided to connect motors on sliding bases, to controls, and to vibrating equipment.
- 24.) Code sized pullboxes shall be provided for conduit runs over 100 feet or more than 360 degrees of bends as required in NFPA 70.
- 25.) Provide hangers and supports as required to comply with NECA 1 and NECA 101.
- 26.) Installation of hangers and supports shall be made to the structural steel, masonry and poured concrete. Hangers and supports shall not be installed to pre-cast concrete, metal decks, steel bracing or bridging, piping or other conduit.
- 27.) Fasteners for supports and hangers shall be made with beam clamps, U-bolts, stud welding or other approved devices. Fasteners for supports and hangers to

concrete shall be made with one piece malleable iron or wrought steel inserts with long radius necks and keyhole slots for attachment in forms, with self-drilling type expansion shields with inside threads and expansion plugs, or with other approved type devices.

- 28.) Installation shall be such so as to support conduit without sagging and shall be clear of the work of other trades. Provision for expansion and contraction shall be made.
- 29.) Size outlet boxes in conformity with code for number and gauge of conductors therein. Except where noted to be larger, minimum box size shall be 4" square by 1-1/4" deep. Junction boxes shall be labeled with respective circuit numbers.
- 30.) Outlet boxes shall be flush with the finished surface of walls and ceilings of combustible materials.
- 31.) Openings in boxes, conduit bodies and fittings shall be adequately closed.
- 32.) Surface mounted boxes and cabinets mounted in wet and damp locations shall be weatherproof and shall have at least 1/4 inch air space between the box and mounting surface.
- 33.)—Provide 1/2" c.o. from thermostat location to location of mechanical control panel to be verified in field. Coordinate exact location of thermostats with mechanical & controls sub-contractor.

86-2.11 SERVICE. Add the following:

Service shall conform to the provisions of Section 86-2.11, "Service" of the Caltrans Standard Specifications, Los Angeles County Department of Public Works Traffic Signal Control Equipment Specifications, latest edition, and these Technical Specifications.

CONTRACTOR shall provide conduit, trench, and backfill for Southern California Edison Company service from power source to the proposed Type III-BF service enclosures/cabinets.

The Type III-BF service cabinet shall include by-pass test switches, circuit breakers and contactors for intersection, safety lighting and internally illuminated street name signs (I.S.N.S.). Two Type V photoelectric control (PEC) units shall be provided, one for luminaries and one for I.S.N.S.

The Type III-BF service cabinet finish color shall be anodized aluminum.

CONTRACTOR shall make all arrangements with the Southern California Edison Company for service, as appropriate. The CONTRACTOR shall be responsible for all service details.

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expenses (except invoices) and scheduling far in advance of need. The City will pay SCE invoices, prepare and sign application for service.

CONTRACTOR shall modify existing Type III-BF enclosures/cabinets as required in order to provide full power to the facilities as shown on the plans.

CONTRACTOR shall notify the ENGINEER in writing at least 15 working days in advance of the date on which they desire any service connections or disconnects to be made. The CONTRACTOR shall be entitled to no extension of time or other compensation for any delay to this operation resulting from his failure to give the prescribed notification.

The eleventh paragraph of Section 86-2.11 of the Caltrans Standard Specifications is amended as follows:

"It shall be the CONTRACTOR's responsibility to verify the location of and to make arrangements for and to pay for all costs to provide the necessary connection for the traffic signal and lighting system."

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801-10.2 Grounding/Bonding

- 1.) Electrical equipment and enclosures, including conduits, supports, cabinets, motor frames, switchboard enclosures, control panels and associated equipment, which are installed or connected under this contract, shall be properly grounded by connection to the grounding system, regardless of whether or not these connections are shown on the drawings.
- 2.) The grounding installation shall have provisions for both system and equipment grounds as defined by the "CEC" these grounding systems are to be effectively insulated from each other except at the service connection.
- 3.) Grounding shall be done in accordance with the provisions of "CEC" and the "NEC". Local requirements of the inspection authority having jurisdiction shall govern in all matters of interpretation.
- 4.) If water service is used for grounding point, it shall be ascertained that the water piping is electrically continuous at joints within 5ft of building and is of conducting material. Water piping with sweated joints in electrical path shall have such joints bonded.
- 5.) Where ground cables enter and leave ferrous conduits, they shall be mechanically connected to the end of the raceway. Where ground cable passes through ferrous flooring or framing, connection shall be made to such metal.

801-10.3 Lighting/Lighting Controls

- 1.) Before ordering the lighting fixtures, verify with the architect, or at the job site, the exact ceiling being furnished, and provide the necessary hardware for a complete installation.
- 2.) Install lighting fixtures so as to clear piping, ducts, air diffusers, grilles, access panels & other devices, provide hangers to support fixtures without causing sagging or distortion to the fixtures, install fixtures symmetrical to ceiling tiles and or dimensions shown, provide fire rated enclosure over light fixtures recessed in fire rated walls or ceilings. Replace all damaged or defective fixtures including glassware, plastics or diffusers up to the time of final inspection and acceptance by the owner.

801-10.4 Disconnects

Provide a code approved disconnect switch or breaker within sight of every motor. For motors not equipped with "built in" protection, provide magnetic or manual motor starter with overload heaters, sized to comply with motor manufacturers recommendations and applicable codes. Verify fuse size with manufacturer recommendations.

801-10.5 Electrical Equipment (panelboard, transformer, switchboard)

- 1.) Install equipment in accordance with NFPA 70.
- 2.) Contractor shall provide type written panel schedules in all panels at completion of project. Panel schedules shall also be included in as built documentation.

801-10.6 Start Up/Testing/Close Out

- 1.) Contractor shall demonstrate that all equipment and circuitry is working properly and meets the design intent of the drawings.
- 2.) Wiring and connections shall be tested for continuity, grounds, short circuits, and other defects before any equipment or fixtures are connected thereto. Cables shall be checked for continuity, shorts, insulation resistance, and proper phasing. Contractor shall terminate all cables & wires with terminal lugs (supplied by contractor).
- 3.) Overload devices shall be adjusted and set to suit the loads which they control.
- 4.) Loads on all parts of systems shall be balanced, insofar as is practical.
- 5.) All changes shall be made that are necessary for adjusting, setting and balancing.

- 6.) Phase rotation at all buses, panels, switchboard etc., shall be checked to see if it conforms to recognized standards.
- 7.) Ground tests shall be made with the 3 electrode "AC" or "DC" voltage drop method to establish initial readings for records, and to ascertain that they meet design and code requirements.
- 8.) Control circuits shall be checked out for proper functioning and fail-safe qualities.
- 9.) Receptacles shall be checked out for correct and constant phase position, and grounded receptacles shall be tested for location and effectiveness of grounded pin.
- 10.) Lighting switching/controls shall be tested for correct operations especially where 3 and 4 way operation is designated.
- 11.) Control devices such as limit switches, level controls, pressure controls, thermostats, shall be set for operating conditions. Coordinate with mechanical contractor.
- 12.) Running loads of motors shall be checked against nameplate data. Overloads shall be reported.
- 13.) Insulation shall be tested before and after installation, and before energizing.
 - 1.) Rubber insulation shall be tested for acceptance by applying direct current potential not over 3 times the ratio of direct current to 60% of equivalent "RMS" alternating current factory test voltage for 5 minutes.
 - 2.) Varnished cambric, paper, and other insulation shall be tested in the manner directed by and up to the limits recommended by the manufacturer.
 - 3.) Insulation resistance shall be tested by Megger of not less than 600 volts output for circuits 480 volts and less. Any circuit showing an insulation resistance of less than 1 Mohm shall be investigated and the weak point corrected. Correct or replace any circuit defective or grounded and make wire-by-wire test.
- 14.) Thoroughly clean all parts of the equipment and material installed under this section. Surfaces of exposed conduit shall be cleaned of cement, plaster, dirt, rust, grease, and other foreign matter, and be left in condition suitable to the contractor and acceptable for painting.
 - 1.) Equipment furnished without shop applied finish shall be field painted.

- 2.) Concealed surfaces of metal racks, frames, and boxes shall be painted before mounting.
- 3.) After tests have been completed, clean all lighting fixtures and equipment with soap and water, leaving everything in working order at the completion of the electrical work.
- 15.) Close out documentation shall be provided to the owner at the completion of the project. Close out documentation includes, but is not limited to, as built drawings, maintenance manuals, keys, spare hardware, and other written equipment manufacturer documentation.
- 16.) CAD as built drawings shall be provided to the owner at the completion of the project. CAD as built drawings shall be updated by the contractor as per the actual installation. CAD as built drawings shall be provided in editable dwg format on CD/DVD. Pdf drawings in dwg format are not acceptable.

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