

CITY OF CARLSBAD

San Diego County

California

**CONTRACT DOCUMENTS,
GENERAL PROVISIONS, AND
TECHNICAL SPECIFICATIONS**

FOR

**MISCELLANEOUS SEWER
REHABILITATION,
NORTHWEST QUADRANT
CONTRACT NO. 5503-1**

BID NO. PWS11-02UTIL



TABLE OF CONTENTS

<u>Item</u>	<u>Page</u>
Notice Inviting Bids.....	5
Contractor's Proposal.....	9
Bid Security Form.....	27
Bidder's Bond to Accompany Proposal	28
Guide for Completing the "Designation Of Subcontractors" Form	30
Designation of Subcontractor and Amount of Subcontractor's Bid Items	32
Bidder's Statement of Technical Ability and Experience	33
Bidder's Certificate of Insurance for General Liability, Employers' Liability, Automotive Liability and Workers' Compensation	34
Bidder's Statement Re Debarment.....	35
Bidder's Disclosure of Discipline Record	36
Non-Collusion Affidavit to Be Executed by Bidder and Submitted with Bid	38
Contract Public Works	39
Labor and Materials Bond.....	45
Faithful Performance/Warranty Bond	47
Optional Escrow Agreement for Surety Deposits in Lieu of Retention.....	49



GENERAL PROVISIONS

Section 1	Terms, Definitions Abbreviations and Symbols	
1-1	Terms	52
1-2	Definitions	53
1-3	Abbreviations	57
1-4	Units of Measure	59
1-5	Symbols.....	60
Section 2	Scope and Control of The Work	
2-1	Award and Execution of Contract	61
2-2	Assignment	61
2-3	Subcontracts	61
2-4	Contract Bonds	62
2-5	Plans and Specifications.....	63
2-6	Work to be Done	66
2-7	Subsurface Data	66
2-8	Right-of-Way	67
2-9	Surveying	67
2-10	Authority of Board and Engineer.....	71
2-11	Inspection.....	71
Section 3	Changes in Work	
3-1	Changes Requested by the Contractor	71
3-2	Changes Initiated by the Agency	72
3-3	Extra Work	73
3-4	Changed Conditions	75
3-5	Disputed Work	76
Section 4	Control of Materials	
4-1	Materials and Workmanship	79
4-2	Materials Transportation, Handling and Storage.....	83
Section 5	Utilities	
5-1	Location.....	84
5-2	Protection	84
5-3	Removal	85
5-4	Relocation	85
5-5	Delays	85
5-6	Cooperation.....	86
Section 6	Prosecution, Progress and Acceptance of the Work	
6-1	Construction Schedule and Commencement of Work	86
6-2	Prosecution of Work	86
6-3	Suspension of Work.....	87
6-4	Default by Contractor	88
6-5	Termination of Contract	88
6-6	Delays and Extensions of Time	88
6-7	Time of Completion.....	89
6-8	Completion, Acceptance, and Warranty	90
6-9	Liquidated Damages	90
6-10	Use of Improvement During Construction	91



Section 7	Responsibilities of the Contractor	
7-1	Contractor's Equipment and Facilities	91
7-2	Labor	91
7-3	Liability Insurance	91
7-4	Workers' Compensation Insurance	91
7-5	Permits	92
7-6	The Contractor's Representative	93
7-7	Cooperation and Collateral Work	94
7-8	Project Site Maintenance	94
7-9	Protection and Restoration of Existing Improvements	96
7-10	Public Convenience and Safety	96
7-11	Patent Fees or Royalties	102
7-12	Advertising	102
7-13	Laws to be Observed	102
7-14	Antitrust Claims	103
Section 8	Facilities for Agency Personnel	
8-1	General	103
Section 9	Measurement and Payment	
9-1	Measurement of Quantities for Unit Price Work	103
9-2	Lump Sum Work	103
9-3	Payment	104
9-4	Bid Items	107

TECHNICAL SPECIFICATIONS

DIVISION 01 – GENERAL REQUIREMENTS

01025 Measurement and Payment

DIVISION 11 – EQUIPMENT

11080 Wastewater Bypass and Containment

DIVISION 13 – SPECIAL CONSTRUCTION

13605 Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers

APPENDIXES

Appendix A	Door Hanger for Project Notification
Appendix B	Applicable City Standard Drawings (for reference only)
Appendix C	Sample NCTD ROE Permit
Appendix D	Record Drawings



CITY OF CARLSBAD, CALIFORNIA

NOTICE INVITING BIDS

UNTIL 2:00 PM ON AUGUST 31, 2010, the City shall accept sealed bids, clearly marked as such, at the Faraday Center, 1635 Faraday Avenue, Carlsbad, CA 92008-7314, Attn: Purchasing Officer, by mail, delivery service or by deposit in the Bid Box located in the first floor lobby, at which time they will be opened and read, for performing the work as follows: Rehabilitate approximately 2,100 lineal feet of 6-inch and 8-inch gravity flow sewer pipeline with the installation of cured-in-place pipe (CIPP) liners.

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT

CONTRACT NO. 5503-1

BID NO. PWS11-02UTIL

INSTRUCTIONS TO BIDDERS AND BID REQUIREMENTS

This bid and the terms of the Contract Documents and General Provisions constitute an irrevocable offer that shall remain valid and in full force for a period of 90 days and such additional time as may be mutually agreed upon by the City of Carlsbad and the Bidder.

No bid will be received unless it is made on a proposal form furnished by the Purchasing Department. Each bid must be accompanied by security in a form and amount required by law. The bidder's security of the second and third next lowest responsive bidders may be withheld until the Contract has been fully executed. The security submitted by all other unsuccessful bidders shall be returned to them, or deemed void, within ten (10) days after the Contract is awarded. Pursuant to the provisions of law (Public Contract Code section 10263), appropriate securities may be substituted for any obligation required by this notice or for any monies withheld by the City to ensure performance under this Contract. Section 10263 of the Public Contract Code requires monies or securities to be deposited with the City or a state or federally chartered bank in California as the escrow agent. The escrow agent shall maintain insurance to cover negligent acts and omissions of the agent in connection with the handling of retentions under this section in an amount not less than \$100,000 per contract.

The City of Carlsbad may disqualify a contractor or subcontractor from participating in bidding when a contractor or subcontractor has been debarred by the City of Carlsbad or another jurisdiction in the State of California as an irresponsible bidder.

The work shall be performed in strict conformity with the plans, provisions, and specifications as approved by the City Council of the City of Carlsbad on file with the Engineering Department. The specifications for the work include City of Carlsbad Technical Specifications and the Standard Specifications for Public Works Construction, Parts 2 & 3, current edition at time of bid opening and the supplements thereto as published by the "Greenbook" Committee of Public Works Standards, Inc. all hereinafter designated "SSPWC", as amended. Specification Reference is hereby made to the plans and specifications for full particulars and description of the work. The General Provisions (Part 1) to the SSPWC do not apply.



The City of Carlsbad encourages the participation of minority and women-owned businesses.

The City of Carlsbad encourages all bidders, suppliers, manufacturers, fabricators and contractors to utilize recycled and recyclable materials when available, appropriate and approved by the Engineer.

BID DOCUMENTS

The bid documents comprise the following documents which must be completed and properly executed including notarization, where indicated.

1. Contractor's Proposal
2. Bidder's Bond
3. Non-Collusion Affidavit
4. Designation of Subcontractor and Amount of Subcontractor's Bid
5. Bidder's Statement of Technical Ability and Experience
6. Acknowledgement of Addendum(a)
7. Certificate of Insurance. The riders covering the City, its officials, employees and volunteers may be omitted at the time of bid submittal but shall be provided by the Bidder prior to award of this contract.
8. Bidder's Statement Re Debarment
9. Bidder's Disclosure Of Discipline Record
10. Escrow Agreement for Security Deposits - (optional, must be completed if the Bidder wishes to use the Escrow Agreement for Security)

ENGINEER'S ESTIMATE:

All bids will be compared on the basis of the Engineer's Estimate. The estimated quantities are approximate and serve solely as a basis for the comparison of bids. The Engineer's Estimate is **\$435,000**

TIME OF COMPLETION:

The contractor shall complete the Work within the time set in the contract as defined in the General Provisions Section 6-7.

SPECIALTY CONTRACTORS:

ACCEPTABLE LICENSE TYPES

Except as provided herein a bid submitted to the City by a Contractor who is not licensed as a contractor pursuant to the Business and Professions Code shall be considered nonresponsive and shall be rejected by the City. In all contracts where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with California law. Where federal funds are involved the contractor shall be properly licensed at the time the contract is awarded. In all other cases the contractor shall state their license number, expiration date and classification in the proposal, under penalty of perjury. This invitation to bid does not involve federal funds. The following classifications are acceptable for this contract: CLASSIFICATION "A", GENERAL ENGINEERING.

ESCROW AGREEMENT

If the Contractor intends to utilize the escrow agreement included in the contract documents in lieu of the usual 10% retention from each payment, these documents must be completed and submitted with the signed contract. The escrow agreement may not be substituted at a later date.

OBTAINING PLANS AND SPECIFICATIONS

Sets of plans, various supplemental provisions, and Contract documents may be obtained at the Cashier's Counter of the Faraday Center located at 1635 Faraday Avenue, Carlsbad, California 92008-7314, for a non-refundable fee of **\$30.00** per set. If plans and specifications are to be mailed, the cost for postage should be added.



INTENT OF PLANS AND SPECIFICATIONS

Any prospective bidder who is in doubt as to the intended meaning of any part of the drawings, specifications or other contract documents, or finds discrepancies in or omissions from the drawings and specifications may submit to the Engineer a written request for clarification or correction. Any response will be made only by a written addendum duly issued by the Engineer a copy of which will be mailed or delivered to each person receiving a set of the contract documents. No oral response will be made to such inquiry. **Prior to the award of the contract, no addition to, modification of or interpretation of any provision in the contract documents will be given by any agent, employee or contractor of the City of Carlsbad except as hereinbefore specified. No bidder may rely on directions given by any agent, employee or contractor of the City of Carlsbad except as hereinbefore specified.**

REJECTION OF BIDS

The City of Carlsbad reserves the right to reject any or all bids and to waive any minor irregularity or informality in such bids.

THE PAYMENT OF PREVAILING WAGES IS NOT REQUIRED

The City of Carlsbad is a Charter City. Carlsbad Municipal Code Section 3.28.130 supersedes the provisions of the California Labor Code when the public work is not a statewide concern. The City Council has determined that it is not in the best interest of the city to require the payment of prevailing wages for this project. Payment of prevailing wages is at contractor's discretion.

PRE BID MEETING

A pre-bid meeting and tour of the project site will not be held.

UNIT PRICES AND COMPUTATION OF BIDS

All bids are to be computed on the basis of the given estimated quantities of work, as indicated in this proposal, times the unit price as submitted by the bidder. In case of a discrepancy between words and figures, the words shall prevail. In case of an error in the extension of a unit price, the corrected extension shall be calculated and the bids will be computed as indicated above and compared on the basis of the corrected totals.

All prices must be in ink or typewritten. Changes or corrections may be crossed out and typed or written in with ink and must be initialed in ink by a person authorized to sign for the Contractor.

ADDENDUMS

Bidders are advised to verify the issuance of all addenda and receipt thereof one day prior to bidding. Submission of bids without acknowledgment of addenda may be cause of rejection of bid.



BOND AND INSURANCE REQUIREMENTS

The Contractor shall provide bonds to secure faithful performance and warranty of the work in an amount equal to one hundred percent (100%) of the Contract price on this project. The Contractor shall provide bonds to secure payment of laborers and materials suppliers, in an amount equal to one hundred percent (100%) of the total amount payable by the terms of the contract. These bonds shall be kept in full force and effect during the course of this project, and shall extend in full force and effect and be retained by the City until they are released as stated in the General Provisions section of this contract. All bonds are to be placed with a surety insurance carrier admitted and authorized to transact the business of insurance in California and whose assets exceed their liabilities in an amount equal to or in excess of the amount of the bond. The bonds are to be accompanied by the following documents:

- 1) An original, or a certified copy, of the unrevoked appointment, power of attorney, by laws, or other instrument entitling or authorizing the person who executed the bond to do so.
- 2) A certified copy of the certificate of authority of the insurer issued by the insurance commissioner.

If the bid is accepted, the City may require copies of the insurer's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code, within 10 calendar days of the insurer's receipt of a request to submit the statements.

Insurance is to be placed with insurers that:

- 1) Have a rating in the most recent Best's Key Rating Guide of at least A-:VII
- 2) Are admitted and authorized to transact the business of insurance in the State of California by the Insurance Commissioner.

Auto policies offered to meet the specification of this contract must:

- 1) Meet the conditions stated above for all insurance companies.
- 2) Cover any vehicle used in the performance of the contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.

Workers' compensation insurance required under this contract must be offered by a company meeting the above standards with the exception that the Best's rating condition is waived. The City does accept policies issued by the State Compensation Fund meeting the requirement for workers' compensation insurance.

The Contractor shall be required to maintain insurance as specified in the Contract. Any additional cost of said insurance shall be included in the bid price.

The award of the contract by the City Council is contingent upon the Contractor submitting the required bonds and insurance, as described in the contract, within twenty days of bid opening. If the Contractor fails to comply with these requirements, the City may award the contract to the second or third lowest bidder and the bid security of the lowest bidder may be forfeited.

BUSINESS LICENSE

The prime contractor and all subcontractors are required to have and maintain a valid City of Carlsbad Business License for the duration of the contract.

Approved by the City Council of the City of Carlsbad, California, by Resolution No. 2010-185 adopted on the 13th day of July, 2010.

July 21, 2010

Date


Deputy City Clerk



CITY OF CARLSBAD

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

CONTRACTOR'S PROPOSAL

City Council
City of Carlsbad
1200 Carlsbad Village Drive
Carlsbad, California 92008

The undersigned declares he/she has carefully examined the location of the work, read the Notice Inviting Bids, examined the Plans, Specifications, General Provisions, Contract Documents, and addenda thereto, and hereby proposes to furnish all labor, materials, equipment, transportation, and services required to do all the work to complete Contract No. 5503-1 in accordance with the Plans, Specifications, General Provisions, Contract Documents, and addenda thereto and that he/she will take in full payment therefore the following unit prices for each item complete, to wit:

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT SCHEDULE "A" HEMLOCK AVENUE EXISTING SEWER REHABILITATION

Item No.	Description	Approximate Quantity and Unit	Unit Price (Figures)	Total Amount (Figures)
A-1	Contract Bonds, Insurance, Encroachment Permits, Rights-of-Entry, Project Management, Mobilization, Demobilization, and Preparatory Work at a Stipulated Lump Sum of <u>Ten Thousand Dollars</u> (Stipulated Amount: Do Not Change)	LS	\$ <u>10,000</u>	\$ <u>10,000</u>
A-2	Furnish, Install, and Maintain Traffic Control including Preparation and Approval of Traffic Control Plans, All Signs, Delineators, Arrow Boards, and Flagmen <u>(Price in Words)</u>	LS	\$ _____	\$ _____



Item No.	Description	Approximate Quantity and Unit	Unit Price (Figures)	Total Amount (Figures)
A-3	Thoroughly Clean Existing Sewer (Removal of Grease, Roots, and any Obstruction), Video Inspect Existing Sewer after Initially Cleaning and Flushing the Sewer, and Post-Video Inspection of the Sewer after Rehabilitation Work is Complete (640± LF) in Accordance with the Construction Drawings and Technical Specifications, Section 13605	LS	\$ _____	\$ _____
	(Price in Words)			
A-4	Remove Protruding Sewer Laterals into the Sewer Main and Preliminary Point Repairs by a Robotically-Controlled Device from inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	18 EA	\$ _____	\$ _____
	(Price in Words)			
A-5	Furnish & Install 6" Cured-in-Place Pipe (CIPP) Liner in Accordance with the Technical Specifications, Section 13605	640± LF	\$ _____	\$ _____
	(Price in Words)			
A-6	Wastewater Bypass and Containment in Accordance with the Construction Drawings and Technical Specifications Section 11080	LS	\$ _____	\$ _____
	(Price in Words)			



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
A-7	Reinstate Sewer Laterals by a Robotically-Controlled Device from Inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications Section 13605	18 EA	\$_____	\$_____
	_____ _____ (Unit Price in Words)			
A-8	Furnish and Install Sewer Lateral Inserts (Top Hat) by a Robotically-Controlled Device from inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications Section 13605	18 EA	\$_____	\$_____
	_____ _____ (Unit Price in Words)			

Total amount of bid in words for Schedule "A": _____

Total amount of bid in numbers for Schedule "A": \$ _____

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.



MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
SCHEDULE "B"
REDWOOD AVENUE EXISTING SEWER REHABILITATION

Item No.	Description	Approximate Quantity and Unit	Unit Price (Figures)	Total Amount (Figures)
B-1	Contract Bonds, Insurance, Encroachment Permits, Rights-of-Entry, Project Management, Mobilization, Demobilization, and Preparatory Work at a Stipulated Lump Sum of <u>Ten Thousand Dollars</u> (Stipulated Amount: Do Not Change)	LS	\$ <u>10,000</u>	\$ <u>10,000</u>
B-2	Furnish, Install, and Maintain Traffic Control including Preparation and Approval of Traffic Control Plans, All Signs, Delineators, Arrow Boards, and Flagmen <u>(Price in Words)</u>	LS	\$ _____	\$ _____
B-3	Thoroughly Clean Existing Sewer (Removal of Grease, Roots, and any Obstruction), and Video Inspect Existing Sewer after Initially Cleaning and Flushing the Sewer, and Post-Video Inspection of the Sewer after Rehabilitation Work is Complete (580± LF) in Accordance with the Construction Drawings and Technical Specifications, Section 13605 <u>(Price in Words)</u>	LS	\$ _____	\$ _____



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
B-4	Remove Protruding Sewer Laterals into the Sewer Main and Preliminary Point Repairs by a Robotically-Controlled Device from inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	18 EA	\$ _____	\$ _____
	_____ _____ (Price in Words)			
B-5	Furnish & Install 6" Cured-in-Place Pipe (CIPP) Liner in Accordance with the Technical Specifications, Section 13605	580± LF	\$ _____	\$ _____
	_____ _____ (Price in Words)			
B-6	Wastewater Bypass and Containment in Accordance with the Construction Drawings and Technical Specifications, Section 11080	LS	\$ _____	\$ _____
	_____ _____ (Price in Words)			
B-7	Reinstate Sewer Laterals by a Robotically-Controlled Device from Inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	18 EA	\$ _____	\$ _____
	_____ _____ (Unit Price in Words)			



Item No.	Description	Approximate Quantity and Unit	Unit Price (Figures)	Total Amount (Figures)
B-8	Furnish and Install Sewer Lateral Inserts (Top Hat) by a Robotically-Controlled Device from inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	18 EA	\$_____	\$_____

	(Unit Price in Words)			

Total amount of bid in words for Schedule "B": _____

Total amount of bid in numbers for Schedule "B": \$ _____

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.



MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
SCHEDULE "C"
PIO PICO DRIVE EXISTING SEWER REHABILITATION

Item No.	Description	Approximate Quantity and Unit	Unit Price (Figures)	Total Amount (Figures)
C-1	Contract Bonds, Insurance, Encroachment Permits, Rights-of-Entry, Project Management, Mobilization, Demobilization, and Preparatory Work at a Stipulated Lump Sum of <u>Ten Thousand Dollars</u> (Stipulated Amount: Do Not Change)	LS	\$ <u>10,000</u>	\$ <u>10,000</u>
C-2	Furnish, Install, and Maintain Traffic Control including Preparation and Approval of Traffic Control Plans, All Signs, Delineators, Arrow Boards, and Flagmen <u>(Price in Words)</u>	LS	\$ _____	\$ _____
C-3	Thoroughly Clean Existing Sewer (Removal of Grease, Roots, and any Obstruction), and Video Inspect Existing Sewer after Initially Cleaning and Flushing the Sewer, and Post-Video Inspection of the Sewer after Rehabilitation Work is Complete (400± LF) in Accordance with the Construction Drawings and Technical Specifications, Section 13605 <u>(Price in Words)</u>	LS	\$ _____	\$ _____



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
C-4	Remove Protruding Sewer Laterals into the Sewer Main and Preliminary Point Repairs by a Robotically-Controlled Device from inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	3 EA	\$ _____	\$ _____
	_____ (Price in Words)			
C-5	Furnish & Install 8" Cured-in-Place Pipe (CIPP) Liner in Accordance with the Technical Specifications, Section 13605	400± LF	\$ _____	\$ _____
	_____ (Price in Words)			
C-6	Wastewater Bypass and Containment in Accordance with the Construction Drawings and Technical Specifications, Section 11080	LS	\$ _____	\$ _____
	_____ (Price in Words)			
C-7	Reinstate Sewer Laterals by a Robotically-Controlled Device from Inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	3 EA	\$ _____	\$ _____
	_____ (Unit Price in Words)			



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
C-8	Furnish and Install Sewer Lateral Inserts (Top Hat) by a Robotically-Controlled Device from inside the Sewer Main without Excavation in Accordance with the Construction Drawings and Technical Specifications, Section 13605	3 EA	\$_____	\$_____

	(Unit Price in Words)			

Total amount of bid in words for Schedule "C": _____

Total amount of bid in numbers for Schedule "C": \$ _____

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.



**MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
SCHEDULE "D"
AVENUE OF THE TREES EXISTING SEWER REHABILITATION**

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
D-1	Contract Bonds, Insurance, Encroachment Permits, Rights-of-Entry, Project Management, Mobilization, Demobilization, and Preparatory Work at a Stipulated Lump Sum of <u>Ten Thousand Dollars</u> (Stipulated Amount: Do Not Change)	LS	\$ <u>10,000</u>	\$ <u>10,000</u>
D-2	Furnish, Install, and Maintain Traffic Control including Preparation and Approval of Traffic Control Plans, All Signs, Delineators, Arrow Boards, and Flagmen <u>(Price in Words)</u>	LS	\$ _____	\$ _____
D-3	Thoroughly Clean Existing Sewer (Removal of Grease, Roots, and any Obstruction), Video Inspect Existing Sewer after Initially Cleaning and Flushing the Sewer, and Post-Video Inspection of the Sewer after Rehabilitation Work is Complete (230± LF) in Accordance with the Construction Drawings and Technical Specifications, Section 13605 <u>(Price in Words)</u>	LS	\$ _____	\$ _____



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
D-4	Furnish & Install 8" Cured-in-Place Pipe (CIPP) Liner in Accordance with the Technical Specifications, Section 13605	230± LF	\$ _____	\$ _____

	(Price in Words)			
D-5	Wastewater Bypass and Containment in Accordance with the Construction Drawings and Technical Specifications, Section 11080	LS	\$ _____	\$ _____

	(Price in Words)			

Total amount of bid in words for Schedule "D": _____

Total amount of bid in numbers for Schedule "D": \$ _____

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.



**MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
SCHEDULE "E"
MAGNOLIA AVENUE EXISTING SEWER REHABILITATION**

<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
E-1	Contract Bonds, Insurance, Encroachment Permits, Rights-of-Entry, Project Management, Mobilization, Demobilization, and Preparatory Work at a Stipulated Lump Sum of <u>Ten Thousand Dollars</u> (Stipulated Amount: Do Not Change)	LS	\$ <u>10,000</u>	\$ <u>10,000</u>
E-2	Furnish, Install, and Maintain Traffic Control including Preparation and Approval of Traffic Control Plans, All Signs, Delineators, Arrow Boards, and Flagmen <u>(Price in Words)</u>	LS	\$ _____	\$ _____
E-3	Thoroughly Clean Existing Sewer (Removal of Grease, Roots, and any Obstruction), Video Inspect Existing Sewer after Initially Cleaning and Flushing the Sewer, and Post-Video Inspection of the Sewer after Rehabilitation Work is Complete (275± LF) in Accordance with the Construction Drawings and Technical Specifications, Section 13605 <u>(Price in Words)</u>	LS	\$ _____	\$ _____



<u>Item No.</u>	<u>Description</u>	<u>Approximate Quantity and Unit</u>	<u>Unit Price (Figures)</u>	<u>Total Amount (Figures)</u>
E-4	Furnish and Install 8" Cured-in-Place Pipe (CIPP) Liner in Accordance with the Technical Specifications, Section 13605	275± LF	\$ _____	\$ _____

	(Price in Words)			
E-5	Wastewater Bypass and Containment in Accordance with the Construction Drawings and Technical Specifications, Section 11080	LS	\$ _____	\$ _____

	(Price in Words)			

Total amount of bid in words for Schedule "E": _____

Total amount of bid in numbers for Schedule "E": \$ _____

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.



**MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
BID SUMMARY**

Bid Schedule A (Hemlock Avenue) \$ _____

Bid Schedule B (Redwood Avenue) \$ _____

Bid Schedule C (Pio Pico Drive) \$ _____

Bid Schedule D (Avenue of the Trees) \$ _____

Bid Schedule E (Magnolia Avenue) \$ _____

Total Bid for Schedules A through E \$ _____

Total Bid for Schedules A through E _____

(words)

The basis of award will be the sum of Schedules "A", "B", "C", "D", and "E".

Price(s) given above are firm for 90 days after date of bid opening.

Addendum(a) No(s). _____ has/have been received and is/are included in this proposal.



The Undersigned has carefully checked all of the above figures and understands that the City will not be responsible for any error or omission on the part of the Undersigned in preparing this bid.

The Undersigned agrees that in case of default in executing the required Contract with necessary bonds and insurance policies within twenty (20) days from the date of award of Contract by the City Council of the City of Carlsbad, the City may administratively authorize award of the contract to the second or third lowest bidder and the bid security of the lowest bidder may be forfeited.

The Undersigned bidder declares, under penalty of perjury, that the undersigned is licensed to do business or act in the capacity of a contractor within the State of California, validly licensed under license number _____, classification _____ which expires on _____, and that this statement is true and correct and has the legal effect of an affidavit.

A bid submitted to the City by a Contractor who is not licensed as a contractor pursuant to the Business and Professions Code shall be considered nonresponsive and shall be rejected by the City § 7028.15(e). In all contracts where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with California law. However, at the time the contract is awarded, the contractor shall be properly licensed.

The Undersigned bidder hereby represents as follows:

1. That no Council member, officer agent, or employee of the City of Carlsbad is personally interested, directly or indirectly, in this Contract, or the compensation to be paid hereunder; that no representation, oral or in writing, of the City Council, its officers, agents, or employees has induced him/her to enter into this Contract, excepting only those contained in this form of Contract and the papers made a part hereof by its terms; and
2. That this bid is made without connection with any person, firm, or corporation making a bid for the same work, and is in all respects fair and without collusion or fraud.

Accompanying this proposal is _____ (Cash, Certified Check, Bond or Cashier's Check) for ten percent (10%) of the amount bid.

The Undersigned is aware of the provisions of section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and agrees to comply with such provisions before commencing the performance of the work of this Contract and continue to comply until the contract is complete.



IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE:

- (1) Name under which business is conducted _____
- (2) Signature (given and surname) of proprietor _____
- (3) Place of Business _____
(Street and Number)
City and State _____
- (4) Zip Code _____ Telephone No. _____
- (5) E-Mail _____

IF A PARTNERSHIP, SIGN HERE:

- (1) Name under which business is conducted _____
- (2) Signature (given and surname and character of partner) (Note: Signature must be made by a general partner)

- (3) Place of Business _____
(Street and Number)
City and State _____
- (4) Zip Code _____ Telephone No. _____
- (5) E-Mail _____



IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted _____

(2) _____
(Signature)

(Title)

Impress Corporate Seal here

(3) Incorporated under the laws of the State of _____

(4) Place of Business _____
(Street and Number)
City and State _____

(5) Zip Code _____ Telephone No. _____

(6) E-Mail _____

NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED



List below names of president, vice president, secretary and assistant secretary, if a corporation; if a partnership, list names of all general partners, and managing partners:

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



BID SECURITY FORM

(Check to Accompany Bid)

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

(NOTE: The following form shall be used if check accompanies bid.)

Accompanying this proposal is a *Certified *Cashiers check payable to the order of CITY OF CARLSBAD, in the sum of _____

_____ dollars (\$_____), this amount being ten percent (10%) of the total amount of the bid. The proceeds of this check shall become the property of the City provided this proposal shall be accepted by the City through action of its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required Performance, Warranty and Payment Bonds and proof of insurance coverage within the stipulated time; otherwise, the check shall be returned to the undersigned. The proceeds of this check shall also become the property of the City if the undersigned shall withdraw his or her bid within the period of fifteen (15) days after the date set for the opening thereof, unless otherwise required by law, and notwithstanding the award of the contract to another bidder.

BIDDER

*Delete the inapplicable word.

(NOTE: If the Bidder desires to use a bond instead of check, the Bid Bond form on the following pages shall be executed--the sum of this bond shall be not less than ten percent (10%) of the total amount of the bid.)



**MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
CONTRACT NO. 5503-1**

That we, _____, as Principal, and _____,
as Surety are held and firmly bound unto the City of Carlsbad, California, in an amount as follows:
(must be at least ten percent (10%) of the bid amount) _____ for which
payment, well and truly made, we bind ourselves, our heirs, executors and administrators,
successors or assigns, jointly and severally, firmly by these presents.

**MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
CONTRACT NO. 5503-1**

in the City of Carlsbad, is accepted by the City Council, and if the Principal shall duly enter into and execute a Contract including required bonds and insurance policies within twenty (20) days from the date of award of Contract by the City Council of the City of Carlsbad, being duly notified of said award, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect, and the amount specified herein shall be forfeited to the said City.

.....



...
In the event Principal executed this bond as an individual, it is agreed that the death of Principal shall not exonerate the Surety from its obligations under this bond.

Executed by PRINCIPAL this _____ day of _____, 20____.

PRINCIPAL:

(name of Principal)

By: _____
(sign here)

(print name here)

(Title and Organization of Signatory)

By: _____
(sign here)

(print name here)

(title and organization of signatory)

Executed by SURETY this _____ day
of _____, 20____.

SURETY:

(name of Surety)

(address of Surety)

(telephone number of Surety)

By: _____
(signature of Attorney-in-Fact)

(printed name of Attorney-in-Fact)

(Attach corporate resolution showing current power of attorney.)

(Proper notarial acknowledgment of execution by PRINCIPAL and SURETY must be attached.)

(President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

APPROVED AS TO FORM:

RONALD R. BALL

City Attorney

By: _____
Deputy City Attorney



GUIDE FOR COMPLETING THE "DESIGNATION OF SUBCONTRACTORS" FORM

REFERENCES Prior to preparation of the following "Subcontractor Disclosure Form" Bidders are urged to review the definitions in section 1-2 of the General Provisions to this Contract, especially, "Bid", "Bidder", "Contract", "Contractor", "Contract Price", "Contract Unit Price", "Engineer", "Own Organization", "Subcontractor", and "Work". Bidders are further urged to review sections 2-3 SUBCONTRACTS of the General Provisions.

CAUTIONS This form will be used by the Agency to determine the percentage of work that the Bidder proposes to perform. Bidders are cautioned that failure to provide complete and correct information may result in rejection of the bid as non-responsive. Any bid that proposes performance of more than 50 percent of the work by subcontractors or otherwise to be preformed by forces other than the Bidder's own organization will be rejected as non-responsive. Specialty items of work that may be so designated by the Engineer on the "Contractor's Proposal" are not included in computing the percentage of work proposed to be performed by the Bidder.

INSTRUCTIONS The Bidder shall set forth the name and location of business of each and every subcontractor whom the Bidder proposes to perform work or labor or render service in or about the work or improvement, and every subcontractor licensed as a contractor by the State of California whom the Bidder proposes to specially fabricate and install any portion of the work or improvement according to detailed drawings contained in the plans and specifications in excess of one-half of one percent (0.5%) of the Bidder's total bid or, in the case of bids or offers for the construction of streets and highways, including bridges, in excess of one-half of one percent (0.5%) or ten thousand dollars (\$10,000) whichever is greater. Said name(s) and location(s) of business of subcontractor(s) shall be set forth and included as an integral part of the bid offer.

The Designation of Subcontractors form must be submitted as a part of the Bidder's sealed bid. Failure to provide complete and correct information may result in rejection of the bid as non-responsive.

Suppliers of materials from sources outside the limits of work are not subcontractors. The value of materials and transport of materials from sources outside the limits of work, as shown on the plans, shall be assigned to the Contractor or the Subcontractor as the case may be, that the Bidder proposes as installer of said materials. The value of material incorporated in any Subcontractor-installed bid item that is supplied by the Bidder shall be included as a part of the work that the Bidder proposes to be performed by the Subcontractor installing said item.

When a Subcontractor has a Carlsbad business license, the number must be entered on the proper form. If the Subcontractor does not have a valid business license, enter "NONE" in the appropriate space.

When the Bidder proposes using a Subcontractor to construct or install less than 100 percent of a bid item, the Bidder shall attach an explanation sheet to the Designation of Subcontractor form. The explanation sheet shall clearly apprise the City of the specific facts that show the Bidder proposes to perform no less than fifty percent (50%) of the work with its own forces.

Determination of the subcontract amounts for purposes of award of the contract shall be determined by the City Council in conformance with the provisions of the contract documents and the various supplemental provisions. The decision of the City Council shall be final.



Contractor is prohibited from performing any work on this project with a subcontractor who is ineligible to perform work on a public works project pursuant to Labor Code Sections 1771.1 or 1777.7.

Bidders shall make any additional copies of the disclosure forms as may be necessary to provide the required information. The page number and total number of additional form pages shall be entered in the location provided on each type of form so duplicated.



(To Accompany Proposal)

The Bidder certifies that it has used the sub-bid of the following listed subcontractors in preparing this bid for the Work and that the listed subcontractors will be used to perform the portions of the Work as designated in this list in accordance with applicable provisions of the specifications and section 4100 et seq. of the Public Contract Code, "Subletting and Subcontracting Fair Practices Act." The Bidder further certifies that no additional subcontractor will be allowed to perform any portion of the Work in excess of one-half of one percent (0.5%) of the Bidder's total bid, or in the case of bids or offers for construction of streets and highways, including bridges, in excess of one-half of one percent (0.5%) or ten thousand dollars (\$10,000), whichever is greater, and that no changes in the subcontractors listed work will be made except upon the prior approval of the Agency.

[illegible]

* Pursuant to section 4104 (a)(2)(A) California Public Contract Code, receipt of the information preceded by an asterisk may be submitted by the Bidder up to 24 hours after the deadline for submitting bids contained in the "Notice Inviting Bids."



(To Accompany Proposal)

[illegible]

BIDDER'S CERTIFICATE OF INSURANCE FOR GENERAL LIABILITY, EMPLOYERS' LIABILITY, AUTOMOTIVE LIABILITY AND WORKERS' COMPENSATION

(To Accompany Proposal)

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

As a required part of the Bidder's proposal the Bidder must attach either of the following to this page.

1) Certificates of insurance showing conformance with the requirements herein for each of:

- ☐ Comprehensive General Liability
- ☐ Automobile Liability
- ☐ Workers Compensation
- ☐ Employer's Liability

2) Statement with an insurance carrier's notarized signature stating that the carrier can, and upon payment of fees and/or premiums by the Bidder, will issue to the Bidder Policies of insurance for Comprehensive General Liability, Automobile Liability, Workers Compensation and Employer's Liability in conformance with the requirements herein and Certificates of insurance to the Agency showing conformance with the requirements herein.

All certificates of insurance and statements of willingness to issue insurance for auto policies offered to meet the specification of this contract must:

- 1) Meet the conditions stated in The Notice Inviting Bids and the General Provisions for this project for each insurance company that the Contractor proposes.
- 2) Cover any vehicle used in the performance of the contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.



BIDDER'S STATEMENT RE DEBARMENT

(To Accompany Proposal)

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

- 1) Have you or any of your subcontractors ever been debarred as an irresponsible bidder by another jurisdiction in the State of California?

yes

no

- 2) If yes, what was/were the name(s) of the agency(ies) and what was/were the period(s) of debarment(s)? Attach additional copies of this page to accommodate more than two debarments.

party debarred

party debarred

agency

agency

period of debarment

period of debarment

BY CONTRACTOR:

(name of Contractor)

By: _____
(sign here)

(print name/title)

Page _____ of _____ pages of this Re Debarment form



BIDDER'S DISCLOSURE OF DISCIPLINE RECORD

(To Accompany Proposal)

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License board, P.O. Box 26000, Sacramento, California 95826.

- 1) Have you ever had your contractor's license suspended or revoked by the California Contractors' State license Board two or more times within an eight year period?

yes

no

- 2) Has the suspension or revocation of your contractor's license ever been stayed?

yes

no

- 3) Have any subcontractors that you propose to perform any portion of the Work ever had their contractor's license suspended or revoked by the California Contractors' State license Board two or more times within an eight year period?

yes

no

- 4) Has the suspension or revocation of the license of any subcontractor's that you propose to perform any portion of the Work ever been stayed?

yes

no

- 5) If the answer to either of 1. or 3. above is yes fully identify, in each and every case, the party disciplined, the date of and violation that the disciplinary action pertain to, describe the nature of the violation and the disciplinary action taken therefore.

(If needed attach additional sheets to provide full disclosure.)

Page ____ of ____ pages of this Disclosure of Discipline form



(To Accompany Proposal)

Page 37 of 107 Pages

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED
BY BIDDER AND SUBMITTED WITH BID
PUBLIC CONTRACT CODE SECTION 7106**

**MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT
CONTRACT NO. 5503-1**

State of California)
) ss.
County of)

_____, being first duly sworn, deposes
(Name of Bidder)

and says that he or she is _____
(Title)

of _____
(Name of Firm)

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

I declare under penalty of perjury that the foregoing is true and correct and that this affidavit was executed on the _____ day of _____, 20____.

Signature of Bidder

Subscribed and sworn to before me on the _____ day of _____, 20____.

(NOTARY SEAL)

Signature of Notary



CONTRACT PUBLIC WORKS

This agreement is made this _____ day of _____, 20____, by and between the City of Carlsbad, California, a municipal corporation, (hereinafter called "City"), and _____ whose principal place of business is _____ (hereinafter called "Contractor").

City and Contractor agree as follows:

1. Description of Work. Contractor shall perform all work specified in the Contract documents for:

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

(hereinafter called "project")

2. Provisions of Labor and Materials. Contractor shall provide all labor, materials, tools, equipment, and personnel to perform the work specified by the Contract Documents.

3. Contract Documents. The Contract Documents consist of this Contract, Notice Inviting Bids, Contractor's Proposal, Bidder's Bond, Non-Collusion Affidavit, Designation of Subcontractors, Technical Ability and Experience, Bidder's Statement Re Debarment, Escrow Agreement, Release Form, the Plans and Specifications, the General Provisions, addendum(s) to said Plans and Specifications and General Provisions, and all proper amendments and changes made thereto in accordance with this Contract or the Plans and Specifications, and all bonds for the project; all of which are incorporated herein by this reference.

Contractor, her/his subcontractors, and materials suppliers shall provide and install the work as indicated, specified, and implied by the Contract Documents. Any items of work not indicated or specified, but which are essential to the completion of the work, shall be provided at the Contractor's expense to fulfill the intent of said documents. In all instances through the life of the Contract, the City will be the interpreter of the intent of the Contract Documents, and the City's decision relative to said intent will be final and binding. Failure of the Contractor to apprise subcontractors and materials suppliers of this condition of the Contract will not relieve responsibility of compliance.

4. Payment. For all compensation for Contractor's performance of work under this Contract, City shall make payment to the Contractor per section 9-3 PAYMENT of the General Provisions section of this contract. The Engineer will close the estimate of work completed for progress payments on the last working day of each month. The City shall withhold retention as required by Public Contract Code Section 9203.

5. Independent Investigation. Contractor has made an independent investigation of the jobsite, the soil conditions at the jobsite, and all other conditions that might affect the progress of the work, and is aware of those conditions. The Contract price includes payment for all work that may be done by Contractor, whether anticipated or not, in order to overcome underground conditions. Any information that may have been furnished to Contractor by City about underground conditions or other job conditions is for Contractor's convenience only, and City does not warrant that the conditions are as thus indicated. Contractor is satisfied with all job conditions, including underground



conditions and has not relied on information furnished by City.

6. Hazardous Waste or Other Unusual Conditions. If the contract involves digging trenches or other excavations that extend deeper than four feet below the surface Contractor shall promptly, and before the following conditions are disturbed, notify City, in writing, of any:

(A) Hazardous Waste. Material that Contractor believes may be material that is 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) Differing Conditions. Subsurface or latent physical conditions at the site differing from those indicated.

(C) Unknown Physical Conditions. 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.

City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in contractor's costs of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in this contract.

In the event that a dispute arises between City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the contractor's cost of, or time required for, performance of any part of the work, 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. 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.

7. Immigration Reform and Control Act. Contractor certifies it is aware of the requirements of the Immigration Reform and Control Act of 1986 (8 USC sections 1101-1525) and has complied and will comply with these requirements, including, but not limited to, verifying the eligibility for employment of all agents, employees, subcontractors, and consultants that are included in this Contract.

8. Indemnification. Contractor shall assume the defense of, pay all expenses of defense, and indemnify and hold harmless the City, and its officers and employees, from all claims, loss, damage, injury and liability of every kind, nature and description, directly or indirectly arising from or in connection with the performance of the Contract or work; or from any failure or alleged failure of Contractor to comply with any applicable law, rules or regulations including those relating to safety and health; and from any and all claims, loss, damages, injury and liability, howsoever the same may be caused, resulting directly or indirectly from the nature of the work covered by the Contract, except for loss or damage caused by the sole or active negligence or willful misconduct of the City. The expenses of defense include all costs and expenses including attorneys' fees for litigation, arbitration, or other dispute resolution method.

Contractor shall also defend and indemnify the City against any challenges to the award of the contract to Contractor, and Contractor will pay all costs, including defense costs for the City. Defense costs include the cost of separate counsel for City, if City requests separate counsel.

Contractor shall also defend and indemnify the City against any challenges to the award of the contract to Contractor, arising in whole or in part from alleged inaccuracies or misrepresentation by the Contractor, whether intentional or otherwise, and Contractor will pay all costs, including defense costs for the City. Defense costs include the cost of separate counsel for City, if City requests



separate counsel.

9. Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his or her agents, representatives, employees or subcontractors. Said insurance shall meet the City's policy for insurance as stated in City Council Policy # 70.

(A) Coverages And Limits Contractor shall maintain the types of coverages and minimum limits indicated herein:

a. **Commercial General Liability Insurance:** \$1,000,000 combined single limit per occurrence for bodily injury and property damage. If the policy has an aggregate limit, a separate aggregate in the amounts specified shall be established for the risks for which the City or its agents, officers or employees are additional insured.

b. **Business Automobile Liability Insurance:** \$1,000,000 combined single limit per accident for bodily injury and property damage. In addition, the auto policy must cover any vehicle used in the performance of the contract, used onsite or offsite, whether owned, non-owned or hired, and whether scheduled or non-scheduled.

c. **Workers' Compensation and Employers' Liability Insurance:** Workers' compensation limits as required by the Labor Code of the State of California. Workers' compensation offered by the State Compensation Insurance Fund is acceptable to the City.

(B) Additional Provisions: Contractor shall ensure that the policies of insurance required under this agreement with the exception of Workers' Compensation and Business Automobile Liability Insurance contain, or are endorsed to contain, the following provisions.

a. The City, its officials, employees and volunteers are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the contractor; premises owned, leased, hired or borrowed by the contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officials, employees or volunteers. All additional insured endorsements must be evidenced using separate documents attached to the certificate of insurance; one for each company affording general liability, and employers' liability coverage.

b. The Contractor's insurance coverage shall be primary insurance as respects the City, its officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officials, employees or volunteers shall be in excess of the contractor's insurance and shall not contribute with it.

c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officials, employees or volunteers.

d. Coverage shall state that the contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(C) Notice Of Cancellation. Each insurance policy required by this agreement shall be endorsed to state that coverage shall not be nonrenewed, suspended, voided, canceled, or reduced in coverage or limits except after ten (10) days' prior written notice has been sent to the City by certified mail, return receipt requested.

(D) Deductibles And Self-Insured Retention (S.I.R.) Levels. Any deductibles or self-insured retention levels must be declared to and approved by the City. At the option of the City, either: the



insurer shall reduce or eliminate such deductibles or self-insured retention levels as respects the City, its officials and employees; or the contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration and defense expenses.

(E) Waiver Of Subrogation. All policies of insurance required under this agreement shall contain a waiver of all rights of subrogation the insurer may have or may acquire against the City or any of its officials or employees.

(F) Subcontractors. Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. Coverages for subcontractors shall be subject to all of the requirements stated herein.

(G) Acceptability Of Insurers. Insurance is to be placed with insurers that have a rating in Best's Key Rating Guide of at least A-VII. Insurers must also be authorized to transact the business of insurance by the State of California Insurance Commissioner as admitted carriers as evidenced by a listing in the official publication of the Department of Insurance of the State of California and/or under the standards specified by City Council Policy # 70.

(H) Verification Of Coverage. Contractor shall furnish the City with certificates of insurance and original endorsements affecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be in forms approved by the City and are to be received and approved by the City before the Contract is executed by the City.

(I) Cost Of Insurance. The Cost of all insurance required under this agreement shall be included in the Contractor's bid.

10. Claims and Lawsuits. All claims by contractor for \$375,000 or less shall be resolved in accordance with the provisions in the Public Contract Code, Division 2, Part 3, Chapter 1, Article 1.5 (commencing with section 20104) which are incorporated by reference. A copy of Article 1.5 is included in Section 3 of the General Provisions. The contractor shall initially submit all claims over \$375,000 to the City using the informal dispute resolution process described in Public Contract Code subsections 20104.2(a), (c), (d). Notwithstanding the provisions of this section of the contract, all claims shall comply with the Government Tort Claim Act (section 900 et seq., of the California Government Code) for any claim or cause of action for money or damages prior to filing any lawsuit for breach of this agreement.

(A) Assertion of Claims. Contractor hereby agrees that any contract claim submitted to the City must be asserted as part of the contract process as set forth in this agreement and not in anticipation of litigation or in conjunction with litigation.

(B) False Claims. Contractor acknowledges that if a false claim is submitted to the City, it may be considered fraud and the Contractor may be subject to criminal prosecution.

(C) Government Code. Contractor acknowledges that California Government Code sections 12650 et seq., the False Claims Act, provides for civil penalties where a person knowingly submits a false claim to a public entity. These provisions include false claims made with deliberate ignorance of the false information or in reckless disregard of the truth or falsity of the information.

(D) Penalty Recovery. If the City of Carlsbad seeks to recover penalties pursuant to the False Claims Act, it is entitled to recover its litigation costs, including attorney's fees.

(E) Debarment for False Claims. Contractor hereby acknowledges that the filing of a false claim may subject the Contractor to an administrative debarment proceeding wherein the Contractor may be prevented from further bidding on public contracts for a period of up to five years.



(F) Carlsbad Municipal Code. The provisions of Carlsbad Municipal Code sections 3.32.025, 3.32.026, 3.32.027 and 3.32.028 pertaining to false claims are incorporated herein by reference.

(G) Debarment from Other Jurisdictions. Contractor hereby acknowledges that debarment by another jurisdiction is grounds for the City of Carlsbad to disqualify the Contractor or subcontractor from participating in future contract bidding.

(H) Jurisdiction. Contractor agrees and hereby stipulates that the proper venue and jurisdiction for resolution of any disputes between the parties arising out of this agreement is San Diego County, California.

I have read and understand all provisions of Section 10 above. _____ init _____ init

11. Security. Securities in the form of cash, cashier's check, or certified check may be substituted for any monies withheld by the City to secure performance of this contract for any obligation established by this contract. Any other security that is mutually agreed to by the Contractor and the City may be substituted for monies withheld to ensure performance under this Contract.

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

13. Provisions Required by Law Deemed Inserted. Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and included herein, and if, through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon application of either party, the Contract shall forthwith be physically amended to make such insertion or correction.



14. Additional Provisions. Any additional provisions of this agreement are set forth in the "General Provisions" or "Supplemental Provisions" attached hereto and made a part hereof.

NOTARIAL ACKNOWLEDGMENT OF EXECUTION BY ALL SIGNATORIES MUST BE ATTACHED

(CORPORATE SEAL)

CONTRACTOR:

CITY OF CARLSBAD a municipal corporation of the State of California

(name of Contractor)

By: _____
Mayor

By: _____
(sign here)

ATTEST:

(print name and title)

LORRAINE M. WOOD, City Clerk

By: _____
(sign here)

(print name and title)

President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under the corporate seal empowering that officer to bind the corporation.

APPROVED AS TO FORM:

RONALD R. BALL
City Attorney

By: _____
Deputy City Attorney



LABOR AND MATERIALS BOND

WHEREAS, the City Council of the City of Carlsbad, State of California, by Resolution No. _____, adopted _____, has awarded to

_____ (hereinafter designated as the "Principal"), a Contract for:

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

in the City of Carlsbad, in strict conformity with the drawings and specifications, and other Contract Documents now on file in the Office of the City Clerk of the City of Carlsbad and all of which are incorporated herein by this reference.

WHEREAS, Principal has executed or is about to execute said Contract and the terms thereof require the furnishing of a bond, providing that if Principal or any of their subcontractors shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon or about the performance of the work agreed to be done, or for any work or labor done thereon of any kind, the Surety on this bond will pay the same to the extent hereinafter set forth.

NOW, THEREFORE, WE, _____, as Principal, (hereinafter designated as the "Contractor"), and _____ as Surety, are held firmly bound unto the City of Carlsbad in the sum of _____

_____ Dollars (\$_____), said sum being an amount equal to: One hundred percent (100%) of the total amount payable under the terms of the contract by the City of Carlsbad, and for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors, or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Contractor or his/her subcontractors fail to pay for any materials, provisions, provender, supplies, or teams used in, upon, for, or about the performance of the work contracted to be done, or for any other work or labor thereon of any kind, consistent with California Civil Code section 3181, or for amounts due under the Unemployment Insurance Code with respect to the work or labor performed under this Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the contractor and subcontractors pursuant to section 13020 of the Unemployment Insurance Code with respect to the work and labor, that the Surety will pay for the same, and, also, in case suit is brought upon the bond, reasonable attorney's fees, to be fixed by the court consistent with California Civil Code section 3248.

This bond shall inure to the benefit of any of the persons named in California Civil Code section 3181, so as to give a right of action to those persons or their assigns in any suit brought upon the bond.

Surety stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed hereunder or the specifications accompanying the same shall affect its obligations on this bond, and it does hereby waive notice of any change, extension of time, alterations or addition to the terms of the contract or to the work or to the specifications.



In the event that Contractor is an individual, it is agreed that the death of any such Contractor shall not exonerate the Surety from its obligations under this bond.

Executed by CONTRACTOR this _____
day of _____, 20____.

CONTRACTOR:

(name of Contractor)

By: _____
(sign here)

(print name here)

(title and organization of signatory)

By: _____
(sign here)

(print name here)

(title and organization of signatory)

Executed by SURETY this _____ day
of _____, 20____.

SURETY:

(name of Surety)

(address of Surety)

(telephone number of Surety)

By: _____
(signature of Attorney-in-Fact)

(printed name of Attorney-in-Fact)

(attach corporate resolution showing current power
of attorney)

(Proper notarial acknowledgment of execution by CONTRACTOR and SURETY must be attached.)

(President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

APPROVED AS TO FORM:

RONALD R. BALL
City Attorney

By: _____
Deputy City Attorney



FAITHFUL PERFORMANCE/WARRANTY BOND

WHEREAS, the City Council of the City of Carlsbad, State of California, by Resolution No. _____, adopted _____, has awarded to _____, (hereinafter designated as the "Principal"), a Contract for:

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

in the City of Carlsbad, in strict conformity with the contract, the drawings and specifications, and other Contract Documents now on file in the Office of the City Clerk of the City of Carlsbad, all of which are incorporated herein by this reference.

WHEREAS, Principal has executed or is about to execute said Contract and the terms thereof require the furnishing of a bond for the faithful performance and warranty of said Contract;

NOW, THEREFORE, WE, _____, as Principal, (hereinafter designated as the "Contractor"), and _____, as Surety, are held and firmly bound unto the City of Carlsbad, in the sum of _____ Dollars (\$ _____), said sum being equal to one hundred percent (100%) of the estimated amount of the Contract, to be paid to City or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounden Contractor, their heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided on their 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 and save harmless the City of Carlsbad, its officers, employees and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

Surety stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed there under or the specifications accompanying the same shall affect its obligations on this bond, and it does hereby waive notice of any change, extension of time, alterations or addition to the terms of the contract or to the work or to the specifications.



In the event that Contractor is an individual, it is agreed that the death of any such Contractor shall not exonerate the Surety from its obligations under this bond.

Executed by CONTRACTOR this _____
day of _____, 20____.

CONTRACTOR:

(name of Contractor)

By: _____
(sign here)

(print name here)

(Title and Organization of Signatory)

By: _____
(sign here)

(print name here)

(Title and Organization of signatory)

Executed by SURETY this _____ day of _____, 20____

SURETY:

(name of Surety)

(address of Surety)

(telephone number of Surety)

By: _____
(signature of Attorney-in-Fact)

(printed name of Attorney-in-Fact)

(Attach corporate resolution showing current power of attorney.)

(Proper notarial acknowledgment of execution by CONTRACTOR and SURETY must be attached.)

(President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

APPROVED AS TO FORM:
RONALD R. BALL
City Attorney

By: _____
Deputy City Attorney



OPTIONAL ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the City of Carlsbad whose address is 1200 Carlsbad Village Drive, Carlsbad, California, 92008, hereinafter called "City" and

_____ whose address is
_____ hereinafter called
"Contractor" and _____ whose address is
_____ hereinafter
called "Escrow Agent."

For the consideration hereinafter set forth, the City, Contractor and Escrow Agent agree as follows:

1. Pursuant to sections 22300 and 10263 of the Public Contract Code of the State of California, the Contractor has the option to deposit securities with the Escrow Agent as a substitute for retention earnings required to be withheld by the City pursuant to the Construction Contract entered into between the City and Contractor for

MISCELLANEOUS SEWER REHABILITATION, NORTHWEST QUADRANT CONTRACT NO. 5503-1

in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the City shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the City within 10 days of the deposit. The Escrow Agent shall maintain insurance to cover negligent acts and omissions of the Escrow Agent in connection with the handling of retentions under these sections in an amount not less than \$100,000 per contract. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the contract between the City and Contractor. Securities shall be held in the name of the City and shall designate the Contractor as the beneficial owner.

2. The City shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

3. When the City makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the City pays the Escrow Agent directly.

4. The Contractor shall be responsible for paying all fees for the expenses incurred by the Escrow Agent in administering the Escrow Account and all expenses of the City. These expenses and payment terms shall be determined by the City, Contractor and Escrow Agent.

5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the City.



6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from City to the Escrow Agent that City consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. The City shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the City of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the City.

8. Upon receipt of written notification from the City certifying that the Contract is final and complete and that the Contractor has complied with all requirements and procedures applicable to the Contract, the Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

9. The Escrow Agent shall rely on the written notifications from the City and the Contractor pursuant to sections (1) to (8), inclusive, of this agreement and the City and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notices or to receive written notice on behalf of the City and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

For City:

Title FINANCE DIRECTOR

Name _____

Signature _____

Address 1635 Faraday Avenue, Carlsbad, CA 92008

For Contractor:

Title _____

Name _____

Signature _____

Address _____

For Escrow Agent:

Title _____

Name _____

Signature _____

Address _____

At the time the Escrow Account is opened, the City and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.



IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

For City:

Title MAYOR

Name _____

Signature _____

Address 1200 Carlsbad Village Drive, Carlsbad, CA 92008

For Contractor:

Title _____

Name _____

Signature _____

Address _____

For Escrow Agent:

Title _____

Name _____

Signature _____

Address _____



**GENERAL PROVISIONS
FOR
MISCELLANEOUS SEWER REHABILITATION,
NORTHWEST QUADRANT
CONTRACT NO. 5503-1**

CITY OF CARLSBAD

**BIDDERS ARE ADVISED THAT THIS SECTION REPLACES PART 1,
GENERAL PROVISIONS, OF THE STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION**

SECTION 1 -- TERMS, DEFINITIONS, ABBREVIATIONS, AND SYMBOLS

1-1 TERMS – Unless otherwise stated, the words *directed, required, permitted, ordered, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory*, or words of like meaning, refer to actions, expressions, and prerogatives of the Engineer.

1-1.1 Reference to Drawings. Where words "shown", "indicated", "detailed", "noted", "scheduled", or words of similar import are used, it shall be understood that reference is made to the plans accompanying these provisions, unless stated otherwise.

1-1.2 Directions. Where words "directed", "designated", "selected", or words of similar import are used, it shall be understood that the direction, designation or selection of the Engineer is intended, unless stated otherwise. The word "required" and words of similar import shall be understood to mean "as required to properly complete the work as required and as approved by the Engineer," unless stated otherwise.

1-1.3 Equals and Approvals. Where the words "equal", "approved equal", "equivalent", and such words of similar import are used, it shall be understood such words are followed by the expression "in the opinion of the Engineer", unless otherwise stated. Where the words "approved", "approval", "acceptance", or words of similar import are used, it shall be understood that the approval, acceptance, or similar import of the Engineer is intended.

1-1.4 Perform. The word "perform" shall be understood to mean that the Contractor, at its expense, shall perform all operations, labor, tools and equipment, and further, including the furnishing and installing of materials that are indicated, specified or required to mean that the Contractor, at its expense, shall furnish and install the work, complete in place and ready to use, including furnishing of necessary labor, materials, tools, equipment, and transportation.



1-2 Definitions. The following words, or groups of words, shall be exclusively defined by the definitions assigned to them herein.

Addendum – Written or graphic instrument issued prior to the opening of Bids which clarifies, corrects, or changes the bidding or Contract Documents. The term Addendum shall include bulletins and all other types of written notices issued to potential bidders prior to opening of Bids.

Agency – The City of Carlsbad, California.

Agreement – See Contract.

Assessment Act Contract – A Contract financed by special assessments authorized under a State Act or procedural ordinance of a City or County.

Base – A layer of specified material of planned thickness placed immediately below the pavement or surfacing.

Bid – The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work.

Bidder – Any individual, firm, partnership, corporation, or combination thereof, submitting a Bid for the Work, acting directly or through a duly authorized representative.

Board – The officer or body constituting the awarding authority of the Agency, which is the City Council for the City of Carlsbad or the Board of Directors of Carlsbad Municipal Water District.

Bond – Bid, performance, and payment bond or other instrument of security.

City Council – the City Council of the City of Carlsbad.

City Manager – the City Manager of the City of Carlsbad or his/her approved representative.

Cash Contract – A Contract financed by means other than special assessments.

Change Order – A written order to the Contractor signed by the Agency directing an addition, deletion, or revision in the Work, or an adjustment in the Contract Price or the Contract time issued after the effective date of the Contract. A Change Order may or may not also be signed by the Contractor.

Code – The terms *Government Code*, *Labor Code*, etc., refer to codes of the State of California.

Construction Manager – the Project Inspector's immediate supervisor and first level of appeal for informal dispute resolution.

Contract – The written agreement between the Agency and the Contractor covering the Work.



Contract Documents – Including but not limited to; the Contract, any Addendum (which pertain to the contract documents), Notice Inviting Bids, Instructions to Bidders; Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Contract, the Bonds, the General Provisions, permits from other agencies, the Technical Specifications, the Supplemental Provisions, the Plans, Standard Plans, Standard Specifications, Reference Specifications, and all Modifications issued after the execution of the Contract.

Contractor – The individual, partnership, corporation, joint venture, or other legal entity having a Contract with the Agency to perform the Work. In the case of work being done under permit issued by the Agency, the permittee shall be constructed to be the Contractor. The term “prime contractor” shall mean Contractor.

Contract Price – The total amount of money for which the Contract is awarded.

Contract Unit Price – The amount stated in the Bid for a single unit of an item of work.

County Sealer – The Sealer of Weights and Measures of the county in which the Contract is let.

Days – Days shall mean consecutive calendar’s days unless otherwise specified.

Deputy City Engineer, Construction Management & Inspection – The Construction Manager’s immediate supervisor and second level of appeal for informal dispute resolution.

Dispute Board – Persons designated by the City Manager of the City of Carlsbad or Executive Manager of the Carlsbad Municipal Water District, to hear and advise the City Manager on claims submitted by the Contractor. The City Manager for the City of Carlsbad or the Executive Manager for the Carlsbad Municipal Water District is the last appeal level for informal dispute resolution.

Electrolier – Street light assembly complete, including foundation, standard, luminaire arm, luminaire, etc.

Engineer – The City Engineer of the City of Carlsbad or his/her approved representative. The Engineer is the third level of appeal for informal dispute resolution.

Geotextile – Synthetic fiber used in civil engineering applications, serving the primary functions of separation and filtration.

House Connection Sewer – A sewer, within a public street or right-of-way, proposed to connect any parcel, lot, or part of a lot with a mainline sewer.

House Sewer – A sewer, wholly within private property, proposed to connect any building to a house connection sewer.

Luminaire – The lamp housing including the optical and socket assemblies (and ballast if so specified).

Luminaire Arm – The structural member, bracket, or mast arm, which, mounted on the standard, supports the luminaire.

Minor Bid Item – A single contract item constituting less than 10 percent (10%) of the original Contract Price bid.



Modification – Includes Change Orders and Supplemental Agreements. A Modification may only be used after the effective date of the Contract.

Notice of Award – The written notice by the Agency to the successful Bidder stating that upon compliance by it with the required conditions, the Agency will execute the Contract.

Notice to Proceed – A written notice given by the Agency to the Contractor fixing the date on which the Contract time will start.

Own Organization - When used in Section 2-3.1 – Employees of the Contractor who are hired, directed, supervised and paid by the Contractor to accomplish the completion of the Work. Further, such employees have their employment taxes, State disability insurance payments, State and Federal income taxes paid and administered, as applicable, by the Contractor. When used in Section 2-3.1 "own organization" means construction equipment that the Contractor owns or leases and uses to accomplish the Work. Equipment that is owner operated or leased equipment with an operator is not part of the Contractor's Own Organization and will not be included for the purpose of compliance with Section 2-3.1.

Person – Any individual, firm, association, partnership, corporation, trust, joint venture, or other legal entity.

Plans – The drawings, profiles, cross sections, working drawings, and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions, or details of the Work.

Private Contract – Work subject to Agency inspection, control, and approval, involving private funds, not administered by the Agency.

Project Inspector – The Engineer's designated representative for inspection, contract administration and first level for informal dispute resolution.

Proposal – See Bid.

Reference Specifications – Those bulletins, standards, rules, methods of analysis or test, codes, and specifications of other agencies, engineering societies, or industrial associations referred to in the Contract Documents. These refer to the latest edition, including amendments in effect and published at the time of advertising the project or issuing the permit, unless specifically referred to by edition, volume, or date.

Roadway – The portion of a street reserved for vehicular use.

Service Connection – Service connections are all or any portion of the conduit, cable, or duct, including meter, between a utility distribution line and an individual consumer.

Sewer – Any conduit intended for the reception and transfer of sewage and fluid industrial waste.

Specifications – General Provisions, Standard Specifications, Technical Specifications, Reference Specifications, Supplemental Provisions, and specifications in Supplemental Agreements between the Contractor and the Board.

Standard – The shaft or pole used to support street lighting luminaire, traffic signal heads, mast arms, etc.



Standard Plans – Details of standard structures, devices, or instructions referred to on the Plans or in Specifications by title or number.

Standard Specifications – The Standard Specifications for Public Works Construction (SSPWC), the “Greenbook”.

State – State of California.

Storm Drain – Any conduit and appurtenances intended for the reception and transfer of storm water.

Street – Any road, highway, parkway, freeway, alley, walk, or way.

Subbase – A layer of specified material of planned thickness between a base and the subgrade.

Subcontractor – An individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work.

Subgrade – For roadways, that portion of the roadbed on which pavement, surfacing, base, subbase, or a layer of other material is placed. For structures, the soil prepared to support a structure.

Supervision – Supervision, where used to indicate supervision by the Engineer, shall mean the performance of obligations, and the exercise of rights, specifically imposed upon and granted to the Agency in becoming a party to the Contract. Except as specifically stated herein, supervision by the Agency shall not mean active and direct superintendence of details of the Work.

Supplemental Agreement – A written amendment of the Contract Documents signed by both parties.

Supplemental Provisions – Additions and revisions to the Standard Specifications setting forth conditions and requirements peculiar to the work.

Surety – Any individual, firm, or corporation, bound with and for the Contractor for the acceptable performance, execution, and completion of the Work, and for the satisfaction of all obligations incurred.

Tonne – Also referred to as “metric ton”. Represents a unit of measure in the International System of Units equal to 1,000 kilograms.

Utility – Tracks, overhead or underground wires, pipeline, conduits, ducts, or structures, sewers, or storm drains owned, operated, or maintained in or across a public right of way or private easement.

Work – That which is proposed to be constructed or done under the Contract or permit, including the furnishing of all labor, materials, equipment, and services.



1-3 ABBREVIATIONS

1-3.1 General. The abbreviation herein, together with others in general use, are applicable to these Standard Specifications and to project Plans or other Contract Documents.

All abbreviations and symbols used on Plans for structural steel construction shall conform to those given by the "Manual of Steel Construction" published by the American Institute of Steel Construction, Inc.

1-3.2 Common Usage

<u>Abbreviation</u>	<u>Word or Words</u>
ABAN	Abandon
ABAND	Abandoned
ABS	Acrylonitrile – butadiene – styrene
AC	Asphalt Concrete
ACP	Asbestos cement pipe
ACWS	Asphalt concrete wearing surface
ALT	Alternate
APTS	Apartment and Apartments
AMER STD	American Standard
AWG	American Wire Gage (nonferrous wire)
BC	Beginning of curve
BCR	Beginning of curb return
BDRY	Boundary
BF	Bottom of footing
BLDG	Building and Buildings
BM	Bench mark
BVC	Beginning of vertical curve
B/W	Back of wall
C/C	Center to center
CAB	Crushed aggregate base
CAL/OSHA	California Occupational Safety and Health Administration
CalTrans	California Department of Transportation
CAP	Corrugated aluminum pipe
CB	Catch Basin
Cb	Curb
CBP	Catch Basin Connection Pipe
CBR	California Bearing Ratio
CCR	California Code of Regulations
CCTV	Closed Circuit TV
CES	Carlsbad Engineering Standards
CF	Curb face
CF	Cubic foot
C&G	Curb and gutter
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CIP	Cast iron pipe
CIPP	Cast-in place pipe
CL	Clearance, center line
CLF	Chain link fence
CMB	Crushed miscellaneous base
CMC	Cement mortar-coated
CML	Cement mortar-lined
CMWD	Carlsbad Municipal Water District
CO	Cleanout (Sewer)
COL	Column
COMM	Commercial
CONC	Concrete
CONN	Connection
CONST	Construct, Construction
COORD	Coordinate
CSP	Corrugated steel pipe
CSD	Carlsbad Standard Drawings
CTB	Cement treated base
CV	Check valve
CY	Cubic yard
D	Load of pipe
dB	Decibels
DBL	Double
DF	Douglas fir
DIA	Diameter
DIP	Ductile iron pipe
DL	Dead load
DR	Dimension Ratio
DT	Drain Tile
DWG	Drawing
DWY	Driveway
DWY APPR	Driveway approach
E	Electric
EA	Each
EC	End of curve
ECR	End of curb return
EF	Each face
EG	Edge of gutter
EGL	Energy grade line
EI	Elevation
ELC	Electrolier lighting conduit
ELT	Extra long ton
ENGR	Engineer, Engineering
EP	Edge of pavement
ESMT	Easement
ETB	Emulsion-treated base
EVC	End of vertical curb
EWA	Encina Wastewater Authority
EXC	Excavation
EXP JT	Expansion joint
EXST	Existing
F	Fahrenheit
F&C	Frame and cover
F&I	Furnish and install
FAB	Fabricate
FAS	Flashing arrow sign
FD	Floor drain
FDN	Foundation



MOD	Modified, modify
MON	Monument
MSL	Mean Sea Level (Reg. Standard Drawing M-12)
MTBM	Microtunneling Boring Machine
MULT	Multiple
MUTCD	Manual on Uniform Traffic Control Devices
MVL	Mercury vapor light
NCTD	North County Transit District
NRCP	Nonreinforced concrete pipe
OBS	Obsolete
OC	On center
OD	Outside diameter
OE	Outer edge
OHE	Overhead Electric
OMWD	Olivenhain Municipal Water District
OPP	Opposite
ORIG	Original
PB	Pull box
PC	Point of curvature
PCC	Portland cement concrete or point of compound curvature
PCVC	Point of compound vertical curve
PE	Polyethylene
PI	Point of intersection
PL	Property line
PMB	Processed miscellaneous base
POC	Point on curve
POT	Point on tangent
PP	Power pole
PRC	Point of reverse curve
PRVC	Point of reverse vertical curve
PSI	Pounds per square inch
PT	Point of tangency
PVC	Polyvinyl chloride
PVMT	Pavement
PVT R/W	Private right-of-way
Q	Rate of flow in cubic feet per second
QUAD	Quadrangle, Quadrant
R	Radius
R&O	Rock and oil
R/W	Right-of-way
RA	Recycling agent
RAC	Recycled asphalt concrete
RAP	Reclaimed asphalt pavement
RBAC	Rubberized asphalt concrete
RC	Reinforced concrete
RCB	Reinforced concrete box
RCE	Registered civil engineer
RCP	Reinforced concrete pipe
RCV	Remote control valve
REF	Reference
REINF	Reinforced or reinforcement
RES	Reservoir
RGE	Registered geotechnical engineer
ROW	Right-of-Way
RR	Railroad
RSE	Registered structural engineer
RTE	Registered traffic engineer
S	Sewer or Slope, as applicable
SCCP	Steel cylinder concrete pipe
SD	Storm drain
SDNR	San Diego Northern Railway
SDR	Standard thermoplastic pipe dimension ratio (ratio of pipe O.D. to minimum wall thickness)
SDRSD	San Diego Regional Standard Drawings
SE	Sand Equivalent

SEC Section
 SF Square foot
 SFM Sewer Force Main
 SI International System of Units (Metric)
 SPEC Specifications
 SPPWC Standard Plans for
 Public Works Construction
 SSPWC Standard Specifications for
 Public Works Construction
 ST HWY State highway
 STA Station
 STD Standard
 STR Straight
 STR GR Straight grade
 STRUC Structural/Structure
 SW Sidewalk
 SWD Sidewalk drain
 SY Square yard
 T Telephone
 TAN Tangent
 TC Top of curb
 TEL Telephone
 TF Top of footing
 TOPO Topography

TR Tract
 TRANS Transition
 TS Traffic signal or transition structure
 TSC Traffic signal conduit
 TSS Traffic signal standard
 TW Top of wall
 TYP Typical
 UE Underground Electric
 USA Underground Service Alert
 VAR Varies, Variable
 VB Valve box
 VC Vertical curve
 VCP Vitrified clay pipe
 VERT Vertical
 VOL Volume
 VWD Vallecitos Water District
 W Water, Wider or Width, as applicable
 WATCH Work Area Traffic Control Handbook
 WI Wrought iron
 WM Water meter
 WPJ Weakened plane joint
 XCONN Cross connection
 XSEC Cross section

1-3.3 Institutions.

<u>Abbreviation</u>	<u>Word or Words</u>
AASHTO	American Association of State Highway and Transportation Officials
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
API	American Petroleum Institute
AREA	American Railway Engineering Association
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
FHWA	Federal Highway Administration
GRI	Geosynthetic Research Institute
NEMA	National Electrical Manufacturers Association
NOAA	National Oceanic and Atmospheric Administration (Dept. of Commerce)
UL	Underwriters' Laboratories Inc.
USGS	United States Geological Survey

1-4 UNITS OF MEASURE.

1-4.1 General. U.S. Standard Measures, also called U.S. Customary System, are the principal measurement system in these specifications. However, certain material specifications and test requirements contained herein use SI units specifically and conversions to U.S. Standard Measures may or may not have been included in these circumstances. When U.S. Standard Measures are not included in parenthesis, then the SI units shall control. S.I. units and U.S. Standard Measures in parenthesis may or may not be exactly equivalent.

Reference is also made to ASTM E 380 for definitions of various units of the SI system and a more extensive set of conversion factors.



1-4.2 Units of Measure and Their Abbreviations.

<u>U.S. Customary Unit</u> <u>(Abbreviations)</u>	<u>(Equal To)</u>	<u>SI Unit</u> <u>(Abbreviations)</u>
1 mil (=0.001 in).....		25.4 micrometer (μm)
1 inch (in).....		25.4 millimeter (mm)
1 inch (in).....		2.54 centimeter (cm)
1 foot (ft).....		0.3048 meter (m)
1 yard (yd).....		0.9144 meter (m)
1 mile (mi).....		1.6093 kilometer (km)
1 square foot (ft^2).....		0.0929 square meter (m^2)
1 square yard (yd^2).....		0.8361 square meter (m^2)
1 cubic foot (ft^3).....		0.0283 cubic meter (m^3)
1 cubic yard (yd^3).....		0.7646 cubic meter (m^3)
1 acre.....		0.4047 hectare (ha)
1 U.S. gallon (gal).....		3.7854 Liter (L)
1 fluid ounce (fl. oz.).....		29.5735 millileter (mL)
1 pound mass (lb) (avoirdupois).....		0.4536 kilogram (kg)
1 ounce mass (oz).....		0.02835 kilogram (kg)
1 Ton (=2000 lb avoirdupois).....		0.9072 Tonne (= 907 kg)
1 Poise.....		0.1 pascal second ($\text{Pa} \cdot \text{s}$)
1 centistoke (cs).....		1 square millimeters per second (mm^2/s)
1 pound force (lbf).....		4.4482 Newton (N)
1 pounds per square inch (psi).....		6.8948 Kilopascal (kPa)
1 pound force per foot (lbf/ft).....		1.4594 Newton per meter (N/m)
1 foot-pound force (ft-lbf).....		1.3558 Joules (J)
1 foot-pound force per second ([ft-lbf]/s).....		1.3558 Watt (W)
1 part per million (ppm).....		1 milligram/liter (mg/L)

Temperature Units and Abbreviations

Degree Fahrenheit ($^{\circ}\text{F}$):.....	Degree Celsius ($^{\circ}\text{C}$):
$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$	$^{\circ}\text{C} = (^{\circ}\text{F} - 32)/1.8$

SI Units (abbreviation) Commonly Used in Both Systems

1 Ampere (A)
 1 Volt (V)
 1 Candela (cd)
 1 Lumen (lm)
 1 second (s)

Common Metric Prefixes

kilo (k).....	10^3
centi (c).....	10^{-2}
milli (m).....	10^{-3}
micro (μ).....	10^{-6}
nano (n).....	10^{-9}
pico (p).....	10^{-12}

1-5 SYMBOLS

Δ	Delta, the central angle or angle between tangents
$\angle$	Angle
%	Percent
'	Feet or minutes
"	Inches or seconds
1	Number
/	per or (between words)
$^{\circ}$	Degree
PL	Property line
CL	Centerline
SL	Survey line or station line



SECTION 2 – SCOPE AND CONTROL OF WORK

2-1 AWARD AND EXECUTION OF CONTRACT. Award and execution of Contract will be as provided for in the Specifications, Instruction to Bidders, or Notice Inviting Bids.

2-2 ASSIGNMENT. No Contract or portion thereof may be assigned without consent of the Board, except that the Contractor may assign money due or which will accrue to it under the Contract. If given written notice, such assignment will be recognized by the Board to the extent permitted by law. Any assignment of money shall be subject to all proper withholdings in favor of the Agency and to all deductions provided for in the Contract. All money withheld, whether assigned or not, shall be subject to being used by the Agency for completion of the Work, should the Contractor be in default.

2-3 SUBCONTRACTS.

2-3.1 General. Each Bidder shall comply with the Chapter of the Public Contract Code including Sections 4100 through 4113. The following excerpts or summaries of some of the requirements of this Chapter are included below for information:

The Bidder shall set forth in the Bid, as provided in 4104:

“(a) The name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvements, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor’s total bid, or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor’s total bid or ten thousand dollars (\$10,000), whichever is greater.”

“(b) The portion of the work which will be done by each such subcontractor under this act. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in his bid.”

If the Contractor fails to specify a Subcontractor, or specifies more than one Subcontractor for the same portion of the work to be performed under the Contract (in excess of one-half of 1 percent of the Contractor’s total Bid), the Contractor shall be qualified to perform that portion itself, and shall perform that portion itself, except as otherwise provided in the Code.

As provided in Section 4107, no Contractor whose Bid is accepted shall substitute any person as Subcontractor in place of the Subcontractor listed in the original Bid, except for causes and by procedures established in Section 4107.5. This section provides procedures to correct a clerical error in the listing of a Subcontractor.

Section 4110 provides that a Contractor violating any of the provisions of the Chapter violates the Contract and the Board may exercise the option either to cancel the Contract or assess the Contractor a penalty in an amount of not more than 10 percent of the subcontract involved, after a public hearing.

Should the Contractor fail to adhere to the provisions requiring the Contractor to complete **50 percent** of the contract price with its own organization, the Agency may at its sole discretion elect



to cancel the contract or deduct an amount equal to 10 percent of the value of the work performed in excess of **50 percent** of the contract price by other than the Contractor's own organization. The Board shall be the sole body for determination of a violation of these provisions. In any proceedings under this section, the prime contractor shall be entitled to a public hearing before the Board and shall be notified ten (10) days in advance of the time and location of said hearing. The determination of the City Council shall be final.

2-3.2 Additional Responsibility. The Contractor shall give personal attention to the fulfillment of the Contract and shall keep the Work under its control.

The Contractor shall perform, with its own organization, Contract work amounting to at least 50 percent of the Contract Price except that any designated "Specialty Items" may be performed by subcontract, and the amount of any such "Specialty Items" so performed may be deducted from the Contract Price before computing the amount required to be performed by the Contractor with its own organization. "Specialty Items" will be identified by the Agency in the Bid or Proposal. Where an entire item is subcontracted, the value of work subcontracted will be based on the Contract Unit Price. When a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated percentage of the Contract Unit Price. This will be determined from information submitted by the Contractor, and subject to approval by the Engineer.

Before the work of any Subcontractor is started, the Contractor shall submit to the Engineer for approval a written statement showing the work to be subcontracted giving the name and business of each Subcontractor and description and value of each portion of the work to be so subcontracted.

2-3.3 Status of Subcontractors. Subcontractors shall be considered employees of the Contractor, and the Contractor shall be responsible for their work.

2-4 CONTRACT BONDS. Before execution of the Contract, the Bidder shall file surety bonds with the Agency to be approved by the Board in the amounts and for the purposes noted below. Bonds issued by a surety, who is authorized to issue bonds in California, and whose bonding limitation shown in said circular is sufficient to provide bonds in the amount required by the Contract shall be deemed to be approved unless specifically rejected by the Agency. Bonds from all other sureties shall be accompanied by all of the documents enumerated in Code of Civil Procedure 995.660 (a). The Bidder shall pay all bond premiums, costs, and incidentals.

Each bond shall incorporate, by reference, the Contract and be signed by both the Bidder and Surety and the signature of the authorized agent of the Surety shall be notarized.

The Contractor shall provide a faithful performance/warranty bond and payment bond (labor and materials bond) for this contract. The faithful performance/warranty bond shall be in a sum not less than one hundred percent of the total amount payable by the terms of this contract. The Contractor shall provide bonds to secure payment of laborers and materials suppliers in a sum not less than one hundred percent of the total amount payable by the terms of this contract.

Both bonds shall extend in full force and effect and be retained by the Agency during this project until they are released according to the provisions of this section.

The faithful performance/warranty bond will be reduced to 25 percent of the original amount 30 days after recordation of the Notice of Completion and will remain in full force and effect for the one year warranty period and until all warranty repairs are completed to the satisfaction of the Engineer. The bonds to secure payment of laborers and materials suppliers shall be released six months plus 30 days after recordation of the Notice of Completion if all claims have been paid.



All bonds are to be placed with a surety insurance carrier admitted and authorized to transact the business of insurance in California and whose assets exceed their liabilities in an amount equal to or in excess of the amount of the bond. The bonds are to contain the following documents:

- 1) An original, or a certified copy, of the un-revoked appointment, power of attorney, by laws, or other instrument entitling or authorizing the person who executed the bond to do so.
- 2) A certified copy of the certificate of authority of the insurer issued by the insurance commissioner.

If the bid is accepted, the Agency may require a financial statement of the assets and liabilities of the insurer at the end of the quarter calendar year prior to 30 days next preceding the date of the execution of the bond. The financial statement shall be made by an officer's certificate as defined in Section 173 of the Corporations Code. In the case of a foreign insurer, the financial statement may be verified by the oath of the principal officer or manager residing within the United States.

Should any bond become insufficient, the Contractor shall renew the bond within 10 days after receiving notice from the Agency.

Should any Surety at any time be unsatisfactory to the Board, notice will be given the Contractor to that effect. No further payments shall be deemed due or will be made under the contract until a new Surety shall qualify and be accepted by the Board.

Changes in the Work or extensions of time, made pursuant to the Contract, shall in no way release the Contractor or Surety from its obligations. Notice of such changes or extensions shall be waived by the Surety.

2-5 PLANS AND SPECIFICATIONS.

2-5.1 General. The Contractor shall keep at the Work site a copy of the Plans and Specifications, to which the Engineer shall have access at all times.

The specifications for the work include the General Provisions, project technical specifications, Carlsbad Engineering Standards (CES), Standard Specifications for Public Works Construction, (SSPWC), Part 2 & 3, and the latest supplements thereto, current edition at the time of bid opening as published by the "Greenbook" Committee of Public Works Standards, Inc., hereinafter designated "SSPWC", as amended.

The construction plans consist of one set of drawings designated as **City of Carlsbad Drawing No. 466-7**. The standard drawings used for this project are the latest edition of the San Diego Area Regional Standard Drawings, hereinafter designated SDRSD, as issued by the San Diego County Department of Public Works, together with the most recent editions of the City of Carlsbad Engineering Standards and Carlsbad Standard Drawings, as issued by the City of Carlsbad and the Carlsbad Municipal Water District, hereinafter designated as CES and CSD, respectively. Copies of some of the pertinent standard drawings are enclosed as an appendix to these General Provisions.

The Plans, Specifications, and other Contract Documents shall govern the Work. The Contract Documents are intended to be complementary and cooperative. Anything specified in the Specifications and not shown on the Plans, or shown on the Plans and not specified in the Specifications, shall be as though shown on or specified in both.

The Plans shall be supplemented by such working drawings and shop drawings as are necessary to adequately control the Work.

The Contractor shall ascertain the existence of any conditions affecting the cost of the Work through a reasonable examination of the Work site prior to submitting the Bid.



Existing improvements visible at the Work site, for which no specific disposition is made on the Plans, but which interfere with the completion of the Work, shall be removed and disposed of by the Contractor.

The Contractor shall, upon discovering any error or omission in the Plans or Specifications, immediately call it to the attention of the Engineer.

2-5.2 Precedence of Contract Documents.

If there is a conflict between Contract Documents, the document highest in precedence shall control. The precedence shall be the most recent edition of the following documents listed in order of highest to lowest precedence:

- 1) Permits from other agencies as may be required by law.
- 2) Change orders, whichever occurs last.
- 3) Contract addenda, whichever occurs last.
- 4) Contract
- 5) Carlsbad General Provisions, Technical Specifications, and Supplemental Provisions.
- 6) Plans.
- 7) Standards plans.
 - a) City of Carlsbad Standard Drawings.
 - b) Carlsbad Municipal Water District Standard Drawings.
 - c) City of Carlsbad modifications to the San Diego Area Regional Standard Drawings.
 - d) San Diego Area Regional Standard Drawings.
 - e) State of California Department of Transportation Standard Plans.
- 8) Standard Specifications for Public Works Construction, as amended.
- 9) Reference Specifications.
- 10) Manufacturer's Installation Recommendations

Detail drawings shall take precedence over general drawings.

Change Orders, Supplemental Agreements and approved revisions to Plans and Specifications will take precedence over items 2) through 9) above. Detailed plans and plan views shall have precedence over general plans.

2-5.3 Submittals.

2-5.3.1 General. Submittals shall be provided, at the Contractor's expense, as required in 2-5.3.2, 2-5.3.3 and 2-5.3.4, when required by the Plans or Special Provisions, or when requested by the Engineer.

Materials shall neither be furnished nor fabricated, nor shall any work for which submittals are required be performed, before the required submittals have been reviewed and accepted by the Engineer. Neither review nor acceptance of submittals by the Engineer shall relieve the Contractor from responsibility for errors, omissions, or deviations from the Contract Documents, unless such deviations were specifically called to the attention of the Engineer in the letter of transmittal. The Contractor shall be responsible for the correctness of the submittals.

The Contractor shall allow a minimum of 20 working days for review of submittals unless otherwise specified in the Special Provisions. Each submittal shall be accompanied by a letter of transmittal.

Each submittal shall be consecutively numbered. Resubmittals shall be labeled with the number of the original submittal followed by an ascending alphabetical designation (e.g. The label '4-C' would indicate the third instance that the fourth submittal had been given to the Engineer). Each sheet of



each submittal shall be consecutively numbered. Each set of shop drawings and submittals shall be accompanied by a letter of transmittal on the Contractor's letterhead. The Letter of Transmittal shall contain the following:

- 1) Project title and Agency contract number.
- 2) Number of complete sets.
- 3) Contractor's certification statement.
- 4) Specification section number(s) pertaining to material submitted for review.
- 5) Submittal number (Submittal numbers shall be consecutive including subsequent submittals for the same materials.)
- 6) Description of the contents of the submittal.
- 7) Identification of deviations from the contract documents.

When submitted for the Engineer's review, Shop Drawings shall bear the Contractor's certification that the Contractor has reviewed, checked, and approved the Shop Drawings and that they are in conformance with the requirements of the Contract Documents. The Contractor shall subscribe to and shall place the following certification on all submittals:

"I hereby certify that the (equipment, material) shown and marked in this submittal is that proposed to be incorporated into this Project, is in compliance with the Contract Documents, can be installed in the allocated spaces, and is submitted for approval."

By: _____ Title: _____

Date: _____

Company Name: _____

2-5.3.2 Working Drawings. Working drawings are drawings showing details not shown on the Plans which are required to be designed by the Contractor. Working drawings shall be of a size and scale to clearly show all necessary details.

Six copies and one reproducible shall be submitted. If no revisions are required, three of the copies will be returned to the Contractor. If revisions are required, the Engineer will return one copy along with the reproducible for resubmission. Upon acceptance, the Engineer will return two of the copies to the Contractor and retain the remaining copies and the reproducible.

Working drawings are required in the following sections:

TABLE 2-5.3.2 (A)

Item	Section Number	Title	Subject
1	7-10.4.1	Safety Orders	Trench Shoring
2	207-2.5	Joints	Reinforced Concrete Pipe
3	207-8.4	Joints	Vitrified Clay Pipe
4	207-10.2.1	General	Fabricated Steel Pipe
5	300-3.2	Cofferdams	Structure Excavation & Backfill
6	303-1.6.1	General	Falsework
7	303-1.7.1	General	Placing Reinforcement
8	303-3.1	General	Prestressed Concrete Construction
9	304-1.1.1	Shop Drawings	Structural Steel
10	304-1.1.2	Falsework Plans	Structural Steel
11	304-2.1	General	Metal Hand Railings
12	306-2.1	General	Jacking Operations
13	306-3.1	General	Tunneling Operations



14	306-3.4	Tunnel Supports	Tunneling Operations
15	306-6	Remodeling Existing Sewer Facilities	Polyethylene Liner Installation
16	306-8	Microtunneling	Microtunneling Operations
17	307-4.3	Controller Cabinet Wiring Diagrams	Traffic Signal Construction

Working drawings listed above as Items 5, 6, 8, 9, 10, 12, 13, 14 and 16 shall be prepared by a Civil or Structural Engineer registered by the State of California.

2-5.3.3 Shop Drawings. Shop drawings are drawings showing details of manufactured or assembled products proposed to be incorporated into the Work. Shop drawings required shall be as specified in the Special Provisions.

2-5.3.4 Supporting Information. Supporting information is information required by the Specifications for the purposes of administration of the Contract, analysis for verification of conformance with the Specifications, the operation and maintenance of a manufactured product or system to be constructed as part of the Work, and other information as may be required by the Engineer. Six copies of the supporting information shall be submitted to the Engineer prior to the start of the Work unless otherwise specified in the Special Provisions or directed by the Engineer. Supporting information for systems shall be bound together and include all manufactured items for the system. If resubmittal is not required, three copies will be returned to the Contractor. Supporting information shall consist of the following and is required unless otherwise specified in the Special Provisions:

- 1) List of Subcontractors per 2-3.2.
- 2) List of Materials per 4-1.4.
- 3) Certifications per 4-1.5.
- 4) Construction Schedule per 6-1.
- 5) Confined Space Entry Program per 7-10.4.4.
- 6) Concrete mix designs per 201-1.1.
- 7) Asphalt concrete mix designs per 203-6.1.
- 8) Data, including, but not limited to, catalog sheets, manufacturer's brochures, technical bulletins, specifications, diagrams, product samples, and other information necessary to describe a system, product or item. This information is required for irrigation systems, street lighting systems, and traffic signals, and may also be required for any product, manufactured item, or system.

2-5.4 RECORD DRAWINGS. The Contractor shall provide and keep up-to-date a complete "as-built" record set of blue-line prints, which shall be corrected in red daily and show every change from the original drawings and specifications and the exact "as-built" locations, sizes and kinds of equipment, underground piping, valves, and all other work not visible at surface grade. Prints for this purpose may be obtained from the Agency at cost. This set of drawings shall be kept on the job and shall be used only as a record set and shall be delivered to the Engineer within ten (10) days of completion of the work. Payment for performing the work required by Section 2-5.4 shall be included in the various bid items and no additional payment will be made therefore.

2-6 WORK TO BE DONE. The Contractor shall perform all work necessary to complete the Contract in a satisfactory manner. Unless otherwise provided, the Contractor shall furnish all materials, equipment, tools, labor, and incidentals necessary to complete the Work.

2-7 SUBSURFACE DATA. All soil and test hole data, water table elevations, and soil analyses shown on the drawings or included in the Specifications apply only at the location of the test holes and to the depths indicated. Soil test reports for test holes which have been drilled are available for inspection at the office of the Engineer. Any additional subsurface exploration shall be done by Bidders or the Contractor at their own expense.

The indicated elevation of the water table is that which existed on the date when test hole data was determined. It is the Contractor's responsibility to determine and allow for the elevation of groundwater at the date of project construction. A difference in elevation between groundwater



shown in soil boring logs and groundwater actually encountered during construction will not be considered as a basis for extra work.

2-8 RIGHT-OF-WAY. Rights-of-way, easements, or rights-of-entry for the Work will be provided by the Agency. Unless otherwise provided, the Contractor shall make arrangements, pay for, and assume all responsibility for acquiring, using, and disposing of additional work areas and facilities temporarily required. The Contractor shall indemnify and hold the Agency harmless from all claims for damages caused by such actions.

2-9 SURVEYING.

2-9.1 Permanent Survey Markers. The Contractor shall not cover or disturb permanent survey monuments or benchmarks without the consent of the Engineer. Where the Engineer concurs, in writing, with the Contractor that protecting an existing monument in place is impractical, the Contractor shall employ a licensed land surveyor or a registered civil engineer authorized to practice land surveying within the State of California, hereinafter Surveyor, to establish the location of the monument before it is disturbed. The Contractor shall have the monument replaced by the Surveyor no later than thirty (30) days after construction at the site of the replacement is completed. The Surveyor shall file corner record(s) as required by §§ 8772 and 8773, et seq. of the California Business and Professions Code.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument frame and cover to the new grade within 7 days of paving unless the Engineer shall approve otherwise. Monument frames and covers shall be protected during street sealing or painting projects or be cleaned to the satisfaction of the Engineer.

2-9.2 Survey Service. The Contractor shall hire and pay for the services of a Surveyor, hereinafter Surveyor to perform all work necessary for establishing control, construction staking, records research and all other surveying work necessary to construct the work, provide surveying services as required herein and provide surveying, drafting and other professional services required to satisfy the requirements of the Land Surveyors Act. Surveyor shall be resident on the site during all surveying operations and shall personally supervise and certify the surveying work.

2-9.2.1 Submittal of Surveying Data, All surveying data submittals shall conform to the requirements of Section 2-5.3.3, "Submittals", herein. The Contractor shall submit grade sheets to the Engineer before commencing work in the area affected by the grade sheets. The Contractor shall submit field notes for all surveying required herein to the Engineer within ten days of performing the survey. All surveying field notes, grade sheets and survey calculations shall be submitted in bound form on 215mm by 280 mm (8½" by 11") paper. The field notes, calculations and supporting data shall be clear and complete. Supporting data shall include all maps, affidavits, plats, field notes from earlier surveys and all other evidence used by the Surveyor to determine the location of the monuments set. The field notes and calculations will be labeled with name of the Surveyor, the party chief, the field crewmembers and the author of the field notes or calculations. They shall be annotated with the date of observation or calculation, be numbered with consecutive page numbers and shall be readable without resort to any electronic aid, computer program or documentation for any computer program. The field notes shall be prepared in conformance with the CALTRANS "Surveys Manual". The Contractor shall have a Record of Survey prepared by the Surveyor and file it in conformance with §§ 8700 - 8805 of the State of California Business and Professions Code when the Surveyor performs any surveying that such map is required under §§ 8762 of the State of California Business and Professions Code and whenever the Surveyor shall establish, set or construct any permanent survey monument. SDRS drawing M-10 type monuments, bolts, spikes, leaded tacks and nails (when set in concrete), iron pipes, reinforcing steel and all monuments and marks that are at, or accessory to, property corners and street centerlines are permanent survey monuments. The Record of Survey shall show all monuments set, control monuments used, the basis of bearings and all other data needed to determine the procedure of survey and the degree of accuracy attained by the field surveying including the unadjusted ratio of closure. The unadjusted ratio of closure shall not exceed 1 part in 40,000. The record of survey shall show the location and justification of location of all permanent monuments set and their relation to the street right-of-way.



Record(s) of Survey(s) shall be submitted for the Engineer's review and approval before submittal to the County Surveyor and before submittal to the County Recorder.

2-9.2.2 Survey Requirements, Stakes shall be set at offsets approved by the Engineer at no greater intervals than specified in TABLE 2-9.2.2(A) as measured along the project stationing. Stakes shall be set to show the location and grade of future curbs adjacent to traffic signal locations where the curb is not being built as a part of this contract. Staking and marking shall be completed by the Surveyor and inspected and approved by the Engineer before the start of construction in the area marked. Centerline monument shall have the disk stamped with the date the monument was set and the registration number of the Surveyor. Habitat mitigation sites and other areas to be preserved that are shown on the plans shall be staked and flagged prior to the start of any other activities within the limits of the work. When curb and gutter does not exist and is not being installed as a part of the project the location of adjacent facilities being constructed as a part of the contract the Contractor shall place stakes defining the horizontal and vertical location of such adjacent utility vaults, poles or other facilities that are being installed as parts of, or adjunct to, the project either by the Contractor and/or those noted on the plans as to be installed by others.

TABLE 2-9.2.2(A)
Survey Requirements for Construction Staking

Feature Staked	Stake Description ②	Centerline or Parallel to Centerline Spacing④, ⑥	Lateral Spacing ③, ⑥	Setting Tolerance (Within)
Street Centerline	SDRS M-10 Monument	≤1000', Street Intersections, Begin and end of curves, only when shown on the plans	on street centerline	0.02' Horizontal, also see Section 2-9.2.1 herein
Clearing	Lath in soil, painted line on PCC & AC surfaces	lath - Intervisible, ≤ 50' on tangents & ≤ 25' on curves, Painted line - continuous	at clearing line	1' Horizontal
Slope	RP + Marker Stake	Intervisible and ≤ 50'	Grade Breaks & ≤ 25'	0.1' Vertical & Horizontal
Fence	RP + Marker Stake	≤ 200' on tangents, ≤ 50' on curves when $R \geq 1000'$ & 25' on curves when $R \leq 1000'$	N/A (constant offset)	0.1' Horizontal
Rough Grade Cuts or Fills ≥ 10 m (33')	RP + Marker Stake	≤ 50'	N/A	0.1' Vertical & Horizontal
Final Grade (includes top of: Basement soil, subbase and base)	RP + Marker Stake, Blue-top in grading area	≤ 50' on tangents & curves when $R \geq 1000'$ & ≤ 25' on curves when $R \leq 1000'$	≤ 22'	$\frac{3}{8}"$ Horizontal & $\frac{1}{4}"$ Vertical
Asphalt Pavement Finish Course	RP, paint on previous course	≤ 25' or as per the intersection grid points shown on the plan whichever provides the denser information	edge of pavement, paving pass width, crown line & grade breaks	$\frac{3}{8}"$ Horizontal & $\frac{1}{4}"$ Vertical
Drainage Structures, Pipes & similar Facilities①, ⑦	RP + Marker Stake	intervisible & ≤ 25', beginning and end, BC & EC of facilities, Grade breaks, Alignment breaks, Junctions, Inlets & similar facilities, Risers & similar facilities (except plumbing), Skewed cut-off lines	as appropriate	$\frac{3}{8}"$ Horizontal & $\frac{1}{4}"$ Vertical
Curb	RP + Marker Stake	≤ 25', BC & EC, at $\frac{1}{4}\Delta$, $\frac{1}{2}\Delta$ & $\frac{3}{4}\Delta$ on curb returns & at beginning & end	(constant offset)	$\frac{3}{8}"$ Horizontal & $\frac{1}{4}"$ Vertical
Traffic Signal ①		Vertical locations shall be based on the ultimate elevation of curb and sidewalk		



Feature Staked	Stake Description ②	Centerline or Parallel to Centerline Spacing④, ⑥	Lateral Spacing ③, ⑥	Setting Tolerance (Within)
Signal Poles & Controller ①	RP + Marker Stake	at each pole & controller location	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical
Junction Box ①	RP + Marker Stake	at each junction box location	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical
Conduit ①	RP + Marker Stake	$\leq 50'$ on tangents & curves when $R \geq 1000'$ & $\leq 25'$ on curves when $R \leq 1000'$ or where grade $\leq 0.30\%$	as appropriate	$\frac{3}{8}$ " Horizontal & when depth cannot be measured from existing pavement $\frac{1}{4}$ " Vertical
Minor Structure ①	RP + Marker Stake + Line Stake	for catch basins: at centerline of box, ends of box & wings & at each end of the local depression ⑤	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical (when vertical data needed)
Abutment Fill	RP + Marker Stake + Line Stake	$\leq 50'$ & along end slopes & conic transitions	as appropriate	0.1' Vertical & Horizontal
Wall ①	RP + Marker Stake + Line Point + Guard Stake	$\leq 50'$ and at beginning & end of: each wall, BC & EC, layout line angle points, changes in footing dimensions &/or elevation & wall height	as appropriate	$\frac{1}{4}$ " Horizontal & $\frac{1}{4}$ " Vertical
Major Structure ⑤				
Footings, Bents, Abutments & Wingwalls	RP + Marker Stake + Line Point + Guard Stake	10' to 33' as required by the Engineer, BC & EC, transition points & at beginning & end. Elevation points on footings at bottom of columns	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical
Superstructures	RP	10' to 33' sufficient to use string lines, BC & EC, transition points & at beginning & end. Elevation points on footings at bottom of columns	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical
Miscellaneous ⑤				
Contour Grading ①	RP + Marker Stake	$\leq 50'$	along contour line	0.1' Vertical & Horizontal
Utilities ①, ②	RP + Marker Stake	$\leq 50'$ on tangents & curves when $R \geq 1000'$ & $\leq 25'$ on curves when $R \leq 1000'$ or where grade $\leq 0.30\%$	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical
Channels, Dikes & Ditches ①	RP + Marker Stake	intervisible & $\leq 100'$, BC & EC of facilities, Grade breaks, Alignment breaks, Junctions, Inlets & similar facilities	as appropriate	0.1' Horizontal & $\frac{1}{4}$ " Vertical
Signs ①	RP + Marker Stake + Line Point + Guard Stake	At sign location	Line point	0.1' Vertical & Horizontal
Subsurface Drains ①	RP + Marker Stake	intervisible & $\leq 50'$, BC & EC of facilities, Grade breaks, Alignment breaks, Junctions, Inlets & similar facilities, Risers & similar facilities	as appropriate	0.1' Horizontal & $\frac{1}{4}$ " Vertical
Overside Drains ①	RP + Marker Stake	longitudinal location	At beginning & end	0.1' Horizontal & $\frac{1}{4}$ " Vertical
Markers ①	RP + Marker Stake	for asphalt street surfacing $\leq 50'$ on tangents & curves when $R \geq 1000'$ & $\leq 25'$ on curves when $R \leq 1000'$.	At marker location(s)	$\frac{1}{4}$ " Horizontal
Railings & Barriers ①	RP + Marker Stake	At beginning & end and $\leq 50'$ on tangents & curves when $R \geq 1000'$ & $\leq 25'$ on curves when $R \leq 1000'$	at railing & barrier location(s)	$\frac{3}{8}$ " Horizontal & Vertical
AC Dikes ①	RP + Marker Stake	At beginning & end	as appropriate	0.1' Horizontal & Vertical
Box Culverts		10' to 33' as required by the Engineer, BC & EC, transition points & at beginning & end. Elevation points on footings & at invert	as appropriate	$\frac{3}{8}$ " Horizontal & $\frac{1}{4}$ " Vertical
Pavement Markers①	RP	200' on tangents, 50' on curves when $R \geq 1000'$ & 25' on curves when $R \leq 1000'$. For PCC surfaced streets lane cold joints will suffice	at pavement marker location(s)	$\frac{1}{4}$ " Horizontal



- ① Staking for feature may be omitted when adjacent marker stakes reference the offset and elevation of those features and the accuracy requirements of the RP meet the requirements for the feature
- ② Reference points shall be sufficiently durable and set securely enough to survive with accuracy intact throughout the installation & inspection of the features or adjacent facilities for which they provide control. RP means reference point for the purposes of this table
- ③ Perpendicular to centerline.
- ④ Some features are not necessarily parallel to centerline but are referenced thereto
- ⑤ Multi-plane surfaced features shall be staked so as to provide line & grade information for each plane of the feature
- ⑥ $\geq$ means greater than, or equal to, the number following the symbol. $\leq$ means less than, or equal to, the number following the symbol.
- ⑦ The cut datum for storm drainage & sanitary sewer pipes & similar structures shall be their invert. The cut datum for all other utilities shall be the top of their pipe or conduit.

All guard stakes, line stakes and lath shall be flagged. Unless otherwise approved by the Engineer flagging, paint and marking cards shall be the color specified in TABLE 2-9.2.2(B)

TABLE 2-9.2.2(B)
Survey Stake Color Code for Construction Staking

Type of Stake	Description	Color*
Horizontal Control	Coordinated control points, control lines, control reference points, centerline, alignments, etc.	White/Red
Vertical Control	Bench marks	White/Orange
Clearing	Limits of clearing	Yellow/Black
Grading	Slope, intermediate slope, abutment fill, rough grade, contour grading, final grade, etc.	Yellow
Structure	Bridges, sound and retaining walls, box culverts, etc.	White
Drainage, Sewer, Curb	Pipe culverts, junction boxes, drop inlets, headwalls, sewer lines, storm drains, slope protection, curbs, gutters, etc.	Blue
Right-of-Way	Fences, R/ W lines, easements, property monuments, etc.	White/Yellow
Miscellaneous	Signs, railings, barriers, lighting, etc.	Orange

* Flagging and marking cards, if used.

2-9.2.3 Payment for Survey. Payment for work performed to satisfy the requirements of Sections 2-9.1 through 2-9.2.2 shall be included in the actual bid items requiring the survey work and no additional payment will be made. Extension of unit prices for extra work shall include full compensation for attendant survey work and no additional payment will be made. Payment for the replacement of disturbed monuments and the filing of records of survey and/or corner records, including filing fees, shall be incidental to the work necessitating the disturbance of said monuments and no additional payment will be made.

2-9.3 Private Engineers. Surveying by private engineers on the Work shall conform to the quality and practice required by the Engineer.

2-9.4 Line and Grade. All work shall conform to the lines, elevations, and grades shown on the Plans.

Three consecutive points set on the same slope shall be used together so that any variation from a straight grade can be detected. Any such variation shall be reported to the Engineer. In the absence of such report, the Contractor shall be responsible for any error in the grade of the finished work.

Grades for underground conduits will be set at the surface of the ground. The Contractor shall transfer them to the bottom of the trench.

2-10 AUTHORITY OF BOARD AND ENGINEER. The Board has the final authority in all matters affecting the Work. Within the scope of the Contract, the Engineer has the authority to enforce



compliance with the Plans and Specifications. The Contractor shall promptly comply with instructions from the Engineer or an authorized representative.

The decision of the Engineer is final and binding on all questions relating to: quantities; acceptability of material, equipment, or work; execution, progress or sequence of work; and interpretation of the Plans, Specifications, or other drawings. This shall be precedent to any payment under the Contract, unless otherwise ordered by the Board.

2-10.1 Availability of Records, The Contractor shall, at no charge to the Agency, provide copies of all records in the Contractor's or subcontractor's possession pertaining to the work that the Engineer may request.

2-10.2 Audit And Inspection, Contractor agrees to maintain and/or make available, to the Engineer, within San Diego County, accurate books and accounting records relative to all its activities and to contractually require all subcontractors to this Contract to do the same. The Engineer shall have the right to monitor, assess, and evaluate Contractor's and its subcontractors performance pursuant to this Agreement, said monitoring, assessments, and evaluations to include, but not be limited to, audits, inspection of premises, reports, contracts, subcontracts and interviews of Contractor's staff and the staff of all subcontractors to this contract. At any time during normal business hours and as often as the Engineer may deem necessary, upon reasonable advance notice, Contractor shall make available to the Engineer for examination, all of its, and all subcontractors to this contract, records with respect to all matters covered by this Contract and will permit the Engineer to audit, examine, copy and make excerpts or transcripts from such data and records, and to make audits of all invoices, materials, payrolls, records of personnel, and other data relating to all matters covered by this Contract. However, any such activities shall be carried out in a manner so as to not unreasonably interfere with Contractor's ongoing business operations. Contractor and all subcontractors to this contract shall maintain such data and records for as long as may be required by applicable laws and regulations.

2-11 INSPECTION. The Work is subject to inspection and approval by the Engineer. The Contractor shall notify the Engineer before noon of the working day before inspection is required. Work shall be done only in the presence of the Engineer, unless otherwise authorized. Any work done without proper inspection will be subject to rejection. The Engineer and any authorized representatives shall at all times have access to the Work during its construction at shops and yards as well as the project site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with these specifications. Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

SECTION 3 – CHANGES IN WORK

3-1 CHANGES REQUESTED BY THE CONTRACTOR.

3-1.1 General. Changes in the Plans and Specifications, requested in writing by the Contractor, which do not materially affect the Work and which are not detrimental to the Work or to the interests of the Agency, may be granted by the Engineer. Nothing herein shall be construed as granting a right to the Contractor to demand acceptance of such changes.

3-1.2 Payment for Changes Requested by the Contractor. If such changes are granted, they shall be made at a reduction in cost or no additional cost to the Agency.



3-2 CHANGES INITIATED BY THE AGENCY.

3-2.1 General. The Agency may change the Plans, Specifications, character of the work, or quantity of work provided the total arithmetic dollar value of all such changes, both additive and deductive, does not exceed 25 percent of the Contract Price. Should it become necessary to exceed this limitation, the change shall be by written Supplemental Agreement between the Contractor and Agency, unless both parties agree to proceed with the change by Change Order.

Change Orders shall be in writing and state the dollar value of the change or established method of payment, any adjustment in contract time of completion, and when negotiated prices are involved, shall provide for the Contractor's signature indicating acceptance.

3-2.2 Payment.

3-2.2.1 Contract Unit Prices. If a change is ordered in an item of work covered by a Contract Unit Price, and such change does not involve substantial change in character of the work from that shown on the Plans or specified in the Specifications, then an adjustment in payment will be made. This adjustment will be based upon the increase or decrease in quantity and the Contract Unit Price.

If the actual quantity of an item of work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications varies from the Bid quantity by 50 percent or less, payment will be made at the Contract Unit Price. If the actual quantity of said item of work varies from the Bid quantity by more than 50 percent, payment will be made per Section 3-2.2.2 or 3-2.2.3 as appropriate.

If a change is ordered in an item of work covered by a Contract Unit Price, and such change does involve a substantial change in the character of the work from that shown on the Plans or specified in the Specifications, an adjustment in payment will be made per Section 3-2.4.

3-2.2.2 Increases of More Than 50 Percent. Should the actual quantity of an item of work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications, exceed the Bid quantity by more than 50 percent, payment for the quantity in excess of 150 percent of the Bid quantity will be made on the basis of an adjustment in the Contract Unit Price mutually agreed to by the Contractor and the Agency, or at the option of the Engineer, on the basis of Extra Work per Section 3-3. The Extra Work per Section 3-3, basis of payment, shall not include fixed costs. Fixed costs shall be deemed to have been recovered by the Contractor through payment for 150 percent of the Bid quantity at the Contract Unit Price.

3-2.2.3 Decreases of More Than 50 Percent. Should the actual quantity of an item of work covered by a Contract Unit Price, and constructed in conformance with the Plans and Specifications, be less than 50 percent of the Bid quantity, an adjustment in payment will not be made unless so requested in writing by the Contractor. If the Contractor so requests, payment will be made on the basis of an adjustment in the Contract Unit Price mutually agreed to by the Contractor and the Agency, or at the option of the Engineer, on the basis of Extra Work per Section 3-3; however, in no case will payment be less than would be made for the actual quantity at the Contract Unit Price nor more than would be made for 50 percent of the Bid quantity at the Contract Unit Price.

3-2.3 Stipulated Unit Prices. Stipulated Unit Prices are unit prices established by the Agency in the Contract Documents as distinguished from Contract Unit Prices submitted by the Contractor. Stipulated Unit Prices may be used for the adjustment of Contract changes when so specified in the Special Provisions.

3-2.4 Agreed Prices. Agreed Prices are prices for new or unforeseen work, or adjustments in Contract Unit Prices per Section 3-2.2, established by mutual agreement between the Contractor and



the Agency. If mutual agreement can not be reached, the Engineer may direct the Contractor to proceed on the basis of Extra Work in accordance per Section 3-3, except as otherwise specified in Sections 3-2.2.2 and 3-2.2.3.

3.2.4.1 Schedule of Values. Prior to construction, Contractor shall provide a schedule of values for all lump sum bid items that shall be used for the purpose of progress payments. The prices shall be valid for the purpose of change orders to the project.

3.2.5 Eliminated Items. Should any Bid item be eliminated in its entirety, payment will be made to the Contractor for its actual costs incurred in connection with the eliminated item prior to notification in writing from the Engineer so stating its elimination. If material conforming to the Plans and Specifications is ordered by the Contractor for use in the eliminated item prior to the date of notification of elimination by the Engineer, and if the order for that material can not be canceled, payment will be made to the Contractor for the actual cost of the material. In this case, the material shall become the property of the Agency. Payment will be made to the Contractor for its actual costs for any further handling. If the material is returnable, the material shall be returned and payment will be made to the Contractor for the actual cost of charges made by the supplier for returning the material and for handling by the Contractor. Actual costs, as used herein, shall be computed on the basis of Extra Work per Section 3-3.

3-3 EXTRA WORK.

3-3.1 General. New or unforeseen work will be classified as "extra work" when the Engineer determines that it is not covered by Contract Unit Prices or stipulated unit prices.

3-3.2 Payment.

3-3.2.1 General. When the price for the extra work cannot be agreed upon, the Agency will pay for the extra work based on the accumulation of costs as provided herein.

3-3.2.2 Basis for Establishing Costs.

(a) **Labor.** The costs of labor will be the actual cost for wages of workers performing the extra work at the time the extra work is done, plus employer payments of payroll taxes, workers compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs, resulting from Federal, State, or local laws, as well as assessments or benefits required by lawful collective bargaining agreements.

The use of a labor classification which would increase the extra work cost will not be permitted unless the Contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental. The labor cost for foremen shall be proportioned to all of their assigned work and only that applicable to extra work will be paid.

Nondirect labor costs, including superintendence, shall be considered part of the markup of Section 3-3.2.3 (a).

(b) **Materials.** The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the job site in the quantities involved, plus sales tax, freight, and delivery.



The Agency reserves the right to approve materials and sources of supply, or to supply materials to the Contractor if necessary for the progress of the Work. No markup shall be applied to any material provided by the Agency.

(c) **Tool and Equipment Rental.** No payment will be made for the use of tools which have a replacement value of \$200 or less.

Regardless of ownership, the rates and right-of-way delay factors to be used in determining rental and delay costs shall be the edition of the, "Labor Surcharge and Equipment Rental Rates" published by CALTRANS, current at the time of the actual use of the tool or equipment. The right-of-way delay factors therein shall be used as multipliers of the rental rates for determining the value of costs for delay to the Contractor and subcontractors, if any. The labor surcharge rates published therein are not a part of this contract.

The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included.

If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the Agency than holding it at the Work site, it shall be returned, unless the Contractor elects to keep it at the Work site, at no expense to the Agency.

All equipment shall be acceptable to the Engineer, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

The reported rental time for equipment already at the Work site shall be the duration of its use on the extra work. This time begins when equipment is first put into actual operation on the extra work, plus the time required to move it from its previous site and back, or to a closer site.

(d) **Other Items.** The Agency may authorize other items which may be required on the extra work, including labor, services, material, and equipment. These items must be different in their nature from those required for the Work, and be of a type not ordinarily available from the Contractor or Subcontractors.

Invoices covering all such items in detail shall be submitted with the request for payment.

(e) **Invoices.** Vendors' invoices for material, equipment rental and other expenditures shall be submitted with the request for payment. If the request for payment is not substantiated by invoices or other documentation, the Agency may establish the cost of the item involved at the lowest price which was current at the time of the report.

3-3.2.3 Markup.

(a) **Work by Contractor.** The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profits:

- | | | |
|----|---------------------------------|----|
| 1) | Labor | 20 |
| 2) | Materials | 15 |
| 3) | Equipment Rental | 15 |
| 4) | Other Items and Expenditures .. | 15 |

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



(b) **Work by Subcontractor.** When all or any part of the extra work is performed by a Subcontractor, the markup established in Section 3-3.2.3(a) shall be applied to the Subcontractor's actual cost of such work. A markup of 10 percent on the first \$5,000 of the subcontracted portion of the extra work and a markup of 5 percent on work added in excess of \$5,000 of the subcontracted portion of the extra work may be added by the Contractor.

3-3.3 Daily Reports by Contractor. When the price for the extra work cannot be agreed upon, the Contractor shall submit a daily report to the Engineer on forms approved by the Agency. Included are applicable delivery tickets, listing all labor, materials, and equipment involved for that day, and other services and expenditures when authorized. Payment for extra work will not be made until such time that the Contractor submits completed daily reports and all supporting documents to the Engineer. Failure to submit the daily report by the close of the next working day may waive any rights for that day. An attempt shall be made to reconcile the report daily, and it shall be signed by the Engineer and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the Contractor.

The report shall:

1. Show names of workers, classifications, and hours worked.
2. Describe and list quantities of materials used.
3. Show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable.
4. Describe other services and expenditures in such detail as the Agency may require.

3-4 CHANGED CONDITIONS. The Contractor shall promptly notify the Engineer of the following Work site conditions (hereinafter called changed conditions), in writing, upon their discovery and before they are disturbed:

1. Subsurface or latent physical conditions differing materially from those represented in the Contract;
2. Unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character being performed; and
3. Material differing from that represented in the Contract which 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.

The Engineer will promptly investigate conditions which appear to be changed conditions. If the Engineer determines that conditions are changed conditions and they will materially affect performance time, the Contractor, upon submitting a written request, will be granted an extension of time subject to the provisions of 6-6.

If the Engineer determines that the conditions do not justify an adjustment in compensation, the Contractor will be notified in writing. This notice will also advise the Contractor of its obligation to notify the Engineer in writing if the Contractor disagrees.



The Contractor's failure to give notice of changed conditions promptly upon their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith.

The Contractor shall not be entitled to the payment of any additional compensation for any act, or failure to act, by the Engineer, including failure or refusal to issue a change order, or for the happening of any event, thing, occurrence, or other cause, unless the Contractor shall have first given the Engineer due written notice of potential claim as hereinafter specified. Compliance with this section shall not be required as a prerequisite to notice provisions in Section 6-7.3 Contract Time Accounting, nor to any claim that is based on differences in measurement or errors of computation as to contract quantities. The written notice of potential claim for changed conditions shall be submitted by the Contractor to the Engineer upon their discovery and prior to the time that the Contractor performs the work giving rise to the potential claim. The Contractor's failure to give written notice of potential claim for changed conditions to the agency upon their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith.

The Contractor shall provide the City with a written document containing a description of the particular circumstances giving rise to the potential claim, the reasons for which the Contractor believes additional compensation may be due and nature of any and all costs involved within 20 working days of the date of service of the written notice of potential claim for changed conditions. Verbal notifications are disallowed.

The potential claim shall include the following certification relative to the California False Claims Act, Government Code Sections 12650-12655.

"The undersigned certifies that the above statements are made in full cognizance of the California False Claims Act, Government Code Sections 12650-12655. The undersigned further understands and agrees that this potential claim, unless resolved, must be restated as a claim in response to the City's proposed final estimate in order for it to be further considered."

By: _____ Title: _____

Date: _____

Company Name: _____

The Contractor's estimate of costs may be updated when actual costs are known. The Contractor shall submit substantiation of its actual costs to the Engineer within 20 working days after the affected work is completed. Failure to do so shall be sufficient cause for denial of any claim subsequently filed on the basis of said notice of potential claim.

It is the intention of this section that differences between the parties arising under and by virtue of the contract be brought to the attention of the Engineer at the earliest possible time in order that such matters be settled, if possible, or other appropriate action promptly taken.

3-5 DISPUTED WORK. The Contractor shall give the agency written notice of potential claim prior to commencing any disputed work. Failure to give said notice shall constitute a waiver of all claims in connection therewith. If the contractor and the agency are unable to reach agreement on disputed work, the Agency may direct the contractor to proceed with the work.

Prior to proceeding with dispute resolution pursuant to Public Contract Code provisions specified hereinafter, the contractor shall attempt to resolve all disputes informally through the following dispute resolution chain of command:



1. Project Inspector
2. Construction Manager
3. Deputy City Engineer, Construction Management & Inspection
4. City Engineer
5. City Manager

The Contractor shall submit a complete report within 20 working days after completion of the disputed work stating its position on the claim, the contractual basis for the claim, along with all documentation supporting the costs and all other evidentiary materials. At each level of claim or appeal of claim the City will, within 10 working days of receipt of said claim or appeal of claim, review the Contractor's report and respond with a position, request additional information or request that the Contractor meet and present its report. When additional information or a meeting is requested the City will provide its position within 10 working days of receipt of said additional information or Contractor's presentation of its report. The Contractor may appeal each level's position up to the City Manager after which the Contractor may proceed under the provisions of the Public Contract Code.

The authority within the dispute resolution chain of command is limited to recommending a resolution to a claim to the City Manager. Actual approval of the claim is subject to the change order provisions in the contract.

All claims by the contractor for \$375,000 or less shall be resolved in accordance with the procedures in the Public Contract Code, Division 2, Part 3, Chapter 1, Article 1.5 (commencing with Section 20104) which is set forth below:

ARTICLE 1.5 RESOLUTION OF CONSTRUCTION CLAIMS

20104. (a)(1) This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a contractor and a local agency.

(2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

(b)(1) "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California.

(2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.

(c) The provisions of this article or a summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.

(d) This article applies only to contracts entered into on or after January 1, 1991.

20104.2. For any claim subject to this article, the following requirements apply:

(a) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

(b)(1) For claims of less than fifty thousand dollars (\$50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this



subdivision, upon mutual agreement of the local agency and the claimant.

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

(c)(1) For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

20104.4. The following procedures are established for all civil actions filed to resolve claims subject to this article:

(a) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

(b)(1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil procedure) shall apply to any proceeding brought under the subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.



(3) In addition to Chapter 2.5 (commencing with Section 1141.10) Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(c) The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

20104.6. (a) No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.

(b) In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

Although not to be construed as proceeding under extra work provisions, the Contractor shall keep and furnish records of disputed work in accordance with Section 3-3.

SECTION 4 – CONTROL OF MATERIALS

4-1 MATERIALS AND WORKMANSHIP.

4-1.1. General. All materials, parts, and equipment furnished by the Contractor in the Work shall be new, high grade, and free from defects. Quality of work shall be in accordance with the generally accepted standards. Material and work quality shall be subject to the Engineer's approval.

Materials and work quality not conforming to the requirements of the Specifications shall be considered defective and will be subject to rejection. Defective work or material, whether in place or not, shall be removed immediately from the site by the Contractor, at its expense, when so directed by the Engineer.

If the Contractor fails to replace any defective or damaged work or material after reasonable notice, the Engineer may cause such work or materials to be replaced. The replacement expense will be deducted from the amount to be paid to the Contractor.

Used or secondhand materials, parts, and equipment may be used only if permitted by the Specifications.

4-1.2 Protection of Work and Materials. The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality and fitness of materials to be used in the Work. Stored materials shall be reasonably accessible for inspection. The Contractor shall also adequately protect new and existing work and all items of equipment for the duration of the Contract.

The Contractor shall not, without the Agency's consent, assign, sell, mortgage, hypothecate, or remove equipment or materials which have been installed or delivered and which may be necessary for the completion of the Contract.

4-1.3 Inspection Requirements.

4-1.3.1 General. Unless otherwise specified, inspection is required at the source for such typical materials and fabricated items as bituminous paving mixtures, structural concrete, metal fabrication, metal casting, welding, concrete pipe manufacture, protective coating application, and similar shop or plant operations.



Steel pipe in sizes less than 18 inches and vitrified clay and cast iron pipe in all sizes are acceptable upon certification as to compliance with the Specifications, subject to sampling and testing by the Agency. Standard items of equipment such as electric motors, conveyors, elevators, plumbing fixtures, etc., are subject to inspection at the job site only. Special items of equipment such as designed electrical panel boards, large pumps, sewage plant equipment, etc., are subject to inspection at the source, normally only for performance testing. The Specifications may require inspection at the source for other items not typical of those listed in this section.

The Contractor shall provide the Engineer free and safe access to any and all parts of work at any time. Such free and safe access shall include means of safe access and egress, ventilation, lighting, shoring, dewatering and all elements pertaining to the safety of persons as contained in the State of California, California Code of Regulations, Title 8, Industrial Relations, Chapter 4, Division of Industrial Safety, Subchapter 4, Construction Safety Orders and such other safety regulations as may apply. Contractor shall furnish Engineer with such information as may be necessary to keep the Engineer fully informed regarding progress and manner of work and character of materials. Inspection or testing of the whole or any portion of the work or materials incorporated in the work shall not relieve Contractor from any obligation to fulfill this Contract.

4-1.3.2 Inspection of Materials Not Locally Produced. When the Contractor intends to purchase materials, fabricated products, or equipment from sources located more than 50 miles outside the geographical limits of the Agency, an inspector or accredited testing laboratory (approved by the Engineer), shall be engaged by the Contractor at its expense, to inspect the materials, equipment or process. This approval shall be obtained before producing any material or equipment. The inspector or representative of the testing laboratory shall judge the materials by the requirements of the Plans and Specifications. The Contractor shall forward reports required by the Engineer. No material or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by the approved agent. Approval by said agent shall not relieve the Contractor of responsibility for complying with the Contract requirements.

4-1.3.3 Inspection by the Agency. The Agency will provide all inspection and testing laboratory services within 50 miles of the geographical limits of the Agency. For private contracts, all costs of inspection at the source, including salaries and mileage costs, shall be paid by the permittee.

4-1.4 Test of Material. Before incorporation in the Work, the Contractor shall submit samples of materials, as the Engineer may require, at no cost to the Agency. The Contractor, at its expense, shall deliver the materials for testing to the place and at the time designated by the Engineer. Unless otherwise provided, all initial testing will be performed under the direction of the Engineer, and at no expense to the Contractor. If the Contractor is to provide and pay for testing, it will be stated in the Specifications. For private contracts, the testing expense shall be borne by the permittee.

The Contractor shall notify the Engineer in writing, at least 15 days in advance, of its intention to use materials for which tests are specified, to allow sufficient time to perform the tests. The notice shall name the proposed supplier and source of material.

If the notice of intent to use is sent before the materials are available for testing or inspection, or is sent so far in advance that the materials on hand at the time will not last but will be replaced by a new lot prior to use on the Work, it will be the Contractor's responsibility to renotify the Engineer when samples which are representative may be obtained.

Except as specified in these Provisions, the Agency will bear the cost of testing of locally produced materials and/or on-site workmanship where the results of such tests meet or exceed the requirements indicated in the Standard Specifications, Technical Specification, and any Supplemental Provisions. The cost of all other tests shall be borne by the Contractor.



At the option of the Engineer, the source of supply of each of the materials shall be approved by the Engineer before the delivery is started. All materials proposed for use may be inspected or tested at any time during their preparation and use. If, after incorporating such materials into the Work, it is found that sources of supply that have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources. If any product proves unacceptable after improper storage, handling or for any other reason it shall be rejected, not incorporated into the work and shall be removed from the project site all at the Contractor's expense.

Compaction tests may be made by the Engineer and all costs for tests that meet or exceed the requirements of the specifications shall be borne by the Agency. Said tests may be made at any place along the work as deemed necessary by the Engineer. The costs of any retests made necessary by noncompliance with the specifications shall be borne by the Contractor.

4-1.5 Certification. The Engineer may waive materials testing requirements of the Specifications and accept the manufacturer's written certification that the materials to be supplied meet those requirements. Material test data may be required as part of the certification.

4-1.6 Trade Names or Equals. The Contractor may supply any of the materials specified or offer an equivalent. The Engineer shall determine whether the material offered is equivalent to that specified. Adequate time shall be allowed for the Engineer to make this determination.

Whenever any particular material, process, or equipment is indicated by patent, proprietary or brand name, or by name of manufacturer, such wording is used for the purpose of facilitating its description and shall be deemed to be followed by the words **or equal**. A listing of materials is not intended to be comprehensive, or in order of preference. The Contractor may offer any material, process, or equipment considered to be equivalent to that indicated. The substantiation of offers shall be submitted as provided in the contract documents.

The Contractor shall, at its expense, furnish data concerning items offered by it as equivalent to those specified. The Contractor shall have the material tested as required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the item will fulfill its intended function.

Test methods shall be subject to the approval of the Engineer. Test results shall be reported promptly to the Engineer, who will evaluate the results and determine if the substitute item is equivalent. The Engineer's findings shall be final. Installation and use of a substitute item shall not be made until approved by the Engineer.

If a substitute offered by the Contractor is not found to be equal to the specified material, the Contractor shall furnish and install the specified material.

The specified Contract completion time shall not be affected by any circumstance developing from the provisions of this section.

The Contractor is responsible for the satisfactory performance of substituted items. If, in the sole opinion of the Engineer, the substitution is determined to be unsatisfactory in performance, appearance, durability, compatibility with associated items, availability of repair parts and suitability of application the Contractor shall remove the substituted item and replace it with the originally specified item at no cost to the Agency.



4-1.7 Weighing and Metering Equipment. All scales and metering equipment used for proportioning materials shall be inspected for accuracy and certified within the past 12 months by the State of California Bureau of Weights and Measures, by the County Director or Sealer of Weights and Measures, or by a scale mechanic registered with or licensed by the County.

The accuracy of the work of a scale service agency, except as stated herein, shall meet the standards of the California Business and Professions Code and the California Code of Regulations pertaining to weighing devices. A certificate of compliance shall be presented, prior to operation, to the Engineer for approval and shall be renewed whenever required by the Engineer at no cost to the Agency.

All scales shall be arranged so they may be read easily from the operator's platform or area. They shall indicate the true net weight without the application of any factor. The figures of the scales shall be clearly legible. Scales shall be accurate to within 1 percent when tested with the plant shut down. Weighing equipment shall be so insulated against vibration or moving of other operating equipment in the plant area that the error in weighing with the entire plant running will not exceed 2 percent for any setting nor 1.5 percent for any batch.

4-1.8 Calibration of Testing Equipment. Testing equipment, such as, but not limited to pressure gages, metering devices, hydraulic systems, force (load) measuring instruments, and strain-measuring devices shall be calibrated by a testing agency acceptable to the Engineer at intervals not to exceed 12 months and following repairs, modification, or relocation of the equipment. Calibration certificates shall be provided when requested by the Engineer.

4-1.9 Construction Materials Dispute Resolution (Soils, Rock Materials, Concrete, Mortar and Related Materials, Masonry Materials, Bituminous Materials, Rock Products, and Modified Asphalts). In the interest of safety and public value, whenever credible evidence arises to contradict the test values of materials, the Agency and the Contractor will initiate an immediate and cooperative investigation. Test values of materials are results of the materials' tests, as defined by these Specifications or by the special provisions, required to accept the Work. Credible evidence is process observations or test values gathered using industry accepted practices. A contradiction exists whenever test values or process observations of the same or similar materials are diverse enough such that the work acceptance or performance becomes suspect. The investigation shall allow access to all test results, procedures, and facilities relevant to the disputed work and consider all available information and, when necessary, gather new and additional information in an attempt to determine the validity, the cause, and if necessary, the remedy to the contradiction. If the cooperative investigation reaches any resolution mechanism acceptable to both the Agency and the Contractor, the contradiction shall be considered resolved and the cooperative investigation concluded. Whenever the cooperative investigation is unable to reach resolution, the investigation may then either conclude without resolution or continue by written notification of one party to the other requesting the implementation of a resolution process by committee. The continuance of the investigation shall be contingent upon recipient's agreement and acknowledged in writing within 3 calendar days after receiving a request. Without acknowledgement, the investigation shall conclude without resolution. The committee shall consist of three State of California Registered Civil Engineers. Within 7 calendar days after the written request notification, the Agency and the Contractor will each select one engineer. Within 14 calendar days of the written request notification, the two selected engineers will select a third engineer. The goal in selection of the third member is to complement the professional experience of the first two engineers. Should the two engineers fail to select the third engineer, the Agency and the Contractor shall each propose 2 engineers to be the third member within 21 calendar days after the written request notification. The first two engineers previously selected shall then select one of the four proposed engineers in a blind draw. The committee shall be a continuance of the cooperative investigation and will re-consider all available information and if necessary gather new and additional information to determine the validity, the



cause, and if necessary, the remedy to the contradiction. The committee will focus upon the performance adequacy of the material(s) using standard engineering principles and practices and to ensure public value, the committee may provide engineering recommendations as necessary. Unless otherwise agreed, the committee will have 30 calendar days from its formation to complete their review and submit their findings. The final resolution of the committee shall be by majority opinion, in writing, stamped and signed. Should the final resolution not be unanimous, the dissenter may attach a written, stamped, and signed minority opinion. Once started, the resolution process by committee shall continue to full conclusion unless:

1. Within 7 days of the formation of the committee, the Agency and the Contractor reach an acceptable resolution mechanism; or
2. Within 14 days of the formation of the committee, the initiating party withdraws its written notification and agrees to bear all investigative related costs thus far incurred; or
3. At any point by the mutual agreement of the Agency and the Contractor. Unless otherwise agreed, the Contractor shall bear and maintain a record for all the investigative costs until resolution. Should the investigation discover assignable causes for the contradiction, the assignable party, the Agency or the Contractor, shall bear all costs associated with the investigation. Should assignable causes for the contradiction extended to both parties, the investigation will assign costs cooperatively with each party or when necessary, equally. Should the investigation substantiate a contradiction without assignable cause, the investigation will assign costs cooperatively with each party or when necessary, equally. Should the investigation be unable to substantiate a contradiction, the initiator of the investigation shall bear all investigative costs. All claim notification requirements of the contract pertaining to the contradiction shall be suspended until the investigation is concluded.

4-2 MATERIALS TRANSPORTATION, HANDLING AND STORAGE.

The Contractor shall order, purchase, transport, coordinate delivery, accept delivery, confirm the quantity and quality received, prepare storage area(s), store, handle, protect, move, relocate, remove and dispose excess of all materials used to accomplish the Work. Materials shall be delivered to the site of the work only during working hours, as defined in Section 6-7.2, and shall be accompanied by bills of lading that shall clearly state for each delivery: the name of the Contractor as consignee, the project name and number, address of delivery and name of consignor and a description of the material(s) shipped. Prior to storage of any materials which have been shipped to or by the Contractor to any location within the Agency's boundaries the Contractor shall provide the Engineer a copy of lease agreements for each property where such materials are stored. The lease agreement shall clearly state the term of the lease, the description of materials allowed to be stored and shall provide for the removal of the materials and restoration of the storage site within the time allowed for the Work. All such storage shall conform to all laws and ordinances that may pertain to the materials stored and to preparation of the storage site and the location of the site on which the materials are stored. Loss, damage or deterioration of all stored materials shall be the Contractor's responsibility. Conformance to the requirements of this section, both within and outside the limits of work are a part of the Work. The Engineer shall have the right to verify the suitability of materials and their proper storage at any time during the Work.



SECTION 5 – UTILITIES

5-1 LOCATION. The Agency and affected utility companies have, by a search of known records, endeavored to locate and indicate on the Plans, all utilities which exist within the limits of the work. However, the accuracy and/or completeness of the nature, size and/or location of utilities indicated on the Plans is not guaranteed.

Where underground main distribution conduits such as water, gas, sewer, electric power, telephone, or cable television are shown on the Plans, the Contractor shall assume that every property parcel will be served by a service connection for each type of utility.

As provided in Section 4216 of the California Government Code, at least 2 working days prior to commencing any excavation, the Contractor shall contact the regional notification center (Underground Service Alert of Southern California) and obtain an inquiry identification number.

The California Department of Transportation is not required by Section 4216 to become a member of the regional notification center. The Contractor shall contact it for location of its subsurface installations.

The Contractor shall determine the location and depth of all utilities, including service connections, which have been marked by the respective owners and which may affect or be affected by its operations. If no pay item is provided in the Contract for this work, full compensation for such work shall be considered as included in the prices bid for other items of work.

5-2 PROTECTION. The Contractor shall not interrupt the service function or disturb the support of any utility without authority from the owner or order from the Agency. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.

Where protection is required to ensure support of utilities located as shown on the Plans or in accordance with Section 5-1, the Contractor shall, unless otherwise provided, furnish and place the necessary protection at its expense.

Upon learning of the existence and location of any utility omitted from or shown incorrectly on the Plans, the Contractor shall immediately notify the Engineer in writing. When authorized by the Engineer, support or protection of the utility will be paid for as provided in Section 3-2.2.3 or 3-3.

The Contractor shall immediately notify the Engineer and the utility owner if any utility is disturbed or damaged. The Contractor shall bear the costs of repair or replacement of any utility damaged if located as noted in Section 5-1.

When placing concrete around or contiguous to any non-metallic utility installation, the Contractor shall at its expense:

1. Furnish and install a 2 inch cushion of expansion joint material or other similar resilient material; or
2. Provide a sleeve or other opening which will result in a 2 inch minimum-clear annular space between the concrete and the utility; or
3. Provide other acceptable means to prevent embedment in or bonding to the concrete.

Where concrete is used for backfill or for structures which would result in embedment, or partial embedment, of a metallic utility installation; or where the coating, bedding or other cathodic protection system is exposed or damaged by the Contractor's operations, the Contractor shall notify



the Engineer and arrange to secure the advice of the affected utility owner regarding the procedures required to maintain or restore the integrity of the system.

5-3 REMOVAL. Unless otherwise specified, the Contractor shall remove all interfering portions of utilities shown on the Plans or indicated in the Bid documents as “abandoned” or “to be abandoned in place”. Before starting removal operations, the Contractor shall ascertain from the Agency whether the abandonment is complete, and the costs involved in the removal and disposal shall be included in the Bid for the items of work necessitating such removals.

5-4 RELOCATION. When feasible, the owners responsible for utilities within the area affected by the Work will complete their necessary installations, relocations, repairs, or replacements before commencement of work by the Contractor. When the Plans or Specifications indicate that a utility installation is to be relocated, altered, or constructed by others, the Agency will conduct all negotiations with the owners and work will be done at no cost to the Contractor, except for manhole frame and cover sets to be brought to grade as provided in the Standard Specifications for Public Works Construction, Section 301-1.6, 2009 Edition. Utilities which are relocated in order to avoid interference shall be protected in their position and the cost of such protection shall be included in the Bid for the items of work necessitating such relocation.

After award of the Contract, portions of utilities which are found to interfere with the Work will be relocated, altered or reconstructed by the owners, or the Engineer may order changes in the Work to avoid interference. Such changes will be paid for in accordance with Section 3-2.

When the Plans or Specifications provide for the Contractor to alter, relocate, or reconstruct a utility, all costs for such work shall be included in the Bid for the items of work necessitating such work. Temporary or permanent relocation or alteration of utilities requested by the Contractor for its convenience shall be its responsibility and it shall make all arrangements and bear all costs.

The utility owner will relocate service connections as necessary within the limits of the Work or within temporary construction or slope easements. When directed by the Engineer, the Contractor shall arrange for the relocation of service connections as necessary between the meter and property line, or between a meter and the limits of temporary construction or slope easements. The relocation of such service connections will be paid for in accordance with provisions of Section 3-3. Payment will include the restoration of all existing improvements which may be affected thereby. The Contractor may agree with the owner of any utility to disconnect and reconnect interfering service connections. The Agency will not be involved in any such agreement.

In conformance with Section 5-6 the Contractor shall coordinate the work with utility agencies and companies. Prior to the installation of any and all utility structures within the limits of work by any utility agency or company, or its contractor, the Contractor shall place all curb or curb and gutter that is a part of the work and adjacent to the location where such utility structures are shown on the plans and are noted as being located, relocated or are otherwise shown as installed by others. In order to minimize delays to the Contractor caused by the failure of other parties to relocate utilities that interfere with the construction, the Contractor, upon the Engineer's approval, may be permitted to temporarily omit the portion of work affected by the utility. If such temporary omission is approved by the Engineer the Contractor shall place survey or other physical control markers sufficient to locate the curb or curb and gutter to the satisfaction of the utility agency or company. Such temporary omission shall be for the Contractor's convenience and no additional compensation will be allowed therefore or for additional work, materials or delay associated with the temporary omission. The portion thus omitted shall be constructed by the Contractor immediately following the relocation of the utility involved unless otherwise directed by the Engineer.

5-5 DELAYS. The Contractor shall notify the Engineer of its construction schedule insofar as it affects the protection, removal, or relocation of utilities. Said notification shall be included as a part of



the construction schedule required in Section 6-1. The Contractor shall notify the Engineer in writing of any subsequent changes in the construction schedule which will affect the time available for protection, removal, or relocation of utilities.

The Contractor will not be entitled to damages or additional payment for delays attributable to utility relocations or alterations if correctly located, noted, and completed in accordance with Section 5-1.

The Contractor may be given an extension of time for unforeseen delays attributable to unreasonably protracted interference by utilities in performing work correctly shown on the Plans.

The Agency will assume responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities within the area affected by the Work if such utilities are not identified in the Contract Documents. The Contractor will not be assessed liquidated damages for any delay caused by failure of Agency to provide for the timely removal, relocation, or protection of such existing facilities.

If the Contractor sustains loss due to delays attributable to interferences, relocations, or alterations not covered by Section 5-1, which could not have been avoided by the judicious handling of forces, equipment, or plant, there shall be paid to the Contractor such amount as the Engineer may find to be fair and reasonable compensation for such part of the Contractor's actual loss as was unavoidable and the Contractor may be granted an extension of time.

5-6 COOPERATION. When necessary, the Contractor shall so conduct its operations as to permit access to the Work site and provide time for utility work to be accomplished during the progress of the Work.

SECTION 6 – PROSECUTION, PROGRESS, AND ACCEPTANCE OF THE WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK. Except as otherwise provided herein and unless otherwise prohibited by permits from other agencies as may be required by law the Contractor shall begin work within 10 calendar days after receipt of the "Notice to Proceed".

6-1.1 Pre-Construction Meeting. After, or upon, notification of contract award, the Engineer will set the time and location for the Preconstruction Meeting. Attendance of the Contractor's management personnel responsible for the management, administration, and execution of the project is mandatory for the meeting to be convened. Failure of the Contractor to have the Contractor's responsible project personnel attend the Preconstruction Meeting will be grounds for default by Contractor per Section 6-4. No separate payment will be made for the Contractor's attendance at the meeting. The notice to proceed will only be issued on or after the completion of the preconstruction meeting.

6-1.1 The construction schedule shall be provided and comply with the requirement of Section 6-1.1 of the SSPWC 2009 Edition.

6-1.3 Measurement and Payment of Construction Schedule. The Contractor's preparation, revision and maintenance of the Construction Schedule are incidental to the work and no separate payment will be made therefore.

6-2 PROSECUTION OF WORK.

To minimize public inconvenience and possible hazard and to restore street and other work areas to their original condition and state of usefulness as soon as practicable, the Contractor shall diligently prosecute the Work to completion. If the Engineer determines that the Contractor is failing to prosecute the Work to the proper extent, the Contractor shall, upon orders from the Engineer, immediately take steps to remedy the situation. All costs of prosecuting the Work as described herein



shall be included in the Contractor's Bid. Should the Contractor fail to take the necessary steps to fully accomplish said purposes, after orders of the Engineer, the Engineer may suspend the work in whole or part, until the Contractor takes said steps.

As soon as possible under the provisions of the Specifications, the Contractor shall backfill all excavations and restore to usefulness all improvements existing prior to the start of the Work.

If Work is suspended through no fault of the Agency, all expenses and losses incurred by the Contractor during such suspensions shall be borne by the Contractor. If the Contractor fails to properly provide for public safety, traffic, and protection of the Work during periods of suspension, the Agency may elect to do so, and deduct the cost thereof from monies due the Contractor. Such actions will not relieve the Contractor from liability.

6-2.1 Order of Work. The work to be done shall consist of furnishing all labor, equipment and materials, and performing all operations necessary to complete the Project Work as shown on the Project Plans and as specified in the Specifications. The work includes rehabilitation of sewer pipeline as shown on Drawing No. 466-7 including the installation of cured-in-place pipe lining systems along with miscellaneous related work.

6-2.2.1 Phasing Work.

There are multiple site locations included in this contract. The systematic phasing of the work shall be provided in the project schedule.

6-2.2.2 Weekend and Night Work. Night work or weekend may be required to complete the work. Cost related

6-2.3 Project Meetings. The Engineer will establish the time and location of weekly Project Meetings. The Contractor's Representative shall attend each Project Meeting. The Project Representative shall be the individual determined under Section 7-6, "The Contractor's Representative". No separate payment for attendance of the Contractor, the Contractor's Representative or any other employee or subcontractor or subcontractor's employee at these meetings will be made.

6-3 SUSPENSION OF WORK.

6-3.1 General. The Work may be suspended in whole or in part when determined by the Engineer that the suspension is necessary in the interest of the Agency. The Contractor shall comply immediately with any written order of the Engineer. Such suspension shall be without liability to the Contractor on the part of the Agency except as otherwise specified in Section 6-6.3.

6-3.2 Archaeological and Paleontological Discoveries. If discovery is made of items of archaeological or paleontological interest, the Contractor shall immediately cease excavation in the area of discovery and shall not continue until ordered by the Engineer. When resumed, excavation operations within the area of discovery shall be as directed by the Engineer.

Discoveries which may be encountered may include, but not be limited to, dwelling sites, stone implements or other artifacts, animal bones, human bones, and fossils.

The Contractor shall be entitled to an extension of time and compensation in accordance with the provisions of Section 6-6.



6-4 DEFAULT BY CONTRACTOR. If the Contractor fails to begin delivery of material and equipment, to commence the Work within the time specified, to maintain the rate of delivery of material, to execute the Work in the manner and at such locations as specified, or fails to maintain the Work schedule which will insure the Agency's interest, or, if the Contractor is not carrying out the intent of the Contract, the Agency may serve written notice upon the Contractor and the Surety on its Faithful Performance Bond demanding satisfactory compliance with the Contract.

The Contract may be canceled by the Board without liability for damage, when in the Board's opinion the Contractor is not complying in good faith, has become insolvent, or has assigned or subcontracted any part of the Work without the Board's consent. In the event of such cancellation, the Contractor will be paid the actual amount due based on Contract Unit Prices or lump sums bid and the quantity of the Work completed at the time of cancellation, less damages caused to the Agency by acts of the Contractor. The Contractor, in having tendered a Bid, shall be deemed to have waived any and all claims for damages because of cancellation of Contract for any such reason. If the Agency declares the Contract canceled for any of the above reasons, written notice to that effect shall be served upon the Surety. The Surety shall, within five (5) days, assume control and perform the Work as successor to the Contractor.

If the Surety assumes any part of the Work, it shall take the Contractor's place in all respects for that part, and shall be paid by the Agency for all work performed by it in accordance with the Contract. If the Surety assumes the entire Contract, all money due the Contractor at the time of its default shall be payable to the Surety as the Work progresses, subject to the terms of the Contract.

If the Surety does not assume control and perform the Work within 5 days after receiving notice of cancellation, or fails to continue to comply, the Agency may exclude the Surety from the premises. The Agency may then take possession of all material and equipment and complete the Work by Agency forces, by letting the unfinished Work to another Contractor, or by a combination of such methods. In any event, the cost of completing the Work shall be charged against the Contractor and its Surety and may be deducted from any money due or becoming due from the Agency. If the sums due under the Contract are insufficient for completion, the Contractor or Surety shall pay to the Agency within 5 days after the completion, all costs in excess of the sums due.

The provisions of this section shall be in addition to all other rights and remedies available to the Agency under law.

6-5 TERMINATION OF CONTRACT. The Board may terminate the Contract at its own discretion or when conditions encountered during the Work make it impossible or impracticable to proceed, or when the Agency is prevented from proceeding with the Contract by act of God, by law, or by official action of a public authority.

6-6 DELAYS AND EXTENSIONS OF TIME.

6-6.1 General. If delays are caused by unforeseen events beyond the control of the Contractor, such delays will entitle the Contractor to an extension of time as provided herein, but the Contractor will not be entitled to damages or additional payment due to such delays, except as provided in 6-6.3. Such unforeseen events may include: war, government regulations, labor disputes, strikes, fires, floods, adverse weather or elements necessitating cessation of work, inability to obtain materials, labor or equipment, required extra work, or other specific events as may be further described in the Specifications.

No extension of time will be granted for a delay caused by the Contractor's inability to obtain materials unless the Contractor furnishes to the Engineer documentary proof. the proof must be



provided in a timely manner in accordance with the sequence of the Contractor's operations and the approved construction schedule.

If delays beyond the Contractor's control are caused by events other than those mentioned above, the Engineer may deem an extension of time to be in the best interests of the Agency. The Contractor will not be entitled to damages or additional payment due to such delays, except as provided in Section 6-6.3.

If delays beyond the Contractor's control are caused solely by action or inaction by the Agency, such delays will entitle the Contractor to an extension of time as provided in Section 6-6.2.

6-6.2 Extensions of Time. Extensions of time, when granted, will be based upon the effect of delays to the Work. They will not be granted for noncontrolling delays to minor portions of the Work unless it can be shown that such delays did or will delay the progress of the Work.

6-6.3 Payment for Delays to Contractor. The Contractor will be compensated for damages incurred due to delays for which the Agency is responsible. Such actual costs will be determined by the Engineer. The Agency will not be liable for damages which the Contractor could have avoided by any reasonable means, such as judicious handling of forces, equipment, or plant. The determination of what damages the Contractor could have avoided will be made by the Engineer.

6-6.4 Written Notice and Report. The Contractor shall provide written notice to the Engineer within two hours of the beginning of any period that the Contractor has placed any workers or equipment on standby for any reason that the Contractor has determined to be caused by the Agency or by any organization that the Agency may otherwise be obligated by. The Contractor shall provide continuing daily written notice to the Engineer, each working day, throughout the duration of such period of delay. The initial and continuing written notices shall include the classification of each workman and supervisor and the make and model of each piece of equipment placed on standby, the cumulative duration of the standby, the Contractor's opinion of the cause of the delay and a cogent explanation of why the Contractor could not avoid the delay by reasonable means. Should the Contractor fail to provide the notice(s) required by this section the Contractor agrees that no delay has occurred and that it will not submit any claim(s) therefore.

6-7 TIME OF COMPLETION.

6-7.1 General. The Contractor shall complete the Work within the time set forth in the Contract. The Contractor shall complete each portion of the Work within such time as set forth in the Contract for such portion. The time of completion of the Contract shall be expressed in working days. The Contractor shall diligently prosecute the work to completion within 80 working days after the starting date specified in the Notice to Proceed.

6-7.2 Working Day. A working day is any day within the period between the start of the Contract time as defined in Section 6-1 and the date provided for completion, or upon field acceptance by the Engineer for all work provided for in the Contract, whichever occurs first, other than:

1. Saturday,
2. Sunday,
3. any day designated as a holiday by the Agency,
4. any other day designated as a holiday in a Master Labor Agreement entered into by the Contractor or on behalf of the Contractor as an eligible member of a contractor association,
5. any day the Contractor is prevented from working at the beginning of the workday for cause as defined in Section 6-6.1,



6. any day the Contractor is prevented from working during the first 5 hours with at least 60 percent of the normal work force for cause as defined in Section 6-6.1.

Unless otherwise approved in writing by the Engineer, the hours of work shall be between the hours of 7:00 a.m. and 4:00 p.m. on Mondays through Fridays, excluding Agency holidays. The Contractor shall obtain the written approval of the Engineer if the Contractor desires to work outside said hours or at any time during weekends and/or holidays. This written permission must be obtained at least 48 hours prior to such work. The Engineer may approve work outside the hours and/or days stated herein when, in his/her sole opinion, such work conducted by the Contractor is beneficial to the best interests of the Agency. The Contractor shall pay the inspection costs of such work.

6-7.3 Contract Time Accounting. The Engineer will make a daily determination of each working day to be charged against the Contract time. These determinations will be discussed and the Contractor will be furnished a periodic statement showing allowable number of working days of Contract time, as adjusted, at the beginning of the reporting period. The statement will also indicate the number of working days charged during the reporting period and the number of working days of Contract time remaining. If the Contractor does not agree with the statement, it shall file a written protest within 15 days after receipt, setting forth the facts of the protest. Otherwise, the statement will be deemed to have been accepted.

6-8 COMPLETION, ACCEPTANCE, AND WARRANTY. The Work will be inspected by the Engineer for acceptance upon receipt of the Contractor's written assertion that the Work has been completed.

The Engineer will not accept the Work or any portion of the Work before all of the Work is completed and all outstanding deficiencies that may exist are corrected by the Contractor and the Engineer is satisfied that all the materials and workmanship, and all other features of the Work, meet the requirements of all of the specifications for the Work. Use, temporary, interim or permanent, of all, or portions of, the Work does not constitute acceptance of the Work. If, in the Engineer's judgment, the Work has been completed and is ready for acceptance the Engineer will so certify to the Board. Upon such certification by the Engineer the Board may accept the completed Work. Upon the Board's acceptance of the Work the Engineer will cause a "Notice of Completion" to be filed in the office of the San Diego County Recorder. The date of recordation shall be the date of completion of the Work.

All work shall be warranted for one (1) year after recordation of the "Notice of Completion" and any faulty work or materials discovered during the warranty period shall be repaired or replaced by the Contractor, at its expense. Twenty-five percent of the faithful performance bond shall be retained as a warranty bond for the one year warranty period. The Contractor shall replace or repair any such defective work in a manner satisfactory to the Engineer, after notice to do so from the Engineer, and within the time specified in the notice. If the Contractor fails to make such replacement or repairs within the time specified in the notice, the Agency may perform this work and the Contractor's sureties shall be liable for the cost thereof.

6-9 LIQUIDATED DAMAGES. Failure of the Contractor to complete the Work within the time allowed will result in damages being sustained by the Agency. For each consecutive calendar day in excess of the time specified for completion of Work, as adjusted in accordance with Section 6-6, the Contractor shall pay the Agency, or have withheld monies due it, the sum of five hundred Dollars (\$500.00). Such sum is liquidated damages and shall not be construed as a penalty, and may be deducted from payments due the Contractor if such delay occurs.

Execution of the Contract shall constitute agreement by the Agency and Contractor that five hundred Dollars per day is the minimum value of costs and actual damages caused by the Contractor to complete the Work within the allotted time. Any progress payments made after the specified completion date shall not constitute a waiver of this paragraph or of any damages.



6-10 USE OF IMPROVEMENT DURING CONSTRUCTION. The Agency reserves the right to take over and utilize all or part of any completed facility or appurtenance. The Contractor will be notified in writing in advance of such action. Such action by the Agency will relieve the Contractor of responsibility for injury or damage to said completed portions of the improvement resulting from use by public traffic or from the action of the elements or from any other cause, except Contractor operations or negligence. The Contractor will not be required to reclean such portions of the improvement before field acceptance, except for cleanup made necessary by its operations. Nothing in this section shall be construed as relieving the Contractor from full responsibility for correcting defective work or materials.

In the event the Agency exercises its right to place into service and utilize all or part of any completed facility or appurtenance, the Agency will assume the responsibility and liability for injury to persons or property resulting from the utilization of the facility or appurtenance so placed into service, except for any such injury to persons or property caused by any willful or negligent act or omission by the Contractor, Subcontractor, their officers, employees, or agents.

SECTION 7 – RESPONSIBILITIES OF THE CONTRACTOR

7-1 CONTRACTOR'S EQUIPMENT AND FACILITIES. The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the Work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.

7-2 LABOR.

7-2.1 General. Only competent workers shall be employed on the Work. Any person employed who is found to be incompetent, intemperate, troublesome, disorderly, or otherwise objectionable, or who fails or refuses to perform work properly and acceptably, shall be immediately removed from the Work by the Contractor and not be reemployed on the Work.

7-2.2 Laws. The Contractor, its agents, and employees shall be bound by and comply with applicable provisions of the Labor Code and Federal, State, and local laws related to labor.

The Contractor shall strictly adhere to the provisions of the Labor Code regarding minimum wages; the 8-hour day and 40-hour week; overtime; Saturday, Sunday, and holiday work; and nondiscrimination because of race, color, national origin, sex, or religion. The Contractor shall forfeit to the Agency the penalties prescribed in the Labor Code for violations.

7-3 LIABILITY INSURANCE. Insurance shall be required as specified in section 10 of the Public Works Contract.

The cost of this insurance shall be included in the Contractor's Bid.

7-4 WORKERS' COMPENSATION INSURANCE. Before execution of the Contract by the Board, the Contractor shall file with the Engineer the following signed certification:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."



The Contractor shall also comply with Section 3800 of the Labor Code by securing, paying for, and maintaining in full force and effect for the duration of the contract, complete Workers' Compensation Insurance, and shall furnish a Certificate of Insurance to the Engineer before execution of the Contract. The Agency, its officers, or employees, will not be responsible for any claims in law or equity occasioned by failure of the Contractor to comply with this paragraph.

All compensation insurance policies shall bear an endorsement or shall have attached a rider whereby it is provided that, in the event of expiration or proposed cancellation of such policies for any reason whatsoever, the Agency shall be notified by registered mail not less than 30 days before expiration or cancellation is effective.

All insurance is to be placed with insurers that are admitted and authorized to conduct business in the state of California and are listed in the official publication of the Department of Insurance of the State of California. Policies issued by the State Compensation Fund meet the requirement for workers' compensation insurance.

7-5 PERMITS. Except as specified herein the Contractor will obtain, at no cost to the Contractor all City of Carlsbad encroachment, right-of-way, grading and building permits necessary to perform work for this contract on Agency property, streets, or other rights-of-way. Contractor shall not begin work until all permits incidental to the work are obtained. The Contractor shall obtain and pay for all permits for the disposal of all materials removed from the project. The cost of said permit(s) shall be included in the price bid for the appropriate bid item and no additional compensation will be allowed therefore. The Contractor shall obtain and pay for all costs incurred for permits necessitated by its operations such as, but not limited to, those permits required for night work, overload, blasting, and demolition. For private contracts, the Contractor shall obtain all permits incidental to the Work or made necessary by its operations, and pay all costs incurred by the permit requirements.

The Contractor shall pay all business taxes or license fees that are required for the work.

7-5.1 Resource Agency Permits. No resource agency permits are required for the work described on the contract plans, Dwg 466-7.

7-5.2 Relations with the Railroad.

7-5.2.1 General. The Contractor shall cooperate with the North County Transit District (NCTD), the Burlington Northern and Santa Fe Railway (BNSF) and the National Railway Passenger Corporation (AMTRAK), herein after collectively referred to as Railroad. It is understood the Railroad shall have absolute authority and right to cause the Contractor's work on the Railroad Property to cease.

7-5.2.2 Right of Entry Permit. It shall be the responsibility of the Contractor to obtain a "Right of Entry" Permit from the North County Transit District Board, (The Board), prior to the commencement of any work. A Sample Permit is included in Appendix 'C', of these supplemental provisions. All fees and costs associated with obtaining and complying with the terms of this permit, including but not limited to engineering review, submittal review, railway flaggers and construction inspection, shall be the responsibility of the Contractor, and no other payment will be allowed, except as specified herein.

All fees and costs associated with obtaining and complying with the terms of the Right of Entry permit shall be the responsibility of the Contractor. Contractor may be required to make a deposit to NCTD. The deposit to NCTD will be required prior to the issuance of the Right of Entry permit. Any portion of the deposit remaining after acceptance of the contract by the City will be returned to the Contractor. Payment to the Contractor for all costs associated with obtaining and complying with the Right of Entry permit shall be considered as included in various items of work and no additional compensation will be allowed therefore. The Contractor after receipt of the Right of Entry Permit



approved by the Board shall furnish the Engineer with two copies of the executed Right of Entry permit.

7-5.2.3 Railroad Requirements

The Contractor shall notify NCTD in writing at least ten (10) working days prior to commencement of work on Railroad Right of Way at:

North County Transit District
810 Mission Avenue
Oceanside, CA 92504
(760) 966-6504
(760) 754-9403 FAX

The details of construction, including proposed method of setup to perform the work shall be submitted to the railroad for approval and shall not be undertaken without approval and shall not be undertaken until approval by the Railroad is given.

All persons entering into the railroad right of way will be required to attend a preconstruction Railroad Safety Training course conducted by NCTD. No additional compensation to Contractor will be allowed for attendance at a Railroad Safety Training course.

7-5.2.4 Requirements for use of Railway Flaggers. The presence of equipment, materials, or manpower will not be allowed within 25 feet of the centerline of any track without the presence of Railway Flaggers. The Contractor shall be responsible for coordination with NCTD to schedule Railway Flaggers. Costs for Railway Flaggers shall be the responsibility of the Contractor and subtracted from the deposit made to NCTD. The current cost for Railway flaggers average \$600.00 per day.

7-5.2.5 Railroad Insurance. Contractor shall provide NCTD proof of liability insurance with limits of \$2,000,000 per occurrence and \$6,000,000 aggregate and no exclusion of working in the vicinity of a railroad. Insurance shall name the City and its representatives as additionally insured under the aforementioned limits. Payment for insurance shall be considered as included in the various bid items and no separate payment will be made therefore

7-5.2.3 Railroad Fees. The following fees are estimated for this project and payment for these fees shall be considered as included in the various bid items and no separate payment will be made therefore:

Permit Fee: \$1,000.00
Contractor Safety Class: \$350.00
Engineering Review: \$1,500.00

7-6 THE CONTRACTOR'S REPRESENTATIVE. Before starting work, the Contractor shall designate in writing a representative who shall have complete authority to act for it. An alternative representative may be designated as well. The representative or alternate shall be present at the Work site whenever work is in progress or whenever actions of the elements necessitate its presence to take measures necessary to protect the Work, persons, or property. Any order or communication given to this representative shall be deemed delivered to the Contractor. A joint venture shall designate only one representative and alternate. In the absence of the Contractor or its representative, instructions or directions may be given by the Engineer to the superintendent or person in charge of the specific work to which the order applies. Such order shall be complied with promptly and referred to the Contractor or its representative.



In order to communicate with the Agency, the Contractor's representative, superintendent, or person in charge of specific work shall be able to speak, read, and write the English language.

7-7 COOPERATION AND COLLATERAL WORK. The Contractor shall be responsible for ascertaining the nature and extent of any simultaneous, collateral, and essential work by others. The Agency, its workers and contractors and others, shall have the right to operate within or adjacent to the Work site during the performance of such work.

The Agency, the Contractor, and each of such workers, contractors and others, shall coordinate their operations and cooperate to minimize interference.

The Contractor shall include in its Bid all costs involved as a result of coordinating its work with others. The Contractor will not be entitled to additional compensation from the Agency for damages resulting from such simultaneous, collateral, and essential work. If necessary to avoid or minimize such damage or delay, the Contractor shall redeploy its work force to other parts of the Work.

Should the Contractor be delayed by the Agency, and such delay could not have been reasonably foreseen or prevented by the Contractor, the Engineer will determine the extent of the delay, the effect on the project, and any extension of time.

7-7.1 Coordination. The Contractor shall coordinate and cooperate with all the utility companies during the relocation or construction of their lines. The Contractor may be granted a time extension if, in the opinion of the Engineer, a delay is caused by the utility company. No additional compensation will be made to the Contractor for any such delay.

7-8 PROJECT SITE MAINTENANCE.

7-8.1 Cleanup and Dust Control. Throughout all phases of construction, including suspension of work, and until the final acceptance, the Contractor shall keep the site clean and free from rubbish and debris. The Contractor shall also abate dust nuisance by cleaning, sweeping and sprinkling with water, or other means as necessary. The use of water resulting in mud on public streets will not be permitted as a substitute for sweeping or other methods.

When required by the Plans or Specifications, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day for the purpose of keeping paved areas acceptably clean wherever construction, including restoration, is incomplete.

Materials and equipment shall be removed from the site as soon as they are no longer necessary. Before the final inspection, the site shall be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. All cleanup costs shall be included in the Contractor's Bid.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately and the area cleaned.

Excess excavation material from catch basins or similar structures shall be removed from the site immediately. Sufficient material may remain for use as backfill if permitted by the Specifications. Forms and form lumber shall be removed from the site as soon as practicable after stripping.

Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend work until the condition is corrected. No additional compensation will be allowed as a result of such suspension.



Cleanup and dust control required herein shall also be executed on weekends and other non-working days when needed to preserve the health safety or welfare of the public. The Contractor shall conduct effective cleanup and dust control throughout the duration of the Contract. The Engineer may require increased levels of cleanup and dust control that, in his/her sole discretion, are necessary to preserve the health, safety and welfare of the public. Cleanup and dust control shall be considered incidental to the items of work that they are associated with and no additional payment will be made therefore.

7-8.2 Air Pollution Control. The Contractor shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.

7-8.3 Vermin Control. At the time of acceptance, structures entirely constructed under the Contract shall be free of rodents, insects, vermin, and pests. Necessary extermination work shall be arranged and paid for by the Contractor as part of the Work within the Contract time, and shall be performed by a licensed exterminator in accordance with requirements of governing authorities. The Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.

7-8.4 Sanitation. The Contractor shall provide and maintain enclosed toilets for the use of employees engaged in the Work. These accommodations shall be maintained in a neat and sanitary condition. They shall also comply with all applicable laws, ordinances, and regulations pertaining to public health and sanitation of dwellings and camps.

Wastewater shall not be interrupted. Should the Contractor disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.

7-8.5 Temporary Light, Power, and Water. The Contractor shall furnish, install, maintain, and remove all temporary light, power, and water at its own expense. These include piping, wiring, lamps, and other equipment necessary for the Work. The Contractor shall not draw water from any fire hydrant (except to extinguish a fire), without obtaining permission from the water agency concerned. The Contractor shall obtain a construction meter for water used for the construction, plant establishment, maintenance, cleanup, testing and all other work requiring water related to this contract. The Contractor shall contact the appropriate water agency for requirements. The Contractor shall pay all costs of temporary light, power and water including hookup, service, meter and any, and all, other charges, deposits and/or fees therefore. Said costs shall be considered incidental to the items of work that they are associated with and no additional payment will be made therefore.

7-8.6 Water Pollution Control. The Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution. It shall conduct and schedule operations so as to minimize or avoid muddying and silting of said channels, drains, and waters. Water pollution control work shall consist of constructing those facilities which may be required to provide prevention, control, and abatement of water pollution.

According to the Volume 4, Storm Water Standards Manual of the City of Carlsbad Engineering Standards, Rev 6/4/2008, this project requires a Storm Water Pollution Prevention Plan (SWPPP) of level Tier 1, as described within said document. Contractor shall provide a SWPPP Tier 1 and comply with those requirements. All cost associated with SWPPP including implementation shall be considered part of the bid cost no additional payment will be made.

7-8.7 Drainage Control. The Contractor shall maintain drainage within and through the work areas. Earth dams will not be permitted in paved areas. Temporary dams of sandbags, asphaltic



concrete, or other acceptable material will be permitted when necessary. Such dams shall be removed from the site as soon as their use is no longer necessary.

7-8.8 Noise Control. All internal combustion engines used in the construction shall be equipped with mufflers in good repair when in use on the project with special attention to the City Noise Control Ordinance, Carlsbad Municipal Code Chapter 8.48.

7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS. The Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property.

The Contractor shall repair or replace all existing improvements within the right-of-way which are not designated for removal (e.g., curbs, sidewalks, driveways, fences, walls, signs, utility installations, pavement, structures, etc.) which are damaged or removed as a result of its operations. When a portion of a sprinkler system within the right-of-way must be removed, the remaining lines shall be capped. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.

Maintenance of street and traffic signal systems that are damaged, temporarily removed or relocated shall be done in conformance with 307-1.5.

Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed due to Contractor's operations, they shall be restored or replaced in as nearly the original condition and location as is reasonably possible. Lawns shall be reseeded and covered with suitable mulch.

The Contractor shall give reasonable notice to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, sprinklers, and other improvements, within the right-of-way which are designated for removal and would be destroyed because of the Work.

All costs to the Contractor for protecting, removing, and restoring existing improvements shall be included in the Bid.

7-10 PUBLIC CONVENIENCE AND SAFETY.

7-10.1 Traffic and Access. The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to pass through the Work, or an approved detour shall be provided.

Safe and adequate pedestrian and vehicular access shall be provided and maintained to: fire hydrants; commercial and industrial establishments; churches, schools and parking lots; service stations and motels; hospitals; police and fire stations; and establishments of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved by the Engineer.

Safe and adequate pedestrian zones and public transportation stops, as well as pedestrian crossings of the Work at intervals not exceeding 90 m (300 feet), shall be maintained unless otherwise approved by the Engineer.

Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time. If backfill has been completed to the extent that safe access may be provided, and the street is opened to local traffic, the Contractor shall immediately clear the street and driveways and provide and maintain access.



The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules for these services.

Grading operations, roadway excavation and fill construction shall be conducted by the Contractor in a manner to provide a reasonably satisfactory surface for traffic. When rough grading is completed, the roadbed surface shall be brought to a smooth, even condition satisfactory for traffic.

Unless otherwise authorized, work shall be performed in only one-half the roadway at one time. One half shall be kept open and unobstructed until the opposite side is ready for use. If one-half a street only is being improved, the other half shall be conditioned and maintained as a detour.

The Contractor shall schedule the work so as to prevent damage by all traffic, including but not limited to mail delivery. The Contractor shall not schedule work so as to conflict with trash pickup. The trash hauling schedule can be obtained by calling the City's contracted waste disposal company, Coast Waste Management at 929-9417.

During overlay operations, the Contractors schedule for overlay application shall be designated to provide residents and business owners whose streets are to be overlaid sufficient paved parking within an 800 foot distance from their homes or businesses.

Seventy-two hours prior to the start of any construction in the public right-of-way that affects vehicular traffic and/or parking or pedestrian routes, the Contractor shall give written notification of the impending disruption. For a full street closure, all residences and/or businesses on the affected street or alley shall be notified. For partial street closures, or curb, sidewalk and driveway repairs, the residences and/or businesses directly affected by the work shall be notified.

The notification shall be hand delivered and shall state the date and time the work will begin and its anticipated duration. The notification shall list two telephone numbers that may be called to obtain additional information. One number shall be the Contractor's permanent office or field office and the other number shall be a 24-hour number answered by someone who is knowledgeable about the project. At least one of the phone numbers shall be in the (760) area code. An answering machine shall not be connected to either number. The notification shall also give a brief description of the work and simple instructions to the home or business owner on what they need to do to facilitate the construction. The Contractor shall submit the contents of the notification to the Engineer for approval. Notices shall not be distributed until approved by the Engineer.

For residences, the notification shall be pre-cut in a manner that enables it to be affixed to a doorknob without adhesives. It shall be a minimum size of 3-1/2 inches by 8-1/2 inches and shall be brightly colored with contrasting printing. The material shall be equivalent in strength and durability to 65 lb. card stock. The printing on the notice shall be no smaller than 12 point. An example of such notice is provided in Appendix "A".

In addition to the notifications, the contractor shall post no parking signs 72 hours in advance of the work being performed. The no parking signs shall state the date and time of parking restriction for a duration not to exceed the time necessary to complete the work at that location. Failure of the contractor to meet the posted date requires re-posting the no parking signs 72 hours in advance of the rescheduled work. If the work is delayed or rescheduled the no parking signs shall be removed and re-posted 72 hours in advance of the rescheduled work.

The preparation, materials, printing and distribution of the notifications shall be included in the contract price bid for traffic control and the Contractor will not be entitled to any additional compensation for printing and distributing these notices.

The contractor shall replace all street markings and striping damaged by construction activities.



The Contractor shall include in its Bid all costs for the above requirements.

7-10.2 Storage of Equipment and Materials in Public Streets. Construction materials shall not be stored in streets, roads, or highways for more than 5 days after unloading. All materials or equipment not installed or used in construction within 5 days after unloading shall be stored elsewhere by the Contractor at its expense unless authorized additional storage time.

Construction equipment shall not be stored at the Work site before its actual use on the Work nor for more than 5 days after it is no longer needed. Time necessary for repair or assembly of equipment may be authorized by the Engineer.

Excavated material, except that which is to be used as backfill in the adjacent trench, shall not be stored in public streets unless otherwise permitted. After placing backfill, all excess material shall be removed immediately from the site.

7-10.3 Street Closures, Detours, Barricades. The Contractor shall comply with all applicable State, County, and City requirements for closure of streets. The Contractor shall provide barriers, guards, lights, signs, temporary bridges, flagpersons, and watchpersons. The Contractor shall be responsible for compliance with additional public safety requirements which may arise. The Contractor shall furnish and install signs and warning devices and promptly remove them upon completion of the Work.

After obtaining the Engineers approval and at least 5 working days before closing, detouring, partially closing or reopening any street, alley or other public thoroughfare the Contractor shall notify the following:

- | | |
|---|----------------|
| 1) The Engineer..... | (760) 602-2720 |
| 2) Carlsbad Fire Department Dispatch | (760) 931-2197 |
| 3) Carlsbad Police Department Dispatch..... | (760) 931-2197 |
| 4) Carlsbad Traffic Signals Maintenance (extension 2937)..... | (760) 438-2980 |
| 5) Carlsbad Traffic Signals Operations | (760) 602-2752 |
| 6) North County Transit District..... | (760) 967-2828 |
| 7) Waste Management..... | (760) 929-9400 |

The Contractor shall comply with their requirements. The Contractor shall obtain the Engineer's written approval prior to deviating from the requirements of 2) through, and including, 7) above. The Contractor shall obtain the written approval no less than five working days prior to placing any traffic control that affects bus stops.

The Contractor shall secure approval, in advance, from authorities concerned for the use of any bridges proposed by it for public use. Temporary bridges shall be clearly posted as to load limit, with signs and posting conforming to current requirements covering "signs" as set forth in the Traffic Manual published by the California Department of Transportation. This manual shall also apply to the street closures, barricades, detours, lights, and other safety devices required.

All costs involved shall be included in the Bid.

Traffic controls shall be in accordance with the plans, The California Manual on Uniform Traffic Control Devices (FHWA MUTCD 2003 Revision 1, as amended for use in California) and these provisions. If any component in the traffic control system is damaged, displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location. In the event that the Contractor fails to install and/or maintain barricades or such other traffic signs, markings, delineation or devices as may be required herein, the Engineer may, at his/her sole option, install the traffic signs, markings, delineation or devices and charge the Contractor twenty dollars (\$25.00) per day per traffic sign or device, or the actual cost of providing such traffic control facility, whichever is the greater.



7-10.3.1 Construction Area Signs and Control Devices. All construction traffic signs and control devices shall be maintained throughout the duration of work in good order and according to the approved traffic control plan. All construction area signs shall conform to the provisions of Section 206-7.2 et seq. All temporary reflective pavement markers shall conform to the provisions of Section 214-5.1 et seq. All temporary reflective channelizers shall conform to the provisions of Section 214-5.2 et seq. All paint for temporary traffic striping, pavement marking, and curb marking shall conform to the provisions of Section 210-1.6 et seq. except that all temporary paint shall be rapid dry water borne conforming to Section 210-1.6 for materials and Section 310-5 et seq. For workmanship. Warning and advisory signs, lights and devices installed or placed to provide traffic control, direction and/or warning shall be furnished, installed and maintained by the Contractor. Warning and advisory signs, lights and devices shall be promptly removed by the Contractor when no longer required. Warning and advisory signs that remain in place overnight shall be stationary mounted signs. Stationary signs that warn of non-existent conditions shall be removed from the traveled way and from the view of motorists in the traveled way or shielded from the view of the traveling public during such periods that their message does not pertain to existing conditions. Care shall be used in performing excavation for signs in order to protect underground facilities. All excavation required to install stationary construction area signs shall be performed by hand methods without the use of power equipment. Warning and advisory signs that are used only during working hours may be portable signs. Portable signs shall be removed from the traveled way and shielded from the view of the traveling public during non-working hours. During the hours of darkness, as defined in Division 1, Section 280, of the California Vehicle Code, portable signs shall be illuminated or, at the option of the Contractor, shall be in conformance with the provisions in Section 206-7.2 et seq. If illuminated traffic cones rather than post-type delineators are used during the hours of darkness, they shall be affixed or covered with reflective cone sleeves as specified in CALTRANS "Standard Specifications", except the sleeves shall be 7" long. Personal vehicles of the Contractor's employees shall not be parked within the traveled way, including any Section closed to public traffic. Whenever the Contractor's vehicles or equipment are parked on the shoulder within 6' of a traffic lane, the shoulder area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at not less than 25' intervals to a point not less than 25' past the last vehicle or piece of equipment. A minimum of nine (9) cones or portable delineators shall be used for the taper. A W20-1 (Road Work Ahead) or C24 (Shoulder Work Ahead) sign shall be mounted, as required herein, on a signpost or telescoping flag tree with flags. The signpost or flag tree shall be placed where directed by the Engineer.

7-10.3.2 Maintaining Traffic. The Contractor's personnel shall not work closer than 6', nor operate equipment within 2' from any traffic lane occupied by traffic. For equipment the 2' shall be measured from the closest approach of any part of the equipment as it is operated and/or maneuvered in performing the work. This requirement may be waived when the Engineer has given written authorization to the reduction in clearance that is specific to the time, duration and location of such waiver, when such reduction is shown on the traffic control plans included in these contract documents, when such reduction is shown on the traffic control plans prepared by the Contractor and approved by the Engineer or for the work of installing, maintaining and removing traffic control devices. As a condition of such waiver the Engineer may require the Contractor to detour traffic, adjust the width of, or realign the adjacent traffic lane, close the adjacent traffic lane or provide barriers.

During the entire construction, a minimum of 1 paved traffic lanes, not less than 12' wide, shall be open for use by public traffic in each direction of travel.

7-10.3.3 Traffic Control System for Lane Closure. A traffic control system consists of closing traffic lanes or pedestrian walkways in accordance with the details shown on the plans, California Manual on Uniform Traffic Control Devices (FHWA MUTCD 2003 Revision 1, as amended for use in California) and provisions under "Maintaining Traffic" elsewhere in these Provisions. The provisions in this section will not relieve the Contractor from its responsibility to provide such additional devices or take such measures as may be necessary to maintain public safety.



When lanes are closed for only the duration of work periods, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder at the end work period. If the Contractor so elects, said components may be stored at selected central locations, approved by the Engineer, within the limits of the right-of-way.

7-10.3.4 Traffic Control for Permanent and Temporary Traffic Striping. During traffic stripe operations, traffic shall be controlled with lane closures, as provided for under "Traffic Control System for Lane Closure" of these Supplemental Provisions or by use of an alternative traffic control plan proposed by the Contractor and approved by the Engineer. The Contractor shall not start traffic striping operations using an alternative plan until the Contractor has submitted its plan to the Engineer and has received the Engineer's written approval of said plan.

7-10.3.5 Temporary Pavement Delineation. Temporary pavement delineation shall be furnished, placed, maintained and removed in accordance with the minimum standards specified in the California Manual on Uniform Traffic Control Devices (FHWA MUTCD 2003 Revision 1, as amended for use in California) published by CALTRANS. Whenever the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic. Lane line or centerline pavement delineation shall be provided at all times for traveled ways open to public traffic. All work necessary, including any required lines or marks, to establish the alignment of temporary pavement delineation shall be performed by the Contractor. When temporary pavement delineation is removed, all lines and marks used to establish the alignment of the temporary pavement delineation shall be removed by grinding.

Surfaces to receive temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with permanent pavement delineation.

Temporary pavement delineation shall be removed when, as determined by the Engineer, the temporary pavement delineation conflicts with the permanent pavement delineation or with a new traffic pattern for the area and is no longer required for the direction of public traffic. When temporary pavement delineation is required to be removed, all lines and marks used to establish the alignment of the temporary pavement delineation shall be removed.

7-10.3.6 Preparation of Traffic Control Plan Sheets.

If no traffic control plans (TCP) or Traffic Control Staging plans (TCP) are included in the project plans, or if the Contractor elects to modify TCP included in the project plans, the Contractor shall have such new or modified TCP prepared and submitted as a part of the Work for any and all construction activities that are located within the traveled way. The Contractor shall have TCP prepared and submitted as a part of the Work for any construction activities that are a part of this project that are not included in the project plans. The Contractor must submit the TCP for the Engineer's review in conformance with the requirements of Section 2-5.3, et seq. and obtain the Engineer's approval of the TCP prior to implementing them. The minimum 20-day review period specified in Section 2-5.3.1 for shop drawings and submittals shall pertain to each submittal of TCP, new, modified or added to, for the Engineer's review. New or revised TCP submittals shall include all TCP needed for the entire duration of the Work. Each phase of the TCP shall be shown in sufficient scale and detail to show the lane widths, transition lengths, curve radii, stationing of features affecting the traffic control plan and the methodology proposed to transition to the subsequent TCP phase. When the vertical alignment of the traveled surface differs from the finished pavement elevation vertical curves must also be shown.



7-10.3.7 Payment.

The Contractor shall prepare and implement traffic control plans and shall furnish all labor and materials to perform, install, maintain, replace and remove all traffic control as incidentals to the work with which they are associated and no other compensation will be allowed therefore.

7-10.4 Safety.

7-10.4.1 Safety Orders. The Contractor shall have at the Work site, copies or suitable extracts of: Construction Safety Orders, Tunnel Safety Orders and General Industry Safety Orders issued by the State Division of Industrial Safety. The Contractor shall comply with provisions of these and all other applicable laws, ordinances, and regulations.

Before excavating any trench 5 feet or more in depth, the Contractor shall submit a detailed plan to the Agency showing the design of shoring, bracing, sloping, or other provisions to be made for the workers' protection from the hazard of caving ground during the excavation of such trench. If the plan varies from the shoring system standards, the plan shall be prepared by a registered Civil Engineer. No excavation shall start until the Engineer has accepted the plan and the Contractor has obtained a permit from the State Division of Industrial Safety. A copy of the permit shall be submitted to the Engineer.

Payment for performing all work necessary to provide safety measures shall be included in the prices bid for other items of work except where separate bid items for excavation safety are provided, or required by law.

7-10.4.2 Use of Explosives. Explosives may be used only when authorized in writing by the Engineer, or as otherwise stated in the Specifications. Explosives shall be handled, used, and stored in accordance with all applicable regulations.

The Engineer's approval of the use of explosives shall not relieve the Contractor from liability for claims caused by blasting operations.

7-10.4.3 Special Hazardous Substances and Processes. Materials that contain hazardous substances or mixtures may be required on the Work. A Material Safety Data Sheet as described in Section 5194 of the California Code of Regulations shall be requested by the Contractor from the manufacturer of any hazardous products used.

Material usage shall be accomplished with strict adherence to California Division of Industrial Safety requirements and all manufacturer warnings and application instructions listed on the Material Safety Data Sheet and on the product container label.

The Contractor shall notify the Engineer if a specified product cannot be used under safe conditions.

7-10.4.4 Confined Spaces.

(a) Confined Space Entry Program. The Contractor shall be responsible for implementing, administering and maintaining a confined space entry program (CSEP) in accordance with Sections 5156, 5157 and 5158, Title 8, CCR.

Prior to starting the Work, the Contractor shall prepare and submit its comprehensive CSEP to the Engineer. The CSEP shall address all potential physical and environmental hazards and contain procedures for safe entry into confined spaces, including, but not limited to the following:



1. Training of personnel
2. Purging and cleaning the space of materials and residue
3. Potential isolation and control of energy and material inflow
4. Controlled access to the space
5. Atmospheric testing of the space
6. Ventilation of the space
7. Special hazards consideration
8. Personal protective equipment
9. Rescue plan provisions

The Contractor's submittal shall include the names of its personnel, including subcontractor personnel, assigned to the project who will have CSEP responsibilities, their CSEP training, and their specific assignment and responsibility in carrying out the CSEP.

(b) Permit-Required Confined Spaces. Entry into permit-required confined spaces as defined in Section 5157, Title 8, CCR may be required as a part of the Work. All manholes, tanks, vaults, pipelines, excavations, or other enclosed or partially enclosed spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The Contractor shall implement a permit space program prior to performing any work in a permit-required confined space. A copy of the permit shall be available at all times for review by Contractor and Agency personnel at the Work site.

(c) Payment. Payment for implementing, administering, and providing all equipment and personnel to perform the CSEP shall be included in the bid items for which the CSEP is required.

7-10.4.5 Safety and Protection of Workers and Public. The Contractor shall take all necessary precautions for the safety of employees on the work and shall comply with all applicable provisions of Federal, State and Municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workers and public, and shall use danger signs warning against hazards created by such features of construction as protruding nails, hoists, well holes, and falling materials.

7-11 PATENT FEES OR ROYALTIES. The Contractor shall absorb in its Bid the patent fees or royalties on any patented article or process furnished or used in the Work. The Contractor shall indemnify and hold the Agency harmless from any legal action that may be brought for infringement of patents.

7-12 ADVERTISING. The names, addresses and specialties of Contractors, Subcontractors, architects, or engineers may be displayed on removable signs. The size and location shall be subject to the Engineer's approval.

Commercial advertising matter shall not be attached to or painted on the surfaces of buildings, fences, canopies, or barricades.

7-13 LAWS TO BE OBSERVED. The Contractor shall keep fully informed of State and National laws and County and Municipal ordinances and regulations which in any manner affect those employed in the Work or the materials used in the Work or in any way affect the conduct of the Work. The Contractor shall at all times observe and comply with such laws, ordinances, and regulations. Municipal ordinances that affect this work include Chapter 11.06. Excavation and Grading. If this notice specifies locations or possible materials, such as borrow pits or gravel beds, for use in the proposed construction project which would be subject to Section 1601 or Section 1603 of the Fish



and Game Code, the conditions established pursuant to Section 1601 et seq. of the Fish and Game Code shall become conditions of the contract.

7-14 ANTITRUST CLAIMS. Section 7103.5 of the Public Contract Code provides:

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

SECTION 8 – FACILITIES FOR AGENCY PERSONNEL

8-1 GENERAL. Field office for Agency personnel is not required.

SECTION 9 – MEASUREMENT AND PAYMENT

9-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK.

9-1.1 General. Unless otherwise specified, quantities of work shall be determined from measurements or dimensions in horizontal planes. However, linear quantities of pipe, piling, fencing and timber shall be considered as being the true length measured along longitudinal axis.

Unless otherwise provided in Specifications, volumetric quantities shall be the product of the mean area of vertical or horizontal sections and the intervening horizontal or vertical dimension. The planimeter shall be considered an instrument of precision adapted to measurement of all areas.

9-1.2 Methods of Measurement. Materials and items of work which are to be paid for on basis of measurement shall be measured in accordance with methods stipulated in the particular sections involved.

9-1.3 Certified Weights. When payment is to be made on the basis of weight, the weighing shall be done on certified platform scales or, when approved by the Engineer, on a completely automated weighing and recording system. The Contractor shall furnish the Engineer with duplicate licensed weighmaster's certificates showing actual net weights. The Agency will accept the certificates as evidence of weights delivered.

9-1.4 Units of Measurement. The system of measure for this contract shall be the U.S. Standard Measures.

9-2 LUMP SUM WORK. Items for which quantities are indicated "Lump Sum", "L.S.", or "Job", shall be paid for at the price indicated in the Bid. Such payment shall be full compensation for the items of work and all work appurtenant thereto.

When required by the Specifications or requested by the Engineer, the Contractor shall submit to the Engineer within 15 days after award of Contract, a detailed schedule in triplicate, to be used only as a basis for determining progress payments on a lump sum contract or designated lump sum bid item. This schedule shall equal the lump sum bid and shall be in such form and sufficiently detailed as to satisfy the Engineer that it correctly represents a reasonable apportionment of the lump sum.



9-3 PAYMENT

9-3.1 General. The quantities listed in the Bid schedule will not govern final payment. Payment to the Contractor will be made only for actual quantities of Contract items constructed in accordance with the Plans and Specifications. Upon completion of construction, if the actual quantities show either an increase or decrease from the quantities given in the Bid schedule, the Contract Unit Prices will prevail subject to the provisions of Section 3-2.2.1.

The unit and lump sum prices to be paid shall be full compensation for the items of work and all appurtenant work, including furnishing all materials, labor, equipment, tools, and incidentals.

Payment will not be made for materials wasted or disposed of in a manner not called for under the Contract. This includes rejected material not unloaded from vehicles, material rejected after it has been placed, and material placed outside of the Plan lines. No compensation will be allowed for disposing of rejected or excess material.

Payment for work performed or materials furnished under an Assessment Act Contract will be made as provided in particular proceedings or legislative act under which such contract was awarded.

Whenever any portion of the Work is performed by the Agency at the Contractor's request, the cost thereof shall be charged against the Contractor, and may be deducted from any amount due or becoming due from the Agency.

Whenever immediate action is required to prevent injury, death, or property damage, and precautions which are the Contractor's responsibility have not been taken and are not reasonably expected to be taken, the Agency may, after reasonable attempt to notify the Contractor, cause such precautions to be taken and shall charge the cost thereof against the Contractor, or may deduct such cost from any amount due or becoming due from the Agency. Agency action or inaction under such circumstances shall not be construed as relieving the Contractor or its Surety from liability.

Payment shall not relieve the Contractor from its obligations under the Contract; nor shall such payment be construed to be acceptance of any of the Work. Payment shall not be construed as the transfer of ownership of any equipment or materials to the Agency. Responsibility of ownership shall remain with the Contractor who shall be obligated to store any fully or partially completed work or structure for which payment has been made; or replace any materials or equipment required to be provided under the Contract which may be damaged, lost, stolen or otherwise degraded in any way prior to acceptance of the Work, except as provided in Section 6-10.

Guarantee periods shall not be affected by any payment but shall commence on the date of recordation of the "Notice of Completion."

If, within the time fixed by law, a properly executed notice to stop payment is filed with the Agency, due to the Contractor's failure to pay for labor or materials used in the Work, all money due for such labor or materials will be withheld from payment to the Contractor in accordance with applicable laws.

At the expiration of 35 days from the date of acceptance of the Work by the Board, or as prescribed by law, the amount deducted from the final estimate and retained by the Agency will be paid to the Contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contract to be further retained.

9-3.2 Partial and Final Payment. The Engineer will, after award of Contract, establish a closure date for the purpose of making monthly progress payments. The Contractor may request in writing that such monthly closure date be changed. The Engineer may approve such request when it is compatible with the Agency's payment procedure.



Each month, the Engineer will make an approximate measurement of the work performed to the closure date as basis for making monthly progress payments. The estimated value will be based on contract unit prices, completed change order work and as provided for in Section 9-2 of these General Provisions. Progress payments shall be made no later than thirty (30) calendar days after the closure date. Five (5) working days following the closure date, the Engineer shall complete the detailed progress pay estimate and submit it to the Contractor for the Contractor's information. Should the Contractor assert that additional payment is due, the Contractor shall within ten (10) days of receipt of the progress estimate, submit a supplemental payment request to the Engineer with adequate justification supporting the amount of supplemental payment request. Upon receipt of the supplemental payment request, the Engineer shall, as soon as practicable after receipt, determine whether the supplemental payment request is a proper payment request. If the Engineer determines that the supplemental payment request is not proper, then the request shall be returned to the Contractor as soon as practicable, but not later than seven (7) days after receipt. The returned request shall be accompanied by a document setting forth in writing the reasons why the supplemental payment request was not proper. In conformance with Public Contract Code Section 20104.50, the City shall make payments within thirty (30) days after receipt of an undisputed and properly submitted supplemental payment request from the Contractor. If payment of the undisputed supplemental payment request is not made within thirty (30) days after receipt by the Engineer, then the City shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

From each progress estimate, 10 percent will be deducted and retained by the Agency, and the remainder less the amount of all previous payments will be paid. After 50 percent of the Work has been completed and if progress on the Work is satisfactory, the deduction to be made from remaining progress estimates and from the final estimate may be limited to \$500 or 10 percent of the first half of total Contract amount, whichever is greater.

No progress payment made to the Contractor or its sureties will constitute a waiver of the liquidated damages under 6-9.

As provided in Section 22300 of the California Public Contract Code, the Contractor may substitute securities for any monies withheld by the Agency to ensure performance under the Contract.

After final inspection, the Engineer will make a Final Payment Estimate and process a corresponding payment. This estimate will be in writing and shall be for the total amount owed the Contractor as determined by the Engineer and shall be itemized by the contract bid item and change order item with quantities and payment amounts and shall show all deductions made or to be made for prior payments and amounts to be deducted under provisions of the contract. All prior estimates and progress payments shall be subject to correction in the Final Payment Estimate.

The Contractor shall have 30 calendar days from receipt of the Final Payment Estimate to make written statement disputing any bid item or change order item quantity or payment amount. The Contractor shall provide all documentation at the time of submitting the statement supporting its position. Should the Contractor fail to submit the statement and supporting documentation within the time specified the Contractor acknowledges that full and final payment has been made for all contract bid items and change order items.

If the Contractor submits a written statement with documentation in the aforementioned time, the Engineer will review the disputed item within 30 calendar days and make any appropriate adjustments on the Final Payment. Remaining disputed quantities or amounts not approved by the Engineer will be subject to resolution as specified in Section 3-5, Disputed Work.

The written statement filed by the Contractor shall be in sufficient detail to enable the Engineer to



ascertain the basis and amount of said disputed items. The Engineer will consider the merits of the Contractor's claims. It will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in its claims. Failure to submit such information and details will be sufficient cause for denying payment for the disputed items.

9-3.2.1 Payment for Claims. Except for those final payment items disputed in the written statement required in Section 9-3.2 all claims of any dollar amount shall be submitted in a written statement by the Contractor no later than the date of receipt of the final payment estimate. Those final payment items disputed in the written statement required in Section 9-3.2 shall be submitted no later than 30 days after receipt of the Final Payment estimate. No claim will be considered that was not included in this written statement, nor will any claim be allowed for which written notice or protest is required under any provision of this contract including Sections 3-4 Changed Conditions, 3-5 Disputed Work, 6-6.3 Payment for Delays to Contractor, 6-6.4 Written Notice and Report, or 6-7.3 Contract Time Accounting, unless the Contractor has complied with notice or protest requirements.

The claims filed by the Contractor shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of said claims. The Engineer will consider and determine the Contractor's claims and it will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in its claims. Failure to submit such information and details will be sufficient cause for denying the claims.

Payment for claims shall be processed within 30 calendar days of their resolution for those claims approved by the Engineer. The Contractor shall proceed with informal dispute resolution under Section 3-5, Disputed Work, for those claims remaining in dispute.

9-3.3 Delivered Materials. When provided for in the Specifications, and subject to the limitation and conditions therein, the cost of materials and equipment delivered but not incorporated into the Work will be included in the progress estimate.

9-3.3.1 Delivered Materials. The cost of materials and equipment delivered but not incorporated into the work will not be included in the progress estimate.

9-3.4 Mobilization. When a bid item is included in the Proposal form for mobilization and subject to the conditions and limitations in the Specifications, the costs of work in advance of construction operations and not directly attributable to any specific bid item will be included in the progress estimate. When no such bid item is provided, payment for such costs will be considered to be included in the other items of work.

9-3.4.1 Mobilization and Preparatory Work. Payment for mobilization and preparatory Work will be made at the stipulated lump-sum price bid therefore in the bid schedule and includes full compensation for furnishing all insurance, bonds, licenses, labor, materials, utilities, tools, equipment and incidentals, and for doing all the work involved in mobilization and preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidental to preparing to conduct work on and off the project site and other offsite facilities necessary for work on the project; for all other facilities, sureties, work and operations which must be performed or costs incurred prior to beginning work on various contract items on or off the project site, excepting those specifically paid for under separate sections of these specifications. The Contractor hereby agrees that the stipulated lump sum amount is sufficient for Mobilization and Preparatory Work, as described in this section, and that the Contractor shall have no right to additional compensation for Mobilization and Preparatory Work.



Progress payments for Mobilization and Preparatory Work will be made as follows:

For the first progress payment (after the issuance of the Notice to Proceed), forty percent (40%) of the amount bid for Mobilization And Preparatory Work will be allowed. For the second progress payment, an additional sixty percent (60%) of the amount bid for mobilization and preparatory work will be allowed therefore.

9-3.4.1 Mobilization and Preparatory Work. Payment for mobilization and preparatory Work will be included in the various items of work and no other payment will be made.

9-4 BID ITEMS. Payment for each Bid Item shall be made at the quantity and type as listed in the Contractor's Proposal. All work shown or mentioned on the plans, in the Contract Documents, General Provisions, or Technical Provisions/Specifications shall be considered as included in the Bid Items. Contractor must protect existing utilities, improvements, landscaping, irrigation systems, and vegetation in place. If damaged during the work, Contractor is responsible to repair or replace any utilities, improvements, landscaping, irrigation systems, and vegetation at his expense.

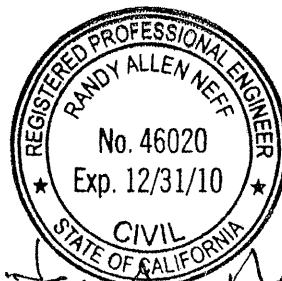
Clarification of bid items is provided in Section 01025 Measurement and Payment of the Technical Specifications in this contract.



TECHNICAL SPECIFICATIONS

Index

1. Section 01025 Measurement and Payment
2. Section 11080 Wastewater Bypass and Containment
3. Section 13605 Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers



Randy A. Neff

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 – GENERAL

A. Work Listed in the Schedule of Work Items

1. Work under this contract will be paid on a unit price or lump-sum basis as outlined on the Bid Form(s) for the quantity of work installed.
2. The unit prices and lump-sum prices include full compensation for furnishing the labor, materials, tools, and equipment and doing all the work involved to complete the work included in the contract documents.
3. The application for payment will be for a specific item based on the percentage completed or quantity installed. The percentage complete will be based on the value of the partially completed work relative to the value of the item when entirely completed and ready for service.
4. Extra work or changes in the Work shall be accomplished as provided in the General Provisions.

B. Work Not Listed in the Schedule of Work Items

1. The General Provisions and items in the specifications which are not listed in the schedule of work items of the Bid Form(s) are, in general, applicable to more than one listed work item, and no separate work item is provided therefor. Contractor shall include the cost of work not listed but necessary to complete the project designated in the contract documents in the various listed work items of the Bid Form(s).
2. The bids for the work are intended to establish a total cost for the work in its entirety. Should the Contractor feel that the cost for the work has not been established by specific items in the Bid Form(s), include the cost for that work in some related bid item so that the Proposal for the project reflects the total cost for completing the work in its entirety.

PART 2 – MATERIALS

A. Description of Bid Items

Items A-1, B-1, C-1, D-1, and E-1	Contract Bonds, Insurance, Encroachment Permits, Rights-of-Entry, Project Management, Mobilization and Preparatory Work – See Section 9-3.4 of the General Provisions.
Items A-2, B-2, C-2, D-2, and E-2	Traffic Control – Bid item shall include complete Traffic Control including preparation and obtaining approval of traffic control plans, furnishing, installing, maintaining traffic control devices during all stages of construction, removing traffic control devices when they are no longer needed, and temporary street striping. The contract lump sum price paid shall be considered full compensation for furnishing all materials, labor, tools, equipment, and all incidentals, necessary to complete the work in accordance with the Standard Specifications and as directed by the Engineer.
Items A-3, B-3, C-3, D-3, and E-3	Video Inspections – The contract lump sum price paid for sewer video inspections shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved to perform the pre- and post-rehabilitation sewer video inspections as specified by the Contract's Specifications, "Section 13605, Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers" and as directed by the Engineer including, but not limited to, obtaining encroachment permits or right-of-entry permits to work within public or private rights-of-way; furnishing, installation, and removal of traffic control to perform the work; thoroughly cleaning existing sewer (removal of grease, roots, and any obstruction); collection of debris from cleaning the sewer at downstream manholes and removal and disposal of it at a legal disposal site; and delivery of DVDs and written logs of the sewer videos to the Owner. Full compensation for the video inspections and all related work and expenses shall be considered as included in the contract lump sum price and no additional compensation will be allowed.
Items A-4, B-4, and C-4	Removal of Protruding Sewer Laterals in the Sewer Main and Preliminary Pipe Repairs - The Bid item includes, but not limited to, furnishing all labor, materials, tools, equipment, and incidentals, for the removal of protruding sewer laterals in the sewer main and preliminary pipe repairs by a robotically-controlled device from inside the sewer main without excavation, all as specified by the Contract's Specifications, "Section 13605, Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers" and as directed by the Engineer.

Items A-5, B-5, C-5, D-4, and E-4	Furnishing and Installing Cured-in-Place Pipe Liners - The Bid item includes, but not limited to, furnishing all labor, materials, tools, equipment, and incidentals, for installation of cured-in-place pipe liners inside existing sewers, obtaining encroachment permits or right-of-entry permits to work within public or private rights-of-way, sewer interior surface preparation (final interior sewer cleaning), installation of resin-impregnated cured-in-place pipe (CIPP) liners and performance of the curing process, disposing of effluent from the curing process (if applicable) in compliance with EPA, finishing the liner and repairing leaks at the interface of the manhole and liner, and field and laboratory testing of the cured liner, all as specified by the Contract's Specifications, "Section 13605, Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers" and as directed by the Engineer.
Items A-6, B-6, C-6, D-5, and E-5	Wastewater Bypass and Containment - The contract lump sum price paid for wastewater bypass and containment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved as specified in the Contract's Specifications, "Section 11080, Wastewater Bypass and Containment" and as directed by the Engineer. Full compensation for the preparation and approval of the contractor's sewage spill containment and contingency plan and all related work and expenses shall be considered as included in the contract lump sum price paid for wastewater bypass and containment and no additional compensation will be allowed.
Items A-7, B-7, and C-7	Reinstate Sewer Laterals - The Bid item includes, but not limited to, furnishing all labor, materials, tools, equipment, and incidentals, for the reinstatement of existing sewer laterals (cutting and removing the cured liner at the sewer inlet to the sewer main) by a robotically-controlled device from inside the sewer main without excavation, all as specified by the Contract's Specifications, "Section 13605, Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers" and as directed by the Engineer.
Items A-8, B-8, and C-8	Furnish and Install Sewer Lateral Inserts (Top Hat) - The Bid item includes, but not limited to, furnishing all labor, materials, tools, equipment, and incidentals, for furnishing and installing sewer lateral inserts (Top Hat) by a robotically-controlled device from inside the sewer main without excavation and performance of the insert curing process, all as specified by the Contract's Specifications, "Section 13605, Installation of Cured-in-Place Pipe (CIPP) in Existing Sewers" and as directed by the Engineer.

END OF SECTION

**SECTION 11080
WASTEWATER BYPASS AND CONTAINMENT**

PART 1 - GENERAL

A. Description

1. Bypassing sewage for rehabilitation of existing sewers shall be necessary.
2. In lieu of the suggested bypass systems described herein, the Contractor may submit an alternative by-pass plan to the engineer for approval prior to the start of construction.
3. The Contractor shall furnish, install, and operate all necessary piping, pumps, generators, equipment, and appurtenances of sufficient capacity to handle all flows to prevent sewage from backing up into the upstream sewer lines. The sewer flow shall be intercepted, as required for construction, at an upstream manhole, pumped and conveyed in a closed conduit to a downstream manhole until the existing sewer is operational.
4. Bypassing of untreated wastewater to surface water or drainage courses shall not be permitted. Bypass piping layout shall be compatible for vehicular traffic, residence and business access, and shall not block any driveways.
5. The Regional Water Quality Control Board (RWQCB) has the authority to impose stiff fines in case of a sewage spill. The Contractor shall be held responsible for paying fines for a sewage spill due to his operations or any circumstance, which is within his control. These fines shall be deducted from the payments due to the Contractor before disbursing funds.
6. Contractor shall schedule his work so sewer main rehabilitation work between existing manholes is completed within an eight-hour period.

B. Suggested Bypass Systems

Contractor may elect to provide bypass pumping of wastewater around the work site. If bypass pumping is to be accomplished with engine driven pumps, Contractor shall have an adequate supply of fuel and a standby pump. If bypass pumping is to be accomplished with electric driven pumps, Contractor shall have standby power facilities and a standby pump. In addition, Contractor shall have adequate suction and discharge lines, repair clamps, and other related parts to ensure continuous and uninterrupted operation of pumping equipment. In case of an emergency, Contractor shall also have septic pumping trucks available while wastewater bypass pumping is being performed. Under certain circumstances where bypass pumping from an upstream manhole to a downstream manhole is not physically possible, bypassing wastewater around the work site may need to be accomplished by pumping wastewater from an upstream manhole into a tanker truck and transporting the wastewater to a waste disposal site. In this case, Contractor shall provide a minimum of three tanker trucks and arrange and pay all disposal fees. A minimum of two tanker trucks shall be designated to alternate transporting wastewater to the disposal site while minimum of one standby tanker truck is available in the event that the first truck does not return before the second truck is full. In addition, Contractor shall have adequate suction and discharge lines, repair clamps,

and other related parts to ensure continuous and uninterrupted operation of pumping equipment.

C. Submittals

1. The Contractor shall, at least 14 days prior to commencement of work for the installation of pipe, submit to the Engineer for review and approval a Plan (including Contingent Plan) for bypassing sewage flows in the existing sewer system. Bypass Plan shall allow for continuous uninterrupted service to existing sewer connections. Engineer will approve or comment on the Plan as needed. However approval of the plans by the Engineer does not relieve the responsibility of the Contractor to insure successful operation of the bypass plan. The Plan and the Contingent Plan shall be prepared and signed by a California Registered Civil Engineer.
2. The Plan shall include but not be limited to the following:
 - a. Staging areas for pumps
 - b. Sewer plugging method and types of plugs
 - c. Size and location of manholes or access points for suction and discharge piping
 - d. Number, size, material, location and method of installation of suction piping
 - e. Number, size, material, location and method of installation of discharge piping
 - f. Bypass pump sizes, capacity, number of each size to be on site and power requirements
 - g. Calculation of static lift, friction losses, and flow velocity
 - h. Standby power generator size, location
 - i. Schedule for installation of and maintenance of bypass pumping lines
 - j. Plan indicating location of bypass piping

PART 2 - MATERIALS

A. Piping

The bypass piping shall be a continuous piece of polyethylene solid wall piping joined by butt fusion welding, steel pipe with welded or Victaulic joints, or a system of Victaulic aluminum piping, couplings, and fittings. Mechanical joints will not be allowed in the polyethylene bypass piping except at the pumps, manifold, and discharge connections. Above ground piping that is exposed to traffic loading shall be continuous piece of steel pipe with a system of Victaulic

couplings and fittings. The bypass pipe shall be of a pressure class that is compatible with the bypass pump.

B. Pumps

1. All pumps used shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered.
2. All pumps must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of effluent flows.
3. Estimated peak flows for Hemlock Avenue and Redwood Avenue project locations are approximately 125 gpm. Estimated peak flows for Magnolia Avenue under I-5 Freeway, Pio Pico Drive, and Avenue of the Trees project locations are approximately 160 gpm. Bypass pumping capacity shall be 150 percent of the estimated peak flow. Contractor shall investigate flow conditions at time of construction and determine actual capacity required to pass peak flows.

PART 3 - EXECUTION

A. System Requirements

1. The pump and bypass lines shall be of adequate capacity and size to handle the estimated peak flows.
2. Provide 100 percent backup pumping capacity connected to the primary pump. The bypass system shall be attended at all times. The bypass system may be shut down and full flow restored in the existing system only with prior written approval of the Engineer.
3. The bypass pumping and piping system shall be independently tested at a minimum 50 psi prior to starting construction.
4. During the execution of the Work, the Contractor shall be responsible for continuity of sanitary sewer flows.
5. The pumps shall be equipped with light and/or sound alarms in the event of pump failure. During sewer bypass pumping operations, the pumps shall be continuously attended and monitored by personnel qualified to operate the pumping equipment. This includes after hour periods when the Contractor may not be conducting any construction activities. The personnel monitoring the pump shall be equipped with a cellular telephone so that additional personnel can be contacted in case of an emergency.
6. The Contractor shall have onsite a fully functional and fueled standby pump(s) that can be immediately placed in service if the primary pumping unit malfunctions. Provide backup power supply that is readily connectable in the event of loss of primary power. The cost for the standby unit(s) and backup power shall be included in the cost for the sewer bypass bid item and no additional compensation will be allowed.

7. Power and alarm wires shall be protected in all locations, buried across driveways and traveled way.
8. Manholes shall be covered, safe, and vandal resistant at all times during bypass operations.
9. If sewage backup occurs and enters buildings, the Contractor shall be responsible for clean-up, repair, property damage cost and claims.
10. If sewage backup occurs resulting in overflow and spills, the Contractor shall be responsible for clean-up, repair, property damage cost and claims.

B. Contingency Plan for Bypass

1. Prior to starting work, the Contractor shall provide an emergency contingency plan in event of pump, power supply, or pipeline failures, including an emergency contact list.
2. The method of connecting this bypass shall be indicated on the bypass plan submittal.
3. In event of a sewage spill, Contractor shall immediately notify City wastewater personnel Don Wasko at (760) 802-4756 or Jim Gusman at (760) 802-8827 and then follow directions of RWQCB and the Health Department all in accordance with Proposition 65.
4. If necessary, the City forces will clean up the Contractor's spill and run parallel operations at Contractor's cost.
5. The bypass and contingency plans shall be prepared and signed by a California Registered Civil Engineer (R.C.E.).

END OF SECTION

SECTION 13605
INSTALLATION OF CURED-IN-PLACE PIPE (CIPP) IN EXISTING SEWERS

PART 1 - GENERAL

This document specifies a cured-in-place pipe (CIPP) liner for the rehabilitation of sanitary sewers. This specification includes quality control measures that mandate a CIPP liner of consistent and high quality. This specification is open to both fiberglass-based CIPP products that are cured with ultraviolet light and felt-based CIPP products that are cured with hot water. It does not include steam-cured CIPP products due to the lack of reliable and established quality control procedures for steam-cured CIPP products. This specification is organized as follows:

- PART 1 - General
- PART 2 - Resins
- PART 3 - Liner
- PART 4 - Design Parameters
- PART 5 - Installation
- PART 6 - Requirements and Testing

A. Description

The method of rehabilitation shall be cured-in-place pipe (CIPP) as described herein for the sewers listed in this bid document. This method includes (see Detailed Sequence of Work, Part 5 - Installation herein) the following components:

1. Cleaning (including removal of grease, roots, and any obstructions)
2. Pre-rehabilitation video inspection of the cleaned sewer before the sewer is lined
3. Identification of existing sewer laterals
4. Grinding and removing protruding sewer laterals by remote methods
5. Performing preliminary repairs of damaged joints or sewer pipe by remote methods
6. Installation of a resin-impregnated cured-in-place pipe (CIPP) liner into the existing sewer
7. Curing CIPP liner by ultraviolet light or hot water curing process as specified by the resin manufacturer
8. Reopening sewer lateral inlets into the sewer main
9. Post-rehabilitation video inspection after the sewer is lined

10. CIPP liner sampling and testing

11. Clean-up

Before final acceptance of each line segment, a post-rehabilitation video inspection and samples of the CIPP shall be taken and tested and approved. Rehabilitation must be completed for the full length from manhole to manhole, resulting in a sound, tight-fitting water-tight CIPP liner with a smooth interior surface.

The Contractor shall not revise any material, design values or procedural matters stated or approved herein, without informing the Owner and receiving written approval of the revision. Any revisions without written approval by the Owner shall result in rejection and removal of work done with the unapproved materials or processes at no cost to the Owner.

Removal and replacement of any existing improvements, including but not limited to, fences, damage repair to yards, lawns, sidewalks, driveways, and other public or private property, due to actions or processes related to the work being performed shall be included in the cost of the project.

Traffic control, confined space entry, and work site protection shall be the responsibility of the Contractor and costs of these items shall be included in the amounts bid for the quantities of work specified. The Contractor shall comply with applicable OSHA trench safety rules.

B. Experience Record of Contractors

The Contractor shall have successfully managed and completed CIPP rehabilitation projects on lines ranging in size from the smallest line on the project to the largest line on the project within the last three years previous to the bid date.

C. Reference Standards

1. ASTM C581

Standard Practice for Determining Chemical Resistance of thermosetting resins used in glass fiber reinforced structures, intended for liquid service.

2. ASTM D543

Test Method for resistance of plastics to chemical reagents.

3. ASTM D790

Test Method(s) for flexural properties of un-reinforced and reinforced plastics and electrical insulating materials.

4. ASTM F1216 (including Appendix XI)

Standard practice for rehabilitation of existing pipelines and conduits by the inversion and curing of a resin-impregnated tube (liner).

5. ASTM F1743-96

Rehabilitation of existing pipelines and conduits by pulled-in-place installation of cured-in-place thermo-setting resin pipe (CIPP).

6. APS Standard

Water tightness standard for cured-in-place thermo-setting resin pipe/Porosity Test protocol.

7. ASTM F2019-03

Standard practice for rehabilitation of existing pipelines and conduits by the pulled in place installation of glass reinforced plastic cured-in-place thermosetting resin pipe.

D. Housekeeping

Containment of sewage and site cleanliness is the responsibility of the Contractor. Fines levied by State and Federal agencies in the event of a spill or unapproved discharge shall be paid by the Contractor. Spill cleanup as well as site cleanup shall be conducted by and paid for by the Contractor.

E. Submittals

Contractor shall provide the following information with the submittal package:

1. Type of resin to be used. Attach 3rd party test results for chemical corrosion resistance testing (Section 2.02 herein). Attach statement that resin is approved to be used in the proposed CIPP system (see Section 2.02 herein).
2. Initial (laminate design) modulus of elasticity used on this project shall be in accordance with PART 4 - DESIGN PARAMETERS herein. Attach 3rd party test results conducted in the last three (3) years.
3. Initial (laminate design) flexural strength used on this project shall be in accordance with PART 4 - DESIGN PARAMETERS herein. Attach 3rd party test results conducted in the last three (3) years.
4. Long-Term Reduction Factors (50% for felt-based CIPP products and 62.5% for fiberglass-based CIPP products). Attach 3rd party test results conducted in the last three (3) years.
5. Type of Inner liner and Outer liner to be used. Attach manufacturer's or 3rd party certification for both the inner and outer liners stating styrene gas barrier status.
6. Certificate of "direct sizing" - for fiberglass products only.
7. 3rd party test results stating the strength of the seam - for felt products only.

8. Boiler Truck Operator Certification (OSHA) - for thermal cure products only.
9. Distance from wet-out facility to job-site (300 mile maximum distance) – for thermal cure products only.
10. Thickness of each segment of pipe lined. Attach ASTM 1216 wall thickness formula calculations.
11. Manufacturer information about the proposed robotically-controlled device to grind protruding laterals and reinstate laterals from inside sewer main.
12. Proposed curing application.
13. Cured-in-place manufacturer (Insituform Technologies, Inc., Reline America, Inc. or approved equal).

NOTICE: FAILURE TO SUBMIT REQUESTED INFORMATION WILL RENDER THE SUBMITTALS INCOMPLETE AND SUBMITTALS WILL BE RETURNED TO CONTRACTOR TO RE-SUBMIT WITH SPECIFIED ITEMS.

PART 2 - RESINS

A. Acceptable Resin Types

1. Polyester NPG
2. Orthothalic
3. Vinylester

B. Resin Definitions and Physical Characteristics

The liquid thermosetting resin used in this rehabilitation project shall produce a properly cured liner which will be resistant to abrasion caused by solids, grit, and/or sand. The cured liner shall also be resistant to corrosion due to acids and gases such as sulfuric acid, carbonic acid, hydrogen sulfide, methane, and carbon monoxide. The cured-in-place felt-based liner system shall utilize thermosetting resins and fiberglass-based liner systems shall utilize UV-cured resins which will withstand the corrosive effect of the existing residential, commercial, and industrial effluents, liquids and/or gases.

The resin system to be used shall be manufactured by an approved company selected by the cured-in-place process manufacturer. Only corrosion resistant polyester NPG, orthothalic, and vinylester resins complying with the following definitions shall be used.

The chemical corrosion resistance of the resin system used by the Contractor shall be tested by the resin manufacturer in accordance with ASTM F1216, D-543 or C-581 as applicable. Exposure to the chemical solutions listed below shall result in a loss of not more than twenty percent (20%) of the initial physical properties when tested in accordance with ASTM C-581-87.

Chemical Solution	Concentration (%)
Tap Water (pH 6-9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Gasoline	100
Vegetable Oil	100
Detergent	0.1
Soap	0.1

PART 3 - LINER

A. Acceptable Materials

1. Fiberglass (Cured with Ultraviolet Light)
2. Felt (Cured with Hot Water)

B. Liner Characteristics & Standards

At the time of manufacture, each lot of felt liner shall be inspected for defects and tested in accordance with applicable ASTM standards. At the time of delivery, the liner shall be homogeneous throughout, uniform in color, free of cracks, holes, foreign materials, blisters, and deleterious faults.

For testing purposes, a production lot shall consist of all liner having the same marking number. It shall include any and all items produced during any given work shift and must be so identified as opposed to previous or ensuing production.

The Engineer may at any time direct the manufacturer to obtain compound samples and prepare test specimens in accordance with applicable ASTM standards.

An "inner liner" film and an "outer liner" film must be used for resin control (to prevent resin migration and contamination). The "inner liner" film and "outer liner" film must both be certified styrene gas barriers. The "inner liner" film must be removed after the curing process is complete unless it is a permanent part of the system and is made an integral part of the carrier liner by bonding or fusing to the carrier liner.

The material shall be manufactured in such a manner as to result in a tight-fitting, continuous liner after installation. There shall be no measurable annular space. The liner shall have a snug fit at manhole terminations as shall be evidenced by flares.

All wet-out or impregnation of the liner shall be done in accordance with state and federal regulatory requirements. No "over the hole" or "on-site" wet-out is allowed. For products that are cured with hot water, the wet-out must be conducted within 300 miles of the job site considering the time-sensitive characteristics of thermal-cured products.

1. Fiberglass Liner (Ultraviolet Light Curing Application)

The fiberglass liner shall be seamless and spirally wound, including an exterior and interior film that protects and contains the resin used in the liner. The exterior film shall be provided with a UV light blocker foil.

- a. The liner shall consist of a seamless, spirally wound glass fiber that is flexible and has strain values (expandable) of equal to eight (8) to ten (10) percent. The liner shall not have a longitudinal seam, including a stitched seam, stitch-free-weld or bond, or stitch-free overlap. The liner shall be constructed to withstand installation pressures and have sufficient strength to bridge missing pipe.
- b. The impregnated liner shall have a uniform thickness, that when compressed at installation pressures, will meet or exceed the design thickness. If voids are present in the pipe, the design wall thickness must still be met or exceeded.
- c. The liner shall be sized such that when installed, it will tightly fit the internal circumference and length of the original pipe.
- d. The liner shall be saturated with the appropriate resin using a resin bath to allow for the lowest possible amount of air entrapment. Vacuum-suction impregnation methods are not allowed due to the introduction of air using this method. The liner shall be formed into a spirally wound shape for the purpose of being seamless in its cured state. An inner and outer material shall be added so that they are both impervious to airborne styrene, with the outer material also having UV blocking characteristics. The inner membrane shall be removed after the installation and curing processes are completed.
- e. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color to allow a clear detailed examination with closed circuit television inspection equipment.
- f. The liner shall be seamless in its cured state to insure homogenous physical properties around the circumference of the cured liner.
- g. The liner shall be constructed to withstand installation pressures and have sufficient strength to bridge missing pipe while meeting or exceeding the design wall thickness at all pipe locations during installation conditions and pressures.

2. Felt Liner (Hot Water Curing Application)

The liner shall consist of one or more layers of absorbent felt fabric and meet the requirements of ASTM F1216 or ASTM F1743, Section 5.

- a. For work performed under this specification, the following felt-based carrier liner materials may be used: non-woven polyester felt and non-woven fiberglass filament reinforced polyester felt.
- b. The liner shall be constructed to withstand installation pressures and have sufficient strength to bridge missing pipe while meeting or exceeding the design wall thickness at all pipe locations during installation conditions and pressures.
- c. The liner shall be sized such that when installed will tightly fit the internal circumference and length of the original pipe. Overlapped layers of felt in longitudinal seams that cause lumps in the final product shall not be utilized.
- d. The liner shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated elastomeric layers. No material shall be included in the liner that may cause delamination in the cured liner (CIPP). No dry or unsaturated layers shall be evident.
- e. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color to allow a clear detailed examination with closed circuit television inspection equipment.
- f. Seams in the felt liner will be allowed; however, seams shall be stronger than the non-seamed felt. Third-party test data documenting the strength of the seam is required.
- g. The manufacturer will test the raw materials and liner materials at various stages of manufacturing on every liner, including taking samples of every finished liner and conducting tests for e-modulus, tensile, wall thickness and porosity.
- h. The outside of the liner shall be marked for distance at regular intervals along its entire length, not to exceed 5 feet. Such markings shall include the manufacturer's name or identifying symbol.

PART 4 - DESIGN PARAMETERS

The newly installed liner shall be **designed for a minimum fifty-year service life** under continuous loading conditions. The design shall assume no bonding to the original pipe wall. The liner shall be designed to withstand all imposed loads.

<u>Parameter</u>	<u>C.I.P.P. System</u>
1. Pipe Condition	Fully deteriorated
2. Soil Type	Saturated (water table at ground surface)
3. Design Thickness	Fiberglass: ASTM 1216 Design Formula, rounded up to nearest .7 mm manufacturing increment Felt: ASTM 1216 Design Formula <u>plus</u> 10% (in consideration of product stretch), rounded up to nearest 1.5 mm manufacturing increment
4. Ovality of Pipe	2% of circumference, unless measured and stated otherwise by Engineer in writing
5. Soil Load	120 lbs/ft ³
6. Traffic Loads	Per AASHTO-HS-20-44 Highway Loading
7. Modulus of Soil	500 psi
8. Maximum Deflection (vertical axis)	5%
9. Minimum Safety Factor	2.0
10. Resin Migration Allowance	Not allowed
11. Soil Cover	Maximum distance in feet measured between the crown of the pipe and the highest point of soil cover over the length of the pipe
12. Water Cover	Same as soil cover unless stated otherwise by the Engineer, in writing, for specific lines

Wall thickness design calculations for each pipe to be rehabilitated via the CIPP method shall be submitted with the Contractor's submittal package, along with supporting formulas that document that version of formula used. Additionally, product-specific strength values, including the short term flexural modulus and the long term flexural modulus reduction factor, must be substantiated by third-party testing which shall be provided with the submittals. The materials utilized for the contracted project shall be of a quality equal to or better than the materials used in the long-term test with respect to the initial flexural modulus and long term reduction factor used in design.

1. Physical Properties for Fiberglass-Based (Ultraviolet Light-Cured) CIPP Products
The cured pipe shall conform to the minimum structural standards, as follows:

- | | | |
|----|----------------------------------|---------------|
| a. | Flexural Strength ASTM D-790 | 21,000 psi |
| b. | Modulus of Elasticity ASTM D-790 | 1,100,000 psi |
| c. | Porosity/Water Tightness Test | tight |

2. Physical Properties for Felt-Based (Hot Water-Cured) CIPP Products

The cured pipe shall conform to the minimum structural standards, as follows:

- | | | |
|----|----------------------------------|-------------|
| a. | Flexural Strength ASTM D-790 | 4,500 psi |
| b. | Modulus of Elasticity ASTM D-790 | 250,000 psi |
| c. | Porosity/Water Tightness Test | tight |

A. Liner Thickness

The minimum allowable wall thickness for fiberglass CIPP products is 2.8 mm and shall be increased as necessary to meet ASTM 1216 Design Formula in 0.7 mm increments. The minimum allowable wall thickness for felt CIPP products is 6.0 mm and shall be increased as necessary to meet ASTM 1216 Design Formula in 1.5 mm increments. Fiberglass or felt products below the stated minimum wall thickness (above) will not be allowed under any circumstances.

PART 5 - INSTALLATION

A. Sequence of Work

The Contractor shall follow the construction procedure provided below, unless otherwise authorized in writing by the Owner. The construction sequence is not intended to cover every specific item of work necessary. Contractor shall provide all labor, equipment, and materials and perform all work necessary to complete the contract work. Additional procedures shall be performed to accommodate actual conditions. Prior to installation of the liner, the following activities are required:

1. Submittal and Receipt of Approved Submittals

Contractor shall furnish City six (6) copies of all submittals (see Section 1.05 herein) which shall be approved by City prior to commencing construction activities.

2. Public Notification

Contractor shall deliver written notices to each home or business at least seven (7) days in advance of construction and again as a reminder 48 hours in advance of installing the cured-in-place pipe liner. The written notice shall be approved by the City before distribution and shall contain a general description of the work and where sewer service will be limited or restricted, names of streets where

work will take place, and dates and times when sewer service will be limited or restricted and when sewer service will be fully functional. Contractor shall reinstate all sewer service within an 8 hour period. Any sewer service out of service longer than 8 hours shall be bypassed to a sanitary sewer at no cost to the City.

3. Sewer Bypass Pumping (see Technical Specifications, Section 11080)

4. Sewer Cleaning/Interior Surface Preparation

Prior to mobilization, Contractor shall obtain an encroachment permit to work within public rights-of-way and/or a right-of-entry to work within private property. Contractor shall install all required traffic control at no additional cost to Owner.

Contractor shall clean sewer with high-velocity water jet cleaners with appropriate cutting tools to remove internal sludge, roots, root balls, grease, and other debris from the interior of the existing sewer. Contractor shall collect debris from downstream manhole and remove and dispose of it at a legal disposal site daily. Sewer damage as a result of improper use of cleaning equipment shall be repaired by the Contractor at no cost to Owner.

5. CCTV Internal Inspection

Contractor shall retain the service of a qualified television taping firm experienced with similar projects utilizing equipment specially designed for sewer inspection, approved by the City, to inspect the sewer main interior before and after rehabilitation, and locate all sewer lateral inlets to the sewer main within the construction limits. The Contractor shall use the closed circuit television inspections (CCTV) as a pre-construction method to determine the condition of the sewer and location of all services and as a post-construction method to inspect the work.

The Contractor shall provide the City 48 hour notice prior to commencing any video work. The inspection videos shall be performed and two copies (on DVD) of the videos and a tabulation of sewer lateral inlets to the sewer main and their locations delivered to the City prior to the start of the rehabilitation of the mainline sewer. Said firm shall be approved by City prior to construction. DVDs shall be high quality color DVDs.

Prior to the initial television inspection (pre-rehabilitation video), each reach of the sewer shall be thoroughly cleaned (removal of grease, roots, and obstructions) and then flushed with water. The pre-rehabilitation video and post-rehabilitation video television inspections shall be performed in one direction for the entire length between manholes. At the beginning of each run, the DVD shall show the run number, date, time, name of the operator, station of the beginning manhole, station of the ending manhole, street name, and size of sewer. Each run shall continuously display the beginning station of the manhole and a counter calibrated in feet showing an accurate distance from the beginning manhole. The size and location of each sewer lateral or wye shall be noted on the DVD

and the camera shall be rotated to provide a view inside each sewer lateral or wye.

In addition to the DVD, Contractor shall furnish a legible written log with the same information as the DVD. Once the television inspections are completed, Contractor shall submit two copies of the DVDs and written logs to the City.

CCTV system shall have a rotating lens camera with articulating head. Each joint will be scanned 360 degrees. The television camera shall be specifically designed and constructed for sewer pipe inspection. The camera shall be operative in 100% humidity conditions. Lighting for the camera shall minimize relative glare. Lighting and camera quality shall be suitable to provide a clear, in focus picture of the entire periphery of the pipe for all conditions encountered during the work. Focal distance shall be adjustable through a range from 6" to infinity. The remote reading footage counter shall be accurate to one percent (1%) over the length of the particular section being inspected. The camera, television monitor and other components of the color video system shall be capable of producing a minimum of 350 line resolution. Documentation consisting of a pre-construction color video tape and a written report detailing the condition of the pipe and joints shall be submitted to Owner for approval prior to inserting the liner.

Contractor shall be responsible for all costs associated with the "Pre-Rehabilitation and Post-Rehabilitation Sewer Video Inspections" including, but not limited to all labor, materials, tools, equipment, and incidentals, encroachment permit, pre-video sewer cleaning and disposal of flushed sewer waste at legal disposal site, and traffic control to perform the work described in this section.

6. Removal of Protruding Service Connections/Preliminary Point Repairs

Protruding service connections or laterals that prevent the proper insertion of the liner shall be determined from CCTV tape and removed to allow the liner to pass through the existing sanitary sewer pipe after review and approval from the Owner.

In addition, Contractor shall perform preliminary repairs from inside the sewer pipe to repair damaged sections of the sewer pipe and prevent the proposed liner from protruding into the void outside the sewer pipe. After the repairs are complete, the Contractor shall prepare another video of the repaired section and submit it to the Owner for approval prior to inserting the liner.

The removal of the protruding laterals and preliminary repairs shall be accomplished by a robotically controlled device from within the sewer pipe without excavation.

7. Mainline Liner Installation (see Sections 5.02 through 5.06 herein)

8. Finish Liner

Contractor shall repair leaks at the interface of the sewer manholes and the liner. Contractor shall cut the cured liner flush with the inside wall of the manholes after the liner has cooled in accordance with manufacturer's recommendations. Contractor shall fill voids between manhole channel, bench, or wall and the liner with quick setting, H₂S resistant epoxy mortar to form a watertight seal. Contractor shall trowel the grout to form a smooth transition between manhole base or channel and the liner to ensure smooth sewage flow with no collection points for solids.

9. Reinstatement of Sewer Service Connections

The exact location and number of service connections shall be determined from the CCTV tape. Contractor shall accurately field locate all existing service connections whether in service or not. The Contractor shall reconnect all service connections to the liner pipe including those from unoccupied, abandoned or vacant lot, unless directed otherwise by the Owner. All existing service connections shall be reconnected by internal remote cutting method as described below:

a. Service Connection by Remote Cut

Service connections shall be performed by a TV-controlled remote cutting device. They shall be made by experienced operators so that no blind attempts or holes are made in the liner pipe. Location shall be verified carefully with earlier tapes for accuracy, especially where dimples are not defined or clearly ascertained. The Owner reserves the right to require service connection by excavation at certain or all locations, at no additional cost to the Owner, if the quality, workmanship, and approval rating for remote cut is poor and not satisfactory.

The remote cut shall be brushed smooth and circular in nature as seen by a 360 degree TV camera. The hole shall be 100% of the service pipe diameter. It shall be properly aligned and be concentric to the existing connection. The locations of all remote cuts shall be verified carefully to match earlier tapes for their exact locations. All wrong holes, or trial cuts shall be considered unacceptable and shall be properly repaired at no additional cost to the Owner. Excess resin build up is unacceptable and shall be removed. The Owner's staff shall review all service connections. The Owner may check the completed remote connections for the 100% requirement by excavating the site, if necessary. Defective connections shall be properly repaired at no additional cost to the Owner.

b. Service Connection Insert

After the service connections are reinstated, Contractor shall install an epoxy element into each lateral opening to provide a seamless connection between the sewer lateral and lined mainline pipe. The insert (Top Hat) shall be a liner, in the form of a tube, installed by a robotic

device, at least 7 inches into the lateral that creates at least a 3 inch brim, molded flat against the lined mainline pipe. The insert shall be a tight-fitting, watertight pipe-within-a-pipe to eliminate any visible ground water leakage and future root growth at the lateral to sewer connection. The combination of a pressurized fit and ultraviolet light shall cure the insert into place.

In extreme circumstances, Contractor may have to reinstate a sewer service connection by excavation, if approved and at no additional cost to Owner as described below:

c. Service Connection by Excavation (In Case of Emergency Only)

If reinstatement of a sewer service connection cannot be completed with a robotically-controlled device from within the sewer main, the service connection shall be excavated at the exact location where the existing lateral connects to the main. The existing lateral shall be disconnected from the sewer main. The existing sewer main (carrier pipe for the liner), shall be carefully broken/removed to expose the liner to the extent necessary. The liner pipe shall not be damaged and shall be allowed to normalize to ambient temperature and cool down before a hole is drilled out. This coupon shall be retrieved and delivered to the Owner for inspection of the liner thickness at that location. The cut out hole section in the liner shall be coated with approved resin/epoxy which shall cure at the ambient temperature.

A pre-fabricated polyethylene saddle or approved equal fitting shall be installed over the cut out. The saddle shall be a one-piece saddle equipped with a neoprene gasket so that a complete seal is accomplished when the strap-on saddle is tightened with two (2) stainless steel bands, one on each side. The stub-out attached to the saddle must protrude into the liner a distance equal to the wall thickness of the liner. The new stub out or lateral shall be connected to the existing service line by a rubber coupling with stainless steel bands, as manufactured by "Mission" or an Owner approved equal.

The "Mission" coupling shall be secured to the existing service lateral and new stub and/or stack with stainless steel bands. The entire exposed service connection shall be encased in cement-stabilized sand a minimum of 6" below and 12" above and on the sides of the pipe at a cost incidental to service connection. The service connections shall be tested by the Contractor and approved by the Owner before backfilling.

Gasketed PVC sewer pipe (Schedule 40) may be used for all stubs. PVC saddles with neoprene gaskets may be used in lieu of polyethylene saddles.

A service reconnection by excavation shall consist of the removal and replacement of any cracked, offset, or leaking existing service line up to a

distance of eight (8) feet from the center of the new liner measured horizontally.

If reinstatement of a sewer lateral service connection requires open trench construction, the amounts bid by Contractor shall include all costs for all materials, equipment, and labor unless separate bid items are included in the bid sheets to complete the work, all at no additional cost to the City.

Said amounts shall include, but not be limited to, utility location and verification (excavating, exposing, and verifying top, bottom, and side of utility crossings), removing, disposing, and replacement of existing sewer pipe materials, relocation of existing utilities as required for construction, trenching, excavating and exporting unsuitable material, exporting and importing trench material and acquiring location to stockpile trench material (if space is not available onsite), dewatering, shoring or sloping (as required), bedding (including imported select material or select native material), furnishing and installing all other materials, backfilling (including imported select material or select native material), compacting, testing, protecting in place or removing and replacing all existing utilities, and public and private improvements (including berms, curbs, gutters, sidewalks, cross-gutters, spandrels, medians, driveways, landscaping, landscaping materials, irrigation systems, fencing, walls, power poles, poles, signs, and guard rails), restoring all areas and improvements to pre-existing improvements, in accordance with the Contract Documents.

10. Post-Lining Inspection of Mainline (see Section 5.01, Item E herein)

11. Field Testing and Acceptance (see Part 6 herein)

B. Installation

Installation of the impregnated liner may be by inversion or insertion as specified by the manufacturer. All equipment, labor, materials, and processes required to complete the work must be ready on-site before installation begins.

The first segment shall be lined, completed and accepted to become the "job standard" against which all subsequent work is judged.

C. Setup

The installation area/equipment shall be securely protected and all damaged yards, driveways, walks, etc., shall be repaired at no cost to the Owner. Plastic sheeting will be used to cover the work area around the manholes and/or access points to eliminate the opportunity of environmental contamination to the aboveground setting during the installation process.

D. Preliner/Outer Film/Outer Liner for Felt Products

At all locations where the CIPP felt liner is inverted or inserted into the host pipe, a preliner shall be used to control resin loss, liner thickness, a reduction in physical properties, contamination

of the resin by water or other contaminants, and prevent blocked or plugged services and laterals. The preliner shall be a reinforced plastic sheet formed into a tube, sized to fit the host pipe being lined and shall be continuous from manhole to manhole. The preliner must be a rated gas barrier for styrene. Installation of the preliner shall be witnessed by the Owner or Engineer. Failure to install the required preliner or installation of preliner over only part of the segment shall result in the completed CIPP for that segment being rejected (regardless of physical tests and thickness test results). During thickness testing, the preliner shall be removed from the thickness test core sample along with the inner liner film used. If there is any damage to the preliner, it should be repaired immediately with styrene-proof tape.

E. Preliner Insertion for Fiberglass/UV-Cured Products

1. For fiberglass-based liners, a slip sheet shall be installed on the bottom half of the pipe prior to liner insertion, for the purpose of smoothing out the bottom of the liner to increase flow characteristics.
2. Fiberglass-based liners shall have an outer and inner styrene film barrier. The outer film shall be a UV-resistant barrier. The inner film material should be removed and discarded after curing to provide optimal quality of the final product.
3. A constant tension winch should be used to pull the glass fiber liner into position in the pipe. Once inserted, end plugs shall be used to cap each end of the glass fiber liner to prepare for pressurizing the liner. The end plugs should be secured with straps to prevent them from being expelled due to pressure. Liner restraints should be used in manholes.
4. The glass fiber liner shall be cured with UV light sources at a constant inner pressure. When inserting the curing equipment in the liner, care should be taken not to damage the inner film material.
 - a. The UV light sources should be assembled according to the manufacturer's specifications for the liner diameter. For the liner to achieve the required water tightness and specified mechanical properties, the following parameters must be controlled during the entire curing process, giving the Engineer a record of the curing parameters over every segment of the entire length of the liner. This demonstrates that the entire liner is cured properly. The recording will include:
 - Curing speed
 - Light source working & wattage
 - Inner air pressure
 - Exothermic (curing) temperatures
 - Date and time
 - Length of liner

A record of the curing parameters shall be obtained using a computer and data base that are tamper proof. During the curing process, infrared sensors shall be used to record curing data that will be submitted to the Engineer with a post-CCTV inspection on DVD.

- b. The parameters for curing speed, inner air pressure and wattage are defined in the Quality Tracker UV-curing protocol issued by the manufacturer. The optimal curing speed, or travel speed of the energized UV light sources, is determined for each length of liner based on liner diameter, liner thickness, and exothermic reaction temperature.
5. Flushing of the cured fiberglass/UV-cured CIPP liner (to reduce styrene residual) is not required for fiberglass/UV-cured CIPP products that provide 3rd party test results that document styrene residual levels (without flushing) within acceptable defined levels.

F. Liner Insertion/Inversion for Felt/Hot Water Cured Products

1. The resin impregnated liner shall be transported and stored in a refrigerated truck until it is installed in an existing line by using an application of water or cable and winch to properly place the liner between the upstream and downstream manholes.
2. For felt-based liners, a preliner or outer film in the form of a tube, shall be inserted into the pipe prior to inserting the impregnated liner.
3. The wet-out felt liner shall be inserted, or inverted, through an existing manhole or other approved access. Liner installation head pressures (minimum and maximum for hot and cold conditions) shall not be exceeded, regardless of which method of installation (stand pipe, pressure unit, etc.) is used.
4. Using the "Inversion Procedure", the liner end shall initially be turned inside out and attached to a platform ring, standpipe, or as approved. The addition of water will be adjusted to sufficient height/pressure to cause the impregnated liner to invert from manhole to manhole, and hold the liner tight against the existing pipe wall.
5. Using the "Insertion Procedure", the liner is winched into position according to manufacturer's recommendations. The addition of water will be adjusted to sufficient height/pressure to cause the calibration hose to invert from manhole to manhole and hold the liner tight against the existing pipe wall.
6. Liner restraints should be used in manholes.
7. After the installation of the liner is completed, the Contractor shall use hot water system capable of providing the required amount of heat uniformly throughout the section for a complete cure of the resin. Boiler-truck operators must be fully certified by an approved certifying agency approved by the Engineer. Certification documentation of at least two certified boiler-truck operators is required at time of submittal review. Only fully-certified boiler-truck operators can operator boiler-trucks.
8. All water obtained from a City fire hydrant shall be metered and paid for by the Contractor. An air gap shall be provided between pipes/hoses connected to a

fire hydrant and a storage tank/equipment used by the Contractor. The cost of said water shall be included in the cost of the project.

9. The curing temperature and schedule shall be as recommended by the resin/catalyst system manufacturer. The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing heat supply. Additionally, the Contractor is required to utilize a remote temperature sensing method to ensure adequate curing for every foot of liner in the pipe, considering the possibility of heat sinks. Temperatures monitored at the manholes do not guarantee an adequate representation of the temperatures for every foot of liner. Temperatures from each remote sensing device shall be recorded by a strip-chart recorder on a continuous tape. Graphs of the tape shall reflect readings from start of cure to completion of cure/draining of line. Tapes for each segment shall be submitted upon completion of each section. Initial cure may be considered completed when the remote sensing device(s) reflect that the cure temperatures, as recommended by the resin/catalyst system manufacturer, have been achieved. Curing temperatures and schedule shall comply with submitted data and shall include an adequate "cool down" as recommended by the resin manufacturer.
10. The Contractor shall cool the hardened pipe to a temperature below 100 degrees Fahrenheit, in accordance with the resin manufacturer's recommendation, before relieving the water column or pressure. Cool water may be added to the water column while maintaining circulation as water is drained from a small hole at the opposite end of the cured-in-place pipe, so that a constant water column height is maintained until cool-down is completed. Care shall be taken in the release of the water column so that a vacuum will not develop that could damage the newly installed pipe. Coupon samples shall be obtained for testing (see Part 6 herein).
11. Since styrene is considered a volatile organic compound and a carcinogen, care must be taken to insure that styrene levels are below U.S. Environmental Protection Agency (EPA) standards for airborne, surface and water contamination. The EPA has set the maximum contaminant level at 0.1 ppm for drinking water and other water sources that impact drinking water. For sanitary sewer flow to a sewage treatment plant, styrene contamination must be kept below 2.1 ppm so as to not interfere with the effectiveness of the plant.
12. Effluent from the curing process must be disposed of in full compliance with state and federal regulatory requirements at either the City's treatment facility or an outside recycling facility that will accept effluent from the curing process at no additional cost to Owner. The Contractor shall obtain approval and pay all fees for disposal of effluent from the curing process. In addition, Contractor shall provide written documentation showing that the effluent content complies with acceptable disposal requirements, a copy of which must be submitted to the Owner for each rehabilitated pipeline, or each day of lining work.

PART 6 - REQUIREMENTS AND TESTING

The layers of the cured CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers separate cleanly or the probe

or knife blade moves freely between the layers. If separation of the layers occurs during testing of field samples, new samples will be cut from the work. Any reoccurrence may cause rejection of the work.

Testing of the completed, installed liner consists of:

- A. Field testing
- B. Laboratory testing
- C. Long term testing

The Owner will pay for all initial testing described herein. Retests of failed samples shall be paid for by the Contractor via a deductive line item on the pay estimate.

Regardless of the resin/carrier liner system used, the completed liner shall meet or exceed:

- A. The initial modulus of elasticity (ASTM D-790) (as stated in design calculations);
- B. Initial flexural strength (ASTM D-790);
- C. APS Porosity Standard (tight or non-porous result); and
- D. Wall thickness values stated on each liner design sheet.

Values for the four parameters above which are under the minimum values stated on the bid form are not acceptable. An under thickness liner may be brought into compliance at no additional cost to the Owner by (1) removal and replacement of the undersized liner, or (2) addition of a second liner with the full wall thickness as stated on the liner design submittal (and after acceptable preparation of the undersized liner interior). Option 2 will be considered by the Owner on a case by case basis considering the resulting loss of flow capacity, and can be refused by the Owner for that reason. The addition of a thin liner that makes up the amount of undersizing is not an acceptable remedy because the structural properties of CIPP liners are not additive if they are not cured simultaneously and therefore are bonded together to act as a single liner.

In the event of a liner failure of either/both the flexural strength and the modulus tests, another flat plate sample shall be tested. Should the second sample fail, the liner shall be brought into satisfactory compliance by the above methods.

A. Sample Requirements

The following sample shall be taken for each section of sewer lined:

One core of 12" diameter minimum taken from the inside of the pipe or from an 18" long section of the CIPP (sufficient in length to conduct ASTM flexural test) extending from the existing pipe being lined in the manhole equal to the exact ID of the lined pipe. See Item 6.02, "No Dig" option.

B. Field Test (Thickness)

Remove the CIPP liner material from the host pipe core samples. Remove any inner liner film, preliner and resin that is not contained within the felt liner. Measure the liner thickness at three spots on each sample. The resulting six measurements will be averaged. The average thickness shall be equal to or greater than the required thickness for the particular section stated on the bid form. No undersize allowance is permitted. In accordance with D 790-03, referenced in ASTM 1216, the calculated wall thickness refers only to the part of the liner that consists of a saturated felt liner. Elements that are not part of the saturated felt liner do not contribute to the structural integrity of the liner, thereby excluding felt liner that is not fully saturated or portions of resin without the felt liner carrier.

If the Contractor takes his sample from inside the line, he must repair the spot with a method approved by the Engineer.

"No Dig" option: At Owner's option, in lieu of excavation for core samples, the liner shall be run through 18" long section of line-sized pipe, or an appropriate restraint, to act as a mold for the liner and cured. One such sample shall be taken from liner at starting manhole and one at the ending manhole of the section being lined.

C. Laboratory Testing

Samples obtained for these tests will be sent by the Owner to an approved laboratory for testing. The Owner will pay for testing.

END OF SECTION

APPENDIX A

Sample Door Hanger for Project Notification



**CITY OF CARLSBAD
ROAD WORK**

ABC CONTRACTORS
OFFICE # (760)XXX-XXXX
FIELD # (760)XXX-XXXX

Dear resident:

As a part of the City of Carlsbad's ongoing program to maintain its streets, your street will be resurfaced with asphalt concrete over the existing roadway surface. This construction will require the closing of your street to through traffic for one day. Your street, from XYZ St. to DEF Ave. will be closed to through traffic and resurfaced on:

MON. TUE. WED. THU. FRI.
DATE: XX/XX/XX

from 7:00A.M. to 5:00 P.M.

If you don't plan to leave your home by 7:00 A.M. on the above date please park your car on an adjacent street in your neighborhood that will not be resurfaced. Streets scheduled for resurfacing can be determined by calling either the Contractor or the City of Carlsbad's Project Inspector. When walking to and from your car, remember not to walk on the newly overlaid street or you will have black residue on the bottom of your shoes. Please do not drive, walk on, walk pets, play, or skate on the newly overlaid asphalt. Also, please refrain from watering your lawns, washing cars, etc., approximately 6-8 hours after the asphalt is laid as running water will cause damage to the new surface.

ABC is the Contractor that will be performing the resurfacing work for the city and you may call them at the above phone number if you have any questions regarding the project. Resurfacing of your street will not occur on the day your trash is collected.

Mail delivery may be delayed if the postman cannot reach the mailbox that day. If you have a moving company scheduled for that day please call and inform the Contractor of the date. If you have any concerns which cannot be addressed by the Contractor, you may call the City's Project Inspector @ (xxx) xxx-xxxx.

Thank you for your cooperation as we work to make a better City of Carlsbad.

APPENDIX B

**Applicable City Standard Drawings
(for reference only)**

STANDARD CAST IRON MANHOLE
FRAME & COVER - SEE DWG. NO. S4.

PAVEMENT OR
FINISH GRADE.

MIN. SLOPE
1" PER FT.

WIDTH SHALL EQUAL
INSIDE DIA OF PIPE.

12" WIDE X 6" THICK
CLASS 560-C-3250
CONCRETE COLLAR
WITH 3" ASPHALT
CONCRETE OVERLAY
(TYPICAL).

3' DIA.

ADJUST
RINGS AS
REQUIRED.
MAX.=11",
MIN.=5",
TOP=2-2 1/2"
RINGS.

INVERT
GRADE

DEPTH=MIN.
3/4" PIPE DIA.

SECTION C-C

NOTES:

CAST IN PLACE CONCRETE FOR BASE
SHALL BE TYPE 560-B-3250.

ALL PIPE IN MANHOLE SHALL BE PVC
AND SHALL BE INCLUDED AS PART OF
MANHOLE.

MANHOLE SHALL BE CONSTRUCTED IN
ACCORDANCE WITH ASTM C-478.

STUB OUTS SHALL HAVE A MINIMUM
LENGTH OF 3 FEET BEYOND MANHOLE.

SDR 35 PVC PIPE MAY BE INSTALLED IN
STRAIGHT-THROUGH MANHOLES WITH NO
JUNCTIONS. THE TOP SECTION OF PIPE
SHALL BE REMOVED FLUSH WITH TOP
OF SHELF. CUTS SHALL BE NEAT AND
DRESSED MINIMIZING BURRS AND ROUGH
EDGES.

EACH SHAFT AND RISER JOINT SHALL
BE SEALED PER JOINT DETAIL ON DWG
S-1A WITH BUTYL RUBBER SEALANT
ROPE.

WHEN MANHOLE FORMS THE JUNCTION OF
SEWERS AND/OR AN ANGLE IN MAIN
ALIGNMENT, SPECIAL CARE SHALL BE
USED IN FORMING THE CHANNELS TO
FACILITATE THE FLOW OF SEWAGE.
INVERTS SHALL BE TRUE TO GRADE AND
ALIGNMENT AND FINISHED WITH SMOOTH
SURFACE.

NOT TO SCALE

SECTION A-A

VARIABLE

B

JOINT DETAILS
SEE DWG S1A

B

4" MIN.

6"

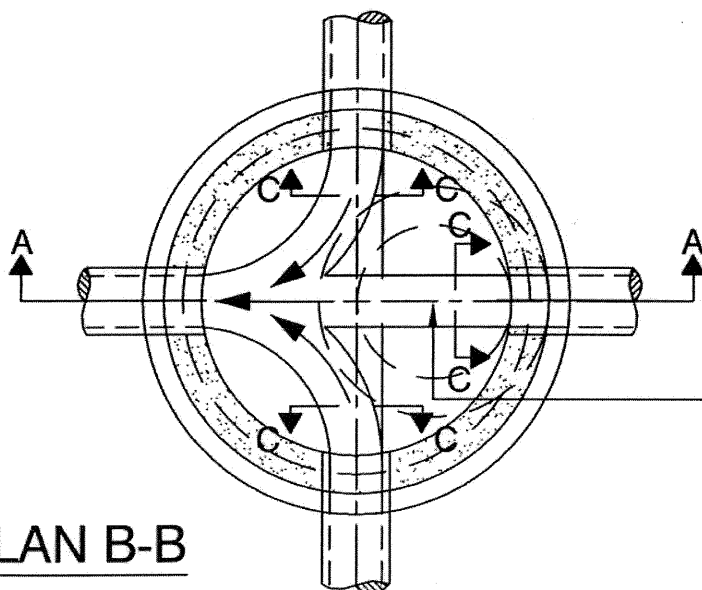
9"

8"

5' DIA.

POUR BASE AGAINST
6-INCHES OF 3/4"
CRUSHED. ROCK BASE

PLAN B-B



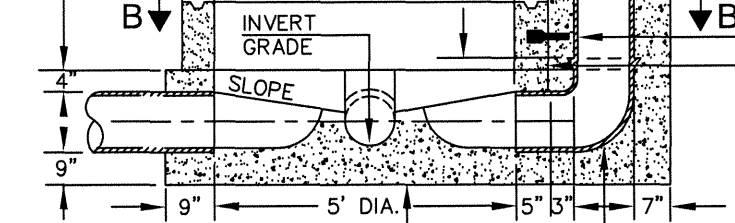
REV.	APPROVED	DATE	CITY OF CARLSBAD	Robert T. Johnson Jr. 7/10/08
			STANDARD	CITY ENGINEER DATE
			SEWER MANHOLE	SUPPLEMENTAL STANDARD NO. S-1

STANDARD CAST IRON ACCESSHOLE
FRAME & COVER -
SEE DWG. NO. S4.

12" WIDE X 6" THICK
CONCRETE COLLAR
WITH 3" ASPHALT
CONCRETE OVERLAY
(TYPICAL).

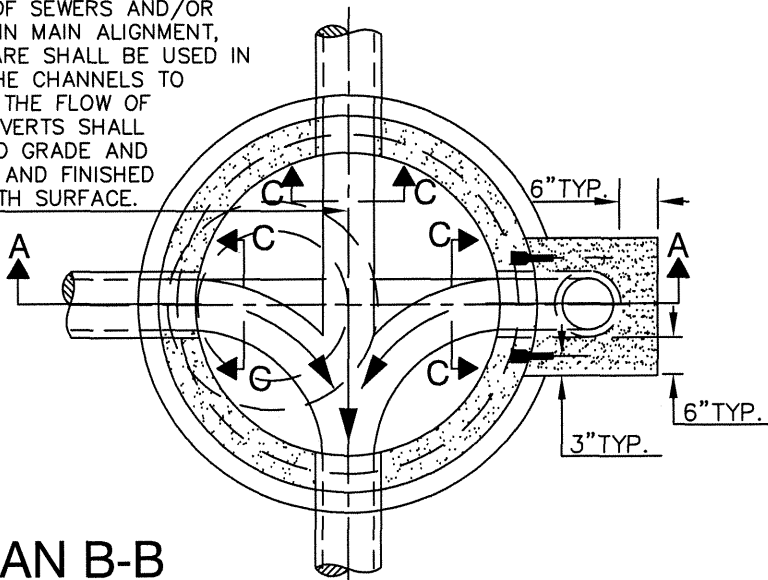
ADJUSTING RINGS AS
REQUIRED. MAX=11",
MIN.=5", TOP
5"=2-2 1/2" RINGS.

VARIABLE



SECTION A-A

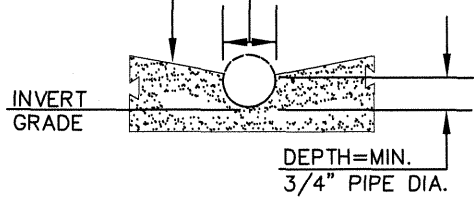
WHEN ACCESSHOLE FORMS THE
JUNCTION OF SEWERS AND/OR
AN ANGLE IN MAIN ALIGNMENT,
SPECIAL CARE SHALL BE USED IN
FORMING THE CHANNELS TO
FACILITATE THE FLOW OF
SEWAGE. INVERTS SHALL
BE TRUE TO GRADE AND
ALIGNMENT AND FINISHED
WITH SMOOTH SURFACE.



PLAN B-B

MIN. SLOPE
1/4" PER FT.

WIDTH SHALL EQUAL
INSIDE DIA OF PIPE.



SECTION C-C

JOINT DETAIL
SEE DWG S1A.

STANDARD "T" BRANCH SPIGOT END
TO BE CUT OFF FLUSH WITH SURFACE.

JOINT WITH "T" BRANCH
AND FIRST SECTION OF
PIPE TO BE JOINED PRIOR
TO INSTALLATION IN ACCESSHOLE.

TWO 3/8"x2 3/4" LAG SCREW
EXTENSION SHIELDS GALVANIZED
AND 3/8"x6" LAG SCREWS
GALVANIZED PER EACH 4 FOOT
ACCESSHOLE RING AS SHOWN.

CLEAN AND ROUGHEN SURFACE
RINGS AND APPLY NEAT CEMENT
PASTE PRIOR TO POURING SUPPLY
DROP SECTION.

90° PIPE SPIGOT END TO BE CUT
OFF FLUSH WITH INSIDE SURFACE.

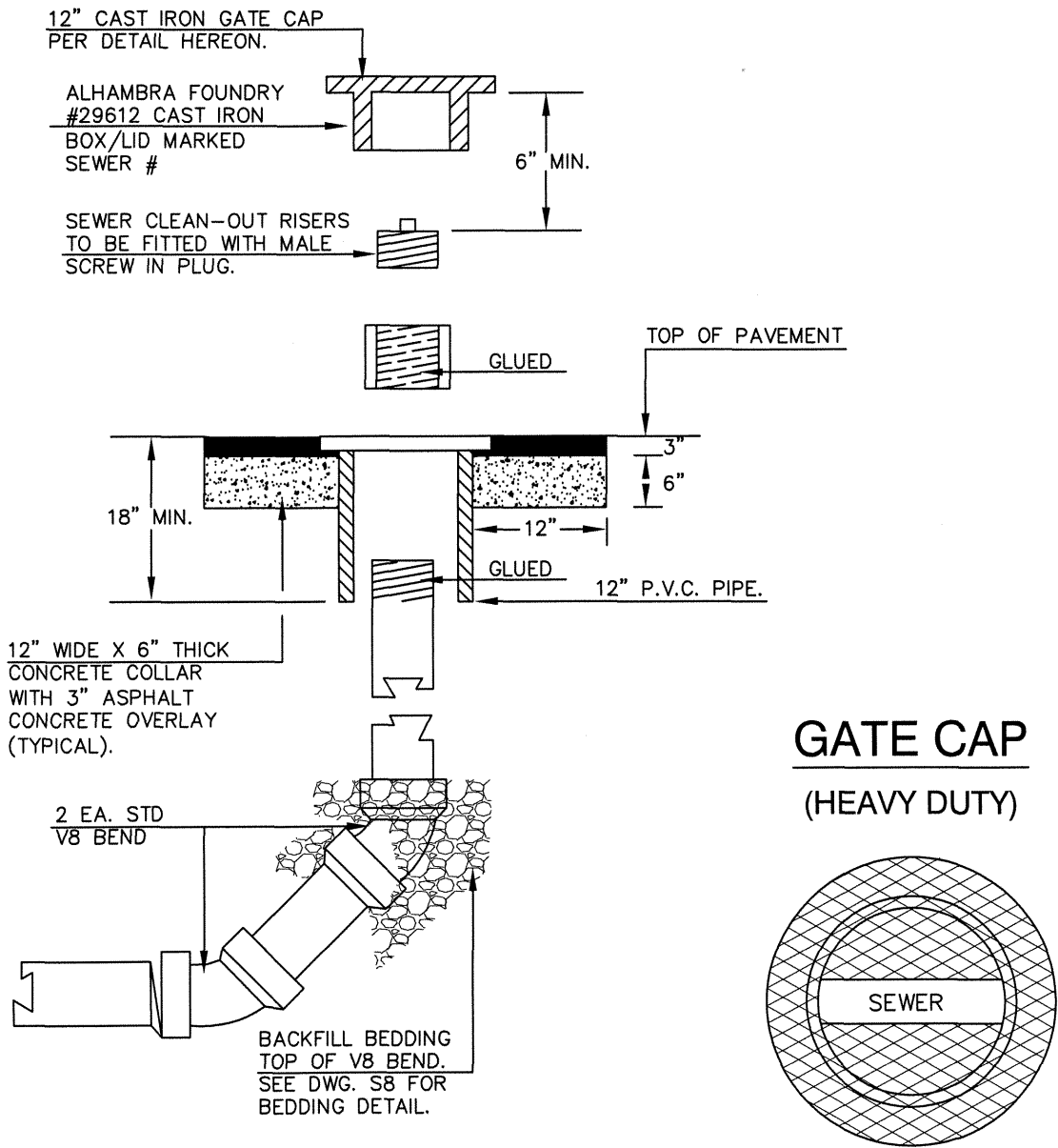
NOTES:

ALL CAST IN PLACE CONCRETE
SHALL BE TYPE 564-B-3250.

ALL PIPE IN ACCESSHOLE
SHALL BE PVC OR VITRIFIED
CLAY PIPE AND SHALL BE
INCLUDED AS PART OF
ACCESSHOLE.

DOUBLE DROP ACCESSHOLE IS
CONSTRUCTED THE SAME AS
DROP ACCESSHOLE EXCEPT
THAT IT HAS TWO DROP
SECTIONS.

REV.	APPROVED	DATE	CITY OF CARLSBAD	<i>Glenn P. ...</i> 6-04
			DROP ACCESSHOLE	CITY ENGINEER DATE
				SUPPLEMENTAL STANDARD NO. S-2

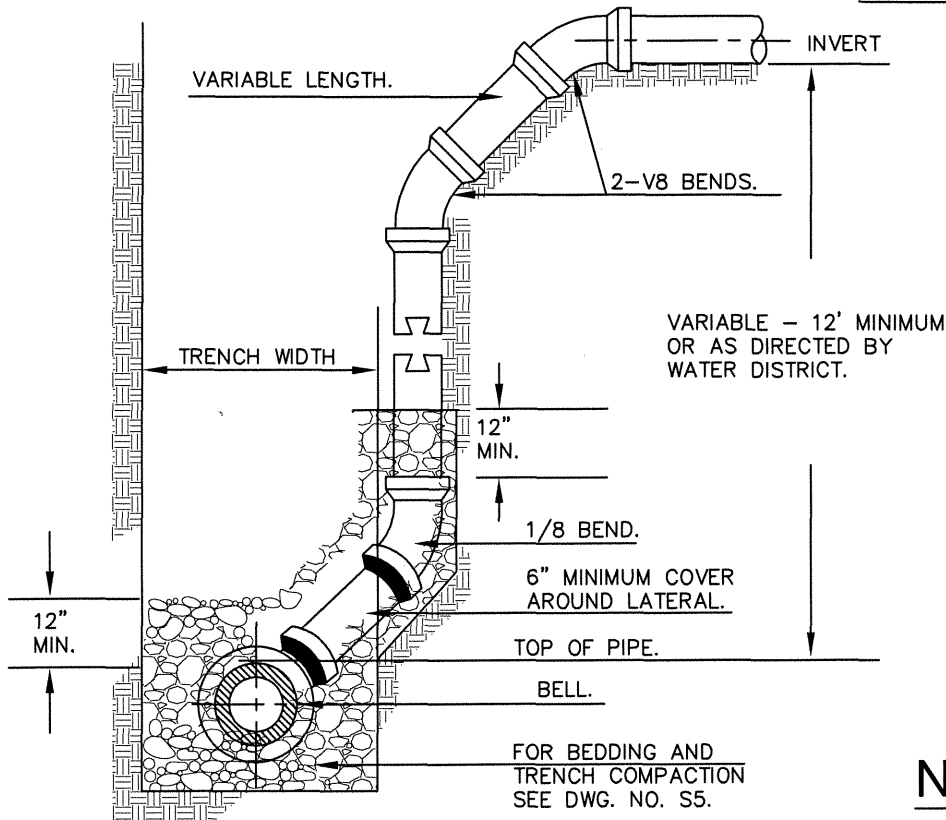


NOTES:

1. GATE CAP SHALL BE LABELED SEWER.
2. CLEANOUTS MAY BE USED WITH P.V.C. SEWER MAIN.
3. RISER SHALL BE SAME DIAMETER AS SEWER MAIN.

REV.	APPROVED	DATE	CITY OF CARLSBAD	 CITY ENGINEER SUPPLEMENTAL STANDARD NO.	6-04 DATE S-6
			SEWER MAIN CLEANOUT		

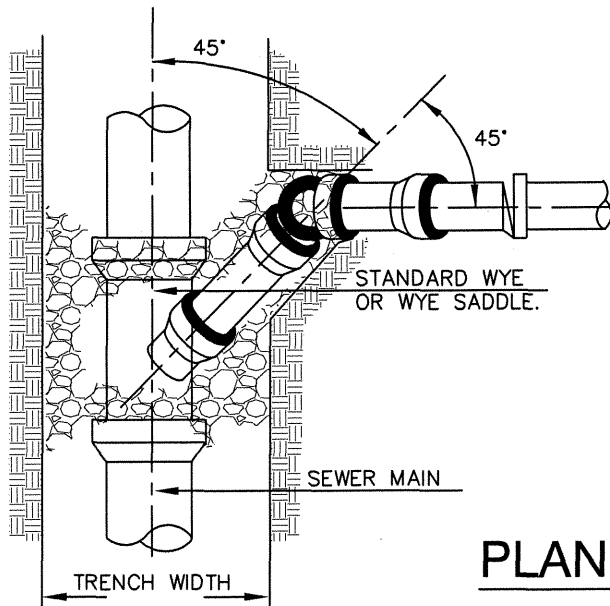
ELEVATION



NOTES:

THE VERTICAL PIPE SHALL BE BRACED WHILE TRENCH IS BEING BACKFILLED.

ALL JOINTS ON SEWER LATERAL PIPE SHALL BE COMPRESSION TYPE OR APPROVED SOLVENT WELD.



SEE DWG. NO. S7 FOR CONTINUATION OF SEWER LATERAL TO PROPERTY LINE.

PLAN VIEW

REV.	APPROVED	DATE	CITY OF CARLSBAD	<i>Glenn P. ...</i> 6-04
			SEWER LATERAL	CITY ENGINEER DATE
			(DEEP CUT HOUSE CONNECTION)	SUPPLEMENTAL STANDARD NO. S-8

APPENDIX C

Sample NCTD ROE Permit

North County Transit District

Encroachment Permit Application Process



Background

North County Transit District (NCTD) was created in 1976 and owns the railroad right-of-way (ROW) from Orange County line to the Del Mar/San Diego border and from Oceanside to Escondido. NCTD maintains the ROW from Orange County to Santa Fe Depot and from Oceanside to Escondido. The ROW varies from 100-300 feet in width. Passenger and freight trains travel on the coastal ROW every day of the year at speeds up to 90 miles per hour. Passenger and freight trains travel on the inland ROW every day of the year at speeds up to 55 miles per hour.

NCTD's Comprehensive Real Estate Policy

NCTD may allow the use of its real estate by public agencies, utilities, telecommunications companies, and others provided that the proposed use does not interfere with NCTD's current or planned use of the real estate. Applicants have the sole responsibility for relocating any improvements at their expense if necessary to accommodate NCTD's future use; they must reimburse NCTD for all costs associated with the proposed use; and they must pay fair market value for the use.

Types of Encroachment Documents

No matter the purpose, all entry on the ROW requires a permit. If permanent improvements are to remain in the ROW, either a License Agreement or Lease is also required. The Applicant must obtain a License or Lease from before a permit will be issued.

☐ Joint Right-of Entry (JROE) permits, licenses and leases

The Metropolitan Transit System ("MTS") owns the ROW located within the boundaries of the City of San Diego. Projects south of Del Mar require a Joint NCTD/MTS permit, additional review, cost and time to process. To obtain further details about JROE permits, licenses and leases, Applicants should contact MTS.

☐ NCTD Right-of-Entry (ROE) Permit

Applicants whose projects are in the City of Del Mar and locations north on the coastal ROW, or on NCTD's inland ROW, must obtain a ROE permit from NCTD prior to commencing work. A separate ROE permit is required each time work is performed.

NCTD requires the Applicant to deposit the estimated amount of reimbursable costs; attend railroad safety training; provide evidence of liability insurance naming NCTD and other rail users as additional insured; and to meet other conditions determined by NCTD to be necessary to protect NCTD's real property and railroad operations, prior to issuance of the ROE permit.

☐ NCTD License and Lease

A License or Lease is required for any permanent improvement or facility that will be located on NCTD property, such as a fence, pipeline or aerial cable. The Licensee or Tenant must maintain the facility at their sole expense, relocate or remove the facility at their sole expense upon notice from NCTD, and maintain liability insurance naming NCTD and other rail users as additional insureds. The License or Lease contains other conditions as NCTD determines are necessary to protect NCTD's real estate and railroad operations. Licensees and Tenants will be required to pay fair value for the use of the property. Payment of fair market value is required for placement of private facilities, and public facilities which are constructed as part of a private project and dedicated to a member agency.

Application Packages

Applicants requesting permission to enter NCTD property estate must submit an application and obtain a Right-of-Entry Permit, a License, or both prior to commencement of the project or use. Completed applications must include three (3) sets of plans.

Plans must show details of the proposed construction affecting the tracks and NCTD's real estate or facilities. The plans must show property lines, all rail facilities and distance to, below or above the rail.

North County Transit District Encroachment Permit Application Process



Three (3) sets of false work plans, false work removal plans, shoring plans, cribbing plans and calculations for false work, shoring or cribbing which are proposed to be located over, under or within 30 feet of tracks must be included with the general plans if not indicated elsewhere. Plans and calculations must be stamped by a registered Professional Engineer licensed in the State of California.

Application Review Process

NCTD departmental staff and consultants will review applications and plans to determine the potential impact upon NCTD real estate and operations. NCTD reviews applications and plans as staff time is available. The initial review may require 4 to 6 weeks from receipt of completed application.

Generally, NCTD will communicate its provisional approval or denial via e-mail, telephone or letter within 45 days of receipt of completed application. Do NOT proceed if NCTD sends a denial letter! Re-submit to meet the criteria.

If the application does not propose permanent improvements or facilities within the ROW, NCTD will prepare the ROE permit and send it to the Applicant for signature. The Applicant will sign and return the document with applicable fees. NCTD will execute the ROE permit and return a copy to the Applicant.

If permanent improvements or a request to lease is proposed, NCTD will obtain a cost estimate for an appraisal and communicate that dollar estimate to the Applicant. The Applicant must pay for the appraisal. Upon completion of the appraisal and satisfactory acceptance of the valuation, NCTD will prepare and send the License or Lease to the Applicant for signature. The Applicant will sign the License or Lease. NCTD will execute the License or Lease and return a copy to the Applicant.

First Submittal/Counter Help

Counter help is available to guide the Applicant's first submittal and provide criteria the project must meet. Counter help is provided at no charge to the Applicant however, NCTD staff cannot design the Applicant's project. Extensive staff involvement or multiple meetings with staff or NCTD's consultants will be charged against the deposit (see "Deposit" below).

Fees and Deposits

☐ Application Fees

A non-refundable application review fee of \$250 must be included for consideration of any application. Payment of the application fee does not guarantee or imply NCTD's acceptance or approval of the proposed project or use.

☐ Appraisal Fee

If NCTD requires an appraisal to establish fair market value of the property, the Applicant must pay the cost of the appraisal. NCTD will obtain a cost estimate before the appraisal is conducted.

☐ Right-of-Entry

If the Applicant's project is approved, the Applicant will submit a non-refundable permit fee. The minimum permit fee is \$ 1,000; in some cases the fee will be higher.

☐ Deposit

NCTD will consider the Applicant's project, and estimate the cost of flagging, inspection, contractor safety training, permit administration, construction oversight, and other anticipated NCTD expenses. NCTD will notify Applicant of the estimated cost of engineering review or appraisal fees prior to issuing a ROE permit. Applicant must deposit with NCTD such estimated amounts prior to the commencement of Applicant's work on the railroad property. Depending on the length and intensity of activity, additional deposits may be required. NCTD will promptly refund any unused deposit after completion of the work and clearing of all charges against it.

North County Transit District

Encroachment Permit Application Process



☐ **Exhibit or As-Built Fee**

Applicant must provide as-built drawings signed by the resident engineer for facilities that are permanently placed upon NCTD's ROW. NCTD may require a separate as-built deposit with each application for a License or amendment thereto. The deposit will be returned in its entirety upon NCTD's satisfaction with the exhibit.

☐ **License Fees**

Licenses carry an annual fee. The nature, location and size of the facility determine the amount of this fee. Please refer to the fee schedule attached hereto.

Insurance

The ROE permit, License or Lease will specify the types, limits, and other insurance and indemnification requirements. Permittees, Licensees and Tenants will be required to provide a certificate of liability insurance naming NCTD and other rail users as an additional insured. Depending on the nature of the Project, separate Railroad Protective Insurance may be required.

Flag Protection

Flag protection by a rules-qualified railroad flagman is required for any work within 25 feet of the centerline of any track, or if equipment such as a crane or boom truck can reach into the airspace measured vertically at 25 feet of the centerline of any rail, or in any other instance wherein NCTD determines that the safety of the railroad may be jeopardized by the work. Flagging is provided subject to availability and is at Applicant's sole expense.

Contractor Safety Training (CST)

All persons working on the railroad property must attend NCTD's 2-hour safety training course. Each crew member will receive a safety manual and a hard-hat sticker valid for one year. NCTD charges a flat rate for CST regardless of the number of people the Applicant sends to a single class.

Questions or Comments

Further inquiries may be directed to Mr. Ed Singer, Real Estate Asset Administrator, NCTD, 810 Mission Avenue, Oceanside, CA 92054. (760)-966-6556

North San Diego County Transit Development Board
STANDARD ENCROACHMENT PERMIT APPLICATION



NCTD USE ONLY

NCTD PERMIT # _____	FLAGGING CONTROL # _____	NCTD Received Date _____	Application # _____
----------------------------	---------------------------------	---------------------------------	----------------------------

APPLICANT: PLEASE COMPLETE ALL ITEMS BELOW; ATTACH PAGES, IF NEEDED

Project Location		Applicant Information	
MilePost Start	MilePost End	Name of Applicant	
Street Address of Project:		Mailing Address:	
Nearest Cross Street(s):		Applicant Telephone:	
Other Identifying Remarks:		Engineer/PM	
		PM/Eng. Address, if different	
		PM/Engineer telephone/e-mail	
Project Description		THIS IS AN EMERGENCY PROJECT Yes _____ No _____	
Date: Commencement		Date: Expected Completion	
Who will do the work? (List all)		Other agencies, entities, companies involved	
Fully Describe the Project. Include five (5) sets of complete plans with specifications, calculations, maps, if applicable			

North San Diego County Transit Development Board

STANDARD ENCROACHMENT PERMIT APPLICATION

Specific Uses, (check all that apply)					
Description/Notes		USE	Description/Notes		USE
		Temporary Use			Pedestrian Over/Underpass
		Place a New Facility			Private Crossing
		Located in Railroad Right-of-Way			Public Crossing
		Located on Other NCTD Property			Repair to Existing Facility
		New Construction			Sewer
		Maintenance Work			Signage
		Improvement to Existing Facility			Slope Work
		Communications Line			Storage of materials
		Drainage basin or culvert			Storage of Rail cars
		Electrical supply, guy wires or poles			Storage of vehicles
		Hazardous Materials Clean up			Storm Water Drain
		High pressure gas line or valve work			Survey work
		Landscaping			Underground Work
		Livestock crossing			Utility relocation
		Monitoring Well			Wall, fencing, etc.
		Overhead Work, e.g. bridge or road			Water Supply



Utility Crossings Estimated Fee Schedule

Type	Perpendicular Crossing*	Size	Recurring Fee
Electrical	O/H	<69kV	\$1,000
Electrical	O/H	=>69kV	case by case
Electrical	U/G	<69kV	\$1,500
Electrical	U/G	=>69kV	case by case
Natural Gas	U/G	<=8"	\$1,500
Natural Gas	U/G	>8"	case by case
Pole, guy, or miscellaneous	surface	n/a	\$750 minimum
Telephone, cable, other	O/H	n/a	\$1,000
Telephone, cable, other	U/G	n/a	\$1,500
Sewer, water, storm drain pipeline	U/G	=<30"	\$1,000
Sewer, water, storm drain pipeline	U/G	>30"	case by case

One time fee

Type	Location	Size	One-time fee
Sewer or water	U/G	=< 12"	case by case
Sewer or water	U/G	>12"	case by case
Storm drain	U/G or surface	n/a	case by case

* Longitudinal installations are evaluated on a case by case basis

O/H = Overhead

U/G = Underground

ALL FEES ARE SUBJECT TO CHANGE BASED UPON PERMITEE'S SUBMITTED DESIGN

APPENDIX D

Record Drawings

CONSTRUCTION PLANS FOR THE
IMPROVEMENT OF
HEMLOCK AVENUE

BETWEEN GARFIELD ST. AND A.T. & S.F. R.R. R.O.W.

PROJECT NO. 3-27

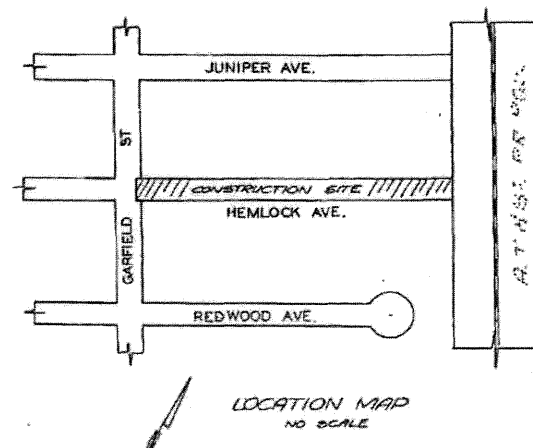
DRAWING NO. 139-7

EXISTING FEATURES

ROAD SURFACING	---
WATER MAIN	---
SEWER MAIN	---
GAS MAIN	---
UNDERGROUND UTILITY CABLE	---
POWER OR TELEPHONE POLE	○
FENCE	---
CONCRETE CURB	---
TREE	⊕
CONCRETE MANHOLE	⊙
4" P.C.C. SIDEWALK	---

STANDARD DRAWING REFERENCE

TYPE G CURB CITY OF CARLSBAD STD. DWG G-1
RESIDENTIAL DRIVEWAY CITY OF CARLSBAD STD. DWG G-8
DRIVEWAY DETAILS CITY OF CARLSBAD STD. DWG G-8C
CONCRETE PIPE INLET CITY OF CARLSBAD STD. DWG D-15
CONCRETE MANHOLE CITY OF CARLSBAD STD. DWG S-7



ASSESSMENT DISTRICT 1-1963

APPROVED THIS 24th DAY OF May 1964

Lowell A. Patton
ENGINEER OF WORK

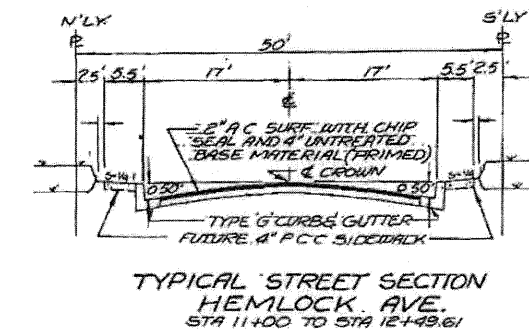
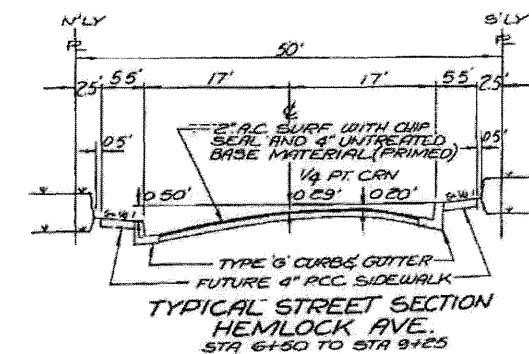
NOTES

N MEANS NORTH; E MEANS EAST; S MEANS SOUTH; W MEANS WEST; W.V. MEANS WATER VALVE; G.V. MEANS GAS VALVE; P.C.C. MEANS PORTLAND CEMENT CONCRETE; R.O.W. MEANS ROAD OIL MIX; A.C. MEANS ASPHALTIC CONCRETE; R/W MEANS RIGHT OF WAY; R MEANS PROPERTY LINE; V.C.P. MEANS VITRIFIED CLAY PIPE; ST MEANS STREET; AVE MEANS AVENUE; CONC MEANS CONCRETE; C MEANS CENTERLINE; GRD MEANS GROUND; SWK MEANS SIDEWALK; CONST MEANS CONSTRUCTION; DR MEANS DRIVE.

WORK TO BE DONE

THE CONSTRUCTION OF 10" CONC PIPE DRAINAGE INLET SHOWN THUS:
THE CONSTRUCTION OF TYPE "G" CURB & GUTTER SHOWN THUS:
THE CONSTRUCTION OF 2" ASPHALTIC CONCRETE WITH 4" DECOMPOSED GRANITE SUBBASE SHOWN THUS:
THE CONSTRUCTION OF 4" CAST IRON UNDERDRAIN SHOWN THUS:

THE CONSTRUCTION OF 10" CONC PIPE, 12" RCP, 12" CMP & STD CONC DRAINAGE MANHOLES WITH 2" AC CHANNEL
THE CONSTRUCTION OF 4" P.C.C. SIDEWALK SHOWN THUS:
THE CONSTRUCTION OF 4" V.C.P. SEWER LATERAL SHOWN THUS:
THE CONSTRUCTION OF 4" P.C.C. DRIVEWAY APPROACH SHOWN THUS:
THE CLEARING & GRUBBING FROM PROPERTY LINE TO PROPERTY LINE AS SHOWN ON THE CONSTRUCTION PLANS
THE REMOVAL OF EXISTING SIDEWALK & CURB ONLY AS SHOWN ON PLANS

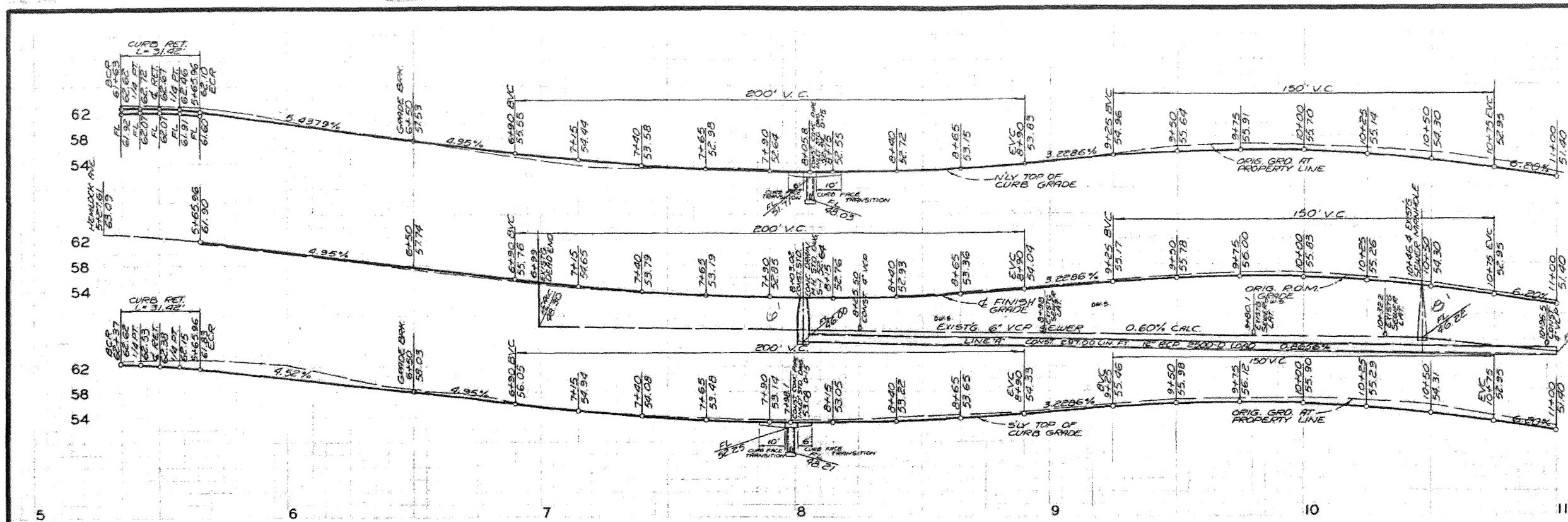


SHEET 1 OF 3 SHEETS

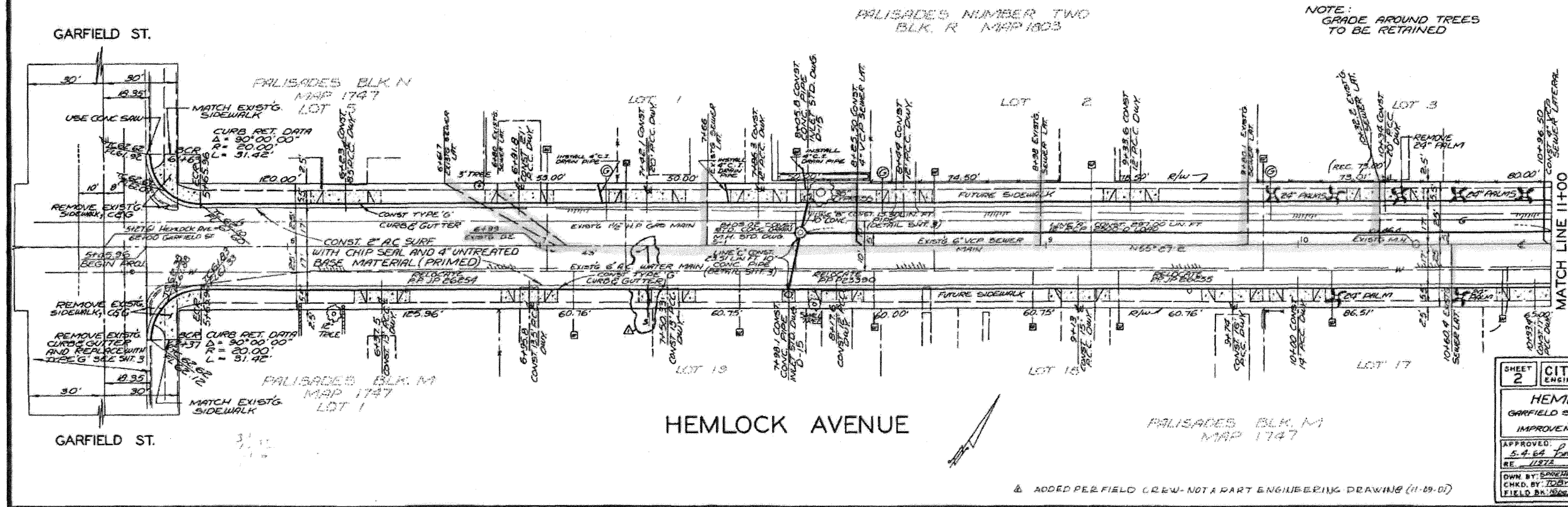
139-7

F183

IN HOLD



NOTE: GRADE AROUND TREES TO BE RETAINED

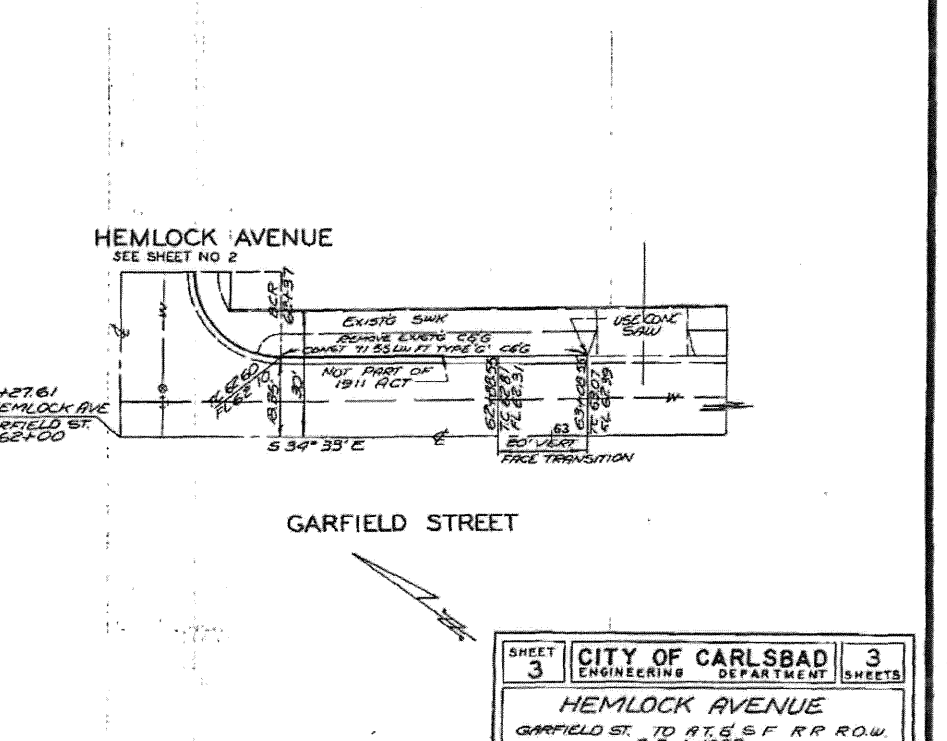
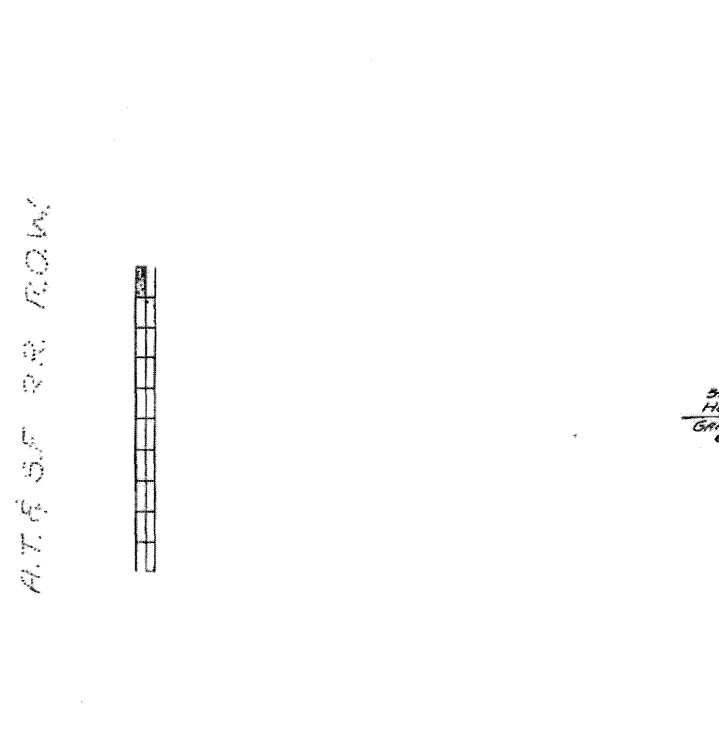
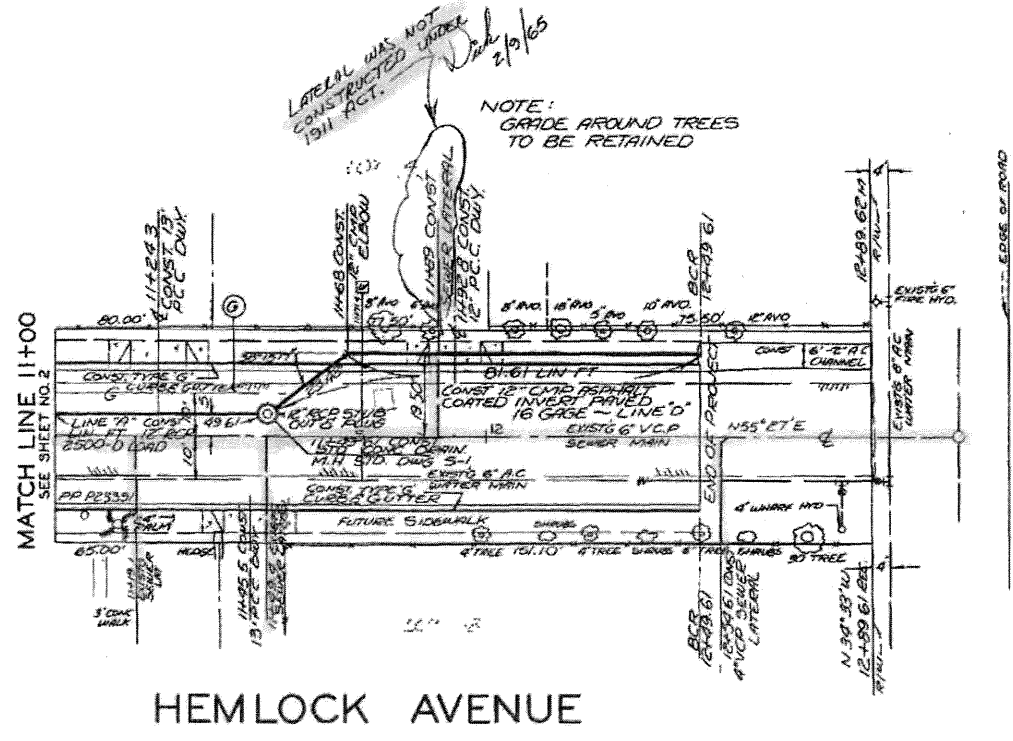
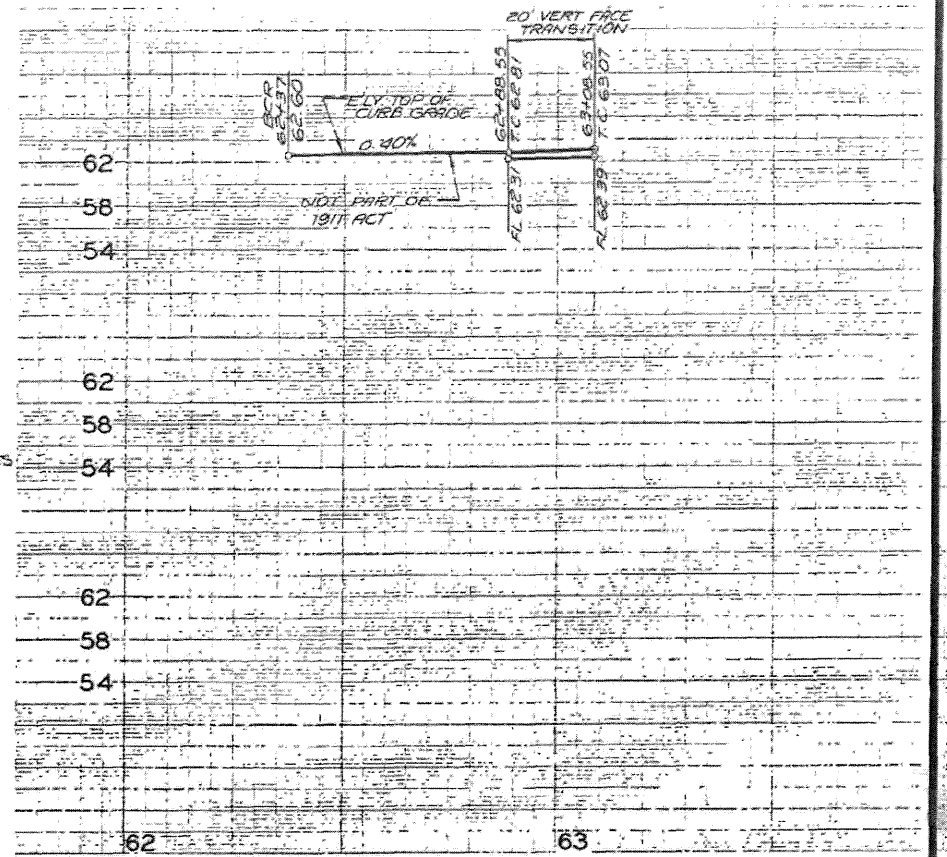
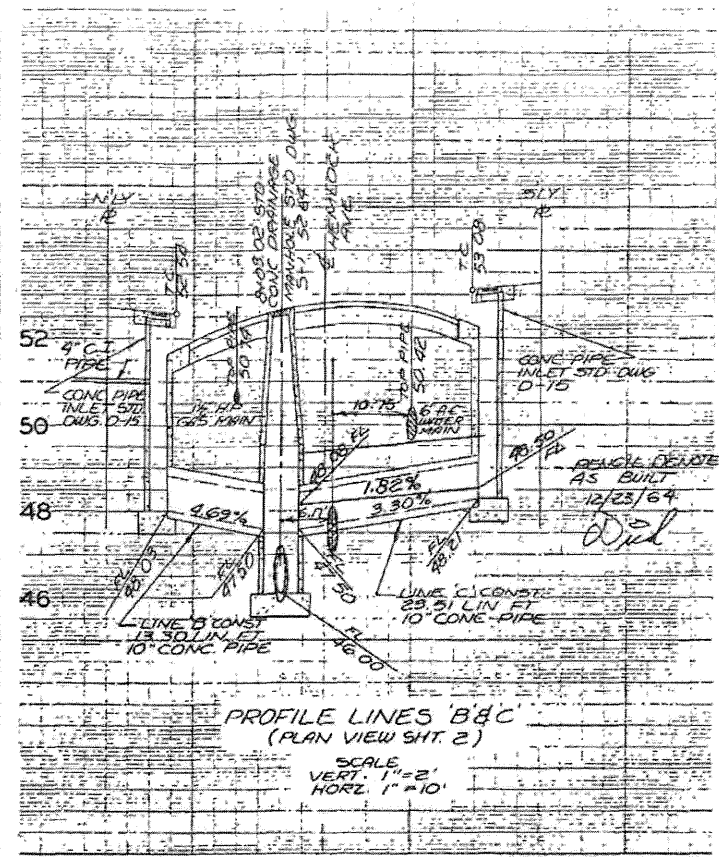
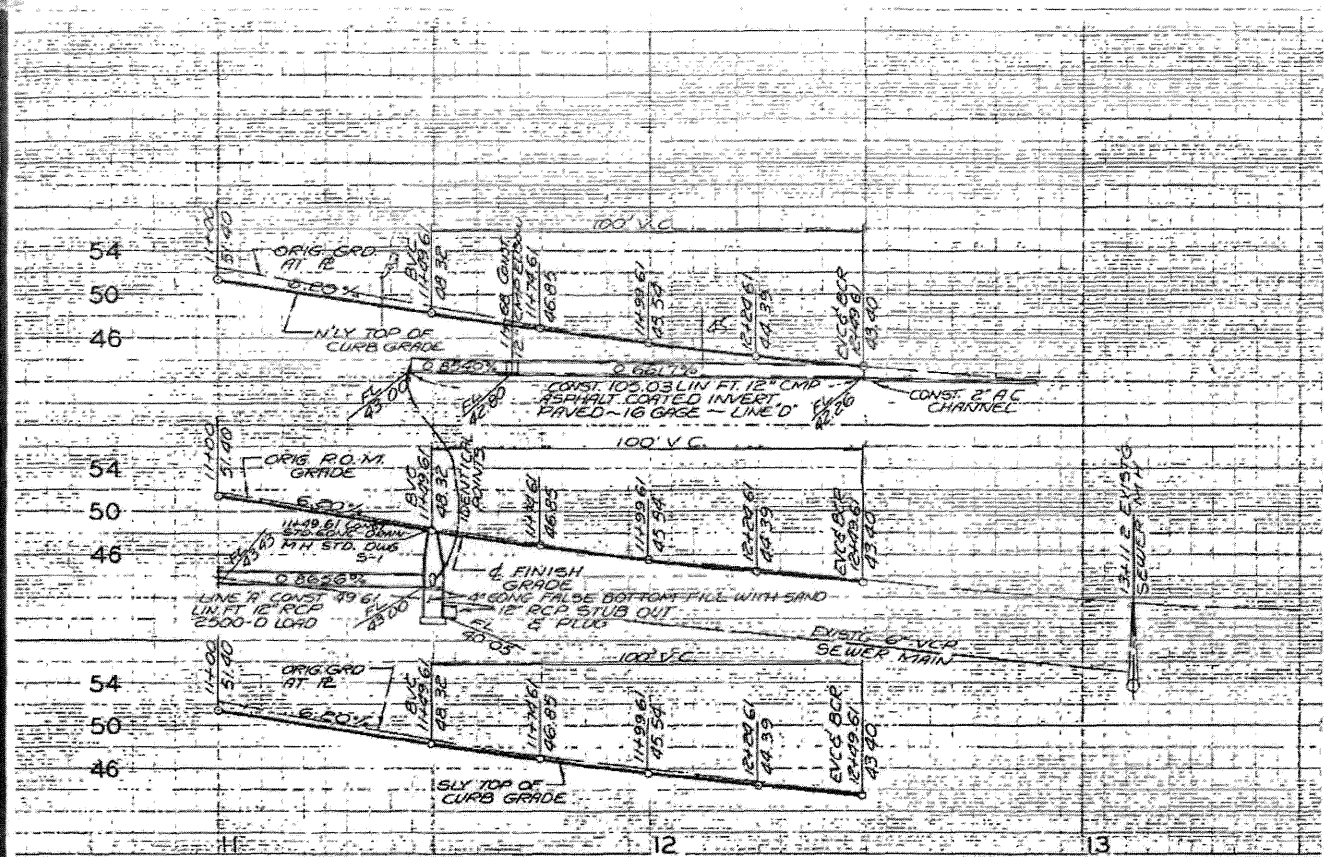


SHEET 2	CITY OF CARLSBAD	3
ENGINEERING	DEPARTMENT	SHEETS
HEMLOCK AVENUE		
GARFIELD ST. TO A.T. & S.F. RR. ROW		
P.D. 1-1965		
IMPROVEMENT PLAN & PROFILE		
APPROVED:	DATE: 3-8-64	SCALE: 1"=8'
RE: 11875	CITY ENGINEER	VERT: 1"=8'
OWN BY: CARLSBAD	PROJECT NO. 3-27	DRAWING NO. 139-7
CHKD. BY: T. J. B.		
FIELD BY: 1964-1		

& ADDED PER FIELD CREW-NOT A PART ENGINEERING DRAWING (11-69-01)

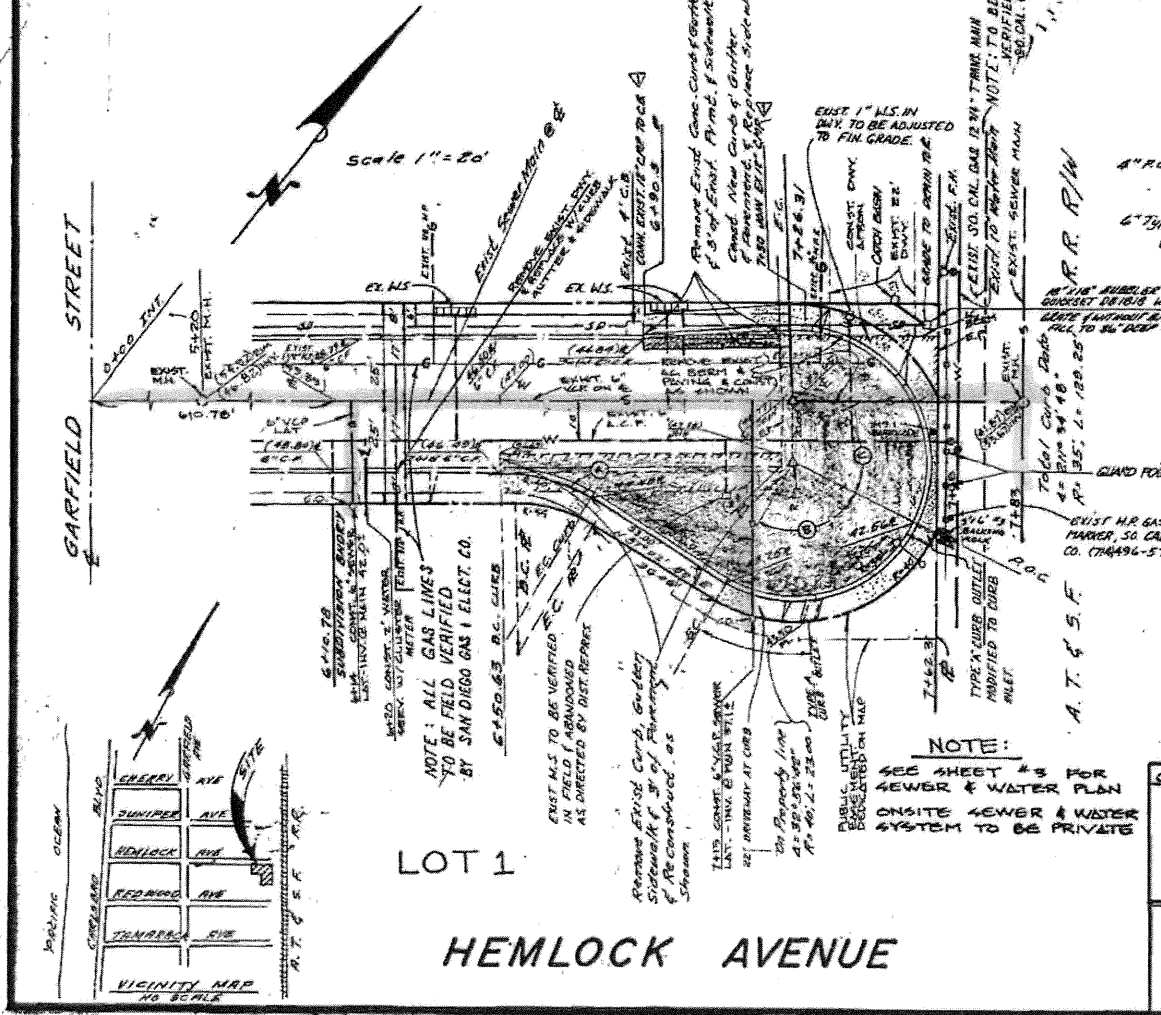
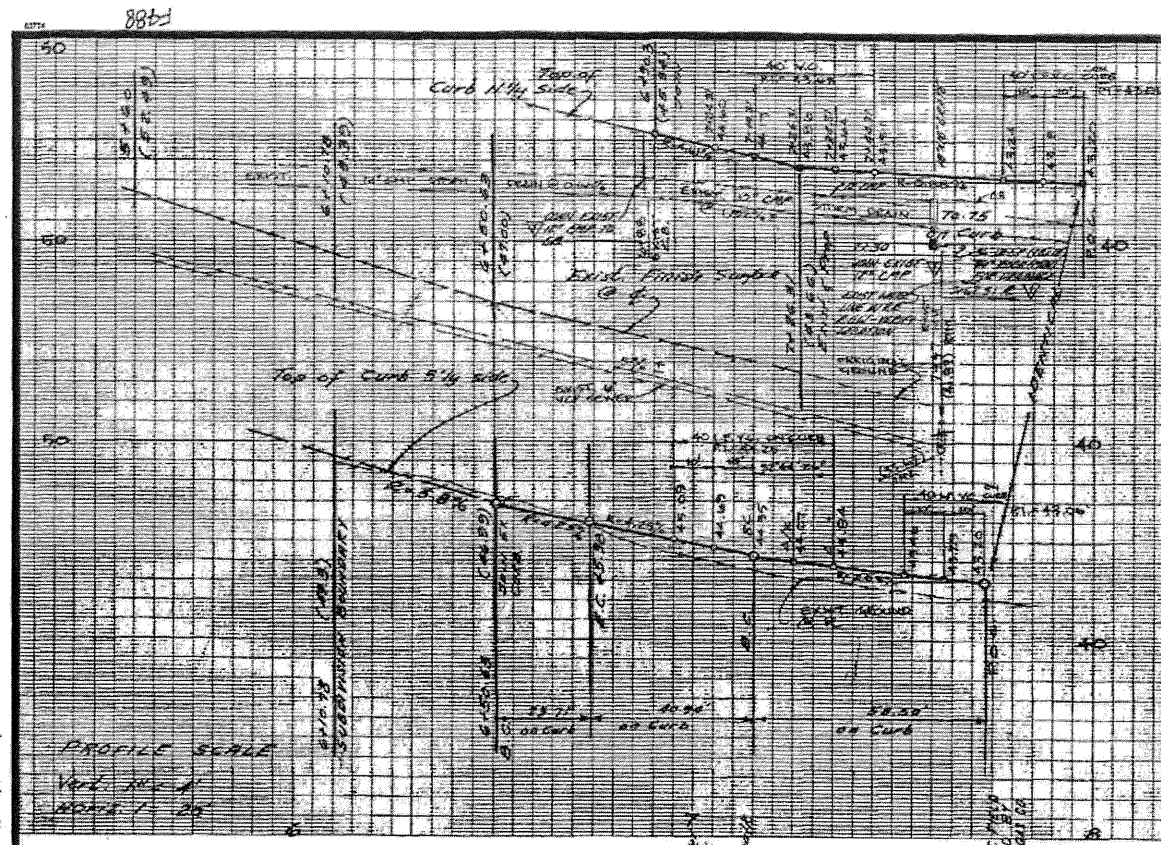
DRAWING NUMBER
139-7-2-110

FICP



SHEET 3	CITY OF CARLSBAD ENGINEERING DEPARTMENT	3 SHEETS
HEMLOCK AVENUE GARFIELD ST. TO A.T. & S.F. RR R.O.W. P.D. 1-1963 IMPROVEMENT PLAN & PROFILE		
APPROVED: 5-4-64 RE: 11376	DATE: 5-4-64 SCALE: 1"=8' VERT. 1"=20' HORIZ. 1"=20'	PROJECT NO. 3-27
DWN BY: S. B. B. CHKD BY: J. B. B. FIELD BK. 1091	DRAWING NO. 139-7	

F100



WORK TO BE DONE:

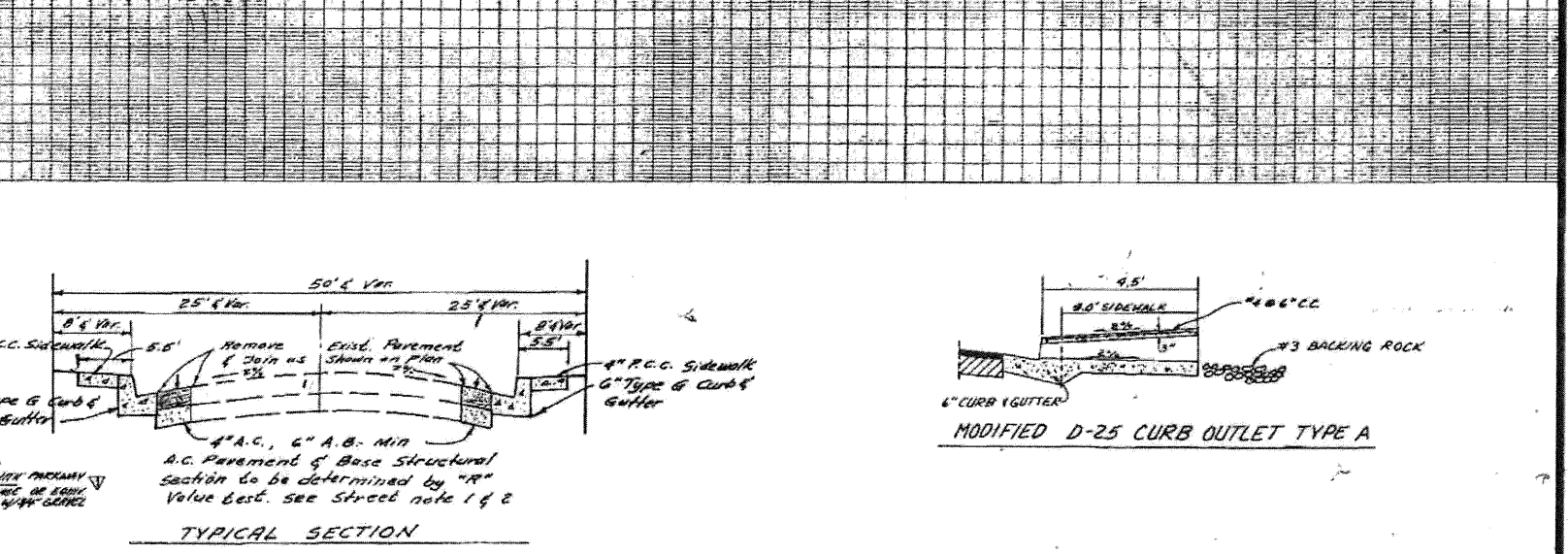
The improvements consist of the following work to be done according to these Plans, the current City of Carlsbad Engineering Department standard specifications, and special provisions for the improvement of Subdivision Streets, and A.P.D. 1990 standards. **NOTE:** The removal of and connection to existing improvements are as shown on these Plans.

Grading of Streets (See Typical Section herein)
 The Preparation of Subgrade and Paving of the Streets
 The Construction of 6" Type "G" Curb and gutter, and sidewalk
 The Construction of Survey Monument (as shown on Plans) S.D.R.S. G-2 & R-7
 The Installation of Guard Rail S.D.R.S. M-9
 The Construction of 12" Diameter Drainage
 The Construction of 12" Diameter Sewer Vent with Chamber at 10' ST. shown
 The Construction of CURB OUTLET TYPE "A" WITH THE DETENTION OF MANHOLE FRAME & CURB SIDE D.P.S.
 The Construction of TURN-BUILT TYPE "A" TURNED AS SHOWN S.D.S. G-2 & R-7
 The Installation of STREET LIGHT S.D.S. L-1

GENERAL NOTES:

1. Location and Elevation of improvement to be noted by work to be done shall be confirmed by field measurements prior to work. Contractors will make exploration, excavation and locate existing underground facilities sufficiently ahead of construction to permit revision of plans if conditions are found to require adjustment. Location of existing facilities, the existence and location of any underground utility lines or structures shown on this plan was obtained by a search of the available records. The contractor is required to take all precautionary measures to protect the utility lines shown herein and any other existing lines not of record or not shown on these plans.

SEE SHEET NO. 2 FOR ADDITIONAL NOTES



CURB DATA

R=40.00'	R=35.00'	R=30.00'
Δ=31°15'18"	Δ=27°45'11"	Δ=11°58'21"
L=22.05'	L=20.61'	L=7.65'

ASSESSORS PARCEL NO.
204-27-044

OWNER/DEVELOPER
G.T.W. A CALIFORNIA GENERAL PARTNERSHIP
690 ELM AVENUE, #204
CARLSBAD, CA. 92008
PHONE: (619) 434-7173

SITE ADDRESS: 369 HEMLOCK AVE.

C.T. 83-39 / C.P. 268 / V-356

LEGEND

- FL. - FLOW LINE
- TC. - TOP OF CURB
- CF. - CURB FACE
- M.H. - MANHOLE
- (E) - EXIST. ELEVATION
- Δ - M.I.D. STREET MON.
- ||||| - PAVING REMOVAL
- E.P. - EDGE/PAVING
- R.P. - RADIUS POINT
- S.B. - SEWER BASIN
- F.S. - FINISH SURFACE
- G.O. - CLEANOUT

"AS BUILTS"
 Rodney L. Smiling 1-14-87
 TRUCKEE C. HARRIS FOR BORDO DATE

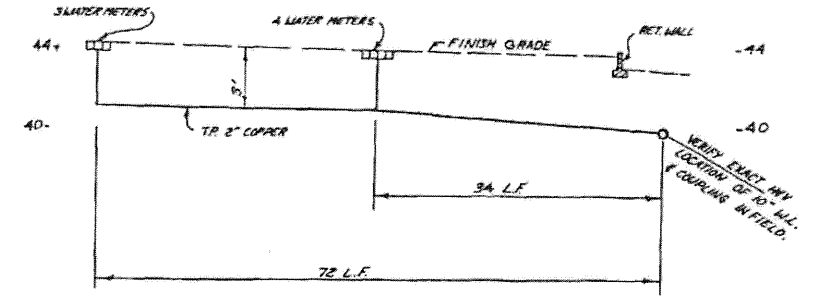
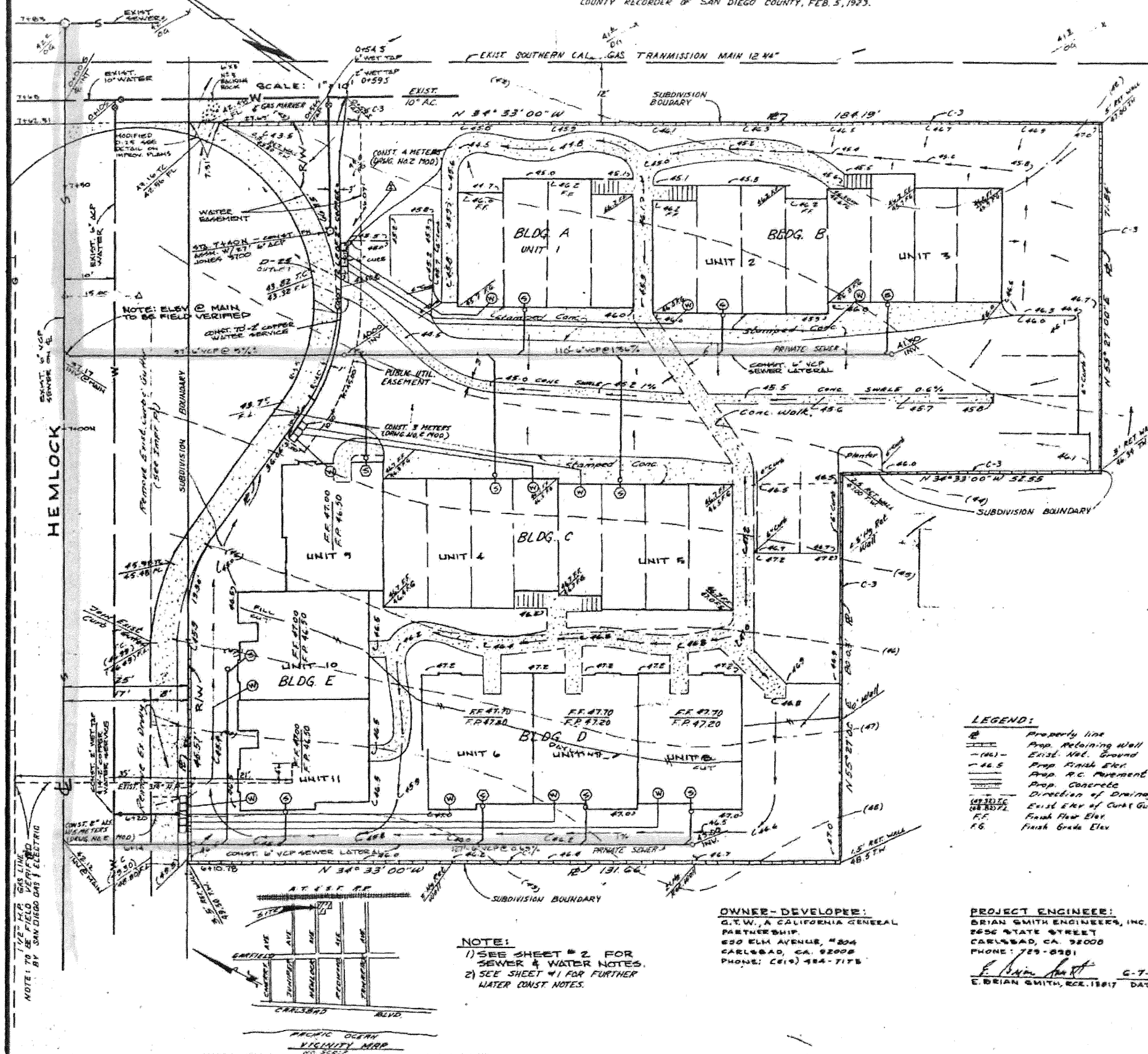
BENCH MARK:
 At Rail Road Right of Way
 Chiswick Square in Base of R.R.
 W/40 W/5.5 Tamarack Avenue
 City of Carlsbad Field Book
 ELEV. 43.967

COSTA REAL MUNICIPAL WATER DISTRICT 1-7-85 JACK Y. KUBOTA, R.C.R. 1056-DIST. ENR. CITY OF CARLSBAD FIRE DEPT.		BRIAN SMITH ENGINEERS 2656 STATE STREET CARLSBAD, CALIF. (619) 723-8961 E. Brian Smith R.C.E. 12-817									
NOTE: SEE SHEET #3 FOR SEWER & WATER PLAN ON-SITE SEWER & WATER SYSTEM TO BE PRIVATE		REVISIONS <table border="1"> <tr> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>APP'D</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		DATE	DESCRIPTION	BY	APP'D				
DATE	DESCRIPTION	BY	APP'D								

SHEET 1 CITY OF CARLSBAD ENGINEERING DEPARTMENT PLANS FOR THE IMPROVEMENT OF HEMLOCK AVENUE CARLSBAD TRACT 83-39 APPROVED: [Signature] AS SET 5/1/85 RE 3/2/85 CITY ENGINEER DATE	SHEETS 3 PROJECT NO. CT 83-39 DRAWING NO. 243-9
--	--

- HEMLOCK CONDOMINIUM - CARLSBAD TRACT NO. 83-39.

A PORTION OF LOT 14 IN BLOCK "M" OF PALISADES, IN THE CITY OF CARLSBAD, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 1747, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, FEB. 5, 1923.



PROFILE OF 2" COPPER W. L.
SCALE: HORIZ. 1"=10'
VERT. 1"=4'

LEGEND:

- Property line
- Prop. Retaining Wall
- (100) — Exst. Nat. Ground
- 46.5 — Prop. Finish Elev.
- Prop. A.C. Pavement
- Prop. Concrete
- (46.5) — Direction of Drainage
- (46.5) — Exst. Elev. of Curbs/Gutters
- F.F. — Finish Floor Elev.
- F.G. — Finish Grade Elev.

OWNER-DEVELOPER:
G.T.W. A CALIFORNIA GENERAL
PARTNERSHIP
600 ELM AVENUE, #204
CARLSBAD, CA. 92008
PHONE: (619) 434-7175

PROJECT ENGINEER:
BRIAN SMITH ENGINEERS, INC.
2656 STATE STREET
CARLSBAD, CA. 92008
PHONE: 725-8281
B. Smith
G-T-84
B. BRIAN SMITH, RCE, 15817 DATE

NOTE:
1) SEE SHEET # 2 FOR
SEWER & WATER NOTES.
2) SEE SHEET # 1 FOR FURTHER
WATER CONST. NOTES.

"AS BUILT"

Rodney C. Imming 1-14-87
RODNEY C. IMMING RCE 30881 DATE

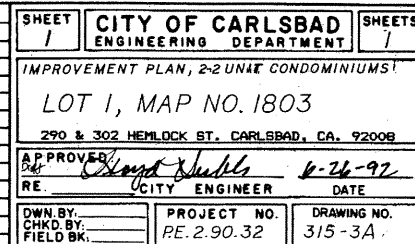
SITE ADDRESS: 369 HEMLOCK RD.
C.T. 83-39 / C.P. 248 / V. 356

BENCH MARK
At Railroad Right of Way
Chiseled Square in Base of RR
WIG WING S.S. Tamarac Ave
City of Carlsbad Field Book
Elev. 43.387

DATE BY	DESCRIPTION	APPROVED	PROJECT NO.	DRAWING NO.
	REVISIONS		CT83-39	243-9

SHEET 3	CITY OF CARLSBAD ENGINEERING DEPARTMENT	SHEETS 3
SEWER AND WATER PLAN FOR HEMLOCK CONDOMINIUM C.T. 83-39		
APPROVED Rodney C. Imming 1-14-87 RE 37301 CITY ENGINEER	DATE 5/3/85	

1. Laterals will remain shall be 100% air tested after construction of other utilities as specified in the City of Cambridge Standard Specifications.
2. All mains shall be constructed with a three foot (3') minimum depth to top of pipe in private streets, maximum depth of twelve feet (12') to top of pipe, unless otherwise approved.
3. All sewer lines and appurtenances shall be inspected and approved by the Engineering Inspector prior to backfilling.
4. All pipes shall have a four-inch (4") minimum crushed rock bedding in accordance with the appropriate standard drawing.
5. All laterals shall be constructed to a minimum five-foot (5') depth (to top of pipe) at property line and shall be clear of driveways. All laterals shall be clearly marked with an "X" on the curb and shall be shown on the "as-built" drawing.
6. All screen holes shall be pitched with "not mix A.C. equivalent to the road section (6" minimum)
7. Single family residential lots shall be served by a four-inch (4") 400 S.C. lateral set at a minimum grade of two percent (2.0%) with a minimum drop of 0.3 feet.
8. Fireworks shall be installed on all laterals at the property line using a 4" x 6" dimension in accordance with the requirements of the Engineering Inspector.
9. Two (2) sets of cut sheets shall be provided to the Engineering Inspector.
10. Field air acceptance of any sewer line by the City. All mains shall be air tested clear using the "Wynn" ball method and manually tested.

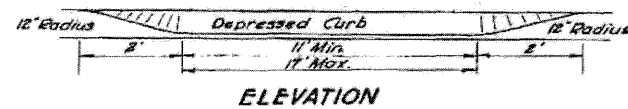
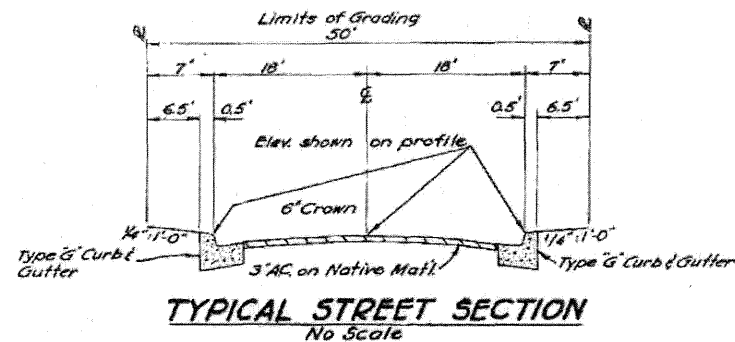
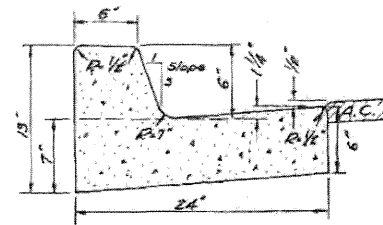


IMPROVEMENT PLANS FOR PACIFIC TERRACE

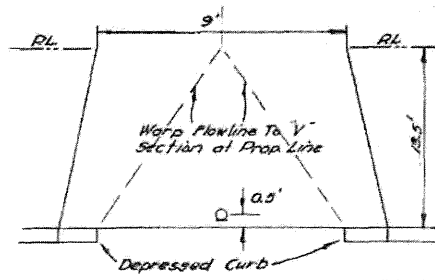
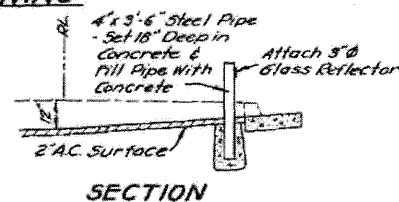
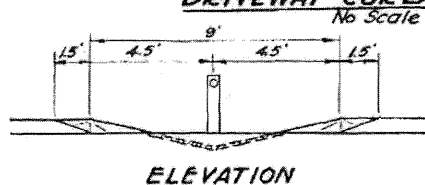
CITY OF CARLSBAD, CALIFORNIA

Plans Prepared By
BOYLE ENGINEERING
Santa Ana San Diego

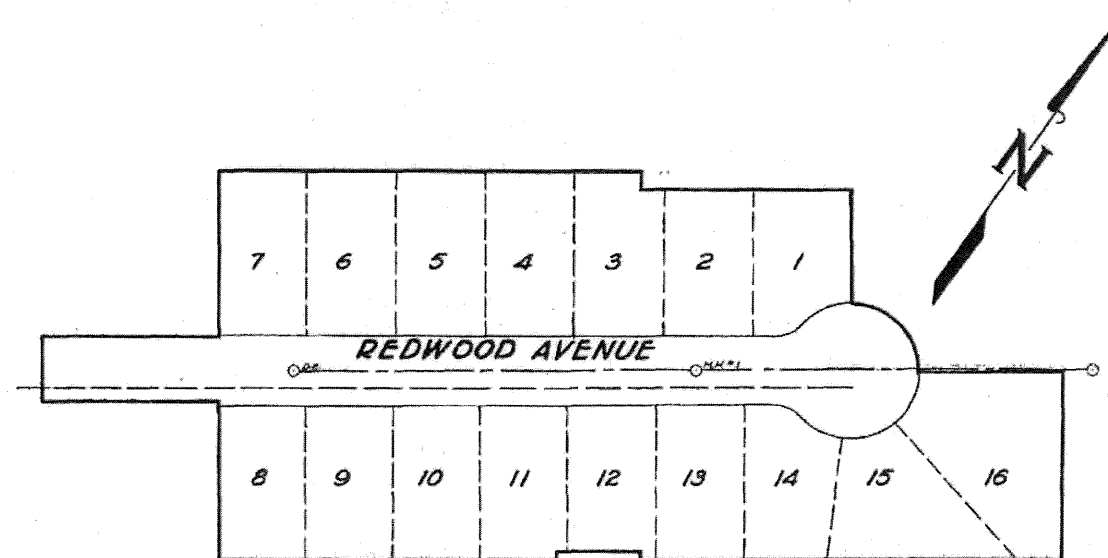
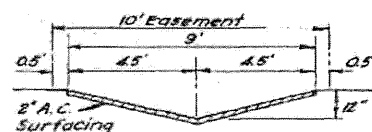
**SECTION TYPE "G" CURB
AND GUTTER**
No Scale



**SECTION
DRIVEWAY CURB OPENING**
No Scale



DRAIN INLET DETAIL
No Scale



GENERAL NOTES

1. All Street Improvements and Sewer Installations shall be done in accordance with the general requirements and to the satisfaction of the City Engineer of Carlsbad, California.
2. All Water Mains, Services, Fire Hydrants and appurtenant work shall be done in accordance with the specifications and requirements of the Carlsbad Mutual Water Company.
3. Water Mains shall have a minimum cover of 36" from finish grade.
4. Trench Grade for water mains shall be 0.5 feet below bottom of pipe.
5. All Paving shall be seal coated.
6. Basis of Elevation is the City of Carlsbad datum.
7. Bench Mark: Rim of Sewer Manhole 877's No. of 6 Tamarack Ave in AT & SF RR ROW, Elev 41.54.
8. The Grading of Lots shall be such that surface drainage is toward the street from the 20' foot setback line, excepting Lots 15 & 16 which drain away from the street outside the parkway. There shall be no ponding of water in the area.
9. Where Driveway Openings are to be provided in the curb, the Subdivider shall furnish the contractor the locations of same upon request.
10. The contractor shall stamp the letter "S" in the curb at the sewer lateral location.

WORK TO BE DONE

- Portland Cement Concrete Curbs, Type G
- Sewer Mains, Vitrified Clay
- Sewer Manholes & Number
- Sewer Laterals, 4" V.C.
- Water Mains
- Water Services
- Gate Valves
- Fire Hydrants
- A.C. Lined Drainage Ditch
- A.C. Paving with approved base
- Driveway curb openings per detail
- Plant 6' High approved trees in parkways at 40' intervals
- Furnish and install one dual street name sign at each intersection

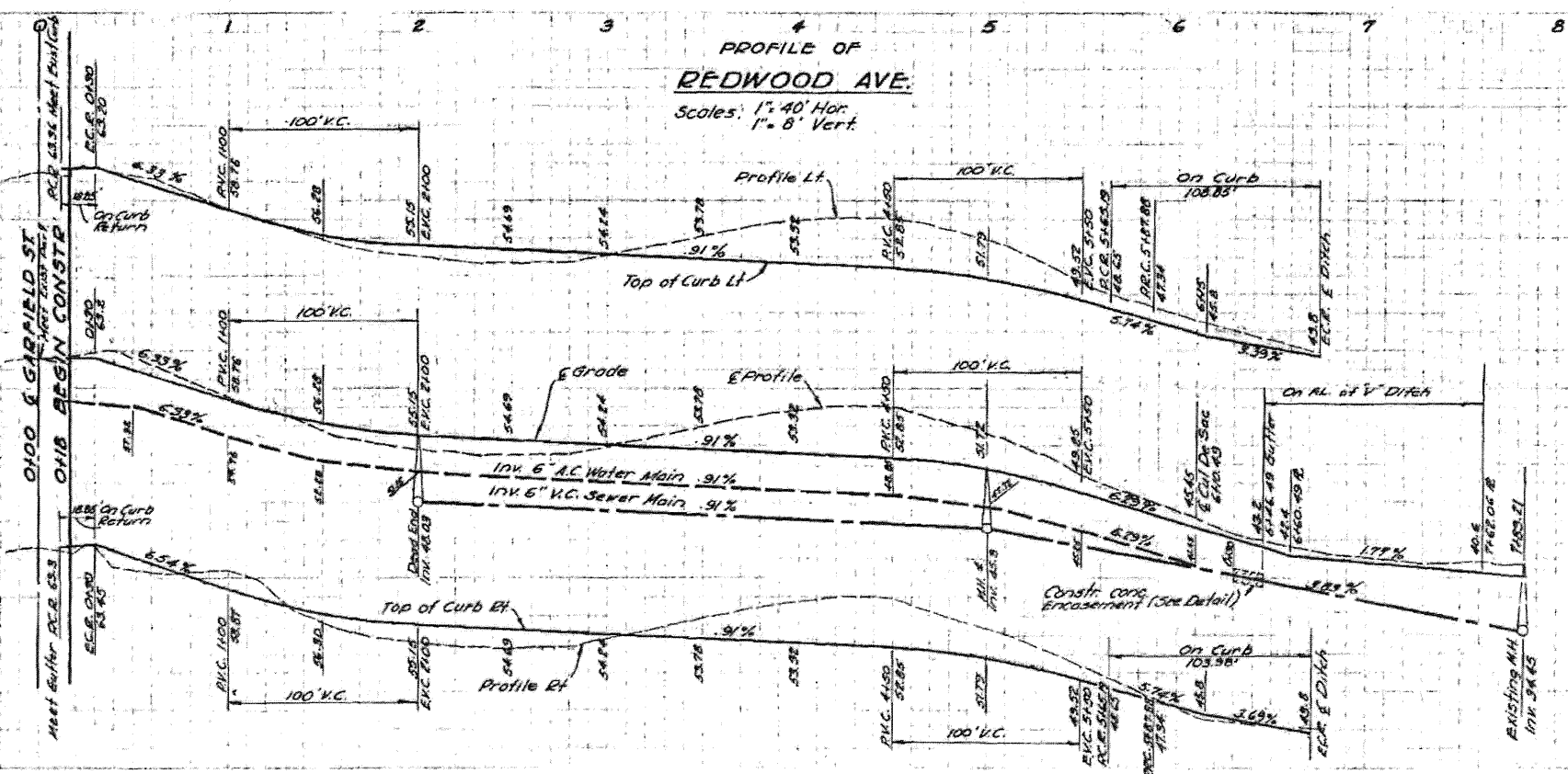
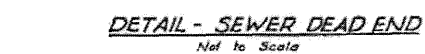
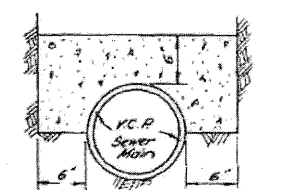
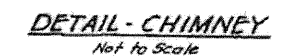
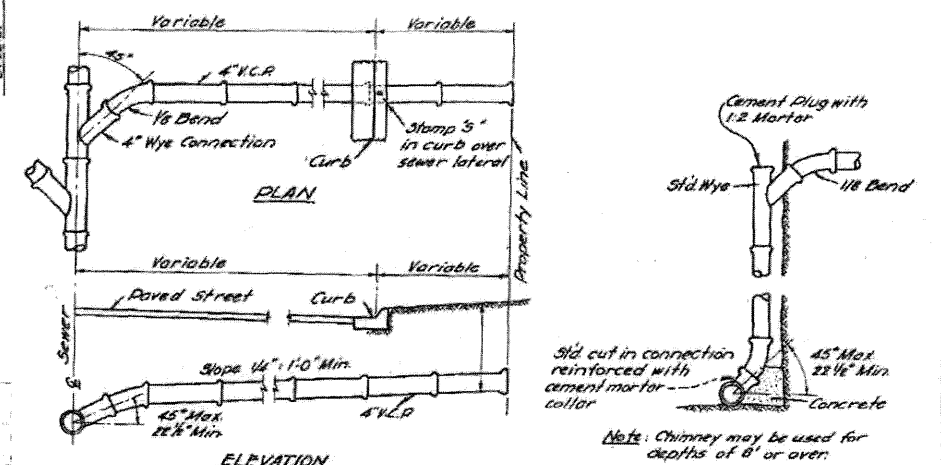
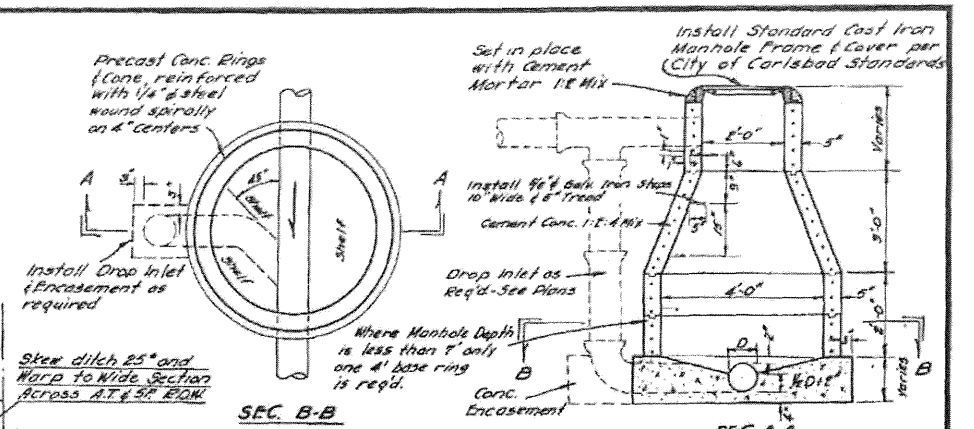
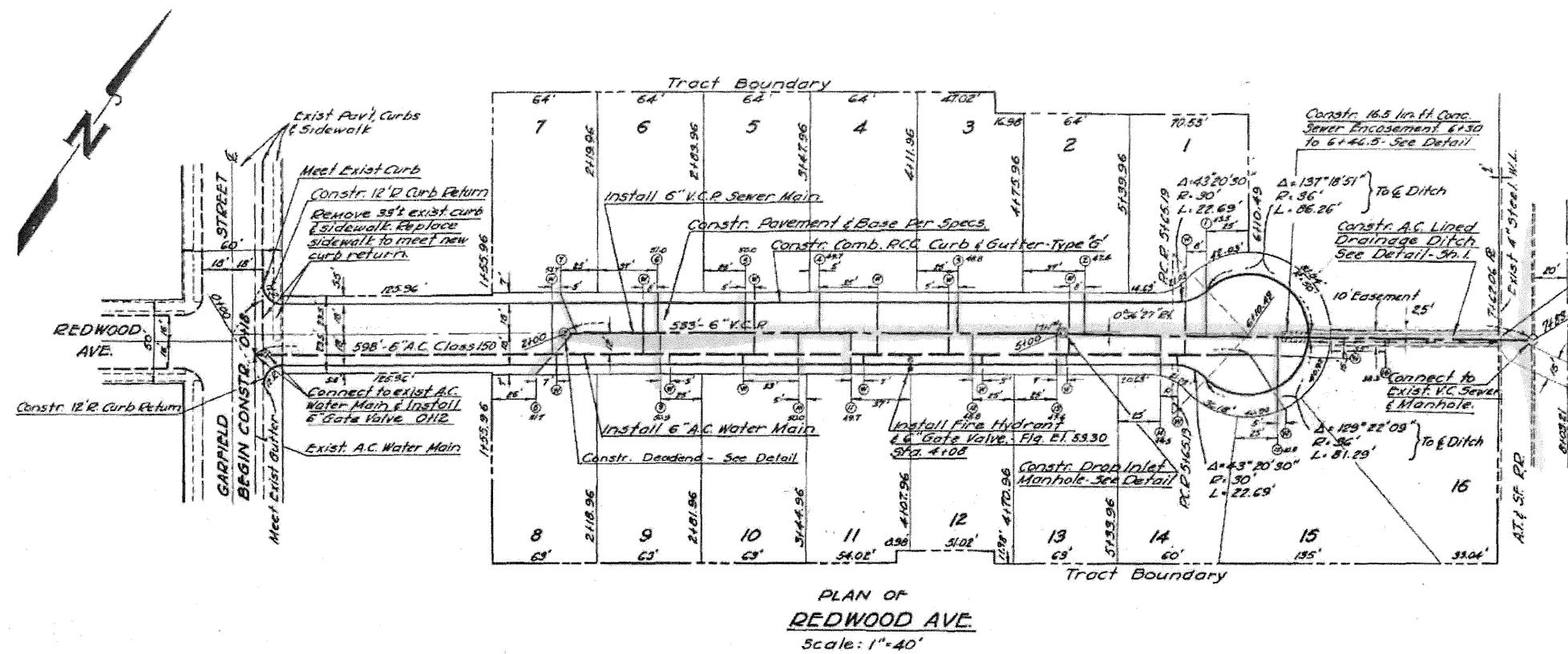
LEGEND

- Existing V.C. Sewer & Manhole
- Existing Conc. Curb & Gutter
- Existing Water Mains
- Elevations of Sewer Laterals at 8'

Approved on this 6th day of March, 1957.

J. G. Kubota, C.E. 10056
J. G. Kubota, City Engineer
City of Carlsbad, California

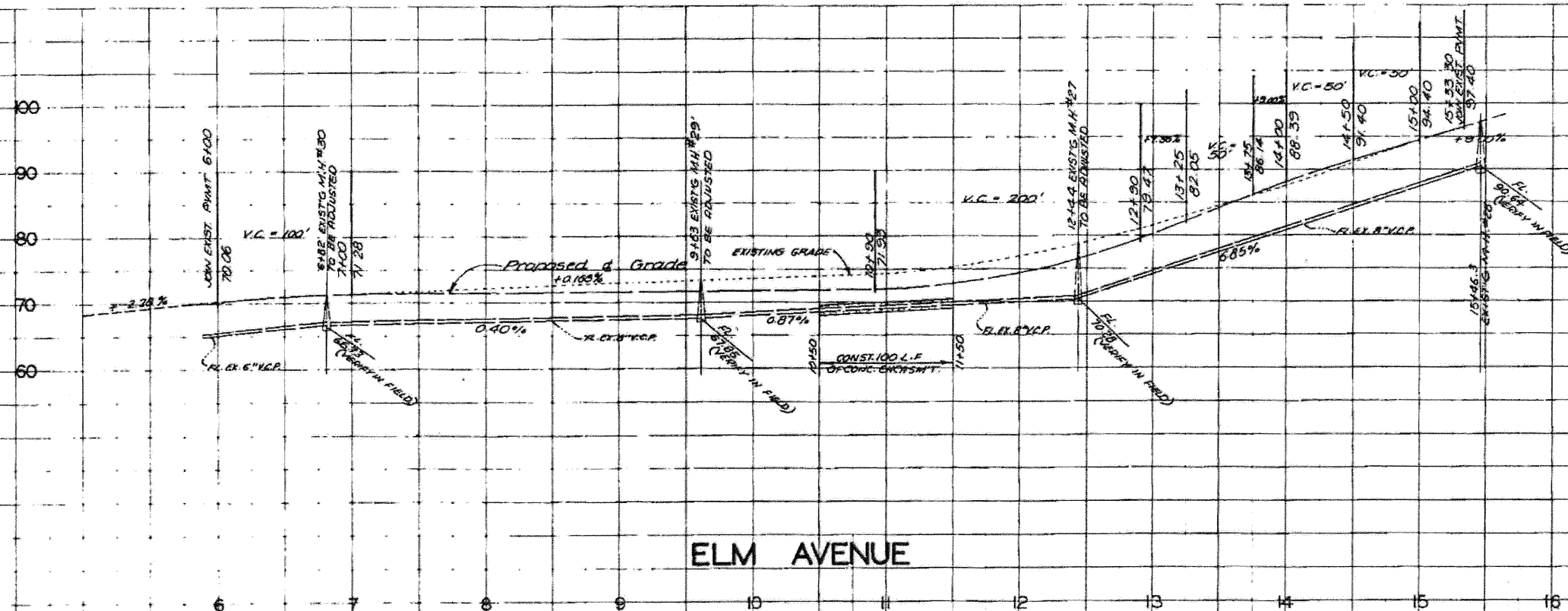
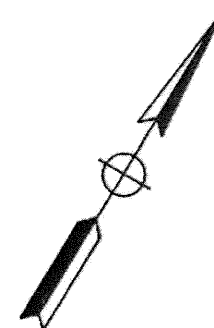
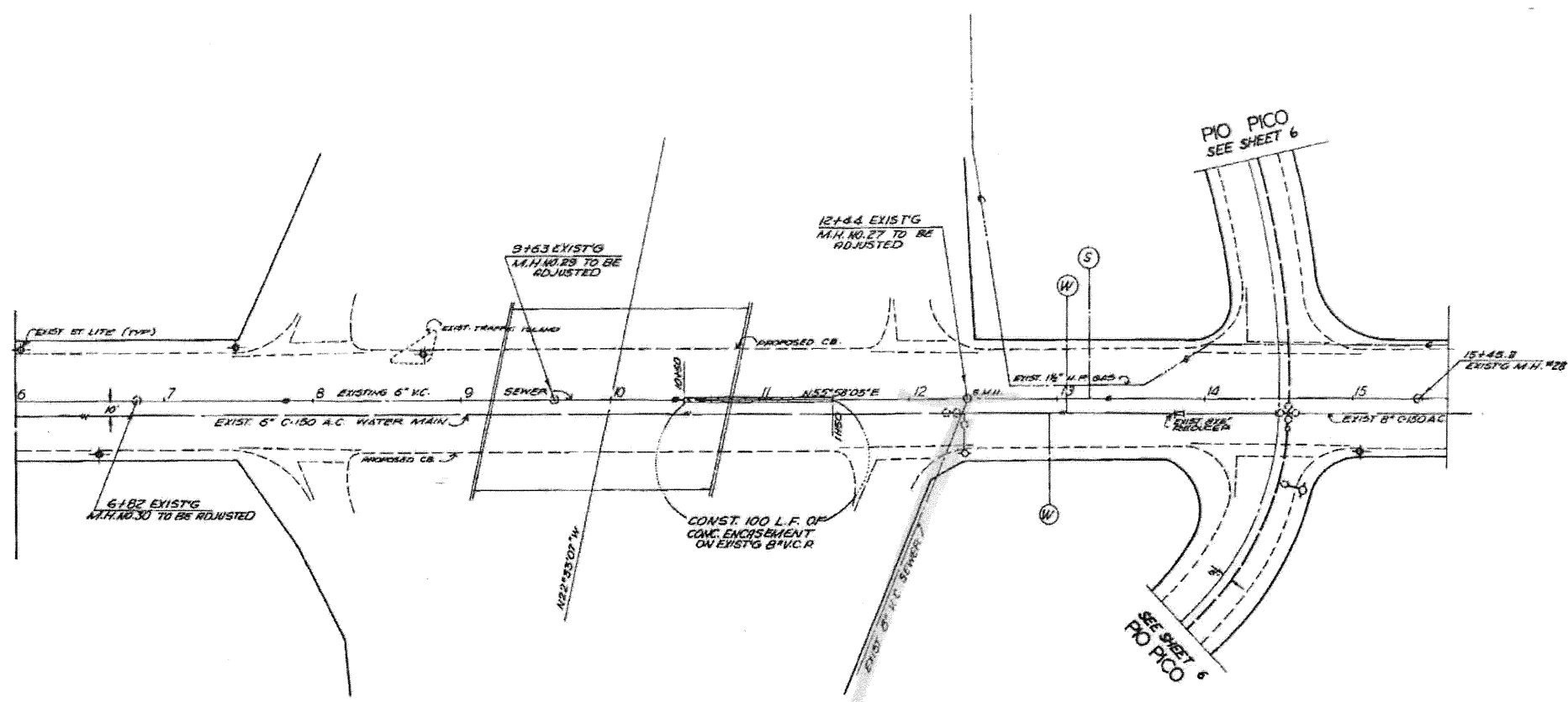
CITY OF CARLSBAD		
IMPROVEMENT PLANS		
PACIFIC TERRACE		
Design N.E.R.	BOYLE ENGINEERING	Job N° 5114
Drawn R.E.O.	R.E.O.	
Check R.E.S.	R.E.S.	
Revised	Scale: as noted	
		SHEET 1 OF 2 SHEETS



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

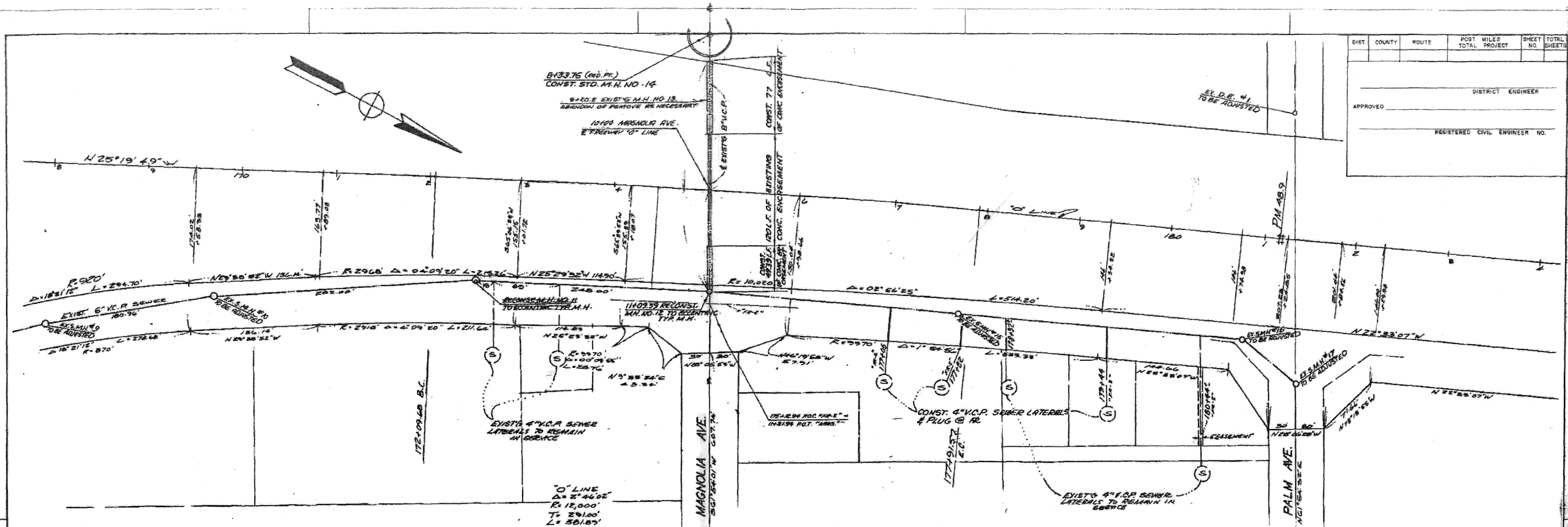
APPROVED _____
DISTRICT ENGINEER

REGISTERED CIVIL ENGINEER NO. _____

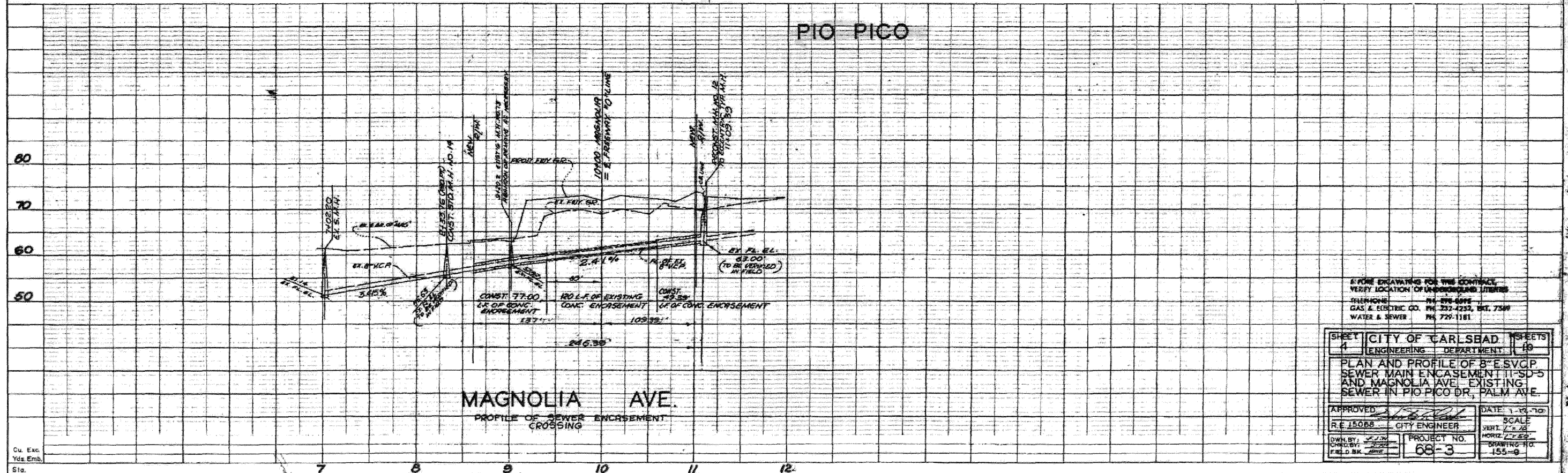


ELM AVENUE

SHEET 9	CITY OF CARLSBAD ENGINEERING DEPARTMENT	SHEETS 7/7
PLAN AND PROFILE OF 8" V.C.P. CONC. ENCASMENT IN ELM AVE AND 11-SD-5		
APPROVED: _____ RE. 15066	CITY ENGINEER	DATE: 1-12-10 SCALE: VERT. 1"=20' HORIZ. 1"=50'
DESIGNED BY: _____ CHECKED BY: _____ FIELD BY: _____	PROJECT NO. 68-3	DRAWING NO. 155-9



DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL NO.
DISTRICT ENGINEER				
APPROVED				
REGISTERED CIVIL ENGINEER NO.				



BEFORE EXCAVATING FOR THIS CONTRACT, VERIFY LOCATION OF UNDERGROUND UTILITIES.

TELEPHONE: 84-896-6096
 GAS & ELECTRIC CO. PH. 232-4232, EXT. 7359
 WATER & SEWER PH. 729-1181

SHEET 4	CITY OF CARLSBAD	SHEETS 10
ENGINEERING DEPARTMENT		
PLAN AND PROFILE OF 8" E.S.V.C.P. SEWER MAIN ENCASEMENT II-SD-5 AND MAGNOLIA AVE. EXISTING SEWER IN PIO PICO DR., PALM AVE.		
APPROVED	DATE: 1-10-70	SCALE
R.E. 15088	CITY ENGINEER	VERT. 1" = 20'
OWN. BY	PROJECT NO.	HORIZ. 1" = 50'
CHECKED BY	68-3	DRAWING NO. 155-9
FIELD BY		

