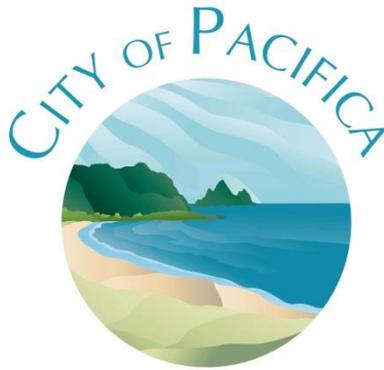

CITY OF PACIFICA

Milagra Creek Sinkhole Repair Project



October 2016

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SECTION 1.

PROJECT DESCRIPTION

Milagra Creek Sinkhole Repair Project

The Work consists, generally, of

Replacing the upper 100' +/- reach of pipe with new 48" id HDPE storm drain pipe, installation of a new structure to interface the new HDPE pipe and the existing RCP segment, repair of the sunken areas of Edgemar Avenue and parking lot and related miscellaneous work, which was damaged during the El Niño disaster of 2016.

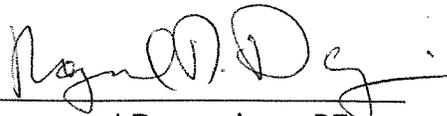
(see Appendix A for detailed description)

These specifications were prepared by the following professional engineer:

Ed Slintak, PE
CSG Consultants, Inc.
Professional Engineering License No. 39925
Expires on 12/31/2017



Under the direction of:


Raymund Donguines, PE
Senior Civil Engineer
City of Pacifica
Professional Engineering License No. 62061
Expires on 9/30/2017

Van Dominic Ocampo, PE
City Engineer/Public Works Director
City of Pacifica
Professional Engineering License No. 59601
Expires on 12/31/2017

SECTION 2.

NOTICE TO BIDDERS:

INVITATION FOR FORMAL BIDS

The City Of Pacifica invites sealed proposals for formal bid project described in the specifications document entitled

Milagra Creek Sinkhole Repair Project

which is on file in the Office of the City Engineer at 151 Milagra Drive (650 738-3767) in said City and to which reference is hereby expressly made for more particular description of the work to be done. All work is to be done in accordance with said specifications document.

General work description:

This project consists of replacing the upper 100' reach of pipe with new 48" id HDPE storm drain pipe, installation of a new structure to interface the new HDPE pipe and the remaining/existing RCP segment, repair of the sunken areas of Edgemar Avenue and parking lot and related work, in the City of Pacifica.

Bids due by: Wednesday, November 16, 2016 at 10:00 a.m.

A Class A (General Engineering Contractor) or appropriate specialty contractor's license is required for this contract.

NOTICE IS FURTHER GIVEN that the City of Pacifica has heretofore established a prevailing rate and scale of wages. Reference is hereby made to said list of prevailing wage rates which has been determined pursuant to Section 1773 of the Labor Code, and which are heretofore established by reference. The prevailing rate and scale of wages for this contract is the determination made by the Director of Industrial Relations as applicable to San Mateo County. A copy of the determination is on file at the office of the Director of Public Works/ City Engineer.

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

Milagra Creek Sinkhole Repair Project

No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. Proposal shall include proof of registrations.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The Contractor to whom this project is awarded shall, in the performance of the work and improvements, conform to the Labor Code of the State of California and other laws of the State of California applicable hereto.

All proposals shall be accompanied by a cashier's or certified check payable to the order of said City amounting to 10% of the bid amount or by a bond in said amount and payable to said City, signed by the bidder and a corporate surety or by the bidder and two sureties who shall testify before any officer competent to administer an oath. Said check shall be forfeited, or said bond shall become payable, to said City if the bidder depositing the same does not enter into a contract with the City within 10 days after written notice that the contract has been awarded to said bidder.

Successful Contractor shall furnish City a faithful performance bond and labor and material bond and insurance certificates as required in these specifications.

The City of Pacifica hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, sex, age, color, national origin, creed, sexual orientation or marital status in consideration for an award.

The time fixed for receiving sealed bids or proposals for the doing of said work and improvements herein ordered is **November 16, 2016**, at the hour of **10:00 a.m.** o'clock at the Office of the City Clerk, 170 Santa Maria Avenue, Pacifica, California 94044, which said time and place are hereby fixed as the time and place of a public meeting, at which said public meeting said bids will be publicly opened, examined and declared by the City Clerk; said bids, after being publicly opened, examined and declared, will be calculated by the Engineer, their report returned to the City Clerk, and the report of the results of the bidding and the calculations of the Engineer will be reported to the City Council of the City of Pacifica at the next regular meeting thereof. The City Council of the City of Pacifica reserves the right to reject any and all proposals or bids, should it deem this necessary for the public good, and it may also reject

Milagra Creek Sinkhole Repair Project

the bid of any bidder who has been delinquent or unfaithful in any former contract with the City of Pacifica.

Time of completion for all work shall be **30** working days after a Notice to Proceed is issued.

SECTION 3.

INSTRUCTIONS TO BIDDERS

1. Receipt and Opening of Bids

The City of Pacifica herein called the "Owner," invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Owner at the Office of the City Clerk at the time stated in the Notice to Bidders and then at said office publicly opened and read aloud. The envelopes containing the bids must be sealed, addressed to the Office of the City Clerk, Attn: Director of Public Works /City Engineer, 170 Santa Maria Avenue, Pacifica, California 94044 and designated as "**Milagra Creek Sinkhole Repair Project.**"

The Owner may waive any informalities in any bid not prepared and submitted in accordance with the provisions hereof, or may reject any or all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 30 days after the actual date of the opening thereof.

2. Preparation of Bid

Each bid must be submitted on the prescribed forms provided in the Proposal section and accompanied by certification by bidder. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures, and the foregoing Certification must be fully completed and executed when submitted.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his or her address, and the name of the project for which the bid is submitted.

The section titled "Proposal" contains the required forms for bid preparation, except the Bidder's Bond form, which is in Section 5.

3. Bid Security

Each bid must be accompanied by a cashier's check, or a certified check of the bidder, or a bid bond fully executed by the bidder as

principal and having as surety thereon a surety company approved by the Owner, in the amount of 10% of the bid. Such checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within 30 days after the date of opening of bids, upon demand of the bidder at any time thereafter, so long as he/she has not been notified of the acceptance of his bid.

4. **Subcontracts**

The bidder is specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under his contract must be acceptable to the Owner and must submit certification by proposed subcontractor regarding Equal Employment Opportunity. Approval of the proposed subcontract award cannot be given by the Owner unless and until the proposed subcontractor has submitted the certification and/or other evidence showing that he/she has fully complied with any reporting requirements to which it is or was subject.

Although the bidder is not required to attach such certifications by proposed subcontractors to his bid, the bidder is here advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

5. **Qualification Statement**

The “**Contractor’s Qualification Statement,**” supplied with this specification, must be filled out completely and submitted with the bid; failure to do so may result in bid rejection. ***It is to be considered proprietary information and is to remain private to the maximum extent allowable by law.***

6. **Liquidation Damages for Failure to Enter into Contract**

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within ten days after he has received notice of acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with the bid.

7. **Conditions of Work**

Each bidder must inform him/herself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract.

Milagra Creek Sinkhole Repair Project

Insofar as possible, the contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any contractor. All public information in City files relating to this project may be reviewed by the bidder prior to submitting the bid.

8. Addenda and Interpretations

Every request for interpretation should be made to the City of Pacifica, Director of Public Works/City Engineer, Van Dominic Ocampo, 170 Santa Maria Avenue, Pacifica, California, (650) 738-3767, and must be submitted no less than three days prior to the date fixed for the opening of bids. Any and all supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be made available to all prospective bidders. Failure of any bidder to receive any such addenda or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents. All bidders must acknowledge receipt of all addenda as part of the proposal.

9. Security for Faithful Performance

Simultaneously with his delivery of the signed Contract, the selected Contractor shall furnish the following surety bonds and certificates of insurance:

Performance Bond, 100% of the contract price;

Labor and Materials Payment Bond, 100% of the contract price;

Insurance;

All in amounts as specified in Appendix C included herein. The surety on all bonds shall be a duly authorized company satisfactory to the Owner.

10. Notice of Special Provisions

Attention is particularly called to those parts of the Contract Documents which deal with the following:

- General Conditions
- Special Provisions
- Technical Specifications.

11. **Laws and Regulations**

The bidder's attention is directed to the fact that all applicable Federal and state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract Documents the same as though herein written out in full.

Records pertaining to this Contract shall be subject to the examination and audit of the Auditor General and the State for a period of three years after final payment under the Contract. Adequate records for such audit in form approved by the State shall be maintained and expenditures not approved by the State shall be borne by others.

12. **Method of Award — Lowest Qualified Bidder**

The Owner reserves the right to determine the lowest qualified bidder based upon the best bid as determined by the Owner. The Owner may reject any and all bids.

13. **Obligation of Bidder**

Prior to opening of bids, it is required that each bidder shall have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including any addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of the bid.

14. **Quantities of Work**

Bidders agree that any quantities given in the bid form and in other Contract Documents are approximate only, being given primarily as a basis for the comparison of bids. The Owner does not – expressly or by implication – agree that the actual amount of work will correspond therewith. Due to the nature of this project (performing repairs after extensive storm damage) and the mechanism of funding (grant funding in an amount not yet determined) the Owner reserves the right to increase or decrease the amount of any class or portion of the work or to omit portions of the work, as may be deemed necessary or expedient by the Owner.

15. **Affirmative Action and Equal Employment Opportunity**

Executive Order 11246, as amended, (Equal Employment Opportunity), requires that a prime contractor or subcontractor who signs a contract on a Federally assisted construction project assumes the obligation to take whatever affirmative actions are necessary to assure an equal employment opportunity in all aspects of employment irrespective of race, sex, age, color, national origin, creed, sexual orientation or marital status.

All construction contractors and subcontractors covered by the Executive Order 11246, as amended, are required to take affirmative action toward employment opportunity.

SECTION 4.

PROPOSAL

PROJECT TITLE: Milagra Creek Sinkhole Repair Project

BUSINESS NAME OF BIDDER: _____

BUSINESS ADDRESS: _____

BUSINESS PHONE: _____

The work to be done and referred to herein is in the City of Pacifica, County of San Mateo, State of California, for the Milagra Creek Sinkhole Repair Project to be constructed in accordance with the Agreement and the General Conditions, Special Provisions, Technical Specifications annexed hereto, and also in accordance with the California Labor Code Part 7, Chapter 1, Article 2, Sections 1770, 1773 and 1773.1 dated March 1982.

The work to be done is described in the Specifications entitled:

Milagra Creek Sinkhole Repair Project

The undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation and in submitting this proposal, the undersigned bidder agrees that if it is determined that he or she is the successful bidder that he has carefully examined the locations of the proposed work, the annexed proposed form of Agreement and the Specifications therein referred to; and he proposes and agrees if this proposal is accepted, that he will contract with the City of Pacifica, in the form of the copy of the Agreement annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Agreement, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that he will take in full payment therefor the following item prices, as listed in the bid schedule herein.

The bidder shall set forth for each item of work, in clearly legible figures, a unit price and an extension for the item in the respective spaces provided for this purpose. In the case of unit basis items, the amount set forth under the Extension column shall be the extension of the unit price bid on the basis of the estimated quantity for the item.

In the case of a discrepancy between the unit price and the extension set forth for the item, the extension price shall prevail, provided, however, if the amount

Milagra Creek Sinkhole Repair Project

set forth as an extension price is ambiguous, unintelligible or uncertain for any cause, or is omitted, then the amount set forth in the Unit Price column for the item shall prevail in accordance with the following.

1. As to lump sum items, the amount set forth in the Unit Price column shall be the item price.
2. As to unit basis items, the amount set forth in the Unit Price column shall be multiplied by the estimated quantity for the item and the price thus obtained shall be the item price.

If this proposal shall be accepted and the undersigned shall fail to contract as aforesaid and to give the two bonds in the sums to be determined as aforesaid with surety satisfactory to the City of Pacifica, within ten days not including Saturdays, Sundays and legal holidays, after the bidder has received notice from the City that the contract has been awarded, the City may, at its option, determine that the bid shall be null and void and the forfeiture of such security accompanying this proposal shall operate and the same shall be the property of the City.

It is understood and agreed that:

1. The undersigned has carefully examined all the Contract Documents which will form a part of the Contract, namely: Notice to Bidders, Instructions to Bidder, Proposal, Agreement, General Conditions, Special Provisions, Technical Specifications, Attachments and any Addenda setting forth any modifications or interpretations of any said documents.
2. The undersigned has, by investigation at the site of the work and otherwise, satisfied himself/herself as to the nature and location of the work and is fully informed as to all conditions and matters which can in any way affect the work or the cost thereof.
3. The undersigned fully understands the scope of the work and has checked carefully all words and figures inserted in this bid and understands that the City of Pacifica will in no way be responsible for any errors or omissions in the preparation of this bid.
4. The undersigned will execute the Agreement and furnish the required surety bonds and certificates of insurance within ten days after notice of acceptance of bid by the City, and shall complete said work within the number of working days as noted in the Specifications from the date specified in the Notice to Proceed given by the City.
5. The undersigned hereby certifies that this proposal is genuine and not sham nor collusive, nor made in the interest or in the behalf of any person

Milagra Creek Sinkhole Repair Project

not herein named and that the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid or any other person, firm or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder.

6. The undersigned will accept an award and enter into a contract for all work scheduled herein on which he puts in a bid. The award of any such work is to be entirely at the discretion of the City of Pacifica after evaluation of the bids submitted. The bidder will be liable for forfeiture to the City of Pacifica of 10% of the total amount of his bid price in accordance with the foregoing stipulations in event of his failure to execute a contract and furnish required bonds therefor within the time provided.
7. The undersigned agrees that the quantities given in the Proposal and other Contract Documents are approximate only, being given as a basis for the comparison of bids, and the City does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work or to omit portions of the work as may be deemed necessary or expedient by the City.
8. The undersigned agrees that the price bid for each item of work includes all applicable taxes.
9. The undersigned agrees to submit a list of subcontractors, including name and location of place of business, who will perform labor or render service to the Contractor in or about the construction of the work or the improvement in an amount in excess of ½ of 1% of the Contractor's total bid.

Portion of work which will be done by each subcontractor:

<u>NAME</u>	<u>SPECIFIC WORK</u>	<u>LICENSE #</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Milagra Creek Sinkhole Repair Project

SCHEDULE OF BID PRICES

NOTE: Quantities are only for comparing bids; see section 14 in the Instructions to Bidders

Bid Item	Bid Item Description	Est. Quantity	Unit	Unit Price	Extension
1	Mobilization	1	LS		
2	Traffic Control	1	LS		
3	Sheeting, Shoring and Bracing	1	LS		
4	Remove Unsuitable Material (Revocable Item)	50	TON		
5	Remove Ex. Bollards, Hydrant Bury and Lateral. Install B.F.	1	LS		
6	Fire Hydrant Assembly, Wet Tap, Bollards and Blue Marker	1	LS		
7	Remove Existing RCP, Install 48" HDPE Pipe	100	LF		
8	12" Lateral Connection to 48" Pipe	2	EA		
9	Concrete Collar at Pipe Connection	1	EA		
10	6 FT. X 6 FT. Concrete Drainage Structure	1	EA		
11	Concrete Sidewalk	225	SF		
12	Concrete Driveway	140	SF		
13	Concrete Curb & Gutter	120	LF		
14	Class II Aggregate Base	100	TON		
15	AC Pavement	35	TON		
16	Remove and Replace Chain Link Fence	1	LS		
17	Reinstall Traffic Sign	1	EA		
18	Red Curb	25	LF		

TOTAL BID PRICE: \$ _____

Milagra Creek Sinkhole Repair Project

Total Bid Price for this Proposal, in words:

_____ **Dollars and** _____ **Cents**

(In case of discrepancy between words and figures, the words shall prevail.)

THE BIDDER MUST ACKNOWLEDGE RECEIPT OF ALL ADDENDA. Not checking the boxes for all issued addenda will disqualify the bid.

<u>Addendum #</u>	<u>Received</u>
_____	<input type="checkbox"/>

BIDDER'S CERTIFICATION:

I do hereby affirm, under penalty of perjury, that I am authorized on behalf of the firm that I represent to submit the foregoing Proposal, and said firm agrees to enter into contract with the City of Pacifica in accordance with the terms contained in the referenced Contract Documents.

(name and title)

(date)

Milagra Creek Sinkhole Repair Project

SECTION 5.

BIDDER'S BOND FORM

(In the Amount of 10% of the Amount Bid)

KNOW ALL MEN BY THESE PRESENTS:

That we, _____

as Principal, and _____
as Surety, are held and firmly bound unto the City of Pacifica, hereinafter called the City, in the sum of 10% of the total amount of the bid of the Principal above named, submitted to said Principal to said City, for the work described below, for the payment of which sum in lawful money of the United States, well and truly made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

In no case shall the liability of the Surety hereunder exceed the sum of
\$_____.

THE CONDITIONS OF this obligation are such that, **WHEREAS**, the above-bound Principal has submitted the above-mentioned bid to said City, for certain construction specifically described below, for which bids are to be opened at the Office of the City Engineer, 170 Santa Maria Avenue, Pacifica, California;

for the: **Milagra Creek Sinkhole Repair Project**

NOW, THEREFORE, if the aforesaid Principal is awarded the contract and, within the time and manner required in the specifications for the work described hereinabove, or if there be no time period specified, then within ten days after the notice of the award of contract, enters into a written contract, in the prescribed form, in accordance with the bid, and files two bonds with the City, one to guarantee faithful performance, and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be void, otherwise it shall remain in full force and virtue.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS THEREOF, we have hereunto set our hands and seals on this _____ day of _____ 20__.

Principal _____ Surety _____

SECTION 6.

CITY OF PACIFICA
CONTRACTOR'S QUALIFICATION STATEMENT
⊕ Required as part of bid ⊕

**THE INFORMATION CONTAINED IN THIS SECTION IS TO BE CONSIDERED PROPRIETARY,
AND IS TO BE KEPT CONFIDENTIAL TO THE FULLEST EXTENT ALLOWABLE BY LAW**

Where there is a question as to a bidder's responsibility, the City Council reserves the right to make such a determination on a case-by-case basis. A bidder is considered responsible if it has the ability to perform successfully under the terms of the Specifications and Contract, both technical capability and financial capacity to do the work, and has not demonstrated non-responsibility in the past. If the City Council determines that the bidder lacks such responsibility, the bidder may not be considered for the award of the contract. The information in this questionnaire may be used by the city in determining responsibility of a bidder.

Name of firm _____

(Name must correspond with contractor's license in every detail)

Corporation Partnership Individual Joint venture Other

Telephone number (_____) _____

Principal office _____

Street and P. O. Box

City/state/zip code

The undersigned certifies under oath that the information provided herein is true and accurate.

1. ORGANIZATION

If your organization is a corporation, please answer the following:

(a) Date of incorporation: _____

(b) State of incorporation: _____

(c) Names of corporate officers and directors:

<u>Name</u>	<u>Position</u>	<u>Percentage of stock</u>
-------------	-----------------	----------------------------

Milagra Creek Sinkhole Repair Project

List any subsidiaries or affiliated companies:

<u>Exact name</u>	<u>Type of business</u>	<u>Ownership</u>
-------------------	-------------------------	------------------

_____	_____	_____
_____	_____	_____
_____	_____	_____

If your organization is a partnership, answer the following:

- (a) Date of organization: _____
- (b) Type of partnership (if applicable): _____
- (c) Name(s) of general partner(s): _____

If your organization is individually owned, answer the following:

- (a) Date of organization: _____
- (b) Name of owner: _____

If the form of your organization is other than those listed above, describe it and name the principal(s):

2. LICENSING

Are you licensed as a contractor to do business in California?

Yes No

License No. _____ Type _____

Classification (type) of specialty contractor: _____

Have you ever been licensed under a different name or license number:

If yes, give name and license number: _____

How many years has your organization been in business as a contractor under your present business name and license number? _____

3. EXPERIENCE

How many years' experience in _____ construction work has your organization had? _____ (type)

(a) As a general contractor: _____ (b) As a subcontractor: _____

Milagra Creek Sinkhole Repair Project

List all major construction projects your organization currently has in progress, giving the name of the project owner, architect, contract amount, percentage of completion and scheduled completion time:

State the total worth of work in progress under contract: _____

In the following spaces show the major projects (ten maximum) your organization has completed during the last five years; be specific as to the nature of the work your firm actually performed:

Year completed	Type of work (be specific)	Value of work performed	Client: city and state, contact person/phone

Milagra Creek Sinkhole Repair Project

Have you been assessed liquidated damages for any project in the past three years?

Yes No

If yes, explain the amount assessed: _____

Have you been in litigation on a question relating to your performance on a contract during the past three years? Yes No

If yes, explain: _____

Are there any outstanding judgments, liens, claims, arbitration proceedings or suits pending against your organization or its officers? Yes No

If yes, explain: _____

Has your organization filed any lawsuits or requested arbitration with regard to a construction contract within the last five years? Yes No

If yes, explain: _____

Within the last five years, has any officer or principal of your organization been an officer or principal of another organization that failed to complete or defaulted upon a construction contract? Yes No

If yes, explain: _____

Have you defaulted upon or failed to complete a contract? Yes No

If yes, explain: _____

Within the last five years, has your organization failed to pay prevailing wages where required or state or federal taxes or contributions?

Milagra Creek Sinkhole Repair Project

Yes No

If yes, explain: _____

Has your organization been investigated by or is currently under investigation by any governmental agency for violation of the state Labor Code, state Business and Professions Code or state licensing laws?

Yes No

If yes, explain: _____

In what other lines of business pertaining to this statement do you have a financial interest:

Name the persons with whom you have been associated in business as partners or joint ventures in each of the last five years:

Milagra Creek Sinkhole Repair Project

What is the construction experience of the principal individuals of your present organization?

Individual's name	Present position or office in your organization	Years of construction experience related to this project	Magnitude and type of work

List subcontractors to whom you have subcontracted work in the last two years:

Name of firm	Address and telephone number

Milagra Creek Sinkhole Repair Project

List the names of three architects or engineers whose jobs you have worked on in the past two years:

Name	Address	Telephone number

List your five major suppliers of equipment, supplies and materials:

Name	Address

4. FINANCIAL QUALIFICATIONS

Name, address and telephone number of bank:

Total line of credit: _____

How secured: _____

How much of your line of credit is currently available? _____

Name of loan officer: _____

(List additional banks on separate sheet, if applicable.)

Milagra Creek Sinkhole Repair Project

Please attach your organization's latest balance sheet and profit and loss statement prepared by a certified public accountant, showing assets and liabilities.

List and explain all contingent liabilities:

Explain any stop notice(s) filed against you in the past three years:

Date	By whom	How resolved	Why filed

Name and address of surety and surety's agent:

Has your firm or any of its principals defaulted so as to cause a loss to a surety?

Yes No

If yes, enter the date(s), name and address of surety and details: _____

Has your organization or any of its principals ever petitioned for bankruptcy?

Yes No

If yes, please provide date and details: _____

(END OF CONTRACTOR'S QUALIFICATION STATEMENT)

CITY OF PACIFICA
170 Santa Maria Ave., Pacifica, CA 94044

CONSTRUCTION SERVICES AGREEMENT

Milagra Creek Sinkhole Repair Project

DATE: _____, 2016

1. IDENTIFICATION OF CONTRACTOR:

CONTRACTOR: _____

CALIFORNIA CONTRACTORS LICENSE NO: _____

2. SCOPE OF THE WORK

See Scope of Work attached as **Appendix A.**

COMPENSATION FOR WORK. Contractor's total compensation for the Work performed under this Agreement (**Contract Sum**) is \$_____, to be paid as lump sum. Payment shall be subject to a five percent (5%) retention.

3. SCHEDULE OF PERFORMANCE FOR THE WORK. Contractor shall commence and complete the Work by the following dates:

Commencement Date shall be on the date established in the Notice to Proceed. Owner reserves the right to modify or alter the Commencement Date of the Work.

Final Completion Date: Within **thirty (30)** working days of Commencement Date.

3.01 Liquidated Damage Amounts.

- A. As liquidated damages for delay Contractor shall pay Owner Five Hundred dollars (\$500.00) for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.
- B. As liquidated damages for delay Contractor shall pay Owner Five Hundred dollars (\$500.00) for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

3.02 Scope of Liquidated Damages

- A. Contractor and Owner agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of such actual damages incurred by Owner because of a delay in completion of all or any part of the Work. Contractor and Owner agree that specified measures of liquidated damages shall be presumed to be the amount of such damages actually sustained by Owner, and that because of the nature of the Project, it would be impracticable or extremely difficult to fix the actual damages.
- B. Liquidated damages for delay shall cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by Owner as a result of delay. Liquidated damages shall not cover the cost of completion of the Work, damages resulting from Defective Work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from Owner (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof. Owner may deduct from any money due or to become due to Contractor

Milagra Creek Sinkhole Repair Project

subsequent to time for completion of entire Work and extensions of time allowed pursuant to provisions hereof, a sum representing then-accrued liquidated damages.

4. TERMS AND CONDITIONS.

4.01 Contractor shall perform the Work in accordance with the terms and conditions of this Agreement and the following attachments (together, **Contract Documents**):

- A. Appendix A – Scope of Work
- B. Appendix B – General Conditions
- C. Appendix C – Insurance
- D. Appendix D – Construction Labor and Materials Payment Bond
- E. Appendix E – Construction Performance Bond
- F. Appendix F – Special Provisions
- G. Appendix E – Technical Specifications

4.02 The Contract Documents are the sole and exclusive provisions that govern the Work. Any provision contained in any Owner purchase order issued in connection with this Agreement or any Work shall be null and void and shall have no force or effect.

4.03 The name of the project (**Milagra Creek Sinkhole Repair Project**) must appear on all invoices and correspondence. Send invoices in duplicate immediately upon performance of Work ordered hereon or as otherwise provided in the Contract Documents to :

**City of Pacifica, Department of Public Works,
170 Santa Maria Avenue, Pacifica, CA 94044.**

CONTRACTOR:

OWNER: **City of Pacifica**

Signature

Signature

Print Name & Title

Lorie Tinfow, City Manager

Date

Date

Attest:

Kathy O'Connell, City Clerk

Approve at to form:

Michelle Marchetta Kenyon, City Attorney

Addresses for Notices:

Attn: _____

City of Pacifica
170 Santa Maria
Pacifica, CA 94044
Attn: Van Ocampo, City Engineer

Milagra Creek Sinkhole Repair Project

Appendix A to Construction Services Agreement

SCOPE OF WORK

Milagra Creek Sinkhole Repair Project

Replace the upper 100' reach of pipe with new 48" id HDPE storm drain pipe, installation of a new structure to interface the new HDPE pipe and the remaining/existing RCP segment, repair of the sunken areas of Edgemar Avenue and parking lot and related miscellaneous work, which was damaged during the El Niño disaster of 2016.

**For detailed information, see, also:
Appendix F – Special Provisions
and
Appendix G – Technical Specifications**

Milagra Creek Sinkhole Repair Project

Appendix B to Construction Services Agreement

GENERAL CONDITIONS

ARTICLE 1 TERMS OF PERFORMANCE

Construction Services Agreement (Agreement) Force and Effect. The provisions of the Agreement and other Contract Documents constitute the entire agreement between the Contractor and Owner regarding the Work described herein. No representation, term or covenant not expressly specified in the Contract Documents shall be a part of the parties' agreement. The Agreement and other Contract Documents shall govern the Work (whenever performed), and shall supersede all other purchase orders and agreements between Contractor and Owner, and any proposal, with respect to the Work.

Construction Performance Bond; Construction Labor and Materials Payment Bond; Securities in Lieu of Retention Escrow Account.

If Contract Sum under the Agreement exceeds (or is expected to exceed) \$25,000, Contractor shall provide (i) a construction labor and material payment bond, in accordance with Civil Code Section 9550 and in form attached hereto Appendix D – Construction Labor and Materials Payment Bond, and (ii) a construction performance bond in form attached hereto as Appendix E – Construction Performance Bond. Contractor may not substitute cash in lieu of the required bond(s).

If the Agreement specifies performance retention, Contractor may elect to substitute securities or direct payment to an escrow account, pursuant to Public Contract Code Section 22300 (incorporated herein by this reference).

Records and Payment Requests. Contractor shall submit all billings with all necessary invoices or other appropriate evidence of proper performance, after which Owner shall make payment within 30 days. Upon Owner's written request, Contractor shall make available to Owner, its authorized agents, officers, or employees, any and all ledgers, books of accounts, invoices, vouchers, cancelled checks, and other records or documents evidencing or relating to the Work or the expenditures and disbursement charged to Owner, and all correspondence, internal memoranda, calculations, books and accounts, records documenting its Work under the Contract Documents, and invoices, payrolls, timecards, records and all other data related to matters covered by the Contract Documents. Contractor shall furnish to Owner, its authorized agents, officers, or employees, such other evidence or information as Owner may require with regard to the Work or any such expenditure or disbursement charged by Contractor. Contractor shall maintain all such documents and records prepared by or furnished to Contractor during the course of performing the Work for at least five years following completion of the Work, except that all such items pertaining to hazardous materials shall be maintained for at least 30 years. Contractor shall permit Owner to audit, examine and make copies, excerpts and transcripts from such records. The State of California or any Federal agency having an interest in the subject of the Contract Documents shall have the same rights conferred to Owner by this section. Such rights shall be specifically enforceable.

Use of Contract Documents and Other Information. Drawings, Specifications, and other Contract Documents are made available to Contractor solely for Contractor's use under the Contract Documents. Further, all tangible and intangible property developed, produced and/or provided by Contractor under the Contract Documents, and all such items (other than Contract Documents) provided by Owner to Contractor in connection with the Contract Documents including, without limitation, drawings, specifications, sketches, models, samples, tools, computer programs, technical information, confidential business information, scripts, customer or personnel information and data, whether written, oral or otherwise (all hereinafter referred to as **Information**) shall be Owner's sole property. Contractor may not use Contract Documents or Information for any purpose unrelated to Contract Documents without Owner's prior written consent. All copies of Information in written, graphic or other tangible form shall be delivered to Owner upon completion of Work, or earlier if otherwise provided in Contract Documents.

Performance of Work/No Assignment. Time is of the essence in the performance of the Work. Contractor will perform the Work in a skillful and workmanlike manner; comply fully with criteria established by

Milagra Creek Sinkhole Repair Project

Owner, and with applicable laws, codes, and all applicable industry standards. Contractor shall maintain its work area in a clean and sanitary condition, clear debris and trash at the end of each work day, and shall not damage or disrupt any property unless specifically part of the scope of the Contract Documents. Contractor shall not contract any portion of the Work or otherwise assign the Contract Documents without prior written approval of Owner. (Contractor shall remain responsible for compliance with all terms of the Contract Documents, regardless of the terms of any such assignment.) Contractor shall permit Owner (or its designees) access to the work area, Contractor's shop, or any other facility, to permit inspection of the Work at all times during construction and/or manufacture and fabrication. The granting of any progress payment, and any inspections, reviews, approvals or oral statements by any Owner representative, or certification by any governmental entity, shall in no way limit or relieve Contractor from its obligations under the Contract Documents. Either party's waiver of any breach, or the omission or failure of either party, at any time, to enforce any right reserved to it, or to require strict performance of any provision of the Contract Documents, shall not be a waiver of any other right to which any party is entitled, and shall not in any way affect, limit, modify or waive that party's right thereafter to enforce or compel strict compliance with every provision hereof. Owner shall have, at all times, set-off rights with respect to any payment and Contractor's failure to perform the terms of the Contract Documents.

Defective Work; Warranties. Contractor warrants that all construction services shall be performed in accordance with generally accepted professional standards of good and sound construction practices, all Contract Documents requirements, and all laws, codes, standards, licenses, and permits. Contractor warrants that all materials and equipment shall be new, of suitable grade of their respective kinds for their intended uses, and free from defects. Contractor hereby grants to Owner for a period of one year following the date of completion its unconditional warranty of the quality and adequacy of all of the Work including, without limitation, all labor, materials and equipment provided by Contractor and its Subcontractors of all tiers. If either prior to completion of the Work, or within one year after completion, any Work (completed or incomplete) is found to violate any of the foregoing warranties (**Defective Work**), Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, correct, remove and replace the Defective Work with conforming Work, and correct, remove and replace any damage to other Work or other property resulting therefrom. If Contractor fails to do so within five days of Owner's written notice (or other time period specified in the notice), Contractor shall pay all of the Owner's resulting claims, costs, losses and damages. Where Contractor fails to timely correct Defective Work, or defects are discovered outside the correction period, Owner shall have all rights and remedies granted by law.

Earthwork and Underground Facilities. If the Work involves digging trenches or other excavations that extend deeper than four feet below the surface, Contractor shall notify Owner in writing of any material that Contractor believes may be hazardous waste that is required to be removed in accordance law, subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids, or 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 the Contract Documents, pursuant to Public Contract Code Section 7104. For any Work involving trench shoring that costs in excess of \$25,000, Contractor shall submit and Owner (or a registered civil or structural engineer employed by Owner) must accept, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches, pursuant to Labor Code Section 6705. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer. Consistent with Government Code Section 4215, as between Owner and Contractor, Owner will be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site only if such utilities are not identified in the Contract Documents or information made available for bidding.

LEGAL

Compliance with Laws; Conflict of Interests. Contractor shall comply with all applicable federal and state laws, regulations and policies, as amended, including those regarding discrimination, unfair labor practices, anti-kick-back, collusion, prevailing wages, labor compliance, and the provisions of the

Milagra Creek Sinkhole Repair Project

Americans with Disability Act. Contractor, its officer, partners, associates, agents, and employees, shall not make, participate in making, or in any way attempt to use the position afforded them by the Contract Documents to influence any governmental decision in which he or she knows or has reason to know that he or she has a financial interest under applicable state, federal and local conflict of interest regulations. Contractor warrants that no person or agency has been employed or retained, or will be employed or retained, to solicit or obtain any contract with Owner, upon an agreement or understanding for a contingent fee, except a bona fide employee or agency.

Licenses, Patents, Permits. Before commencing Work, Contractor shall apply for, obtain and maintain in current status, at its own expense, any license, permit or approval required from any agency for the performance of Work, including a City of Pacifica business license, which shall not be unreasonably denied. To the greatest extent permitted by law, Contractor shall not be entitled to any compensation for any Work performed while not properly licensed, etc.

Employee Wages; Records; Apprentices. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractor shall post job site notices as prescribed by regulation. Contractor shall pay prevailing wages to its employees on any Order in excess of \$1,000.00. Copies of the prevailing rate of per diem wages are on file at Owner's principal office. Contractor shall comply with the 8-hours per day/40 hours per week/overtime/working hours restrictions for all employees, pursuant to the California Labor Code. Contractor and all subcontractors shall keep and maintain accurate employee payroll records for Work performed. The payroll records shall be certified and submitted as required by law, including Labor Code Section 1771.4 and 1776, including (if the Agreement is awarded on or after April 1, 2015 or continues on or after January 1, 2016) to the Labor Commissioner no less frequently than monthly. Contractor shall comply fully with Labor Code Section 1777.5 in the hiring of apprentices for work relating to the Agreement. If Contract Sum exceeds \$2,000 and is funded with federal funds, then Contractor shall pay federal Davis Bacon wages and comply with applicable federal requirements.

Mandatory Contractor and Subcontractor Registration. Pursuant to Labor Code Section 1771(a), Contractor represents that it and all of its Subcontractors are currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. Contractor covenants that any additional or substitute Subcontractors will be similarly registered and qualified.

Indemnity/Liability. Contractor shall defend, indemnify, and save harmless, to the fullest extent permitted by law, the Owner and each of its officers, directors, representatives, agents and employees, against all claims, suits, actions, loss, cost, damage, expense, and liability arising from or related to bodily injury to or death of any person or damage to any property, or resulting from any breach and/or Contractor's negligence in performing the Work pursuant to the Contract Documents. Notwithstanding any provision of the Contract Documents, Owner shall not be liable to Contractor or anyone claiming under it, in contract or tort, for any special, consequential, indirect or incidental damages arising out of or in connection with the Contract Documents or the Work. Owner's rights and remedies, whether under the Contract Documents or other applicable law, shall be cumulative and not subject to limitation.

Worker's Compensation. Pursuant to Labor Code Sections 1860 and 1861, in accordance with the provisions of Section 3700 of the Labor Code, every contractor will be required to secure the payment of compensation to his employees. Contractor represents that it is aware of the provisions of Labor Code Section 3700 that require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor shall comply with such provisions before commencing the performance of the Work.

MISCELLANEOUS

No Modification or Waiver; Severability. The Contract Documents may not be modified, nor may compliance with any of its terms be waived, except by written instrument executed and approved by fully authorized representatives of Owner and Contractor. Contract Documents headings are for convenience only and do not affect the construction of the Contract Documents. Should any part of the Contract Documents be declared invalid, void or unenforceable, all remaining parts, terms and provisions of the Contract Documents shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby.

Milagra Creek Sinkhole Repair Project

Independent Contractor. Contractor is an independent Contractor and does not act as Owner's agent in any capacity, whatsoever. Contractor is not entitled to any benefits that Owner provides to Owner employees including, without limitation, insurance, worker's compensation benefits or payments, pension benefits, health benefits or insurance benefits. Terms within the Contract Documents regarding directives apply to and concern the result of the Contractor's provision of Work not the means, methods, or scheduling of the Contractor's Work. Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures with respect to its provision of Work under the Contract Documents. Contractor shall pay all payroll taxes imposed by any governmental entity and will pay all other taxes not specifically identified in the Contract Documents as Owner's responsibility.

Termination; Suspension; Disputes. Owner may direct Contractor to terminate, suspend, delay, interrupt or accelerate Work, in whole or in part, for such periods of time as Owner may determine in its sole discretion. Owner will issue such directives in writing, and may do so, in whole or in part, for its convenience or due to Contractor's fault. Owner will compensate Contractor for extra costs resulting from such directives only to the extent that Owner issues such directives for its convenience and not due to Contractor's fault (but Owner shall not compensate Contractor for costs, profit or overhead anticipated to be earned or incurred on Work terminated for Owner's convenience.) Contractor shall continue its Work throughout the course of any dispute, and Contractor's failure to continue Work during a dispute shall be a material breach of the Contract Documents. All claims by Contractor against Owner shall be submitted in writing to Owner, and shall be governed by Public Contract Code Sections 20104 – 20104.6, after which time the one year time period in Government Code Section 911.2 shall be, pursuant to Government Code Section 930.2, reduced to 90 days. Should Contractor be terminated for default, and such termination is subsequently determined to be wrongful, such termination will be converted to a termination for convenience as provided herein.

Notices. All notices between the parties hereto shall be in writing and may be served by commercial express/overnight courier service or by depositing the same in the United States mail, postage prepaid and certified receipt requested, and addressed as indicated beneath each party's signature in the Master Agreement, or as either party may otherwise provide to the other.

Dispute Resolution. All Contractor claims not otherwise subject to Public Contract Code Sections 20104 et seq shall, as a condition precedent to litigation thereon, first be mediated. Mediation shall be confidential, non-binding, pursuant to the construction mediation procedures of JAMS in San Francisco, California, and utilize the services of a mediator mutually acceptable to the parties. If the parties are unable to agree, the mediator will be selected by JAMS from its panel of approved construction industry mediators, having a minimum of 10 years' experience in the construction industry. The cost of mediation shall be equally shared by all parties to the mediation. The parties shall, prior to the commencement of a mediation pursuant to this Paragraph, upon notice of the other party, exchange relevant, non-privileged project documents in compliance with Code of Civil Procedure Sections 2031.010 et seq. Additionally, the parties may agree mutually to engage in additional discovery prior to mediation. Should the parties proceed with additional discovery, they shall, unless mutually agreed otherwise, comply with Code of Civil Procedure Sections 2019, et. seq. The Mediator will undertake to resolve any discovery disputes relating to the Mediation.

Execution; Venue; Limitations. The Agreement shall be deemed to have been executed in San Mateo County, California. Enforcement of the Contract Documents shall be governed by the laws of the State of California, excluding its conflict of laws rules. Except as expressly provided in the Contract Documents, nothing in the Contract Documents shall operate to confer rights or benefits on persons or entities other than Owner and Contractor. As between the parties to the Agreement, any applicable statute of limitations for any act or failure to act shall commence to run on the date of Owner's issuance of the final Certificate for Payment, or termination of the Contract Documents, whichever is earlier, except for latent defects, for which the statute of limitation shall begin running upon discovery of the defect and its cause.

Milagra Creek Sinkhole Repair Project

Appendix C to Construction Services Agreement

INSURANCE

1. Commercial General Liability Insurance, written on an “occurrence” basis, which shall provide coverage for bodily injury, death and property damage resulting from operations, liability for slander, false arrest and invasion of privacy, blanket contractual liability, broad form endorsement, and completed operations, personal and advertising liability, with limits of not less than **[\$2,000,000]** general aggregate and **[\$1,000,000]** each occurrence, subject to a deductible of not more than **[\$1,000]** payable by Contractor.
2. Business Automobile Liability Insurance with limits not less than **[\$1,000,000]** each occurrence including coverage for owned, non-owned and hired vehicles, subject to a deductible of not more than **[\$1,000]** payable by Contractor.
3. Workers’ Compensation Employers’ Liability limits not less than **[\$1,000,000]** each accident, **[\$1,000,000]** per disease and **[\$1,000,000]** aggregate. Contractor’s Workers’ Compensation Insurance policy shall contain a Waiver of Subrogation against the City of Pacifica, its officers, directors, officials, agents, employees and volunteers. In the event Contractor is self-insured, it shall furnish Certificate of Permission to Self-Insure signed by Department of Industrial Relations Administration of Self-Insurance, State of California.
4. An Installation Floater including, without limitation, coverage against loss or damage to the Work by fire, lightening, wind, hail, vandalism, malicious mischief, and other such hazards as are normally covered by such coverage. Such insurance shall be in amount equal to the replacement cost (without deduction for depreciation and subject to stipulated value in lieu of average clause) of the Work. Such insurance may be subject to deductible clauses not to exceed **[\$10,000]** for any one loss. Such insurance will not cover loss or damage to Contractor’s equipment, scaffolding or other materials not to be consumed in the performance of the Work. The insurer shall waive all rights of subrogation against Owner.
5. Insurance policies in Appendix C shall contain an endorsement containing the following terms:
 - 5.01 City of Pacifica, its officers, directors, officials, agents, employees, and volunteers, shall be named as additional insureds, but only with respect to liability arising out of the activities of the named insured, and there shall be a waiver of subrogation as to each named and additional insured.
 - 5.02 The policies shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the company’s liability.
 - 5.03 Written notice of cancellation, non-renewal or of any material change in the policies shall be mailed to Owner thirty (30) days in advance of the effective date thereof.
 - 5.04 Insurance shall be primary insurance and no other insurance or self-insured retention carried or held by any named or additional insureds other than Contractor shall be called upon to contribute to a loss covered by insurance for the named insured.
6. Certificates of Insurance and Endorsements shall have clearly typed thereon the Project Name, shall clearly describe the coverage and shall contain a provision requiring the mailing of written notices of cancellation described in clause 5.03 above.
7. All policies of insurance shall be placed with insurers acceptable to Owner. The insurance underwriter(s) must be duly licensed to do business in the State of California and (other than for workers’ compensation) must have an A. M. Best Company rating of **[A-,VII]** or better. Required minimum amounts of insurance may be increased should conditions of Work, in the opinion of Owner, warrant such increase. Contractor shall increase required insurance amounts upon direction by Owner.

Milagra Creek Sinkhole Repair Project

Appendix D to Construction Services Agreement

CONSTRUCTION LABOR AND MATERIAL PAYMENT BOND FORM

KNOW ALL PERSONS BY THESE PRESENTS:

1. THAT WHEREAS, the **City of Pacifica**, a general law city and municipal corporation in the State of California (**Owner**) has awarded to _____, as Principal, a Construction Services Agreement, dated the _____ day of _____, **2016** ("**Agreement**"), titled the **Milagra Creek Sinkhole Repair Project** in the amount of \$ _____ (**Contract Sum**), which Agreement is by this reference made a part hereof, for the work generally described as follows:

2. AND WHEREAS, Principal is required to furnish a bond in connection with the Agreement to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;
3. NOW, THEREFORE, we, the undersigned Principal and _____ as Surety, are held and firmly bound unto Owner in the sum of 100% OF THE CONTRACT SUM (\$ _____), for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.
4. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by Owner, or its subcontractors shall fail to pay any of the persons named in California Civil Code Section 9100, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Agreement, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to California Unemployment Insurance Code Section 13020 with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, plus reasonable attorneys' fees, otherwise the above obligation shall become and be null and void.
5. This bond shall inure to the benefit of any of the persons named in California Civil Code Section 9100, as to give a right of action to such persons or their assigns in any suit brought upon this bond. The intent of this bond is to comply with the California Mechanic's Lien Law.
6. Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Agreement, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Agreement, or to the work to be performed thereunder.
7. Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with Agreement; and

Milagra Creek Sinkhole Repair Project

suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing Owner's rights against the other.

8. Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 2016.

CONTRACTOR AS PRINCIPAL

Company:

Signature

Name

Title

Street Address

City, State, Zip Code

SURETY

Company: (Corp. Seal)

Signature

Name

Title

Street Address

City, State, Zip Code

Milagra Creek Sinkhole Repair Project

Appendix E to Construction Services Agreement

CONSTRUCTION PERFORMANCE BOND FORM

KNOW ALL PERSONS BY THESE PRESENTS:

1. THAT WHEREAS, **City of Pacifica**, a general law city and municipal corporation of the State of California (**Owner**) has awarded to _____ as Principal a Construction Services Agreement, dated the _____ day of _____, **2016** ("**Agreement**"), titled the **Milagra Creek Sinkhole Repair Project** in the amount of \$ _____, (Contract Sum), which Agreement is by this reference made a part hereof, for the work generally described as follows:

2. AND WHEREAS, Principal is required to furnish a bond in connection with the Agreement, guaranteeing the faithful performance thereof;
3. NOW, THEREFORE, we, the undersigned Principal and _____ as Surety are held and firmly bound unto Owner in the sum of 100% OF THE CONTRACT SUM to be paid to Owner or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.
4. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by Owner, shall promptly and faithfully perform the covenants, conditions, and agreements of the Agreement during the original term and any extensions thereof as may be granted by Owner, with or without notice to Surety, and during the period of any guarantees or warranties required under the Agreement, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Agreement made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless Owner as stipulated in the Agreement, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.
5. No extension of time, change, alteration, modification, or addition to the Agreement, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.
6. Whenever Principal shall be and declared by Owner in default under the Agreement, Surety shall promptly remedy the default, or shall promptly:
 - 6.01 Undertake through its agents or independent contractors, reasonably acceptable to Owner, to complete the Agreement in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Agreement including, without limitation, all obligations with respect to warranties, guarantees, indemnities, and the payment of liquidated damages; or
 - 6.02 Obtain a bid or bids for completing the Agreement in accordance with its terms and conditions, and, upon determination by Owner of the lowest responsible bidder, reasonably acceptable to Owner, arrange for a contract between such bidder and Owner and make available as work

Milagra Creek Sinkhole Repair Project

progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Agreement including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by Owner to the Principal under the Agreement and any amendments thereto, less the amount Owner paid to Principal.

7. Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Agreement, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing Owner's rights against the others. Surety may not use Contractor to complete the Agreement absent Owner's written consent.
8. No right of action shall accrue on this bond to or for the use of any person or corporation other than Owner or its successors or assigns.
9. Surety may join in any proceedings brought under the Agreement and shall be bound by any judgment.
10. Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, **2016**.

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Company: (Corp. Seal)

Signature

Signature

Name

Name

Title

Title

Street Address

Street Address

City, State, Zip Code

City, State, Zip Code

Appendix F to Construction Services Agreement

SPECIAL PROVISIONS

I. GENERAL

A. CONTRACT DOCUMENTS:

1. In addition to the Contract Documents enumerated in the Agreement, the work is to be done in accordance with the Standard Plans and the Standard Specifications of the State of California, most recent editions (referred to simply as “Standard Plans” and Standard “Specifications”), which are incorporated into the Contract Documents just to the extent that they are specifically referenced, and in accordance with the City of Pacifica Standard Details. The term “specifications” applies to all of the Contract Documents.

2. Anything not expressly set forth in these specifications, but which is implied or is customarily provided under common industry standards, shall be furnished as though specifically described, and no additional compensation will be paid for it.

3. Should anything be omitted from these specifications, which is necessary for the proper execution of the work herein described, it shall be the duty of the Contractor to notify the City Engineer or authorized representative before signing the Contract.

4. The Contractor is required to carefully check site conditions before submitting a bid, so no compensation shall be provided for any conditions that could have reasonably have been observed.

5. If, during the course of construction, conditions arise or become evident that could not reasonably have been foreseen and were not expressed or clearly implied in these specifications, but which have a material bearing on the performance of the work described herein, it is the responsibility of the Contractor to immediately bring such conditions to the attention of the City Engineer before proceeding.

B. AUTHORITY OF THE CITY ENGINEER:

1. The terms “Engineer” and “City Engineer” refer to the City Engineer of the City of Pacifica.

2. In addition to what is explicitly delegated to the City Engineer in the Contract Documents, it shall be the responsibility of the City Engineer to resolve any question as to the meaning or intent of any ambiguity. It shall also be the responsibility of the City Engineer to provide direction in any matter not clearly or fully described in these Documents.

3. The authority of the City Engineer extends to delegated representatives such as the City’s Inspector.

C. TERMINATION OF CONTRACT: The Owner may terminate the Contract

for the following causes:

1. Contractor is insolvent or has made a general assignment for the benefit of creditors, or a receiver has been appointed on account of the insolvency of Contractor.
2. Contractor or any of its subcontractors materially violates any of the provisions of the Contract Documents or fails to perform the work within the time specified in the current Construction Schedule, as properly modified for time extensions.
3. Contractor or any of its subcontractors fails to make prompt payment to subcontractors or material supplies for material or for labor, unless such failure arises from a failure on the part of Owner to make prompt payment on account of such work or material.
4. Contractor or subcontractor persistently disregards laws, ordinances or the instructions of the Engineer or Owner.
5. Contractor fails to abide by a stop work notice or fails to correct rejected work or materials.
6. Contractor fails to provide and keep in full force and effect all required insurance or fails to cause all subcontractors to so comply.
7. Contractor fails to supply a sufficient number of properly skilled workers or proper materials.

D. CITY'S RIGHTS: In addition to all other rights granted by law to the City, the following are explicitly provided:

1. Inspection by the Engineer or by any of his duly authorized representatives, any order, measurement, or certificate by the Engineer, any order by the City for the payment of money, acceptance of any work or any extension of time, or any possession taken by the City shall not operate as a waiver of any provision of the contract, or any right or power therein reserved to the City, or any right to damages provided by law. Any waiver of any breach of the contract shall not be held to be a waiver of any other or subsequent breach.
2. The City reserves the right to correct any error that may be discovered in any estimate that may have been paid, and to adjust the same to meet the requirements of the contract and specifications. The City reserves the right to claim and recover by process of law, sums as may be sufficient to correct the error or make good any deficit in the work resulting from such error, dishonesty or collusion discovered in the work after the final payment has been made.

E. PAYMENT:

1. Compensation for the work described in the Contract Documents is to be made as a single lump sum, except as stated elsewhere herein.

2. Whenever the Contractor shall deem all work under the Contract to have been completed in accordance therewith, he shall so notify the Engineer who will promptly ascertain whether such be the fact and, if not, will so notify the Contractor in detail of any work not satisfactorily completed. When all the provisions of the contract have been fully complied with to the satisfaction of the Engineer, he will proceed with all reasonable diligence to measure all work done and all materials furnished and will make a final and complete estimate of the value of such work done and materials furnished and will certify to the City Council said estimate and the date of completion of the work. The Council will take prompt action thereon and will furnish the Contractor with a statement of acceptance or of exceptions.

3. At or about 45 days from the date of final acceptance of the work by the Council, the difference between said final estimate and all payments theretofore made to the Contractor shall be due and payable to the Contractor, excepting only such sum or sums as may lawfully be withheld in accordance with the provisions of the Contract. Acceptance by the Contractor of said payment made in accordance with said final estimate shall operate as and shall be a release to the City, its officers, agents, and employees, excepting only claims against the City for any amount withheld by it at the time of such payment.

4. The City may withhold or nullify the whole or any part of payment to such an extent as may be reasonably necessary to protect it from loss on account of:

- a) defective work not remedied, irrespective of when any such work be found defective;
- b) claims or liens filed or reasonable evidence indicating probable filing of claims or liens;
- c) failure of the Contractor to make payments promptly for labor, materials, equipment, or other facilities, or to subcontractors;
- d) a reasonable doubt that the work can be completed by the City for the balance then unearned by the Contractor in the event the City at that time elects to take over work or to terminate the Contract pursuant to the Standard Specifications;
- e) a reasonable doubt that the Contractor can complete the work within the agreed time limits;
- f) costs to the City resulting from failure of the Contractor to complete the work within the proper time;
- g) damage to other work or property.

II. MOBILIZATION & DEMOBILIZATION

A. GENERAL:

Throughout Mobilization or Demobilization, Edgemar Drive may only be closed to the public after written permission is granted by the City Engineer, and after temporary signage described below is installed and at least five days in advance.

B. TEMPORARY FENCE:

1. The existing temporary chain-link fencing must be fully secured in place at all times.

C. ON-SITE STORAGE: All materials, tools and equipment, and any incidental items must be secured so as to not be accessible to the public and so as to not be hazardous to the public. The Contractor is entirely responsible for preventing loss or other damage to the same.

D. VEHICLE & EQUIPMENT PARKING:

1. Access/egress at the main portion of the Fire Station must not be blocked.

2. Workers vehicles must be legally parked on nearby streets adjacent to the work area.

E. LIGHTING AND SIGNAGE:

1. The Contractor may provide temporary lighting if permission is granted by the City Engineer for work to be done at night, but no temporary lighting may remain illuminated when workers are not present.

2. As soon as Contractor's work begins, signs must be secured in the vicinity of the work area.

3. Before Edgemar Drive is closed, signs must be secured at the adjacent intersections of Milagra Drive and Oceana Boulevard, Avalon Drive and Oceana Boulevard and Avalon Drive and Edgemar Drive. Detail of the closure shall include but not limited to Date(s), Time(s) and Duration.

4. Throughout construction the Contractor shall display a sign identifying the firm and providing a phone number that can be used to for questions or complaints, as well as the number for the Pacifica Police Department for emergencies.

F. CLEANUP:

1. Throughout the construction period the site and vicinity shall be kept free of accumulation of waste material or rubbish, including trash not attributable to the Contractor or persons under their control.

2. Causing or allowing any contamination to enter the creek, including washing or rinsing with water, is strictly prohibited.

3. Final cleanup shall remove all remaining litter, debris, leftover or waste materials, temporary structures, wrappings or containers, and shall sweep the street and parking lot immediately around the new work.
 4. If the Contractor fails to contain and remove any waste, rubbish or contamination of any kind and it becomes necessary for the City to do so, the cost of doing so shall be deducted from the compensation to be paid to the Contractor.
- G. **HAZARDOUS MATERIALS:** If hazardous contamination is encountered, and the City or the Contractor requires it to be handled and disposed of as such, no additional compensation shall be paid to the Contractor for special handling or disposal, nor for delays, unless such material is certified by a competent authority to be hazardous contamination.
- H. **PUBLIC CONVENIENCE AND SAFETY:**
1. The Contractor shall be responsible during all phases of work to provide for and maintain public convenience and safety of the public as well as those working on the project.
 2. If the Contractor leaves the site in an unsafe condition when workers are not readily available to correct the deficiency, the City may take necessary action to remediate the situation; the cost of such remediation shall be deducted from the compensation to be paid to the Contractor.

III. SCHEDULE AND DURATION OF PROJECT

- A. **PROJECT DURATION:** All of the work described in these specifications, including punch-list work, must be completed within the time allotted in the Agreement.
- B. **WORKING HOURS:**
1. Normal working hours are defined as between 8:00 AM and 5:00 PM Monday through Friday, except City holidays.
 2. Work may only be performed outside of those hours if written permission is granted by the City Engineer, which must be requested at least two full work days before it is needed.
- C. **EXTENSIONS OF TIME:** Whenever the Contractor believes that conditions beyond their control, including weather conditions or increases in the scope of work, justify an extension of time it may be requested in writing, citing the extenuating conditions. If the City Engineer, in his sole discretion, agrees to the extension, he shall provide such notice to the Contractor that the time for performance of the Contract has been extended.

- D. **PAYMENT INCLUDED IN VARIOUS PAY ITEMS:** Payment for maintaining the Schedule, and for completing the work within the allotted time as may be extended, shall be included within the compensation paid for the various items of work summarized in the Bid Schedule, and no other or additional compensation shall be paid for this unless so agreed in writing by the City Engineer.

Appendix G to Construction Services Agreement
TECHNICAL SPECIFICATIONS

The bid items listed in the Bid Proposal are not intended to be exclusive descriptions of all the work necessary to complete the project scope, and as such, the Contractor shall determine, segregate and include in his pricing for each bid item the cost for furnishing and/or installing materials, tools, equipment, labor and other incidentals necessary to complete all of the work, complete in place as described by the Contract Documents.

I. MOBILIZATION

PART 1- GENERAL:

Shall include all work necessary for project administration and coordination; establishing temporary office space, storage and staging areas; site protection, provision of power, communications, and temporary utility connections; personnel, equipment, supplies, materials, and incidentals to the project; cleanup, site restoration, demobilization and all other items required by the plans and specifications which are not included in other bid items of work.

Mobilization shall include the work required to prepare the site for construction operations, including, but not limited to placing temporary fencing, barricades or other necessary safety and warning devices required for the proper execution of the contract.

Mobilization shall include demobilization and restoration for existing improvements to a condition equal to or better than their condition before the start of the project. This shall include the repair of fences or other improvements and repair of irrigation systems caused by the contractor's operations.

PART 2 – MATERIALS

None

PART 3- EXECUTION:

Contractor shall provide temporary fencing and barricades as appropriate to secure the area. Provide plywood covers or steel plates in traffic areas to protect excavations during non-work hours.

Any damage to existing improvements such as driveways, parking lots, walkways, existing fencing, etc. shall be repaired to the satisfaction of the City.

PART 4 - MEASUREMENT AND PAYMENT

The contract lump sum price paid for the bid item, "**Mobilization**" shall include full compensation for all costs relating to the mobilization and demobilization of manpower and equipment and other incidentals as specified in this section, complete in place and no additional compensation shall be allowed therefore.

The Contract lump sum price for "Mobilization should not exceed five percent (5%) of the total base bid contract price. Any amount bid on the bid schedule in excess of five percent (5%) shall be withheld from payment until the completion of project, to be paid as part of the final payment.

II. TRAFFIC CONTROL

PART 1 - GENERAL

Lane closures, road closures and traffic control shall conform to the provisions in the California Manual on Uniform Traffic Control Devices (CA-MUTCD), latest edition.

PART 2 – MATERIALS

A traffic control plan showing the road closure and all required traffic control devices shall be submitted to the City Engineer for review and approval prior to traffic being obstructed or impeded.

PART 3 - EXECUTION

Advanced Type III barricades with signs indicating Road Closed Ahead and No Pedestrian Access shall be placed at the intersection of Arroyo Drive and Edgemar Avenue and at the intersection of Milagra Drive and Edgemar Avenue as part of the traffic control plan.

Prior to blocking any driveways or parking areas, 72-hour notification must be provided in writing to the property owners, and the property owners must acknowledge their permission to the contractor's schedule for having the work done.

PART 4 - MEASUREMENT AND PAYMENT

The contract lump sum price paid for the bid item, "**Traffic Control**" shall include full compensation for all costs related to providing adequate traffic control for vehicular and pedestrian traffic throughout the project duration, complete in place and no additional compensation shall be allowed therefore.

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III. EARTHWORK

PART 1 - GENERAL

Earthwork includes all labor, equipment, and materials to clear and grub existing vegetation, sawcut, excavate, shape, backfill, compact, import fill and/or remove excess material, as necessary to comply with the plans and specifications.

Earthwork shall also include trench dewatering, bypass pumping and sheeting, shoring and bracing to ensure trench safety.

PART 2 - MATERIALS

Fill materials shall not be used without approval. The Contractor shall provide submittals on all material proposed and allow time for review by the City before acceptance.

Contractor shall submit to the City Engineer the design and calculations for the sheeting, shoring and bracing system proposed. Said design and calculations shall be performed by a registered Civil or Structural Engineer as required by Cal/OSHA.

The Contractor shall prepare a Water Pollution Prevention Plan for the project. The Water Pollution Prevention Plan shall be submitted to the City Engineer at least one week prior to any excavation or earthwork. If the Water Pollution Prevention Plan is not accepted by the City Engineer, the Contractor shall not begin excavation or earthwork. The contractor shall follow all "best management practices" (BMP).

PART 3 – EXECUTION

A. General

Earthwork shall conform to "Dust Control and Cleanup" in the General Conditions, the Standard Specifications, and to the following sections of these Specifications.

The Contractor shall perform his work in such a manner as not to unnecessarily harm the undisturbed condition of the underlying or adjacent soils. When in the opinion of the City Engineer, natural soils or fill are damaged or disturbed by the operations of the Contractor, thereby precluding the utilization of the site as planned, the Contractor shall correct such damage or disturbance. Corrections shall be as directed by the City Engineer and may include, but not be limited to, the removing of natural and fill foundation soils both laterally and vertically and replacing with compacted fill to the required grades or the construction of alternative methods of support. The cost of any such repair, rehabilitation or modification shall be borne by the Contractor.

Milagra Creek Sinkhole Repair Project

The City Engineer will observe all excavations to proposed depths, the clearing and grubbing of material from the site and the placing and compaction of all fill materials and other earthwork related operations specified in the Contract Documents. The Contractor shall notify the City Engineer least forty-eight (48) hours in advance of the beginning of operations which require inspection or approval.

All unsuitable materials from excavation shall be disposed of as described in "Part 4- Clean Up" of Section 7.2.01.

B. Excavation, Clearing and Grubbing

Final grade shall conform to the lines and grade shown on the drawings.

Unless otherwise noted, the Contractor shall remove all brush, trees, logs, stumps, roots, heavy sods, heavy growth grass, all decayed vegetable matter, fences and all structures as required to complete the work. The Contractor shall also remove all rock, stones in excess of six inches, broken concrete and pavement, debris and all obstruction of any kind or character, whether natural or artificial, encountered in the work.

The Contractor will encounter concrete slurry that was placed to stabilize the sinkhole.

Material that is removed as herein before specified, and is not to be incorporated in the work, shall be disposed of offsite by and at the Contractor's expense in a manner acceptable to the City Engineer.

C. Unusual Materials in Excavations

While digging trenches or excavating, the Contractor shall promptly, and before the following conditions are disturbed, notify the City and/or City Engineer, in writing, of any:

- A. Material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II or Class III disposal site in accordance with provisions of existing law.
- B. 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 the contract.

In the event that a dispute arises between the City Engineer and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a

Milagra Creek Sinkhole Repair Project

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 the contract, but shall proceed with all work to be performed under the contract. 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.

D. Bypass Pumping and Trench Dewatering

Contractor shall control water from Milagra Creek from entering the project area during construction. Contractor may pump water from Milagra Creek to the existing inlet located inside the City's Corp Yard immediately west of the parking lot.

All portions of the work shall be kept free of standing water at all times until the work specified is complete. The Contractor shall maintain uniform grades, construct ditches and/or provide and operate pumps as necessary to dewater and prevent flooding, erosion, softening of compacted surfaces and formation of mud in trenches and excavations. If ditches are required, they shall be constructed and maintained in a neat uniform shape. Contractor shall not under any circumstances conduct or pump water or allow water to be directed or flow toward other facilities or improvements on the site without approval of the City Engineer. The Contractor shall construct stilling basins or filtration as required to prevent silt and mud from entering the public drainage system as directed by the City Engineer.

E. Stockpile

If stockpiling onsite is not an option, the City will allow the Contractor to stockpile material at the City property located at the corner of Palmetto Avenue and Montecito Avenue. The size of the stockpile is at Contractor's discretion. Access to the site will be allowed from 8:00 am to 4:00 pm. Refer to the Appendix for the stockpile location.

F. Finishing

After the completion of construction, the affected areas shall be returned to a condition that, in the opinion of the City Engineer, shall match the condition prior to the beginning of construction. The area shall be finished smooth and free of ruts or other construction marks, graded to drain and any existing ground cover damaged by construction operations shall be restored. Any disturbed improvements, such as landscape and planter areas, irrigation system components, fences, parking lot, or other items correlated to the present use of the grounds, shall be restored to their original condition or better and to their original position as directed by the City Engineer.

Milagra Creek Sinkhole Repair Project

Landscaping of area between the chain link fence and the existing Milagra Creek drainage structure is not required, however special attention is required as the contractor shall re-grade the area with native topsoil to its original condition. The City of Pacifica will restore vegetation within this area at a later date.

G. Open Trenches Prohibited

No trenches shall be left open during non-working hours. All open trenches at the end of the work day shall be completely covered using steel plates.

At all street crossings, existing driveways, water gate valves and fire hydrants, the Contractor shall make provisions for trench crossings either by backfill or temporary bridges to allow for free access.

Provisions shall be made to direct and convey all surface runoff water in existing gutters or drainage channels.

H. Bracing & Shoring

Pursuant to State law, all open excavations greater than five feet in depth shall be constructed with bracing, sheeting, shoring or other equivalent method designed for the workers' safety. The Contractor must at all times conduct operations in accordance with Article 6, "Excavations, Trenches and Earthwork," of the State Division of Industrial Safety Construction Safety Orders, as amended.

Contractor shall submit for City approval in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping or other provisions for worker protection from the hazard of caving ground during the excavation of the trench. Plan shall be prepared by a registered Civil or Structural Engineer.

The Contractor shall carefully supervise the installation, maintenance and removal of sheeting, shoring and bracing. The Contractor shall have full authority over job safety matters and shall provide supervision when excavation work is in progress in all trenches.

The Contractor shall be solely responsible for any and all liabilities which may arise from his failure to provide adequate shoring, bracing or sheeting as necessary to support the excavation under any and all of the conditions of loading which may exist or which may arise during construction of the project.

The design, planning, installation and removal of all temporary sheeting, shoring, sheet piling, lagging and bracing shall be accomplished in such a manner as to maintain the required excavation or trench section and to maintain the undisturbed state of the soils below and adjacent to the excavation. During backfilling, the bottom of the shoring shall be kept above the level of the backfill at all times.

Milagra Creek Sinkhole Repair Project

I. Backfill and Compaction

Prior to pipe laying and placing of trench backfill, the Engineer shall inspect and approve the condition of the trench.

Where the term "compaction" is used herein, it is defined as relative compaction and refers to the in-place dry density of the fill expressed by ASTM D-1557, latest edition. The City Engineer may test all compacted materials.

Fill shall be placed in lifts not exceeding 8 inches in uncompacted thickness. The Contractor shall adjust the water content of the fill material to an amount that will enable the specified degree of compaction to be attained in each lift. Each lift shall be thoroughly mixed before compaction to ensure a uniform distribution of water content.

Jetting and/or flooding for compaction shall not be allowed. All backfill including trench backfill shall be compacted in 8-inch maximum lifts during placement.

J. Slope Stabilization and Erosion Control

If any chance of rain is forecasted by the National Weather Service prior to the completion of the work, straw bale and additional silt fence barriers shall be placed to reduce overland flow velocities and trap sediment.

K. Cleanup

Upon completion of construction operations the entire work site, including all catch basins, inlets and other structures shall be thoroughly cleaned of dirt, rubbish, debris and obstructions of any kind to the satisfaction of the City Engineer.

Other unsuitable and surplus materials remaining upon completion of the work shall become the property of the Contractor unless otherwise specified herein or noted on the plans, and shall be removed from the work site by the Contractor and disposed of in a lawful manner to the satisfaction of the City and/or City Engineer.

PART 4 - MEASUREMENT AND PAYMENT

The contract lump sum price paid for the bid item, “**Sheeting, Shoring and Bracing**” shall include full compensation for all costs related to the safety and shoring of excavations as necessary to accommodate conditions encountered in the field and shall include the design, installation, monitoring and removal of such system, complete in place and no additional compensation shall be allowed therefore.

Full compensation for work required under the bid item, “**Remove Unsuitable Material**” shall be paid at the bid item price per ton, based on the weight of Class II Aggregate Base utilized in restoring the excavation bottom to the grading plane specified, if necessary, and shall include the excavation, removal and disposal of such unsuitable material; providing, placing and compacting Class II Aggregate Base complete in place. This item is a revocable item, provided in the event that unsuitable material is encountered and may be eliminated if it's not.

In the event that the material found is hazardous, any additional compensation necessary beyond what it would take to dispose of non-hazardous material, will be negotiated and paid by change order.

Compensation for all other work required under this Earthwork Technical Specifications Section shall be included in the price paid for other individual items of work and no additional compensation will be allowed therefore.

IV. FIRE HYDRANT

PART 1 - GENERAL

1.01 WORK INCLUDED

Work shall consist of removing the existing fire hydrant service, bury, bollards and installing a blind flange at the existing gate valve. At a separate location, work shall also involve installing a new fire service line, bury, fire hydrant and blue pavement marker.

PART 2 – MATERIALS

2.01 Fire Service Line

Refer to Appendix A for Standard Fire Hydrant Assembly and specifications.

2.02 Fire Hydrant & Appurtenances

Refer to Appendix A for Standard Fire Hydrant Assembly and specifications. City to provide Standard Fire Hydrant Assembly.

2.03 Bollards

- A. Iron Pipe - Bollard shall be 4 inch hot-dipped, galvanized iron pipe to be filled with concrete after installation.
- B. Cap - Top of bollard to be fitted with a push on galvanized end cap.
- C. Reflectorized Tape - Install 3" wide red and white reflectorized tape, two-inches (2") from top of pipe.

2.04 Permanent Pavement Markers and Adhesives

Pavement markers shall be 2-way blue reflective markers and shall be of the prismatic reflector type consisting of methyl methacrylate or suitably compounded acrylonitrile-butadiene-styrene (ABS) shell filled with a mixture of an inert thermosetting compound and filler material.

Adhesive for pavement markers shall be either rapid set epoxy or hot melt bituminous adhesive.

PART 3 – EXECUTION

A. Removal of Existing Hydrant assembly

All existing fire service improvements as shown on the plan from the gate valve to the existing hydrant location, including pipe, bury and bollards shall be removed. The existing valve box shall be removed. A water-tight blind flange shall be installed at the existing valve.

B. New Hydrant assembly

Contractor shall coordinate with North Coast County Water District and follow the Districts standard details for completion of all improvements.

C. Bollards

Bollard shall be 3 feet above ground with 3 feet of embedment for a total length of 6 feet. Bollard shall be installed with an 18 inch diameter footing of poured in place concrete.

PART 4 – MEASUREMENT AND PAYMENT

The contract lump sum price paid for “**Remove Existing Bollards, Hydrant Bury and Lateral, Install Blind Flange**” shall include the removal of the existing hydrant bollards, bury and lateral and installation of a blind flange at the existing gate valve, remove valve box, complete in place and no additional compensation will be allowed therefore.

The contract lump sum price paid for “**Fire Hydrant Assembly, Wet Tap, Bollards and Blue Marker**” shall include the installation of new hydrant bollards, hydrant, bury, gate valve, valve box, wet tap into the main and blue marker complete in place and no additional compensation will be allowed therefore.

V. STORM DRAINS

PART 1 - GENERAL

1.01 WORK INCLUDED

Work shall consist of potholing existing underground utilities at potential conflict areas; excavating and backfilling trenches (including shoring as needed) for installation of drainage system including connections to existing facilities; removing existing storm drain pipe; furnishing and placing new storm drain pipe; bedding and backfill, and protection of existing facilities to remain in place at locations indicated on the plans or as directed by the Design Engineer.

1.02 WORK SPECIFIED UNDER OTHER SECTIONS

Consult all other sections of these specifications to determine the extent and character of the work specified elsewhere but related to that included in this section. Work specified herein shall be properly coordinated.

1.03 REFERENCE STANDARDS

1. State Standard Specifications.

1.04 SUBMITTALS

1. Product Data: Submit to the Design Engineer for review product literature for manufactured items such as pipe, pipe fittings, inlets, grates, and manholes.
2. Factory test results for representative watertight joints.
3. Certification of compliance with specified joint properties.
4. Test results to demonstrate that bedding and backfill materials comply with the Specifications.
5. Shop drawing of manholes.
6. Video inspection record.

1.05 RECORD DRAWINGS

The Contractor shall keep an accurate dimensioned record of the actual location and depth, as referred to the approved base datum, on all components of the storm drain system in conformance with accepted industry practice. The Record Drawings shall be submitted to the Design Engineer for approval. Record Drawings, approved by the Design Engineer, are required to be submitted prior to the processing of final contract payment.

PART 2 – MATERIALS

2.01 PIPE

Pipe will be HDPE corrugated with smooth interior (Type S) conforming to Section 64 of the State Standard Specifications, with watertight joints as specified in Section 61 of the State Standard Specifications. Fittings shall be made of the same material as the pipe.

2.02 BEDDING AND INITIAL BACKFILL MATERIAL

Natural river or bank sand; washed, free of silt, clay, loam, friable or soluble materials, and organic matter; with 100 percent passing the No. 4 Sieve and no more than 5 percent passing the No. 200 Sieve (Dry Weight). Backfill material shall consist of Class 2 aggregate base material, 3/4" maximum, in accordance with Section 26-1.02B, "Class 2 Aggregate Base", of the State Standard Specifications.

2.03 BACKFILL

Native material excavated from the trench, prepared as necessary to be free of rocks or lumps greater than four inches in greatest dimension and free of organic material or other deleterious materials.

2.04 OVER EXCAVATED MATERIAL

Before pipe installation, The Contractor will excavate the minimum amount of unsuitable material as specified on the plans. The excavated unsuitable material will be replaced with Class II AB as specified in Section X. of these Technical Specifications.

2.05 CONCRETE ENCASEMENT

Concrete encasement at pipe connection between existing RCP and HDPE pipe shall conform to size, shape and details as shown on the plans.

2.06 MORTAR

Mortar for sealing pipe connections to concrete structures shall be composed of one part Portland cement and 2 parts sand by volume. Sand shall be well graded and of such size that all will pass a No. 8 sieve. The materials shall be mixed to a consistency suitable for the purpose intended. Mortar shall be used within 30 minutes after the mixing water has been added. Other joint sealant materials which will prevent leakage and infiltration may be used, if approved by the Design Engineer.

PART 3 – EXECUTION

3.01 POTHOLING AND TRENCHING

Pothole utilities to verify their location. Contractor shall be responsible for contacting utilities and coordinating work around other utilities. The Contractor shall be responsible for the immediate repair of any underground utilities or sewers damaged during excavation at no additional cost to the City.

The Contractor is solely responsible for furnishing, placing, maintaining and, except as shown or specified otherwise, removing all bracing and shoring in accordance with applicable law, including local ordinances, applicable OSHA, CalOSHA, California Civil Code, and California Department of Industrial Safety Orders.

Trenches shall not be left open during non-working hours. Contractor shall install devices to secure the work area from the public at all times.

All piping in the ground shall have a minimum cover of 1'-6", except as otherwise shown on the Plans, and shall be laid in trenches dug true to grade and line. Piping shall bear equally over its entire length at bottom of trench. Rock or unstable material encountered at grade shall be replaced with bedding material to a minimum depth of 4 inches below pipe.

3.02 PIPE INSTALLATION

Installation shall be performed in accordance with the manufacturer's recommendations and these specifications by open trench method. Pipe laying shall begin at the lowest point and proceed upslope. Each joint of pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe and to prevent an offset in the flowline of the pipe. As work progresses, the interior of the pipe shall be cleared of dirt and debris. Pipe shall not be laid in conditions of unsuitable weather or soil conditions. At times when work is not in progress, open ends of pipes and fittings shall be closed.

Before pipe is placed in position in the trench, the bottom and sides of the trench shall be carefully prepared, the required bedding placed, and bracing and sheeting installed where required. The trench shall be excavated to the required depths to meet the invert elevations show on plan. Each pipe shall be accurately placed to the line and grade called for on the Plans.

The width of trenches at their bottoms shall be as shown on the drawings.

Milagra Creek Sinkhole Repair Project

No connection shall be made where joint surfaces and joint materials have been soiled by earth or embedment in handling until such surfaces are thoroughly cleaned.

As the work progresses, the interior of all pipes shall be kept clean. After each line of pipe has been laid, it shall be carefully inspected and all earth, trash, rags, and other foreign matter removed from the interior.

Backfilling of trenches shall not be started until the Inspector has inspected the pipe. Backfill material, placement and compaction shall be placed in conformance with the project plans.

Approved bedding material shall be compacted to at least 95% prior to placing pipe. It shall be partially removed by hand tools at fittings and bells to allow pipe to lay flat.

3.03 FLUSHING

After the new storm drain system is installed and the existing system connections are complete, the Contractor shall flush the line of all debris and be completely removed. Debris shall not be allowed to pass downstream into the drainage system.

3.04 VIDEO INSPECTION

The Contractor shall CCTV inspect the installed storm drain after backfilling is completed. Notify the Inspector of the inspection at least 48 hours in advance. Turn over a copy of the video record and log to the City and/or City Engineer.

PART 4 - MEASUREMENT AND PAYMENT

The contract price paid per linear foot for **“Remove Existing RCP, Install 48” HDPE Pipe”**, shall include full compensation for performing the full scope of work including excavation, removal of existing pipe, furnishing and placing bedding, new pipe, native backfill, compaction, and subgrade surface restoration, along with video inspection as shown on the plans and described in the Technical Specifications, complete in place, and no additional compensation will be allowed therefore.

Measurement shall be along the horizontal plane along the center line of the new pipe per linear foot installed, as measured from the center of concrete collar at the pipe connection to the center of the 6 ft. x 6 ft drainage structure.

Compensation for the placement of Class II Aggregate Base and Asphalt Pavement within the trench section shall be paid by separate bid item.

Milagra Creek Sinkhole Repair Project

The contract unit price for “**12-inch Lateral Connection to 48” Pipe**” shall include full compensation for performing the scope of work as shown on the plans and described in the Technical Specifications, complete in place, and no additional compensation will be allowed therefore.

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VI. CONCRETE STRUCTURES

PART 1 - GENERAL

1.01 SCOPE

Concrete construction shall consist of the removal and replacement of concrete curb and gutter, sidewalk, and driveway approach, in accordance with the provisions of Section 73, "Concrete Curbs and Sidewalks", and Section 90, "Concrete", of the State Standard Specifications, as shown on the Plans, and as specified in these Special Provisions. The work shall include furnishing, placing, and compacting Class 2 aggregate base in accordance with Section 7.6, "Aggregate Base", of these Technical Specifications, to the lines and grades shown on the Standard Details and as shown on the Plans.

The Contractor's attention is directed to Item 37 - Traffic Control & Public Access within the General Provisions and Item 12 - Traffic Control within the Special Provisions. Construction of concrete curb and gutter, sidewalk, and driveway approach must be coordinated with the property owners by the Contractor. This work will require advance notification to the property owners by the Contractor.

The Engineer, at the Engineer's discretion, will inspect and test the facilities, materials and methods for producing the concrete to ensure that a concrete of the quality suitable for use in the work is obtained.

Concrete shall be composed of Portland cement, fine aggregate, coarse aggregate, admixtures if approved for use, and water, proportioned and mixed as specified in accordance with these Technical Specifications.

PART 2 – MATERIALS

2.01 REQUIREMENTS

Aggregate base shall be Class 2 conforming to Section 7.6 "Aggregate Base" within the Technical Specifications.

Concrete used for curb and gutter, sidewalk, and driveway approach, shall be 6-sack Portland cement concrete with 28-day compressive strength of 3,250 psi.

Reinforcing steel shall be grade 40 or 60, conforming to Section 52, "Reinforcement", of the State Standard Specifications.

Curing compound shall be non-pigmented curing compound with fugitive dye conforming to the requirements of ASTM Designation: C309, Type 1-D, Class A.

PART 3 - EXECUTION

3.01 CONSTRUCTION

The work includes sawcutting and removing existing concrete improvements to the nearest score joint, scarifying, moisture conditioning, grading, and compacting the subgrade to the specified relative compaction; and placing, moisture conditioning, grading, and compacting Class 2 aggregate base to the specified relative compaction. The subgrade elevation and depth of aggregate base shall be as shown on the City of Pacifica Standard Details and as shown on the Plans. Doweling to the existing improvements to remain shall be as shown on the City of Pacifica Standard Details. Care shall be taken to prevent any damage or concrete spillage to the existing adjacent improvements, including but not limited to landscaping and irrigation, and curb, gutter and sidewalk to remain.

The subgrade and aggregate base under sidewalk and curb ramps shall be compacted to at least 90% relative compaction. The subgrade and aggregate base under curb and gutter, driveway, shall be compacted to at least 95% relative compaction.

Work shall include temporary asphalt concrete patch paving at gutter lips. Attention is directed to the requirements of Section 90-1.03C, "Protecting Concrete", of the State Standard Specifications.

3.02 CONCRETE REMOVAL

At the locations shown on the Plans, the Contractor shall remove existing concrete curb, gutter, sidewalk, and driveways. Removed items shall be disposed of in accordance with Section 6.11, "Disposal of Material Outside the Project Limits", of the Pacifica Standards and Section 5-1.20B(4), "Contractor-Property Owner Agreement", of the State Standard Specifications.

Existing concrete to be removed shall be sawcut at the nearest joint or score line unless shown otherwise on the Plans. Any existing concrete damaged by reason of the Contractor's operations outside this limit shall be repaired at the Contractor's expense. The repair shall be made by removing and replacing the entire portion between weakened plane joints or score lines.

PART 4 - MEASUREMENT AND PAYMENT

The contract unit price paid per linear foot or square foot (as shown below), for the following items shall include full compensation for providing all labor, supervision, materials, tools, equipment, and incidentals necessary to complete the work, including, but not limited to, sawcutting, removing, and disposing of existing improvements, doweling; reinforcing steel; concrete; curing; temporary patch paving at gutter lip; AC plug at gutter lip; grading behind the sidewalk; protecting, repairing, replacing, relocating and maintaining existing landscaping and irrigation systems; and all other work as

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shown on the Plans and the City of Pacifica Standard Plans, as specified in the Standard Specifications, City of Pacifica Standards, these Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefore:

The furnishing, placement and compaction of aggregate base is not included in the individual concrete bid items. Compensation for furnishing and installing aggregate base, complete in place, shall be paid under the bid item for "Class 2 Aggregate Base".

The contract unit price for **“Concrete Collar at Pipe Connection”** and **“6 Feet x 6 Feet Concrete Drainage Structure”** shall include full compensation for performing the scope of work as shown on the plans and as specified in the Technical Provisions, and for doing all the work involved to perform the full scope of work including excavation, bedding, installation and removal of forms, placing of concrete and steel reinforcement, removal of forms, backfill, compaction and other incidentals, complete in place and no additional compensation shall be allowed therefore.

Other concrete items of work shall be measured and paid as follows:

- **“Concrete Sidewalk” (SF)** – as the SF of new concrete placed.
- **“Concrete Driveway” (SF)** – as the SF of new concrete placed. Work scope does not include the curb and gutter.
- **“Concrete Curb & Gutter” (LF)** – as the LF distance along the back of curb. Scope includes the removal and replacement of asphalt adjacent to the curb to accommodate formwork as part of the linear foot price.

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VII. CONCRETE FORMWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. General: Refer to Drawings.

1.02 SCOPE

- A. Work shall include formwork for cast-in-place or pre-cast concrete.

1.03 REQUIREMENTS

A. Coordination

1. Verify conditions, layout and dimensions, prior to placing formwork.
2. Coordinate with reinforcement.
3. Coordinate with earthwork.

B. Regulatory Requirements:

1. Trade Standards: American Concrete Institute, AC1 347 Recommended Practice for Concrete Formwork.
2. Code: 2013 California Building Code, Title 24.

PART 2 – MATERIALS

2.01 MATERIALS

A. Wood Forms:

1. Exposed surfaces: DFPA grade stamped BB-EXT Plyform 5/8" minimum thickness Class 1 plywood (milled oiled). Plywood shall be new at start of work.
2. Unexposed surfaces: Any lumber of sufficient strength to hold concrete in place.

B. Earth Forms:

1. Unless otherwise indicated on Drawings, concrete for foundation may be placed directly against neatly cut excavation, unless soil is unsuitable for supporting concrete.

2. Where Earth Forms are Used:
 - a. Sides of excavation shall be made with neat cut.
 - b. Material shall stand without caving, and footing width is increased 1 inch for each form side removed.
 - c. Minimum reinforcing steel clearances indicated on Drawings shall be maintained.
 - d. Suitable provisions shall be taken to prevent raveling of top edges or sloughing of loose material from walls of excavation.
- C. Form Ties and Spreaders: Metal; wire ties not permitted at exposed concrete work.

PART 3 - EXECUTION

3.01 CONSTRUCTION FORM

- A. The design and engineering of the formwork, as well as its construction, shall be the responsibility of the Contractor.
- B. Forms: Construct to prevent any spread, shifting, or settling when concrete is deposited and tight enough to avoid any leakage or washing out of cement mortar from the concrete.
- C. Forms shall be designed in a manner so that the stresses in the different members can be determined, including the details:
 1. Have sufficient rigidity so that deflection is no more than 1/8 inch between supports after the concrete has been placed therein and to assure a smooth and even appearance of the surfaces.
 2. Plywood forms: as necessary to prevent deflections, back with other materials.
- D. Bolts, rods and other approved devices: Use for internal ties and spreaders, and of such construction that when the forms are removed, no metal shall be within 1 inch of an exterior nor within one-half inch of an interior concrete surface.
 1. The use of ties consisting of twisted wire loops will not be permitted.
 2. Bolts and rods which are to be completely withdrawn shall be coated with grease.
- E. Forms shall be of sufficient size to ensure a smooth concrete surface exposed to view; conform to finish grades as noted on the drawings.

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- F. Take special care forms are true to the required lines, grades and surfaces so as to give a uniform neat and workmanlike finish to concrete surfaces.
- G. Remove dirt, chips, sawdust, rubbish, water, etc. from the forms by water hosing and air pressure before concrete is deposited.
- H. Coat form surfaces with form coating compound, followed by a form release agent; apply form coatings to forms prior to installation of reinforcing steel.
- I. Make provisions to draw the forms into firm contact with the concrete before placing additional concrete when a concrete pour has been stopped for a sufficient length of time that shrinkage or warp has produced separation between the forms and the concrete; take care to prevent any shoulder or ledge being formed at a cold joint.
- J. Make and locate construction joints generally in a manner so as not to impair the strength of the structure and only at locations as approved by the Design Engineer; form keys in any cold joints shown or required.
 - 1. Provide expansion joints in slabs on grade in accordance with the drawings and Construction Documents.
 - 2. Provide construction joints and control joints where indicated on the drawings and Construction Document.
- K. Take all means necessary to protect formwork materials before, during, and after installation and to protect the installed work of other trades; in the event of damage, immediately make all repairs and replacements necessary to the approval of the City Engineer and at no additional cost to the City.
- L. All lumber for chamfers, scoring, or other purposes in contact with exposed surface or concrete, unless otherwise specifically noted, shall be smooth surfaces, sound, and completely straight.
- M. Provide forms for footings wherever concrete cannot be placed against solid earth excavation.

3.02 INSERTS

- A. Secure in position pipe sleeves, anchors and bolts, before the concrete is poured.
- B. Obtain information and instruction from trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete so that provisions can be made without delaying the project.

- C. Cutting or patching made necessary by failure or delay in complying with these requirements shall be made at no cost to the City.

3.03 REMOVAL OF FORMS

- A. The Design Engineer will cooperate with the Contractor in allowing the removal of forms and shoring as early as possible.
 - 1. The length of time the forms must remain in place depends on the rate of time required for the concrete to obtain a proper strength and upon the construction loads that will be placed on the concrete. In general, when concrete has attained not less than 75% of design strength; in no case less than 2500 psi and a minimum of 3 day.
 - 2. When in doubt about removal of forms, consult with the Design Engineer.
- B. Reused forms: Good condition and thoroughly cleaned before being used.
- C. Remove debris and surplus material.
- D. During the period that forms are in place on the concrete work, keep forms wet.

PART 4 – MEASUREMENT AND PAYMENT

Payment for work required under Concrete Formwork shall be included in the prices bid for the individual Concrete items of work and no additional compensation will be allowed therefore unless specifically noted otherwise.

VIII. CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. General: Refer to Drawings.

1.02 SCOPE

A. Work shall include reinforcing steel, chairs and ties for cast-in-place concrete.

1.03 REQUIREMENTS

A. Coordination

1. Verify conditions, layout and dimensions.
2. Obtain items to be embedded in sufficient time for proper placement.

B. Regulatory Requirements:

1. Trade Standards:

- a. American Concrete Institute, ACI 318 Building Code Requirements for Reinforced Concrete, latest edition.
- b. American Concrete Institute, ACI 315 Manual of Standard Practice for Detailing Reinforced Concrete Structures, latest edition.
- c. Concrete Reinforcing Steel Institute, CRSI, Manual of Standard Practice.
- d. American Welding Society, AWS D1.4 Recommendations for Welding Reinforcing Steel.

2. Code: 2013 California Building Code, Title 24.

C. Quality Control:

1. Inspection: Contractor shall notify the City Engineer at least forty-eight hours prior to each concrete pour and no concrete shall be placed until all reinforcing steel has been installed by the Contractor and approved by the City Engineer.

PART 2 – MATERIALS

2.01 MATERIALS

- A. Steel shall be ASTM designation A706/A706A and conform to the requirements of Section 52 of the State Specifications.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Storage: Store in a manner that will avoid excessive rusting or coating with grease, oil dirt, or other objectionable materials.
- B. Fabricate and place reinforcement in accordance with applicable standards and specifications.
- C. Shop and/or field fabricated reinforcing:
 - 1. Bend bars to code, and accurately to shop details.
 - 2. Make bends using pin sizes as recommended by American Concrete Institute.
- D. Reinforce areas where reinforcement is not specifically shown in a manner similar to other like parts. Contact the Design Engineer prior to performing work.
- E. Securely fasten and support bars so that they may be walked upon without displacement and to prevent movement during placing of concrete.
- F. Whenever conduits, piping, inserts, slots, sleeves, etc., interfere with the placing of reinforcement as shown or called for, consult the Design Engineer and secure from him, in writing, the method of placing before pouring any concrete; bending of the bars around openings or sleeves is not permitted.
- G. Reinforcement shall be free from rust, scale, oil or any coating that may reduce the bond strength.
- H. Accurately position then secure reinforcement in place as shown on Drawings.
- J. Stagger splices in horizontal bars so that adjacent splices will be four feet apart.
- K. Thoroughly clean reinforcement bars before placing concrete.

M. Form bond breaker agent shall not be permitted on any reinforcing steel.

3.02 STEEL PLACEMENT

A. Do not bend or straighten steel in a manner which will injure the material; do not use bars with kinks or bends not shown on the Drawings.

B. Preserve clear space between bars of not less than 1-1/2 times the nominal diameter for round bars, and in no case allow the clear distance to be less than 1-1/2 inches nor less than 1-1/3 times the maximum size of aggregate.

C. Securely tie reinforcement at every intersection.

D. Lap bars at splices sufficient to develop the strength of the bars:

1. Wherever possible stagger the splices in adjacent bars.
2. Splices will not be permitted at points of maximum tensile stresses.
3. Splicing of reinforcing steel shall be in accordance with the Building Code Requirements for Reinforced Concrete, ACI 318, latest edition, of the American Concrete Institute.

E. Concrete cover: Place reinforcement as required by Code and ACI.

PART 4 – MEASUREMENT AND PAYMENT

Payment for work required under Concrete Reinforcement shall be included in the prices bid for the individual Concrete items of work and no additional compensation will be allowed therefore unless specifically noted otherwise.

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IX. CONCRETE

PART 1 – GENERAL

1.01 SCOPE

Provide all labor, material, power, tools, transportation, services, and equipment necessary for the installation of all plain and reinforced concrete work as shown on the Drawings and as specified herein. The work includes but is not limited to the excavation to place formwork, aggregate base, and concrete, installation and removal of all formwork; placement and compaction of aggregate base; placement and bending of reinforcement; and finishing, curing and protecting the concrete.

1.02 WORK SPECIFIED UNDER OTHER SECTIONS

Consult all other Sections to determine extent and character of work specified elsewhere but related to that included in this Section. Work specified herein shall be properly coordinated with that specified.

1.03 GENERAL REQUIREMENTS

A. Quality Control: Contractor shall be completely responsible for the determination of concrete mixes to provide the required compressive strength and other requirements set forth under this Section. Concrete mix designs shall be submitted to the Design Engineer for review before ordering the concrete.

Concrete to be used shall have a minimum 28 day compressive strength of 3000 psi.

Maximum slump shall be 4 inches.

B. Samples: Samples of all material under this Section shall be supplied, as required, for testing, as specified herein or as directed by Design Engineer.

C. Cleanup: Contractor shall clean up and remove from the site all spillage, overpour, discarded forming materials, rejected work or materials, and any other refuse or debris resulting from his work.

D. Concrete structures shall be in conformance with the Drawings.

E. Concrete construction shall consist of fine grading as necessary, subgrade preparation, placement and compaction of Class 2 aggregate base if required and any fill materials, placement of reinforcement, forming, placing, finishing, stripping of forms, and access ramps, curing and protection from damage during construction. The concrete construction shall also include any work necessary to make a neat conform with existing concrete including sawcutting,

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pavement removal, curb height transitions and doweling. Concrete construction damaged prior to final acceptance of the project shall be removed and replaced at the direction of the City Engineer at the sole expense of the Contractor.

PART 2 – MATERIALS

2.01 CEMENT: Portland Cement: Type II cement conforming to ASTM C150, Modified.

2.02 AGGREGATES

- A. Coarse Aggregate: Gravel, crushed gravel, crushed rock, or combinations thereof free from vegetable matter and other deleterious substances, of approved source.
- B. Fine Aggregate: Natural sand or a combination of not less than 50% natural and manufactured sand, free from deleterious coatings, roots, bark, sticks, rags, and other extraneous material. All fine aggregate shall be thoroughly and uniformly washed.
- C. Combined aggregate grading shall conform to the requirements of 1-inch maximum grading.

2.03 MISCELLANEOUS

- A. Water: Clean and free from deleterious amounts of acids, alkalis, salts, or organic materials.
- B. Concrete curing compound shall meet Section 90 of Standard Specifications.
- C. Reinforcing bars shall conform to ASTM A615. All reinforcement shall be clean and free of paint and loose rust scale.
- D. Forms: Forms shall conform to lines and dimensions shown, mortar tight, rigid and braided, and tied to prevent sagging or displacement. Form ties and similar accessories shall be such that all metal will be at least 1 inch from surface when forms are stripped.
- E. Premolded Expansion Joint Material: ASTM D1751 and shall be ¼” to ½” thick to the full depth of the concrete section.
- F. Class 2 aggregate base shall be in conformance with Section 26 of the Standard Specifications and with the “Aggregate Base” Technical Provisions section, where required.

PART 3 – EXECUTION

3.01 PLACEMENT OF AGGREGATE BASE

After grading is approved, Contractor shall place and compact Class 2 aggregate base prior to placement of concrete. Placement and compaction of aggregate base shall comply with Section 26 of the Standard Specifications and with the “Aggregate Base” Technical Provisions section.

3.02 MIXING AND PLACING CONCRETE

- A. No concrete shall be placed until the Inspector has inspected the subgrades, forms and steel.
- B. Mixing may be performed at the site or by ready-mixed methods. Total amount of water in mix shall include free water in aggregate, and the amount of water added to mixing drum shall be regulated accordingly. If the desired slump or slump flow is less than specified, and unless otherwise stated, obtain the desired slump or slump flow with a one-time addition of water. Do not exceed the maximum water content for the batch as established by the designed mixture proportion. A one-time addition of water is not prohibited from being several distinct additions of water provided that no concrete has been discharged except for slump or slump flow testing. All water additions shall be completed within 15 min. from the start of the first water addition. Such additional water shall be injected into the mixer under such pressure and direction of flow to allow for proper distribution within the mixer. The drum shall be turned an additional 30 revolutions, or more if necessary, at mixing speed to ensure that a homogenous mixture is attained.
- C. All sidewalk or other flatwork that is to be constructed adjacent to curb and gutter shall be formed and poured monolithic with the curb and gutter unless otherwise permitted by the City Engineer.
- D. Score lines for sidewalks shall be scored perpendicular to the longitudinal direction of the walk at uniform intervals approximately equal to the width of sidewalk. Score lines shall be constructed with a scoring tool producing a score line at least 6.25 mm (1/4 inch) deep.

3.03 FINISHING

Workmanship shall be of the highest standards. During finishing, cement shall not be applied to the dry concrete surface. Surfaces shall be consistently finished through the job. Scored joints shall be deeply tooled, straight and level.

- A. Tooling: Tool the edges of all joints, pavements.

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- B. Form 45 degrees, 1/2" radius at all corners and edges of curbs.
- C. Deep score lines or weaken plane joints shall be a minimum of 1" deep, straight, even, tooled, or sawed. The width shall be the minimum possible and not to exceed 1/4".
- D. Finish on Exposed Interior and Exterior Surfaces: As soon as the surface becomes workable, it shall be wood floated, then trowelled to a uniform smooth surface. Follow by directional, even, and uniform medium brooming.
- E. Cleaning: Upon removal of forms, all bolts, nails, wires, ties, spreaders, etc. shall be removed, cut, or broken back at least 1 inch below the surface of the concrete and resulting imprint chipped out as required and patched with mortar as specified. All projecting fins shall be removed and all other minor irregularities in exposed concrete surfaces shall be removed and/or cut back and patched as directed by the City Engineer. All other work stained by leakage of concrete shall be cleaned and repaired.
- F. Patching Material: Cement mortar consisting of 1 part cement, and 2 parts sand by volume with just enough water to ensure workability. Exposed patches shall be colored to match the neighboring surface in color. After cleaning and filling with specified mortar, all patches shall be washed and rubbed smooth and even with carborundrum brick to a uniform finish matching existing work.
- G. Defective Work: Such as under-strength concrete, concrete out of line, level or plumb, or showing objectionable cracks, honeycomb, rock pockets, voids, spilling, exposed reinforcing, etc., shall be repaired or removed and replaced as directed by and to the satisfaction of the Engineer. All cleaning, patching, and repairs shall be subject to the Engineer's approval and acceptance. Concrete curb and gutter damaged prior to final acceptance of the project shall be removed and replaced at the direction of the City and/or City Engineer at the sole expense of the Contractor.

3.04 CURING AND PROTECTION

- A. Pavements, Curbs and Structures: Shall conform to Section 90 of the Standard Specifications.
- B. Finished concrete shall be protected at all times from damage. After completion of curing period, the work shall be protected from damage by equipment and other operations until final acceptance.

PART 4 – MEASUREMENT AND PAYMENT

Payment for work required under Concrete shall be included in the bid prices for the individual Concrete items of work and no additional compensation will be allowed therefore unless specifically noted otherwise.

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X. AGGREGATE BASE

PART 1- GENERAL

This work shall consist of furnishing and placing Class 2 aggregate base, 3/4" maximum, in accordance with Section 26, "Aggregate Bases", of the State Standard Specifications and these Special Provisions.

PART 2- MATERIALS

Material shall consist of Class 2 aggregate base material, 3/4" maximum, in accordance with Section 26-1.02B, "Class 2 Aggregate Base", of the State Standard Specifications.

The use of reclaimed aggregate base material is not permitted on this project.

PART 3 – EXECUTION

Class 2 aggregate base shall be furnished, placed, and compacted to the lines and grades necessary for reconstructing concrete curb and gutter, sidewalks, driveways and curb ramps at the locations shown on the Plans and where directed by the Engineer. Aggregate base shall be compacted to 95% relative compaction under curb & gutter and driveways and 90% relative compaction under sidewalks and curb ramps. (Compaction per ASTM D1557)

PART 4 - MEASUREMENT AND PAYMENT

The contract unit price paid per ton for "**Class II Aggregate Base**" shall include full compensation for furnishing, transporting, placing, spreading, moisture conditioning and compacting the aggregate base material as part of curb, gutter, sidewalk, driveways, parking lot, concrete structures, prior to the placing of AC paving, or other improvements. This item shall also include manual placement and compaction where necessary, quality control testing at the Contractor's expense and all other work as shown on the plans, as specified in the State Standard Specifications, City of Pacifica Standard Specifications and these specifications and no additional compensation will be allowed therefore.

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XI. ASPHALT CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

Work shall consist of replacing existing asphalt pavement in the street and parking lot.

1.02 REFERENCE STANDARDS

State Standard Specification, Section 39

1.03 SUBMITTALS

A. Job Mix Formula (JMF):

1. Proposed JMF on form CEM-3511
2. Mix design documentation on Form CEM-3512 dated within 12 months of submittal
3. JMF verification on Form CEM-3513, if applicable
4. Materials Safety Data Sheets (MSDS) for:
 - a. Asphalt Binder

Review of the JMF by the Design Engineer may take up to ten business days after receipt of a complete submittal.

- B.** Materials suppliers' certificates of compliance in conformance to the requirements of this section.
- C.** Certified plant load out slips for each load of material delivered to site shall be submitted to the Inspector upon delivery.

PART 2 – MATERIALS

2.01 AGGREGATE

Type A or B, 3/8-inch maximum size, medium grading, Section 39 of the State Standard Specifications.

2.02 ASPHALT BINDER

Asphalt Concrete Pavement: Grade PG 64-10 or PG 64-16, Section 92 of the State Standard Specifications.

2.03 PRIME COAT

Grade SC-70 liquid asphalt, Section 93 of the State Standard Specifications.

2.04 TACK COAT

Grade SS-1, SS-1h, CSS-1 or CSS-1h asphaltic emulsions, Section 94 of the State Standard Specifications.

2.05 AGGREGATE BASE

Class 2, ¾ inch maximum aggregate base, See the Aggregate Base section of these special conditions and Section 26 – 1.02 B of the State Standard Specifications.

PART 3 – EXECUTION

3.01 SAWCUTTING AND PAVEMENT REMOVAL

The depth, width and shape of the cut shall be as indicated on the plans or as directed by the Design Engineer. The final cut shall result in a uniform surface conforming to the plans. The outside lines of the sawcut area shall be neat and uniform. The existing surfacing to remain in place shall not be damaged in any way.

3.02 SURFACE PREPARATION

- A. Compact the trench backfill as indicated on the plans and as specified.
- B. Place aggregate base as specified in Section 26 – 1.03 B of the State Standard Specifications.

3.03 PRIME COAT

Apply prime coat to the base course before placing asphalt concrete on bare subgrade at the rate of 0.15 to 0.25 gallons per square yard. Blot any excess with sand.

3.04 TACK COAT

Completely coat all vertical surfaces of existing pavement and vertical surfaces of curbs, gutters, conforms, and construction joints before placing asphalt concrete on or against them.

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3.05 ASPHALT CONCRETE PAVEMENT

- A. Construction Process: Standard.
- B. Minimum Temperature: The minimum temperature of asphalt concrete delivered to the site shall be at least 250° F, and no more than 370° F.
- C. Lift Thickness: Where the total thickness of asphalt concrete to be placed is greater than 2-1/2", place in lifts of equal thickness, none of which shall exceed 2-1/2".
- D. Compaction: 92% minimum.

3.06 FINISH

The finished surface of trench resurfacing shall be smooth and match the adjacent surface of the existing pavement.

3.07 FIELD TESTING

The Owner may test compaction (Percent of maximum theoretical density) for each layer for each separate area in the placed.

3.08 CLEAN UP

Prior to allowing the public to access recently paved areas, remove all loose aggregate and blot up any excess oil.

PART 4 – MEASUREMENT AND PAYMENT

The contract per ton price paid for the bid item, "**AC Pavement**" shall include full compensation for all costs related to furnishing and placing asphalt pavement as shown on the Plans, as specified in the State Standard Specifications, City of Pacifica Standard Specifications and these Special Provisions and no additional compensation will be allowed therefore.

Compensation for the placement of new asphalt as a plug against new curb and gutter shall be paid under the "Concrete Curb and Gutter" bid item.

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XII. CHAIN LINK FENCE

PART 1 - GENERAL

Work shall consist of removing and replacing the chain link fence, fencing components and posts behind the back of walk located east off of Edgemar Avenue, as necessary to complete the work described in the plans and specifications.

PART 2 – MATERIALS

Contractor may remove and reuse the existing fencing if it is maintained in good conditions. Replacement fencing, posts, and fencing components, if furnished for installation new shall be per Caltrans Standard detail A85 and Caltrans Specifications Section 80-3.

PART 3 – EXECUTION

Contractor shall remove and replace the chain link fence as shown on the plans to the pre-construction condition.

PART 4 – MEASUREMENT AND PAYMENT

The contract lump sum price paid for "**Remove and Replace Chain Link Fence**" shall include full compensation for all costs related to removing and replacing with existing or new fencing, posts, fencing components and all other work necessary to complete the work as described in the plans and specifications in accordance with these Special Provisions, the State Standard Specifications and no additional compensation will be allowed therefore.

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XIII. REINSTALL SIGN

PART 1 - GENERAL

Work shall consist of salvaging the existing sign panel, removing and disposing of existing post and foundation and reinstalling the sign panel on the new post at the location shown on the plans.

PART 2 – MATERIALS

Post shall be 12-gage galvanized steel, 1.75-inch square tube with perforations, weighing 2.09 pounds per linear foot. Posts shall have a bolt installed at the base of the post, as recommended by the manufacturer: Ulti-Mate sign support system with EZ Installation anchor, as manufactured by Western Highway Products, or equal.

PART 3 – EXECUTION

Signs shall be installed on a new post, set at least 24-inches deep in an 8-inch diameter concrete foundation.

Post shall be tall enough to allow for 7-feet of clearance from the bottom of the sign panel to the finished surface.

PART 4 – MEASUREMENT AND PAYMENT

The contract unit price paid for "**Reinstall Traffic Sign**" shall include full compensation for all costs related to removing the old sign panel, post and foundation and installing a new post and foundation and reinstalling the sign panel, complete in place, and no additional compensation will be allowed therefore.

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XIV. RED CURB

PART 1 - GENERAL

Work shall consist of applying two coats of red paint to both the face and top of curb.

PART 2 – MATERIALS

City will provide contractor with brand and color code for red, exterior, lead-free paint.

PART 3 – EXECUTION

Curb shall be dry for at least two days prior to application. Temperature shall be at least 50 degrees Fahrenheit during application.

Thoroughly clean surfaces to be painted.

Contractor to apply paint using a roller. Apply two coats to both the top and face of curb.

Painter's tape shall be used to prevent painting beyond the back of curb or into the gutter flow line.

PART 4 – MEASUREMENT AND PAYMENT

The contract linear foot price paid for "**Red Curb**", shall include full compensation for all costs related to painting the curbs as described in this section and no additional compensation will be allowed therefore. The linear foot price paid shall be as measured along the back of curb, and shall include as work scope the painting of both the face and top of curb, two coats.

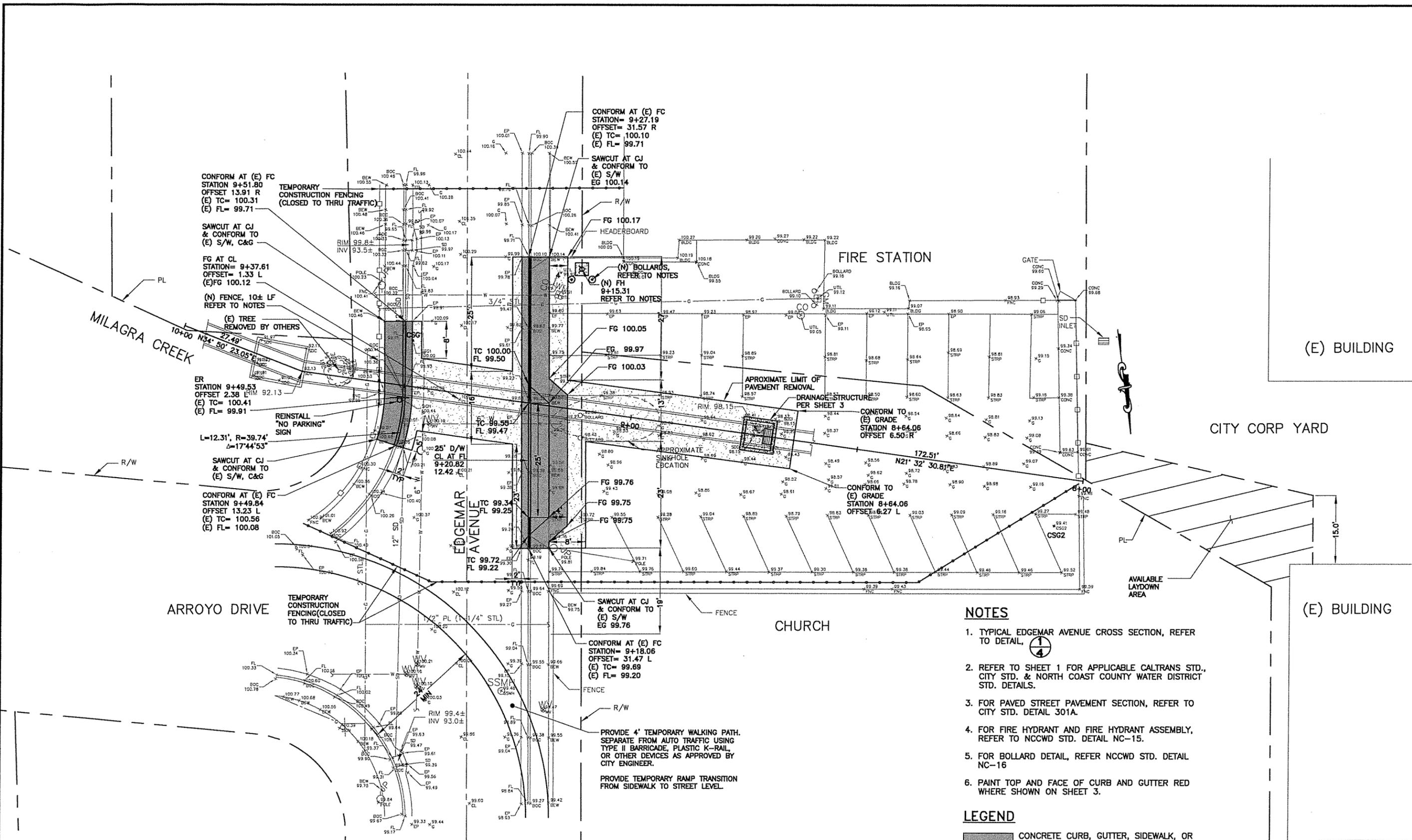
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ATTACHMENT 1

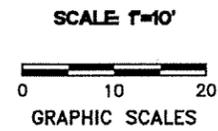
PROJECT PLANS

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L:\DESIGN\16.336-1 Milagra Creek Drainage\BID SET\02. HORIZONTAL PLAN.dwg @ 03:03:32 PM



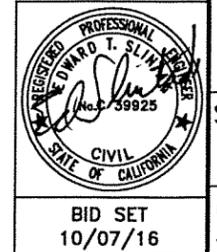
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- NOTES**
1. TYPICAL EDGEMAR AVENUE CROSS SECTION, REFER TO DETAIL, ①
 2. REFER TO SHEET 1 FOR APPLICABLE CALTRANS STD., CITY STD. & NORTH COAST COUNTY WATER DISTRICT STD. DETAILS.
 3. FOR PAVED STREET PAVEMENT SECTION, REFER TO CITY STD. DETAIL 301A.
 4. FOR FIRE HYDRANT AND FIRE HYDRANT ASSEMBLY, REFER TO NCCWD STD. DETAIL NC-15.
 5. FOR BOLLARD DETAIL, REFER NCCWD STD. DETAIL NC-16
 6. PAINT TOP AND FACE OF CURB AND GUTTER RED WHERE SHOWN ON SHEET 3.
- LEGEND**
- CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY

HORIZONTAL CONTROL

POINT	STATION	OFFSET	ELEVATION
CSG1	9+49.58	9.96 RT.	100.0
CSG2	8+04.79	10.53 LT.	99.41



DESIGNED: ES/ARS
DRAWN: ARS
APPROVED: ES

PREPARED BY: CSG Consultants Inc.
 550 Pilegrim Drive, Suite 404
 Milagra, CA 94542
 Phone: (650) 522-2500 Fax: (650) 522-2599

PREPARED FOR: CITY OF PACIFICA
 PUBLIC WORKS DEPARTMENT
 170 SANTA MARIA AVE.
 PACIFICA, CALIFORNIA

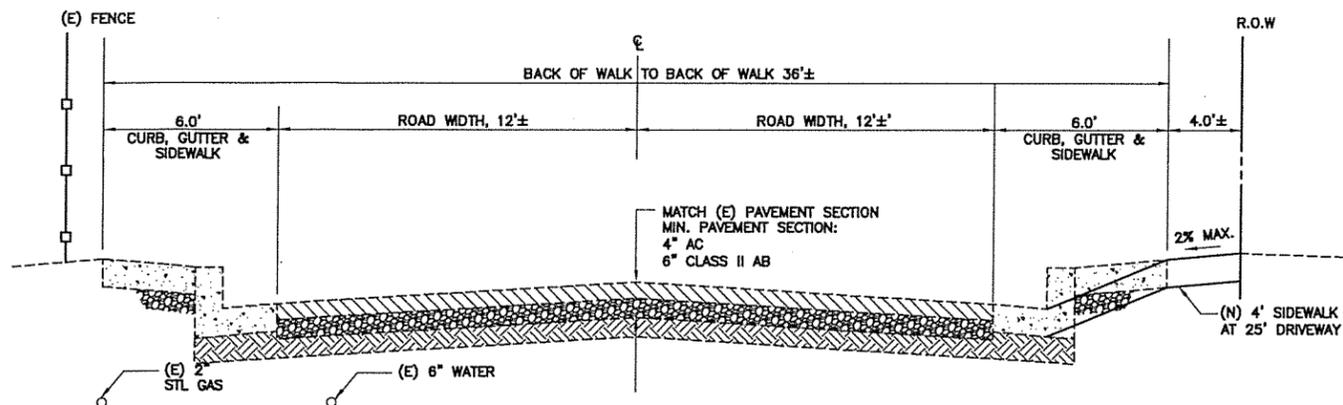
TITLE: LAYOUT PLAN
MILAGRA CREEK SINKHOLE REPAIR PROJECT

SHEET 2
 OF
6

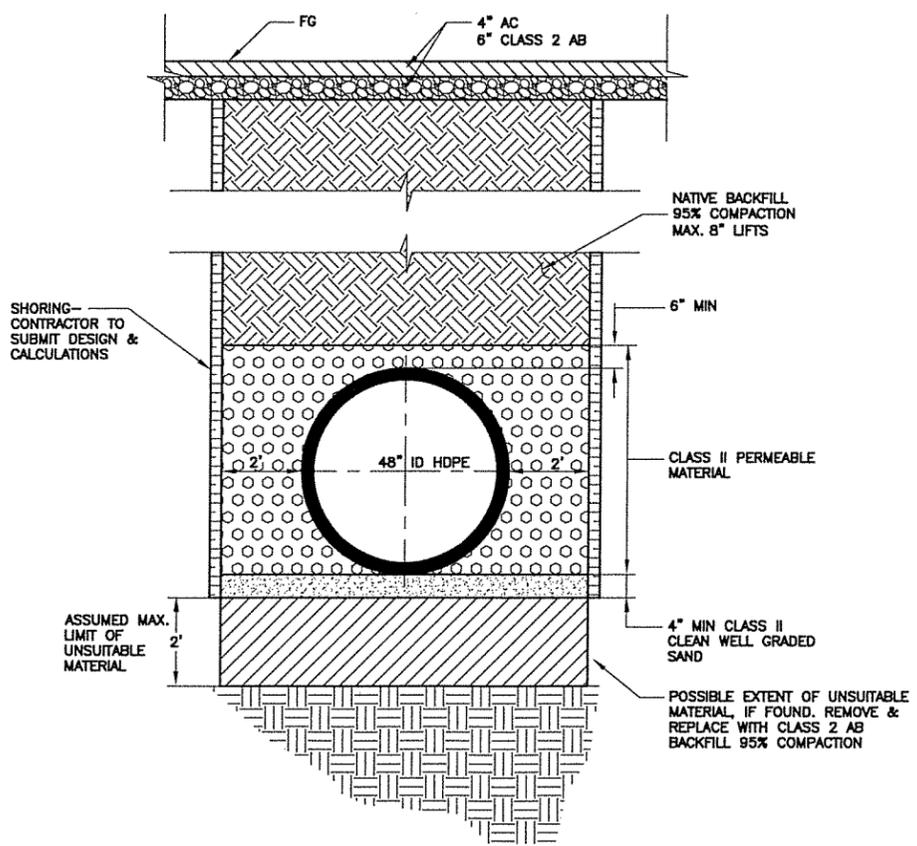
DATE: 6/01/16
JOB#: 16.336-1

REVISIONS

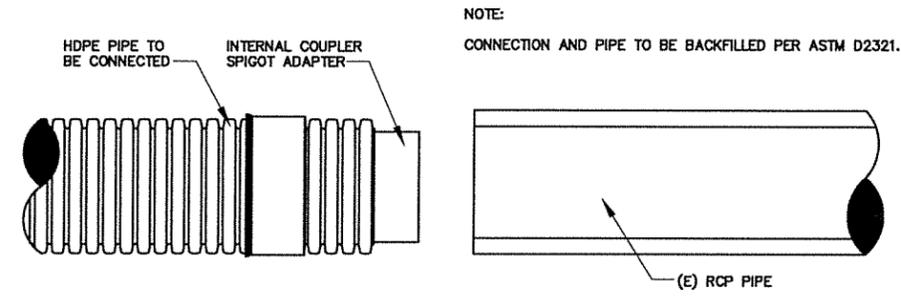
NO.	DATE	DESCRIPTION



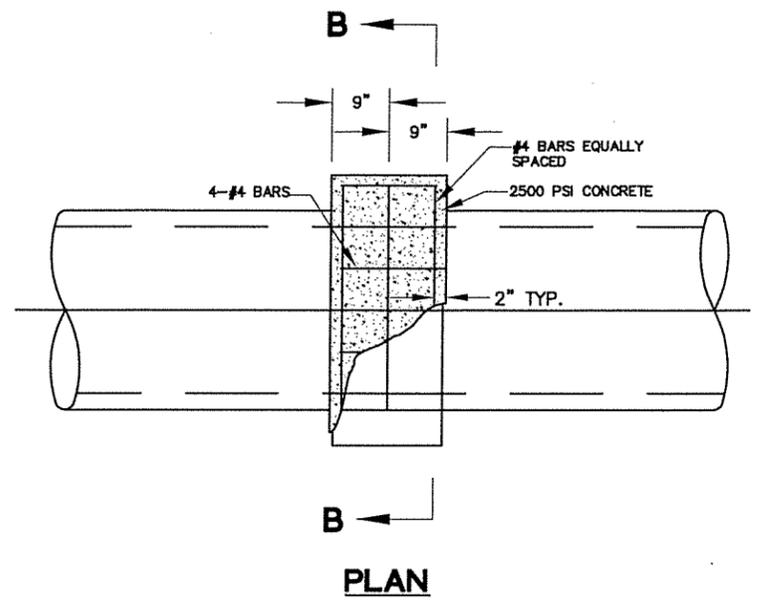
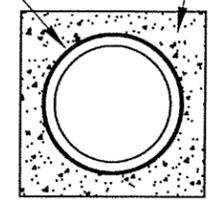
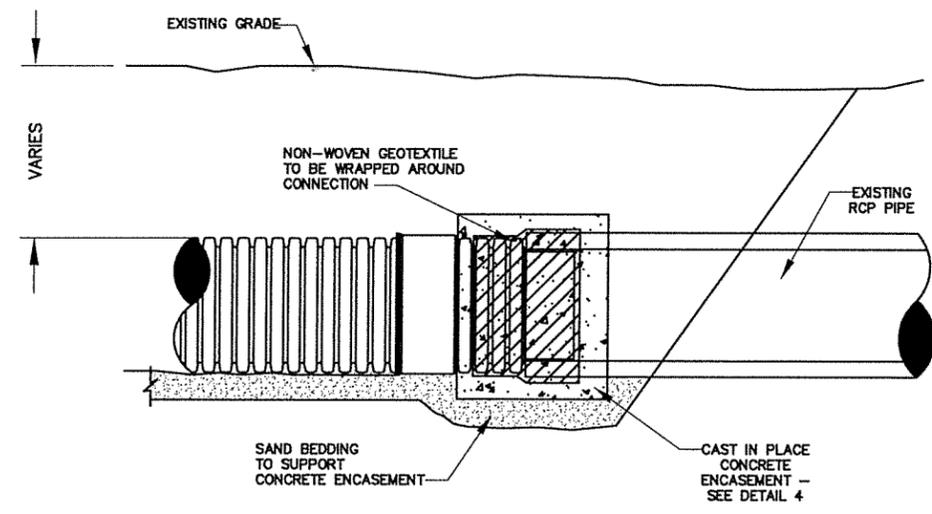
1
—
**TYPICAL CROSS SECTION
EDGEMAR AVE.
N.T.S.**



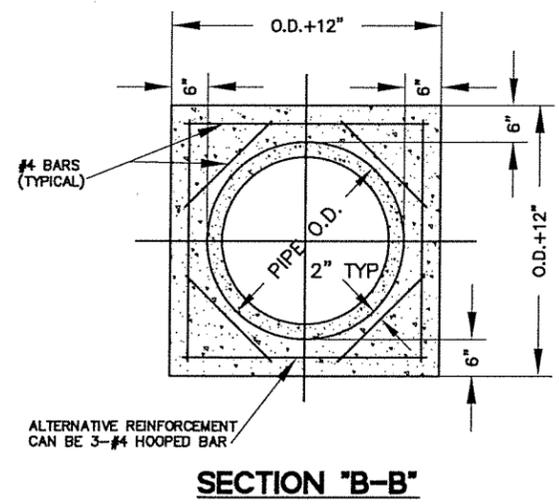
2
—
**ONSITE TRENCH SECTION
N.T.S.**



3
—
**HDPE TO RCP
PIPE CONNECTION
N.T.S.**



PLAN



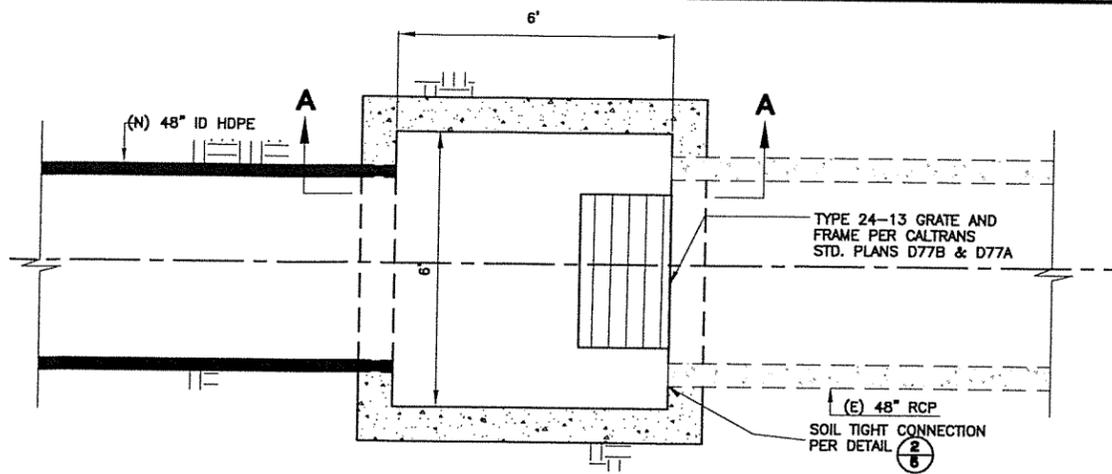
SECTION "B-B"

4
—
**CONCRETE ENCASEMENT
N.T.S.**

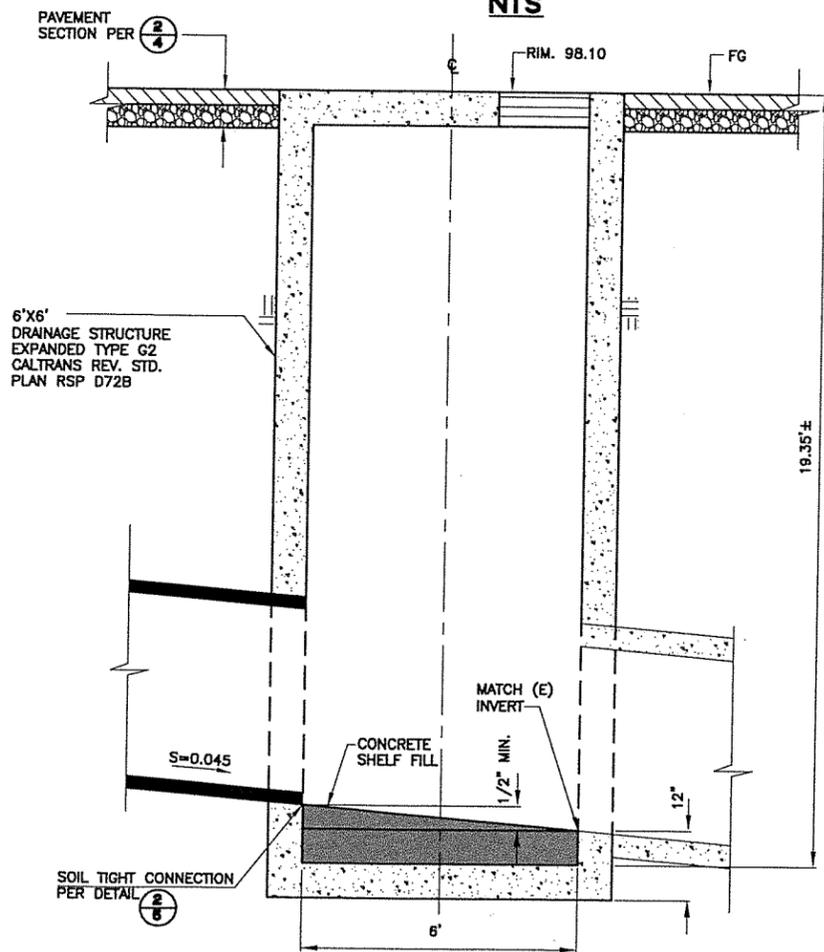
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REGISTERED PROFESSIONAL ENGINEER
EDWARD T. SLIPKOPF
59925
CIVIL
STATE OF CALIFORNIA

DESIGNED: ES/ARS	DRAWN: ARS	APPROVED: ES	NO.	REVISIONS	DATE
PREPARED BY: CSG Consultants Inc. 550 Pritchett Drive Escondido, CA 92025 Phone (650)522-2500 Fax (650)522-2899			PREPARED FOR: CITY OF PACIFICA PUBLIC WORKS DEPARTMENT 170 SANTA MARIA AVE. PACIFICA, CALIFORNIA		
TITLE: MILAGRA CREEK SINKHOLE REPAIR PROJECT			SHEET 4 OF 6		
BID SET 10/07/16			DATE: 8/01/16 JOB#: 16.336-1		

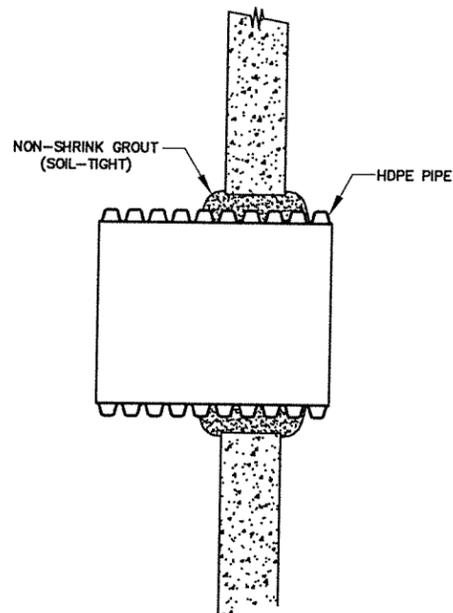


PLAN
NTS

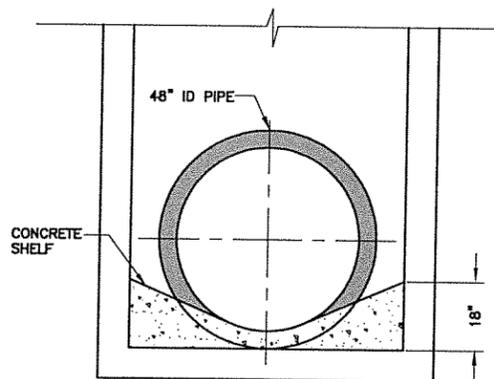


SECTION A-A
SCALE 1/2" = 1'-0"

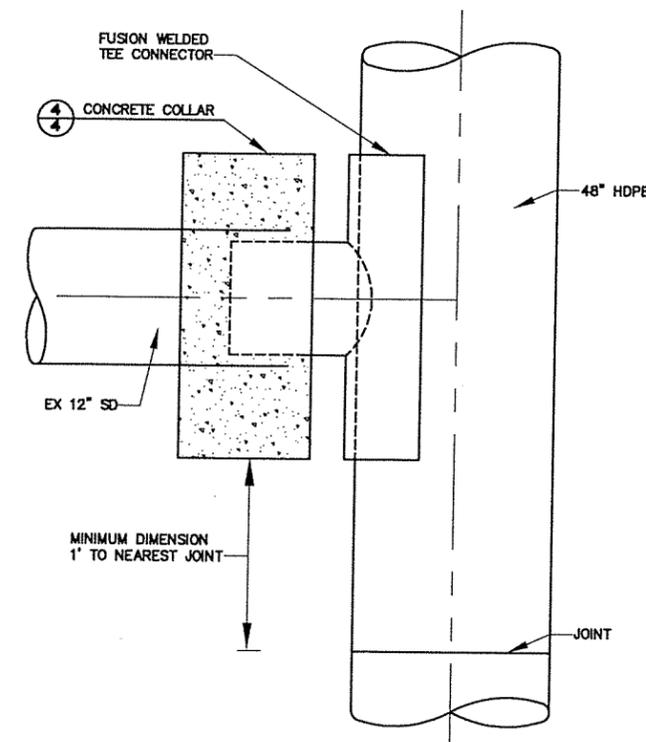
1
6'x6' DRAINAGE STRUCTURE
NTS



2
SOIL-TIGHT CONNECTION AT STRUCTURE
NTS



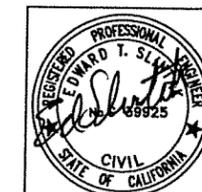
4
CONCRETE SHELF
NTS



PLAN

3
(E) 12" SD PIPE CONNECTION TO HDPE
NTS

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DESIGNED: ES/ARS	DRAWN: ARS	APPROVED: ES	NO.	REVISIONS	DATE
PREPARED BY: CSG Consultants Inc. 550 Pflieger Drive Foster City, CA 94404 Phone (650)522-2500 Fax (650)522-2599			PREPARED FOR: CITY OF PACIFICA PUBLIC WORKS DEPARTMENT 170 SANTA MARIA AVE. PACIFICA, CALIFORNIA		
DETAILS MILAGRA CREEK SINKHOLE REPAIR PROJECT			TITLE: SHEET 5 of 6		
BID SET 10/27/16			DATE: 6/01/16		

J:\DESIGN\16.336-1 Milagra Creek Drainage\BID SET\104-05_DETAILS.dwg @ 03:07:08 PM

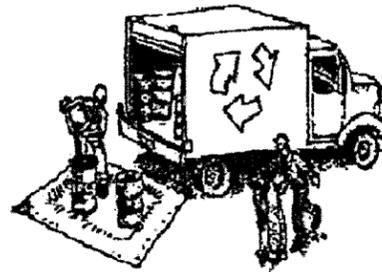


SAN MATEO COUNTYWIDE
**Water Pollution
 Prevention Program**
 Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control



Maintenance and Parking

- Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, steam cleaning equipment, etc.

Spill Prevention and Control

- Keep spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- Clean up spills or leaks immediately and dispose of cleanup materials properly.
- Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- Clean up spill: on dirt areas by digging up and properly disposing of contaminated soil.
- Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthwork & Contaminated Soils



Erosion Control

- Schedule grading and excavation work for dry weather only.
- Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- Seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.

Sediment Control

- Protect storm drain inlets, gutters, ditches, and drainage courses with appropriate BMPs, such as gravel bags, fiber rolls, berms, etc.
- Prevent sediment from migrating offsite by installing and maintaining sediment controls, such as fiber rolls, silt fences, or sediment basins.
- Keep excavated soil on the site where it will not collect into the street.
- Transfer excavated materials to dump trucks on the site, not in the street.
- Contaminated Soils
- If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
 - Unusual soil conditions, discoloration, or odor.
 - Abandoned underground tanks.
 - Abandoned wells
 - Buried barrels, debris, or trash.

Paving/Asphalt Work

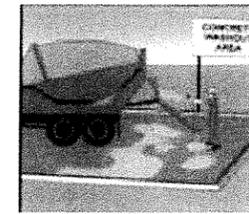


- Avoid paving and seal coating in wet weather, or when rain is forecast before fresh pavement will have time to cure.
- Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

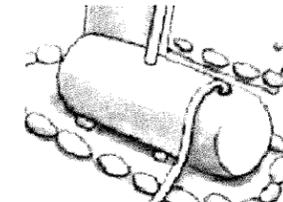
- Completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- If sawcut slurry enters a catch basin, clean it up immediately.

Concrete, Grout & Mortar Application



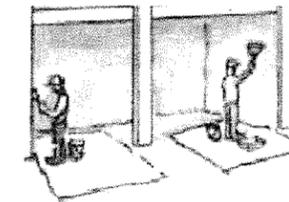
- Store concrete, grout and mortar under cover, on pallets and away from drainage areas. These materials must never reach a storm drain.
- Wash out concrete equipment/trucks offsite or in a contained area, so there is no discharge into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- Collect the wash water from washing exposed aggregate concrete and remove it for appropriate disposal offsite.

Dewatering



- Effectively manage all run-on, all runoff within the site, and all runoff that discharges from the site. Divert run-on water from offsite away from all disturbed areas or otherwise ensure compliance.
- When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the Engineer to determine whether testing is required and how to interpret results. Contaminated groundwater must be treated or hauled off-site for proper disposal.

Painting & Paint Removal



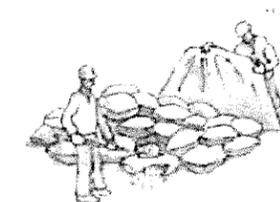
Painting cleanup

- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or surface waters.
- For water-based paints, paint out brushes to the extent possible. Rinse to the sanitary sewer once you have gained permission from the local wastewater treatment authority. Never pour paint down a drain.
- For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of residue and unusable thinner/solvents as hazardous waste.

Paint removal

- Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyltin must be disposed of as hazardous waste.
- Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.

Landscape Materials



- Contain stockpiled landscaping materials by storing them under tarps when they are not actively being used.
- Stack erodible landscape material on pallets. Cover or store these materials when they are not actively being used or applied.
- Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

Storm drain polluters may be liable for fines of up to \$10,000 per day!

DESIGNED: ES/ARS	NO.	REVISIONS	DATE
DRAWN: ARS			
APPROVED: ES			
PREPARED BY: CSG Consultants Inc.	550 PLYMOUTH DRIVE DOWNSIDE, CA 94004 Phone (650) 522-2500 Fax (650) 522-2599		
PREPARED FOR: CITY OF PACIFICA PUBLIC WORKS DEPARTMENT	170 SANTA MARIA AVE. PACIFICA, CALIFORNIA		
TITLE: CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)	MILLAGRA CREEK SINKHOLE REPAIR PROJECT		
SHEET 6 OF 6	DATE: 6/01/16		
BID SET 10/07/16	JOB#: 16.336-1		

L:\DESIGN\16.336-1 Milagra Creek Drainage\BID SET\06_BMP.dwg @ 03:09:51 PM

ATTACHMENT 2

STANDARD PLANS

CALTRANS

Chain Link Fence	RSP A 85
Drainage Inlets	RSP D 72B
Drainage Inlet Notes	RSP D72F
Precast Drainage Inlet Tables	RSP D73G
Grate Details No. 1	D77A
Grate Details No. 2	D77B

CITY OF PACIFICA

Curb, Gutter and Sidewalk Notes	101A
Curb, Gutter and Sidewalk	101B
Lowered Driveway Approach	102A
Driveway Approach Alternates	102B
Joints in Curb, Gutter, Sidewalk & Driveway	103
General Trench Notes	300A
Detailed Trench Notes	300B
Paved Streets Trench Detail	301A
Unpaved Public R/W Standard Trench	301B
Storm Drainage Piping Notes	303B

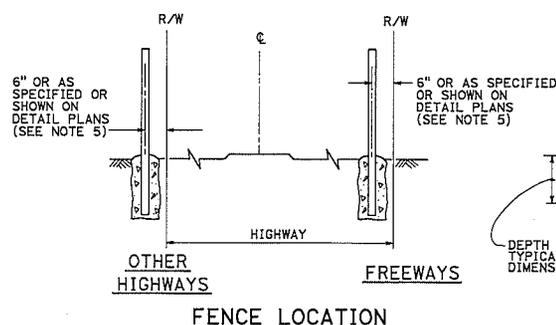
NORTH COAST COUNTY WATER DISTRICT

Standard Fire hydrant Assembly	NC-15
Fire Hydrant Bollards	NC-16
Installation of Portable Water Meters	NC-17
Water Valve Box – Roadway Installation	NC-18

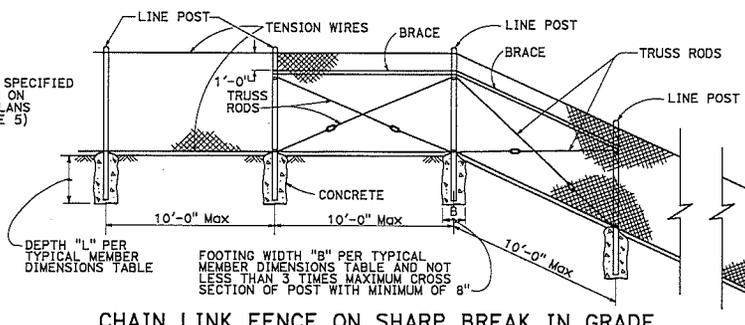
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL SHEETS

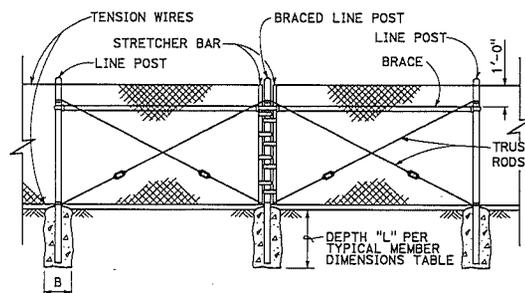
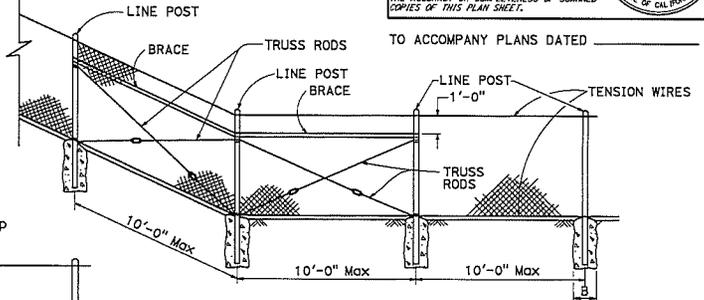
July 15, 2016
 PLANS APPROVAL DATE
 TO ACCOMPANY PLANS DATED _____



FENCE LOCATION

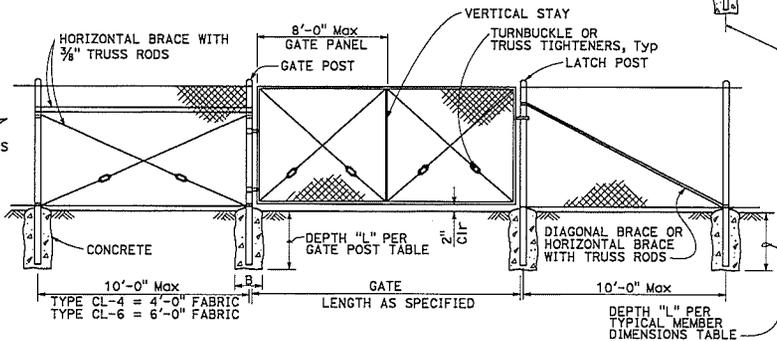


CHAIN LINK FENCE ON SHARP BREAK IN GRADE



BRACED LINE POST INSTALLATION

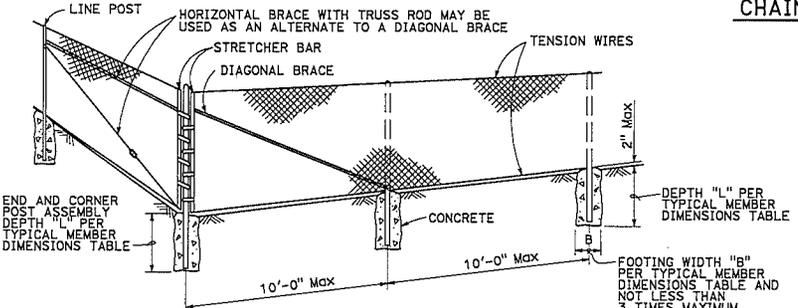
Braced line post at intervals not exceeding 1000'



CHAIN LINK GATE INSTALLATION

FENCE HEIGHT (Max)	SLATTED	B (in)	L (ft)	ROUND PIPE		
				SECTION	ROUND OD PIPE	WEIGHT (lb/ft)
5'-0"	NO	12"	2'-6"	3 Std	3.50"	7.58
6'-0"	NO	12"	2'-6"	3 Std	3.50"	7.58
8'-0"	NO	12"	3'-0"	3 Std	3.50"	7.58
10'-0"	NO	14"	3'-6"	3 Std	3.50"	7.58
5'-0"	YES	12"	3'-0"	3/2 Std	4.00"	9.12
6'-0"	YES	14"	3'-6"	4 Std	4.50"	10.80
8'-0"	YES	18"	3'-6"	5 Std	5.56"	14.60
10'-0"	YES	20"	4'-0"	6 Std	6.63"	19.00

Above post dimensions and weights are minimums. Larger sizes may be used upon approval. Maximum Gate Width is 24'-0".



CORNER POST

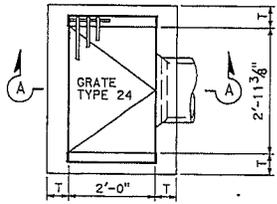
TYPICAL MEMBER DIMENSIONS (See Notes)													
FENCE HEIGHT (Max)	SLATTED	B (in)	L (ft)	LINE POSTS				BRACES					
				ROUND PIPE		ROLL FORMED		ROUND PIPE		ROLL FORMED			
				SECTION	ROUND OD PIPE	WEIGHT (lb/ft)	SECTION	WEIGHT (lb/ft)	SECTION	ROUND OD PIPE	WEIGHT (lb/ft)	SECTION	WEIGHT (lb/ft)
5'-0"	NO	8"	2'-6"	1/2 Std	1.90"	2.72	1.875" x 1.625"	1.85	2 Std	2.38"	3.66	1.625" x 1.250"	1.35
6'-0"	NO	10"	2'-6"	2 Std	2.38"	3.66	1.875" x 1.625"	2.40	2 Std	2.38"	3.66	1.625" x 1.250"	1.35
8'-0"	NO	12"	3'-0"	2 1/2 Std	2.88"	5.80	3.250" x 2.500"	4.50	2 Std	2.38"	3.66	1.625" x 1.250"	1.35
10'-0"	NO	14"	3'-6"	3 Std	3.50"	7.58	3.250" x 2.500"	4.50	2 1/2 Std	2.88"	5.80	1.625" x 1.250"	1.35
5'-0"	YES	12"	3'-0"	3/2 Std	4.00"	9.12	N/A	-	2 Std	2.38"	3.66	N/A	-
6'-0"	YES	14"	3'-0"	4 Std	4.50"	10.80	N/A	-	2 Std	2.38"	3.66	N/A	-
8'-0"	YES	18"	3'-6"	5 Std	5.56"	14.60	N/A	-	2 Std	2.38"	3.66	N/A	-
10'-0"	YES	20"	4'-0"	6 Std	6.63"	19.00	N/A	-	2 1/2 Std	2.88"	5.80	N/A	-

- NOTES:**
- The table to the right shows minimum sized posts and braces complying with the specifications. Larger or heavier post and brace sizes may be used upon approval.
 - Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
 - Other sections which comply with the strength requirements and other provisions of the Specifications may be used upon approval.
 - Options exercised shall be uniform on any one project.
 - Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.
 - See Revised Standard Plan RSP A85B for Brace, Stretcher Bar, and Truss Tightener Details.

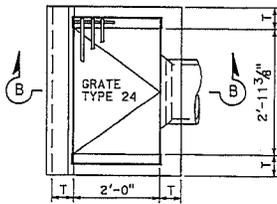
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE
 NO SCALE

RSP A85 DATED JULY 15, 2016 SUPERSEDES STANDARD PLAN A85 DATED OCTOBER 30, 2015 - PAGE 117 OF THE STANDARD PLANS BOOK DATED 2015.

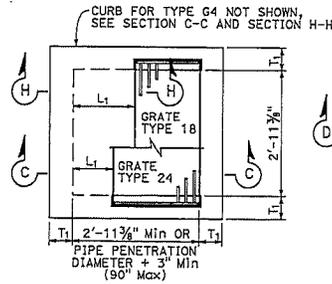
REVISED STANDARD PLAN RSP A85



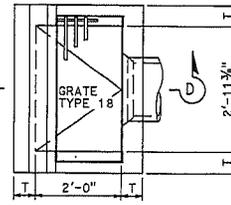
PLAN
TYPE G1



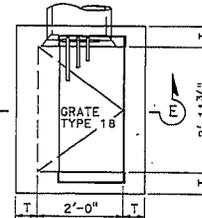
PLAN
TYPE G3



PLAN
STANDARD
TYPE G2 OR G4



PLAN
TYPE G5



PLAN
TYPE G6

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
			TOTAL PROJECT	NO. SHEETS

enrad
REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

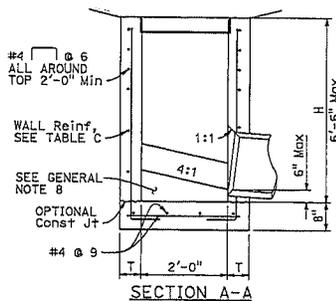
REGISTERED PROFESSIONAL ENGINEER
No. C59276
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA ON ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

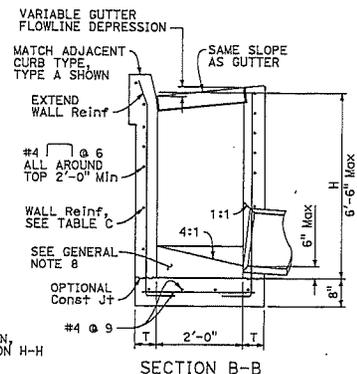
TO ACCOMPANY PLANS DATED _____

NOTE:
1. For notes and Table 2. See Revised Standard Plan RSP D72C.

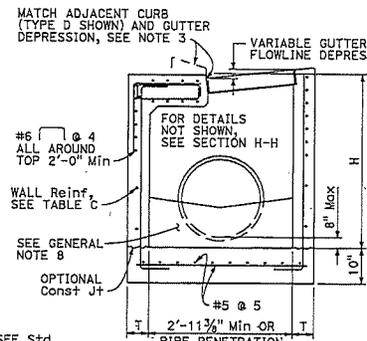
	T ₁	Vert BARS
L ₁ AND L ₂ < 2'-10"	9"	#4 @ 12
L ₁ OR L ₂ > 2'-10"	12"	#5 @ 12



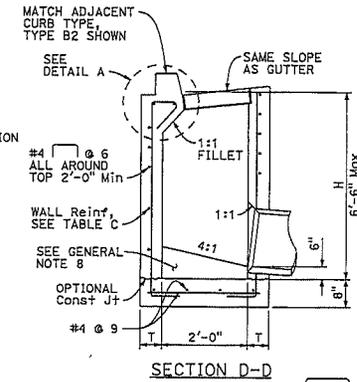
SECTION A-A



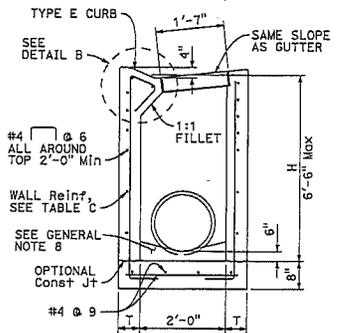
SECTION B-B



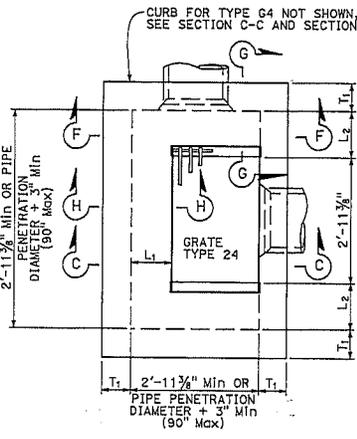
SECTION C-C



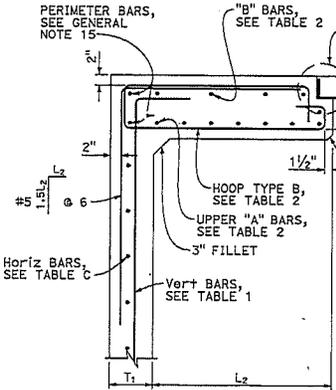
SECTION D-D



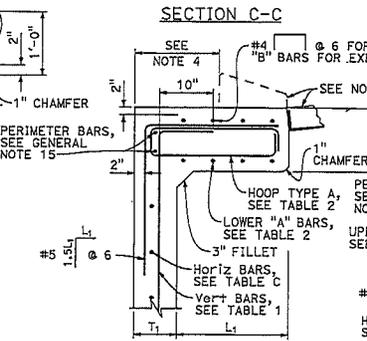
SECTION E-E



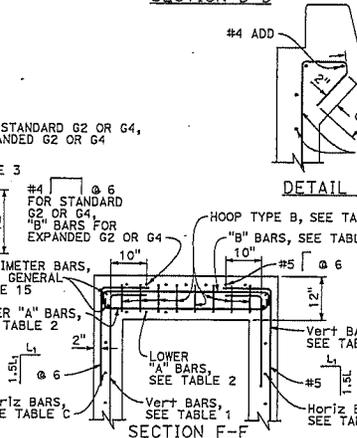
PLAN
EXPANDED
TYPE G2 OR G4



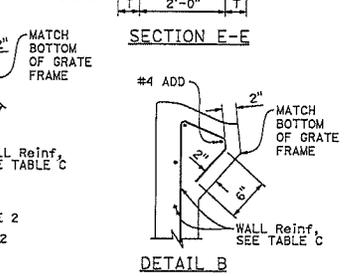
SECTION G-G



SECTION H-H



SECTION F-F



DETAIL A

DETAIL B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CIP DRAINAGE INLETS
TYPES G1, G2, G3,
G4, G5 AND G6**

NO SCALE

REVISED STANDARD PLAN RSP D72B

2015 REVISED STANDARD PLAN RSP D72B

GENERAL NOTES:

- "H" is measured from top of bottom slab to the normal gutter grade line undepressed at the curb face.
- For "T" wall thickness and reinforcement, see Table C on Revised Standard Plan RSP D72G.
- Wall reinforcement must be placed in the center of the wall thickness with horizontal bars placed on the exterior face. Bottom slab concrete cover must be 3" clear on the interior face unless otherwise noted. Top slab concrete cover must be 2" clear on the exterior face unless otherwise noted. Reinforcement spacing is in inches unless otherwise noted.
- Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below bottom of lid. The distance between steps must not exceed 1'-0" and be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts must comply with State Industrial Safety Requirements. See Revised Standard Plan RSP D74 for step details.
- Pipe(s) can be placed in any wall. Adjacent to each side of the opening, place additional reinforcement equivalent to half the interrupted main reinforcement. For larger pipes greater than or equal to 42" diameter, also add 4 diagonal bars, 1 bar each side. Bars must be the same size as the larger of the main vertical or horizontal bars. Extend bars one development length past the intersection with the adjacent diagonal bar, or where bars intersect mid thickness of adjacent wall bottom or top of non-continuous wall, bend ends as required into same plane.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- Curb section must match adjacent curb.
- Except for inlets used as junction boxes, basin floors must have wood trowel finish and a minimum slope of 4:1, unless otherwise noted, from all directions toward outlet pipe by casting grout fill on top of the bottom slab. The additional volume to achieve the 4:1 slope may also be achieved by casting the bottom slab and fill as a composite concrete element.
- See Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
- See Standard Plans D78A and D78B for gutter depression details.
- See Standard Plan A87A and Revised Standard Plan RSP A87B for curb and dike details.
- Details shown apply to metal, concrete and plastic pipe(s).
- The Contractor may use WWR instead of bar reinforcement. The ratio of bar reinforcement to WWR shall be based on the yield strength ratio.
- Cast-in-place (CIP) inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation.
- Perimeter reinforcement must not be smaller than main bars and #4 and serves as a rigid frame to position and attach the required structural reinforcement and may be tack welded at outer corners when using ASTM A706 weldable bars.

DESIGN NOTES:

- Design Specifications: AASHTO LRFD Bridge Design Specifications, 6th edition with 2012 Interims and Errata and CA Amendments.
HL-93, consists of design truck or tandem, and design lane load.
Dynamic Load Allowance, $IM = 33\%$
Multiple Presence Factor, $m = 1.0$
Design lane load was excluded in Top Slab design.
A wheel load of 8 kips without impact factor was used for top slabs that are above a curb.
- Earth Load:
Vertical pressure = 140 pcf
Lateral pressure:
= 100 pcf for walls with flat embankment
= 140 pcf for walls with slope embankment, 1.5:1 Max
- Downdrag: $\phi = 34^\circ$ and $\gamma_c = 120$ pcf.
- Buoyancy: $\gamma_w = 62.4$ pcf to finished grade
- Reinforced Concrete: $f'_c = 3.6$ ksi, $f_y = 60.0$ ksi.
- Soil pressures shown are factored per AASHTO LRFD and include self-weight, live load and downdrag.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

emad
REGISTERED CIVIL ENGINEER

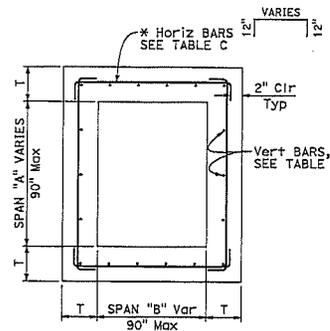
July 15, 2016
PLANS APPROVAL DATE

Docl H. Duval
C59876
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER

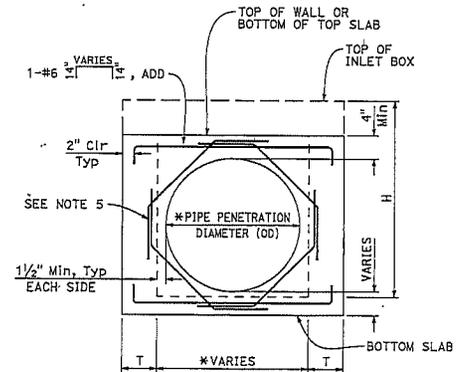
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TO ACCOMPANY PLANS DATED _____



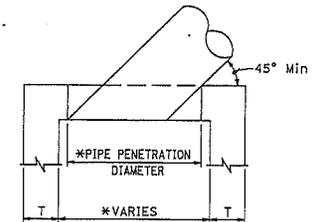
TYPICAL INLET PLAN

* ALTERNATIVE HORIZONTAL BARS



TYPICAL WALL W/ PIPE OPENING

* SEE "SKEWED PIPE PLAN"



SKEWED PIPE PLAN

* ADJUST PIPE PENETRATION AND BOX WIDTH FOR SKEWED PIPES.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CIP DRAINAGE INLET NOTES

NO SCALE

RSP D72F DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D72F

2015 REVISED STANDARD PLAN RSP D72F

Earl W. Poon
REGISTERED CIVIL ENGINEER



July 15, 2016
PLANS APPROVAL DATE
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TO ACCOMPANY PLANS DATED _____

2015 REVISED STANDARD PLAN RSP D73G

TABLE A - CONCRETE QUANTITIES

TYPE	H=3'-0" TO 8'-0"		H=8'-1" TO 20'-0"	
	H=3'-0" (CY)	ADDITIONAL CONCRETE PER FOOT (CY)	H=8'-1" (CY)	ADDITIONAL CONCRETE PER FOOT (CY)
G1	0.95	0.220	SEE NOTE 2	SEE NOTE 2
G2*	1.25	0.255	2.55	0.255
G3	1.06	0.220	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	1.41	0.255	2.71	0.255
G4 (TYPE 24)*	1.36	0.255	2.65	0.255
G5	1.09	0.220	SEE NOTE 2	SEE NOTE 2
G6	1.14	0.220	SEE NOTE 2	SEE NOTE 2
OS	1.28	0.278	2.69	0.278
OL7	1.92	0.278	3.33	0.278
OL10	2.43	0.278	3.84	0.278
OL14	3.16	0.278	4.57	0.278
OL21	4.58	0.278	5.99	0.278
GOL7	2.36	0.313	4.04	0.434
GOL10	2.84	0.313	4.53	0.434
GT1	2.30	0.480	SEE NOTE 2	SEE NOTE 2
GT2	2.71	0.530	5.40	0.530
GT3	2.29	0.480	SEE NOTE 2	SEE NOTE 2
GT4	2.69	0.530	5.39	0.530
GO	1.25	0.245	2.37	0.245
GDO	1.64	0.322	3.37	0.446

* Quantities are based on the minimum interior dimensions.

TABLE B - REINFORCEMENT QUANTITIES

TYPE	H=3'-0" TO 8'-0"		H=8'-1" TO 20'-0"	
	H=3'-0" (LB)	ADDITIONAL REINFORCEMENT PER FOOT (LB)	H=8'-1" (LB)	ADDITIONAL REINFORCEMENT PER FOOT (LB)
G1	88.5	21.90	SEE NOTE 2	SEE NOTE 2
G2*	151.5	24.54	277.4	38.64
G3	92.9	21.90	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	134.4	24.54	260.3	38.64
G4 (TYPE 24)*	125.1	24.54	251.0	38.64
G5	92.5	21.90	SEE NOTE 2	SEE NOTE 2
G6	92.5	21.90	SEE NOTE 2	SEE NOTE 2
OS	145.8	35.57	327.8	49.60
OL7	328.0	35.57	510.0	49.60
OL10	467.5	35.57	649.5	49.60
OL14	667.5	35.57	849.5	49.60
OL21	1056.1	35.57	1238.1	49.60
GOL7	474.7	45.17	706.8	74.02
GOL10	604.9	45.17	836.9	74.02
GT1	349.0	80.48	SEE NOTE 2	SEE NOTE 2
GT2	403.7	86.82	849.1	135.15
GT3	347.0	80.48	SEE NOTE 2	SEE NOTE 2
GT4	403.7	86.82	849.1	135.15
GO	99.8	23.75	221.7	37.46
GDO	208.8	46.22	446.2	75.61

* Quantities are based on the minimum interior dimensions.

TABLE D

INLET	CURB USED IN QUANTITIES
G1	-
G2	-
G3	A1-6
G4 (Type 18)	A1-6
G4 (Type 24)	A1-6
G5	B1-4
G6	1/2E
OS	-
OL7	-
OL10	-
OL14	-
OL21	-
GOL7	-
GOL10	-
GT1	D-6
GT2	E
GT3	A2-8
GT4	A2-8
GO	-
GDO	-

TABLE C - WALL REINFORCEMENT

TYPE	H ≤ 8'-0" (T=6", UON)			8'-0" < H ≤ 20'-0" (T=8", UON)		
	HORIZONTAL	VERTICAL	#ADD	HORIZONTAL	VERTICAL	#ADD
OS	#406	#308	#308	#404 (T=6")	#308	#308
OL	#406	#308	#308	#404 (T=6")	#308	#308
GOL	#405	#308	#308	#505	#306	#306
G1 (H ≤ 6'-9")	#409	#308	#308	-	-	-
G2 & G4 (a** ≤ 38")	#409	#308	#308	#405 (T=6")	#308	#308
G2 & G4 (38" < a** ≤ 50")	#406	#308	#308	#404 (T=6")	#308	#308
G2 & G4 (50" < a** ≤ 64")	#405	#308	#308	#505	#306	#306
G2 & G4 (64" < a** ≤ 76")	#507 (T=8")	#306	#306	#504	#306	#506
G2 & G4 (76" < a** ≤ 90")	#505 (T=8")	#306	#306	#503	#306	#506
G3 (H ≤ 6'-9")	#409	#308	#308	-	-	-
G5 (H ≤ 6'-9")	#409	#308	#308	-	-	-
G6 (H ≤ 6'-9")	#409	#308	#308	-	-	-
GT1 (H ≤ 6'-9")	#505 (T=8")	#306	#306	-	-	-
GT2	#505 (T=8")	#306	#306	#503	#306	#506
GT3 (H ≤ 6'-9")	#505 (T=8")	#306	#306	-	-	-
GT4	#505 (T=8")	#306	#306	#503	#306	#506
GO	#409	#308	#308	#405 (T=6")	#308	#308
GDO	#405	#308	#308	#505	#306	#306

* See Detail A on Revised Standard Plan RSP D73F for additional vertical bars at the base.
** a = Larger interior span

TABLE E

TYPE	SOIL PRESSURE BELOW BASE SLAB (ksf)	
	H ≤ 8'-0"	8'-0" < H ≤ 20'-0"
OS	2.89	5.68
OL*	2.89	5.68
GOL*	2.36	4.93
G1 (H ≤ 6'-9")	3.51	-
G2 & G4 (a** ≤ 38")	2.96	5.79
G2 & G4 (38" < a** ≤ 50")	2.21	4.51
G2 & G4 (50" < a** ≤ 64")	3.19	4.89
G2 & G4 (64" < a** ≤ 76")	2.50	4.23
G2 & G4 (76" < a** ≤ 90")	2.04	3.56
G3 (H ≤ 6'-9")	3.51	-
G5 (H ≤ 6'-9")	3.51	-
G6 (H ≤ 6'-9")	3.51	-
GT1 (H ≤ 6'-9")	3.41	-
GT2	3.60	6.42
GT3 (H ≤ 6'-9")	3.41	-
GT4	3.60	6.42
GO	3.37	6.46
GDO	2.48	7.30

* Main Box
** a = Larger interior span

NOTES:

- No deduction or adjustment was made to the quantities of concrete and reinforcement for pipe openings, floor alternatives or curb type.
- Maximum allowable height is 6'-9".
- Quantities are approximate and for design purposes only.
- Design is based on envelope of level and sloped ground.

TABLE F

TYPE	BASE SLAB REINFORCEMENT (T=8", UON)	
	H ≤ 8'-0"	8'-0" < H ≤ 20'-0"
OS	#408 (EW)	#405 (EW)
OL*	#408 (EW)	#405 (EW)
GOL*	#406 (EW)	#404 (EW)
G1 (H ≤ 6'-9")	#4010 (EW)	-
G2 & G4 (a** ≤ 38")	#4010 (EW)	#406 (EW)
G2 & G4 (38" < a** ≤ 50")	#408 (EW)	#405 (EW)
G2 & G4 (50" < a** ≤ 64")	#406 (EW)	#404 (EW)
G2 & G4 (64" < a** ≤ 76")	#405 (EW)	#403 (EW)
G2 & G4 (76" < a** ≤ 90")	#404 (EW)	#503 (EW)
G3 (H ≤ 6'-9")	#4010 (EW)	-
G5 (H ≤ 6'-9")	#4010 (EW)	-
G6 (H ≤ 6'-9")	#4010 (EW)	-
GT1 (H ≤ 6'-9")	#404 (EW)	-
GT2	#404 (EW)	#503 (EW)
GT3 (H ≤ 6'-9")	#404 (EW)	-
GT4	#404 (EW)	#503 (EW)
GO	#4010 (EW)	#406 (EW)
GDO	#406 (EW)	#404 (EW)

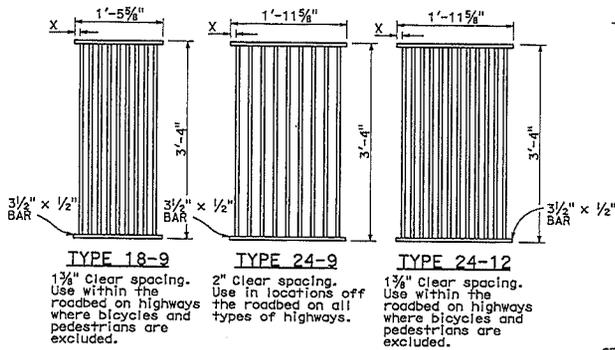
(EW) Each Way
* Main Box
** a = Larger interior span

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

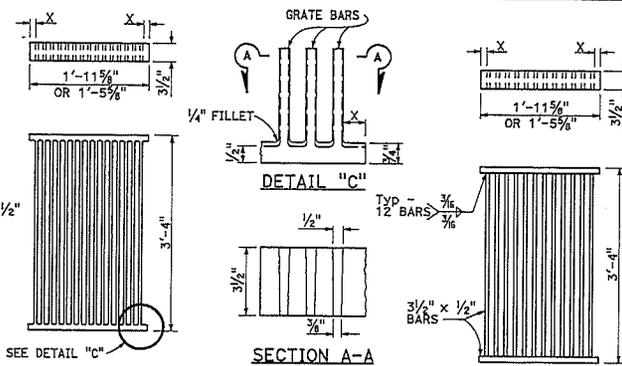
PRECAST DRAINAGE INLET TABLES
NO SCALE

RSP D73G DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D73G

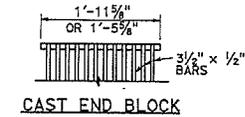


RECTANGULAR GRATE DETAILS
(See table below)

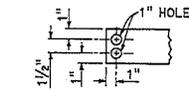


ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE

ALTERNATIVE WELDED GRATE

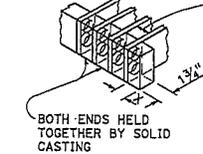


CAST END BLOCK

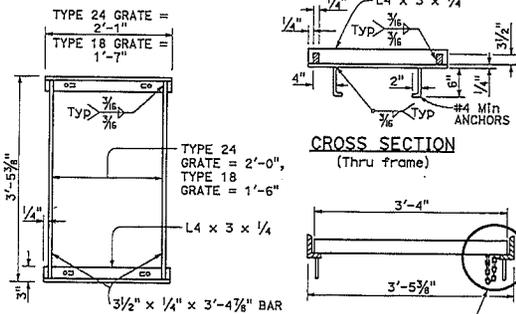


END OF BAR

SPACING SAME AS FOR WELDED OR BOLTED GRATE.

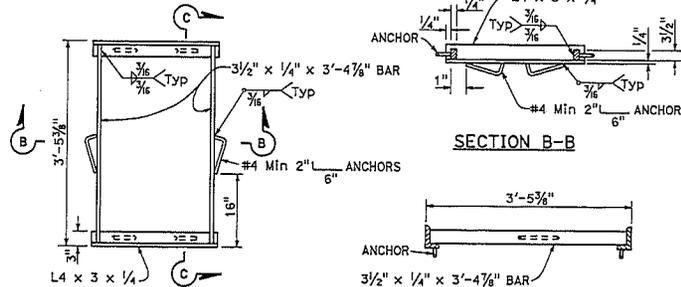


ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE



TYPICAL FRAME

LONGITUDINAL SECTION
(Thru frame and grate)



TYPICAL FRAME

SECTION B-B

ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME
(For details not shown, See Rectangular Frame Details)

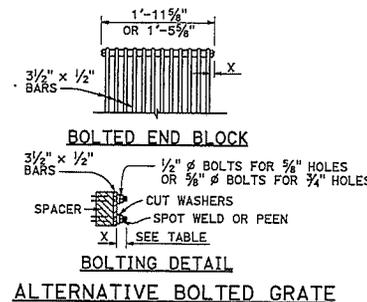
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

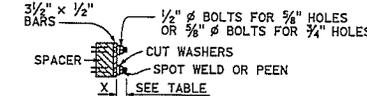
TYPE	No. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/8"
24-9	9	2"	1 3/8"
24-12	12	1 3/4"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCF	PLATE	112
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

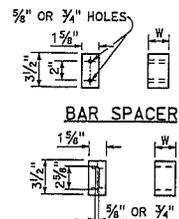
INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



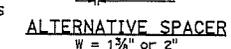
BOLTED END BLOCK



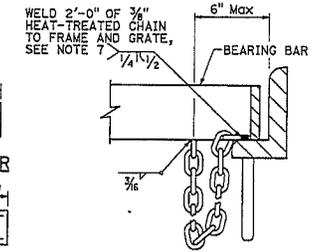
BOLTING DETAIL
ALTERNATIVE BOLTED GRATE



BAR SPACER



ALTERNATIVE SPACER
W = 1 3/8" or 2"



DETAIL "D"
(Steel grates only)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
GRATE DETAILS No. 1
NO SCALE

D77A

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
			TOTAL PROJECT	NO. SHEETS

Raymond Dan Jacobs
REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

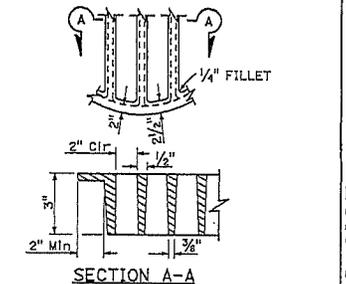
Raymond Dan Jacobs
REGISTERED PROFESSIONAL ENGINEER
CST3332
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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2015 STANDARD PLAN D77A

D14*	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Raymond Don Lopez
 REGISTERED CIVIL ENGINEER
 No. C37332
 State of California
 October 30, 2015
 PLANS APPROVAL DATE
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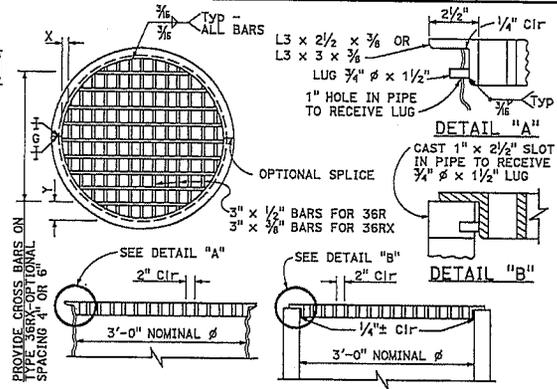


ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE TYPE 36R AND 36RX

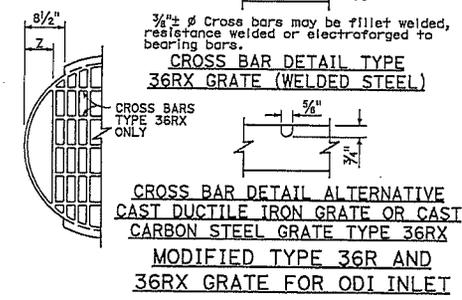
BASIS FOR Misc IRON AND STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDD (SEE NOTE 4)	24-10C	2	391
	24-10S	2	456
	24-12X	2	473
	24-13	2	374
G0,G0L,G1,G2, G3,G4 (TYPE 24)	24-10C	1	202
	24-10S	1	229
	24-12X	1	239
	24-13	1	188
G4 (TYPE 18) G5,G6	18-8S	1	187
	18-9X	1	187
	18-10	1	149
GT1,GT2	18-8S	2	374
	18-9X	2	374
	18-10	2	298
GT3,GT4	24-10C	2	404
	24-10S	2	458
	24-12X	2	478
	24-13	2	376
ODI	36RX (Mod)	1	196
GMP,GCP,GCPI	36RX	1	215
ODI	36R (Mod)	1	220
GMP,GCP,GCPI	36R	1	236
TRASH RACK			22
GRATE CHAIN			3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
GRATE DETAILS No. 2
NO SCALE
D77B



TYPE 36R AND 36RX GRATE DETAILS



- NOTES:**
- When alternative grates are allowed - Final pay based on alternative with the lesser weight.
 - Use frame shown on Standard Plan D74A, D74B or D77A as appropriate.
 - When Type 24-10S, 24-12X or 24-13 grates are used with GDD inlets, a 1/4" x 3/2" x 3-4 1/2" steel bar shall be welded across the center of inlet frame to separate the individual grates.
 - See Standard Plan D77A for connecting chain to welded grate and frame. When chain is required, do not use cast ductile iron grate.

GRATE BAR SPACING TABLE

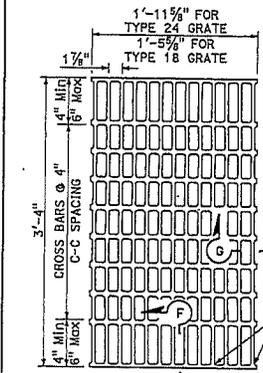
TYPE	No. OF BARS	CLEAR BAR SPACING	X	Y		Z
				4" SPACING	6" SPACING	
36R	13	2"	2 1/8"	3 3/8"	5 3/8"	-
36RX (STEEL)	15	2"	3/8"	3 3/8"	5 3/8"	-
36RX (CAST)	13	2"	2 1/8"	3 3/8"	5 3/8"	-
36R Mod	13	2"	2 1/8"	-	-	5"
36RX Mod (STEEL)	15	2"	3/8"	3 3/8"	5 3/8"	5 1/2"
36RX Mod (CAST)	12	2"	2 1/8"	3 3/8"	5 3/8"	5"

NOTES:

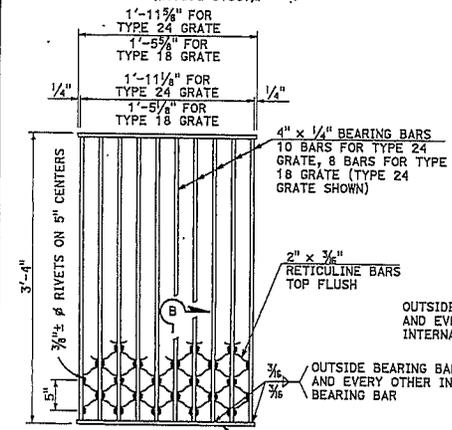
Bearing bars to be 3/2" x 1/4" bars on 1 1/2" centers.

3/8" ϕ cross bars may be fillet welded, resistance welded or electroforged to bearing bars.

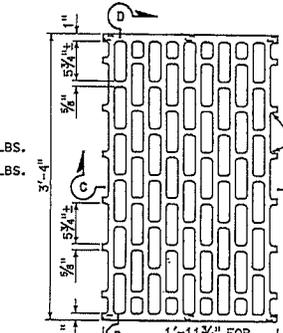
Weight of Type 24 grate = 141 LBS.
Weight of Type 18 grate = 107 LBS. (Type 24 grate shown).



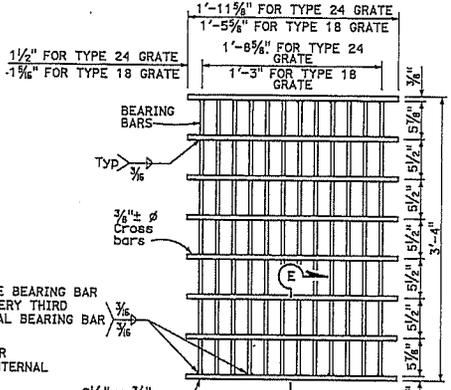
SECTION F-F SECTION G-G
TYPE 18-10 AND 24-13 GRATE
(Welded Steel)



SECTION B-B
TYPE 18-8S AND 24-10S GRATE
(Welded Steel) Reticuline type



SECTION C-C
TYPE 18-8C AND 24-10C GRATE
(Cast ductile iron)



SECTION E-E
TYPE 18-9X AND 24-12X GRATE
(Welded Steel)

NOTES:

Bearing bars to be 3 1/2" x 3/8" bars on 1 1/2" centers.

12 Bars for Type 24 grate - 9 bars for Type 18 grates. (Type 24 grate shown).

Weight of Type 24 grate = 192 LBS.
Weight of Type 18 grate = 145 LBS.

3/8" ϕ cross bars may be fillet welded, resistance welded or electroforged to bearing bars.

1. Subgrade shall be compacted to at least 90% of maximum density in the top 6 inches prior to placing base material as specified below.
2. Where unsuitable subgrade material is encountered, the City Engineer may require remedial work to be done, including, but not limited to, removing additional soil and placing an additional layer of crushed rock and/or geotechnical fabric under the base material.
3. Base material under curb, gutter, and sidewalk must be Caltrans Class 2 Aggregate Base, compacted to approximately 95% of maximum density. The compacted thickness of base material must not be less than 6 inches.
4. Existing concrete shall be removed at expansion joints or shall be saw cut. Saw-cuts in sidewalk or curb shall be at an existing score line in the sidewalk.
5. Concrete thicker than 4 inches must be saw-cut to at least 4 inches deep before chipping out the rest, but if remaining concrete becomes cracked or damaged it shall be replaced as well.
6. No utility boxes, cleanouts, poles, or structures of any kind will be permitted in the sidewalk area without the written approval of the City Engineer.
7. New work shall reasonably match existing texture and color of adjacent existing concrete.
8. Base material shall be moistened immediately prior to placing concrete.
9. Concrete shall be designated as 3,000 psi 28-day compressive strength with Type II or V Portland cement and $\frac{3}{4}$ inch maximum crushed rock aggregate. No admixtures shall be used without the written permission of the City Engineer. For infill or replacement concrete, where adjacent concrete is darkened with age, one pound of lampblack may be added per C.Y.
10. Concrete shall have a slump of not more than 4 inches.
11. New sidewalk, curb or gutter shall be connected to adjacent existing concrete using 12 inch long by $\frac{1}{2}$ inch diameter steel dowels (#4 rebar is acceptable) in tight fitting holes drilled into the existing concrete (approximately 6 inches into adjacent sidewalk, curb and gutter, or 4" into the back of curb).
12. Half inch thick expansion joints shall be placed on both sides of driveway approaches, curb and sidewalk return points, fixed structures (including storm drain inlets), and at approximately 24 feet on center. An expansion joint shall also be placed between the back of sidewalk or driveway approach and any driveway, walkway or foundation poured against it. Weakened plane joints shall be placed at all inside corners (including tree wells and parkway strips), both sides of utility boxes and wherever shrinkage would concentrate stresses, and otherwise at no more than 12 feet on centers. See standard 110 for more. Expansion joint material shall completely separate the concrete all the way to the forms and down to base material, and it shall be cut to match curved surfaces. Expansion joints within sidewalk, curb and gutter shall have steel dowels joining the concrete on both sides of the joint. These dowels shall be smooth, or one side of the joint shall have the dowels wrapped with sleeves to allow them to move.
13. One quarter inch deep by one quarter inch radius score lines in sidewalks shall be evenly spaced at approximately 4 feet apart or as directed by the City Engineer. In addition, a similar score mark shall be placed 6 inches back from the face of curb where curb and sidewalk are poured monolithically. See standard 110.
14. No concrete shall be placed until the City Engineer has inspected and approved forms, subgrade and base material, and dowels into adjacent existing concrete.
15. All exposed edges shall be rounded with a $\frac{1}{2}$ inch radius tool. Sidewalk shall have a medium broom finish cross-wise to the direction of travel. Curbs and gutters shall have a light wood float finish.
16. No voids or rock-pockets shall be present in any exposed surfaces. Any patching done must blend completely with the surrounding surface. If any standing water fails to drain off sidewalk or gutter surfaces, that portion of sidewalk or gutter must be replaced.
17. Curbs, sidewalks and driveway approaches shall be backfilled within 7 days after pouring.
18. Form faces shall not vary from the dimensions shown by more than $\frac{1}{4}$ inch.
19. Unless otherwise specified on the plans, concrete shall be cured by means of the impervious membrane.
20. All new sidewalk constructed adjacent to new curbs shall be Type "A" (poured monolithic with curb) unless otherwise approved in writing by the City Engineer. See Standard 101A.
21. Whenever a portion of existing curb or gutter needs to be replaced it shall be replaced as a complete, curb-and-gutter unit monolithic with sidewalk if contiguous.
22. Saw-cut, remove and replace a section of pavement at least sixteen inches wide by the full depth of the pavement alongside any replaced or new section of concrete curb, gutter or valley gutter, including where new ADA access ramps or driveway approach ramps are installed in existing sidewalk.
23. Edges of remaining pavement shall be heavily coated with approved tack-coat material before new asphalt concrete is placed against them. The joint between the old and new pavement shall be sealed with tack-coat and covered with sand.
24. Asphalt concrete pavement adjacent to new concrete shall not be installed for at least 7 days after pouring concrete. Concrete shall be heavily coated with approved tack-coat material before asphalt concrete is placed against it.

**CITY OF
PACIFICA**

Dept. of Public Works
ENGINEERING DIVISION

**STANDARD
CURB, GUTTER,
SIDEWALK AND
DRIVEWAY NOTES**

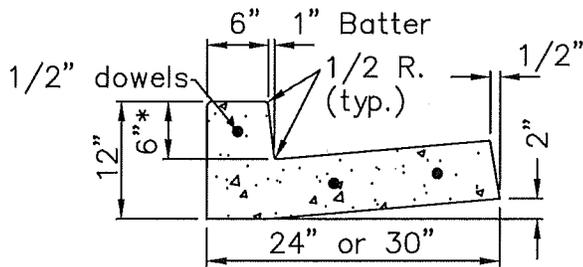
**AUG
2014**

**DWG. NO.
101A**

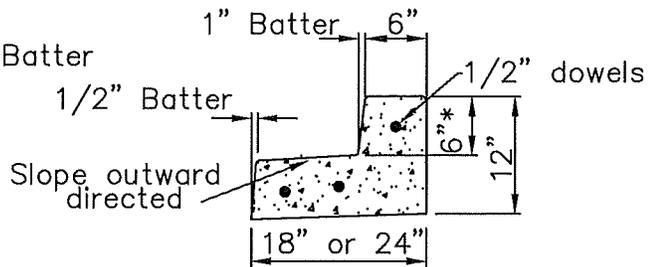
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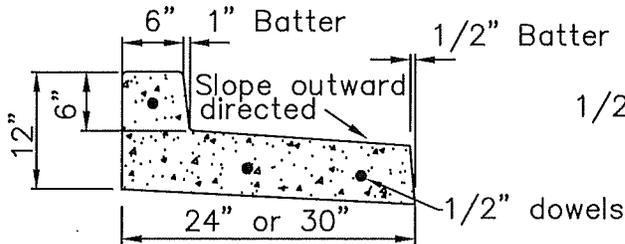
BY:



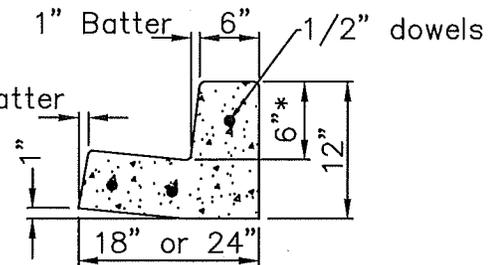
TYPE "A" CURB



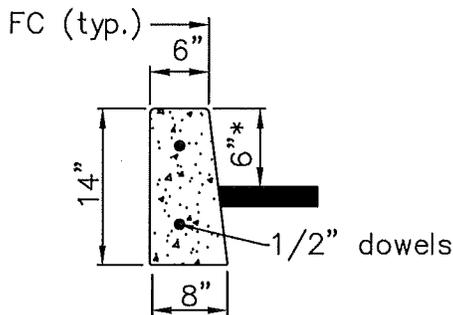
TYPE "B" CURB



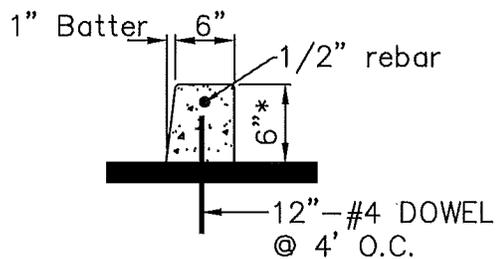
TYPE "C" CURB



TYPE "D" CURB

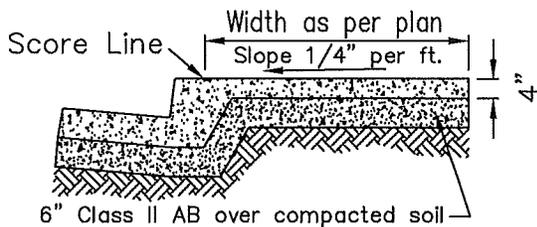


TYPE "E" CURB

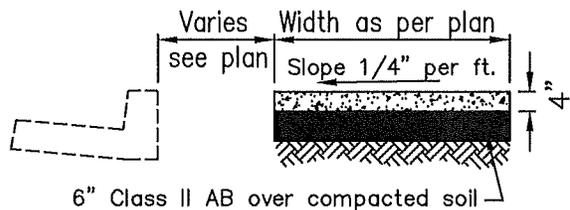


TYPE "F" CURB

4'-6" Residential, 7'-6" Commercial
or as approved otherwise



TYPE "A" SIDEWALK
POURED MONOLITHIC WITH CURB



TYPE "B" SIDEWALK
POURED SEPARATE FROM CURB

NOTE: See Drawing No. 100 for General Notes.
See Drawing No. 110 for joint locations

* Curbs shall be 6" above flow line
except as otherwise directed

**CITY OF
PACIFICA**

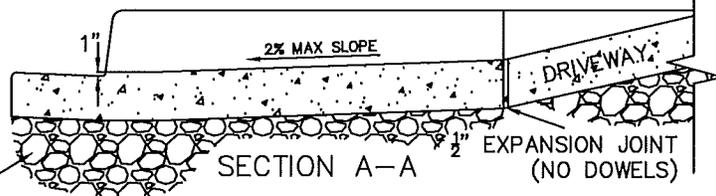
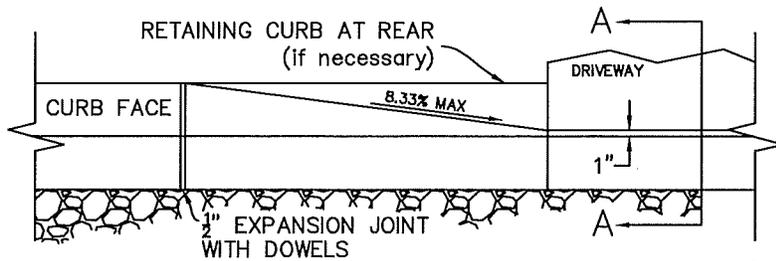
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

**STANDARD
CURB, GUTTER
& SIDEWALK**

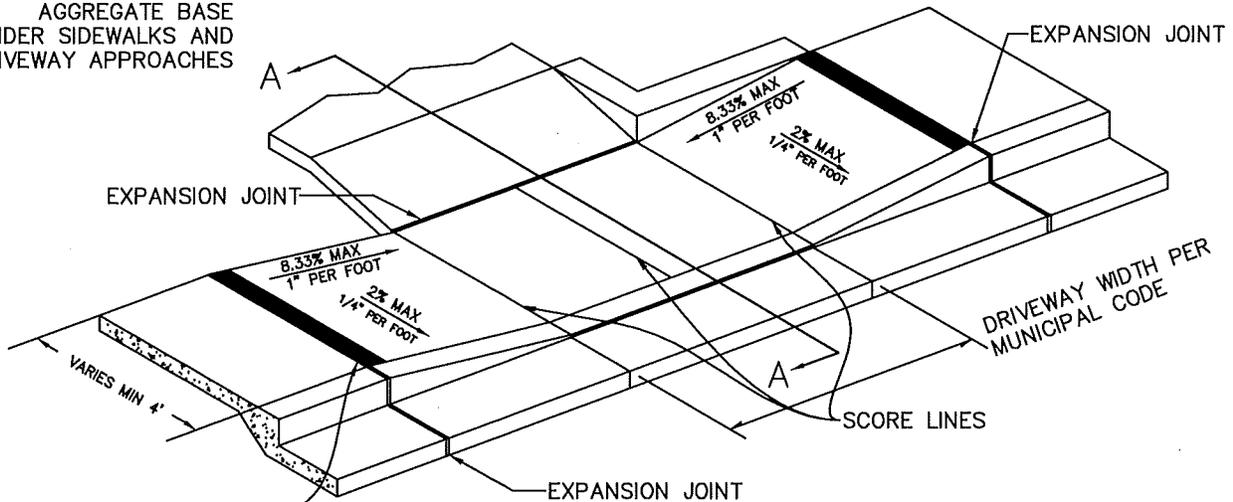
REV	DATE	BY:

**AUG
2014**

**DWG. NO.
101B**



MIN 6" CLASS 2
AGGREGATE BASE
UNDER SIDEWALKS AND
DRIVEWAY APPROACHES



12" WIDE BAND OF 1/4"
DEEP GROOVES SPACED
3/4" ON CENTER

TYPE	CONCRETE THICKNESS
Residential	6"
Commercial	8" unreinforced or 6" with #4 rebar at 18" on center each way

NOTE:

1. Portion of asphalt concrete driveway within the right-of-way shall be a minimum 4" of asphalt concrete over minimum 6" of class 2 aggregate base compacted to 95% over competent soil compacted to apx. 90%.
2. Place 1/2" expansion joints at both sides of the connecting sidewalk and the at the back edge before pouring the driveway.
3. Place dowels into existing sidewalk, curb, and gutter.
4. See drawing No. 101A for general notes

**CITY OF
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PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

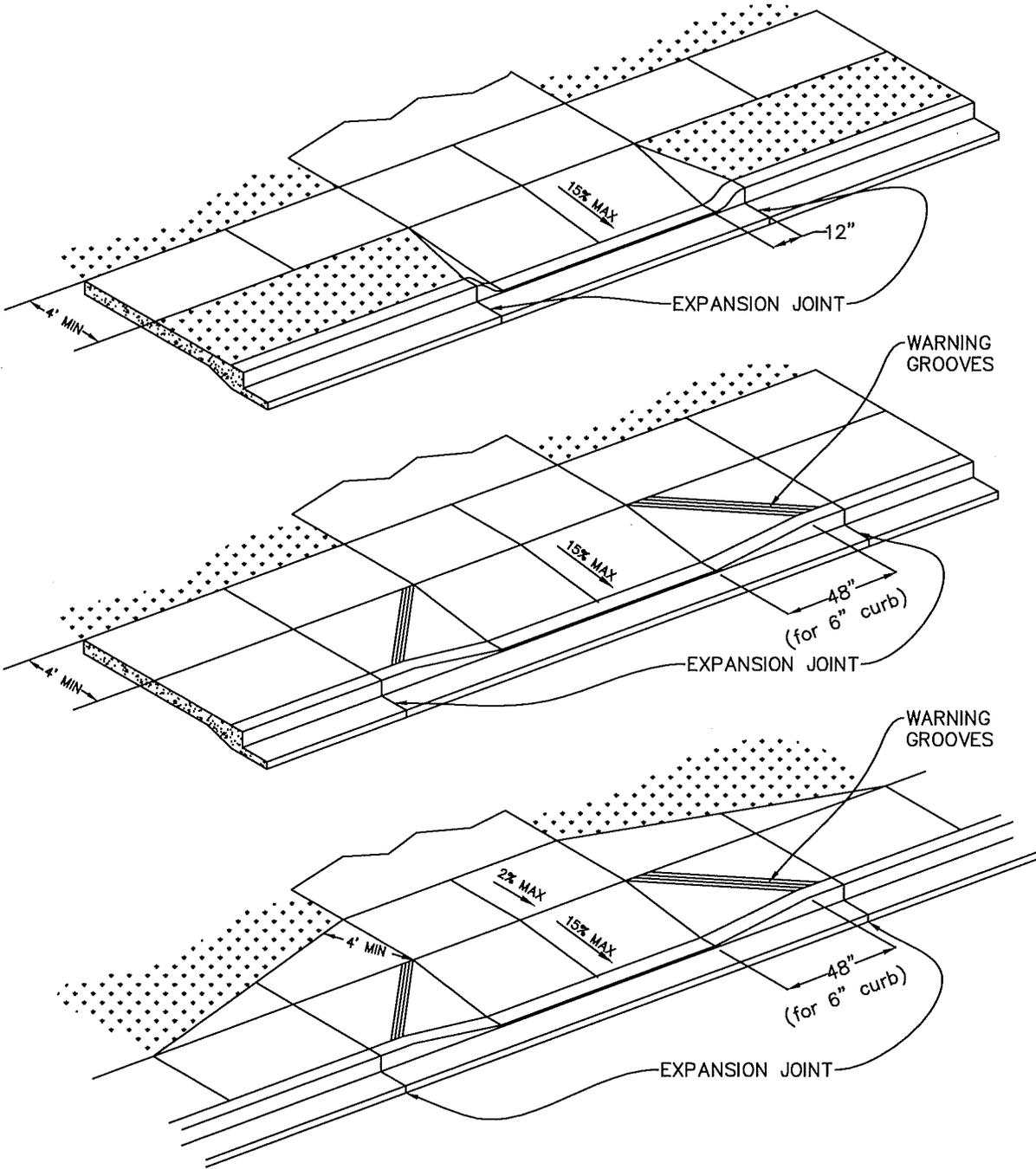
**LOWERED
DRIVEWAY APPROACH**

**AUG
2014**

DWG. NO.

102A

REV DATE BY:

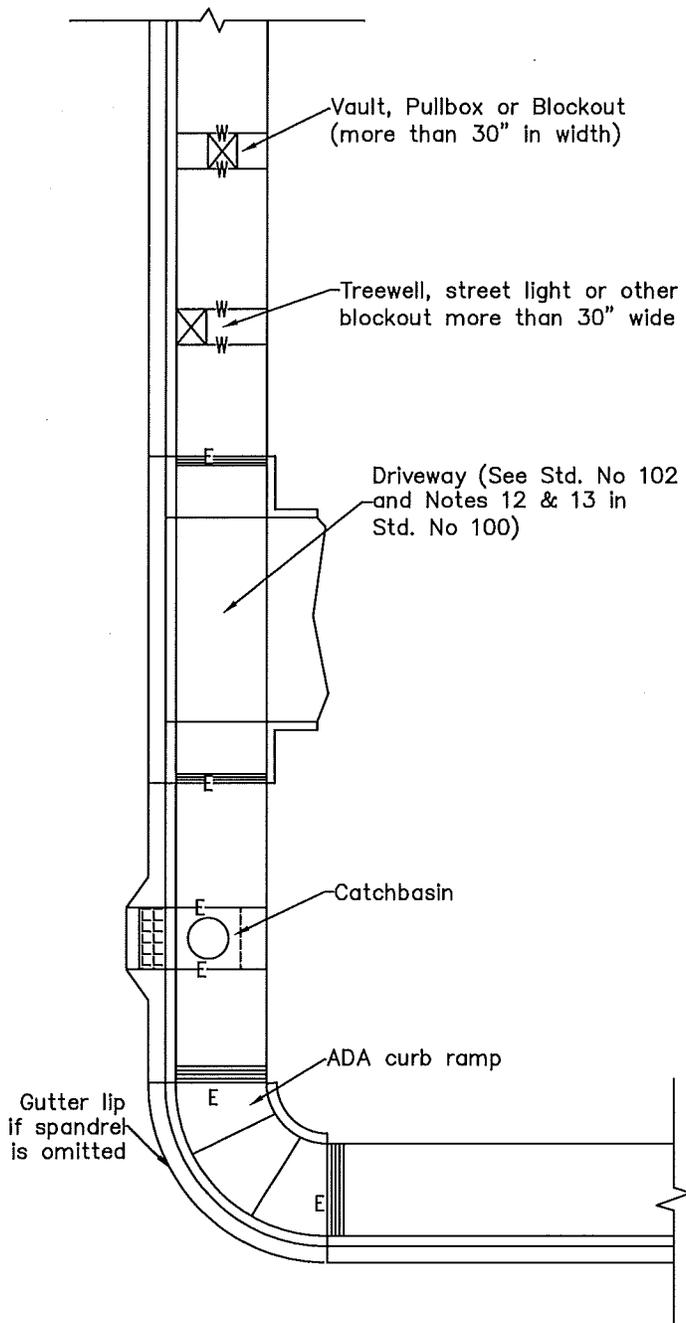


**CITY OF
PACIFICA**

**PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION**

**DRIVEWAY APPROACH
ALTERNATES**

			AUG 2014
			DWG. NO. 102B
REV	DATE	BY:	



REFERENCES

Standard drawing NO 100 & 102

NOTES:

1. Expansion joint material locations are identified by the symbol "E." See Std. No. 102 and Notes 12 & 13 in Std. No 100
2. Expansion joints are constructed with a premolded joint filler and should extend to the full depth and width of the concrete being placed. 12" long slip dowels pass through the filler material apx. 2' on centers.
3. Expansion joint material should be tightly wrapped around the base of all utility poles encased in concrete.
4. In addition to placing as shown, the maximum spacing for expansion joints is 24 feet O.C.
5. Special locations for weakened plane joints are identified by the symbol "W."
6. Weakened plan joints are made by working a trowel into the concrete at least 1-1/2 inches deep along a line across the concrete before it sets firm.
7. In lieu of weakened plane joints, a 1 inch deep saw cut may be used. Sawing should take place within 24 hours after concrete has been placed.
8. In addition to placing at holes and boxes as shown, space weakened plane joints apx. 12 feet O.C. (lay out with score lines)
9. For locations of score lines see Note 14, Std. No. 100.
10. Locate special joints as shown.
11. Match joints in walk with joints in curb whenever practicable.
12. Lay out score lines as closely as possible to regular spacing of around 4 feet apart.

**CITY OF
PACIFICA**

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

STANDARD

**JOINTS IN CURB, GUTTER
SIDEWALK & DRIVEWAY**

**AUG
2014**

**DWG. NO.
103**

REV

DATE

BY:

GENERAL TRENCH NOTES

1. Initial backfill material (see Dwg. 301A & Dwg. 301B) shall conform to requirements of the utility having jurisdiction over the installation. For sewer and storm drain pipes, initial fill shall be 3/8" (minus) clean, fractured rock chips.
2. The material to be used for intermediate backfill (see Dwg. 301A & Dwg. 301B) is dependent upon the location of the excavation and the type of native soil at that location:
 - a. In unpaved areas, suitable native soil (relatively dry, granular material, as approved by the Engineer) may be replaced if it can be recompacted to at least 95% of its original density (not more than 5% leftover). In planted areas the topsoil must be stockpiled separately from the subsoil, and should be replaced last.
 - b. In paved areas over uncemented (loose) sand, clean native material may be replaced. It can be mechanically-compacted or jetted (see below). If the trench sides begin to slough and expose voids under the pavement, the pavement must be cut further back to allow full compaction of those areas all the way up to the pavement.
 - c. In paved areas with anything other than uncemented sand, the intermediate fill must be Caltrans Class II Aggregate Base (3/4" maximum); see section 26 of the Caltrans Standard Specifications. It shall be compacted to approximately 95% of maximum density.
3. Fills shall be placed in loose lifts not exceeding 8 inches in thickness before compaction, except that the first lift of initial backfill over a pipe may be up to 16 inches before compaction with manually-operated "jumping jack" type of equipment. When using a compaction wheel on a backhoe or hydraulic excavator, the initial lift may be up to 36 inches before compaction and subsequent lifts may be up to 24" before compaction."
4. See Dwg. 300B for more information on compacting backfill.
5. In lieu of compacted granular material, trenches may be backfilled with Controlled-Density Fill (CDF or sand-cement slurry); plastic pipes must be sufficiently anchored to prevent floating between anchors.
6. Testing of materials and performance shall be in conformance with the methods stated in the latest edition of the State of California Department of Transportation Standard Specifications.
7. Additional thickness and lifts of asphalt concrete may be required to match existing structural section on major roads.
8. A T-cut is required around all trenches or pits in paved areas. It consists of a widening of the excavation near the top. At a level 12" below the underside of the pavement (generally at least 16" below the pavement surface) there shall be a horizontal ledge 6" wide all around the excavation.

NOTES:

- a. CONTRACTOR WILL SHORE ALL TRENCHES IN CONFORMANCE WITH STATE SAFETY STANDARDS (especially Dept. of Industrial Relations, Division of Industrial Safety, Construction Safety Orders, Article 6: Excavations)."
- b. EDGES OF EXCAVATIONS IN PAVED AREAS SHALL BE SAW-CUT PARALLEL AND/OR PERPENDICULAR TO PAVEMENT EDGE (CURB LINE). PATCHES WITHIN 12 INCHES OF PAVEMENT EDGE SHALL BE EXTENDED TO THE PAVEMENT EDGE. IF THERE IS A CONCRETE GUTTER AT THE PAVEMENT EDGE, THE NEW ASPHALT CONCRETE SHALL FINISH 1/4" HIGHER THAN THE CONCRETE"
- c. VERTICAL FACES OF PAVEMENT AND CONCRETE SHALL BE THOROUGHLY PAINTED WITH APPROVED TACK-COAT MATERIAL PRIOR TO PLACING NEW HOT MIX ASPHALT AGAINST THEM. EMULSION MATERIALS (BROWN) MUST BE ALLOWED TO CURE (TURN BLACK) BEFORE PLACING THE ASPHALT."

CITY OF PACIFICA DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	<u>STANDARD</u> GENERAL TRENCH NOTES			AUG 2014
				DWG. NO. 300A
	REV	DATE	BY:	

DETAILED TRENCHING NOTES

1. Slope trench walls or provide supports in conformance with all local and national safety standards. Open only as much trench as can be safely maintained by available equipment. Backfill all trenches as soon as practicable, but not later than the end of each working day, unless otherwise approved.

2. Minimum Trench Widths:

PIPE DIAMETER	TRENCH WIDTH
12" OR LESS	O.D. PLUS 24" MIN
OVER 12"	O.D. PLUS 36" MIN
ANY NCCWD, PG&E, OR THE WIRED UTILITY COMPANIES	REFER TO COMPANIES STANDARDS

3. Minimum Cover: Minimum cover, from top of roadway surface to pipe or conduit crown, shall be 36 inches or as directed by the utility owning the pipe or conduit.

4. Support of Trench Walls:

- A. When sheeting, jacks, shields, boxes, or other trench supports are used, make sure that support of the pipe and its embedment is maintained throughout installation. Ensure sheeting is sufficiently tight to prevent the trench wall from washing out behind the sheeting.
- B. Unless otherwise approved, sheeting driven into or below the pipe zone shall be left in place to preclude loss of support of foundation and embedment materials. When top of sheeting is to be cut off, make such cut 1.5 feet or more above the pipe crown. Leave rangers, walers, and braces in place as required to support cutoff sheeting and the trench wall in the vicinity of the pipe zone.
- C. When using movable trench boxes and shields, do not disturb the installed pipe and its embedment. Do not use movable supports below the top of the pipe zone unless approved methods are used for maintaining the integrity of embedment material. Before moving supports, place and compact embedment to sufficient depths to protect the pipe; as supports are moved, finish placing and compacting embedment.

6. Controlling Water in the Trench:

- A. In general, do not lay or embed pipe in standing or running water. Prevent runoff and surface water from entering the trench. Pending approval, use sump pumps, well points, deep wells, geofabrics, perforated underdrains, or stone blankets of sufficient thickness to remove and control water in the trench. To preclude loss of soil support, use dewatering methods that minimize removal of fines and creation of voids in the surrounding soil.
- B. Dewater groundwater to maintain stability of in-situ and imported materials. Maintain water level below pipe bedding and foundation to provide a stable trench bottom. When excavating while depressing groundwater, make sure the groundwater is below the bottom of cut at all times to prevent trench walls from sloughing or washing out from behind sheeting. Control water in the trench before, during, and after pipe installation, and until embedment is installed and sufficient backfill has been placed to prevent flotation of the pipe.
- C. Control running water emanating from drainage of surface or groundwater to preclude undermining of the trench bottom or walls, the foundation, or the pipe embedment. Do so by providing dams, cutoffs, or the barriers periodically along the installation to preclude transport of water along the trench bottom. Backfill all trenches after the pipe is installed to prevent disturbance of pipe and embedment.

7. Compaction Methods: In general, clean, coarse-grained materials (i.e., Caltrans Class I & Class II Aggregates) such as crushed stone, gravels, and sands are more readily compacted using vibratory equipment, whereas fine materials, such as sand require kneading and impact force along with controlled water content.

- A. Hand-guided ("jumping jack") or walk-behind compactors may be used. Vibratory plate tampers may be used for sand, whereas hand tampers or air driven hand-held impact rammers shall be used for all other materials. Gas or diesel powered jumping jacks or small, walk-behind vibratory rollers impart both vibratory and kneading or impact force and hence can be used for most classes of embedment and backfill material.
- B. When approved, sand may be consolidated by water jetting, provided the material is densified in layers no more than 3 feet in depth, the jet pipe is at least 1 inch in diameter and 4 feet in length, the water supply provides a pressure of at least 40 psi, and adequate drainage of free water can be maintained. Work the jet pipe up and down, to flood the full depth of the lift being placed, and move it often to flood the entire area. Above the level of the pipe crown, use a vibra-plate to squeeze the water out of the fill, and do not place the next lift until water stops appearing at the surface.
- C. In long or exceptionally deep trenches through firm soils a compactor wheel on a backhoe or excavator may be used under the observation of a qualified inspector who will direct the lift depth and the duration of the effort.

**CITY OF
PACIFICA**

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

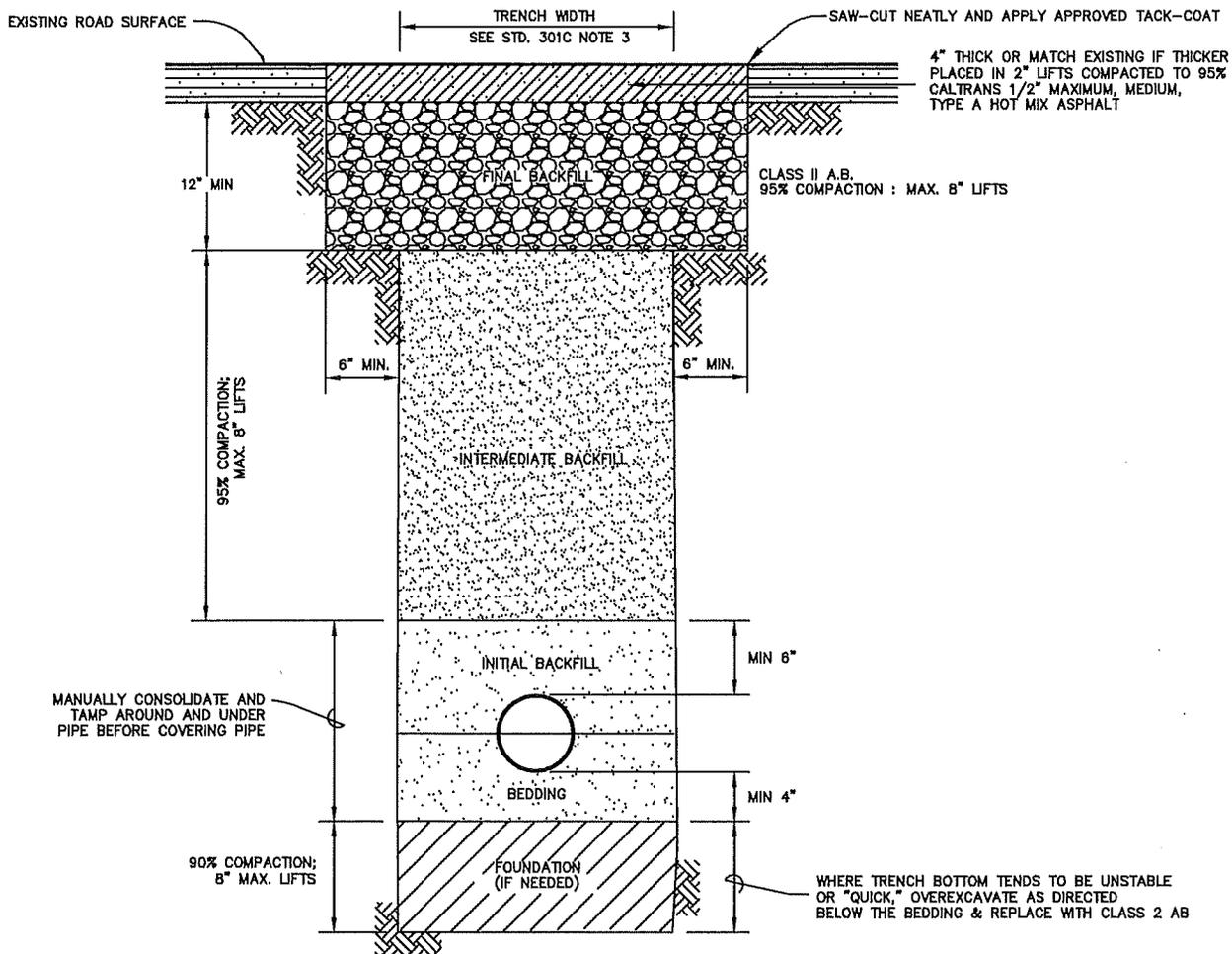
STANDARD

DETAILED
TRENCH NOTES

AUG
2014

DWG. NO.
300B

REV	DATE	BY:
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NOTES:

1. CALL CITY WASTE WATER DIVISION (650-738-7472) 24 HOURS PRIOR TO SEWER PIPE INSTALLATION
2. CALL ENGINEERING (650-738-3767) 24 HOURS PRIOR TO PLACING BACKFILL
3. ALL TRENCHES AND/OR POTHoles SHALL BE RESTORED OR SAFELY COVERED BY 5:00 P.M. OF THE SAME DAY
4. SEWER TAP TRENCH SHALL BE 3' x 5' MAX. OR AS DIRECTED BY THE WASTE WATER DEPT.
5. SLURRY SEAL, IF REQUIRED, SHALL BE APPLIED APPROXIMATELY TWO WEEKS AFTER ALL TRENCHES AND POTHoles ARE RESTORED
6. CERTIFICATE OF COMPLIANCE MAY BE REQUIRED FOR THE ASPHALT, AND TACK COAT
7. SEE ALSO DETAILS 300A AND 300B

TRENCH WIDTH

CONDUIT SIZE:	3" OR LESS	4" TO 18"	OVER 18"
MIN. TRENCH WIDTH	6"	O.D. + 24"	O.D. + 36"

**CITY OF
PACIFICA**

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

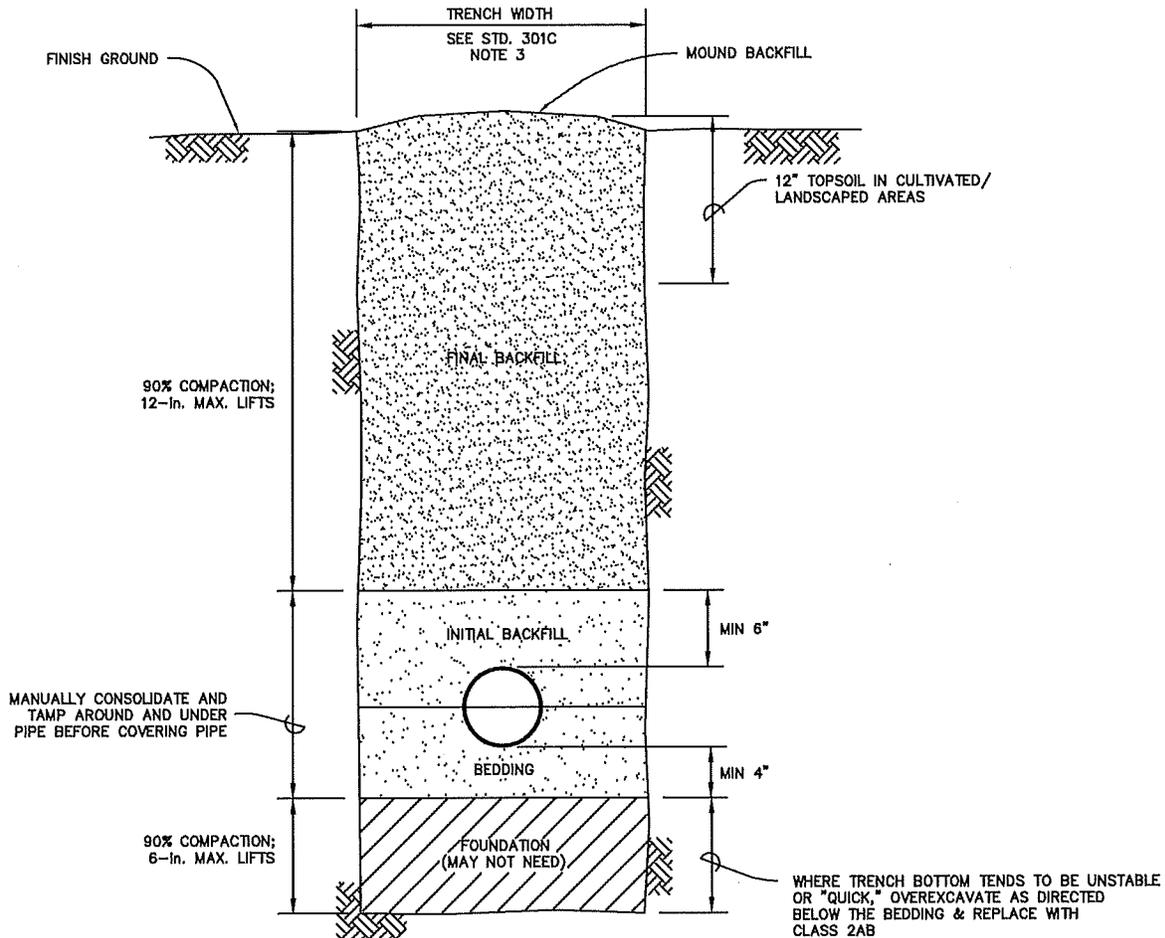
STANDARD

PAVED STREETS
TRENCH DETAIL

AUG
2014

DWG. NO.
301A

REV	DATE	BY:
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NOTES:

1. CALL CITY WASTE WATER DIVISION (650-738-7472) 24 HOURS PRIOR TO SEWER PIPE INSTALLATION.
2. CALL ENGINEERING (650-738-3767) 24 HOURS PRIOR TO PLACING BACKFILL
3. SEE ALSO DETAILS 300A AND 300B

TRENCH WIDTH

CONDUIT SIZE:	3" OR LESS	4" TO 18"	OVER 18"
MIN. TRENCH WIDTH	6"	O.D. + 24"	O.D. + 36"

**CITY OF
PACIFICA**

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

**STANDARD
UNPAVED PUBLIC
RIGHT OF WAY
STANDARD TRENCH**

**AUG
2014**

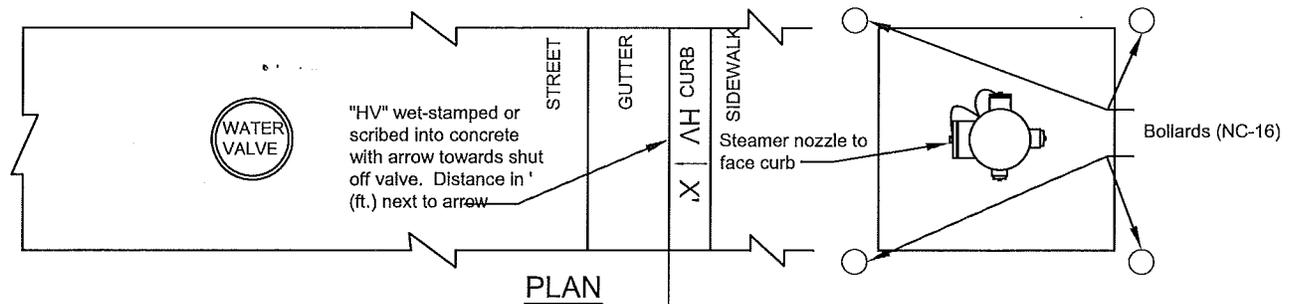
**DWG. NO.
301B**

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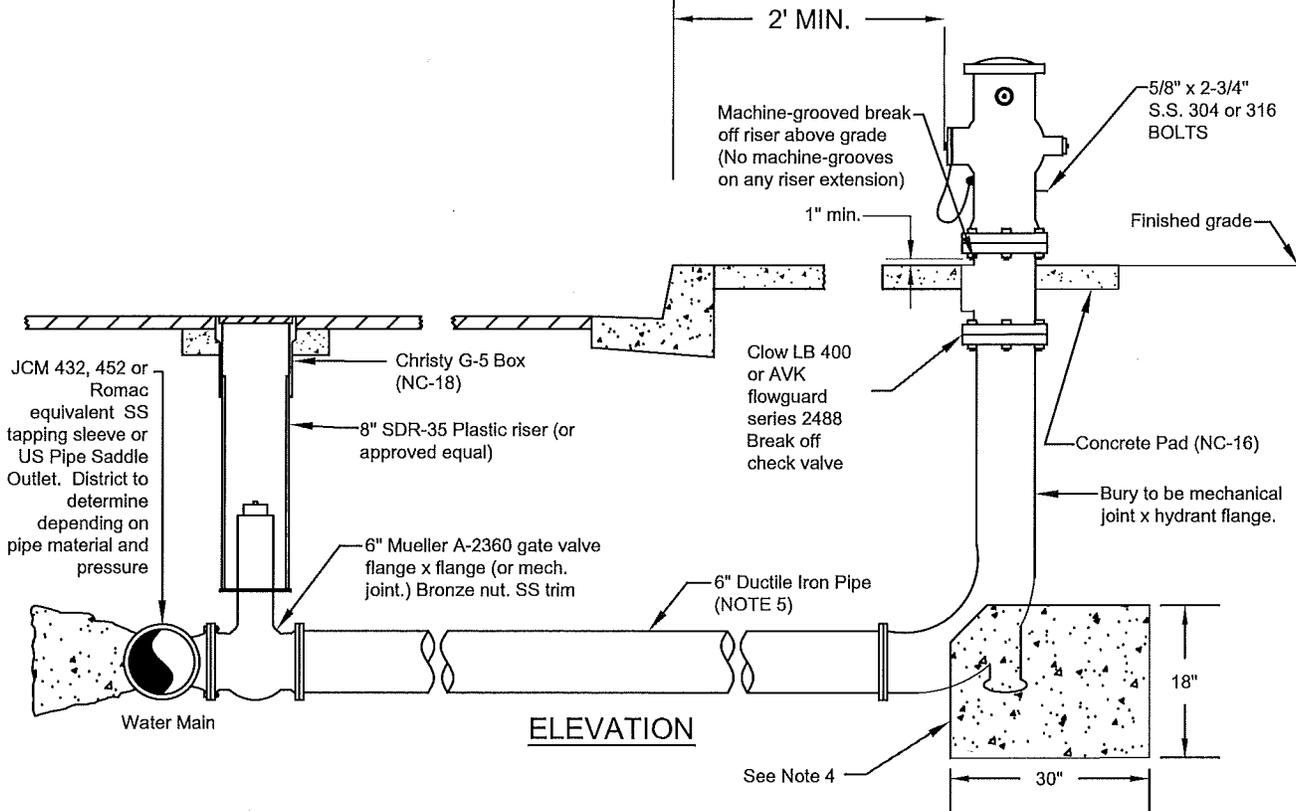
STORM DRAINAGE PIPING NOTES

1. All storm drain pipes shall be either DR17 solid HDPE (white or grey interior), double-walled smooth interior HDPE, SDR26 PVC or reinforced concrete pipe.
 - 1.1. Solid HDPE shall be fusion-welded together, and all fittings shall be fusion-welded to it.
 - 1.2. Double-walled HDPE pipe and fittings shall have water-tight bell-and-spigot joints with gaskets meeting ASTM F477, and shall meet AASHTO M252 or M294, type S.
 - 1.3. PVC pipe and fittings shall have bell-and-spigot joints with gaskets meeting ASTM F477. and shall meet ASTM D3034 or F679.
 - 1.4. Reinforced concrete pipe (RCP) shall be class III or better per ASTM C76 or AASHTO M170 and shall use rubber gasketed joints meeting ASTM C443.
2. Pipe bedding, where the trench bottom is competent soil approved by the City's Inspector, shall be clean crushed rock no larger than 3/4" nominal. When the trench bottom is overly wet or soft the Inspector may require over-excavation and placement of additional import material before bedding.
3. Bedding shall be recessed to accept bell-ends without the pipe being raised above grade.
4. Lay pipe with bells or female ends at the upstream ends. Joints shall be fully engaged.
5. On grades greater than 2:1 (H:V) pipes shall be fitted with anchors to prevent slippage.
6. See Dwg. 300A and Dwg. 300B for backfilling notes.
7. Changes in direction, or changes in pipe size or material, shall only be done at a structure (see Dwg. 303A).
8. Where pipes enter pre-cast concrete structures, the ends shall be flush with the inner walls and the annular space shall be completely filled with non-shrink mortar; a 12" wide concrete collar shall entirely surround the pipe outside the structure.
9. Plastic pipe shall be subject to mandrel testing after backfilling is complete.

<p>CITY OF PACIFICA</p> <p>DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION</p>	<p><u>STANDARD</u></p> <p>STORM DRAINAGE PIPING NOTES</p>				<p>AUG 2014</p>
					<p>DWG. NO.</p>
					<p>303B</p>
		<p>REV</p>	<p>DATE</p>	<p>BY:</p>	



PLAN



ELEVATION

NOTES:

1. Fire Hydrant and bury to be set plumb.
2. Bronze hydrant (no paint) to be 3-way Clow #2060 or 2-way Clow #2050. To be determined by District.
3. All bolts Stainless steel type 304 or 316, coated with anti-sieze compound. Tighten bolts per manufacturer's specification.
4. Thrust blocks shall be placed against undisturbed soil. All bolts shall be free from poured concrete.
5. Pipe material shall be ductile iron class 52.
6. All fittings shall meet AWWA standard C-153/A21.52-00. All gaskets shall be chloramine resistant as well as meet AWWA standard C111/A21.11-00 and NSF standard 61.
7. All mechanical joint fittings shall be restrained with EBAA Megalugs. Flange joints may be permitted by District.
8. Nylon hydrant caps shall be color coded to indicate flow. Hydrant caps shall be attached with stainless steel chain or wire.
9. All requirements are subject to change by District. All plans must be approved by District.
10. District to determine if bollards are required. Other means of protection may be available (large rocks).
11. All underground piping shall be bagged and taped per NCCWD specifications.
12. Pressure test for hydrant run to be tested at a pressure not to exceed the rating of the hydrant. Pressure to be determined by District.
13. Tapping sleeve to be pressure tested at 100 PSI (air) for 15 minutes.
14. Hydrant Valves located in gutters will not be permitted.

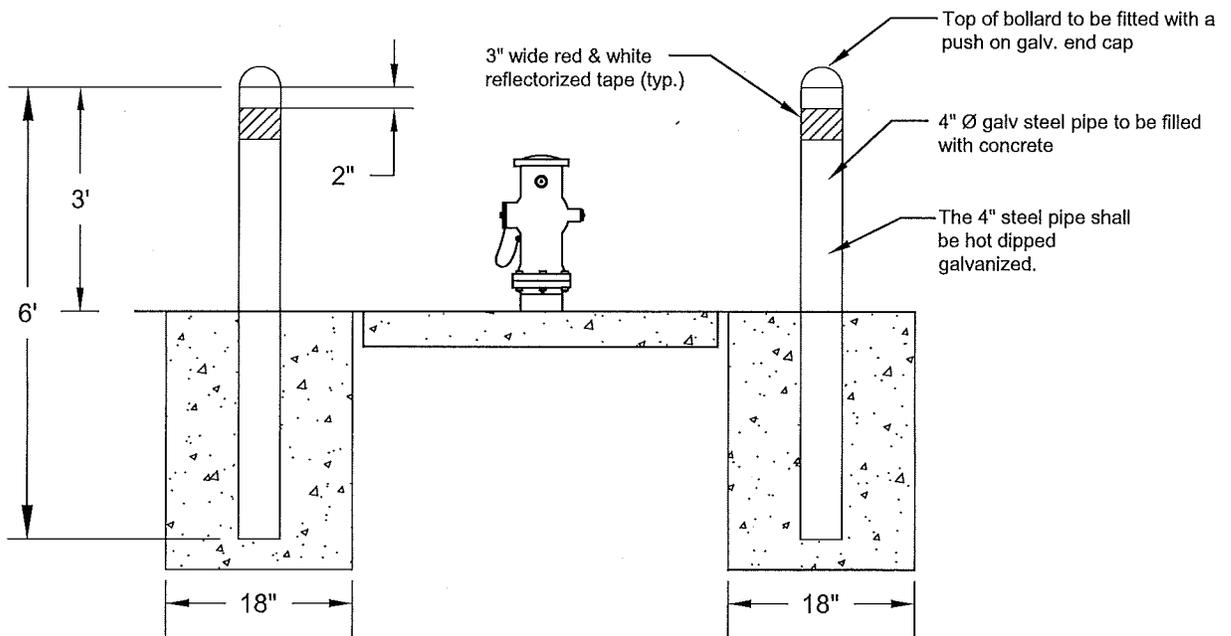
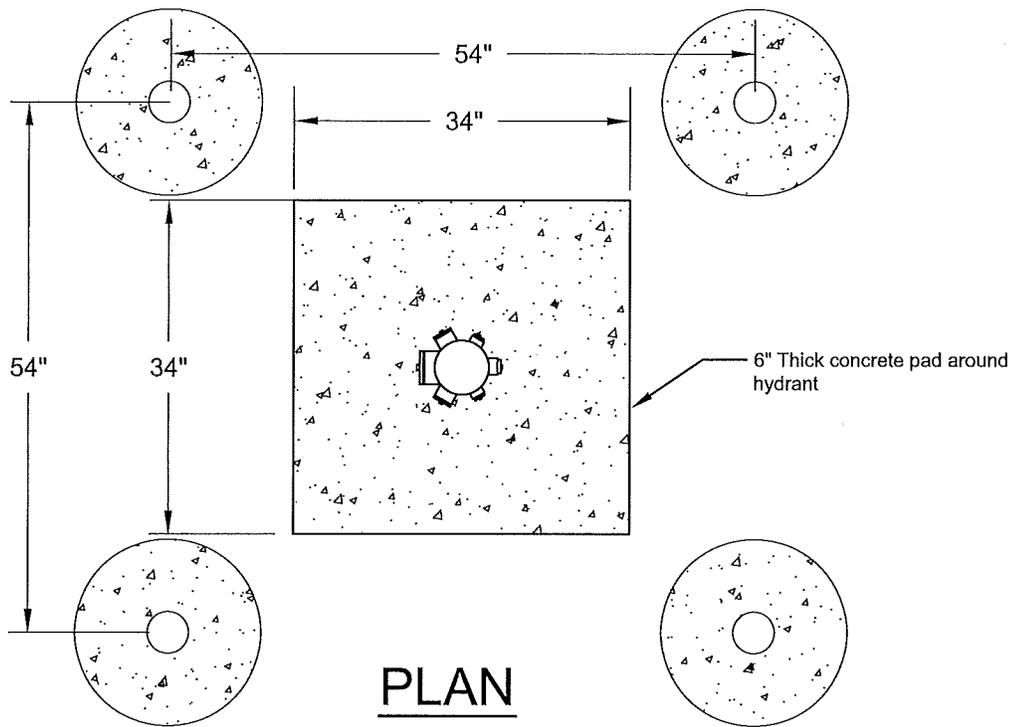
STANDARD
DETAIL

NORTH COAST COUNTY WATER DISTRICT

STANDARD FIRE HYDRANT ASSEMBLY

DATE: 12/13/2012

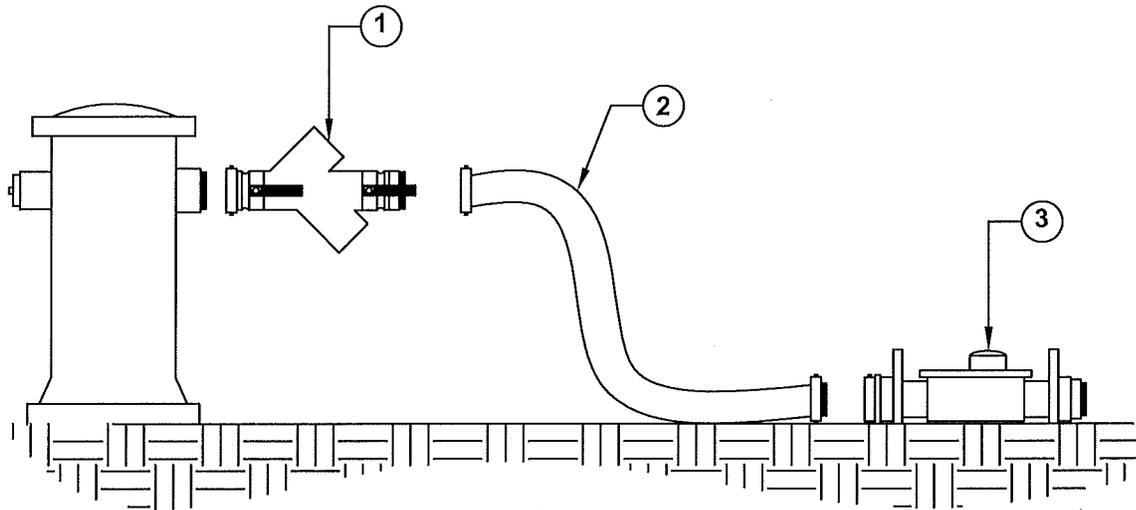
NC-15
SHT 1 OF 1



NOTES:

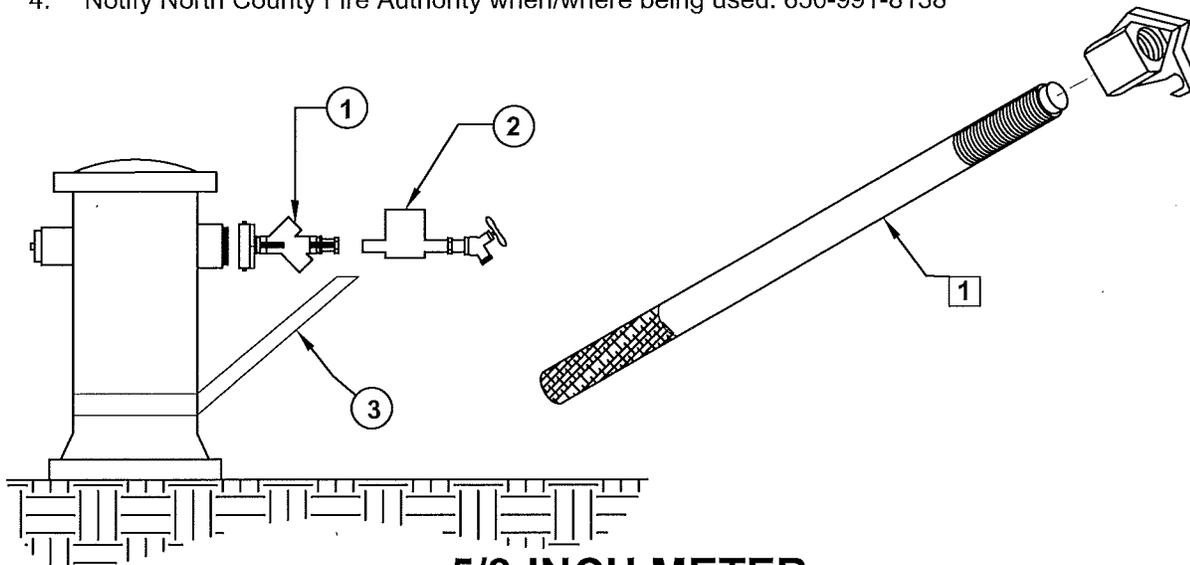
1. Bollards to be set plumb.
2. Bollards are to be set at District discretion
3. Other means of protecting hydrant may be used upon District approval.

STANDARD DETAIL	NORTH COAST COUNTY WATER DISTRICT	
DATE: 12/14/2012	FIRE HYDRANT BOLLARDS (4 POST CONFIGURATION)	NC-16 SHT 1 OF 1



3-INCH METER

1. 2" RP Backflow Preventer (one unit)
2. 6' Long, 2-1/2" Fire hose.
3. 3" Turbo water meter
4. Notify North County Fire Authority when/where being used. 650-991-8138



5/8-INCH METER

1. 3/4" RP Backflow Preventer
2. 5/8" x 3/4" water meter
3. Meter Support stand
4. Notify North County Fire Authority when/where being used 650-991-8138

NOTE:

1. Spanner wrench to be issued by the District.

STANDARD
DETAIL

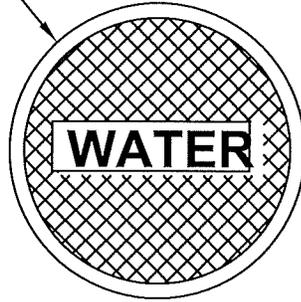
NORTH COAST COUNTY WATER DISTRICT

DATE: 1/18/2012

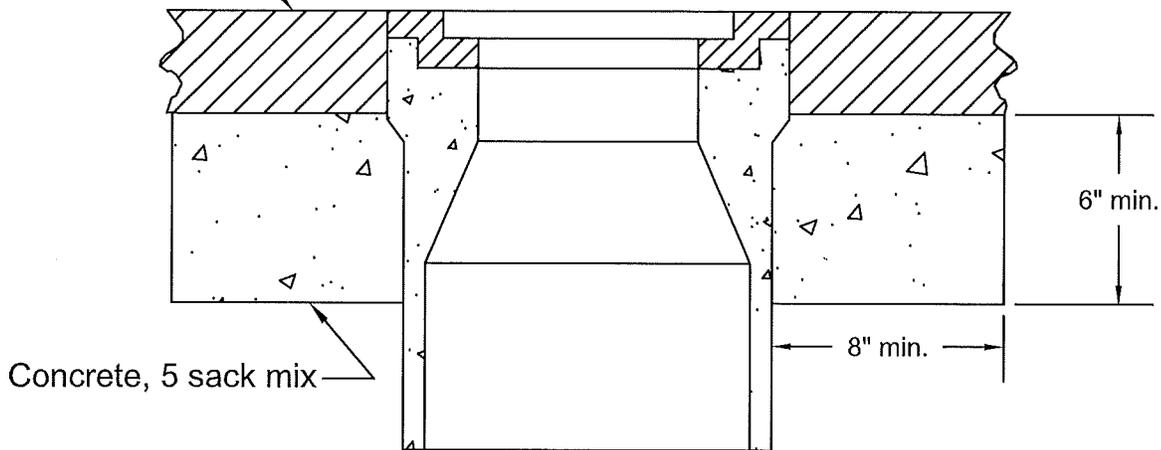
INSTALLATION OF PORTABLE WATER METERS

NC-17
SHT 1 OF 1

Lid marked "WATER"



Asphalt



NOTES

1. Christy G-5 Traffic valve box with cast iron lid.
2. Lid to be marked "WATER".
3. All requirements are subject to change by District. All plans must be approved by the District.

STANDARD
DETAIL

NORTH COAST COUNTY WATER DISTRICT

DATE: 12/17/2012

WATER VALVE BOX - ROADWAY INSTALLATION

NC-18
SHT 1 OF 1