

**PROPOSAL, SPECIFICATIONS, BOND  
AND AFFIDAVIT  
FOR THE CONSTRUCTION OF  
MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149**

**B2014-59**



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City Engineer**

**November 2014**



**TABLE OF CONTENTS**

**SECTION A - NOTICE INVITING BIDS**

NOTICE INVITING BIDS..... A-1

**SECTION B - INSTRUCTIONS TO BIDDERS**

INSTRUCTIONS TO BIDDERS..... B-1

**SECTION C - BID DOCUMENTS**

BIDDER'S SUBMITTAL..... C-1

ACKNOWLEDGMENT OF ADDENDA RECEIVED ..... C-11

CONTRACTOR'S AFFIDAVIT..... C-13

BID BOND..... C-15

LIST OF SUBCONTRACTORS..... C-16

REFERENCES..... C-18

VIOLATIONS OF FEDERAL, STATE OR LOCAL LAWS..... C-19

DISQUALIFICATION OR DEBARMENT ..... C-20

EXPERIENCE STATEMENT..... C-22

**SECTION D - DOCUMENTS TO BE COMPLETED AND DELIVERED TO CITY PRIOR TO AWARD OF CONTRACT**

PERFORMANCE BOND..... D-1

LABOR AND MATERIAL BOND ..... D-3

PUBLIC WORKS AGREEMENT ..... D-6

CONSTRUCTION OR SERVICE CONTRACT ENDORSEMENT ..... D-17

WORKERS' COMPENSATION INSURANCE CERTIFICATION..... D-19

**SECTION E - SPECIAL PROVISIONS**

**APPENDIX I: CITY OF TORRANCE PERMIT AND BUSINESS LICENSE**

**APPENDIX II: CITY OF TORRANCE STANDARD PLANS**

**APPENDIX III: STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (SPPWC)**

**APPENDIX IV: CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN (WMP)**

**APPENDIX V: DRAWINGS SCHEDULE A**

**APPENDIX VI: DRAWINGS SCHEDULE B**

**SECTION A**

**NOTICE INVITING BIDS**

## CITY OF TORRANCE, CALIFORNIA

### NOTICE INVITING BIDS

Notice is hereby given that sealed bids for performing the following described work will be received at the Office of the City Clerk of the City of Torrance, California, **until 3:00 p.m. on Wednesday, December 17, 2014**, after which time they will be publicly opened and read at 3:15 p.m. in the Council Chambers of said City:

#### CONSTRUCTION OF MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149 B2014-59

Specifications are available on the City's website at <http://www.torranceca.gov/27746.htm>

Those who only view and/or print the Specifications from the City's website will not automatically be added to the City's Plan Holder list for this project.

**The official Bidder's Submittal packet must be obtained from the Office of the City Clerk, City Hall, 3031 Torrance Boulevard, Torrance, California. Contact the City Clerk's office at (310) 781-7530 or [CityClerk@TorranceCA.gov](mailto:CityClerk@TorranceCA.gov) for more information. There is no cost if the Bidder's Submittal is obtained at City Hall. A payment of \$5 is required if requested by mail.** The amount includes tax and is not refundable. A prospective bidder must provide to the City Clerk the firm's name, address, telephone and fax numbers, a contact person and a valid email address. This will ensure that your firm is listed as a "Plan Holder" and that you will be informed of any and all information issued subsequent to obtaining the official form of Proposal. Addenda will be issued only by email and only to those that provide the required information to the City Clerk. Receipt of any Addendum must be acknowledged by a bidder in its submitted form of Proposal. **If a bidder submits its Bidder's Submittal on forms other than the official Bidder's Submittal forms, the City may declare the bid as non-responsive.**

A bound Specifications booklet may also be obtained at the same Office of the City Clerk, upon payment of \$20 if obtained at City Hall, or payment of \$25 if requested by mail. Both amounts include tax. Neither amount is refundable. The \$25 includes a copy of the official Bidder's Submittal packet. If requesting any item(s) by mail, please send check to the following:

CITY OF TORRANCE  
OFFICE OF THE CITY CLERK  
3031 TORRANCE BLVD  
TORRANCE, CA 90509  
ATTN: B2014-59

The Engineer's estimate of the contract total is between \$880,000 and \$924,000 for the base bid. All work shall be completed within 90 working days from the date of the Notice to Proceed (NTP).

Per Division 2, Chapter 2 of the Torrance Municipal Code, the Torrance City Council may reject any and all bids, waive any informality or irregularity in such bids, and determine the lowest responsible bidder. No facsimile bids shall be accepted by the City.

**All bidders shall submit the required Bidder's Liner Methodology Qualifications package with their bid.**

Substitution of securities for withheld funds is permitted per Section 22300 of the Public Contract Code.

The City has determined that a Class **A** Contractor's license is necessary to bid this project, but reserves the right to accept another Class at the sole discretion of either the Public Works Director or Engineer.

This project is using local funds and pursuant to Section 1770 et seq. of the California Labor Code, the minimum prevailing rate of per diem wages for each craft, classification, or type of workman needed to execute the Contract shall be those determined by the Director of Industrial Relations of the State of California ("DIR"). These wages are set forth in the General Prevailing Wage Rates for this project, available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov/DLSR/PWD>.

**This contract is subject to compliance monitoring and enforcement by the DIR. If this project has a bid opening date of March 1, 2015 or later, any contractor and any subcontractor must register in order to submit a bid and be awarded a contract. Also refer to Special Provisions Section 7-2.6 of this document. (SB854)**

By order of the City Council of the City of Torrance, California.

For further information, please contact Beth Overstreet, P.E., Engineering Manager in the Public Works Department at (310) 618-3074.



**SECTION B**

**INSTRUCTIONS TO BIDDERS**

## CITY OF TORRANCE, CALIFORNIA

### INSTRUCTIONS TO BIDDERS

#### A. QUALIFICATION OF BIDDERS

##### 1. Competency of Bidders

The Bidder shall be thoroughly competent and capable of satisfactorily performing the Work covered by the Bid. As specified in the Bid Documents, the Bidder shall furnish statements of previous experience on similar work. When requested, the Bidder shall also furnish the plan of procedure proposed; the organization, machinery, plant and other equipment available for the Work; evidence of its financial condition and resources; and any other such documentation as may be required by the City to determine if the Bidder is responsible.

##### 2. Contractor's License

At the time of submitting the Bid, the Bidder shall be licensed as a contractor in accordance with the provisions of Chapter 9, Division 3, of the California Business and Professions Code. The required prime contractor license class for the Work is shown in the project Notice Inviting Bids. However, the City reserves the right to award the Contract to a contractor with another class if the City determines that the license is proper for the work.

##### 3. Contractor Registration Requirements

SB 854 amended the Labor Code to require all contractors bidding on public work to register with the Department of Industrial Relations (DIR) and to pay an annual fee. The registration requires contractors to provide the State with evidence of the contractors' compliance with a number of statutory requirements. The registration requirement took effect on July 1, 2014.

##### 4. Bidder's Submittal and Contract Award Prohibited

Under California Labor Code section 1771.1, as amended by SB 854, unless registered with the DIR, a contractor may not bid, nor be listed as a subcontractor, for any bid proposal submitted for public work on or after March 1, 2015. Similarly, a public entity cannot award a public work contract to a non-registered contractor, effective April 1, 2015.

#### B. BIDDER RESPONSIBILITY

A responsible Bidder is a Bidder who has demonstrated the attribute of trustworthiness, as well as ability, fitness, capacity and experience to satisfactorily perform the work.

Bidders are notified that, in accordance with Division 2, Chapter 2 of the Torrance Municipal Code, the City Council may determine whether the Bidder is responsible based on a review of the Bidder's performance on other contracts.

If, based on the provision and criteria in Division 2, Chapter 2 of the Torrance Municipal Code, the Public Works Director proposes not to recommend the award of contract to the

apparent low bidder, the Director shall notify the Bidder in writing of its intention to recommend to the City Council that the Council award the contract to the 2<sup>nd</sup> lowest responsible bidder. If the Bidder presents evidence in rebuttal to the recommendation, the Director shall evaluate the merits of such evidence, and based on that evaluation, make a recommendation to the City Council.

C. **ADDENDA TO THE CONTRACT DOCUMENTS**

The City may issue Addenda to the Contract Documents during the period of advertising for any reason. Addenda will be issued only by email and to those considered "Plan Holders". Refer to the Notice Inviting Bid for instructions on becoming a "Plan Holder". The Bidder shall acknowledge the receipt of the Addenda in their Bid. Failure of the Bidder to do so may result in the rejection of the Bid as non-responsive.

D. **PREPARATION OF THE BID**

1. Examination of Site, Plans and Specifications

Prior to submitting a Bid, the Bidder shall examine the Plans and the Work site, carefully read the Specifications, and satisfy itself that it has the abilities and resources to complete the Work. The Bidder agrees that if it is awarded the Contract, no claim will be made against the City based on ignorance or misunderstanding of the provisions of the Contract Documents, the nature and amount of the work, and the physical and climatic conditions of the work site.

2. Estimated Quantities

The quantities shown in the Bid are approximate only. The Contractor will be paid for the actual quantities of work based on field measurements as provided for in these Specifications. The City reserves the right to increase or decrease the amount of any item or portion of work to be performed or materials furnished, or to delete any item, in accordance with the Specifications.

3. Bid Instructions and Submissions

The Bid shall be submitted on the Bidder's Submittal forms provided by the City Clerk. All Bid Documents listed below must be completed, executed and submitted with the Bid by the Bidder.

Required Bidder's Submittal Documents:

- 1) Bidder's Submittal
- 2) Addenda Acknowledgment Of Addenda Received
- 3) Contractor's Affidavit
- 4) Bid Bond (10%)
- 5) List of Subcontractors
- 6) References (2 pages)
- 7) Violations of Federal or State Law
- 8) Disqualification or Debarment
- 9) Experience Statement
- 10) Bidder's Liner Methodology Qualifications Package [Note: The Bid submittal requirements supplement Section 500-1 of the Standard Specifications.]

All prices submitted will be considered as including any and all sales or use taxes. For any individual bid item, in the case of a discrepancy between its unit price and total bid, the unit price shall always prevail.

4. Disadvantaged Business Enterprise (DBE) Requirements

This project has no DBE requirements.

E. BID BOND

The Bid must be accompanied by either cash, a certified or cashier's check or a surety bond (bid bond) payable to the City of Torrance. Bids must be submitted on the proposal forms furnished by the Public Works Department. The Bid Guaranty shall be in an amount equivalent to at least 10% of the Total Contract Bid Price.

F. NONRESPONSIVE BIDS AND BID REJECTION

1. A Bid in which any one (1) of the required sixteen (16) Bid proposal documents are not completed, executed and submitted may be considered non-responsive and be rejected.
2. A Bid in which the Contract Unit Prices are unbalanced, which is incomplete or which shows alteration of form or irregularities of any kind, or which contains any additions or conditional or alternate Bids that are not called for, may be considered non-responsive and be rejected.

G. AWARD OF CONTRACT

In accordance with Division 2, Chapter 2 of the Torrance Municipal Code, the City Council reserves the right to reject any and all bids received, to take all bids under advisement for a period not-to-exceed sixty (60) days after date of opening thereof, to waive any informality or irregularity in the Bid, and to be the sole judge of the merits of material included in the respective bids received.

No less than 2 weeks prior to the anticipated City Council meeting awarding a contract as a result of the Notice Inviting Bids, the City will notify all of the vendors that submitted a bid of the intention to award.

City of Torrance Bid/RFP Protest Procedures: The City of Torrance Bid/RFP Protest Procedures may be found on the City of Torrance website:  
[http://www.torranceca.gov/PDF/Bid\\_RFP\\_Protest\\_Procedures.pdf](http://www.torranceca.gov/PDF/Bid_RFP_Protest_Procedures.pdf)

H. EXECUTION OF CONTRACT

After the Contract is awarded, the awardee shall execute the following eight (8) documents:

- 1) Performance Bond (100% of Bid)
- 2) Labor and Material Bond (100% of Bid)
- 3) Contract - Public Works Agreement
- 4) Verification of Insurance Coverage (Certificates and Endorsements)
- 5) Construction or Service Contract Endorsement
- 6) Workers' Compensation Insurance Certificate

- 7) Construction Permit Application Form
- 8) Business License Application Form

I. APPRENTICESHIP EMPLOYMENT STANDARDS

The Contractor is directed to the provisions in Sections 1776, 1777.5 and 1777.6 of the California Labor Code concerning the employment of apprentices by the contractor or any subcontractor under them.

J. PERMITS, LICENSES AND PUBLIC WORKS AGREEMENT

The Contractor shall procure and execute all permits, licenses, pay all charges and fees, and give all notices necessary and incidental to the completion of the Work. The Contractor shall execute a Public Works Agreement. No fee is charged for a Construction-Excavation Permit issued by the City of Torrance for a public works project. The Contractor shall obtain a City of Torrance Business License.

K. INSURANCE

The Contractor shall maintain Automobile Liability, General Liability and Workers' Compensation Insurance as specified in the Public Works Agreement included in the Project Specifications.

L. PRE-BID INQUIRIES

A Bidder with a Pre-Bid Inquiry must submit their question(s) in writing to the Torrance Public Works Department. Any and all questions must be emailed to Elizabeth Overstreet, Engineering Manager at EOverstreet@TorranceCA.gov. Please list "**MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149 RFI**" in the subject line of the email.

All questions must be received no later than 1:00 p.m. on the Wednesday one week prior to the date for opening the bids. Questions received after this date may not be considered. For questions of a general nature, a bidder may call Elizabeth Overstreet directly at (310) 618-3074.



**SECTION C**  
**BID DOCUMENTS**

**BIDDER'S SUBMITTAL**

**PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT FOR THE CONSTRUCTION OF  
MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149  
B2014-59**

Company: \_\_\_\_\_

**This Bid requires a Bidder to separately list its Total Bid pricing for the 2 options listed below.** The Bidder must list its Total Bid price in numbers for each option. If a Bidder fails to list its Total Bid price for any one option, the Bidder would be considered non-responsive for that option only.

The City will determine the lowest responsible bidder for each of the options. For the purpose of awarding the contract, the City will select one of the options only and subsequently recommend award to the Bidder who is determined the lowest responsible bidder for the City's selected option.

In the event a Bidder does not correctly list its Total Bid pricing on this page, the City will determine the correct Total Bid pricing from the individual bid schedules included herein.

Options (list Total Bid in numbers)

1. Total Bid (Base Bid Schedule A): \$ \_\_\_\_\_

2. Total Bid (Base Bid Schedule A + Additive Bid Schedule B): \$ \_\_\_\_\_

## BIDDER'S SUBMITTAL

### PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT FOR THE CONSTRUCTION OF MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149 B2014-59

Honorable Mayor and Members  
of the Torrance City Council  
Torrance, California

Members of the Council:

In accordance with the Notice Inviting Bids pertaining to the receiving of sealed proposals by the City Clerk of the City of Torrance for the above titled improvement, the undersigned hereby proposes to furnish all Work to be performed in accordance with the Plans, Specifications, Standard Drawings, and the Contract Documents, for the unit price or lump sum set forth in the following schedule.

### MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149

#### BASE BID SCHEDULE A

Item No.	Est. Qty	Units	Bid Item Description	Spec. Section	Unit Price	Total Bid
1	1	LS	MOBILIZATION	9-3.4		
2	1	LS	TRAFFIC CONTROL	7-10		
3	1	LS	BEST MANAGEMENT PRACTICES	7-8.6.2		
4	930	LF	INSTALL LINER IN 8 INCH VCP SEWER ON PASEO DE GRANADA FROM MANHOLE 92-6-21 TO MANHOLE 101-2-01, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg#23 & 26)		
5	26	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON PASEO DE GRANADA BETWEEN MANHOLE 92-6-21 TO MANHOLE 101-2-01	500-1.1.7(a) (Appendix V, Dwg# 23 & 26)		
6	1001	LF	INSTALL LINER IN 8 INCH VCP SEWER ON CALLE MIRAMAR FROM MANHOLE 93-4-08 TO MANHOLE 92-6-08, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 50, 53 & 56)		
7	16	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON CALLE MIRAMAR BETWEEN MANHOLE 93-4-08 TO MANHOLE 92-6-08	500-1.1.7(a) (Appendix V, Dwg# 50, 53 & 56)		
8	356	LF	INSTALL LINER IN 8 INCH VCP SEWER ON VIA ALAMEDA FROM MANHOLE 101-1-13 TO MANHOLE 101-1-05, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 16)		

Item No.	Est. Qty	Units	Bid Item Description	Spec. Section	Unit Price	Total Bid
9	9	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON VIA ALAMEDA BETWEEN MANHOLE 101-1-13 TO MANHOLE 101-1-05	500-1.1.7(a) (Appendix V, Dwg# 16)		
10	3050	LF	INSTALL LINER IN 8 INCH VCP SEWER ON VIA PASQUAL FROM MANHOLE 101-3-04 TO MANHOLE 91-6-10, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 1, 4, 6, 9 & 13)		
11	72	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON VIA PASQUAL BETWEEN MANHOLE 101-3-04 TO MANHOLE 91-6-10	500-1.1.7(a) (Appendix V, Dwg# 1, 4, 6, 9 & 13)		
12	1792	LF	INSTALL LINER IN 8 INCH VCP SEWER ON VIA MONTE D'ORO FROM MANHOLE 92-5-31 TO MANHOLE 92-1-15, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 9, 31, 34, 38, 41 & 42)		
13	35	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON VIA MONTE D'ORO BETWEEN MANHOLE 92-5-31 TO MANHOLE 92-1-15	500-1.1.7(a) (Appendix V, Dwg# 9, 31, 34, 38, 41 & 42)		
14	1403	LF	INSTALL LINER IN 8 INCH VCP SEWER ON CALLE DE MADRID FROM MANHOLE 102-1-08 TO MANHOLE 92-6-18, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 64, 68 & 71)		
15	45	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON CALLE DE MADRID BETWEEN MANHOLE 102-1-08 TO MANHOLE 92-6-18	500-1.1.7(a) (Appendix V, Dwg# 64, 68 & 71)		
16	200	LF	INSTALL LINER IN 8 INCH VCP SEWER ON VIA LOS MIRADORES FROM MANHOLE 92-4-08 TO MANHOLE 91-6-11, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 48)		
17	7	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON VIA LOS MIRADORES BETWEEN MANHOLE 92-4-08 TO MANHOLE 91-6-11	500-1.1.7(a) (Appendix V, Dwg# 48)		
18	354	LF	INSTALL LINER IN 8 INCH VCP SEWER ON CALLE DE ARBOLES FROM MANHOLE 101-1-17 AND MANHOLE 101-2-11, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 19)		
19	13	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON CALLE DE ARBOLES BETWEEN MANHOLE 101-1-17 AND MANHOLE 101-2-11	500-1.1.7(a) (Appendix V, Dwg# 19)		

Item No.	Est. Qty	Units	Bid Item Description	Spec. Section	Unit Price	Total Bid
20	291	LF	INSTALL LINER IN 8 INCH VCP SEWER ON CALLE DE ANDALUCIA FROM MANHOLE 102-1-11 AND MANHOLE 101-3-07, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 29)		
21	8	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON CALLE DE ANDALUCIA BETWEEN MANHOLE 102-1-11 AND MANHOLE 101-3-07	500-1.1.7(a) (Appendix V, Dwg# 29)		
22	263	LF	INSTALL LINER IN 8 INCH VCP SEWER ON PASEO DE LAS DELICIAS FROM MANHOLE 83-2-03 TO MANHOLE 83-2-02, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 62)		
23	5	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON PASEO DE LAS DELICIAS BETWEEN MANHOLE 83-2-03 TO MANHOLE 83-2-02	500-1.1.7(a) (Appendix V, Dwg# 62)		
24	200	LF	INSTALL LINER IN 8 INCH VCP SEWER ON VISTA DEL SOL FROM MANHOLE 91-5-02 TO MANHOLE 91-5-01, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix V, Dwg# 58)		
25	7	EA	RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD ON VISTA DEL SOL BETWEEN MANHOLE 91-5-02 AND MANHOLE 91-5-01	500-1.1.7(a) (Appendix V, Dwg# 58)		
26	1	EA	POINT REPAIR ON 8" VCP SEWER ON VIA PASQUAL, APPROXIMATELY 12 FEET DEEP. REMOVE AND REPLACE 12 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 91-6-10. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg# 1 & 2)		
27	1	LS	POINT REPAIR ON 8" VCP SEWER ON VIA PASQUAL, APPROXIMATELY 7 FEET DEEP. REMOVE AND REPLACE 8 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 92-5-30. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg# 9 & 10)		
28	1	LS	POINT REPAIR ON 8" VCP SEWER AND DROP CONNECTION ON VIA PASQUAL, APPROXIMATELY 8 FEET DEEP. REMOVE AND REPLACE 8 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 92-5-31. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg# 9 & 10)		
29	1	LS	POINT REPAIR ON 8" VCP SEWER ON VIA LOS MIRADORES, APPROXIMATELY 6 FEET DEEP. REMOVE AND REPLACE 6 FEET MAXIMUM LENGTH OF PIPE. POINT	500-1.1.9, 500-1.2-7 (Appendix V, Dwg# 44 &		

Item No.	Est. Qty	Units	Bid Item Description	Spec. Section	Unit Price	Total Bid
			REPAIR LOCATION IS APPROXIMATELY 38' FROM MANHOLE 92-5-06. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	45)		
30	1	LS	POINT REPAIR ON 8" VCP SEWER ON VIA LOS MIRADORES, APPROXIMATELY 7 FEET DEEP. REMOVE AND REPLACE 4 FEET MAXIMUM LENGTH OF PIPE. POINT REPAIR LOCATION IS APPROXIMATELY 72' FROM MANHOLE 92-5-06. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg# 44 & 45)		
31	1	LS	POINT REPAIR ON 8" VCP SEWER ON VISTA DEL SOL, APPROXIMATELY 7 FEET DEEP. REMOVE AND REPLACE 8 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 91-5-01. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg# 58 & 59)		
32	1	LS	POINT REPAIR ON 8" VCP SEWER 242ND ST, APPROXIMATELY 8 FEET DEEP. REMOVE AND REPLACE 10 FEET MAXIMUM LENGTH OF PIPE. LOCATION IS APPROXIMATELY 100' FROM MANHOLE 104-1-09. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#75 & 76)		
33	1	LS	POINT REPAIR ON 8" VCP SEWER ON 242ND ST, APPROXIMATELY 8 FEET DEEP. REMOVE AND REPLACE 10 FEET MAXIMUM LENGTH OF PIPE. LOCATION IS APPROXIMATELY 228' FROM MANHOLE 104-1-09. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#75 & 76)		
34	1	LS	POINT REPAIR ON 8" VCP SEWER ON 242ND ST, APPROXIMATELY 8 FEET DEEP. REMOVE AND REPLACE 6 FEET MAXIMUM LENGTH OF PIPE. LOCATION IS APPROXIMATELY 10' FROM MANHOLE 104-1-10. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#75 & 76)		
35	1	EA	12" DIAMETER TULIP TREE REMOVAL AND ROOTS	300-1.3, 300-1.4 (Appendix V, Dwg#75)		
36	1	EA	PLANT 15 GAL CRAPE MYRTLE NEW TREE	308-4 (Appendix V, Dwg#75)		
37	2000	SF	PROVISIONAL REMOVE AND CONSTRUCT PCC DRIVEWAY APPROACH	303-5.9, (Appendix V, Dwg#77)		
38	1	EA	PROVISIONAL TREE REMOVAL UP TO 12" DIAMETER AND ROOTS	300-1.3, 300-1.4 (Appendix V, Dwg#77)		

Item No.	Est. Qty	Units	Bid Item Description	Spec. Section	Unit Price	Total Bid
39	1	EA	PROVISIONAL PLANT 15 GAL CRAPE MYRTLE NEW TREE	308-4 (Appendix V, Dwg#77)		
40	128	LF	PROVISIONAL PIPELINE REPAIR ON 8" VCP SEWER ON 242ND ST, APPROXIMATELY 8 FEET DEEP. REMOVE AND REPLACE 128 FEET MAXIMUM LENGTH OF PIPE. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#77)		
41	1	LS	POINT REPAIR ON 8" VCP SEWER ON OCEAN, APPROXIMATELY 8 FEET DEEP. REMOVE AND REPLACE 6 FEET MAXIMUM LENGTH OF PIPE. LOCATION IS APPROXIMATELY 8' FROM MANHOLE 104-1-10. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#75 & 76)		
42	30	LF	PROVISIONAL ITEM FOR POINT REPAIR/REPLACEMENT ON 8" VCP SEWER, INCLUDING, IF NECESSARY, LATERAL SERVICE CONNECTION, APPROXIMATELY 8 FEET DEEP, INCLUDING POST-REPAIR CCTV VIDEO INSPECTION RECORDED TO EXTERNAL HARD DRIVE PRIOR TO PLACING PERMANENT RESURFACING	500-1.1.9, 500-1.2-7		
43	30	LF	PROVISIONAL ITEM FOR ADDITIONAL LENGTH OF PIPE TO BE REPAIRED AT POINT REPAIR LOCATIONS UP TO APPROXIMATELY 8 FEET DEPTH	500-1.1.9, 500-1.2-7		
44	10	EA	PROVISIONAL ITEM FOR ADDITIONAL MANHOLE CHANNEL/SHELF TO BE REPAIRED WITH RAPID SETTING CONCRETE	500-2.10.2 (Appendix V)		
45	1	LS	POINT REPAIR ON 8" VCP SEWER ON VIA PASQUAL, APPROXIMATELY 7 FEET DEEP. REMOVE AND REPLACE WYE CONNECTION AND LATERAL APPROXIMATELY 42 FEET FROM MANHOLE 092-5-30. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#8, 9,&10)		
46	1	LS	POINT REPAIR ON 8" VCP SEWER ON VIA ALAMEDA, APPROXIMATELY 6 FEET DEEP. REMOVE AND REPLACE WYE CONNECTIONS AND LATERALS APPROXIMATELY 112 FEET FROM MANHOLE 101-1-13. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix V, Dwg#15 &16)		
47	45	EA	WITH RAPID-SETTING CONCRETE: FILL/REPAIR VOIDS IN UNDERLYING MANHOLE CHANNEL/SHELF, AND REPAIR CHANNEL AND SHELF	500-2.10.2(Appen dix V)		
48	2	EA	PRUNE TREE ROOTS ALONG THE SIDEWALK ONLY AT 103 AND 109 VIA ALAMEDA	300-1.3(Appendix V, Dwg#16)		

Item No.	Est. Qty	Units	Bid Item Description	Spec. Section	Unit Price	Total Bid
49	400	SF	REOMVE EXISTING AND CONSTRUCT 3 1/2" PCC SIDEWALK OVER 4" CMB	303-5.13(Appendi x V, Dwg#16)		
50	10	EA	SURVEY MONUMENTS (PROVISIONAL)	2-9.1		

**TOTAL BASE BID SCHEDULE A PRICE \$ \_\_\_\_\_**  
 (Figures)\*

**TOTAL BASE BID SCHEDULE A PRICE: \_\_\_\_\_**  
 (Words)\*

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**\*BID MAY BE REJECTED IF TOTAL IS NOT SHOWN IN FIGURES AND WORDS.**

Additive Bid Schedule B may be included in the contract awarded for this project. The City may choose to award the contract for Base Bid Schedule A, or from the combination of Base Bid Schedule A and Additive Bid Schedule B. If Additive Bid Schedule B is to be included in the contract, the lowest responsible bidder will be determined on the total amount shown for Base Bid Schedule "A" plus the total amount for Additive Bid Schedule "B". The City reserves the right to award the contract for only Base Bid Schedule A to the lowest responsible bidder based on the amount shown only in Base Bid Schedule A.

**MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149  
ADDITIVE BID SCHEDULE B**

Item #	Est. Qty	Unit	Bid Item Description	SPEC. SECTION	Unit Price	Total Bid
1	1	LS	MOBILIZATION			
2	1	LS	TRAFFIC CONTROL			
3	1	LS	BEST MANAGEMENT PRACTICES	7-8.6.2		
4	330	LF	BORDER AVE ALLEY INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 73-4-11 TO MANHOLE 73-4-03, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#1)		
5	11	EA	BORDER AVE ALLEY RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 73-4-11 AND MANHOLE 73-4-03	500-1.1.7(a) (Appendix VI, Dwg#1)		
6	255	LF	CRAVENS AVE ALLEY INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 66-1-19 TO MANHOLE 66-1-16, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#12)		
7	12	EA	CRAVENS AVE ALLEY RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 66-1-19 AND MANHOLE 66-1-16	500-1.1.7(a) (Appendix VI, Dwg#12)		
8	241	LF	ZAKON RD INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 85-1-06 TO MANHOLE 85-1-03, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#11)		
9	6	EA	ZAKON RD RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 85-1-06 TO MANHOLE 85-1-03	500-1.1.7(a) (Appendix VI, Dwg#11)		
10	296	LF	CALLE MAYOR INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 85-2-05 TO MANHOLE 76-5-25, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#3)		

Item #	Est. Qty	Unit	Bid Item Description	SPEC. SECTION	Unit Price	Total Bid
11	11	EA	CALLE MAYOR RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 85-2-05 AND MANHOLE 76-5-25	500-1.1.7(a) (Appendix VI, Dwg#3)		
12	132	LF	CALLE MAYOR INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 85-2-04 TO MANHOLE 85-2-05, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#6)		
13	1	EA	CALLE MAYOR RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 85-2-04 AND MANHOLE 85-2-05	500-1.1.7(a) (Appendix VI, Dwg#6)		
14	240	LF	CALLE MAYOR INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 85-1-08 TO MANHOLE 85-2-04, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#6)		
15	1	EA	CALLE MAYOR RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 85-1-08 AND MANHOLE 85-2-04	500-1.1.7(a) (Appendix VI, Dwg#6)		
16	322	LF	CALLE MIRAMAR INSTALL LINER IN 8 INCH VCP SEWER FROM MANHOLE 82-6-09 TO MANHOLE 82-6-05, INCLUDING POST-INSTALLATION VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.4.9 (Appendix VI, Dwg#8)		
17	5	EA	CALLE MIRAMAR RECONNECT EXISTING SEWER SERVICE LATERAL TO LINED SEWER PIPE BY TRENCHLESS METHOD BETWEEN MANHOLE 82-6-09 AND MANHOLE 82-6-05	500-1.1.7(a) (Appendix VI, Dwg#8)		
18	1	LS	GRAMERCY PL POINT REPAIR ON 8" VCP SEWER, APPROXIMATELY 25 FEET DEEP. REMOVE AND REPLACE 8 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 29-4-06. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix VI, Dwg#9 & 10)		
19	1	LS	BORDER AVE ALLEY POINT REPAIR ON 8" VCP SEWER, APPROXIMATELY 5 FEET DEEP. REMOVE AND REPLACE 6 FEET MAXIMUM LENGTH OF PIPE. POINT REPAIR LOCATION APPROXIMATELY 50' FROM MANHOLE 73-4-03. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix VI, Dwg#1)		
20	87	LF	CALLE MAYOR SURVEY AS NEEDED, REMOVE AND REPLACE 8" VCP SEWER,	500-1.1.9, 500-1.2-7		

Item #	Est. Qty	Unit	Bid Item Description	SPEC. SECTION	Unit Price	Total Bid
			APPROXIMATELY 2 FEET DEEP. REMOVE AND REPLACE 87 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 85-1-09 AND 85-1-12. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	(Appendix VI, Dwg#2)		
21	1	LS	CALLE MIRAMAR ALLEY POINT REPAIR ON 8" VCP SEWER APPROXIMATELY 114' FROM MANHOLE, APPROXIMATELY 6 FEET DEEP. REMOVE AND REPLACE 6 FEET MAXIMUM LENGTH OF PIPE. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix VI, Dwg#8)		
22	1	EA	VIA LE SELVA POINT REPAIR ON 8" VCP SEWER, APPROXIMATELY 7 FEET DEEP. REMOVE AND REPLACE 10 FEET MAXIMUM LENGTH OF PIPE. RECONNECT NEW PIPE TO EXISTING MANHOLE 92-1-31. POST-REPAIR CCTV VIDEO-INSPECTION RECORDED TO AN EXTERNAL HARD DRIVE	500-1.1.9, 500-1.2-7 (Appendix VI, Dwg#13)		
23	5	EA	WITH RAPID-SETTING CONCRETE: FILL/REPAIR VOID(S) IN AND/OR UNDERLYING MANHOLE CHANNEL/SHELF, AND REPAIR CHANNEL AND SHELF	500-2.10.2(Appendix VI)		
24	20	LF	PROVISIONAL ITEM FOR ADDITIONAL LENGTH OF PIPE TO BE REPAIRED AT POINT REPAIR LOCATIONS	500-1.1.9, 500-1.2-7 (Appendix VI)		
25	5	EA	PROVISIONAL ITEM FOR ADDITIONAL MANHOLE CHANNEL/SHELF TO BE REPAIRED WITH RAPID SETTING CONCRETE	500-2.10.2 (Appendix VI)		
26	80	SF	REMOVE AND CONSTRUCT 4' PCC RIBBON GUTTER	303-5.9, (Appendix VI)		
27	3000	SF	REMOVE AND CONSTRUCT PCC DRIVEWAY APPROACH	303-5.9, (Appendix VI)		
28	10	EA	SURVEY MONUMENTS (PROVISIONAL)	2-9.1		

**TOTAL BID PRICE ALTERNATE SCHEDULE B \$** \_\_\_\_\_  
 (Figures)\*

**TOTAL BID PRICE ALTERNATE SCHEDULE B:** \_\_\_\_\_  
 (Words)\*

**\*BID MAY BE REJECTED IF TOTAL IS NOT SHOWN IN FIGURES AND WORDS.**

**B2014-59**

**BIDDER'S SUBMITTAL (Continued) B2014-59**

The undersigned furthermore agrees to enter into and execute a contract, with necessary bonds, at the unit prices set forth herein and in case of default in executing such contract, with necessary bonds, the check or bond accompanying this bid and the money payable thereon shall be forfeited thereby to and remain the property of the City of Torrance.

The above unit prices include all work appurtenant to the various items as outlined in the Specifications and all work or expense required for the satisfactory completion of said items. In case of discrepancies between unit prices and totals, the unit prices shall govern.

The undersigned declares that it has carefully examined the Plans, Specifications, and Contract Documents, and has investigated the site of the work and is familiar with the conditions thereon.

Contractor: \_\_\_\_\_

Date: \_\_\_\_\_ By: \_\_\_\_\_

Contractor's State License No. \_\_\_\_\_ Class \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

**ACKNOWLEDGMENT OF ADDENDA RECEIVED – B2014-59**

The Bidder shall acknowledge the receipt of addenda by placing an "X" by each addendum received.

Addendum No. 1 \_\_\_\_\_

Addendum No. 2 \_\_\_\_\_

Addendum No. 3 \_\_\_\_\_

Addendum No. 4 \_\_\_\_\_

Addendum No. 5 \_\_\_\_\_

Addendum No. 6 \_\_\_\_\_

Addendum No. 7 \_\_\_\_\_

Addendum No. 8 \_\_\_\_\_

If an addendum or addenda have been issued by the City and not noted above as being received by the Bidder, the Bid Proposal may be rejected.

\_\_\_\_\_  
Bidder's Signature

\_\_\_\_\_  
Date

**CONTRACTOR'S AFFIDAVIT**

STATE OF CALIFORNIA     }  
  }  
COUNTY OF \_\_\_\_\_}

**B2014-59**

\_\_\_\_\_, being first duly sworn, deposes and says:

1. That he is the

\_\_\_\_\_  
Title

of \_\_\_\_\_  
(Name of Partnership, Corporation, or Sole Proprietorship)

hereinafter called "Contractor," who has submitted to the City of Torrance a proposal for the Construction of **MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149.**

2. That said proposal is genuine; that the same is not sham; that all statement of facts therein are true;
3. That such proposal was not made in the interest or behalf of any person, partnership, company, association, organization or corporation not named or disclosed;
4. That the Contractor did not, directly or indirectly, induce, solicit or agree with anyone else to submit a false or sham bid, to refrain from bidding, or to withdraw the bid, to raise or fix the bid price of the Contractor or anyone else, or to raise or fix any overhead, profit or cost element of the Contractor's price or the price of anyone else; and did not attempt to induce action prejudicial to the interest of the City of Torrance, or of any other bidder, or anyone else interested in the proposed contract;
5. That the Contractor has not in any manner sought by collusion to secure for itself an advantage over any other bidder or to induce action prejudicial to the interests of the City of Torrance, or of any other bidder or of anyone else interested in the proposed contract;
6. That the Contractor has not accepted any bid from any subcontractor or materialman through any bid depository, the bylaws, rules or regulations of which prohibit or prevent the Contractor from considering any bid from any subcontractor or materialman, which is not processed through said bid depository, or which prevent any subcontractor or materialman from bidding to any contractor who does not use the facilities of or accept bids from or through such bid depository;

**CONTRACTOR'S AFFIDAVIT (CONTINUED)**

**B2014-59**

7. That the Contractor did not, directly or indirectly, submit the Contractor's bid price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any individual or group of Individuals, except to the City of Torrance, or to any person or persons who have a partnership or other financial interest with said Contractor in its business.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Subscribed and Sworn to  
before me this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Contractor)  
\_\_\_\_\_  
(Title)

\_\_\_\_\_  
Notary Public in and for said  
County and State.  
(Seal)

**BID BOND (10%)  
B2014-59**

**KNOW ALL MEN BY THESE PRESENTS:** That we, \_\_\_\_\_

\_\_\_\_\_

as principal, and \_\_\_\_\_

as sureties, are held and firmly bound unto the City of Torrance, State of California, in the penal sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_), for the payment whereof we hereby bind ourselves, our successors, heirs, executors or administrators jointly and severally, firmly by these presents.

The condition of this obligation is such that, whereas the above bounded principal is about to file with and submit to the City of Torrance a bid or proposal for the performance of certain work as required in the City of Torrance, Project No. B2014-59, said work being: the MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149, and in compliance with the Specifications therefor under an invitation of said City contained in a notice or advertisement for bids or proposals; now if the bid or proposal of the said principal shall be accepted and if the said work be thereupon awarded to the principal by said City and if the said principal shall enter into a contract with the said City in accordance with said bid or proposal, or if the bid or proposal of the said principal is rejected, then this bond shall be void and of no effect and otherwise in full force and effect.

**WITNESS** our hands this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety/Attorney-in-Fact

\_\_\_\_\_  
Signature

Name: \_\_\_\_\_  
Local Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_

## LIST OF SUBCONTRACTORS: B2014-59

The Bidder is required to fill in the following blanks in accordance with the provisions of the California Public Contract Code Sections 4100-4114, CHAPTER 4. SUBLETTING AND SUBCONTRACTING. The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of Title 49 CFR (Code of Federal Regulations) part 26 in the award and administration of US DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate. Each subcontract signed by the bidder must include this assurance. Failure of the bidder to fulfill the requirements of the Special Provisions for submittals required to be furnished after bid opening, including but not limited to escrowed bid documents, where applicable, may subject the bidder to a determination of the bidder's responsibility in the event it is the apparent low bidder on a future public works contracts.

Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

Name Under Which Subcontractor is Licensed: \_\_\_\_\_

Subcontractor's Address: \_\_\_\_\_

Specific Description of Sub-Contract: \_\_\_\_\_

License Number: \_\_\_\_\_ CA License Classification/Type: \_\_\_\_\_

Subcontractors listed must be properly licensed under the laws of the State of California for the type of work which they are to perform. Do not list alternate subcontractors for the same work.

The Bidding Contractor must include each subcontractor's contract license number (AB 44). An inadvertent error in listing the subcontractor's license number shall not be grounds for filing a bid protest, or grounds for considering the bid nonresponsive, if the corrected contractor's license number is submitted to the public entity by the prime contractor within 24 hours after the bid opening – provided that the corrected license number corresponds to the submitted name and location of the subcontractor.

**REFERENCES (Page 1 of 2)**  
**B2014-59**

List work similar in magnitude and degree of difficulty completed by the Contractor within the past three (3) years.

1. Name (Firm/Agency): \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_  
Title of Project: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Date of Completion: \_\_\_\_\_ Contract Amount: \$ \_\_\_\_\_
  
2. Name (Firm/Agency): \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_  
Title of Project: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Date of Completion: \_\_\_\_\_ Contract Amount: \$ \_\_\_\_\_
  
3. Name (Firm/Agency): \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_  
Title of Project: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Date of Completion: \_\_\_\_\_ Contract Amount: \$ \_\_\_\_\_
  
4. Name (Firm/Agency): \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Telephone No.: \_\_\_\_\_  
Title of Project: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Date of Completion: \_\_\_\_\_ Contract Amount: \$ \_\_\_\_\_

**REFERENCES (PAGE 2 OF 2)**  
**B2014-59**

If Contractor has not performed work for the City of Torrance within the last five (5) years, list all work done within said five years (attach additional sheets if necessary). Note if work was done as subcontractor [include only subcontract amount]:

Work Description & Contract Amount	Agency	Date Completed

Contractor's License No.: \_\_\_\_\_ Class: \_\_\_\_\_

a. Date first obtained: \_\_\_\_\_ Expiration: \_\_\_\_\_

b. Has License ever been suspended or revoked? \_\_\_\_\_

If yes, describe when and why: \_\_\_\_\_

c. Any current claims against License or Bond? \_\_\_\_\_

If yes, describe claims: \_\_\_\_\_

Principals in Company (List all – attach additional sheets if necessary):

NAME	TITLE (If Applicable)	LICENSE NO.
_____	_____	_____
_____	_____	_____
_____	_____	_____

**VIOLATIONS OF FEDERAL, STATE OR LOCAL LAWS  
B2014-59**

1. Has your firm or its officers been assessed any penalties by an agency for noncompliance or violations of Federal, State or Local labor laws and/or business or licensing regulations within the past five (5) years relating to your construction projects?

Yes/No: \_\_\_\_\_ Federal/State: \_\_\_\_\_

If "yes," identify and describe, (including agency and status): \_\_\_\_\_

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Have the penalties been paid? Yes/No: \_\_\_\_\_

2. Does your firm or its officers have any ongoing investigations by any public agency regarding violations of the State Labor Code, California Business and Professions Code or State Licensing Laws?

Yes/No: \_\_\_\_\_ Code/Laws: \_\_\_\_\_ Section/Article: \_\_\_\_\_

If "yes," identify and describe, (including agency and status): \_\_\_\_\_

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**DISQUALIFICATION OR DEBARMENT**

Has your firm, any officer of your firm, or any employee who has a proprietary interest in your firm ever been disqualified, removed, or otherwise prevented from bidding on, performing work on, or completing a federal, state or local project because of a violation of law or a safety regulation? Yes/No: \_\_\_\_\_. If yes, provide the following information (if more than once, use separate sheets):

Date: \_\_\_\_\_ Entity: \_\_\_\_\_

Location: \_\_\_\_\_

Reason: \_\_\_\_\_

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Provide Status and any Supplemental Statement: \_\_\_\_\_

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Has your firm been reinstated by this entity? Yes/No: \_\_\_\_\_

**EXPERIENCE STATEMENT**  
B2014-59

To be responsive, the bidder must list below the required project information as listed in the Qualification of Bidders statement, no less than five (5) years of experience in the magnitude and character of the work bid in Public Works projects.

1. Project Title \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Type of Work \_\_\_\_\_  
Client \_\_\_\_\_  
Agency Project Manager \_\_\_\_\_ Phone \_\_\_\_\_  
Date Completed \_\_\_\_\_ % subcontracted \_\_\_\_\_
  
2. Project Title \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Type of Work \_\_\_\_\_  
Client \_\_\_\_\_  
Agency Project Manager \_\_\_\_\_ Phone \_\_\_\_\_  
Date Completed \_\_\_\_\_ % subcontracted \_\_\_\_\_
  
3. Project Title \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Type of Work \_\_\_\_\_  
Client \_\_\_\_\_  
Agency Project Manager \_\_\_\_\_ Phone \_\_\_\_\_  
Date Completed \_\_\_\_\_ % subcontracted \_\_\_\_\_
  
4. Project Title \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Type of Work \_\_\_\_\_  
Client \_\_\_\_\_  
Agency Project Manager \_\_\_\_\_ Phone \_\_\_\_\_  
Date Completed \_\_\_\_\_ % subcontracted \_\_\_\_\_

5. Project Title \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Type of Work \_\_\_\_\_  
Client \_\_\_\_\_  
Agency Project Manager \_\_\_\_\_ Phone \_\_\_\_\_  
Date Completed \_\_\_\_\_ % subcontracted \_\_\_\_\_

NOTE: If requested by the City, the bidder shall furnish a certified financial statement, references, and other information sufficiently comprehensive to permit an appraisal of his current financial condition.

Bidder's Signature \_\_\_\_\_



**SECTION D**

**DOCUMENTS TO BE COMPLETED  
AND DELIVERED TO CITY PRIOR  
TO AWARD OF CONTRACT**

**PERFORMANCE BOND**

**KNOW ALL MEN BY THESE PRESENTS:**

That we, \_\_\_\_\_ as Principal(s) and \_\_\_\_\_ a corporation, incorporated, organized, and existing under the laws of the State of \_\_\_\_\_, and authorized to execute bonds and undertakings and to do a general surety business in the State of California, as Surety, are jointly and severally held and firmly bound unto the City of Torrance, a municipal corporation, located in the County of Los Angeles, State of California, in the full and just sum of: \_\_\_\_\_ Dollars (\$\_\_\_\_\_), lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves and our respective heirs, executors, administrators, representative, successors and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that: **WHEREAS**, said Principal(s) have/has entered into, or are/is about to enter into, a certain written contract or agreement, dated as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, with the said City of Torrance for the Construction of **MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149**, B2014-59, all as is more specifically set forth in said contract or agreement, a full, true and correct copy of which is hereunto attached, and hereby referred to and by this reference incorporated herein and made a part hereof;

**NOW, THEREFORE**, if the said Principal(s) shall faithfully and well and truly do, perform and complete, or cause to be done, performed and complete, each and all of the covenants, terms, conditions, requirements, obligations, acts and things, to be met, done or performed by said Principal(s), including any guarantee period as set forth in, or required by, said contract or agreement, all at and within the time or times, and in the manner as therein specified and contemplated, then this bond and obligation shall be null and void; otherwise it shall be and remain in full force, virtue and effect.

The said Surety, for value received, hereby stipulates and agrees that no amendment, change, extension of time, alteration or addition to said contract or agreement, or of any feature or item or items of performance required therein or thereunder, shall in any manner affect its obligations on or under this bond; and said Surety does hereby waive notice of any such amendment, change, extension of time, alteration, or addition to said contract or agreement, and of any feature or item or items of performance required therein or thereunder.

**PERFORMANCE BOND (CONTINUED)**

In the event any suit, action or proceedings is instituted to recover on this bond or obligation, said Surety will pay, and does hereby agree to pay, as attorney's fees for said City, such sum as the Court in any such suit, action or proceeding may adjudge reasonable.

**EXECUTED, SEALED AND DATED** this \_\_\_\_\_ day of \_\_\_\_\_,  
201\_\_\_\_.

CORPORATE SEAL

PRINCIPAL(S):

BY \_\_\_\_\_

BY \_\_\_\_\_

CORPORATE SEAL

SURETY:

BY \_\_\_\_\_

## LABOR AND MATERIAL BOND

### KNOW ALL MEN BY THESE PRESENTS:

That we, \_\_\_\_\_  
As Principal(s) and \_\_\_\_\_ a  
corporation, incorporated, organized, and existing under the laws of the State of \_\_\_\_\_,  
and authorized to execute bonds and undertakings and to do a general surety business in the  
State of California, as Surety, are jointly and severally held and firmly bound unto:

- (a) The State of California for the use and benefit of the State Treasurer, as ex-officio Treasurer and custodian of the Unemployment Fund of said State; and
- (b) The City of Torrance, California; and
- (c) Any and all persons who do or perform or who did or performed work or labor upon or in connection with the work or improvement referred to in the contract or agreement hereinafter mentioned; and
- (d) Any and all materialmen, persons, companies, firms, association, or corporations, supplying or furnishing any materials, provisions, provender, transportation, appliances or power, or other supplies used in, upon, for or about or in connection with the performance of the work or improvement contracted to be executed, done, made or performed under said contract or agreement; and
- (e) Any and all persons, companies, firms, associations, or corporations furnishing, renting, or hiring teams, equipment, implements or machinery for, in connection with, or contributing to, said work to be done or improvement to be made under said contract or agreement; and
- (f) Any and all persons, companies, firms, associations, or corporations who supply both work and materials;

and whose claim has not been paid by said Principal(s), in full and just sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), lawful money of the United States of America, for the payment of which will and truly to be made, said Principal(s) and said Surety do hereby bind themselves and their respective heirs, executors, administrators, representatives, successors and assigns, jointly and severally, firmly by these presents.

**LABOR AND MATERIAL BOND (CONTINUED)**

**THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, THAT: WHEREAS,** said Principal(s) have/has entered into or are/is about to enter into a certain written contract or agreement, dated as of the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_, with the City of Torrance for the Construction of **MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149,** Bid No. B2014-59, all as is more specifically set forth in said contract or agreement, a full, true and correct copy of which is hereunto attached, and hereby referred to and by this reference incorporated herein and made a part hereof;

**NOW, THEREFORE,** if the said Principal(s) (or any of his/her, its, or their subcontractors) under said contract or agreement fails or fail to pay:

- (1) For any materials, provisions, provender, transportation, appliances, or power, or other supplies; or
- (2) For the hire of any teams, equipment, implements, or machinery; or
- (3) For any work or labor; supplies, furnished, provided, used, done or performed in, upon, for or about or in connection with the said work or improvement; or
- (4) For amounts due under the Unemployment Insurance Act of the State of California with respect to such work or improvement;

the Surety on this bond will pay the same in an amount not exceeding the sum hereinabove specified in this bond; and, also, in case suit is brought upon this bond, said Surety will (and does hereby agree to) pay a reasonable attorney's fee, to be fixed and taxed as costs, and included in the judgment therein rendered.

This bond shall (and it is hereby made to) insure to the benefit of any and all persons entitled to file claims under Section 1192.1 of the Code of Civil Procedure of the State of California, so as to give a right of action to them or their assigns in any suit brought upon this bond, all as contemplated under the provisions of Section 4205 of the Government Code, and of Chapter 1 of Title 4 of Part 3 of the Code of Civil Procedure, of the State of California.

This bond is executed and filed in connection with said contract or agreement hereunto attached to comply with each and all of the provisions of the laws of the State of California above mentioned or referred to, and of all amendments thereto, and the obligors so intend and do hereby bind themselves accordingly.

**LABOR AND MATERIAL BOND (CONTINUED)**

The said Surety, for value received, hereby stipulates and agrees that no amendment, change, extension of time, alteration, or addition to said contract or agreement, or of any feature or item or items of performance required therein or thereunder, shall in any manner affect its obligations on or under this bond; and said Surety does hereby waive notice of any such amendment, change, extension of time, alteration, or addition to said contract or agreement, and of any feature or item or items of performance required therein or thereunder.

**EXECUTED, SEALED AND DATED** this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

CORPORATE SEAL

PRINCIPAL:

BY \_\_\_\_\_

CORPORATE SEAL

SURETY:

BY \_\_\_\_\_

## PUBLIC WORKS AGREEMENT

This PUBLIC WORKS AGREEMENT ("Agreement") is made and entered into as of \_\_\_\_\_, 2014 (the "Effective Date"), by and between the CITY OF TORRANCE, a municipal corporation ("CITY"), and \_\_\_\_\_ (Contractor name, type of entity) ("CONTRACTOR").

### RECITALS:

- A. The CITY wishes to retain the services of an experienced and qualified CONTRACTOR to construct **MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149, Bid #2014-59**;
- B. In order to obtain the desired services, The CITY has circulated a Notice Inviting Bids for the construction of the **MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149**, Bid No. B2014-59 (the "NIB"); and
- C. CONTRACTOR has submitted a Bid (the "Bid") in response to the NIB. CONTRACTOR represents that it is qualified to perform those services requested in the Plans and Specifications. Based upon its review of all Bids submitted in response to the NIB, The CITY is willing to award the contract to CONTRACTOR.

### AGREEMENT:

#### 1. **SERVICES TO BE PERFORMED BY CONTRACTOR**

CONTRACTOR will provide the services and install those materials listed in the Plans and Specifications, which are on file in the Public Works Department. The NIB and the Plans and Specifications are made a part of this Agreement. A copy of the Bid is attached as Exhibit A.

#### 2. **TERM**

Unless earlier terminated in accordance with Paragraph 4 below, this Agreement will continue in full force and effect for two years from the Effective Date.

#### 3. **COMPENSATION**

##### A. CONTRACTOR's Fee.

For services rendered pursuant to this Agreement, CONTRACTOR will be paid in accordance with CONTRACTOR's Bid; provided, however, that in no event will the total amount of money paid the CONTRACTOR, for services initially contemplated by this Agreement, exceed the sum of \$\_\_\_\_\_ ("Agreement Sum"), unless otherwise first approved in writing by the CITY.

##### B. Schedule of Payment.

Provided that the CONTRACTOR is not in default under the terms of this Agreement, upon presentation of an invoice, CONTRACTOR will be paid monthly, within 30 days after the date of the monthly invoice.

#### 4. **TERMINATION OF AGREEMENT**

##### A. Termination by CITY for Convenience.

1. CITY may, at any time, terminate the Agreement for CITY's convenience and without cause.
2. Upon receipt of written notice from CITY of such termination for CITY's convenience, CONTRACTOR will:
  - a) cease operations as directed by CITY in the notice;
  - b) take actions necessary, or that CITY may direct, for the protection and preservation of the work; and
  - c) except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.
3. In case of such termination for CITY's convenience, CONTRACTOR will be entitled to receive payment for work executed; and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

##### B. Termination for Cause.

1. If either party fails to perform any term, covenant or condition in this Agreement and that failure continues for 15 calendar days after the nondefaulting party gives the defaulting party notice of the failure to perform, this Agreement may be terminated for cause; provided, however, that if during the notice period the defaulting party has promptly commenced and continues diligent efforts to remedy the default, the defaulting party will have such additional time as is reasonably necessary to remedy the default.
2. In the event this Agreement is terminated for cause by the default of the CONTRACTOR, the CITY may, at the expense of the CONTRACTOR and its surety, complete this Agreement or cause it to be completed. Any check or bond delivered to the CITY in connection with this Agreement, and the money payable thereon, will be forfeited to and remain the property of the CITY. All moneys due the CONTRACTOR under the terms of this Agreement will be retained by the CITY, but the retention will not release the CONTRACTOR and its surety from liability for the default. Under these circumstances, however, the CONTRACTOR and its surety will be credited with the amount of money retained, toward any amount by which the cost of completion exceeds the Agreement Sum and any amount authorized for extra services.
3. Termination for cause will not affect or terminate any of the rights of the CITY as against the CONTRACTOR or its surety then existing, or which may thereafter accrue because of the default; this provision is in addition to all other rights and remedies available to the CITY under law.

##### C. Termination for Breach of Law.

In the event the CONTRACTOR or any of its officers, directors, shareholders, employees, agents, subsidiaries or affiliates is convicted (i) of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of a contract or subcontract; (ii) under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects responsibility as a public consultant or contractor; (iii) under state or federal antitrust statutes arising out of the submission of bids or proposals; or (iv) of violation of Paragraph 19 of this Agreement; or for any other cause the CITY determines to be so serious and compelling as to affect CONTRACTOR's responsibility as a public consultant or contractor, including but not limited to, debarment by another governmental agency, then the CITY reserves the unilateral right to terminate this Agreement or to impose such other sanctions (which may include financial sanctions, temporary suspensions or any other condition deemed appropriate short of termination) as it deems proper. The CITY will not take action until CONTRACTOR has been given notice and an opportunity to present evidence in mitigation.

**5. FORCE MAJEURE**

If any party fails to perform its obligations because of strikes, lockouts, labor disputes, embargoes, acts of God, inability to obtain labor or materials or reasonable substitutes for labor or materials, governmental restrictions, governmental regulations, governmental controls, judicial orders, enemy or hostile governmental action, civil commotion, fire or other casualty, or other causes beyond the reasonable control of the party obligated to perform, then that party's performance shall be excused for a period equal to the period of such cause for failure to perform.

**6. RETENTION OF FUNDS**

CONTRACTOR authorizes the CITY to deduct from any amount payable to CONTRACTOR (whether or not arising out of this Agreement) any amounts the payment of which may be in dispute or that are necessary to compensate the CITY for any losses, costs, liabilities, or damages suffered by the CITY, and all amounts for which the CITY may be liable to third parties, by reason of CONTRACTOR's negligent acts or omissions or willful misconduct in performing or failing to perform CONTRACTOR's obligations under this Agreement. In the event that any claim is made by a third party, the amount or validity of which is disputed by CONTRACTOR, or any indebtedness exists that appears to be the basis for a claim of lien, the CITY may withhold from any payment due, without liability for interest because of the withholding, an amount sufficient to cover the claim. The failure of the CITY to exercise the right to deduct or to withhold will not, however, affect the obligations of CONTRACTOR to insure, indemnify, and protect the CITY as elsewhere provided in this Agreement.

**7. THE CITY'S REPRESENTATIVE**

The Public Works Director is designated as the "City Representative," authorized to act in its behalf with respect to the work and services specified in this Agreement and to make all decisions in connection with this Agreement. Whenever approval, directions, or other actions are required by the CITY under this Agreement, those actions will be taken by the City Representative, unless otherwise stated. The City Manager has the right to designate another City Representative at any time, by providing notice to CONTRACTOR.

8. **CONTRACTOR REPRESENTATIVE(S)**

The following principal(s) of CONTRACTOR are designated as being the principal(s) and representative(s) of CONTRACTOR authorized to act in its behalf with respect to the work specified in this Agreement and make all decisions in connection with this Agreement:

\_\_\_\_\_  
\_\_\_\_\_

9. **INDEPENDENT CONTRACTOR**

The CONTRACTOR is, and at all times will remain as to the CITY, a wholly independent contractor. Neither the CITY nor any of its agents will have control over the conduct of the CONTRACTOR or any of the CONTRACTOR's employees, except as otherwise set forth in this Agreement. The CONTRACTOR may not, at any time or in any manner, represent that it or any of its agents or employees are in any manner agents or employees of the CITY. CITY has no duty, obligation, or responsibility to CONTRACTOR's agents or employees under the Affordable Care Act. CONTRACTOR is solely responsible for any tax penalties associated with the failure to offer affordable coverage to its agents and employees under the Affordable Care Act and any other liabilities, claims and obligations regarding compliance with the Affordable Care Act with respect to CONTRACTOR's agents and employees. CITY is not responsible and shall not be held liable for CONTRACTOR's failure to comply with CONTRACTOR's duties, obligations, and responsibilities under the Affordable Care Act. CONTRACTOR agrees to defend, indemnify and hold CITY harmless for any and all taxes and penalties that may be assessed against CITY as a result of CONTRACTOR's obligations under the Affordable Care Act relating to CONTRACTOR's agents and employees.

10. **BUSINESS LICENSE**

The CONTRACTOR must obtain a City business license prior to the start of work under this Agreement, unless CONTRACTOR is qualified for an exemption.

11. **OTHER LICENSES AND PERMITS**

CONTRACTOR warrants that it has all professional, contracting and other permits and licenses required to undertake the work contemplated by this Agreement.

12. **FAMILIARITY WITH WORK**

By executing this Agreement, CONTRACTOR warrants that CONTRACTOR (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, CONTRACTOR warrants that CONTRACTOR has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services set forth in this Agreement.

Should CONTRACTOR discover any latent or unknown conditions that will materially affect the performance of the services set forth in this Agreement, CONTRACTOR must immediately inform the CITY of that fact and may not proceed except at CONTRACTOR's risk until written instructions are received from the CITY.

**13. CARE OF WORK**

CONTRACTOR must adopt reasonable methods during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and other components to prevent losses or damages, and will be responsible for all damages, to persons or property, until acceptance of the work by the CITY, except those losses or damages as may be caused by the CITY's own negligence.

**14. CONTRACTOR'S ACCOUNTING RECORDS; OTHER PROJECT RECORDS**

Records of the CONTRACTOR's time pertaining to the project, and records of accounts between the CITY and the CONTRACTOR, will be kept on a generally recognized accounting basis. CONTRACTOR will also maintain all other records, including without limitation specifications, drawings, progress reports and the like, relating to the project. All records will be available to the CITY during normal working hours. CONTRACTOR will maintain these records for three years after final payment.

**15. INDEMNIFICATION**

CONTRACTOR will indemnify, defend, and hold harmless CITY, the Successor Agency to the Former Redevelopment Agency of the City of Torrance, the City Council, each member thereof, present and future, its officers, agents and employees from and against any and all liability, expenses, including defense costs and legal fees, and claims for damages whatsoever, including, but not limited to, those arising from breach of contract, bodily injury, death, personal injury, property damage, loss of use, or property loss however the same may be caused and regardless of the responsibility for negligence. The obligation to indemnify, defend and hold harmless includes, but is not limited to, any liability or expense, including defense costs and legal fees, arising from the negligent acts or omissions, or willful misconduct of CONTRACTOR, its officers, employees, agents, subcontractors or vendors. It is further agreed, CONTRACTOR's obligations to indemnify, defend and hold harmless will apply even in the event of concurrent negligence on the part of CITY, the City Council, each member thereof, present and future, or its officers, agents and employees, except for liability resulting solely from the negligence or willful misconduct of CITY, its officers, employees or agents. Payment by CITY is not a condition precedent to enforcement of this indemnity. In the event of any dispute between CONTRACTOR and CITY, as to whether liability arises from the sole negligence of the CITY or its officers, employees, agents, subcontractors or vendors, CONTRACTOR will be obligated to pay for CITY's defense until such time as a final judgment has been entered adjudicating the CITY as solely negligent. CONTRACTOR will not be entitled in the event of such a determination to any reimbursement of defense costs including but not limited to attorney's fees, expert fees and costs of litigation.

**16. NON-LIABILITY OF THE CITY'S OFFICERS AND EMPLOYEES**

No officer or employee of the CITY will be personally liable to CONTRACTOR, in the event of any default or breach by the CITY or for any amount that may become due to CONTRACTOR.

**17. INSURANCE**

A. CONTRACTOR must maintain at its sole expense the following insurance, which will be full coverage not subject to self insurance provisions:

1. Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:
  - a. Combined single limits of \$2,000,000 per occurrence.
2. General Liability including coverage for premises, products and completed operations, independent contractors, personal injury and contractual obligations with combined single limits of coverage of at least \$3,000,000 per occurrence, with an annual aggregate of no less than \$5,000,000.
3. Workers' Compensation with limits as required by the State of California and Employers Liability with limits of at least \$1,000,000.

B. The insurance provided by CONTRACTOR will be primary and non-contributory.

C. CITY, the Successor Agency to the Former Redevelopment Agency of the City of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer must be named as additional insureds under the automobile and general liability policies.

D. CONTRACTOR must provide certificates of insurance and/or endorsements to the City Clerk of the City of Torrance before the commencement of work.

E. Each insurance policy required by this Paragraph must contain a provision that no termination, cancellation or change of coverage can be made without thirty days notice to the CITY.

F. CONTRACTOR must include all subcontractors as insureds under its policies or must furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors will be subject to all of the requirements of this Paragraph 17.

**18. SUFFICIENCY OF INSURERS**

Insurance required by this Agreement will be satisfactory only if issued by companies admitted to do business in California, rated "B+" or better in the most recent edition of Best's Key Rating Guide, and only if they are of a financial category Class VII or better, unless these requirements are waived by the Risk Manager of the CITY ("Risk Manager") due to unique circumstances. In the event the Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to the CITY, the CONTRACTOR agrees that the minimum limits of any insurance

policies and/or the performance bond required by this Agreement may be changed accordingly upon receipt of written notice from the Risk Manager; provided that CONTRACTOR will have the right to appeal a determination of increased coverage by the Risk Manager to the City Council of the CITY within 10 days of receipt of notice from the Risk Manager.

**19. CONFLICT OF INTEREST**

- A. No officer or employee of the CITY may have any financial interest, direct or indirect, in this Agreement, nor may any officer or employee participate in any decision relating to the Agreement that effects the officer or employee's financial interest or the financial interest of any corporation, partnership or association in which the officer or employee is, directly or indirectly interested, in violation of any law, rule or regulation.
- B. No person may offer, give, or agree to give any officer or employee or former officer or employee, nor may any officer or employee solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any way pertaining to any program requirement, contract or subcontract, or to any solicitation or proposal.

**20. NOTICE**

- A. All notices, requests, demands, or other communications under this Agreement will be in writing. Notice will be sufficiently given for all purposes as follows:
  - 1. Personal delivery. When personally delivered to the recipient: notice is effective on delivery.
  - 2. First Class mail. When mailed first class to the last address of the recipient known to the party giving notice: notice is effective three mail delivery days after deposit in an United States Postal Service office or mailbox.
  - 3. Certified mail. When mailed certified mail, return receipt requested: notice is effective on receipt, if delivery is confirmed by a return receipt.
  - 4. Overnight delivery. When delivered by an overnight delivery service, charges prepaid or charged to the sender's account: notice is effective on delivery, if delivery is confirmed by the delivery service.
  - 5. Facsimile transmission. When sent by fax to the last fax number of the recipient known to the party giving notice: notice is effective on receipt. Any notice given by fax will be deemed received on the next business day if it is received after 5:00 p.m. (recipient's time) or on a non-business day.

6. Addresses for purpose of giving notice are as follows:

CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fax: \_\_\_\_\_

CITY: City Clerk  
City of Torrance  
3031 Torrance Boulevard  
Torrance, CA 90509-2970  
Fax: (310) 618-2931

with a copy to: Attn: Beth Overstreet  
Public Works Department  
City of Torrance  
20500 Madrona Aveune  
Torrance, CA 90503  
Fax: (310)781-6902

- B. Any correctly addressed notice that is refused, unclaimed, or undeliverable because of an act or omission of the party to be notified, will be deemed effective as of the first date the notice was refused, unclaimed or deemed undeliverable by the postal authorities, messenger or overnight delivery service.
- C. Either party may change its address or fax number by giving the other party notice of the change in any manner permitted by this Agreement.

**21. PROHIBITION AGAINST ASSIGNMENT AND SUBCONTRACTING**

This Agreement and all exhibits are binding on the heirs, successors, and assigns of the parties. The Agreement may not be assigned or subcontracted by either the CITY or CONTRACTOR without the prior written consent of the other.

**22. INTEGRATION; AMENDMENT**

This Agreement represents the entire understanding of the CITY and CONTRACTOR as to those matters contained in it. No prior oral or written understanding will be of any force or effect with respect to the terms of this Agreement. The Agreement may not be modified or altered except in writing signed by both parties.

**23. INTERPRETATION**

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

**24. SEVERABILITY**

If any part of this Agreement is found to be in conflict with applicable laws, that part will be inoperative, null and void insofar as it is in conflict with any applicable laws, but the remainder of the Agreement will remain in full force and effect.

**25. TIME OF ESSENCE**

Time is of the essence in the performance of this Agreement.

**26. GOVERNING LAW; JURISDICTION**

This Agreement will be administered and interpreted under the laws of the State of California. Jurisdiction of any litigation arising from the Agreement will be in Los Angeles County, California.

**27. COMPLIANCE WITH STATUTES AND REGULATIONS**

CONTRACTOR will be knowledgeable of and will comply with all applicable federal, state, county and city statutes, rules, regulations, ordinances and orders.

**28. WAIVER OF BREACH**

No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default will impair the right or remedy or be construed as a waiver. A party's consent or approval of any act by the other party requiring the party's consent or approval will not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and will not be a waiver of any other default concerning the same or any other provision of this Agreement.

**29. ATTORNEY'S FEES**

Except as provided for in Paragraph 15, in any dispute, litigation, arbitration, or other proceeding by which one party either seeks to enforce its rights under this Agreement (whether in contract, tort or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing party will be awarded reasonable attorney's fees, together with any costs and expenses, to resolve the dispute and to enforce any judgment.

**30. EXHIBITS**

All exhibits identified in this Agreement are incorporated into the Agreement by this reference.

**31. CONTRACTOR'S AUTHORITY TO EXECUTE**

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

CITY OF TORRANCE,  
a Municipal Corporation

BUSINESS OR INDIVIDUAL NAME  
A XXX corporation

\_\_\_\_\_  
Patrick J. Furey, Mayor

By: \_\_\_\_\_  
SIGNER, title

ATTEST:

\_\_\_\_\_  
Rebecca Poirier, MMC  
City Clerk

APPROVED AS TO FORM:

JOHN L. FELLOWS III  
City Attorney

By: \_\_\_\_\_  
Deputy City Attorney

Attachments: Exhibit A: Bid  
Revised: 7/15/14

**EXHIBIT A**

**Bid**

**[To be attached]**

**CITY OF TORRANCE  
CONSTRUCTION OR SERVICE CONTRACT ENDORSEMENT**

To be attached to and made a part of all policies insuring the liability of any person, form or corporation performing services under contract for the City of Torrance.

Notwithstanding any inconsistent expression in the policy to which this endorsement is attached, or in any other endorsement now or hereafter attached thereto, or made a part thereof, the protection afforded by said policy shall:

1. Include the City of Torrance as an additional insured. (To include the elected officials, appointed officials, and employees.)
2. Indemnify and save harmless the City of Torrance against any and all claims resulting from the undertaking specified in the contract known as:

**PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT  
FOR THE CONSTRUCTION OF  
MISCELLANEOUS SEWER MAIN IMPROVEMENTS AND REPAIRS, I-61/I-149  
B2014-59**

This hold harmless assumption on the part of the underwriters shall include all costs of investigation and defense, including claims based on damage to substructures not shown, not located on the plans, or shown incorrectly.

3. Not be cancelled except by notice to the City Attorney of the City of Torrance at least thirty (30) days prior to the date of cancellation.
4. Provide single limit for Bodily Injury Liability and Property Damage Liability combined, \$1,000,000 each Occurrence, and \$1,000,000 Aggregate.
5. Limited classifications, restricting endorsements, exclusions or other special provisions contained in the policy shall not act to limit the benefits of coverage as they shall apply to the City of Torrance as enumerated in this endorsement. However, nothing herein contained shall affect any rights of the insurer against the insured.
6. It is further expressly agreed by and between the parties hereto that the following two provisions, (a) and (b), are a part of this contract:
  - (a) That the Contractor specifically agrees to comply with applicable provisions of Section 1777.5 of the Labor Code relating to the employment by contractor or subcontractor under it, of journeyman or apprentices, or workmen, in any apprenticeable craft or trade.
  - (b) By my signature hereunder, as Contractor, I certify that I am 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 I will comply with such provisions before commencing the performance of the work of this contract.

The limits of liability as stated in this endorsement apply to the insurance afforded by this endorsement notwithstanding that the policy may have lower limits of liability applying elsewhere in the policy.

\_\_\_\_\_  
Duly Authorized Agent

Attached to and forming part of  
Policy No. \_\_\_\_\_  
of the \_\_\_\_\_

Date: \_\_\_\_\_  
Expiration Date: \_\_\_\_\_

## WORKERS' COMPENSATION INSURANCE CERTIFICATION

In compliance with Section 7-4 of the Standard Specifications, the Contractor shall complete and submit the following certification with a Certificate of Insurance before execution of the contract.

I am aware of, and will comply with, Section 3700 of the Labor Code, requiring every employer to be insured against liability for Workers' Compensation or to undertake self-insurance before commencing any of the work.

\_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_

Title: \_\_\_\_\_

## **SECTION E**

### **SPECIAL PROVISIONS**

**The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction (latest edition) and the Standard Specifications of the State of California Department of Transportation (Caltrans), latest edition, as noted herein. These Special Provisions have been arranged into a format that parallels the Standard Specifications for Public Works Construction.**

## SECTION E - SPECIAL PROVISIONS

### Table of Contents

	Page
<b>PART 1 - GENERAL PROVISIONS</b>	<b>4</b>
SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS	4
1-2 TERMS AND DEFINITIONS.	4
1-3 ABBREVIATIONS	4
SECTION 2 - SCOPE AND CONTROL OF THE WORK	5
2-1 AWARD AND EXECUTION OF CONTRACT.	5
2-3 SUBCONTRACTS	5
2-4 CONTRACT BONDS.	5
2-5 PLANS AND SPECIFICATIONS	5
2-6 WORK TO BE DONE.	8
2-9 SURVEYING	8
2-10 AUTHORITY OF THE BOARD AND THE ENGINEER.	11
2-11 INSPECTION.	11
2-13 CCTV Videos.	12
2-14 COORDINATION AND NOTIFICATIONS TO RESIDENTS AND BUSINESSES.	13
SECTION 3 – CHANGES IN WORK	13
3-2 CHANGES INITIATED BY THE AGENCY	13
3-3 EXTRA WORK	13
3-4 CHANGED CONDITIONS	15
SECTION 4 – CONTROL OF MATERIALS	15
4-1 MATERIALS AND WORKMANSHIP	15
SECTION 5 – UTILITIES	15
5-1 LOCATION.	15
5-2 PROTECTION.	16
5-3 REMOVAL	18
5-4 RELOCATION	18
5-5 DELAYS	19
SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK	19
6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK.	19
6-7 TIME OF COMPLETION	22
6-8 COMPLETION, ACCEPTANCE AND WARRANTY	23
6-9 LIQUIDATED DAMAGES.	23
SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR	23
7.2 LABOR.	23
7-3 INSURANCE.	24
7-4 NOT USED.	25
7-5 PERMITS.	25
7-6 THE CONTRACTOR'S REPRESENTATIVE	25
7-8 WORK SITE MAINTENANCE	26
7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS	29
7-10 PUBLIC CONVENIENCE AND SAFETY	31
SECTION 9 - MEASUREMENT AND PAYMENT	40
9-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK.	40
9-2 LUMP SUM WORK.	41
9-3 PAYMENT	41

9-4	CLAIMS.	43
<b>PART 2 - CONSTRUCTION MATERIALS</b>		<b>44</b>
SECTION 200 – ROCK MATERIALS		44
200-2	UNTREATED BASE MATERIALS	44
SECTION 203 – BITUMINOUS MATERIALS		44
203-6	ASPHALT CONCRETE	44
SECTION 210 – PAINT AND PROTECTIVE COATINGS		44
210-1	PAINT	44
SECTION 212 – LANDSCAPE AND IRRIGATION MATERIALS		45
212-1	LANDSCAPE MATERIALS.	45
SECTION 214 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS		47
<b>PART 3 - CONSTRUCTION METHODS</b>		<b>48</b>
SECTION 300 – EARTHWORK		48
300-1	CLEARING AND GRUBBING	48
300-2	UNCLASSIFIED EXCAVATION	51
SECTION 301 – TREATED SOIL, SUBGRADE PREPARATION, AND PLACEMENT OF BASE MATERIALS		52
301-2	UNTREATED BASE	52
SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION		53
303-5	CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.	53
SECTION 306 – UNDERGROUND CONDUIT CONSTRUCTION		55
306-1	OPEN TRENCH OPERATIONS	55
306-9	SEWER BYPASS.	58
SECTION 308 – LANDSCAPE AND IRRIGATION INSTALLATION		59
308-2	EARTHWORK AND TOPSOIL PLACEMENT	59
308-4	PLANTING	60
308-6	MAINTENANCE AND PLANT ESTABLISHMENT	65
308-8	GUARANTEE	65
SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS		66
<b>PART 5 – SYSTEM REHABILITATION</b>		<b>67</b>
SECTION 500 – PIPELINE		67
500-1	PIPELINE REHABILITATION	67
500-2	MANHOLE AND STRUCTURE REHABILITATION	83

## PART 1 - GENERAL PROVISIONS

### SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

#### 1-2 TERMS AND DEFINITIONS.

Add or redefine the following:

**Agency** – The City of Torrance, herein referred to as CITY.

**Board** – The City Council of the City of Torrance, herein referred to as City Council.

**Engineer** –The Public Works Director and/or City Engineer of the City of Torrance, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

**Claim** - A separate demand by the Contractor for (A) a time extension, (B) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the Agency.

#### 1-3 ABBREVIATIONS

##### 1-3.2 Common Usage:

Add the following abbreviations:

Approx.	Approximate
CA	Consulting Arborist
C.F.	Cubic Feet
Exist.	Existing
L.A.C.D.P.W.	Los Angeles County Department of Public Works
L.F.	Linear Foot or Linear Feet
Med.	Median
M.L.	Main Line
OH	Overhead
Ped.	Pedestrian
Reconst.	Reconstruct
Temp.	Temporary
Theo.	Theoretical
WM	Wire mesh or water meter

## **SECTION 2 - SCOPE AND CONTROL OF THE WORK**

### **2-1 AWARD AND EXECUTION OF CONTRACT.**

Replace the entire subsection with the following:

Within ten (10) working days after the date of the CITY'S award of contract, the Contractor shall execute and return all Contract Documents required by the CITY. The CITY reserves the right to terminate the award if the above requirement is not met. Such termination will result in the forfeiture of the Proposal Guaranty.

The Contract shall not be considered binding upon the CITY until executed by the authorized CITY officials.

### **2-3 SUBCONTRACTS**

**2-3.2 SELF PERFORMANCE.** Replace the second sentence with the following:

The following work will be considered as "Specialty Items":

Clean and CCTV Inspection  
Tree pruning  
Concrete sidewalk, driveway, ribbon gutter  
Survey Monuments  
Traffic Control.

### **2-4 CONTRACT BONDS.**

Revise the second sentence of the fourth paragraph to read as follows:

The "Performance Bond" shall remain in effect for one year following the date specified in the Notice of Completion or, if no Notice of Completion is recorded, for one year following the date of final acceptance by the Engineer.

### **2-5 PLANS AND SPECIFICATIONS**

**2-5.1 General.** Add the following sentence to the first paragraph to read as follows:

The Contractor shall maintain a control set of Plans and Specifications on the Work site at all times. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on this control set to show as-built conditions. Upon completion of the Work, the Contractor shall submit the control set to the Engineer for approval. Final payment will not be made until this requirement is met.

Add the following subsections:

**2-5.1.1 Plans.** Included as part of the Contract Documents are the following, which show the location, character, dimensions or details of the Work:

- 1) Project Plans (Appendices V and VI)

The existing utility information and data provided with the Contract Documents are based on existing plans and documents. The plans and data are provided for information only. The Owner does not guarantee their accuracy and correctness. If the Bidder in preparing the Bid Proposal uses this information, the Bidder assumes all risks resulting from conditions differing from the information shown. The Bidder, in consideration for the information being provided, hereby releases the Owner and Consulting Engineer from any responsibility of obligation as to the accuracy of such information or for any additional compensation for work performed due to assumptions based on the use of such information.

2) Standard Plans

- a. City of Torrance Standard Plans, latest edition.
  
- b. Standard Plans for Public Works Construction, latest edition, promulgated by Public Works Standards, Inc.

Applicable Standard Plans and information for this project are included in the Appendices of these Specifications.

**2-5.1.2 Specifications.** The Work shall be performed or executed in accordance with these Special Provisions and the following:

- 1) Standard Specifications for Public Works Construction, 2012 edition and supplements thereto, hereinafter referred to as the Standard Specifications, as written and promulgated by Public Works Standards, Inc. The Standard Specifications are published by BNi Building News, Inc., 1612 South Clementine Street, Anaheim, CA 92802, Phone: (800) 873-6397.
  
- 2) Sections 56-2, 84, 85, 86 and 90-10 of the State of California Department of Transportation (Caltrans) Standard Specifications, latest edition

**2-5.2 Precedence of Contract Documents.** Replace the entire subsection with the following:

If there is a conflict between any of the Contract Documents, the document highest in precedence shall control. The order of precedence shall be as follows:

- 1) Permits issued by other agencies.
- 2) Change Orders (including Plans and Specifications attached thereto).
- 3) Public Works Agreement
- 4) Addenda
- 5) Special and General Provisions
- 6) Plans
- 7) City Standard Plans
- 8) Other Standard Plans
- 9) Standard Specifications for Public Works Construction
- 10) Reference Specifications

With reference to the Plans/Drawings, the order of precedence is as follows:

- 1) Change Order plans govern over Addenda and Contract plans
- 2) Addenda plans govern over Contract plans
- 3) Contract plans govern over standard plans
- 4) Detail plans govern over general plans
- 5) Figures govern over scaled dimensions

Within the Specifications, the order of precedence is as follows:

- 1) Change Orders
- 2) Permits from other agencies/Supplemental Agreements
- 3) Special Provisions
- 4) Instruction to Bidders
- 5) Referenced Standard Plans
- 6) Referenced Standard Specifications

If the Contractor, in the course of the Work, becomes aware of any claimed errors or omissions in the Contract Documents or in the CITY's fieldwork, the Contractor shall immediately inform the Engineer. The Engineer shall promptly review the matter, and if the Engineer finds an error or omission has been made the Engineer shall determine the corrective actions and advise the Contractor accordingly. If the corrective work associated with an error or omission increases or decreases the amount of work called for in the Contract, the CITY shall issue an appropriate Change Order in accordance with 3-3. After discovery of an error or omission by the Contractor, any related work performed by the Contractor shall be done at the Contractor's risk unless authorized by the Engineer.

**2-5.3 Submittals**

**2-5.3.2 Working Drawings.** Add the following:

In addition to the working drawings required per Table 2-5.3.2 (A), the following working drawings are required:

Item	Subsection No.	Title	Subject
16	300-1.3.3	Recycling Summary	Recycling
17	7-8.5.1, 7-8.5.2, 7-8.5.3, 306-9	Sanitary Sewers	Sewage Bypass and Pumping

For sewer repairs that cannot be accommodated by either the project traffic control plans or City Standard plans, the contractor shall submit traffic control plan(s) to be approved by the engineer. Working drawings listed above as item "19" shall be prepared by a Civil Engineer registered by the State of California.

**2-5.3.4 Supporting Information.** Replace the second paragraph with the following:

Submittals are required for the following:

- 1) Asphalt concrete mix designs per 203-6.2.
- 2) Concrete mix designs per 201-1.1.

- 3) List of Materials per 4-1.4.
- 4) Confined Space Entry Program per 7-10.4.5.1.
- 5) Equipment and materials list per 307-1.
- 6) Certificates of Compliance per 4-1.5.
- 7) Crushed Miscellaneous Base mix designs/properties
- 8) Striping and Marking Materials
- 9) Pipe rehabilitation method
- 10) Manhole rehabilitation method
- 11) Sewer pipe, manhole and flow handling
- 12) Sewer Liner Materials
- 13) Structural Design for Temporary Steel Plate Bridging
- 14) Construction Schedule

In addition to the above, submittals may be required for any product, manufactured item, or system not specifically listed above.

## **2-6 WORK TO BE DONE.**

Add the following:

The Work generally consists of the rehabilitation or replacement of existing sanitary sewers and sanitary sewer point repairs as shown in the Appendices of these Specifications.

## **2-9 SURVEYING**

### **2-9.1 Permanent Survey Markers.** Replace the entire subsection with the following:

There is a potential to encounter existing survey monuments in the vicinity of point repair locations. The Contractor shall not disturb survey monuments, lot stakes (tagged), centerline ties, or benchmarks without notifying the Engineer. The Contractor shall be responsible to have a surveyor document all surveying monuments, lot stakes (tagged), centerline ties, and bench marks that may be disturbed during construction. In the event that identification numbers on survey monuments are illegible, it shall be the responsibility of the Contractor to obtain all information necessary to restore the monuments in their correct location. The Contractor or its Surveyor shall file a Corner Record Form at the Los Angeles County Surveyor referencing survey monuments subject to disturbance prior to the start of construction and also prior to the completion of construction, including a location for reestablishment of disturbed monuments. Copies of the records shall be provided to the City. **Final payment for "Survey Monuments" will not be made until the aforementioned documentation is provided to the CITY.**

All surveying shall be done by a Registered Licensed Land Surveyor or a Registered Civil Engineer authorized to practice land surveying within the state. All monuments and centerline ties shall be tied out and reset in accordance with Section 8771 (Land Surveyors Act) of the Business and Professions Code of the State of California.

There is the potential for survey monuments to be within the excavation areas. The number of which is unknown, therefore, there is a provisional bid item for approximately 10 survey monuments to be re-established. The Contract Unit Price for the provisional item of "Survey Monuments" shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals for doing all the work involved in preserving and/or constructing of the survey monuments, complete in place, and no additional compensation shall be made.

**2-9.2 Survey Service.** Replace the first two paragraphs with the following:

All construction surveying necessary to complete the Work shown on the Plans and provided in these Contract Documents shall be accomplished by or under the direction of a Registered Land Surveyor or Registered Civil Engineer authorized to practice land surveying in the State of California, retained or provided by the Contractor. The CITY reserves the right to direct additional construction survey work be performed at no additional cost when the City determines it is required to adequately construct the Work.

The Contractor shall notify the Engineer in writing at least 2 working days prior to the actual survey. The Contractor shall provide any required traffic control necessary for construction surveying. Prior to disturbing survey monuments, the Contractor shall notify the Engineer in accordance with Section 2-9.1.

Stakes shall be set and stationed by the Contractor for curbs, curbs and gutters, sidewalks, access ramps, bus pads, driveways, headers, storm drains, sewers, cross gutters, spandrels, alley intersection, catch basin, rough grade, and other items as necessary. A corresponding cut or fill to finished grade (or flow line) shall be indicated on a grade sheet. A copy of each grade sheet shall be furnished to the Engineer. If any construction survey stakes are lost or disturbed and need to be replaced, such replacement shall be by the Contractor at its expense.

Construction stakes shall consist of the following:

- a. Offset line and grade stakes for gravity sewer at 50-foot intervals with grade sheets indicating cut to the pipe invert.
- b. One set of control stakes for manholes and jacking pits.
- c. One set of paving stakes.
- d. Pipe heading checks for line and grade at each manhole.
- e. Line and grade of new curb and gutter.
- f. Line and grade of existing features shown on the plan to be replaced in kind sufficient for their construction.

The Contractor shall submit to the City within 2 days after completion of each respective survey, setting of each stake and heading check a copy of the survey notes and calculations certified by the licensed Land Surveyor for the following:

- a. Level and horizontal control circuit for survey control.
- b. Grade sheets for pipeline stakes.
- c. Pipe heading checks.

Add the following:

The Contractor shall provide all labor, work and materials necessary to survey the work to conform to plan lines and limits, provide grades for drainage, establish pavement grades, match to existing conditions, and otherwise lay out the work as necessary for construction. The Contractor

shall review and set all reference points, grades and elevations to the satisfaction of the Engineer prior to construction operations.

After construction and prior to final acceptance by the City of the construction project, the Contractor's land surveyor or qualified Civil Engineer shall reestablish all survey monuments within the construction zone, prepare tie sheets and Corner Records as indicated above, and file them with the City Engineer for review. After review by the City Engineer the land surveyor shall file the Corner Records with the County Land Surveyors Office, and file certified copies of the Corner Records with the City Engineer.

All survey monuments removed or altered as a result of construction shall be reset, and Corner Records filed with the County of Los Angeles Land Surveyor's Office, and approved final Corner Records filed with the Engineer. Centerline ties removed as a result of construction shall be reset and tie sheets filed with the Engineer.

The land surveyor shall provide a letter of certification for all monuments having four or more existing ties which are within 0.02 ft plus or minus of the original City tie sheet records. When several monuments or ties appear on one tie sheet and one of the ties has changed, the land surveyor shall re-measure all of the ties and re-file a new tie sheet with the City as required herein.

County of Los Angeles permanent and temporary bench marks within the construction zone shall be located by survey, and the Contractor's Land Surveyor shall send a written notification of impending construction to the County of Los Angeles Land Surveyor's Office two weeks prior to construction.

Lines and grades for the construction shall be the responsibility of the Contractor, with the following provisions:

All work under this contract shall be built in accordance with the lines and grades shown on the plans. Field survey for establishing these, and for the control of construction, shall be the responsibility of the Contractor. All such survey work including construction staking shall be done under the supervision of a California Licensed Land Surveyor or authorized Civil Engineer. Staking shall be done on all items ordinarily requiring grade and alignment, at intervals normally accepted by the agencies and trade involved.

The Contractor shall provide a copy of the office calculations and grade sheets to the Engineer. The Contractor shall be responsible for any errors in the finished work, and shall notify the Engineer, in writing, within 24 hours, of any discrepancies, or design errors during the construction staking.

Contractor shall provide construction surveying for relocation of any conflicting utilities and provide a reasonable time window of opportunity to the utility owners to relocate their facilities after the survey is provided by the Contractor.

Add the following subsection:

**2-9.5 Payment.** All costs for any construction surveying, including, but not limited to, construction staking, professional office services and field calculation, and furnishing all labor, materials, tools, equipment and incidentals for doing all work involved shall be considered as included in the price for which such work is appurtenant thereto, and no additional compensation shall be allowed therefore.

## **2-10 AUTHORITY OF THE BOARD AND THE ENGINEER.**

Add the following:

Failure of the Contractor to comply with the requirements of the Contract Documents, or to follow the directions of the Engineer, and/or to immediately remedy such noncompliance or to follow directions, may, upon notice from the Engineer, result in the suspension of the Contract monthly progress payments. Any monthly progress payments so suspended may remain in suspension until the Contractor is in compliance with the Contract Documents and the directions of the Engineer, as determined by the Engineer.

## **2-11 INSPECTION.**

Replace the entire subsection with the following:

The Work is subject to inspection and approval by the Engineer. The Contractor shall notify the Engineer a minimum of 48 hours in advance of the required inspection.

The Engineer will make, or have made, such inspections and tests as he deems necessary to see that the Work is in conformance with the Contract Documents. In the event such inspections or tests reveal noncompliance with the Contract Documents, the Contractor shall bear the cost of such corrective measures as deemed necessary by the Engineer, as well as the cost of subsequent re-inspection and re-testing.

Work done in the absence of inspection by the Engineer may be required to be removed and replaced under the inspection of the Engineer, and the entire cost of removal and replacement, including the cost of all materials which may be furnished by the CITY and used in the work thus removed, shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not. Work covered without the approval of the Engineer shall, if so directed by the Engineer, be uncovered to the extent required by the Engineer, and the Contractor shall similarly bear the entire cost of performing all the work and furnishing all the materials necessary for the removal of the covering and its subsequent replacement, including all costs for additional inspection.

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 Work site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with the Contract Documents.

Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

Add the following subsections:

**2-11.1 Special Inspection Fees.** If the Contractor elects to work under this Contract more than 8 hours/day or more than 40 hours/week, Saturday, Sunday, or CITY holidays, the Contractor shall arrange with the Engineer for the required inspection service and pay the Special Inspection Fees which will be charged at the following rates:

Mondays through Fridays - \$135.00 per hour

Saturdays, Sundays, Holidays - \$1,200.00 per day

Fees may be deducted from payments due to the Contractor at the discretion of the Engineer.

If the Contractor works under this contract at times other than within the allowed working hours without permission from or prior arrangement with the Engineer, the Contractor will be charged a lump sum amount of \$500.00 for each occurrence, in addition to the above fees. The amount will be deducted from a Progress Payment.

#### **2-11.4 Material Inspection/Testing and other City Expenses**

- (a) If a City subcontractor hired to perform material inspection and/or testing is required to work additional time to perform inspection and testing as a result of an action or delay caused by the Contractor, except for specific work allowed by the Engineer, the City subcontractor may charge the City an additional fee. The Engineer may deduct the additional fee for said inspection and testing from a Progress Payment to the Contractor. The Engineer also may deduct the cost to perform additional testing when an initial test fails to meet the requirements of this Contract. The typical rates for material testing and inspection are available upon request from the Public Works Department.
- (b) If the Contractor does not comply with a requirement of these Special Provisions or if it does not immediately respond, after being informed, to a request by the Engineer to amend a site condition that jeopardizes the public health, safety or welfare, the Engineer may direct City staff to perform the work. For each occurrence, the City will charge the Contractor a base charge in the amount of \$750 in addition to all costs incurred by the City for administration, labor, equipment and materials. The standard rates for City staff are available upon request from the Public Works Department.
- (c) For each sign, drum, delineator, cone, barricade, warning device, or other type of required traffic control device that is not provided and/or replaced by the Contractor when required by the Traffic Control Plans and/or directed by the Engineer, the Engineer may deduct \$75 per day for each missing device from a Progress Payment.
- (d) Temporary lane closures maintained prior to 8:30 A.M. and/or after 3:30 P.M. may have a negative economic effect on the local residential, commercial or industrial community. Unless a temporary lane closure is otherwise authorized, the Engineer may deduct a fee from a Progress Payment for each temporary lane closure maintained prior to 8:30 A.M. or after 3:30 P.M. The fee will be assessed at a rate of \$700 per each travel lane per each thirty (30) minute interval, or fraction thereof.

Add a subsection as follows:

#### **2-13 CCTV Videos.**

Between 2011 and 2014, CCTV inspections were performed by the City of Torrance and a contractor for the sewer lines to be replaced or rehabilitated under this contract. The CCTV videos, together with logs of the results, are available at the Public Works Department of the City of Torrance, located at 20500 Madrona Avenue. Prospective Bidders may contact Keron Crawford at (310) 618-3087 during normal business hours and schedule an appointment to view these videos during normal working business hours.

The videos and logs are solely for information. The CITY does not guarantee their accuracy and correctness, and in no event is such information to be considered to be a part of the Contract Documents. If the Bidder in preparing the Bid Proposal uses this information, the Bidder hereby assumes all risks resulting from conditions differing from the information shown. The Bidder, in consideration of the opportunity to review the information, hereby releases the CITY from any responsibility or obligation as to the accuracy or completeness of such information, or for any additional compensation for work performed due to assumptions based on the use of such information. The availability of said videos does not relieve the Contractor of its responsibility to perform a new video inspection.

Add a subsection as follows:

## **2-14 COORDINATION AND NOTIFICATIONS TO RESIDENTS AND BUSINESSES.**

In order to provide for smooth coordination of the work and timely notifications to the businesses and residences affected by the construction, the City will hold weekly field meetings lasting approximately one hour in which the contractor foreman, project manager and/or superintendent shall be present. Prior to beginning work, contractor shall deliver written notices to each resident or business affected by the work which will be provided by the CITY. Any written communication to residents and/or businesses requires advance approval from the CITY. Contractor is to notify each resident or business of the proposed start of work date and estimated duration of work affecting said resident or business. In addition, Contractor shall be responsible to notify each resident or business of anticipated noise, odors and access restrictions and shall coordinate with each resident or business to maintain access and security of the work site. Initial contact with private property owners shall be with the presence of the Inspector or Engineer.

## **SECTION 3 – CHANGES IN WORK**

### **3-2 CHANGES INITIATED BY THE AGENCY**

**Section 3-2.2.1 General.** Delete this subsection in its entirety. Add the following:

The City reserves the right to increase or decrease any bid item quantity, as necessary, to meet the City's needs and/or the project and/or budget requirements. If the City increases or decreases any bid item quantity by more than 25% of the original contract quantity, either the City or the Contractor may initiate discussions and/or negotiations regarding a potential adjustment to the contract unit bid price.

**Section 3-2.2.2. Increases of More Than 25%.** Delete this subsection in its entirety.

**Section 3-2.2.3. Decreases of More Than 25%.** Delete this subsection in its entirety.

### **3-3 EXTRA WORK**

**3-3.1 General.** Add the following:

Payment for additional work and all expenditures in excess of the Contract Price must be authorized in writing by the Engineer. Such authorization shall be obtained by the Contractor prior to engaging in additional work. It shall be the Contractor's sole responsibility to obtain written approval

from the Engineer for any change(s) in material or in the work proposed by suppliers or subcontractors. No payment shall be made to the Contractor for additional work which has not been approved in writing, and the Contractor hereby agrees that it shall have no right to additional compensation for any work not so authorized.

The Contractor shall be responsible to provide all data and to obtain all approvals required by the Specifications, including submittal of Daily Extra Work Reports. No claims or extras shall be approved by the Engineer unless all work was done under the direction of and subject to the approval of the Engineer. Disputed work claims shall comply with 3-3 as modified herein.

**3-3.2.2.3 Tools and Equipment Rental.** Replace the second paragraph with the following:

The Contractor will be paid for the use of equipment at the lower of the actual rental rates paid by the Contractor or the rental rates listed for such equipment in either the "Rental Rate Blue Book" published by Dataquest, Inc., 1290 Ridder Park Drive, San Jose, California 95131; telephone (408) 971-9000 or the California Department of Transportation publication entitled "Labor Surcharge and Equipment Rates" available at the Caltrans web site, [www.dot.ca.gov/hq/eqsc/inforesources.htm](http://www.dot.ca.gov/hq/eqsc/inforesources.htm), which is in effect on the date upon which the work is accomplished, and that hereby is made a part of the Contract, regardless of ownership or any rental or other agreement, if such may exist, for the use of such equipment entered into by the Contractor. If it is deemed necessary by the Engineer to use equipment not listed in the said publication, a suitable rental rate will be established by the Engineer. The Contractor may furnish any cost data that might assist the Engineer in the establishment of such rental rate.

**3-3.2.3 Markup.** Add the following:

The markups mentioned hereinafter shall include, but are not limited to, all costs for the services of superintendents, project managers, timekeepers and other personnel not working directly on the change order, and pickup or yard trucks used by the above personnel. These costs shall not be reported as labor or equipment elsewhere except when actually performing work directly on the change order and then shall only be reported at the labor classification of the work performed.

**3-3.2.3.1 Work by Contractor.** Replace with the following:

The following percentages shall be added to the Contractor's costs and shall constitute the mark-up for all overhead and profit, which shall be deemed to include all items of expense not specifically designated as cost or equipment rental in Subsections 3-3.2.2(a), 3-3.2.2(b), and 3-3.2.2(c).

Labor	20
Materials	15
Equipment Rental	15
Other Expenditures	15

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

**3-3.2.3.2 Work by Subcontractor.** Replace with the following:

When any part of the extra work is performed by a subcontractor, the markup established in 3-3.2.3(a) shall be applied to the subcontractor's actual cost of such work. A markup of ten (10) percent on the first \$5,000 of the subcontracted portion of the extra work and a mark-up 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.

The markups specified in parts (a) and (b) above shall be considered as including, but not limited to, the Contractor's labor costs for personnel not working directly on the extra work, including the cost of any tools and equipment that they may use. Such costs shall not be reported as labor or equipment costs elsewhere except when they are actually used in the performance of the extra work. Labor costs shall in that case be reported for the labor classification corresponding to the type and nature of extra work performed.

### **3-4 CHANGED CONDITIONS**

Add the following:

This subsection does not apply to utilities.

## **SECTION 4 – CONTROL OF MATERIALS**

### **4-1 MATERIALS AND WORKMANSHIP**

**4-1.1 General** Add the following paragraph after the second paragraph:

If the work, or any portion thereof, shall be damaged in any way, or if any defective materials or faulty workmanship shall be discovered at any time prior to the final payment, the Contractor shall forthwith, at its own cost and expense, repair said damage, or replace such defective materials, or remedy such faulty workmanship in a manner satisfactory to the Engineer.

**4-1.2 Protection of Work and Materials.** Add the following:

The Contractor shall assume all risks and expense of interference and delay in his operations, and the protection from or the repair of damage to improvements being built under the contract, as may be caused by water of whatever quantity from floods, storms, industrial waste, irrigation, underground or other sources. However, the Contractor shall be entitled to an extension of time in accordance with the provisions of Subsection 6-6. The Contractor shall also assume full responsibility and expense of protecting, or removing and returning to the site of Work, all equipment or materials under his care endangered by any action of the elements.

Furthermore, the Contractor shall indemnify and hold the City harmless from all claims or suits for damages arising from his operations in sewer bypass or dewatering the Work and control of water.

## **SECTION 5 – UTILITIES**

### **5-1 LOCATION.**

Add the following:

The Contractor shall provide coordination with all the utility companies involved and shall provide protection from damage to their facilities. The Contractor shall be responsible for repair or replacement to said facilities made necessary by its failure to provide required protection. The Contractor is required to include utility requirements in the Construction Schedule per Section 6-1.

The Contractor shall utilize the services of "Underground Service Alert-Southern California" for utility locating in all public right-of-ways by calling 1-800-227-2600 at least 48 hours prior to any excavation.

New piping shall go over or under the existing utilities as indicated on the plans. Where not indicated, the Contractor shall assume that the new piping will cross under the existing utility. The Contractor shall pothole existing utilities as shown on the plans, as directed by the Engineer or as deemed necessary by the Contractor. The cost of potholing herein specified shall be included in the prices paid for other items of work and no additional compensation will be allowed.

Underground lines that are potentially hazardous such as oil company lines, natural gas mains, and electrical conduits will be carefully located by the owner as provided in the Standard Specifications. The Contractor shall take special precautions in determining the precise location and depth of these structures to insure that they will not be damaged by its operations.

Substitute the following for the last paragraph:

Prior to starting construction, the Contractor shall be responsible to determine the location and depth of all utilities which have been marked by the respective owners and which may affect or be affected by its operations. The Contractor also shall determine the location and depth of each service connection, whether or not marked. Full compensation for such work shall be considered as included in the prices bid for other items or work. If a utility which was marked or a service connection is found to interfere with the work after construction has commenced, the Contractor shall be solely responsible for all costs of any delay and for any costs which could have been avoided if the Contractor had located the utility prior to start of construction.

## **5-2 PROTECTION.**

Add the following:

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

Sewers, including lateral repairs, shall be constructed of Vitrified Clay Pipe, unless otherwise approved in writing by the Engineer.

Due to the nature of the work involving pipe liners, utility companies may not have marked utilities adjacent to pipelines not shown to require excavations. If, in the course of construction, the Contractor needs to perform additional excavations to provide access or to make repairs, including repairs to laterals, the Contractor shall be responsible to determine the locations of all adjacent facilities.

Add the following after the final paragraph:

As noted in subsections 5-2.1, 5-2.2 and 5-2.3 utilities are classified and are to be handled in one of three ways by the Contractor in the course of performing the contract.

Add the following subsections:

### **5-2.1 Noninterfering Utilities**

Utilities that are not abandoned by the owner and do not physically interfere with the permanent work in its final location shall be supported, protected and maintained in place by the Contractor, and the Contractor shall be solely responsible for any damage, loss or injury, or death resulting from his/her failure to do so and the Contractor shall indemnify and hold harmless the City from any and all such consequences. Noninterfering utilities may, with the permission of the owner and the Public Works Director, be relocated still farther from the permanent work in its final locations, but the Contractor shall not so consider, in submitting his bid, unless the relocation is shown on the plans.

### **5-2.2 Abandoned Utilities**

Abandoned utilities are those portions of any utility which are no longer needed or desired by the owner and whose destruction is consented to by the owner and/or is permitted by notation on the plans. Abandoned utilities which physically interfere with the permanent work or with the construction thereof shall be removed by the Contractor and the Contractor shall be solely responsible for any damage, loss or injury, or death resulting from the removal and the Contractor shall indemnify and hold harmless the City from any and all such consequences.

### **5-2.3 Interfering Utilities**

Any utility shall be deemed an interfering utility (1) which physically occupies any part of the space to be occupied by the permanent work in its final locations, or (2) whose length within the theoretical width of excavation for the permanent work exceeds five times the width of said theoretical excavation whether or not the utility physically interferes with the permanent work. Interfering utilities that are not abandoned by the owner shall be relocated so as not to interfere with the permanent work in its final location. Such relocation will be performed by the owner or the City unless otherwise shown on the plans.

The Contractor shall exercise caution to prevent damage to or movement of the utilities while constructing the permanent work along and adjacent to the utilities.

Should any manhole extend within a trench excavation, the Contractor shall choose one of the following methods of construction and shall assume all responsibilities thereof:

- (1) Support and maintain the manholes in place during the construction of the permanent work in open cut.
- (2) Remove the shaft and maintain the base of the manhole in place until the backfill is placed and compacted; then reconstruct the manhole shaft.
- (3) Use another method of construction which has been submitted to and approved by the Engineer. All costs for the work pertaining to the manholes that might be found to extend partially within the excavation limits or any protective measures required due to the proximity of the manholes and the permanent work at these locations shall be absorbed in the prices bid for the various items of work.

**5-2.4 Protection of Underground Hazardous Utilities.** This Subsection shall apply to projects where there are underground utilities within the Work area which may be potentially hazardous if damaged. A hazardous substance shall be defined as one having the potential for an immediate disaster such as, but not limited to, gasoline, electricity, fuel oil, butane, propane, natural gas, chlorine or other chemicals.

Abandoned or inoperative utilities designed to carry hazardous substances and unidentified or unknown utilities shall be considered hazardous until determined otherwise. Whenever the Contractor is directed by the Engineer to tap these lines, the Contractor shall provide personnel specialized in this work and payment therefore will be considered as extra work per 3-3 of these Special Provisions.

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

- 1) The Contractor shall not trench or excavate within the area where a utility known to carry a hazardous substance exists until its location has been determined by excavation or other proven methods acceptable to the Engineer. The intervals between exploratory excavations or location points shall be sufficient to determine the exact location of the line. Unless otherwise directed by the Engineer, excavation for underground hazardous utilities shall be performed by the Contractor and paid for as specified per 5-1 of these Special Provisions.
- 2) If it is determined that the horizontal or vertical clearance between the utility known to carry hazardous substances and the construction limit is less than 300 mm (12 inches) (450mm (18 inches) if scarifying), the Contractor shall confer with its owner. Unless the owner elects to relocate the line or take it out of service, the Contractor shall not excavate until the line has been completely exposed within the limits of construction.
- 3) Once the physical location of the utility known to carry hazardous substances has been determined, the Contractor, in cooperation with and with the concurrence of the utility owner, shall determine how to protect and/or support the utility from damage before proceeding with the Work.
- 4) During all excavation and trenching operations, the Contractor shall exercise extreme caution and protect the utilities from damage.
- 5) The Contractor shall notify the Engineer, the public agency maintaining records for the jurisdiction in which the Project is located and the owner, if known, whenever previously unidentified or unknown underground utilities are encountered so that the location can be accurately established and made a part of permanent substructure records.

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

### **5-3 REMOVAL**

Add the following:

It shall be the Contractor's responsibility irrespective of the notations on the plans to confirm or determine that a utility is to be abandoned before treating the same as an abandoned utility and shall assume all risks in so determining.

### **5-4 RELOCATION**

Substitute the following for the last paragraph:

For the purpose of these specifications, service connections shall be construed to mean all, or

any portion of, the pipe, conduit, cable, or duct which connects a utility main distribution line to the meter of an individual user, and further, shall include the meter and such portions of said pipe, conduit, cable or duct on the user's side of the meter which affect the contract work or its prosecution.

The City will arrange for the alteration or permanent relocation of only such service connections, except sewer house connections and water laterals, that interfere with the permanent work in its final location and such alteration or permanent relocation will be performed by others at no expense to the Contractor. The Contractor shall be responsible for the alteration or permanent relocation of sewer connections and water laterals, unless otherwise approved by the Engineer.

In instances where the alteration or permanent relocation of interfering service connections can be avoided by encasing same in the slabs or walls of poured-in place concrete structures the Contractor shall, when directed by the Engineer, so encase such service connections, and any costs for such work shall be absorbed in the unit prices or included in the lump sum amounts bid for the various items of work.

Service connections which do not interfere with the project structures shall be maintained in place by the Contractor. The cost of such work shall be absorbed in the unit prices or included in the price bid for the various items of work.

## **5-5 DELAYS**

Substitute the following:

If the contractor while performing the contract discovers utility facilities not identified by the public agency in the contract plans or specifications, he shall immediately notify the City and utility in writing. The Contractor shall not be entitled to damage or additional payment, nor shall it be entitled to standby time for labor if a delay does occur. The Contractor also shall not be entitled to damage or additional payment for equipment not on the project during the occurrence of the event that caused the related delay. The Engineer will determine the extent of the delay attributable to such interferences, the affect of the delay on the project as a whole, and any commensurate extension of time.

Any failure of the City and/or utility company to accomplish relocations in a reasonable manner in light of the Contractor's operations (to the extent such operations would otherwise be feasible and in accordance with the contract and as disclosed to the City prior to the Contractor encountering any such utility) shall entitle the Contractor to an extension of contract time to the extent that, in the judgment of the Engineer, the Contractor's completion of the overall contract work has been delayed; however, the Contractor shall be entitled to no other remedy and, in submitting its bid, thereby waives such other remedies, if any, unless the relocation delay is the result of arbitrary, capricious or malicious conduct by the City.

## **SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK**

### **6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK.**

**6-1.1 Construction Schedule.** Replace the entire subsection with the following:

Within ten (10) working days after the date of the CITY's execution of the Contract, the Contractor shall submit a proposed construction schedule to the Engineer for approval. The schedule shall be in accordance with 6-1.3 and 6-1.4 and shall be in sufficient detail to show chronological relationship

of all activities of the Work. These include, but are not limited to: estimated starting and completion dates of various activities, submittal of shop drawings to the Engineer for approval, procurement of materials and scheduling of equipment.

Prior to issuing the Notice to Proceed, the Engineer will schedule a Pre-Construction Meeting with the Contractor to review the proposed construction schedule and delivery dates, arrange utility coordination and clarify inspection procedures.

Prior to starting any Work, the Contractor may be required to attend a Community Meeting to be scheduled by the Engineer. The meeting, to be held in the evening, will address the residents' questions and concerns regarding the Work, what can be expected during construction and vehicular and pedestrian access that may be temporarily restricted during construction. Compensation for attending these meetings shall be considered a part of Mobilization or, when there is no bid item for Mobilization, shall be considered as part of the bid items of work for this contract.

Notwithstanding any other provisions of the Contract, the Contractor shall not be obligated to perform any work and the CITY shall not be obligated to accept or pay for any work performed by the Contractor prior to delivery of a Notice to Proceed. The CITY's knowledge of work being performed prior to delivery of the Notice to Proceed shall not obligate the CITY to accept or pay for such work. The Contractor shall provide all required Contract bonds and evidences of insurance prior to commencing work at the site.

**6-1.2 Commencement of the Work.** Delete the subsection in its entirety. Add the following subsections:

**6-1.3 Criteria.** The construction schedule shall conform to the following criteria:

- 1) The schedule shall be prepared using the latest version of Primavera, Microsoft Project or approved equal.
- 2) Work activities shall be based on the items of work per 2-6, and the following:
  - a) Contract Unit Price items shall be subdivided into those portions to be constructed during each stage or phase of construction.
  - b) Lump sum items shall be subdivided into those portions to be constructed during each stage or phase of construction.
- 3) Utility relocations in coordination with the Contractor per 5-4 of these Special Provisions shall be considered as activities.
- 4) Required submittals, working and shop drawings shall be included as activities.
- 5) The procurement of construction materials and equipment with long lead times for deliveries shall be included as activities.
- 6) Work to be performed by subcontractors shall be identified and shown as work activities.
- 7) Start and completion dates of each activity shall be illustrated.
- 8) Completion of all Work under the Contract shall be within the time specified in 6-7 of these Special Provisions and in accordance with the Plans and Specifications.

**6-1.4 Requirements.** In preparing the construction schedule, the following items shall be considered:

Sequence of Construction - The Contractor shall sequence the Work in a manner to expeditiously complete the project with a minimum of inconvenience to the adjacent owners and to conform to the following:

1. **All sewer repairs on 242<sup>nd</sup> Street and Ocean Avenue shall be completed before any other work shall commence.**
2. **The Contractor may not begin any pavement reconstruction activities until it has completed the installation of the sewer repair(s) to the satisfaction of the project engineer. Until such time, the repair area shall either be securely plated or backfilled and repaired with temporary asphalt per City of Torrance Standard Plan T116-2.**
3. Root Pruning – Shall occur prior to the removal of the PCC curb/gutter, cross gutters, sidewalk, driveways, curb ramps, etc.
4. Sewer Repairs – All sewer repairs, and its related activities shall be completed in its entirety as the second order of the work after any necessary root pruning. PCC improvements may occur during the same time as the sewer repairs as long as there is no conflict between the two operations, nor a conflict in regard to traffic control which shall be determined by the Engineer.
5. PCC construction - Construction of PCC sidewalks, driveways, access ramps, curbs, gutters and cross gutters shall be formed and poured within 5 working days following removal of the existing material at any location. Any adjacent trench (i.e. 1-foot wide slot trench), required to remove and construct said PCC construction shall be restored per these Specifications and no later than 2 calendar days following the PCC construction. Failure by the Contractor to comply with these requirements in a timely manner may result in a liquidated damage assessed upon the Contractor. Such liquidated damage shall be determined by the Engineer and will be deducted, accordingly, from a Progress Payment due to the Contractor.
6. The Contractor is required to work on tree and stump removals per 300-1.3.2(d), sidewalk, access ramps, curb, gutter, cross gutters and driveway replacements in a continuous operation and simultaneously with the work in item 1 above.
7. Pavement removal - All pavement removed as a result of trenching shall be hauled off the Work site no later than the same day that the removal is performed.
8. Within 4 working days following the installation of the final AC surface course in any Phase, the Contractor shall complete the adjustment of all manholes, valves and any other required surface facilities.
9. Within 5 working days following the installation of the final AC surface course in any Phase, the Contractor shall complete the “cat-tracking” of all proposed pavement markings shown on the Plans. The City will inspect all “cat-tracking” within 2 working days and notify the Contractor of any needed corrections or adjustments. Upon approval of the “cat-tracking” by the Engineer, the Contractor shall then complete the installation of all thermoplastic pavement markings no earlier than 7 calendar days following the installation of the final AC or ARHM surface course in any Phase, but under no

circumstances later than 10 calendar days following the installation of the final AC surface course in any Phase.

10. Tree and Stump removals per 300-1.3.2(d) are to be performed before concrete removals.
11. Irrigation systems - Irrigation systems disrupted by the Contractor shall not be left inoperable for more than three working days.
12. All Work shall only be performed between the hours of 8:00 a.m. and 4:30 p.m. unless otherwise approved by the Engineer.
13. A move-in period of 10 calendar days will be allowed starting on the date in the Notice to Proceed.
14. Holiday Moratorium per 7-10.1.6. of these Special Provisions.
15. Stockpile area. Schedule shall indicate date for cleanup of stockpile area.
16. Survey (Subsection 2-9.2 of these Special Provisions)
17. Trash collection - the Contractor must schedule its work so as not to impact trash collection.

Should the Contractor fail to meet these Requirements, the Engineer reserves the right to prohibit the Contractor from making further removals until the clean up, construction, or rehabilitation of sprinklers is in conformance with the aforementioned requirements. Furthermore, if after notice is given to the Contractor to perform work to meet these requirements, and the Contractor refuses or for any reason fails to perform sufficiently to meet these schedules, CITY may perform said work and charge the Contractor for all costs incurred.

**6-1.5 Updates.** The Contractor shall submit 2 paper copies of the updated construction schedule to the Engineer on the first working day of each month.

If the Contractor decides to make a major change in the method of operations after commencing construction, or if the schedule fails to reflect the actual progress, the Contractor shall submit to the Engineer a revised construction schedule in advance of beginning revised operations.

Full compensation for complying with all requirements of Section 6-1.5 Updates shall be per the Contract Unit Price for "Mobilization". If the Contractor fails to submit an updated Construction Schedule to the Engineer on the first working day of each month, the CITY will deduct one-fifth the amount of the Contract Unit Price for each work day after the due date, up to maximum of \$300, that each monthly schedule update is not submitted.

## **6-7 TIME OF COMPLETION**

**6-7.1 General.** Replace the first sentence with the following:

Time shall be of the essence in the Contract. The Contractor shall begin Work after the mailing by the Engineer to the Contractor, first class mail, postage prepaid, a Notice to Proceed and shall diligently prosecute the same to completion within **90 working days** from the start date specified in the Notice to Proceed.

## **6-8 COMPLETION, ACCEPTANCE AND WARRANTY**

### **6-8.2 Acceptance.** Replace with the following:

If, in the Engineer's judgment, the Work has been completed and is ready for acceptance, the Engineer will so certify and will determine the date when the Work was completed. This will be the date when the Contractor is relieved from responsibility to protect the Work. The Engineer may cause a Notice of Completion to be filed and recorded with the Los Angeles County Recorder's Office. At the Engineer's option, the Engineer may certify acceptance to the City Council who may then cause a Notice of Completion to be filed and recorded with the Los Angeles County Recorder's Office.

### **6-8.3 Warranty.** Add the following subsection:

**6-8.3.1 Manufacturer's Warranties.** Manufacturer's warranties shall not relieve the Contractor of liability under these Specifications. Such warranties only shall supplement the Contractor's responsibility. The Engineer may, at his option, require a manufacturer's warranty on any product offered for use.

## **6-9 LIQUIDATED DAMAGES.**

In each of the two paragraphs, substitute "\$1,500" in place of "\$250" as the amount of the liquidated damages per each consecutive calendar day.

## **SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR**

### **7.2 LABOR.**

#### **7-2.3 Payroll Records.** Add the following:

Payrolls and payroll records: any payrolls and payroll records required for this project shall be submitted, for each week in which any contract work is performed, to the Engineer. A retention of \$5,000 per report per pay period will be withheld from a progress payment for a late or missing report. A report shall be deemed as late or missing when not submitted to the Engineer within 10 calendar days from the close of the pay period for which the report applies. In addition, a non-refundable deduction of \$100 per report per day will be deducted from payments due the Contractor for each late or missing report. The \$100 non-refundable deduction per day will be incurred beginning on the first day the report is late or missing.

Add the following subsection:

#### **7-2.5 Subcontractor and DBE Records:**

Subcontractor records: at the completion of the contract if the Contractor does not submit its Subcontractor Records to the Engineer a retention in the amount of \$10,000 per record will be withheld from a progress payment for a late or missing record. A record shall be deemed as late or missing when not submitted to the Engineer within 15 calendar days from the completion of the contract. In addition, a non-refundable deduction of \$300 per record per day will be deducted from payments due the Contractor for each late or missing record. The \$300 non-refundable deduction per day will be incurred beginning on the first day the record is late or missing.

## **7-2.6 Department of Industrial Relations' monitoring and enforcement of prevailing wage laws**

California Labor Code:

1771.1. (a) A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

SB 854 amended the Labor Code to require all contractors bidding on public works projects to register with the Department of Industrial Relations (DIR) and to pay an annual fee. The registration requires contractors to provide the State with evidence of the contractors' compliance with a number of statutory requirements. The registration requirement took effect on July 1, 2014 to fund the Department of Industrial Relations' monitoring and enforcement of prevailing wage laws. The registration period is open now, and contractors and subcontractors wishing to work on a public works project must be registered by March 1, 2015. For public agencies/awarding bodies, the new law requires that all public works projects with bids due after March 1, 2015, or awarded on or after April 1, 2015, use only registered contractors and subcontractors. The bill also requires awarding bodies to include notice of the registration requirement in their bid invitations and bid documents. In addition, public agencies must also file notice of their public works projects using DIR approved forms.

Registration is completed through an online application and requires a non-refundable \$300 fee to be paid by the contractors and subcontractors. The registration process requires contractors to:

- provide workers' compensation coverage to its employees
- hold a valid Contractors State License Board license
- have no delinquent unpaid wage or penalty assessments
- not be subject to federal or state debarment

Contractors must pay an annual renewal fee by July 1 of each year. The registration form is located on the DIR's website at <http://www.dir.ca.gov/DLSE/dlsepublicworks.html>.

To help awarding bodies and contractors comply with the new requirements, the DIR will post a database of registered contractors and subcontractors on its website. While non-registered contractors may not be awarded public works contracts after the effective date, inadvertently listing an unregistered subcontractor on a bid will not necessarily invalidate that bid. In addition, the registration requirement does not apply to private jobs that are determined to be public works after the contract has been awarded.

## **7-3 INSURANCE.**

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

The Contractor must maintain at its sole expense the following insurance, which will be full coverage not subject to self-insurance provisions:

- 1) Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:
  - a) Combined single limits of \$2,000,000 per occurrence.
- 2) General Liability including coverage for premises, products and completed operations, independent contractors, personal injury and contractual obligations with combined single limits of coverage of at least \$3,000,000 per occurrence, with an annual aggregate of no less than \$5,000,000.

Add the following:

The Contractor must include all subcontractors as insureds under its policies or must furnish separate certificates and endorsements for each subcontractor.

**7-3.3 Worker's Compensation Insurance.** Add the following after the fourth paragraph:

Worker's Compensation Insurance shall be with limits as required by the State of California and Employer's Liability with limits of \$1,000,000 per accident.

**7-3.4 Auto Liability Insurance** Delete subsection in its entirety.

**7-4 NOT USED.**

**7-5 PERMITS.**

Replace the entire section with the following:

The Contractor shall obtain all necessary permits, including but not limited to, Encroachment Permits from the city of Torrance.

The Contractor shall obtain a City of Torrance Business License and a no-fee Construction Excavation Permit before commencing construction. The Contractor shall obtain no-fee Electrical and Plumbing permits from the Building and Safety Department before commencing installation of new electrical services or on-site irrigation systems, as applicable.

Full compensation for complying with the above requirements shall be considered as included in the prices bid for the appropriate items of work.

**7-6 THE CONTRACTOR'S REPRESENTATIVE**

Add a third paragraph to the section stating the following:

The Contractor's Representative shall be approved by the CITY prior to the start of the Work. If the designated representative is rejected, the Contractor shall immediately designate another representative in writing and submit to the City for consideration. The CITY shall have the authority to require the Contractor to remove its representative and/or alternate representative at any time and at no cost to the CITY.

## 7-8 WORK SITE MAINTENANCE

**7-8.1 General.** The second paragraph is amended to read:

Unless directed otherwise by the Engineer, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day to keep paved areas acceptably clean to the City whenever construction, including restoration, is incomplete.

### 7-8.6 Water Pollution Control.

#### 7-8.6.2 Best Management Practices (BMPs).

Add the following:

Best Management Practices shall be defined as any program, technology, process, siting criteria, operating method, measure, or device which controls, prevents, removes, or reduces pollution. The Contractor shall obtain and refer to the California Storm Water Best Management Practice Handbooks, Volume 3 Construction BMP Handbook and the Los Angeles County Department of Public Works Best Management Practices Handbook for Construction Activities. These publications are available from:

Los Angeles County  
Department of Public Works  
Cashier's Office  
900 S. Fremont Avenue  
Alhambra, CA 91803  
Telephone (626) 458-6959

The Contractor shall have a minimum of two (2) readily accessible copies of each publication on the Work site at all times.

The Contractor shall implement BMPs in conjunction with the following construction operation and activities:

CONSTRUCTION PRACTICES	Clearing, Grading and Excavating
	Water Conservation Practices
	Dewatering
	Paving Operations
	Structure Construction and Painting
MATERIAL MANAGEMENT	Material Delivery and Storage
	Material Use
	Spill Prevention and Control
WASTE MANAGEMENT	Solid Waste Management
	Hazardous Waste Management
	Contaminated Soil Management
	Concrete Waste Management
	Sanitary/Septic Waste Management
VEHICLE AND EQUIPMENT MANAGEMENT	Vehicle and Equipment Cleaning
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance

The Contractor shall implement the following BMPs in conjunction with the previously listed construction operation activities:

VEGETATIVE STABILIZATION	Scheduling of Planting
	Preservation of Existing Vegetation
	Temporary Seeding and Planting
	Mulching
PHYSICAL STABILIZATION	Geotextiles and Mats
	Soil Stabilizer/Dust Control
	Temporary Stream Crossing
	Stabilized Construction Roadway
	Stabilized Construction Entrance
RUNOFF DIVERSION	Sodding, Grass Plugging, and Vegetative Buffer strips
	Earth Dikes, Drainage Swales, and Lined Ditches
	Top and Toe of Slope Diversion Ditches/Berms
	Slope Drains and Subsurface Drains

VELOCITY REDUCTION	Flared Culvert End Sections
	Outlet Protection/Velocity Dissipation Devices
	Check Dams
	Slope Roughening/Terracing/Rounding
SEDIMENT TRAPPING	Slit Fences
	Straw Bale Barrier
	Sand Bag Barrier
	Brush or Rock Filter
	Storm Drain Inlet Protection
	Sediment Traps
	Sediment Basin

Additional BMPs may be required as a result of a change in actual field conditions, contractor activities, or construction operations. When more than one BMP is listed under each specific BMP category, the Contractor shall select the appropriate and necessary number of BMPs within each category in order to achieve the BMP objective.

BMPs for contractor activities shall be continuously implemented throughout the year. BMPs for erosion control and sedimentation shall be implemented during the period from October 15 to April 15, and whenever the National Weather Service predicts rain within 24 hours. BMPs for erosion control and sedimentation shall also be implemented prior to the commencement of any contractor activity or construction operation that may produce run-off, and whenever run-off from other sources may occur.

The CITY, as a permittee, is subject to enforcement actions by the State Water Resources Control Board, the Environmental Protection Agency and private citizens. The CITY may assess the Contractor a penalty of \$1,000 for each calendar day that the Contractor has not fully implemented the appropriate BMPs and/or is otherwise in noncompliance with these provisions. In addition, the CITY will deduct, from the final payment due the Contractor, the total amount of any fines levied on

the CITY, plus legal and staff costs, as a result of the Contractor's lack of compliance with these provisions and/or less than complete implementation of the appropriate BMPs.

Full compensation for the implementation of BMPs, including the construction, removal, and the furnishing of all necessary labor, equipment, and materials, shall be considered as included in the price bid for "BEST MANAGEMENT PRACTICES".

The Contractor will be assessed \$1,000 per violation per calendar day that the Contractor does not fully implement or comply with the provisions set forth in these Special Provisions. The penalty will be assessed from Contract progress payments due to the Contractor.

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

The Contractor shall notify the Engineer immediately following receipt of a request from any jurisdictional regulatory City, to enter, inspect, sample, monitor or otherwise access the Project site or the Contractor's records pertaining to water pollution control.

**Sewage Spillage Prevention.** The Contractor's attention is directed to any sewer bypass required during the construction of this Contract.

The Contractor shall make arrangements for an emergency response unit comprised of emergency response equipment and trained personnel to be immediately dispatched to the Work site in the event of a sewage spill. Prior to commencing any Work under the Contract, and subject to review and approval by the Engineer, the Contractor shall prepare and implement a written emergency response plan and procedure, to include response teams, access routes, required materials, equipment, clothing and tools, and an emergency response roster with telephone numbers and arrangements for backup personnel and equipment. This plan and emergency response roster shall be provided to the Engineer.

The Contractor shall be fully responsible for containing any sewage spillage, preventing any sewage from reaching a watercourse, recovery and legal disposal of any spilled sewage, any fines or penalties associated with the sewage spill imposed upon the Agency and/or the Contractor by other jurisdictional agencies, and any other expenses or liabilities created or generated as a result of the sewage spillage.

Should a sewage spill occur, the Contractor shall immediately notify the Engineer.

All costs for work required to comply with the requirements of this subsection shall be considered as included in the price bid for the various items of work.

Add the following subsections:

**7-8.7 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 water meter from the CITY by calling Global Water at (855) 354-5623. A \$1,000 deposit is required and refundable upon return of the meter in good working condition. The Contractor shall pay for the water used, at the CITY's current water rates.

Some water mains in Torrance are owned/operated by California Water Service. For rental of a hydrant meter the contractor shall call California Water Service at (310) 257-1400.

**7-8.8 Contractor's Storage Yard.** The Contractor shall be responsible for obtaining a storage yard for the duration of the Work. If the proposed location of the yard is located within the boundaries of the CITY, the Contractor shall obtain prior approval from the Engineer.

**7-8.9 Graffiti Removal.** The Contractor shall maintain the Work, all of its equipment, and all traffic control devices, including signage, free of graffiti throughout the duration of the Contract. The Contractor shall respond to any request from the Engineer to remove graffiti within 4 hours of notification. Should the Contractor fail to respond to such request, the CITY reserves the right to make other arrangements for the requested graffiti removal and deduct the cost from any monies due the Contractor.

## **7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS**

Add the following paragraph:

The Contractor shall be responsible to protect all new concrete work from being etched, scratched or otherwise marked or having wet slough material deposited thereon. If new concrete work is marked, the Contractor shall replace it at its expense in accordance with 303-5.7 of these special provisions.

The Contractor shall perform all private lawn, hardscape, and parkway restorations, (not included in the project plans) including restoration of irrigation systems and existing curb drains within five (5) days after the adjacent improvements have been constructed at his own expense. The Contractor shall not delay restorations for tree plantings.

Add the following subsections:

**7-9.1 Replacement of Lawns.** When the Contract requires the removal and replacement of lawns or sod, including parkways, the Contractor shall comply with the following minimum requirements: the area to be replanted shall be regraded and covered with two inches of an approved topsoil; the grass seed or sod shall be for grass or sod of the same type as was removed, or an approved equal, and grass shall be sown at the rate recommended by the seed distributing company; Bandini steer manure or approved equal shall be applied to the planted area at the rate recommended by the vendor. The Contractor shall water and care for replaced lawns until the grass has attained a complete cover and has been given its first cutting, unless other arrangements are made with the property owners. The lawn restoration, as above described, shall be completed prior to the final payment.

Topsoil shall be in accordance with 212-1.1.

**7-9.2 Replacement of Sprinkler Systems.** Damaged sprinklers shall be replaced so that the area watered by the original system will be adequately watered by the reconstructed system without

undue waste of water. Overspray on any area no longer planted should be avoided, and any revised shape or layout of the remaining planted area will be adequately watered. Any additional material or work required to obtain said adequate coverage shall be furnished by the Contractor, at its expense. The Contractor shall be responsible to replace any lawn or plant damaged from lack of irrigation resulting from the Contractor's operations, at its expense, to the satisfaction of the Engineer.

**7-9.3 Parkway Trees.** The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the Engineer. All existing trees and shrubs that are damaged during construction shall be trimmed or replaced by the Contractor or a certified tree company to the satisfaction of the Engineer. Tree trimming and replacement shall be accomplished in accordance with the following requirements:

- (a) Trimming. Symmetry of the tree shall be preserved; no stubs, splits torn branches or torn roots left; clean cuts to be made close to trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over one and one-half inches in diameter shall be coated with a suitable tree wound paint as approved by the Engineer.
- (b) Replacement. The Contractor shall immediately notify the Engineer if any tree is damaged by its operations. If, in the opinion of the Engineer, the damage is such that replacement is necessary, the Contractor shall replace the tree at its own expense. The tree shall be of a like variety as the tree damaged, subject to the approval of the Engineer. The size of the tree shall be the size of the tree replaced or 3" in diameter, whichever is smaller.

**7-9.4 Street Furniture.** The Contractor shall be responsible for removal, storage and replacement of trash receptacles, bus benches, bus enclosures, newspaper boxes, mail boxes, etc. and coordination with the Owners as required throughout construction. Replacement of the removed items shall be per the direction of the Owner or Engineer.

**7-9.5 Protection of Existing Pavement Surfaces from Tack Coat and Oil.** When work requires the placement of a tack coat pursuant to Subsection 302-5.4, the Contractor shall protect existing pavement surfaces outside of the work limits from the spreading of tack coat and oil adhering to truck tires exiting work area. The protected area shall extend the full width of the street and be by either of the following methods:

- 1) The Contractor shall wet the existing pavement surface to a distance of ten (10) feet away from the work limit. The wetted area shall be maintained as such until placement of asphalt concrete pavement is completed; OR
- 2) The Contractor shall provide a thin spreading of sand or rock dust material to a distance of five (5) feet away from the work limit. The sand or rock dust area shall be maintained as such until placement of asphalt concrete pavement is completed. The Contractor shall be responsible to remove the sand or rock dust immediately after the placement of asphalt concrete pavement is completed.

**7-9.6 Curb Addresses.** The Contractor shall be responsible to repaint addresses (4-inch high black numbers on white background) on curb faces when printed addresses have been removed due to curb construction.

## **7-10 PUBLIC CONVENIENCE AND SAFETY**

### **7-10.1.2 Vehicular Access.** Replace with the following:

The Contractor's operations shall cause no unnecessary inconvenience. The access rights for 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 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 establishment of similar nature. Access to these facilities shall be continuous and unobstructed 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. When the Contractor begins excavation of a residential driveway, safe access shall be provided within 4 hours and not later than the end of the same workday in which excavation began.

The Contractor shall provide the necessary measures to prevent public access to private residences during removal and replacement of existing barrier structures, such as wood and chain link fences, during non-working hours.

The Contractor shall be responsible to provide at least 48 hours written notice to each affected property before closing or partially closing any driveway or pedestrian access.

Unless the Contractor makes other arrangements satisfactory to the owners, the Contractor shall provide and maintain safe, adequate vehicular access to places of business and public gathering as stated herein below:

- (a) For each establishment (such as, but not limited to, gas stations, markets, and other "drive-in" business) on the corner of an intersection, which has a driveway (or driveways) on each intersecting street, the Contractor shall provide vehicular access to at least one driveway on each intersecting street insofar as the access is affected by the Contractor's operations.
- (b) For each establishment (such as, but not limited to, motels, parking lots and garages) which has a one-way traffic pattern with the appropriate entrance driveway and exit driveway, the Contractor shall provide vehicular access to the entrance driveway and the exit driveway insofar as the access is affected by the Contractor's operations.
- (c) The Contractor shall provide vehicular access to all schools and parking lots including, but not limited to, apartment building parking lots.
- (d) The Contractor shall provide vehicular access to all establishments requiring such access for receiving or delivering materials or supplies.
- (e) The Contractor shall make every reasonable effort to provide maximum access to churches on their Sabbath days. In addition, the Contractor shall not park or store equipment at the site of a church on its Sabbath days.

- (f) At least three (3) days prior to starting work in any location, the Contractor shall distribute written notices to all homeowners and residents that will be impacted by the work. The City will provide the notice.
- (g) The Contractor shall provide a minimum 1-inch thick temporary asphalt surface for an access ramp or sidewalk if it is not able to install the permanent improvement within 5 working days following the removal of the existing material at any location. The offset at any transverse or longitudinal joint shall not be more than one-half (1/2) inch. On the temporary asphalt surface: the running slope shall not exceed 1:20; the cross slope shall not exceed 1:50. The Contractor shall not be allowed any additional compensation for the installation and removal of temporary asphalt.
- (h) The Contractor shall protect the work from traffic. Should the slurry seal be damaged, the Contractor shall provide satisfactory repairs at no cost to the City.

Should any change in these requirements be necessitated by extraordinary occurrences or requirements during the execution of the Work, the Contractor shall obtain prior written approval of the Engineer.

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.

All costs associated with the above requirements shall be included in the Contract Unit Price for "Traffic Control".

**7-10.1.3 Pedestrian Access.** Replace the entire subsection with the following:

The Contractor's operations shall cause no unnecessary inconvenience. The access rights for the public shall be considered at all times, unless otherwise approved by the Engineer.

Safe and adequate pedestrian 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 establishment 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 300 feet, shall be maintained unless otherwise approved by the Engineer.

All costs for the above requirements shall be included in the Contract Unit Price for TRAFFIC CONTROL.

**7-10.2 Work Area Traffic Control**

**7-10.2.1 General.** Replace this section with the following:

**Minimum Requirements for Maintaining Traffic Flow.** The Contractor shall observe the following minimum requirements:

- a) Unless otherwise shown on the City of Torrance Standard Traffic Control Plans, permitted by this Contract or authorized by the Engineer, all roadways, driveways, travel and turning lanes, sidewalks and access ramps shall remain open at all times.
- b) The Contractor shall provide adequate steel plating to cover and protect a newly poured PCC cross gutter with spandrels and integral curb in order to allow traffic flow and not close a street. A minimum lane width of 14 feet shall be provided over the steel plating.
- c) At a minimum, the Contractor shall maintain one (1) ten (10) foot-wide lane open in each direction between the hours of 8:00 a.m. and 4:30 p.m. All travel lanes shall be kept open all other times.
- d) Any travel lane adjacent to the curb and within the work zone shall be, at a minimum, a twelve (12) foot-wide lane.
- e) Reduction in lane requirements may be afforded only with prior written approval from the Engineer.
- f) Traffic signs, flaggers, warning devices, safety traffic devices and, on select streets, electronic arrow boards for diverting and directing traffic shall be furnished, installed and maintained by the Contractor throughout the project.
- g) The Contractor must provide access through the work zone in non-working hours by means of temporary ramps. Open trenches shall either be covered by steel plates, or ramped with crushed miscellaneous base. No drop-off at either transverse or longitudinal joints shall be allowed at any time. Temporary ramps, including those for driveway access, shall be constructed with either crushed miscellaneous base or temporary asphalt, as appropriate, with a minimum of 1" to 12" slope in both longitudinal and transverse directions.

All costs for the above requirements shall be included in the Contract Unit Price for "Traffic Control".

**Temporary Pavement Markings.** If permanent pavement markings cannot be restored by the end of the work shift in which they were obliterated, temporary markings shall be provided by the Contractor prior to leaving the Work site on all streets except any street closed to through traffic. These temporary markings shall be as follows:

Temporary lane lines and/or centerlines shall consist of day/night reflectorized raised pavement markers, approved by the Engineer, spaced approximately twenty-four (24) feet apart. A list of approved day/night reflectorized raised pavement markers may be obtained from the CITY.

Where approved by the Engineer, the Contractor may use reflectorized lines approximately twenty-four (24) inches long and four (4) inches wide, spaced approximately twenty-four (24) feet apart.

Right edge lines shall not be simulated with dashes or pavement markers; however, portable delineators, guide markers, etc., may be used by the Contractor where it is considered desirable to enhance the edge of traveled way due to curvilinear alignment, narrowing pavement, etc., and shall be used when directed by the Engineer.

Locations where no-passing zone centerline delineation has been obliterated shall be posted by the Contractor with a sign package consisting of a **W20-1 "ROAD WORK AHEAD"** and **SC13 "DO NOT PASS"**.

All temporary pavement markings and signs shall be maintained, or replaced as necessary by the Contractor, until permanent pavement markings are restored.

All costs associated with the above requirements shall be included in the Contract Unit Price for "Traffic Control".

**Temporary Pavement Markers/Delineation.** Temporary pavement delineation shall be furnished, placed, maintained and removed in accordance with the provisions of Section 12-3.01, of the Caltrans Standard Specifications. Nothing in these Special Provisions shall be construed as to reduce the minimum standards specified in the Manual of Traffic Controls published by Caltrans or as relieving the Contractor from responsibility as provided in 7-10 of these Special Provisions.

Whenever the work causes obliteration of pavement markers and/or delineation, the Contractor shall set in place temporary pavement markers/delineation prior to opening the traveled way to traffic. All pavement markers/delineation, including but not limited to lane lines, centerlines, directional arrows, pavement legends, etc, shall be provided at all times for traveled ways open to traffic.

All work necessary to establish temporary pavement markers/delineation shall be performed by the Contractor. Surfaces on which temporary pavement delineation is to be applied shall be cleaned of all dirt and loose material and shall be dry when the pavement delineation is applied. Temporary pavement markers/delineation shall not be applied over existing pavement delineation or other temporary pavement delineation.

Temporary pavement markers/delineation shall be maintained until replaced with permanent pavement markers/delineation. Temporary pavement delineation shall be removed when 1) it conflicts with the permanent pavement delineation; 2) a new traffic pattern is established or 3) as determined by the Engineer.

Temporary pavement delineation shall consist of temporary reflective raised pavement markers placed on lane lines and centerlines at longitudinal intervals of not more than 24 feet apart. Temporary reflective raised markers shall be the same color as the lane line or centerline the markers replace. Temporary reflective raised pavement markers shall be, at the option of the Contractor, one of the following or approved equal:

Apex Universal Product No. 2SCSM-1W or 2SCSM-2Y markers manufactured by Apex Universal, 11033 Forest Place, Santa Fe Springs, CA 90607, Telephone (562) 944 8878.

Flex-O-Lite Raised Construction Marker (RCM), manufactured by Flex-O-Lite, Lukens Company, P.O. Box 4366, St. Louis, MO 63123-0166, Telephone (800) 325-9525.

Temporary reflective raised pavement markers shall be placed as directed by the Engineer. Temporary reflective raised pavement markers shall be applied to the pavement surface with the adhesive in accordance with the manufacturer's instructions. Epoxy adhesive shall not be used to apply temporary reflective raised pavement markers in areas where the pavement will not be removed.

Temporary lane line or centerline delineation consisting of temporary reflective raised pavement markers placed on longitudinal intervals of not more than twenty-four (24) feet, shall be used on lanes opened to public traffic for a maximum of fourteen (14) days. Prior to the end of the fourteen (14) days the planned permanent pavement delineation, except permanent pavement markers, shall be placed. If the planned permanent pavement delineation, exclusive of permanent pavement markers, is not placed within fourteen (14) days, the Contractor shall provide, at its expense, additional temporary pavement delineation as directed by the Engineer. The additional temporary pavement delineation to be provided shall be equivalent to the pattern specified for the permanent traffic lines as determined by the Engineer.

Full compensation for furnishing, placing, maintaining, and removing the temporary pavement markers/delineation shall be considered as included in the Contract Unit Price for "Traffic Control".

**Temporary "No Parking" Signs.** The Contractor is responsible to post "Temporary No Parking" signs at least forty-eight (48) hours in advance of the first date of work and the required enforcement. If work is to begin on either a Monday or Tuesday, the Contractor shall post the signs on a Friday. Each sign must include text indicating the beginning and end dates and the hours in effect. "Tow-Away" and "No Parking" must be shown on each sign face. If it is required to temporarily restrict parking 24 hours/day then "Tow-Away" and "No Parking Anytime" must be shown on each sign face. The signs shall be mounted on either 1" x 2" X 3' high wood stakes, Type II barricades, or 39-inch high delineators. Signs shall be spaced at approximately 100' intervals on the effected side(s) of the street. Signs shall not be posted on trees, traffic signal poles, utility poles, street lights, or any other street furniture.

Signs shall be professionally made of moisture-resistant, heavy duty cardboard or other approved material. All signs shall be maintained by the Contractor and kept free of graffiti. Any sign that becomes illegible or is removed shall be replaced within twenty-four (24) hours. The Contractor shall only be permitted to restrict parking for the minimum time necessary to complete on-going work. The Contractor shall be responsible to remove and repost "Temporary No Parking" signs when work will be delayed for more than five (5) consecutive days, or if the work must go beyond the end date shown on the signs, or otherwise directed by the Engineer.

The Contractor shall obtain approval for the signs and the placement thereof from the Engineer. Immediately after this approval and posting, the Contractor shall notify Torrance Police Department, Traffic Division, at (310) 618-5557 for review and enforcement. The parking restriction cannot be enforced until the signs have been in place 48 hours and the Police notified.

The Contractor shall maintain said signs through the day of work, and shall remove all of said signs on or within one (1) calendar day of the completion of work within the restricted parking area.

If, in the event a street scheduled for slurry or cape sealing was missed, the Contractor shall immediately remove all "No Parking" signs and notify all residents and others previously notified, with printed notices, that due to unforeseen circumstances, the Contractor was not able to seal the street as previously notified, that the street will be rescheduled in approximately 1 to 2 weeks, and that they will be re-notified. The Contractor shall, on the job site prior to the start of each day's work, have an adequate supply of approved letters of notification to residents for missed streets.

Full compensation for furnishing, placing, maintaining and removing temporary signs shall be considered as included in the Contract Unit Price for "Traffic Control".

**Holiday Moratorium.** No reduction in lane widths on any major street shall be permitted during the CITY's holiday period construction moratorium, which begins on the Monday prior to Thanksgiving

and ends on the Friday following New Year's Day. No traffic signal shall be out of operation for any period of time during said moratorium.

**Trash Pick-Up.** Trash pick up days are established and will not be changed. Consult the Engineer regarding trash pick up schedule. The Contractor shall ensure streets and alleys affected by the work are accessible to the CITY's automated trash trucks on designated pick up days. In alleys, Contractor shall be responsible to provide and maintain access to large trash containers during the course of the work.

**Protection of Permanent Pavement Markings, Manholes, Valves.** The Contractor shall, in areas outside of the work zone, protect existing raised pavement markers, thermoplastic legends and markings. The Contractor shall protect existing valve and manhole covers, utility caps, and similar items from damage.

The contractor shall be responsible for replacing or restoring any damaged items to the satisfaction of the Engineer.

Full compensation for complying with the work contained in this section shall be included in the contract bid price for "Traffic Control" per lump sum (LS). Payment shall include all labor, tools, equipment, materials and incidentals necessary to complete the work and no additional compensation will be allowed therefore.

**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 watch persons. 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.

In addition to the requirements of this subsection, the Contractor shall conform to the requirements for street closures, detours, and barricades as stipulated in the Special Provisions. However, deviations from the requirements stipulated in the Special Provisions may be permitted upon written approval of the Public Works Director when such deviations are in the best interest of the City.

The Contractor shall notify the Public Works Department at (310) 781-6900, at least ten (10) working days in advance of closing or partially closing any street or alley and comply with their requirements. In addition, the Contractor shall notify the Torrance Police Department at (310) 328-3456 and Torrance Fire Department at (310) 781-7042 at least two (2) working days in advance of such closing.

It shall be the Contractor's responsibility to allow passage of the Palos Verdes Peninsula Transit Authority coaches through the construction area at all times. The Contractor shall notify the Palos Verdes Peninsula Transit Authority at (310) 544-7108 at least 48 hours prior to construction affecting bus stop zones to allow said Transit System to temporarily abandon and relocate bus stop zones within the construction area.

The Contractor shall immediately notify the above parties upon completion of the construction work and opening or reopening of any street or alley.

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.

The Contractor shall install, maintain, and remove all temporary delineators, barricades, lights, warning signs and other devices necessary to control traffic as specified in the project plans and these specifications. Materials for a temporary facility may be provided from new or used materials. If used materials are provided, they shall be sound, in good condition and otherwise meet the requirements of new materials. All traffic control devices shall be free of graffiti, and the Contractor shall be responsible to immediately clean and/or replace any device to the satisfaction of the Engineer.

Full compensation for furnishing, installing, maintaining and removing the above traffic control devices shall be considered as included in the Contract Unit Price for "Traffic Control".

Where streets in which improvements are being constructed are specified hereinafter to be closed to through traffic, it shall be understood that such closures shall apply only to the portions of such streets where construction is actually in progress.

After award of the contract, the Contractor shall submit to the City its proposed Traffic Control Plan as required by the Special Provisions and to comply with the requirements specified herein. This submittal shall be made sufficiently in advance (street closure schedules MUST be submitted ten (10) days prior to closing the affected street) of any rerouting or diversion of traffic by the Contractor to allow for a review of the Contractor's proposed traffic control by the Public Works Director.

The Contractor shall submit to the Public Works Director detailed plans prepared by a Registered Civil Engineer of all temporary bridges proposed for use on this project. This includes bridges which may have been used on previous projects. The Contractor shall allow 15 days for approval by the Engineer. The drawings shall indicate specific locations where the bridge is to be used. Bridges shall not be installed until such time as written approval is obtained from, and the bridge is inspected by, the Public Works Director.

The Contractor shall conform to Section 74.6.8 of the Torrance Municipal Code. In addition, the Contractor shall comply with directions from the Engineer to provide protection at excavations, trenches and/or other potentially hazardous construction areas. The Contractor shall be required to erect temporary railing (Type K) per Caltrans Standard Plan T3, five-foot high chain link fences, or equivalent protection, to completely enclose all open excavations over three feet (3') in depth. Fencing shall be approved by the Engineer, and provide adequate security. Fencing may be removed during working hours to the extent necessary to provide access and working room, in which case the Contractor shall provide equivalent security, to the satisfaction of the Engineer, during said periods. Any excavation not secured to the satisfaction of the Engineer shall be completely backfilled prior to the end of each day's construction activities. The Engineer may require additional security devices, lighting or other protection in addition to said fencing. Full compensation for furnishing, placing and removing temporary protection shall be considered as included in the price for the various items of work.

**7-10.2.2 Traffic Control Plan (TCP) Add the following:**

Traffic Control for scenarios not covered in the City of Torrance Standard Plans shall be in accordance with the California Manual of Uniform Traffic Control Devices (CA MUTCD), Latest Edition, and shall be approved by the City Engineer. The Contractor shall take care to implement additional measures as necessary to provide for specific work locations and access requirements. It is expected that some phases of work, especially in intersections, will require the use of flagmen for short durations, which the Contractor shall provide as deemed necessary for safety.

For sewer repairs, the contractor shall utilize City Standard Plans where applicable. Should the City of Torrance or CA MUTCD standard plans not apply, the contractor shall submit a legible, detailed TCP on one or more 24" x 36" reproducible plan sheets which shall clearly show and/or describe all proposed lights, warning signs, barricades, delineators, temporary lane markings, temporary traffic signals or signs, and any and all other facilities proposed to be installed. Said TCP shall be prepared by a Registered Civil and Traffic Engineer and shall show all lane closures, restrictions, tapers and other disruptions of normal traffic flow, including pedestrian and vehicular detours. A schedule and/or sequencing diagram shall be included. Said TCP may be drawn on a sepia or other transparent copy of the Plans. Said TCP shall be submitted to the Engineer for approval no later than two (2) weeks after the award of Contract. It shall be the Contractor's responsibility to immediately revise said Plan at the direction of the Engineer, and the Contractor hereby agrees that such changes shall not constitute a claim for extra work or additional costs. The approved TCP shall be strictly adhered to, and the Contractor hereby understands and agrees that its failure to provide any facility or device as shown on the TCP, or its deviation from said Plan, shall constitute a breach of Contract.

Traffic control devices and signs shall be in place prior to the beginning of any onsite construction related activities. The Contractor shall provide notification of any planned street closures or restrictions which affect public safety vehicles and site access, and coordinate work notifications with the Police Department, Fire Department, Caltrans, adjacent cities, transit agencies, and schools.

The Contractor shall allow residents on the streets to park within a reasonable distance from their homes. The Contractor shall notify residents and businesses of the work and post temporary "No Parking" signs at least 48 hours prior to the implementation of parking restrictions and the scheduled paving of the streets affected.

The Contractor shall be responsible for adequate barricading of the work area and controlling of traffic in the vicinity of the project as specified in 7-10 in the Standard Specifications or as directed by the Engineer.

Closures and parking restrictions shall only be made for the amount of time necessary to complete construction activities. Areas that do not have active construction work shall be secured and reopened as directed by the Engineer. Extents of closures and parking restrictions shall be limited to areas as necessary for immediate construction activities.

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 90m (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.

**7-10.2.3 Payment.** Replace the entire section with the following:

Full compensation for complying with the submittal requirements, furnishing, placing and removing traffic control shall be on a lump sum (LS) basis per the Contract Unit Price for "Traffic Control".

"Traffic Control" shall be prorated on a monthly basis through the duration of the project.

"Traffic Control" shall be paid at the same rate as the amount of sewer work completed.

**7-10.5.3 Steel Plate Covers.** Add the following:

When backfilling operations of an excavation in the traveled way, whether transverse or longitudinal cannot be properly complete within a work day, steel plate bridging with a non-skid surface and shoring may be required to preserve unobstructed traffic flow. In such cases, the following conditions shall apply:

1. Steel plate used for bridging shall extend a minimum of 12-inches beyond the edges of the trench.
2. Steel plate bridging shall be installed to operate with minimum noise.
3. The trench shall be adequately shored to support the bridging and traffic loads.
4. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
5. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.

Steel plate bridging and shoring shall be installed using either the following Method (1) or Method (2):

**Method (1)** (For speeds more than 45 mph)

The Pavement shall be cold planed to a depth equal to the thickness of the plate and width and length equal to the dimensions of the plate.

**Method (2)** (For speeds 45 mph or less)

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway a minimum of two (2) dowels pre-drilled into the corners of the plate and drilled 2-inches into the

pavement. Subsequent plates are butted to each other. Fine grade asphalt concrete shall be compacted to form ramps, maximum slope of 8.5% with a minimum 12- inches taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry or an equivalent slurry that is satisfactory to the City and/or Caltrans.

The Contractor shall be responsible for maintenance of the steel plates, shoring and asphalt concrete ramps.

The following table shows the advisory minimal thickness of steel plate bridging required for a given trench width (A-36 grade steel, designed for HS20-44 truck loading).

<u>Trench Width</u>	<u>Minimum Plate Thickness</u>
10"	1/2"
1'-11"	3/4"
2'-7"	7/8"
3'-5"	1"
5'-3"	1 1/4"

For spans greater the 5'-3" a structural design shall be prepared by a California registered civil engineer.

All steel plates within the right-of-way whether used in or out of the travel way shall be without deformation. Steel plates shall be non-skid. Advanced signs shall be required for steel plates within traveled ways (Type P per the Watch Manual or a Rough Road sing (W33) per Caltrans requirements).

All costs associated with the above requirements shall be included in the Contract Unit Price for "Traffic Control".

Add the following section:

**SECTION 9 - MEASUREMENT AND PAYMENT**

**9-1 MEASUREMENT OF QUANTITIES FOR UNIT PRICE WORK.**

Add the following subsections:

**9-1.2.1 Payment for Labor and Materials**

The Contractor shall pay and cause the subcontractors to pay any and all accounts for labor, including Worker's Compensation premiums, State Unemployment and Federal Social Security payments and all other wage and salary deductions required by law. The Contractor also shall pay and cause the subcontractors to pay any and all accounts for services, equipment and materials used by it and the subcontractors during the performance of work under this contract. All such accounts shall be paid as they become due and payable. If requested by the Engineer, the Contractor shall immediately furnish the City with proof of payment of such accounts.

**9-1.2.2 Measurement and Payment**

Payment of each item will include full compensation for furnishing all labor, materials, tools, equipment and backup equipment; transportation and technical competence for performing all work

necessary to complete each item as indicated on the plans and as specified in these Contract Documents, including but not limited to obtaining all applicable certifications necessary for specialty personnel and major equipment in conformance with Subsection 7-5, and all other applicable permits; securing a storage yard to store all equipment and materials to be used on the job, disposal of waste materials, restoration of the site, etc. The storage yard may also be used as a temporary storage for excavated materials, and traffic control items.

## **9-2 LUMP SUM WORK.**

Replace the second paragraph with the following:

The Contractor shall, within five (5) working days of receipt of a request from the Engineer, submit a complete breakdown of lump sum bid prices showing the value assigned to each part of the work, including an allowance for profit and overhead. In submitting the breakdown, the Contractor certifies that it is not unbalanced and that the value assigned to each part of the work represents its estimate of the actual cost, including profit and overhead, of performing that part of the work. The breakdown shall be sufficiently detailed to permit its use by the Engineer as one of the bases for evaluating requests for payment. No extra costs shall be allowed for providing these breakdowns.

## **9-3 PAYMENT**

**9-3.2 Partial and Final Payment.** Replace the third paragraph with the following:

For each progress estimate, 5 percent will be deducted and retained by the CITY, and the remainder less the amount of all previous payments will be paid. In addition, 125% of the amount of outstanding "Stop Notices" shall be withheld.

Add the following:

The Contractor shall submit all requests for payment on a Progress Payment Invoice.

Prior to submittal of said invoice, all items for which payment is requested shall be checked and approved in writing by the Engineer. No payments will be made unless all back-up data is submitted with the payment request and the Progress Payment Invoice is signed by both Contractor and Engineer.

**9-3.4 MOBILIZATION.** Replace the entire subsection with the following:

Mobilization shall include the provisions of the Construction Schedule; Sewage Spillage Prevention; Emergency Response Plan; site review; obtaining all permits, insurance, and bonds; moving onto the site all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities, and removal of same at completion of the Work; and other work, all as required for the proper performance and completion of the Work, as further defined below.

Mobilization shall include, but not be limited to, the following items:

- (a) Submittal and modification, as required, of the Construction Schedule.
- (b) Moving on to the site of all Contractor's plant and equipment required for the first month's operations. the
- (c) Installing temporary construction power and wiring.

- (d) Establishing fire protection system.
- (e) Developing construction water supply.
- (f) Providing on-site sanitary facilities and portable water facilities, as required.
- (g) Arranging for and erection of Contractor's work and storage yard.
- (h) Submittal of all required insurance certificates and bonds, including subcontractors.
- (i) Obtaining all required permits.
- (j) Posting all OSHA required notices and establishment of safety programs.
- (k) Potholing and other research and review as necessary to verify site conditions and utility locations.
- (l) Having the Contractor's Superintendent present at the job site full-time.
- (m) Removal (including all spray-painted markings on any surface), cleanup, and restoration.

The contract bid item for Mobilization shall include all labor, equipment, tools, work and materials necessary to mobilize and demobilize forces, equipment, and material; obtain bonding, insurance, permits, licenses, preparation of a conditions survey, and other work as necessary to facilitate the construction operation. Mobilization costs shall not exceed 5% of the total bid amount. The bid item shall also include for the protection and/or repair of any existing or new elements damaged as a result of the construction activities or public use. This item shall also include for all costs associated with site security and protection for the duration of the construction phase.

Payment shall be per lump sum amount as follows:

When 5% of the work other than mobilization has been constructed, then 20% of the mobilization item will be paid. The remaining balance will be prorated on a monthly basis over the course of the project, with final payment at 100% construction.

Full compensation for complying with the work contained in this section shall be included in the Contract Bid Price for "Mobilization" per lump sum (LS). Payment shall include all labor, tools, equipment, materials and incidentals necessary to complete the work, and no additional compensation will be allowed therefore.

Add the following subsection:

### **9.3-5 Noncompliance with Plans and Specifications**

Failure of the Contractor to comply with any requirement of the Plans and Specifications, and/or to immediately remedy any such noncompliance upon notice from the Engineer, may result in suspension of Contract Progress Payments. Any Progress Payments so suspended shall remain in suspension until the Contractor's operations and/or submittals are brought into compliance to the satisfaction of the Engineer. No additional compensation shall be allowed as a result of suspension

of Progress Payments due to noncompliance with the plans or specifications. The Contractor shall not be permitted to stop work due to said suspension of Progress Payments.

Add the following Section 9-4:

**9-4 CLAIMS.**

The Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the CITY, or the happening of any event, thing or occurrence, unless the Contractor shall have given the CITY due written notice of potential claim as hereinafter specified.

The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. Said notice shall be submitted on a form approved by the CITY at least forty-eight (48) hours (two working days) in advance of performing said work, unless the work is of an emergency nature, in which case the Contractor shall notify and obtain approval from the Engineer prior to commencing the work. The Engineer may require the Contractor to delay construction involving the claim, but no other work shall be delayed, and the Contractor shall not be allowed additional costs for any said delay but may be allowed an extension of time if the Engineer agrees that the work delayed is a controlling element of the Construction Schedule. The Contractor shall be required to submit any supporting data (or a detailed written explanation justifying further delay) within five (5) work days of a request from the Engineer and shall be responsible for all costs associated with any delays resulting from late and/or incomplete submittals. By submitting a Bid, the Contractor hereby agrees that this subsection shall supersede 6-6.3 and 6-6.4 of the Standard Specifications.

It is the intention of this subsection 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 may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that it shall have no right to additional compensation for any claim that may be based on any such act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was timely filed.

## **PART 2 - CONSTRUCTION MATERIALS**

### **SECTION 200 – ROCK MATERIALS**

#### **200-2 UNTREATED BASE MATERIALS**

**200-2.1 General.** Replace the entire subsection with the following:

Untreated base for pavement, curb, gutter, cross gutters, hardscape and other improvements, as shown on Plans, shall be Crushed Miscellaneous Base (CMB) conforming to 200-2.4.

**200-2.4 Crushed Miscellaneous Base.** Add the following:

Payment for Crushed Miscellaneous Base shall be included as incidental in all work items requiring such, and no additional compensation will be allowed. CMB shall conform to the requirements as per SSPWC.

### **SECTION 203 – BITUMINOUS MATERIALS**

#### **203-6 ASPHALT CONCRETE**

**203-6.1 General.** Add the following:

Asphalt concrete shall be of the followings classifications:

Type B-PG-64-10 for base paving of pavement repairs

Type C2-PG-64-10 for overlay finish surfaces

Type D2-PG-64-10 for temporary asphalt pavement

### **SECTION 210 – PAINT AND PROTECTIVE COATINGS**

#### **210-1 PAINT**

Add the following subsections:

##### **210-1.6 Paint for Traffic Striping, Pavement Marking, and Curb Marking**

**210-1.6.1. General.** Add the following:

All permanent striping and pavement markings shall be hot applied alkyd thermoplastic in accordance with the provisions of Section 84-2.02 of the Caltrans Standard Specifications.

##### **210-1.6.2. Thermoplastic Paint, State Specifications.**

Thermoplastic traffic stripes and pavement markings shall conform to the provisions of Section 84 of the Caltrans Standard Specifications. Contractor shall paint a solid black stripe between all double thermoplastic striping.

Add the following subsections:

### **210-1.7 Test Reports and Certifications**

At the time of delivery of each shipment of material, the Contractor shall, upon request, deliver to the Engineer certified copies of manufacturer's test report. The test report shall indicate the name of manufacturer, type of material, date of manufacture, quantity, State Specification number, manufacturer's lot or batch number, and results of the required tests. The test report shall be signed by an authorized representative of the manufacturer. The certified test reports and the testing required in connection therewith shall be at no cost to the CITY.

## **SECTION 212 – LANDSCAPE AND IRRIGATION MATERIALS**

### **212-1 LANDSCAPE MATERIALS.**

Add the following:

All work specified in this section shall conform to the applicable requirements of ANSI Standard Z60.1-1980, "Nursery Stock," and to the rules and grading provisions adopted by the American Association of Nurserymen, Inc.

#### **212-1.1 Topsoil**

**212-1.1.1 General.** Add the following:

Unless otherwise specified on the Plans or required by the Engineer, topsoil shall be Class "C" in accordance with the requirements of 212-1.1.4. Imported soil, if required, shall be Class "A" topsoil in accordance with the requirements of 212-1.1.2.

The Contractor shall provide an Agricultural Soil Suitability Report for topsoil to be furnished, and the requirements for fertilization and amendments as specified herein may be modified as necessary by the Engineer prior to start of the work of this section.

#### **212-1.2 Soil Fertilizing and Conditioning Materials**

**212-1.2.3 Commercial Fertilizer.** Add the following:

Commercial Fertilizer shall be 12-12-12 (N-P-K.) Slow release tablets, if used, shall be 12-12-12 (N-P-K).

**212-1.2.4 Organic Soil Amendment.** Add the following:

Type I organic soil amendment shall be used. The Contractor shall supply the Engineer with a sample of the proposed amendment accompanied by a laboratory analytical analysis from a testing agency registered by the State, which states that the amendment complies with the specifications.

**212-1.2.5 Mulch.** Add the following:

Bark mulch shall be shredded cedar, pine, or fir bark or equal commercial product. Typical mulch size shall be three inches by one-half inch (3" x 1/2"). Submit two (2) samples to the Engineer for approval prior to installation. The material shall be free of seeds, debris, and deleterious

materials, and shall have a rich brown color when supplied.

#### **212-1.4 Plants.**

##### **212-1.4.1 General.** Add the following:

All plants furnished by the Contractor shall be true to type or name as shown on the Plans and shall be tagged in accordance with the standard practice recommended by the Agricultural Code of the State of California; however, determination of plant species or variety shall be made by the Engineer, whose decision shall be final.

All plants shall have been grown in nurseries that have been inspected by the governing authorities. Inspection of plant materials required by City, County, State, or Federal authorities shall be the responsibility of the Contractor, and it shall have secured permits or certificates prior to delivery of plants to site. Certificates of inspection shall be filed with the Engineer.

The Contractor shall obtain clearance from the County Agricultural Commissioner, as required by law, before planting plants delivered from outside the County in which they are to be planted. Evidence that such clearance has been obtained shall be filed with the Engineer.

Plants shall be subject to inspection and approval or rejection by the Engineer at place of growth and/or upon delivery to the site at any time before or during progress of the work. Inspections shall include:

- a) Quantity, quality, size, and variety;
- b) Ball and root condition;
- c) Latent defects and injuries resulting from handling, disease and insects;  
and
- d) Uniformity of plant materials.

The Contractor shall notify the Engineer forty-eight (48) hours before the delivery of plant material, so the plants can be inspected prior to planting.

The Contractor is responsible to coordinate contract growing any plant material that is not readily available at local nurseries. The Contractor shall research the availability of every plant at the beginning of the project to allow sufficient time to contract grow plant material for installation without delays. Contract grown plant material shall be grown to the size indicated on the plans and delivered to the site in a healthy and vigorous condition.

##### **212-1.4.2 Trees.** Add the following:

Trees shall be of the type and size as shown on the Plans or specified in the Specifications.

For single-trunk trees: the trunk shall be straight, slightly tapered at the crown, free of disfigurements or gnarls and well hardened off, 2" caliper trunk, 5' height minimum. The tree shall be free of disease and parasites.

For multi-trunk trees: the trunk shall be well hardened off and the tree free of disease and parasites.

### **212-1.5 Headers, Stakes, and Ties**

**212-1.5.3 Tree Stakes.** Replace the first paragraph with the following:

Tree stakes shall be either 2-inch diameter lodge pole pine, treated with copper nanthanate or pressure treated with chromated copper arsenate, or galvanized steel pipe, per 308-4.6.1 (Method A) and City of Torrance Standard Plan No. T401.

Add the following:

Tree ties shall be a commercially manufactured tie, split plastic hose with a minimum length of twenty inches (20"). Split plastic hose ties shall be "Cinch-tie" by V.I.T. or approved equal.

Add the following section:

**212-1.5.4 Tree Trunk Protector.** Replace the first paragraph with the following:

Tree trunk protector shall be a minimum of 9-inches tall and shall be Arborgard or approved equal.

## **SECTION 214 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS**

Delete the entire Section 214 and replace with Section 85 of the Caltrans Standard Specifications (latest edition).

### **85-1.05 Retroreflective Pavement Markers**

**85-1.055 Adhesives.** Add the following:

At the option of the Contractor, a hot melt bituminous adhesive may be used to cement the markers to the pavement, instead of the Rapid Set Type or Standard Set Type adhesive specified in Section 85-1.06 of the Caltrans Standard Specifications. The bituminous adhesive material, if used, shall conform to the following:

<b><u>ASTM Test Specification</u></b>	<b><u>Method</u></b>	<b><u>Requirement</u></b>
Flash Point, COC °F	D 92	550 Min.
Softening Point, °F	D 36	200 Min.
Brookfield Viscosity, 400° F	D 2196	3,000-7,500 cP
Penetration, 100g 5 sec., 77° F	D 5	10-20 dmm
Filler Content, % by weight (Insoluble in		

A blue RPM shall be placed at all fire hydrant locations per City requirements.

## **PART 3 - CONSTRUCTION METHODS**

### **SECTION 300 – EARTHWORK**

#### **300-1 CLEARING AND GRUBBING**

##### **300-1.3 Removal and Disposal of Materials**

**300-1.3.1 General.** Replace the entire subsection with the following:

Unless otherwise stated on the Plans or Specifications, all material removed from the Work shall become the property of the Contractor and shall be disposed of in a lawful manner. Removals shall include, but not limited to, all excess excavation material, trees and plants, debris, interfering portions of curb, gutters, asphalt and PCC concrete pavements and sidewalks (including base, where applicable), and miscellaneous items as shown on the Plans. The Contractor shall conform to the following requirements:

- 1) The Contractor shall not start any removal work unless it is prepared to perform reconstruction work within 24 hours of the time removals were begun, unless otherwise approved by the Engineer.
- 2) The Contractor shall complete forming and pouring of PCC construction within five (5) working days following the removal of existing material at any location.
- 3) The Contractor shall not remove on-site improvements until it is prepared to construct the adjacent street section and shall promptly restore all such improvements as applicable, upon completion of the adjacent street work.

All concrete removed shall be hauled off the Work site no later than the calendar day following the day that the removal is performed.

Prior to making removals, the Contractor shall meet with the Engineer to verify the limits of removals, locations of joints, to establish smooth joints and to ensure proper drainage. The Contractor may make minor changes in the location of joints and the limits of removals, provided a smooth joint and proper drainage can be achieved and it has obtained prior written approval from the Engineer.

In order to protect the public streets from deterioration due to hauling of materials, the Contractor shall submit, prior to the Pre-Construction Meeting, for approval a proposed route for hauling of materials for disposal. Upon approval, the Contractor shall strictly adhere to that route, unless written permission from the Engineer is obtained to change the route.

##### **300-1.3.2 Requirements**

- a) **Bituminous Pavement.** Replace the first and second sentences with the following: Bituminous pavement shall be removed to neatly sawed edges.

Add subparagraphs (d) and (e):

- (d) **Trees.** The City maintains a tree conservation policy. Unless otherwise shown, all trees are to be protected in place. Demolition and destruction of trees and tree parts, including trunks, branches and foliage, shall be limited to tree removals as shown on the Plans. Root pruning and removals shall be limited to the minimum required to construct new improvements where trees are to be conserved.

The City streetscape department shall place a visible removable “tag” on each tree proposed to be removed at least five (5) work days and no earlier than ten (10) work days prior to removal. Said “tag” is intended to give adjacent residents proof of trees to be removed or saved. Tags shall be on the sidewalk side of trees and located at least five feet (5') above ground.

The Contractor shall remove only trees that have been marked by the City streetscape department for removal. Trees shall be removed in a workmanlike manner so as not to injure other standing trees, plants, and improvements which are to be preserved.

Stumps shall be ground down three feet (3') below ground surface within five (5) feet of the center of the stump. All surface roots shall be removed within the parkway.

The Contractor shall conform to the following requirements:

- 1) The cutting down or removal of trees is prohibited after the prescribed working hours unless permission is granted by the Engineer.
- 2) All debris from pruning or removing a tree shall be cleaned up and hauled away from the Work site on the same day that the tree is cut or pruned. Firewood-size logs may be left neatly piled for residents to pick up for no longer than three (3) days.
- 3) All holes created from removal of tree stumps shall be backfilled and graded to finish level by the end of the workday.
- 4) Sprinkler systems disrupted by the Contractor shall be capped or restored by the end of the workday. Capped systems shall be restored to original working condition within three (3) days.

All debris from pruning or removing a tree shall be cleaned up and hauled away from the Work site on the same day that the tree is cut or pruned. Trees shall be pruned to balance root pruning and root removal. Tree pruning shall be done prior to root pruning and root removal.

Sprinkler systems disrupted by the Contractor shall be capped or restored by the end of the workday. Capped systems shall be restored to original working condition within three (3) days.

- (e) **Miscellaneous Removals and Relocations.** This work shall include all removals not specifically listed in the Proposal or otherwise covered by these Specifications, and all necessary relocations and restorations of walls, fences, plants, hardscape, signs and other items, whether shown on the Plans or not, and as necessary to complete the improvements.

Add the following section:

### **300-1.3.3 Construction and Demolition Debris Recycling**

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

#### **Definitions**

Shall be as defined in the TORRANCE MUNICIPAL CODE, DIVISION 4, CHAPTER 3, ARTICLE 8 (or Section 43.8.1).

#### **RECYCLING SUMMARY**

The Contractor shall prepare and submit a Recycling Summary report using the form included as Appendix IV summarizing the disposal, reuse, and/or recycling activities which occurred throughout the Contract duration. This report shall be submitted by the Contractor to the Agency, before or with its request for the final Progress Payment for said Contract.

Failure of the Contractor to submit the Recycling Summary within the time specified will result in damages being sustained by the Agency. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For failure to submit the Recycling Summary, as required, the Contractor shall pay to the Agency, or have withheld from monies due it, the sum of \$10,000 for a contract of \$500,000 or more. The Contractor shall pay to the Agency, or have withheld from monies due it, 2% of the total contract amount for a contract of \$499,999 or less.

Execution of the Contract shall constitute agreement by the Agency and Contractor that \$10,000 (2% for contracts \$499,999 or less) is the minimum value of the costs and actual damage caused by the failure of the Contractor to submit the Recycling Summary within the time specified. Such sum is liquidated damages and shall not be construed as a penalty, and may be deducted from payments due the Contractor.

#### **PAYMENT**

The cost of construction and demolition debris recycling and completing the Recycling Summary report shall be considered as included in the Contract Unit Price for the various Bid items. The quantities reported will be used for information gathering purposes and not for purposes of payment to the Contractor.

**300-1.4 Payment.** Replace the entire subsection with the following:

When the Contract does not include a pay item for clearing and grubbing, payment under this section shall be by the following:

- a) **Bituminous Pavement.** Payment for the removal and disposal of bituminous pavement for construction of local depression, alley intersection and cross gutters/spandrels shall be considered as included in the Contract Unit Price for the appurtenant items of work, and shall include sawcutting, removal of underlying

subgrade and base, disposal, subgrade preparation and compaction, labor and equipment.

- b) **Concrete Pavement, Cross-Gutters and Alley Intersections.** Payment for removal and disposal of concrete pavement, cross-gutters, alley intersection and local depression shall be included in the Contract Unit Price for the appurtenant items of work and shall include sawcutting, complete removal of underlying subgrade and base, disposal, and all labor and equipment necessary to complete the required removal.
- c) **Concrete Curb, Walk, Gutters and Driveways.** Payment for removal and disposal of concrete curb, curb and gutter, walk, and driveways shall be included in the Contract Unit Price for the appurtenant items of work. Removals shall include sawcutting, root pruning, complete removal of underlying subgrade and base, subgrade preparation and compaction, disposal, and all labor and equipment necessary to complete the required removal.
- d) **Trees.** Payment for tree removals and disposal shall be per the Contract Unit Price and shall include all work involved in tagging, cutting and complete removal of trunks, branches, stumps and roots to a depth of 3 feet below existing grade, excavation, hauling, disposal, backfilling tree wells, restoration and seeding of removal areas; and other appurtenant work.
- e) **Miscellaneous Removal and Relocations.** Payment for miscellaneous removals and relocations shall be per the Contract Unit Price for the appurtenant items of work, and shall include full compensation for excavation, backfilling, grading, trimming plants, pruning tree limbs, import of native and select backfill material if required, placing of top soil, disposing of surplus material, removing existing asphalt walkway, and appurtenant work.

## **300-2 UNCLASSIFIED EXCAVATION**

### **300-2.2 Unsuitable Material**

**300-2.2.1 General.** Replace the first paragraph with the following:

While performing point repairs or manhole or pipeline construction, if unsuitable material is found, the Contractor shall remove said material to the limits determined by the Engineer and replace said material with select fill or base material, as to be determined by the Engineer. Payment for removal and replacement shall be made as Extra Work pursuant to Subsection 3-3. Prior approval is required in accordance with Subsection 9-1.2.3 of these Special Provisions.

Unclassified excavation shall consist of all excavation, including roadway, bituminous pavement, base material, and native material.

### **Removal of Bituminous Pavement**

Bituminous pavement shall be removed to neatly sawed edges. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be saw cut to neat straight lines before permanent to ensure that all areas to be paved are accessible to the rollers used to compact the sub grade or paving materials. Removal at flow line areas shall include restoring pavement surface to flow line grade based on surrounding conditions.

The Contractor shall utilize appropriate equipment to excavate to grade (i.e. milling machine).

Existing utilities are not marked out. The Contractor shall be responsible for USA DigAlert notification, locating and determining the depths of all utilities and to provide adequate clearance. No additional compensation shall be allowed for utility research.

### **Removal of Concrete Curb, Gutter, Sidewalks, Cross Gutters, Driveways and Access Ramps**

Concrete shall be removed to neatly sawed edges. Concrete sidewalk, access ramps or driveways to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than 30 inches in either length or width. If the saw cut would fall within 30 inches of a construction joint, functional weakened plane joint, expansion joint or edge, the concrete shall be removed to the joint or edge. In any case, the saw cut shall be made in and along a score mark if within the 30-inch zone. Curb and gutter shall be sawed to a depth of 1.5 inches on a neat line at right angles to the curb face.

**Removal of all PCC items shall be paid under their respective bid items, and no additional payment shall be made therefor.**

**Removal of all AC items shall be paid under their respective bid items for sewer point repairs, and no additional payment shall be made therefor.**

**Removal of all other work shall be included as an incidental cost to their respective bid items, and no additional payment shall be made therefor.**

All roots found within excavation area shall be removed per subsection 300-6.2 of the Standard Specifications. The Contractor shall coordinate all root removals with the City Arborist.

**300-2.9 Payment.** Replace the first paragraph with the following:

Full compensation for complying with the work contained in this section shall be included in the various unit bid prices, and no additional payment shall be made therefor. Payment for the removal and disposal of bituminous pavement for street reconstruction areas shall be considered as included in the Contract Unit Price for various bid items and shall include sawcutting, removal of underlying subgrade and base, disposal, subgrade preparation and compaction, labor and equipment.

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

### **301-2 UNTREATED BASE**

**301-2.1 General.** Add the following:

Base is required under all PCC and AC improvements as shown on the Plans. Additional base may be required after review of work areas following removals. Prior to constructing new

improvements, the Contractor shall verify with the Engineer that the base sections as shown on the Plans (including areas where no base is called for) are adequate. Payment for any changes shall be made pursuant to Section 3.

A minimum of 8-inches CMB shall be placed under curb, curb and gutter, cross gutters, spandrels and concrete bus pads. A minimum of 6-inches CMB shall be placed under driveways (includes portion to right-of way/property line), alley intersections, local depressions, stained median concrete (maintenance vehicle pullouts) and AC or PCC pavement on private property as part of driveway reconstruction. A minimum of 4-inches CMB shall be placed under sidewalks, access ramps and stained median concrete (noses and mow strip).

Crushed Miscellaneous Base (CMB) shall conform to the requirements as per these Specifications and SSPWC.

**301-2.4 Measurement and Payment.** Add the following:

Crushed miscellaneous base shall be included as incidental in all work items requiring such, and no additional compensation will be allowed.

## **SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION**

### **303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.**

#### **303-5.1 Requirements.**

**303-5.1.1 General.** Replace the first sentence of the first paragraph with the following:

Concrete curbs, gutters, curb and gutters, sidewalks, walks, cross gutters, alley intersections, access ramps, driveways, stained median concrete paving and bus pads shall be constructed of Portland cement concrete of the class, compressive strength and other requirements prescribed in 201-1.

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

Unless otherwise specified on the Plans, and except as otherwise prescribed in 303-5.1.3 under the heading "Driveway Entrances," the minimum thickness of walks shall be 3-1/2 inches.

#### **303-5.5. Finishing**

**303-5.5.2 Curb** Add the following:

Unless otherwise approved by the Engineer, the entire affected concrete curb, gutter, cross-gutter, or spandrel portion shall be removed by sawcutting the adjacent AC pavement one (1) foot from the edge of the affected area to be removed. Where applicable, the contractor shall reconstruct this one (1) foot wide section with a 2-inch thick section of AC pavement (C2-PG-64-10) on a 4-inch thick section of 1-sack cement and sand slurry mix on an 8-inch thick section of untreated Base. If the affected curb and gutter is located in a spandrel, the spandrel shall be sawcut six inches (6") minimum from the flow line of the gutter and the spandrel reconstructed to match the existing spandrel portion to remain and be on 8 inches of untreated Base.

**303-5.5.5. Alley Intersections, Access Ramps, and Driveways.** Add the following:

Unless otherwise approved by the Engineer, the entire affected curb and gutter portion shall be removed by sawcutting the adjacent AC pavement one (1) foot from the edge of the PCC gutter. Where applicable, the contractor shall reconstruct this one (1) foot wide section with a 2-inch thick section of AC pavement (C2-PG-64-10) on a 4-inch thick section of 1-sack cement and sand slurry mix on an 8-inch thick section of untreated Base. If the affected curb and gutter is located in a spandrel, the spandrel shall be sawcut six inches (6") minimum from the flow line of the gutter and the spandrel reconstructed to match the existing spandrel portion to remain and be on 8 inches of untreated Base. No extra payment will be allowed for the PCC spandrel construction.

**303-5.7 Repairs and Replacements.** Add the following:

The Contractor shall be responsible to protect all new concrete work from being etched, scratched or otherwise marked following replacement thereof. If new concrete work is marked, the Contractor shall replace it at its expense and no extra costs will be allowed.

**303-5.9 Measurement and Payment.** Replace the entire subsection with the following:

Payment for concrete walks, sidewalks shall include all joints as shown in standard plans and construction details and shall include protection of existing trees, parkway restoration, Base and shall be per the Contract Unit Price per square foot.

Payment for driveways, ribbon gutters, cross-gutters and spandrels and integral curbs along driveways and spandrels shall include all joints as shown in standard plans and construction details, reconstruction of adjacent 1' wide AC pavement and shall be per the Contract Unit Price per square foot.

**303-5.13 PCC Sidewalk**

The Contractor shall remove existing improvements and construct 3 1/2" PCC sidewalk over 4" CMB as per plan, and shall comply with Subsection 303-5 of the Standard Specifications. **Concrete shall be 520-C-2500.**

The Contractor shall sawcut and remove existing improvements including pavement, base, subgrade, and other in-place materials as necessary for construction; place base; and construct PCC sidewalk where noted and as shown per detail drawings. New concrete improvements shall match existing finish and pattern as directed. Contractor shall coordinate with utility companies for utility adjustments needed when constructing the work.

Sidewalks shall meet all ADA requirements

Sidewalks shall not be monolithic with curb or curb & gutter.

Except as specifically noted, no separate payment shall be made for crushed miscellaneous base (CMB). CMB shall be fine grade (3/4"). CMB shall be compacted to 95% relative compaction per Greenbook requirements. Unless noted otherwise, CMB will be considered as included in payment for the bid items, and no separate payment will be made therefore.

Payment for complying with the work contained in this section shall be included in the contract bid price for "Remove Existing and Construct 3 1/2" PCC Sidewalk over 4" CMB" per square foot (SF), which shall include all joints as shown in standard plans and construction details, protection of

existing trees, parkway restoration, resetting manhole ring, base, full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all of the work involved in constructing PCC improvements complete in place as shown on the plans and specified in these Special Provisions, and no additional compensation will be allowed.

## **SECTION 306 – UNDERGROUND CONDUIT CONSTRUCTION**

### **306-1 OPEN TRENCH OPERATIONS**

#### **306-1.1 Trench Excavation**

##### **306-1.1.1. General.** Add the following:

All trenches shall be sawcut to the bottom of the existing concrete or asphalt section to minimize damage to adjacent pavement. The bottom of the trench shall be excavated uniformly to the grade of the bottom of the pipe and shall be given a final trim using a string line for establishing grade, such that each pipe section when first laid will be continually in contact with the ground along the extreme bottom of the pipe.

Tunneling shall be performed under existing curb, gutter and cross-gutter as shown on the Plans. The Contractor shall exercise caution and care to prevent any damage in tunneling under these structures. There shall be no additional payment for this tunneling work. Payment for this work shall be included in the Contract Unit Price for the installation of the main pipeline.

##### **306-1.1.2 Maximum Length of Open Trench.** Replace the first paragraph with the following:

For work areas where the work zone is created by daily lane closures, the total length of work area, covering elements of the Contractor's operation, from exploratory excavations and pavement cutting to pipe installation and placement of base paving, shall be no more than 1,000 feet, or as limited by the applicable permit or traffic control staging plan. The maximum length of open trench shall be 300 feet, or the distance necessary to accommodate the amount of pipe installed within the permitted work hours, whichever is greater. The distance is the collective length at any location, including open excavation, pipe laying and appurtenant construction and backfill which has not been temporarily resurfaced.

The Contractor shall either place backfill or steel plate or place temporary or base pavement at the end of each work day so he can open all travel lanes to traffic. The last twenty (20) feet of each trench may be open provided that this length is covered with traffic rated plating. Steel plates shall be non-skid and shall be tacked down or spiked and placed flush with the surrounding pavement. The Contractor shall be required to place temporary AC at the edges of the steel plates.

The above requirements for backfilling or use of steel plates will be waived in cases where the trench is located further than 100 feet from any traveled roadway or occupied structure. In such cases, however, barricades and warning lights satisfactory to the Engineer shall be provided and maintained.

##### **306-1.1.3 Maximum and Minimum Width of Trench.** Add the following:

For sewers, potable and reclaimed water pipelines and storm drains, the bottom of the trench shall have a minimum width equal to the outside diameter of the pipe plus 12 inches and a maximum width equal to the outside diameter of the pipe plus 16 inches, unless otherwise shown on the Plans.

Add the following subsections:

**306-1.1.7 Trench Over-Excavation.** Trenches shall be over-excavated beyond the depth shown when ordered by the Engineer. Such over-excavation shall be to the depth ordered. The trench shall be refilled to the grade of the bottom of the pipe with either selected granular material obtained from the excavation, sand or crushed rock, at the option of the Engineer. When crushed rock is ordered, the material shall be a well-graded material of 1-1/2 inch maximum size. Bedding material shall be placed in layers brought to optimum moisture content, and compacted to 95 percent of maximum density where the pipeline trench passes under structures and 90 percent elsewhere. All work specified in this subsection shall be performed by the Contractor and paid in accordance with 3-3 of these Special Provisions.

Any over-excavation carried below the specified grade and not ordered by the Engineer, specified or shown on the Plans, shall be refilled to the required grade with suitable selected granular material. Such material shall be moistened as required and compacted to 95 percent of maximum density under structures and 90 percent elsewhere. Such work shall be performed by the Contractor at its own expense.

**306-1.1.8 Excavation in Lawn Areas.** Where pipeline excavation occurs in lawn areas, the sod shall be carefully removed and stockpiled to preserve it for replacement. Excavated material from the trench may be placed on the lawn provided a drop cloth or other suitable method is employed to protect the lawn from damage. The lawn shall not remain covered for more than seventy-two (72) hours. Immediately after completion of backfilling and testing of the pipeline, the sod shall be replaced in a manner so as to restore the lawn as near possible to its original condition.

Except where trees are shown on the Plans to be removed, trees shall be protected from injury during construction operations. No tree roots over 2 inches in diameter shall be cut without express permission of the Engineer. Trees shall be supported during excavation as may be directed by the Engineer.

### **306-1.2 Installation of Pipe**

**306-1.2.1.1 General.** Replace the second sentence of the third paragraph with the following:

For point repairs, there shall be 4 inches minimum of bedding below the pipe barrel of sewer. Native material and sand are unsuitable for bedding of 8" or larger pipes.

**306-1.2.2 Pipe Laying.** Add the following:

At all times when the work of installing sewer is not in progress, all openings into the pipe and the ends of the pipe in the trenches or structure shall be kept tightly closed to prevent entrance of animals and foreign materials. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause and shall, at no cost to the CITY, restore and replace the pipe to its specified condition and grade if it is displaced due to floating. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Engineer.

Add the following Subsection:

### **306-1.2.14 Point Repairs and Pipe Repairs**

A Point Repair shall be defined to include any repair that is less than or equal to 6' in length unless otherwise specified on the plans, drawings or bid schedule. However, the Contractor, at his option, may elect to repair or replace a larger section of pipe at no extra cost to the City.

The Contractor shall not remove a section of pipe to be replaced until the Engineer has approved the limits of the removals in the field. The approved limits of removal and construction shall be used as the basis of payment. The Contractor, at his option, may elect to remove and construct additional pipe at no extra cost to the City.

### **306-1.3. Backfill and Densification**

**306-1.3.1 General.** Delete the seventh through the eleventh paragraphs and replace with the following:

Where trench is less than or equal to two (2) feet wide in the roadway, the trench shall be backfilled with a sand-cement slurry (100-E-100) backfill per City of Torrance Standard Plan No. T116-M Notes 1A and 2A, unless otherwise approved by the Engineer.

Where trench is greater than two (2) feet wide or if trench walls are sloped, the trench shall be backfilled with Crushed Miscellaneous Base or other material with a sand equivalent of 30 or greater and shall be select granular material free from organic matter per City of Torrance Standard Plan No. T116-M, Notes 1A and 2A. Imported backfill material shall be in accordance with 306-1.3.7. Backfill material shall be moistened to optimum moisture content and compacted to 95 percent of maximum density in the upper 3 feet and 90 percent below the upper 3 feet.

**306-1.3.4** *(omitted from this specification)*

**306-1.3.5 Jetted Bedding and Backfill Compaction Requirements.** Replace the entire subsection with the following:

Trench bedding and backfill densified through jetting shall be densified to a minimum relative compaction of 95 percent in the upper 3 feet of backfill and 90 percent below the upper 3 feet.

**306-1.3.6 Mechanical Compaction Requirements.** Replace the entire subsection with the following:

Mechanically compacted trench backfill shall be densified to a minimum relative compaction of 95 percent in the upper 3 feet of backfill and 90 percent below the upper 3 feet.

Add the following subsection:

**306-1.3.9 Compaction Tests.** Tests to determine materials compaction shall be performed by a separate CITY-hired subcontractor, at the CITY's expense, except that all tests which fail to meet the requirements of these Special Provisions shall be paid for by the Contractor. Maximum density shall be determined in accordance with ASTM D1557 method, modified to use five layers. Field density tests shall be performed in accordance with the test procedure specified in ASTM D1556.

### **306-1.5 Trench Resurfacing**

**306-1.5.1 Temporary Resurfacing.** Delete the last two paragraphs and replace with the following:

For concrete slurry backfill, a minimum of 24 hours shall elapse before temporary resurfacing will be allowed to be placed on the backfill. All temporary resurfacing shall be flush to adjacent surfaces. The Contractor shall be responsible to immediately repair or replace any damaged or settled resurfacing. The temporary resurfacing shall be replaced with permanent resurfacing not more than 15 calendar days after placement of temporary resurfacing.

There shall be no separate payment for temporary resurfacing. Full compensation for furnishing, placing, maintaining, removing, and disposing temporary resurfacing materials shall be included in the Contract Unit Price for various items of work.

**306-1.5.2 Permanent Resurfacing.** Add the following:

Pavement removed or damaged in connection with performing the Work required under the Contract shall be replaced by the Contractor in accordance with these Special Provisions and City of Torrance Standard Plans. If a strip of existing pavement less than 4 feet wide is left between a trench and a gutter or curb or edge of pavement, it shall be removed and new pavement placed in its stead. In cutting or breaking up street surfacing, the Contractor shall not use equipment which will damage the adjacent pavement. If the adjacent pavement is damaged, the Contractor shall be responsible for replacing the pavement with the same kind or better at its expense.

**306-1.6 Basis of Payment for Open Trench Installations.** Add the following as first sentence of the first paragraph:

This subsection shall apply to payment of installed potable water mains, sewer and storm drain pipes.

Revise the second paragraph to read:

The price per linear foot for pipe and conduit in place shall be considered full compensation for all wyes, tees, bends, monolithic catch basin connections, and specials shown on the Plans; the removal of interfering portions of existing sewers, storm drains, and improvements; the closing or removing of abandoned conduit and structures; the excavations of the trench; the control of ground and surface waters; the preparation of subgrade; placing and joining pipe; connecting to existing systems; beddings; backfilling the trench; permanent resurfacing; construction survey; shoring; and all other work necessary to install the pipe or conduit, complete in place.

Delete the phrase, "excluding temporary resurfacing" from the last two paragraphs.

Add the following subsections:

**306-9 SEWER BYPASS.**

1) Submittals

- a) The Contractor shall submit for the Owner's approval, a written by-pass pumping plan at least ten (10) working days prior to the beginning of any individual construction process where by-pass pumping is needed. The plan shall contain a contingency plan in the event of pump(s) failure, the sequence of construction and a list of all piping, pumps, plugs, etc. required for each site.
- b) The Contractor shall submit a list of all the equipment to be used in by-pass pumping process including the capacity of pumps to be used.

## 2) General

- a) When by-pass pumping is required, the Contractor shall supply the pumps, conduits, and other equipment to divert the flow of sewage around the pipe section from manhole to manhole in which work is to be performed. The by-pass system shall be of sufficient capacity to handle existing flow plus additional flow that may occur during a rainstorm. The Contractor shall have on-site backup pumps capable of pumping 150% of the existing flow.
- b) All pump(s) drives shall have noise suppresser exhaust systems to mitigate the noise levels to less than 50db or 10db above ambient noise levels when measured at the property lines closest to the noise source.
- c) The sewage flow from the house laterals shall be maintained during construction and handled in a manner so as not to create a public nuisance or health hazard during the execution of the work to be performed under this Contract. In the event that sewage backup occurs and enters dwellings or other structures, the Contractor shall be responsible for cleanup, repair, property damage costs and all claims arising there from. All spill shall be contained and returned to the sewer system.
- d) The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system.
- e) The Contractor shall provide reliable sewer service to the users of the sanitary sewer at all times, so as to prevent backup and/or overflow into adjacent streets, ditches, storm sewers, and waterways during rehabilitation of the sewer pipes to allow for manhole construction, rehabilitation, and CCTV inspection.
- f) Payment for sewer bypass shall be included in the item of work requiring sewer bypass and no extra costs shall be allowed.

## **SECTION 308 – LANDSCAPE AND IRRIGATION INSTALLATION**

### **308-2 EARTHWORK AND TOPSOIL PLACEMENT**

#### **308-2.1 General.** Add the following:

The landscape work shall not begin until all other trades have repaired all areas of settlement, erosion, rutting, etc., and the soils have been re-established, recompacted and refinished to final grades. The Engineer shall be notified of all areas where the landscape work is prevented from being executed.

Surface drainage shall be provided by modeling the surfaces to facilitate the natural run-off of water. Low spots and pockets shall be filled with topsoil and graded to drain properly.

#### **308-2.3 Topsoil Preparation and Conditioning**

**308-2.3.1 General.** Substitute Class A with Class C in the first sentence of the first paragraph.

Add the following:

Before soil preparation operations are started in any area, the Contractor shall remove and dispose of all trash and any other debris on the surface of the ground.

**308-2.3.2 Fertilizing and Conditioning Procedures.** Add the following:

The conditioning material per 1000 square feet shall be:

- a) Four (4) cubic yards nitrogen stabilized organic amendment derived from redwood, fir or cedar sawdust.
- b) Fifteen (15) lbs. 12-12-12 commercial fertilizer.
- c) Fifteen (15) lbs. soil sulfur.

The Contractor shall apply post-plant fertilizer at the rate of twenty pounds (20 lbs.) per 1,000 sq. ft., thirty (30) days after planting and once again at the end of the post-construction maintenance period.

**308-2.4 Finish Grading.** Replace the second paragraph with the following:

The finish grade below adjacent paving, curbs or headers shall be one inch in lawn areas and three inches in shrub or groundcover areas.

**308-4 PLANTING**

**308-4.1 General. Add the following:**

Planting work shall not begin until the area's irrigation system has been installed, operational and passed inspection.

Inspection and approval of specimens shall be required before delivery to site; all others on delivery. Any plants rendered unsuitable for planting because of this inspection shall be considered as samples and shall not be paid for. In case the sample plants inspected are found to be defective, the Engineer reserves the right to reject the entire lot or lots of plants represented by the defective samples. Rejected plants shall be removed from the site immediately. Random samples will be inspected for root condition.

All plants shall be true to name, and one of each bundle or lot shall be tagged with the name and size of plants, in accordance with the standards of practice recommended by the American Association of Nurserymen. The root condition of plants furnished in containers shall be determined by removal of earth from the roots of not less than two (2) plants, nor more than 2 percent (2%) of the total number of plants of each species or variety, except when container-grown plants are from several different sources; in which case, the roots of not less than two (2) plants of each species or variety from each source shall be inspected by the Engineer at his option. The selection of plants to be inspected will be made by the Engineer.

All plants of the same species and container size (i.e., the same specification) shall be uniform in size and shape and at the same stage of growth to the satisfaction of the Engineer.

All plants shall be fully acclimated and in an active growing state.

The Contractor shall remove all lateral growth that is not acceptable and/or shape all plants to the satisfaction of the Engineer.

All plants shall be full-sized and shall have root systems at a fully developed state within the container.

Hair roots should extend to the edge of the container. No plant shall be root-bound. Root balls may require scarification to the satisfaction of the Engineer.

No boxed, balled or canned plants shall be planted if the ball is broken or cracked, whether before or during the process of planting. Any plant transplanted by the Contractor that dies or has bark, branch or die-back injury shall be replaced at the Contractor's expense with an equal plant to the satisfaction of the Engineer.

Before plants are transported to the planting area, they shall be properly pruned or cut back to reduce damage by wind and to force lateral growth.

No plants shall be transported to the planting area that are not thoroughly wet throughout the ball of earth surrounding the roots. Plants should not be allowed to dry out, nor shall any roots be exposed to the air except during the act of placement. Any plant that, in the opinion of the Engineer, is dry or in a wilted condition when delivered or thereafter, whether in place or not, will not be accepted and shall be replaced at the Contractor's expense.

All inspections herein specified shall be made by the Engineer. The Contractor shall request inspection at least 48 hours in advance of the time inspection is required. Inspection shall be required on the following stages of the work:

- a) During preliminary grading, soil preparation, and initial weeding.
- b) When plants are spotted for planting, but before planting holes have been excavated.
- c) When finish grading has been completed.
- d) When all specified work, except the maintenance period has been completed.
- e) Final inspection at the completion of the maintenance period.

The Contractor's failure to obtain inspection will extend the start and/or finish of the maintenance period as applicable, unless otherwise agreed to in writing by the Engineer.

**308-4.5 Tree and Shrub Planting.** Replace the fourth paragraph with the following:

All planting holes shall be backfilled with a prepared soil mix conforming to the following requirements:

- 4 parts by volume nitrogen-stabilized organic amendment
- 6 parts by volume on-site soil\*
- 1 lb. 12-12-12 commercial fertilizer per cubic yard of mix
- 2 lbs. iron sulfate per cubic yard of mix

\*from area(s) approved by Engineer

The materials shall be thoroughly mixed to the bottom of the pit so that they are evenly distributed and without clods or lumps. Backfill shall be so placed in the pits that the plant will be at its natural growing height and the backfill material will be level one inch below surrounding soil after settlement.

Fertilizer planting tablets (twenty-one (21) gram size and shall be placed with each plant at the following rates:

- One (1) tablet per one (1) gallon container;
- Two (2) tablets per five (5) gallon container;
- Four (4) tablets per fifteen (15) gallon container;
- Eight (8) tablets per 24" box container
- One (1) tablet per each three inches (3") of box size greater than 24".

Center plant in pit or trench on slight pedestal. Face plants with fullest growth into prevailing wind. Set plant plumb and hold rigidly in position until soil has been tamped firmly around ball or roots. Position the plant in the hole and backfill no higher than halfway up the root ball. If required, place the recommended number of tablets evenly around the perimeter of, and immediately adjacent to, the root ball at a depth which is between the middle and the bottom of the root ball. Complete the backfilling, tamp (eliminating all air voids) and water. Do not pack.

Except for street trees, construct a berm 4" above finish grade, extending 4" to 6" beyond edge of root ball, forming a watering basin with a level bottom around each plant. After a minimum of 2 days soaking and the regular irrigation system is operating, the berm area shall be smoothed to finish grade.

### **308-4.8 Lawn Planting**

#### **308-4.8.2 Seed.** Add the following to Method B.

Prior to the application of hydro-mulch, the fine grading of all lawn areas shall be inspected and approved by the Engineer. Seedbeds shall be treated with 5% Dieldrin in granular form at the rate of 3 1/2 pounds per 1000 square feet and lightly watered. After 24 hours (minimum) have elapsed, the seedbeds shall be pre-wet prior to hydroseeding and shall be kept continually moist after hydroseeding.

All equipment used to apply hydromulch shall be subject to the approval of the Engineer. The equipment shall have a built-in agitation system and operating capacity sufficient to agitate, suspend and homogeneously mix a slurry containing not less than 40 lbs. of fiber mulch plus a combined total of 7 lbs. fertilizer solids for each 100 gallons of water.

Hydraulic spray nozzles shall provide a continuous non-fluctuating discharge. The slurry tank shall have a minimum capacity of 1,500 gallons and shall be mounted on a traveling unit, either self-propelled or drawn by a separate unit, which will place the slurry tank and spray nozzle within sufficient proximity to the areas to be seeded.

The slurry preparation shall take place at the site of Work and shall begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, good re-circulation shall be established and at this time the seed shall be added. Fertilizer shall then be added to the mixture after the seed and when the tank is at least one-third filled with water.

The engine throttle shall be opened to full speed when the tank is half filled with water. All the wood pulp mulch shall be added by the time the tank is two-thirds to three-fourths full. Spraying shall commence immediately when the tank is full.

Spray the area with a uniform visible coat using the dark color of the cellulose fiber or organic amendment as a visual guide. The slurry shall be applied in a downward drilling motion via a fan stream nozzle. It is important to ensure that all of the components enter and mix with the soil.

All slurry mixture which has not been applied within four (4) hours after mixing shall be rejected and removed from the Work at the Contractor's expense.

Special care shall be exercised by the Contractor to prevent any of the slurry from being spilled or sprayed anywhere except onto areas to be hydroseeded. Any spillage or overspray immediately shall be removed by and at the expense of the Contractor to the satisfaction of the Engineer.

Seed shall be applied at a minimum rate of five (5) pounds per 1000 square feet.

If complete and full germination is not obtained within 14 days, the Contractor shall hand seed with the same seed mixture and top dress with nitrohumous and redwood soil amendment all areas designated by the Engineer.

Add the following subsections:

### **308-4.10 Parkway Trees**

**308-4.10.1 General.** The CITY maintains a tree conservation policy. The Contractor is required to assist the CITY in its efforts to conserve trees.

The Contractor shall be required to provide a Consulting Arborist (CA) to review and guide its operations that may impact trees to remain. The CA shall be required to be a member of the American Society of Consulting Arborists (310-947-0483) or have Certification as an Arborist by the International Society of Arboriculture (217-355-9411), unless otherwise approved by the Engineer.

The CA shall inspect all work locations and assess the impact of construction on existing trees to remain. If the CA determines that destructive impact is likely, Contractor is required to modify its operations to reduce the likelihood of damage to the fullest extent feasible. Contractor shall be responsible to schedule its operations in a manner that will permit the CA to view areas after removals and prior to construction, as necessary.

The CA shall spot-check representative operations and modifications employed to protect existing trees. A preliminary identification of trees that may potentially be impacted has been made by the Engineer. The CA shall check these and other locations to assure adequate protective measures are taken.

There shall be no separate payment for the services of the CA. All costs for the CA shall be included in the prices bid for appurtenant work.

**308-4.10.2 Conservation Methods.** Manual operations shall be employed for the removal of sod and soil to establish a finished grade within 4 feet of existing trees to remain.

Tree root systems must remain adequate to withstand heavy windstorms.

Construction equipment, materials, sand, soil, gravel, or other material shall not be placed, parked or stored on the surface of any unpaved areas within the driplines (outermost reach of branches) of street trees. No chemicals, rinstates, or petroleum products shall be deposited within the driplines of street trees.

**308-4.10.3 Root Barrier and Pruning.** Roots shall be pruned immediately adjacent to the edge of the sidewalk and the back of curb. Cuts shall be made directly adjacent to the sidewalk and 7.5 inches deep. The cuts shall extend 6 feet in each direction along the sidewalk from the center of the tree trunk for a total length of 12 feet or as directed by the Engineer.

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

Areas root pruned shall be backfilled with Class "C" topsoil either immediately upon completion of root pruning or upon completion of the adjacent work provided that adequate safety and warning devices are placed and maintained at each location.

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

Root sealer shall be approved by the Engineer a minimum of two (2) working days prior to the start of root pruning operations and shall be applied to all cut root areas which are larger than 50mm (2 inches) in diameter. The approved sealer shall be applied as soon as practical after the cuts have been made.

When constructing or replacing driveway approaches, roots shall not be cut by means of mechanical root cutting machines. If root removal is essential to driveway construction, roots shall be manually cut using hand implements with guidance from the CA.

Exposed tree roots shall be covered with mulch and watered from a period immediately following curb and gutter removal, until the area is backfilled following construction.

The root barriers shown in the City of Torrance Standard Plan Numbers T401 and T402 are hereby deleted from this project.

Tress shall be installed per City STD Plan T-401. All trees shall be inspected and approved by the City prior to installation. Trees that appear to be unhealthy, undersized, root bound, or otherwise deficient shall be rejected. The Contractor shall provide maintenance of the trees throughout construction and until final payment. Any trees found deficient at that time are subject to rejection and replacement.

**308-4.11. Payment.** Payment for providing prepared topsoil, furnishing and planting trees, shrubs, and plants shall be included in the lump sum Contract Unit Price for PLANT 15 GAL CRAPE MYRTLE TREE and PROVISIONAL PLANT 15 GAL CRAPE MYRTLE TREE.

The Contract Unit Price for PLANT 15 GAL CRAPE MYRTLE TREE and PROVISIONAL PLANT 15 GAL CRAPE MYRTLE TREE shall include full compensation to install the specified 15 gallon trees complete in place, as shown on the Plans and in accordance with these Special Provisions, including furnishing and planting trees, installation of the tree well, providing prepared topsoil, backfill, restoration of adjacent grass and parkway, and all appurtenant work.

### **308-6 MAINTENANCE AND PLANT ESTABLISHMENT**

Replace the entire subsection with the following:

The Establishment and Maintenance Period shall begin on the first day after all planting in this Work is completed and accepted, and shall continue thereafter until 60 calendar days have passed. This includes the Replacement of Lawns per Section 7-9.1 of these Special Provisions. Notify the Engineer at least seven (7) days in advance of completion. Failure by the Contractor to notify the Engineer will delay the start of the Establishment and Maintenance Period.

Should the Establishment and Maintenance Period be extended beyond the prescribed 60 calendar days because of rejection by the Engineer for whatever reason, the entire installation shall remain the responsibility of the Contractor unless otherwise determined by the Engineer. Any rejected material shall be replaced and the 60 calendar day Establishment and Maintenance Period shall be restarted from that time for the replaced material only.

All areas landscaped or restored under this Contract shall be maintained by the Contractor. The Contractor, without any expense to the CITY, shall weed the planted areas as needed and shall remove all accumulated debris from the landscaped areas as needed and/or as called for by the Engineer.

One month after planting, fertilize plants with 12-12-12 (N-P-K) commercial fertilizer at the rate of 3 level tablespoons per 5-gallon plant basin. The Engineer may require additional fertilization at each monthly interval.

Apply Iron Sequestrene as specified by the manufacturer immediately at the onset of any symptom of iron chlorosis. Repeat fertilization monthly for duration of maintenance period.

The above fertilization schedule may be revised by the Engineer if, in his/her opinion, optimal plant health and growth is not being obtained. The Contractor shall comply with all changes as directed.

The Contractor shall be responsible to provide adequate water to all plants without overwatering. Water conservation is mandated. The Contractor shall obtain approval from the Engineer for its proposed irrigation schedule and any changes thereto.

Add the following subsection:

**308-6.1 Payment.** Payment for Plant Establishment and Maintenance Period shall be included in the Contract Unit Price for items requiring such, and shall include full compensation for all tools, materials, labor, equipment, water and incidentals to complete this work in accordance with the Plans and Special Provisions.

### **308-8 GUARANTEE**

The entire irrigation control system shall be guaranteed against defects in material and workmanship for a period of 1 year from the date of acceptance of the work. The Contractor shall furnish a faithful performance bond in the amount specified in the Contract Documents to cover the guarantee.

The Contractor, without expense to the CITY, shall adjust all irrigation heads to their appropriate operational heights, shall adjust and clean or replace, if necessary, all irrigation heads so that the planting areas are properly covered and they shall be adjusted so as to prevent excessive overflow into the adjacent street right-of-way.

The CITY reserves the right to make temporary repairs as necessary to keep the irrigation system equipment in operating condition. The exercise of this right by the CITY shall not relieve the Contractor of its responsibility under the terms of the Contract as herein specified.

Maintenance shall be done by qualified and experienced irrigation pipefitters.

All fifteen (15) gallon and larger trees installed under the contract shall be guaranteed to live and grow for one (1) year from the date of final acceptance of the contract work unless decline of the tree is specifically attributable to causes unrelated to installation, plant material quality, and the Contractor's maintenance practices.

All other plant material shall be guaranteed to live and grow for a period of ninety (90) calendar days from the date of final acceptance of the contract work unless decline of the plant material is specifically attributable to causes unrelated to installation, plant material quality, and the Contractor's maintenance practices.

Any plant material found to be dead, missing, or in poor condition during the post-construction maintenance period, shall be replaced immediately at the Contractor's expense. The Engineer shall be the sole judge as to the condition of the material. Replacement shall be made to the same specifications required for the original plantings.

During the guarantee period, should the Contractor fail to expeditiously replace dead plant material upon written notification by the Engineer, the City shall cause the work to be corrected and bill the actual costs incurred to the Contractor.

### **SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS**

Delete the entire Section 314 and replace with Sections 84 and 85 of the Caltrans Standard Specifications (2010). Add the following:

The Contractor shall reinstall any adjacent existing striping and curb markings obliterated by new construction, as added or directed by the Engineer, and whether or not shown on the Plans for replacement. Payment shall be considered as included in the unit prices bid for various items of Work, and no additional payment will be made therefore.

The Contractor shall remove markers, markings, and striping where necessary to adjust the configuration of existing striping to new striping. The Contractor shall remove markers flush with existing pavement. The Contractor shall remove markings and striping by wet sandblasting.

Paving damaged due to the removal of raised pavement markers shall be repaired to the satisfaction of the City Engineer.

The Contractor shall furnish to the Engineer samples of materials not less than 3 weeks in advance of the date the materials are to be applied.

The Contractor shall notify the Engineer after completing layout and tracking and at least 1 week before commencing installation of striping, markings and markers. The contractor shall not proceed with installation until they have obtained the written approval of the Engineer.

**84-3.04 Payment.** Add the following:

There shall be no separate payment for pavement markers or reinstallation of existing striping and curb markings obliterated by new construction. Payment for complying with the work contained in this section shall be included in the unit prices bid for various items of Work, and no additional payment will be made therefore.

**PART 5 – SYSTEM REHABILITATION**

**SECTION 500 – PIPELINE**

**500-1 PIPELINE REHABILITATION**

**500-1.1 Requirements.**

**500-1.1.1 General Requirements.** Add the following Subsections:

- 1) Pipeline rehabilitation shall be performed only by the following methods.

- 500-1.4 Cured-In-Place Pipe Liner (CIPP)
- 500-1.10 Folded and Reformed PVC Pipe Liner, Type A or Type B
- 500-1.14 UV Cured-In-Place Pipe Liner (UV-CIPP)

- 2) Design Criteria. The thickness of all pipe liners shall be calculated by the Contractor for a fully deteriorated gravity pipe design condition. The formula computes the pipe liner wall thickness required to withstand the critical buckling pressure exerted by backfill, groundwater, live, and traffic loads. It also includes an ovality factor, C, and the consideration of the long-term effects of creep. The formula, as described in ASTM F 1216:

$$T = 0.721D [(Nq_t/C)^2 / (E_L R_w B' E'_s)]^{1/3}, \text{ (inches)}$$

Where:

$$q_t = 0.433H_w + wH_s R_w / 144 + W_s$$

= total external pressure on pipe, (psi)

$H_w$  = height of water above top of pipe, (feet) (Contractor shall use  $H_w = 2'$  unless otherwise approved by the Engineer)

$w$  = soil density, (lb/ft<sup>3</sup>) = 120

$H_s$  = height of soil above top of pipe, (feet)

$R_w$  = water buoyancy factor =  $1 - 0.33 (H_w/H_s)$ , minimum value = 0.67

$W_s$  = live and traffic loads, (psi) (Contractor shall use  $W_s = H 20$  loading, unless otherwise approved, and shall evaluate for each location)

- D = inside diameter of the host pipe, (inches)
- C = ovality factor = calculate all pipes for a minimum of 2% ovality in the circumference
- N = factor of safety = 2
- B' =  $1/(1 + 4e^{-0.065 H_s})$
- = coefficient of elastic support
- E<sub>s</sub> = modulus of soil reaction, (psi) = 750
- E<sub>L</sub> = long term modulus of elasticity for the pipe liner, (psi)

Anticipated design conditions may change after the Contractor is familiar with the job and all pre-video inspections and reports are completed. If conditions change after the original submittal has been approved, the Contractor shall submit case-by-case design calculations for the Engineer's review. CIPP shall use a minimum of 7% extra resin to compensate for a resin migration/seal factor to fill joints and cracked or deteriorated pipelines to assure installed thickness meets the design criteria.

Table 500-1.1.1.a. lists the minimum finished pipe liner wall thicknesses. The thickness proposed shall be derived from an upgraded safety factor of 2.0, to provide a thicker pipe liner than what may be required by the existing conditions. For Type A PVC the SDR shall be 35 and for Type B PVC the SDR shall be 32.5, unless otherwise approved by the Engineer. All selected pipe liner thickness must be approved by the Engineer. A thinner calculated thickness shall be defaulted to the minimum thickness specified below, unless otherwise approved by the Engineer.

Table 500-1.1.1.a Minimum Pipe Liner Thicknesses

Material	C.I.P.P.	PVC Type A	PVC Type B
<b>Specification</b>	500-1.4	500-1.10	500-1.10
<b>Initial Flexural Modulus, (psi)<sup>1</sup></b>	250,000	280,000	145,000
<b>Nom. I.D. (in.)</b>	Thickness	Thickness	Thickness
<b>6</b>	0.19	0.23	0.23
<b>8</b>	0.19	0.23	0.31
<b>10</b>	0.19	0.29	0.31
<b>12</b>	0.22	0.34	0.37
<b>14</b>	0.30	0.40	0.43

<sup>1</sup> Initial Flexural Modulus is minimum per ASTM D790, Method I.

The minimum cured wall thicknesses specified above are calculated based on 50% retention of the initial flexural modulus and strength values for CIPP and 38% for PVC. The Contractor shall submit, as part of the bid, the results of long-term creep modulus testing per ASTM D2990. The long-term testing shall be done by an independent accredited testing laboratory. Test results of the same type of resin but with a different formulation from the resin system submitted are not acceptable. If the test results and regression analysis of the flexural properties of the resin system justify a wall

thickness less than specified in the Table, the CITY will consider a reduction in wall thickness. In any event, the highest retention factor allowed shall not exceed 50%.

- B. Testing Requirements: For all pipeline rehabilitation systems, in addition to the final CCTV inspection, a restrained sample shall be taken for each manhole-to-manhole lining. Each sample will be checked by the Inspector using ASTM D2122-90 for PVC or ASTM D5813 for CIPP to verify compliance with the minimum thickness per Table 500-1.1.1a. A minimum of one (1) structural test shall be performed on samples taken at six (6) randomly selected sites, as directed by the Engineer. Liner materials not meeting any specified minimum value listed in the APWA Greenbook, ASTM or these specifications for which tests are required shall be removed and replaced with liner material meeting these specifications.

Structural tests shall be in accordance with the following methods:

Item	Description	ASTM Method
1 (a)	ID Wall Thickness (PVC only)	ASTM D 2122-95 7
1 (b)	ID Wall Thickness (CIPP only)	ASTM D 5813 8.1.2
2	Flexural Strength	ASTM D 790-96a
3	Flexural Modulus	ASTM D 790
4	Extrusion Quality (PVC only)	ASTM D2152-95 or ASTM F 1057

- C. There shall be no separate payment for the above described tests. Full compensation for furnishing all labor, materials, tools, equipment and incidentals for completing the tests shall be included in the contract Unit Price for Sewer Rehabilitation.

- 3) The Contractor shall verify the pipe diameter, ovality and length of each section of sewer prior to ordering liner material. Contractor shall immediately notify the Engineer of any discrepancies from the plans.

**500-1.1.2 Submittals.** To this subsection of the Standard Specifications add the following:

- 1) **The Contractor shall submit the following documentation as part of the Bidder’s Proposal.**
  - a. Documentation that the Contractor or Subcontractor is certified and licensed for the lining process.
  - b. Documentation that the Contractor or Subcontractor has a minimum of 2 years installation experience and has installed a minimum of 10,000 linear feet of liner specified for this contract, using the Contractor’s or Subcontractor’s own forces, under the State Contractor’s License as listed in the Bid Proposal or List of Subcontractors, as appropriate.
  - c. Documentation shall list agency, project name, date installed, agency contact person and phone number.
  - d. Documentation that the onsite foreman who will perform the installation has a minimum of 2 years’ experience installing the liner product specified for this contract.
  - e. Documentation of their employees’ cognizance and ability to comply with all Federal and State OSHA regulations regarding confined space entry.

- f. Contractor's or Subcontractor's history stating years in service of installing liner products.
- g. Proof of having passed the Standard Specifications' chemical resistance test (Pickle Jar Test) requirement per Section 211-2 for each of the proposed lining materials shall be provided with the Bid.

**The above information shall be submitted as the Bidder's Liner Methodology Qualifications package per the Instructions to Bidders.**

- 2) The Contractor shall submit the following documentation as part of the contract submittals prior to construction:
  - a. Complete information on the material composition, including, as applicable, resin and catalyst (CIPP), cell classification (PVC), material safety data sheets and design calculations, including the information required per Subsection 500-1.1.1, to be used at each location.
  - b. Documentation that a minimum of 100,000 linear feet of the proposed liner product has been in successful service in the United States for a period of at least two (2) years.
  - c. Manufacturer's recommended temperature and pressure limits and methodologies.
  - d. Documentation of chemical resistance testing as required in Section 210-2.3.3 of the Standard Specifications or ASTM 5813 (10,000 hours minimum test time). In addition, for CIPP Contractor shall submit the manufacturer's certified Fourier Transform Infrared Spectroscopic scans of the proposed resin system.

**The above information shall be submitted as the Liner Materials package per the Instruction to Bidders.**

- 3) The successful Bidder shall submit, prior to the pre-construction conference, a general layout plan with sufficient detail to demonstrate familiarity with the project requirements, including pipeline accesses, equipment layout locations, sources from which construction water will be taken, and sewer bypass locations. This plan is intended to be conceptual only at the time of the pre-construction conference but is intended to be the basis of the detailed submittals required from the successful Bidder.
- 4) The Contractor shall submit certified test results on the specified structural characteristics of the rehabilitation systems for the Engineer's review.

**500-1.1.4 Cleaning and Preliminary Inspection.**

Add the following:

Satisfactory precautions shall be taken to protect the existing pipes from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or any tool which retards the flow of water in the existing pipes are used, precautions shall be taken to ensure that the water pressure created does not cause any damage or flooding to any public or private property being served by the pipe involved.

All sludge, dirt, sand, rocks, grease, and other solid or semi-solid material resulting from the cleaning operation shall be removed at the downstream end. When hydraulic cleaning equipment is used, a suitable sand trap, weir, or dam shall be constructed in the downstream end to trap solids. Under no circumstances shall solids removed from the structures be discharged onto streets, ditches, catch basins, or storm drains. The Contractor is responsible to collect and properly dispose of these materials at a legal location.

Special additional cleaning of heavy deposits, concrete, calcium, etc., not identified will be paid for on a time and material basis as approved by the Engineer.

Contractor shall provide location to dispose of debris from cleaning process.

**500-1.1.5 Television Inspection:** All reference to "VCR" and "video tape" shall mean "video to external hard drive". All videos shall be saved to an external hard drive and made available to the City on a regular basis. The hard drive shall become the property of the City at the end of the project. There shall be no separate payment for the external hard drive and all costs thereof shall be included in the items of work that require video inspection and no extra costs shall be allowed.

**500-1.1.7 Miscellaneous.**

(a) **Service Connections.** Add the following Subsections:

- 1) **Sewer Rehabilitation.** Service connections (laterals) and cleanouts shall be reconnected in accordance with Standard Specifications Subsection 500-1.1.7 The Contractor shall be responsible for all costs for point repairs or excavations required for service connections or cleanouts that are broken or plugged by the rehabilitation process.

Add to the end of the second paragraph:

Laterals and cleanout opening cuts shall conform to the shape and size of the inside diameter of the existing connection. Connections shall not be made until the liner pipe has stabilized. The use of mechanical restraining devices (such as "red heads") that will restrict the pipe from completely stabilizing will not be allowed.

- 2) **Sanitary Sewer Replacement.** If required, service connections shall be constructed in accordance with Standard Specifications Section 306 and Standard Plans for Public Works Construction, Standard Plan 222-2.
- 3) **Service Connection Locations.** The plans do not accurately show service connections and shall not be used to determine the full scope of the work. The location and number of service connections shall be determined by the Contractor from the CCTV inspection and field inspection(s). It shall be the Contractor's sole responsibility to accurately field locate all existing service connections, including those to unoccupied or abandoned buildings, houses or vacant lots. The Contractor shall also verify if a connection for a cleanout is in use. The CITY shall review procedures used to determine live, inactive, stub-outs, and abandoned services. Each sewer service which is reconnected to the rehabilitated or new sewer pipe shall be documented on the plan with the exact distance from the service connection to the centerline of the nearest upstream manhole and include the address of the property served.
- 4) **Notification of Service Interruption.** Sewage flow from house laterals shall be maintained during construction when possible. If a house lateral service must be shut down, it shall be

for a period no longer than 7 hours. Service interruption will be permitted only during low flow periods between the hours of 9 a.m. and 4 p.m.

- a) When disruption of service is required a project general information letter shall be prepared by the Contractor and approved by the CITY for the Contractor's printing and distribution to all residents, business establishments, and institutions fronting on or otherwise directly affected by the project. The Contractor shall be responsible for the distribution of this information letter to all appropriate residences, business and buildings in the project area. Distribution shall be hand delivered and by the US Postal Service (USPS), except as noted below.
- b) A "Notice of Proposed Work" hand delivered and sent by the USPS at least ten (10) calendar days prior to work on site.
- c) A second and different "Two-Day Notice to Proposed Sewer Shutdown" shall be hand delivered by the Contractor two (2) work days prior to work at the affected site.
- d) If the proposed disruption schedule changes for any reason, the Contractor shall hand-deliver a revised notice prior to the original date advising the affected resident of the change.
- e) The contractor shall distribute a "Notice of Utility Operation Reinstatement" in addition to the ten (10) and two (2) day notices. This notice shall be hand delivered by the Contractor immediately after reinstatement of the utility to a condition sufficient for safe and adequate usage.

#### 5) Excavation for Reconnections.

- a) Wherever practical the existing connection shall be left in place until immediately before the new connection is made. Open excavations with exposed sewage will not be allowed unless, in the opinion of the Engineer, they are unavoidable due to the construction.
- b) Backfill of excavations shall not be made with standing sewage or water of any type. This applies to all backfill including, but not limited to, service-main connections, service-customer connections, insertion pits, point repairs, and open-cut replacement of mains or service lines. All water shall be removed by pumps if standing more than 24 hours. Once standing water is removed, a firm subbase is required before backfill can begin. The subbase may be stabilized by mixing cement with soil to absorb water; by adding 3/4" crushed rock; or by adding 2000-psi concrete. Sand shall not be placed in standing water.

#### 6) External Service Reconnections For Sewer Rehabilitation

- a) If applicable, where an external service lateral reconnection must be made, an excavation shall be made down to the service line to be reconnected. The existing service line shall be removed only to the extent needed to complete the work. The new sewer main pipe or liner shall be cut out at the service opening to the sewer main. A prefabricated fitting (Inserta-Tee or approved equal) shall be installed in

accordance with Los Angeles County Department of Public Works Standard Plan 2025-2, or in accordance with the manufacturer's specifications, so that a complete, watertight seal is accomplished when the installation is complete. The cement collar joint shall be used in locations where the sewer main is encased in concrete. The epoxy resin joint, or heat-fused joint, shall be used in all other locations. The new service line shall be connected to the existing service line with a flexible coupling and stainless steel bands, as approved by the Engineer.

- b) The coupling shall be secured to the existing service lateral, and new stub and/or stack, with stainless steel bands. The connection shall be visually inspected and approved by the Engineer before backfilling.
- 7) **Payment.** *Payment for service lateral reconnections to a rehabilitated (lined) sewer shall be made at the Bid Unit Price for "Reconnect Existing Sewer Service Lateral to Lined Sewer Pipe by Trenchless Method", complete in-place, including notifications, sealing, sewer bypass, and incidental items, and no extra costs shall be allowed.*

If a Point Repair includes a service lateral connection, all work necessary to restore the service lateral connection to the host pipe shall be included in the Bid Unit Prices for "*Point Repair on 8" VCP Sewer*".

## **500-1.2 Pipeline Point Repair/Replacement.**

### **500-1.2.1 General.** Add as follows:

Approximate locations of known required point repairs of the host pipe, to be made prior to rehabilitation, are identified in Appendix V and VI of the Specifications. The Contractor shall verify these locations, and, if applicable, identify additional locations that it recommends to be repaired during the preconstruction video inspection. The Contractor shall provide the Engineer a written notification of any discrepancies between the plans and information obtained in the field. The CITY shall determine what locations need repair. The Contractor is fully responsible for the adequate repair of the host pipe as necessary to ensure a successful lining installation, including reconnecting existing service laterals to the host pipe. Replacement pipe shall be no less than 3 feet long and shall use type "D" joints.

Additional work to repair any damage to the pipe lining system caused by host pipe defects, except at any location where the CITY elects not to have a recommended repair performed, or due to failure of the sewer flow bypass system, shall be the Contractor's responsibility and completed at no additional cost to the CITY

Add the following Subsection:

**500-1.2.7 Payment.** Sewer point repairs shall be paid at the Bid Unit Prices for Point Repairs, and shall include all work per Subsection 500-1.2.1 and all incidental work, and no extra costs shall be allowed.

Sewer pipe replacement, excluding point repairs, shall be per the Unit Bid Price per linear foot of pipe and shall include all work per Subsection 500-1.2.1 and all incidental work, and no extra costs shall be allowed.

#### **500-1.4 Cured-in-Place Pipe Liner (CIPP Liner)**

**500-1.4.1 General.** To this subsection of the Standard Specifications add as follows:

The CIPP liner shall extend the full length of the pipe reach to be rehabilitated and shall provide a structurally sound impermeable, seamless, joint-less, close-fitting pipe, that when cured, is mechanically bonded to the host pipe.

The Contractor shall obtain an Industrial Wastewater Permit from the CITY for the curing water disposal. The curing water must be cooled to meet the CITY's discharge standards before releasing the flow.

**500-1.4.2 Material Composition and Testing.** To this subsection of the Standard Specifications add as follows:

- 1) Tube: The tube shall be supplied by the system licensor to the licensed Contractor in accordance with Section 5.1 of ASTM 1216-89 and/or the latest revision thereof. The side of the liner exposed to the sewer flow after inversion is completed shall have a layer of polyurethane bonded to it with a minimum thickness of 0.01 inch and shall be pinhole free. All seams and patches in the polyurethane coating shall be inspected under a black light. The tube shall be placed under a vacuum at the factory and submerged in a die bath to verify that it is pinhole free. The Contractor shall provide proof to that effect. The felt tube shall be continuous and of sufficient length to extend the entire reach (from entry to end point) of the host pipe to be rehabilitated. No joints or laps will be permitted between manholes. The Contractor shall comply with all requirements specified by Subsection 500-1.1.1 and provide documentation to verify this compliance prior to installation.
- 2) One 18-inch long restrained and cured sample shall be taken from the downstream and any intermediate manholes, unless otherwise specified by the Engineer, and shall be checked by the inspector pursuant to Subsection 500-1.1.1 to verify the minimum wall thickness and conformance with the flexural properties listed in Table 500-1.1.1.
- 3) Resin: The Contractor shall furnish an epoxy or epoxy-vinyl-ester resin and a compatible catalyst system as specified by the resin manufacturer that has successfully passed all testing requirements included in the Specifications. The resin manufacturer shall provide the Contractor with the recommended curing cycle and shall submit the same to the Engineer. Certified copies of all test reports performed by the independent testing laboratory on the properties of the selected resin and on the properties of the field liner coupons, as specified in Subsections 4-1.4 and 500-1.1.1 shall be submitted to the Engineer.

**500-1.4.4 Chemical Resistance.** (Replace paragraph as follows):

Proof of having passed the Standard Specifications' chemical resistance test (Pickle Jar Test) requirement per Section 211-2 for each of the proposed lining materials shall be provided with the Bid.

**500-1.4.5 Installation.** To this subsection of the Standard Specifications add the following:

The installation procedures may vary with the methods of rehabilitation techniques/processes approved for the project. The Contractor shall, in his or her submittal, give information, essentially following the same format as in Subsections 500-1.4.5.1, 500-1.4.5.2, 500-1.4.6.1, and 500-1.4.6.2, or give detailed instructions, procedures, and the steps to be followed for the installation of the proposed CIPP liner. All such instructions and procedures shall be submitted for review by the Engineer and shall be carefully followed. Materials, delivered to the jobsite, shall be accompanied by appropriate (individual) documentation listing physical properties, curing, and/or reforming temperatures and pressures.

Add subsections as follows:

**500-1.4.5.1 Wet Out.** The Contractor shall designate a location where the felt tube will be impregnated (“wetted out”) with resin. The quantity of a resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and stretching during installation, and for the loss of resin through cracks and irregularities in the host pipe. The calculations for the quantity of resin required shall be submitted and approved by the Engineer prior to wetting out the liner. A roller system and vacuum shall be used to uniformly distribute the resin throughout the tube to thoroughly saturate the felt tube prior to its dispatch for installation. The gap in the roller shall be verified every 50 feet. The Contractor shall inform the Engineer at least four (4) calendar days in advance, to inspect the materials and the wet out procedure. A catalyst system or additive(s) compatible with the resin and tube may be used per the manufacturer’s recommendation. They shall not impair or reduce the resin’s quality to withstand the minimum chemical resistance criteria.

**500-1.4.5.2 Insertion.**

The wetted out tube shall be transported and kept in a refrigerated truck, until it is inserted through an existing manhole by the approved technique/process of the installer or the Contractor. The Contractor shall use either an end-stop or hold-back mechanism to prevent the felt tube from extending into conduits which are not to be rehabilitated. The Contractor shall protect the project site in accordance with Subsections 7-8 and 7-9 of the Standard Specifications and shall be responsible for repairing or replacement of all existing improvements within the project site which are damaged and/or removed as a result of the Contractor’s operations, at no cost to the CITY.

**500-1.4.6 Curing.** Add as follows:

After the insertion is completed, the Contractor shall cure the liner in accordance with ASTM F1216 Section 7.6 Curing or ASTM F1743 Section 6.6 Curing.

- 1) All water used shall be from metered supply and paid for by the Contractor. If the Contractor is required to place water hoses in roadways or across driveways, Contractor shall provide temporary ramps to protect water hoses from traffic, to the satisfaction of the Inspector. The time required to cure, which is a function of the pipeline diameter, length, and curing temperature, shall be determined by the Contractor in accordance with the resin/catalyst system of the resin manufacturer. The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing water. It is also required that

thermocouples be placed on the top and bottom of the impregnated tube and the host pipe at the upstream and downstream manhole(s), as well as in any intermediate manhole to determine the temperatures during the resin curing process. Thermocouples shall be connected to a recording device at the heater truck to have a continuous measurement of the thermocouples on the tube as well as the intake and output water temperatures at the water heater. If a permanent recording device is not available, then a hand-held thermocouple recording device must be used to measure all temperature readings during the curing and cooling procedure. The recording device used to measure all temperatures shall be calibrated prior to use on the jobsite. The Contractor shall provide all calibration records for all equipment used on the job, upon request by the Engineer. Remotely located thermocouple readings and the temperature of the circulating water at the downstream end of the liner (away from the heater truck) should be recorded every 15 to 30 minutes. All readings, as well as recording charts, shall be described and attached to a Cure Summary Report. The initial cure may be considered completed when the exposed portions of the felt tube appear to be hard and the remote sensing device indicates the temperatures to be adequate, as recommended by the resin/catalyst system manufacturer and approved by the Engineer. However, the Contractor remains fully responsible for the accuracy of his or her work and for determining when curing has been completed to meet the specified properties. Care shall be taken during elevated temperature curing so as not to overstress the fiber liner. Curing temperatures and duration shall comply with data and information previously submitted.

- 2) The cured liner shall have a smooth finish inside. Any roughness that may affect the hydraulic conditions shall be removed by sanding or trimming the "fins" or folds. Such trimming shall not change the required thickness or structural strength of the liner. The Contractor may either apply a sealant compatible with the material to areas where sanding has taken place or replace the pipe liner from manhole to manhole, at no additional cost to the CITY.

Add subsections as follows:

#### **500-1.4.6.1 Cool Down.**

The Contractor shall cool the hardened pipe to a temperature below 38°C (100°F), before relieving the water column. Cool water may be added to the water column while draining hot water from a small hole at the opposite end of the CIPP, 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 would damage the newly installed pipe. Samples shall be obtained for testing as specified in Subsection 500-1.4.2 Material Composition and Testing. The cool down process may vary depending on the installation technique of the manufacturer/Contractor.

#### **500-1.4.6.2 Finished Pipe.**

- 1) The finished CIPP shall be continuous over the entire length from manhole to manhole and shall be free from visual defects such as foreign inclusions, dry spots, keel, boat hull, pinholes, wrinkles, and other deformities. The liner passing through or terminating in a manhole shall be carefully cut out. The cut shall be smooth and parallel with the manhole wall. The finished liner shall not protrude into the manhole over 2 inches. The area/annular space between the host pipe and the CIPP liner shall be sealed with the approved epoxy or other material that is compatible with the CIPP liner and shall provide a watertight seal. The sealant system and materials shall conform to Subsection 210-2.3.3. It shall also meet the leakage requirements of the pressure test specified in these Contract Documents. During

the warranty period, any defect identified by the Engineer which will affect the integrity or strength of the pipe liner shall be repaired at the Contractor's expense.

- 2) Installations will not be considered complete until the lining is installed, all final cuts are finished, all channels and benches in the manholes are installed or refinished, all miscellaneous work described in the Contract Documents is complete, the final video inspection is performed, and as-built information is submitted to and accepted by the CITY.

#### **500-1.4.6.3 Process Limitations.**

- 1) Though the installation process may be licensed or proprietary in nature, the Contractor SHALL NOT change any material, thickness, design values, or procedural matters stated in the submittals without the Engineer's prior knowledge and pre-approval. The Contractor shall submit, in writing, full details about component materials, their properties, and installation procedures and abide by them fully during the entire course of the project.
- 2) The minimum required performance criteria, standards, physical/structural properties, chemical resistance tests, and the liner thickness as given in this specification shall be strictly complied with.
- 3) The CITY will not allow intermediate excavations for additional manholes not shown on the plans.

#### **500-1.4.7 Service Connections and End Seals.** Add as follows:

After curing is complete, the Contractor shall re-establish all service connections per Subsection 500-1.1.7(a). If the Contractor cannot re-establish a service connection as specified above within specified normal working hours, the following shall apply: The Contractor must open all live laterals with preliminary cuts to relieve the flow the same day of installation. The preliminary cut shall be a smooth round cut, with a minimum diameter of 3 inches. Final cuts shall be completed during normal working hours within a week from the date of the liner installation, unless otherwise approved by the Engineer.

Add a subsection as follows:

#### **500-1.4.9 Payment.**

The Bid Unit Prices for installing liners to rehabilitate sewer mains in the manner described shall include full compensation for all materials, labor, tools, equipment, and incidentals required to install liner within the host pipes. Payment for installing liner shall also include the cost of sealing the liner in the manholes, reworking the manhole inverts, benches, and shelves, etc. Payment will be for actual linear footage for liner installed in the field and shall be measured between the manholes from the wall, next to the insertion invert, to the invert wall of the downstream manhole, unless the liner extends through the manhole. Television inspection after rehabilitation (post-CCTV) shall be performed as specified and included in the liner installation cost. As-built information and all other relevant submittals shall be considered incidental to the rehabilitation.

The Contractor shall be responsible for making adequate and suitable arrangements for any bypass pumping that may become necessary to prevent any backflow onto private or public property between the time the liner is inserted and the service re-connections have been made, tested, and approved by the CITY. Bypass pumping shall be incidental to the cost of the sewer rehabilitation.

All costs for required point repairs in case of collapse of the pipe or failure of the new liner, and excavations made for service connections which are broken or found plugged by the rehabilitation process, shall be the responsibility of the Contractor, and no extra costs shall be allowed. No additional payment shall be made for work considered incidental or complementary to a Bid item. The Contractor shall clarify, for his or her own benefit, that all work required, incidental or otherwise, has been included in the items listed in Bidder's Proposal prior to submitting a Bid.

**500-1.10 Folded and Re-Formed PVC Pipe Liner**

**500-1.10.1 General.** Add as follows:

- 1) Folded and re-formed pipe liner shall extend the full length of the pipe reach to be rehabilitated and shall provide a structurally sound, impermeable, seamless, joint-less pipe which tightly fits the host pipe. Folded and re-formed PVC pipe lining consists of the reconstruction of the gravity sewer pipe by insertion of a preheated, folded PVC pipe which is then further heated and progressively unfolded and expanded against the interior surface of the host pipe. The finished PVC pipe liner, when installed and cool, shall extend over the installation length in a continuous, tight-fitting "pipe-within-a-pipe" manner. The minimum thickness of the pipe liner shall be in accordance with Subsection 500-1.1.1.
- 2) The factory test results to show compliance with ASTM D 1784 Cell Classification 13223-B and the requirements of Subsection 500-1.10.2 for Type A, or 12111-C and requirements of Subsection 500-1.10.3 for Type B for each coil of pipe shall be submitted to the Engineer before installation.
- 3) PVC pipe liner when installed and cool shall have the following minimum values when tested in accordance with ASTM standards by an independent testing laboratory approved by the Engineer.

	Flexural Strength	Flexural Modulus	Tensile Strength	Impact Resistance
ASTM Test	D 790	D 790	D 638	D 2444
TYPE A	2,200 psi	280,000-320,000 psi	5,000-6,000 psi	Pass/fail
TYPE B	1,930 psi	145,000-280,000 psi	3,500-5,000 psi	Pass/fail

- 4) Certified copies of all test reports performed by an independent testing laboratory, as specified in Subsections 500 4-1.4 and 500-1.1.5, shall be submitted to the Engineer.

**500-1.10.2 Type A Folded and Re-Formed PVC Pipe Liner.** To this subsection add and revise as follows:

(c) **Material and Equipment Acceptance.** Add as follows:

The Contractor shall submit factory test results and the date the PVC liner was manufactured for each coil of pipe prior to installation for approval. No pipe liner shall be installed later than six months from date of manufacture.

(f) **Installation and Field Inspection.** Add as follows:

- 8) The Contractor shall furnish and maintain in good condition all equipment necessary for the proper execution of the work as specified. The method of installation shall be compatible with the

manufacturer's recommended practices. Before installation, the pipe coils shall be checked by the inspector pursuant to Subsection 500-1.1.1 to verify compliance with the minimum wall thickness.

a) Insertion: The liner pipe shall be inserted into the existing sewer through existing manholes, without modification of the manholes.

b) Forming: If the liner fails to form, the Contractor shall remove the failed liner and replace it with a new liner. This work shall be performed without additional costs to the City. After the liner has been formed, the ends of the liner shall be cut away at both manholes.

c) Finish: The finished liner shall comply with Subsection 500-1.4.6.2. Any defect which will affect the integrity or strength of the liner pipe or cause a problem with the service connections, due to improper finishing or channels or benches, shall be repaired at the Contractor's expense.

**500-1.10.3 Type B Folded and Re-Formed PVC Pipe Liner.** To this subsection add and revise as follows:

The Contractor shall submit factory test results and the date the PVC liner was manufactured for each coil of pipe prior to installation for approval. No pipe liner shall be installed later than six months from the date of manufacture.

The Contractor shall furnish and maintain in good condition all equipment necessary for the proper execution of the work as specified. The method of installation shall be compatible with the manufacturer's recommended practices. Before installation, the pipe coils shall be checked by the inspector pursuant to Subsection 500-1.1.1 to verify compliance with the minimum wall thickness.

**500-1.10.5 Service Connections.** Delete this subsection replace with the following:

Service reconnection shall comply with Subsection 500-1.1.7(a).

Add the following subsection:

### **500-1.14 Ultraviolet Cured-In-Place Pipe (UV-CIPP) Liner Rehabilitation**

#### **500-1.14.1 Description of Work**

This work shall include the furnishing of all materials, equipment, tools and labor required for the rehabilitation of existing pipes by the installation of a resin impregnated Ultra-Violet (UV) cured-in-place pipe (CIPP) lining system. The prefabricated seamless tube shall be constructed of fiberglass fabric entirely encapsulated in an inner and outer membrane and impregnated with resin as recommended by the manufacturer, prior to insertion in the host pipe. Upon UV-curing, the resin-impregnated seamless tube shall form a structurally sound, watertight, tight-fitting pipe-within-a-pipe. The light-cured lining system shall be installed in accordance with the manufacturer's specifications.

#### **500-1.14.2 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

**ASTM F 2019-03** Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)

**ASTM F 1216** Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of Resin-Impregnated Tube.

**ASTM D 543** Test Method for Resistance of Plastics to Chemical Reagents

**ASTM D 638** Standard Test Method for Tensile Properties of Plastics

**ASTM D 790** Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics, and Electrical Insulating Materials

### **500-1.14.3 SUBMITTALS**

Materials proposed shall meet the requirements of the contract specifications and shall be submitted for review and approval by the CITY.

The UV-CIPP system technical literature shall be submitted for review by the CITY.

The Contractor installing the UV-CIPP must be an approved and trained applicator of the system being installed.

### **500-1.14.4 SAFETY**

All work safety requirements of pertinent regulatory agencies shall be complied with. The site shall be secured for working conditions in compliance with the same. Signs and other devices shall be erect as are necessary for the safety of the workers at the work site.

All work shall be performed in accordance with applicable OSHA standards. Emphasis shall be placed upon the requirements for entering confined spaces and with the equipment being utilized for pipe lining.

**500-1.14.5 CURED-IN-PLACE PIPE MATERIALS:** The glass fiber tubing shall be seamless and spirally wound, including an exterior and interior film that protects and contains the approved resin used in the liner for this project. The exterior film will be provided with a UV light blocker foil.

- 1) Tube: The tube 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 tube shall be constructed to withstand installation pressures and have sufficient strength to bridge missing pipe. The wet out tube shall have a uniform thickness that when compressed at installation pressures will meet or exceed the design thickness.
- 2) The tube shall be sized such that when installed, will tightly fit the internal circumference and length of the original pipe.
- 3) The glass fiber tube shall be saturated with the appropriate resin using a resin bath to allow for the lowest possible amount of air entrapment. The liner will then be formed into a spirally wound shape for the purpose of being seamless in its cured state. An inner and outer material will be added that are both impervious to airborne styrene, with the outer material also having UV blocking characteristics. The inner membrane will be removed after the installation and curing processes are completed.
- 4) The wall color of the interior pipe surface of UV-CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.
- 5) The liner should be seamless in its cured state to insure homogenous physical properties around the circumference of the cured liner.
- 6) 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.
  - a) Resin – The resin system shall be SS approved by the engineer, with a catalyst system that when properly cured within the tube composite meets the physical properties of and adheres to ASTM 2019:

Flexural Modulus	1,100,000 psi
Flexural Strength	21,800 psi
Long term E-modulus	675,000 psi
Liner wall porosity	APS Standard

- b) Chemical Resistance – The chemical corrosion resistance of the actual resin system used by the Contractor shall be tested by the resin manufacturer in accordance with ASTM F 1216.

**500-1.14.6 INSTALLATION OF THE GLASS FIBER LINER**

- 1) The approved system must utilize an outer and inner film to ensure that the liner remains intact during the insertion process and to protect the resin at all times during the installation and curing process from water and debris contamination, and resin migration which will lower the physical properties of any thermosetting cured liner. If there is any damage to the outer film, the film shall be repaired immediately with styrene-proof tape.

- 2) A constant tension shall be applied 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. As with all CIPP products, liner restraints should be used in manholes.
- 3) 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.
- 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 shall be taken to not damage the inner film material.

The UV light sources shall 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 shall 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 shall include:

- Curing speed
- Light source working & wattage
- Inner air pressure
- Exothermic (curing) temperatures
- Date and time
- Length of liner

This shall be accomplished using a computer and data base that are tamper-proof. During the curing process, infrared sensors shall be used to record curing data that shall be submitted to the Engineer with a post CCTV inspection on DVD.

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) The inner film material shall be removed and discarded after curing to provide optimal quality of the final product.

## **500-2 MANHOLE AND STRUCTURE REHABILITATION**

**500-2.1 General.** Delete the second sentence and add the following:

As indicated in Subsection 306-6, the pipe liner may be installed through the manholes as part of the lining operation and then cut, secured, and finished within the manhole base in accordance with the Specifications. The method of relining calls for terminating the line just outside the existing pipe ends, then the manhole channel shall be modified under dry conditions utilizing an epoxy grout to create a smooth flow surface throughout the channel between pipe liner ends on a constant downward grade between the manhole inlet invert and the manhole outlet invert. There shall not be any exposed liner lip or edge exceeding 3/16-inch allowed in the manhole channel below the pipe spring line.

Manhole rehabilitation shall be by Air-Placed Concrete and Polyurethane Protective Lining only, per Standard Specifications Subsection 500-2.3 and 500-2.7.

Add the following subsection:

**500-2.3.2.1 Manhole Channel and Shelf Repairs.**

Manhole channel and shelf repairs shall include filling in holes and voids in existing channels and shelves shown on the plan to be repaired utilizing epoxy grout. Channels that are modified to complete the pipe lining process pursuant to Subsection 500-2.1 in manholes not otherwise shown to be repaired shall not be included. The manhole channel shall be modified under dry conditions to create a smooth flow surface throughout the channel between pipe liner ends on a constant downward grade between the manhole inlet invert and the manhole outlet invert. There shall not be any exposed liner lip or edge exceeding 3/16-inch allowed in the manhole channel below the pipe spring line.

**500-2.10.2 Payment.** Add the following:

Payment for manhole and structure rehabilitation shall be made at the Contract Lump Sum Price for each structure in accordance with Subsection 500-2.1 and 500-2.3.2.1, and all cost thereof. The Bid Unit Prices for WITH RAPID-SETTING CONCRETE; FILL/REPAIR VOIDS IN UNDERLYING MANHOLE CHANNEL/SHELF, AND REPAIR CHANNEL AND SHELF shall include full compensation for all materials, labor, tools, equipment, and incidentals required to fill/repair voids including but not limited to trap holes to be filled in.

**500-2.11 Manhole Steps.** Add the following:

Metal manhole steps shall be removed and shall not be reinstalled. Plastic coated steps shall not be removed.



APPENDIX I  
CITY OF TORRANCE PERMIT AND BUSINESS LICENSE



City of Torrance, Community Development Department  
**Permit Application Form**

3031 TORRANCE BLVD. • TORRANCE, CA 90503

**OWNER/APPLICANT INFORMATION**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State: \_\_\_\_\_  
Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_

Evacuation permits will not be issued without USA I.D. number.

Underground Service Alert  
Call 1-800/227-2600

USA I.D.#: \_\_\_\_\_

**CONTRACTOR INFORMATION ON FILE**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

State License #: \_\_\_\_\_

Class: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

City Business#: \_\_\_\_\_

Workers Comp. #: \_\_\_\_\_

Exp. Date: \_\_\_\_\_

**JOB LOCATION/ADDRESS**

*(or closest street address)*

Please list cross streets: \_\_\_\_\_  
\_\_\_\_\_

**DESCRIPTION OF WORK**

\_\_\_\_\_  
\_\_\_\_\_

Lin/Ft Trench \_\_\_\_\_ Width of Trench \_\_\_\_\_ Lin/Ft Curb & Gutter \_\_\_\_\_

Lin/Ft Bore \_\_\_\_\_ Sewer Connection \_\_\_\_\_ Number of Curb/Drains \_\_\_\_\_

Sq/Ft Asphalt \_\_\_\_\_ Sq/Ft Concrete \_\_\_\_\_ Sq/Ft Dirt \_\_\_\_\_

Work Order Number (for utility companies): \_\_\_\_\_

Applicant or Authorized Signature: \_\_\_\_\_

For further permit information, please call 310/618-5898 or Fax 310/618-2846.



**NOTICE  
CITY OF TORRANCE  
COMMUNITY DEVELOPMENT DEPARTMENT/  
ENGINEERING DIVISION  
NEW INSURANCE REGULATIONS**

The City of Torrance Community Development Department/Engineering Division will be requiring proof of liability insurance from each contractor applying for a Construction & Excavation permit to work in the public right-of-way or in a public easement beginning October 1, 2001. Insurance shall cover contractor and vehicles used in the construction. The attached requirements dated September 20, 2001 will detail the insurance limits.

**All insurance certificates shall have an additional clause that states: *"The City of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer"* as additional insured.**

Contractors should bring in proof of insurance at the time of application for permit. For major companies that are self-insured, a letter stating this fact and signed by an officer of the firm will be acceptable. Annual insurance may also be kept on file for contractors working periodically within the City of Torrance.

If you have any questions, please contact the Engineering Division Permit Counter at 310-618-5898.

JEFFERY W. GIBSON  
Community Development Director  
City of Torrance

**EFFECTIVE 8/11/03**

8/11/03

CITY OF TORRANCE  
COMMUNITY DEVELOPMENT DEPARTMENT/  
ENGINEERING DIVISION

PERMIT APPLICATION FORM  
INSURANCE REQUIREMENTS

Any entity performing work on City streets, right-of-way, and property must comply with the following requirements.

**1. TYPE OF INSURANCE**

Any entity performing work must maintain at their sole expense the following insurance, which shall be full coverage not subject to self-insurance provisions.

- General Liability including coverage for premises, products and completed operations, underground hazards, independent contractors, personal injury and contractual obligations with combined single limits of at least \$1,000,000 per occurrence.
- Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:
  - Primary Bodily Injury with limits of at least \$500,000 per person, \$1,000,000 per occurrence AND; Primary Property Damage with limits of at least \$500,000 per occurrence, OR
  - Combined single limits of at least \$1,000,000 per occurrence.
- Workers' Compensation with limits as required by the State of California and Employer's Liability with limits of at least \$1,000,000.

**2. CERTIFICATES**

- Certificates or an attached endorsement must be provided that contains the following provisions:
  - The City of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer must be named as additional insured under the automobile and general liability policies.
  - The insurance policies required by this clause shall contain a provision that no termination, cancellation or change of coverage can be made without 30 days written notice to the City.

**3. FILING REQUIREMENTS**

- Certificates of insurance and/or endorsements must be provided to the Community Development Department, Permits and Records Section, 3031 Torrance Blvd., Torrance, CA 90503, prior to the issuance of the permit.

**4. ADDITIONAL REQUIREMENT**

- Insurance required of any entity performing work will be satisfactory only if issued by companies rated "B+" or better in the most recent edition of Best's Key Rating Guide, and only if they are of a financial category of a VII or better, unless these requirements are modified or waived by the City's Risk Manager.

**Please call the Business License Office at 310-618-5923 for fee amounts. Payment must be submitted with your application.**

<b>FOR OFFICIAL USE ONLY</b>	
1. LICENSE NO.	2. CATEGORY NO.
HOME OCCUPATION	HEALTH PERMIT
	S.I.C. CODE



**PART I. APPLICANT TO ANSWER ALL QUESTIONS IN THIS SECTION (print or type)**

3. BUSINESS NAME OR DBA \_\_\_\_\_

4. CORPORATE NAME (IF DIFFERENT FROM ABOVE) \_\_\_\_\_

5. BUSINESS ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

6. MAILING ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

7. NATURE OF BUSINESS (state type of business being conducted at this location) \_\_\_\_\_

8. NO. OF PERSONS WORKING AT LOCATION \_\_\_\_\_

9. BUSINESS PHONE \_\_\_\_\_

10. NAME OF PERSON MAKING APPLICATION (include in owner, partner or corporate officer) \_\_\_\_\_

11. TITLE \_\_\_\_\_

12. HOME PHONE \_\_\_\_\_

13. RESIDENCE ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

14. DRIVER'S LICENSE NO. \_\_\_\_\_

15. STATE SALES TAX NO. \_\_\_\_\_

16. STATE CONTRACTOR'S LICENSE NO. \_\_\_\_\_

17. SQUARE FOOTAGE \_\_\_\_\_

18. SOCIAL SECURITY NO. \_\_\_\_\_

19. PERM. NO. \_\_\_\_\_

20. SSN NO. \_\_\_\_\_

21. OWNERSHIP INFORMATION

PARTNERSHIP  CORPORATION  SOLE OWNERSHIP

NAMES OF OWNER, PARTNER, OR PRINCIPAL OFFICERS \_\_\_\_\_ TITLE \_\_\_\_\_ HOME ADDRESS \_\_\_\_\_ HOME PHONE \_\_\_\_\_

I declare that I am the owner, partner, corporate officer or person with the power of attorney, and I understand if all the information provided above is not the true the business license being applied for may be reviewed as outlined in section 31.9.10 of the Torrance Municipal Code.

I am duly authorized to make this application and all of the information provided in this application is true and correct. The business will not provide any service, good or product which is illegal under Federal, State, or Local Laws. I declare under penalty of perjury that the foregoing is true and correct.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**PART II. FOR OFFICIAL USE ONLY**

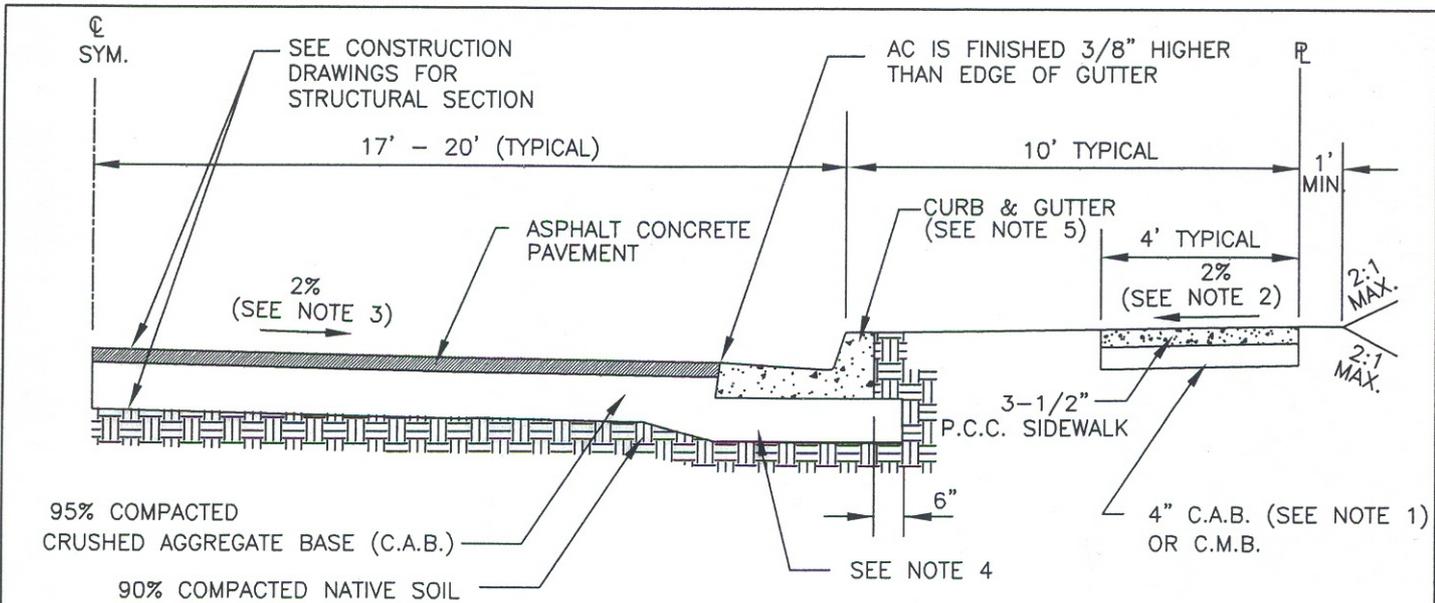
BASIC FEE \_\_\_\_\_ APPLICATION SENT FOR CORRECT PROCESSING FEE \_\_\_\_\_ FILE RESP. FEE \_\_\_\_\_ OTHER \_\_\_\_\_

PER PERSON FEE \_\_\_\_\_ YES  NO  OTHER (enter) \_\_\_\_\_

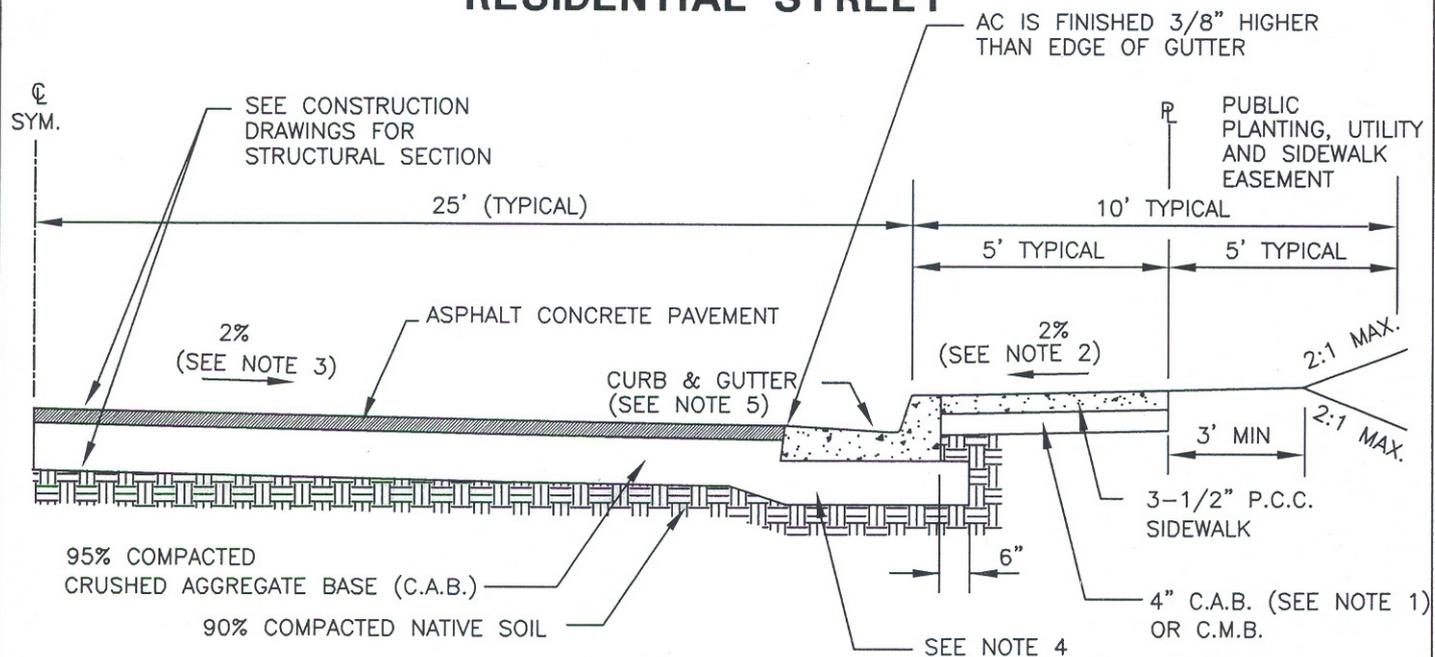
PERMITS FEE \_\_\_\_\_ HOLD  YES  NO  ENT. FEE \_\_\_\_\_ CANCEL/PARTIAL FEE \_\_\_\_\_

RECEIVED BY \_\_\_\_\_ DATE \_\_\_\_\_ ORDER NO. \_\_\_\_\_ BANK NO. \_\_\_\_\_ CASH \_\_\_\_\_ TOTAL AMOUNT \$ \_\_\_\_\_

APPENDIX II  
CITY OF TORRANCE  
STANDARD PLANS



### RESIDENTIAL STREET



### INDUSTRIAL STREET

#### NOTES:

1. THE BASE MAY BE OMITTED UNDER SIDEWALK IF SUBGRADE IS SANDY SOIL AND WHEN AUTHORIZED BY THE PUBLIC WORKS INSPECTOR.
2. TYPICAL - MAY VARY 0.5% MIN. TO 2.0% MAX TO MATCH EXISTING CONDITIONS AND TO FACILITATE JOINS.
3. TYPICAL - MAY VARY 1% MIN. TO 4.0% MAX TO MATCH EXISTING CONDITIONS AND TO FACILITATE JOINS.
4. THICKNESS OF BASE REQUIRED UNDER CURB & GUTTER SHALL BE 8".
5. CURB AND GUTTER AS PER SPPWC STANDARD 120 TYPE A2 UNLESS OTHERWISE NOTED.
6. SIDEWALK NOT TO BE PLACED MONOLITHICALLY WITH CURB.

### CITY OF TORRANCE

### TYPICAL SECTION LOCAL STREET

STANDARD NO.

**T102**

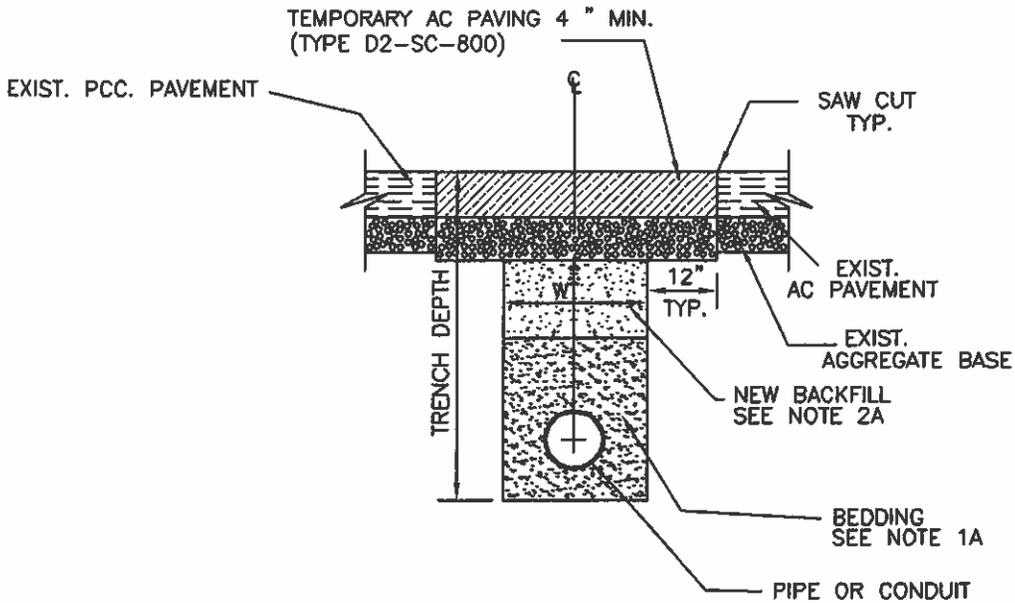
ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

SHEET 1 OF 1

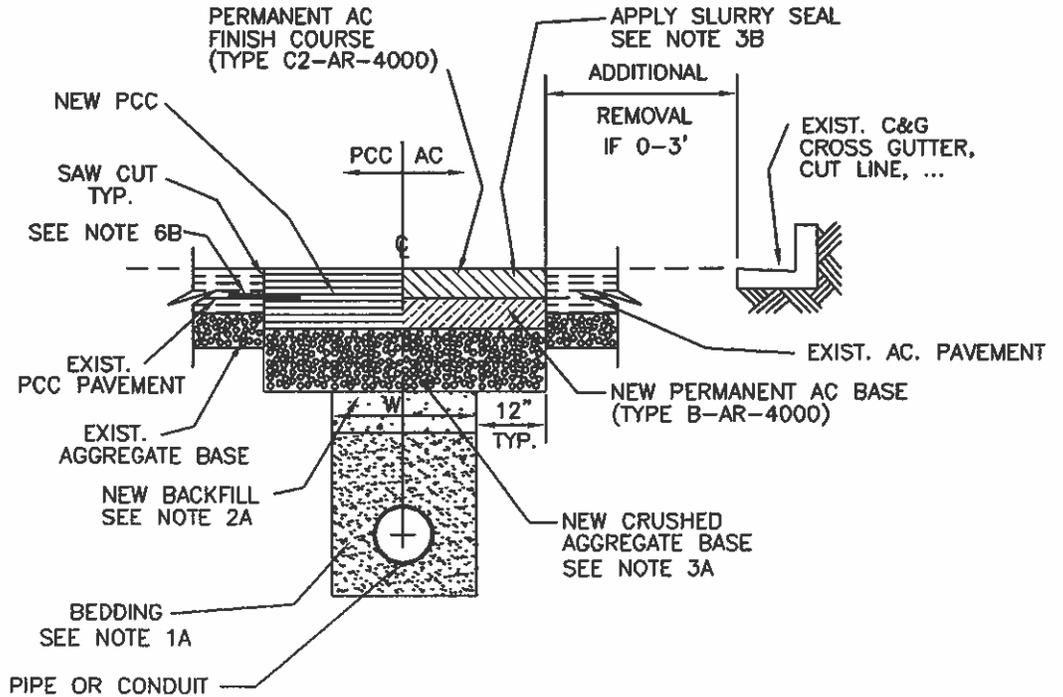
TS/TT/T102

DATE ISSUED

DEC 2012



**TEMPORARY ASPHALT REPAIR**



**PERMANENT TRENCH REPAIR**

**TYPICAL TRENCH SECTION WITHIN ROADWAY  
(SEE NOTE 8C FOR EXCEPTION)**

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

DATE ISSUED  
10 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

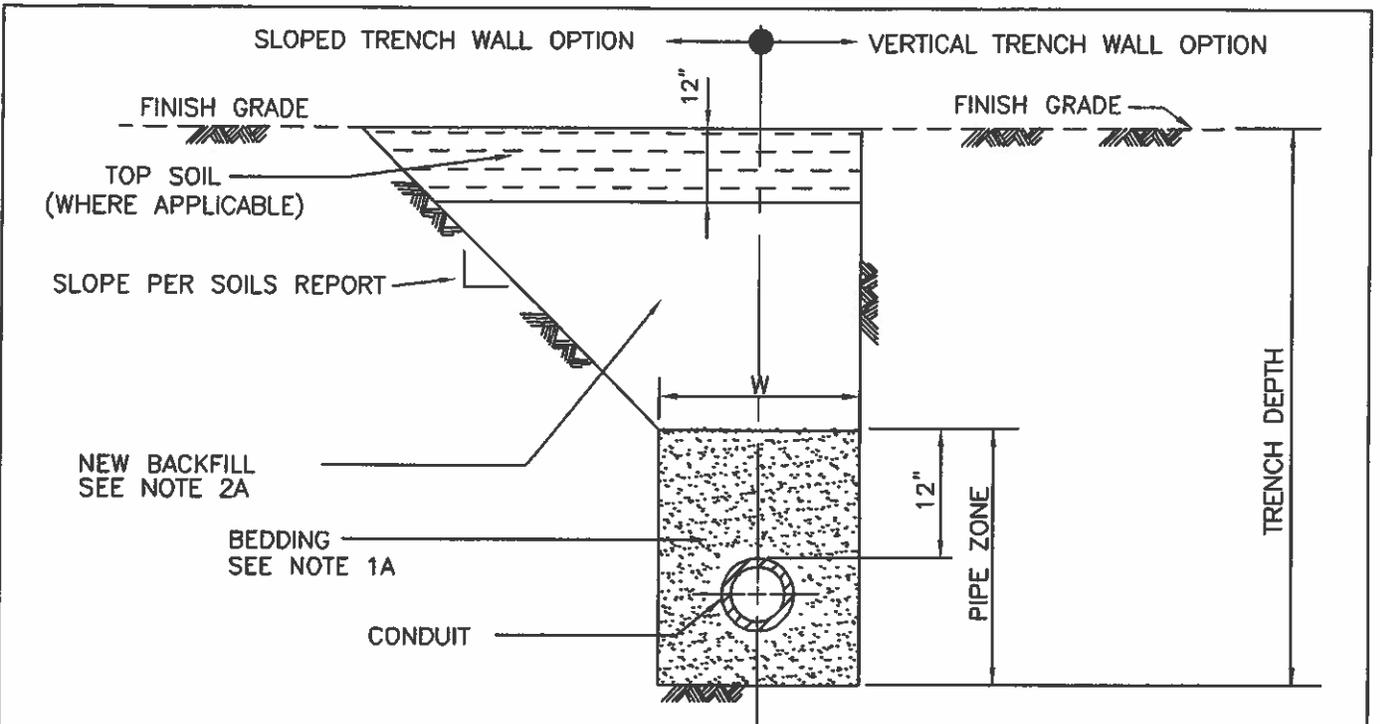
STANDARD NO.

**T116-2**

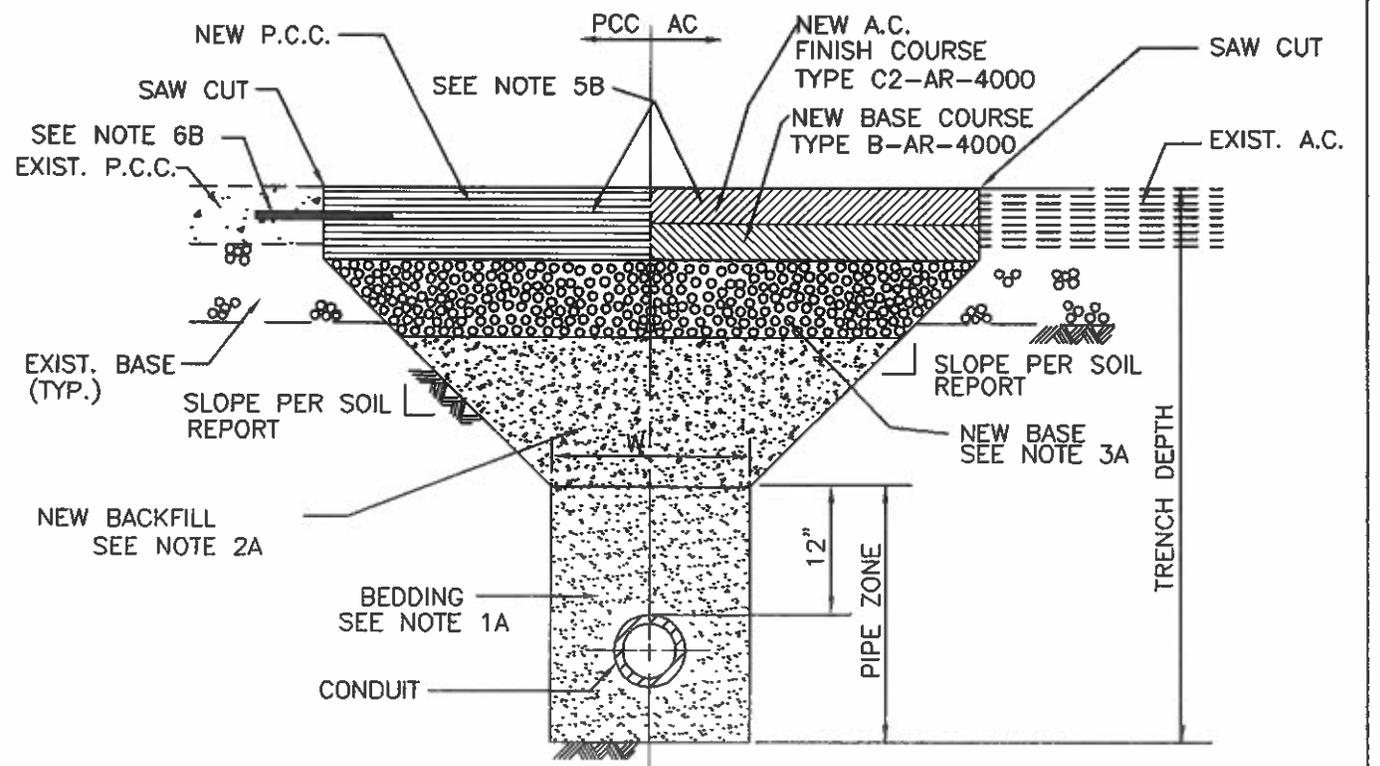
RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538

SHEET 1 OF 4

TT/T116-2



**TYPICAL TRENCH SECTION OUTSIDE ROADWAY**



**TYPICAL TRENCH SECTION WITHIN ROADWAY  
SLOPED TRENCH WALL OPTION**

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

TT\T116-2

DATE ISSUED	<b>TRENCH BACKFILL &amp; PAVEMENT REPAIRS</b>	STANDARD NO.
10 SEP 2002		<b>T116-2</b>
RICHARD W. BURTT ENGINEERING DIRECTOR R.C.E. NO. 32862 R.T.E. NO. 1538		 SHEET 2 OF 4

NOTES:

BELOW GROUND:

1A. SEE STD. PLAN NO'S T204, T302, AND T701 FOR BEDDING REQUIREMENTS.

2A. FOR TRENCHES WITH "W" GREATER THAN 2' OR IF TRENCH WALLS ARE SLOPED, BACKFILL SHALL BE CRUSHED AGGREGATE BASE, OR NATIVE OR OTHER EXCAVATION MATERIAL WITH AN SE VALUE OF 30 OR GREATER. BACKFILL MATERIAL SHALL BE DENSIFIED TO A RELATIVE COMPACTION OF 95% IN THE UPPER 3 FEET AND TO 90% BELOW THE UPPER 3 FEET. FOR TRENCHES LONGER THAN 200' OR LARGER THAN 1,000 SQUARE FEET A LICENSED SOILS ENGINEER SHALL BE PRESENT TO MONITOR THE NATIVE OR IMPORTED BACKFILL OPERATION AND TEST FOR COMPACTION AT 100' OR 200 SQUARE FOOT MAXIMUM INTERVALS

FOR TRENCHES WITH "W" LESS THAN OR EQUAL TO 2' IN THE ROADWAY, A SAND-CEMENT SLURRY (100-E-100) BACKFILL SHALL BE USED. SLURRY SHALL CURE 16 HOURS MINIMUM PRIOR TO BASE PLACEMENT. RAPID SET CEMENT SLURRY SHALL CURE 1 HOUR MINIMUM PRIOR TO BASE PLACEMENT.

IN AREAS NOT IN EXISTING ROADWAY, BACKFILL SHALL BE COMPACTED TO A RELATIVE COMPACTION OF 90%.

3A. NEW CRUSHED AGGREGATE BASE SHALL BE 2" THICKER THAN EXISTING BASE, BUT NOT LESS THAN 8" THICK.

4A. EXCAVATED MATERIAL NOT APPROVED FOR USE IN TRENCH BACKFILL SHALL BE REMOVED FROM JOB SITE UNLESS OTHERWISE USED IN THE WORK.

5A. WHERE WET, UNSTABLE OR RUNNING SOIL IS ENCOUNTERED, SOLID SHEATHING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.

6A. ANY SHORING REQUIRED SHALL BE DESIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER.

7A. "W" SHALL BE MEASURED AT TOP OF BEDDING.

VISIBLE SURFACE:

1B. IF REMAINING AC PAVEMENT BETWEEN EDGE OF TRENCH AND EXISTING GUTTER, CURB, CROSS GUTTER, OR CUT LINE IS LESS THAN 3 FEET IN WIDTH, THEN THIS AC SHALL BE REMOVED AND REPLACED WITH NEW AC PAVEMENT.

2B. THE ENGINEER MAY REQUIRE WIDER REMOVAL AREA THAN THAT SHOWN ABOVE TO SUIT FIELD CONDITIONS.

3B. CRACKS SHALL BE SEALED AND A TYPE 2 SLURRY SEAL COATING WITH 2% LATEX SHALL BE APPLIED FROM LANE LINE TO LANE LINE FOR LONGITUDINAL TRENCHES GREATER THAN 200' IN LENGTH FOR ANY LANE AFFECTED.

4B. THE THICKNESS OF REPLACEMENT ASPHALT SHALL BE A MINIMUM OF 1" GREATER THAN EXISTING AC (2" GREATER IF EXISTING STREET IS PAVED WITH RUBBERIZED AC) BUT NOT LESS THAN 4" (5" FOR RUBBERIZED AC). IF EXISTING PAVEMENT IS PCC, REPLACEMENT CONCRETE SHALL BE AS PER SECTION 201.1 OF THE STANDARD SPECS AND 1" THICKER THAN EXISTING.

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

DATE ISSUED

10 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538



STANDARD NO.

**T116-2**

SHEET 3 OF 4

TT\T116-2

5B. THE NEW FINISH COURSE SHALL BE PLACED FLUSH WITH THE EXISTING ADJACENT PAVING SURFACE - MAXIMUM VARIANCE FROM FLUSH IS 1/8". NEW AC PAVEMENT ADJACENT TO EXISTING EDGE OF PCC GUTTER SHALL BE 3/8" HIGHER THAN EDGE OF GUTTER.

6B. FOR PCC ROADWAY PAVEMENT, DOWEL AT 24" O.C., #4 DEFORMED BAR, 6" EMBEDMENT, AND CENTERED IN EXISTING SLAB WITH 1-1/2" MINIMUM CONCRETE COVER. DOWEL SHALL BE EPOXIED IN EXISTING SLAB AND CAST IN NEW SLAB.

**METHODOLOGY:**

1C. AT THE END OF EACH WORK DAY, ANY TRENCH IN AN ARTERIAL OR IN ROLLING HILLS ROAD, MAPLE/235TH ST. OR ARLINGTON AVE. SHALL BE COVERED BY NON-SKID STEEL PLATES OR BE PAVED WITH TEMPORARY OR PERMANENT PAVEMENT FLUSH WITH ADJACENT PAVEMENT SURFACES. WHEN NON-SKID STEEL PLATES ARE USED, THEY SHALL BE WELDED, SECURED IN PLACE, RAMPED WITH AC, AND NOT USED FOR MORE THAN 48 CONSECUTIVE HOURS ON THE SAME SEGMENT OF TRENCH. "PLATE AHEAD" SIGN SHALL BE PROPERLY INSTALLED WHEN PLATES ARE IN USE. OTHER CITY STREETS MAY HAVE LESSER REQUIREMENTS AND WILL BE CONSIDERED ON A CASE BY CASE BASIS.

2C. ALL TRAFFIC LANES SHALL BE CLEANED AND RESTORED FOR USE IMMEDIATELY UPON PLACEMENT OF TEMPORARY AC PAVEMENT, TRENCH PLATES AND/OR FINAL AC PAVEMENT.

3C. ALL TRAFFIC STRIPING AND/OR MARKINGS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AS DIRECTED BY THE ENGINEER.

4C. TRAFFIC CONTROL SHALL BE PER CITY OF TORRANCE "CONSTRUCTION TRAFFIC CONTROL PROCEDURES ON CITY STREETS" AVAILABLE FROM THE ENGINEERING DEPARTMENT PERMIT COUNTER.

5C. MORATORIUM FOR CUTTING NEW OR RECONSTRUCTED STREETS IS 5 YEARS WITHOUT SPECIAL APPROVAL FROM THE ENGINEERING DIRECTOR. NEW UTILITY SERVICE CONNECTIONS AND SERVICE LINE REPAIRS ARE EXCEPTED IF NOT ABLE TO BE FORSEEN AT THE TIME THE ROADWAY WAS RECONSTRUCTED. APPROVED LONGITUDINAL EXCAVATIONS IN NEW STREETS SHALL REQUIRE THE FULL LANE TO BE GROUND AND OVERLAID.

6C. SLURRY SEALING OF TRENCH AREA MAY BE OMITTED IF PROJECT IS COORDINATED WITHIN ONE YEAR OF A CITY STREET REHABILITATION OR SLURRY SEAL PROJECT.

7C. A COLLECTION DEVICE SHALL BE USED TO COLLECT SEDIMENTS GENERATED DURING SAWCUTTING OPERATION.

8C. TRENCHES WITH "W" LESS THAN 8" WIDE AND LESS THAN OR EQUAL TO 24" DEEP ARE NOT REQUIRED TO USE T-SECTION PAVEMENT CONSTRUCTION, OR APPLY SLURRY SEAL.

9C. ALL PAVEMENT REMOVALS SHALL USE STRAIGHT LINE SAW CUTS A MINIMUM OF 1.5" DEEP.

10C. BORING SHALL BE CONSIDERED AS A CONTINUOUS TRENCH AS FAR AS EXCAVATION REPAIR. POTHOLES LOCATED INTERMITTENTLY WILL NOT BE TREATED AS SEPARATE EXCAVATIONS BUT AS A CONTINUOUS EXCAVATION. THE CITY SHALL RESERVE THE RIGHT TO REQUIRE BORING OR OPEN TRENCH AS THE SITUATION MAY ARISE.

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

DATE ISSUED

27 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538



STANDARD NO.

**T116-2**

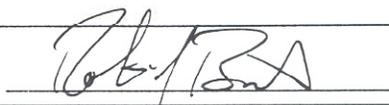
SHEET 4 OF 4

TT\T116-2

## SANITARY SEWER GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION AND SUPPLEMENTS THERETO, AS WRITTEN AND PROMULGATED BY PUBLIC WORKS STANDARDS, INC., HEREINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS, THE TORRANCE STANDARDS, AND TO THE SATISFACTION OF THE COMMUNITY DEVELOPMENT OR PUBLIC WORKS DIRECTOR.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE, VERIFY DEPTH AND PROTECT ALL STRUCTURES, INCLUDING SUBSTRUCTURES, SHOWN ON THE PLAN. THE CONTRACTOR SHALL BEAR THE ENTIRE COST OF REPAIRING OR REPLACING ANY OF SAID STRUCTURES DAMAGED BY HIM/HER DURING PROSECUTION OF THE WORK. ALL REPAIRS AND REPLACEMENTS SHALL BE DONE IN THE PRESENCE OF THE INSPECTOR. ALL LOCATIONS SHOWN ON THE PLAN FOR UTILITY LINES HAVE BEEN TAKEN FROM AVAILABLE RECORDS AND THEIR COMPLETENESS AND CORRECTNESS ARE IN NO WAY GUARANTEED.
3. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600 AND ALL PUBLIC UTILITY COMPANIES AND OWNERS OF PRIVATE FACILITIES WITHIN THE AREA OF CONSTRUCTION AT LEAST 2 WORKING DAYS IN ADVANCE OF PERFORMING ANY WORK WITHIN SAID AREA.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE CITY BEFORE COMMENCING WORK. TRAFFIC CONTROL WITHIN PUBLIC STREET RIGHTS OF WAY SHALL BE IN CONFORMANCE WITH THE "WATCH MANUAL" AND "CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD CALIFORNIA SUPPLEMENT MANUAL)" LATEST EDITION. THE CONTRACTOR SHALL PROVIDE A 24-HOUR TELEPHONE NUMBER FOR EMERGENCY REPAIRS TO TRAFFIC CONTROL AND PAVEMENT MARKINGS.
5. OVERHEAD UTILITY LINE CAUTION: REVIEW APPROVED CONSTRUCTION PLAN. IF CONSTRUCTION REQUIRES WORKERS AND/OR EQUIPMENT TO BE WITHIN 6 FEET OF CRANES OR HOISTING DEVICES TO BE WITHIN 10 FEET OF OVERHEAD ELECTRIC/UTILITY LINES, CALL SOUTHERN CALIFORNIA EDISON CO. AT 310-783-9336.
6. PRIOR TO COMMENCEMENT OF WORK, ALL SURVEY MONUMENTS IN THE PROJECT AREA SHALL BE LOCATED AND TIED OUT. ALL CENTERLINE MONUMENTS OR TIES LOST OR DESTROYED BY THIS WORK SHALL BE REPLACED EITHER BY A LICENSED SURVEYOR OR A CIVIL ENGINEER REGISTERED PRIOR TO JANUARY 1, 1982 AND NEW TIE SHEETS PROVIDED. METHOD OF ESTABLISHMENT SHALL BE STATED ON THE TIE SHEET.
7. GRADE SHEETS PREPARED AND STAMPED BY A LICENSED ENGINEER OR SURVEYOR SHALL BE DELIVERED TO THE INSPECTOR 24 HRS PRIOR TO COMMENCEMENT OF WORK.
8. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT 310-781-6900 PRIOR TO TRIMMING, REMOVING OR RELOCATING ANY EXISTING STREET TREES.
9. UNLESS OTHERWISE SHOWN, ALL TRAFFIC SIGNS SHALL BE RELOCATED OR REMOVED BY THE CONTRACTOR.
10. BEFORE BREAKING INTO OR CONSTRUCTION ON A COUNTY SANITATION DISTRICT SEWER AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, COUNTY SANITATION DISTRICT INSPECTOR SHALL BE NOTIFIED BY PHONE AT 310-638-1161 IN ORDER THAT REQUIRED INSPECTION MAY BE MADE.
11. EXISTING DOWNSTREAM MANHOLES SHALL BE BULKHEADED WITH BRICK AND MORTAR OR PLUGS APPROVED BY THE INSPECTOR AT NEW INLET DURING CONSTRUCTION OF NEW UPSTREAM LINES. BRICK AND MORTAR OR PLUG SHALL BE REMOVED IN THE PRESENCE OF THE INSPECTOR(S) DURING CLEANING OF THE FIRST UPSTREAM SECTION OF THE NEW SYSTEM.
12. NO CONNECTION FOR THE DISPOSAL OF INDUSTRIAL WASTES SHALL BE MADE TO SEWERS SHOWN ON THESE DRAWINGS UNTIL A PERMIT FOR INDUSTRIAL WASTE WATER DISCHARGE HAS BEEN ISSUED BY THE COUNTY SANITATION DISTRICTS FOR SAID CONNECTION.
13. TRENCHES CUT INTO AN EXISTING ROADWAY WITHIN THE PUBLIC RIGHT OF WAY SHALL BE BACKFILLED AND PAVED AS PER TORRANCE STANDARD T116.

### CITY OF TORRANCE

DATE ISSUED	<b>SANITARY SEWER GENERAL NOTES</b>	STANDARD NO.
19 FEB 2008	ROBERT J. BESTE PUBLIC WORKS DIRECTOR R.C.E. NO. 50737 	<b>T200</b>
		SHEET 1 OF 2

TT\T200

SANITARY SEWER GENERAL NOTES (CON'T)

14. TRENCH RESURFACING SHALL BE OF THE SAME TYPE AS THE EXISTING PAVEMENT, EXCEPT IF EXISTING PAVEMENT IS A.C. OVER P.C.C., RESURFACING MAY BE FULL-DEPTH A.C.

15. MANHOLE COVER SHALL BE CAST WITH THE WORDS "TORRANCE SEWER" FOR CITY MAINTAINED LINES AND "PRIVATE SEWER" FOR PRIVATELY MAINTAINED LINES.

16. ALL SEWER LINES CONSTRUCTED TO PUBLIC STANDARDS SHALL BE VITRIFIED CLAY PIPE (VCP). DUCTILE IRON PIPE MAY BE USED SUBJECT TO PRIOR WRITTEN APPROVAL FROM THE COMMUNITY DEVELOPMENT/PUBLIC WORKS DIRECTOR. ALL HOUSE CONNECTION LATERALS SHALL BE MINIMUM 6 INCH DIAMETER.

17. CONTRACTOR SHALL SET ALL MANHOLE FRAMES AND COVERS TO FINISHED GRADE.

18. CONCRETE ENCASEMENT SHALL BE REQUIRED FOR SEWER MAIN LINE AND HOUSE LATERALS WITH LESS THAN 3 FEET OF COVER.

19. THE CONTRACTOR SHALL MAKE AVAILABLE FOR THE INSPECTOR'S REVIEW, ON A DAILY BASIS, AS-BUILT DRAWINGS FOR WORK PERFORMED UP TO AND INCLUDING THE PREVIOUS DAY'S ACTIVITIES. WORK SHALL NOT BE CONSIDERED AS COMPLETE UNTIL AS-BUILT DRAWINGS ARE SUBMITTED TO AND ACCEPTED BY THE COMMUNITY DEVELOPMENT/PUBLIC WORKS DIRECTOR.

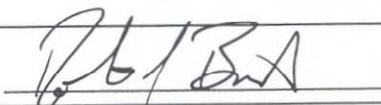
**CITY OF TORRANCE**

DATE ISSUED

19 FEB 2008

**SANITARY SEWER GENERAL NOTES**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

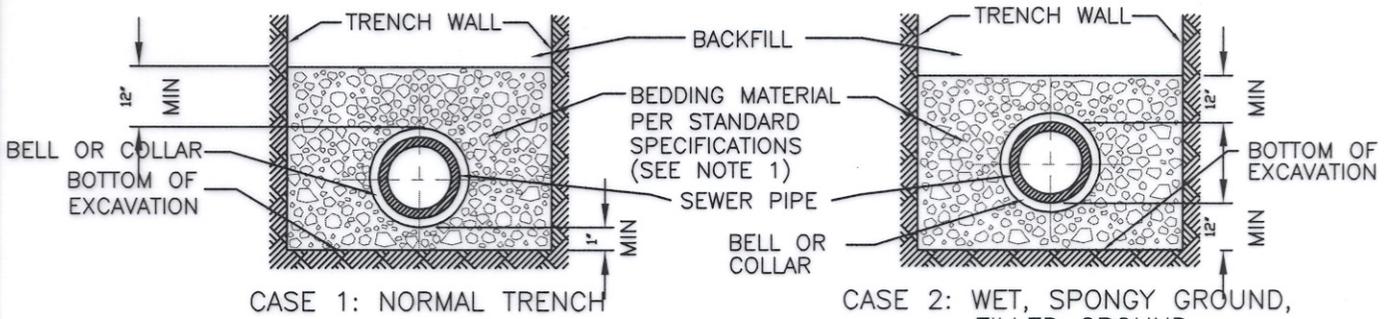


STANDARD NO.

**T200**

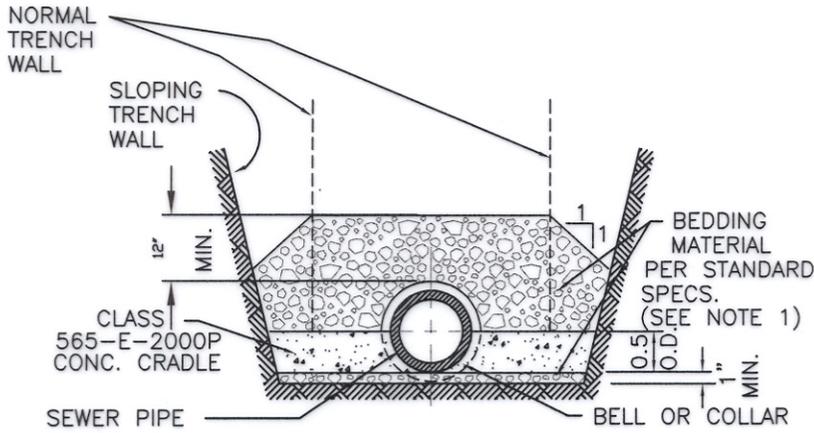
SHEET 2 OF 2

TT\T200



CASE 1: NORMAL TRENCH

CASE 2: WET, SPONGY GROUND, FILLED GROUND (LESS THAN 90% COMPACTION)

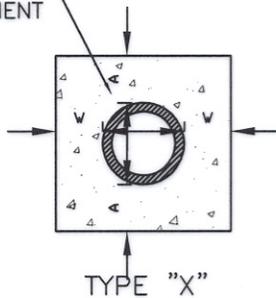


CASE 3: BOTTOM TRENCH WIDTH EXCEEDS THE WIDTH SPECIFIED IN STD. SPECIFICATIONS

NOTE 1: NATIVE MATERIAL AND SAND ARE UNSUITABLE FOR BEDDING OF 8" OR LARGER PIPES.

## CONCRETE REINFORCEMENT FOR SEWER PIPE

CLASS 565-E-2000P CONC. REINFORCEMENT

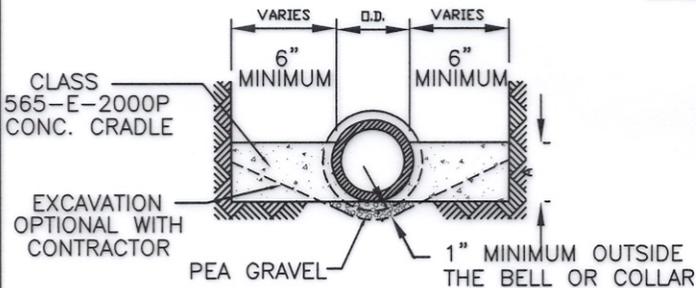


TYPE "X"

TABLES BELOW INDICATE DIMENSIONS OF CONCRETE FOR DIFFERENT SIZES OF PIPE

TYPE "X"						
SIZE	W	A	CLAY PIPE		CONCRETE PIPE	
			STANDARD STRENGTH	EXTRA STRENGTH	STANDARD STRENGTH	EXTRA STRENGTH
6"	4"	4"	0.051	0.051	0.050	0.050
8"	4"	4"	0.063	0.063	0.063	0.063
10"	4"	4"	0.074	0.074	0.074	0.074
12"	4"	4"	0.086	0.086	0.086	0.091
15"	4"	4"	0.107	0.108	0.107	0.114
18"	5"	5"	0.158	0.166	0.159	0.171

SEE NOTE 2



TYPE "Z"

CONCRETE REINFORCEMENT MUST EXTEND TO SOLID BANK

TYPE "Z"					
SIZE	A	CLAY PIPE		CONCRETE PIPE	
		STANDARD STRENGTH	EXTRA STRENGTH	STANDARD STRENGTH	EXTRA STRENGTH
6"	5"	0.017	0.017	0.017	0.017
8"	7"	0.024	0.024	0.024	0.024
10"	9"	0.032	0.032	0.032	0.032
12"	10"	0.037	0.037	0.037	0.037
15"	13"	0.050	0.050	0.050	0.050
18"	16"	0.063	0.064	0.063	0.064

SEE NOTE 2

NOTE 2: COLUMNS INCLUDED BETWEEN ARROWS IN THE TABLES ABOVE INDICATE CUBIC YARDS OF CONCRETE PER LINEAR FT. OF PIPE.

### CITY OF TORRANCE

DATE ISSUED

23 SEP 2009

## BEDDING FOR SEWER PIPE

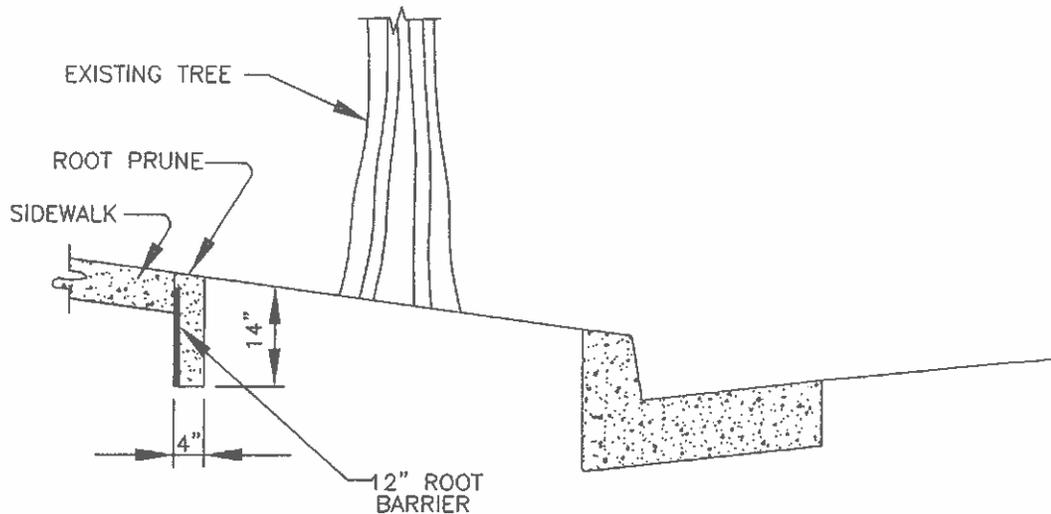
ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

STANDARD NO.

**T204**

SHEET 1 OF 1

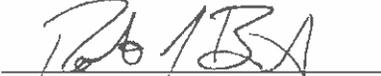
TT/T204



**NOTES:**

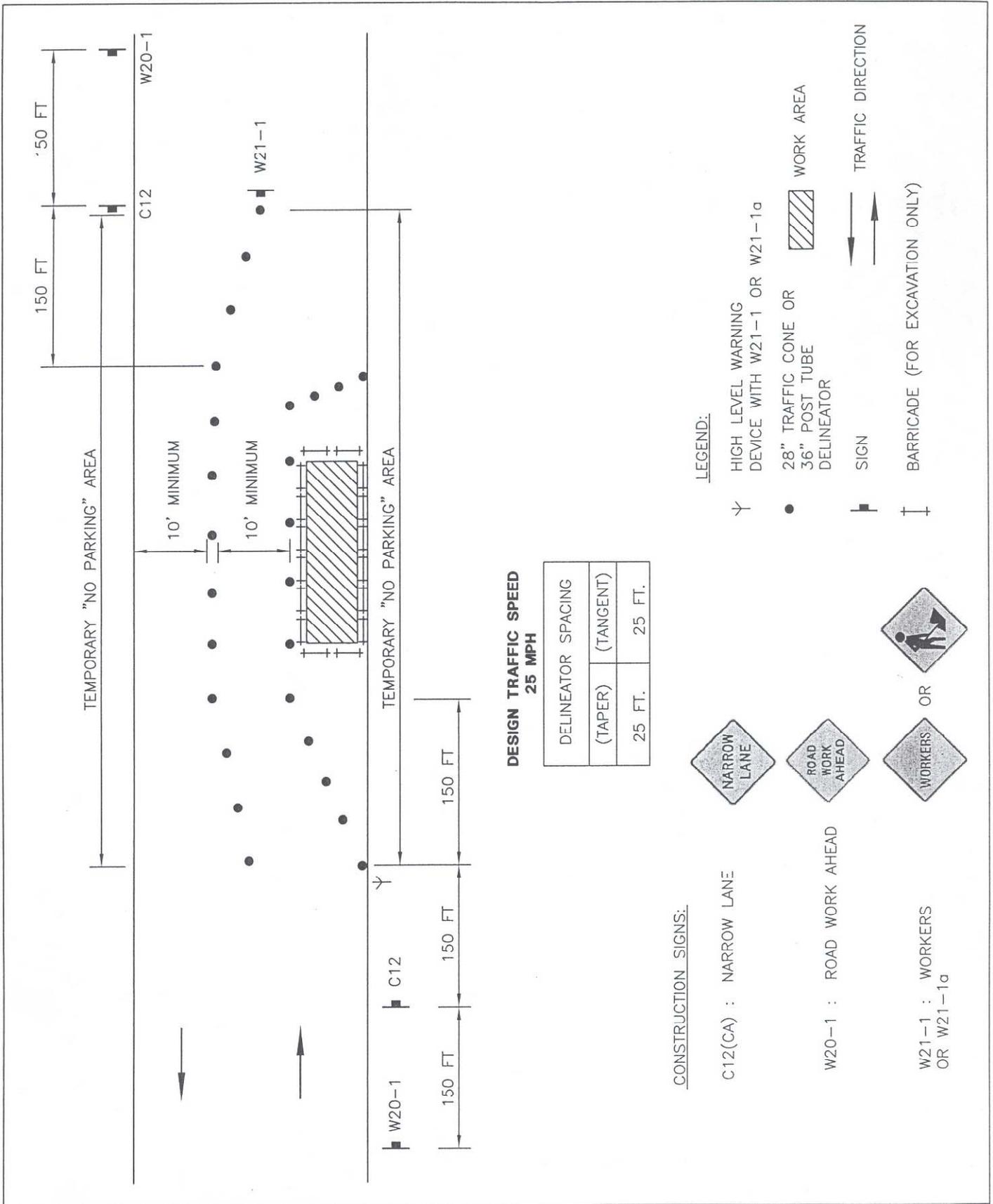
1. ROOT PRUNE ADJACENT TO SIDEWALK TO BE REPLACED DUE TO ROOT INTRUSION, 12' LONG MINIMUM. INSTALL 12' LONG ROOT BARRIER ADJACENT TO SIDEWALK AND BACKFILL WITH CLASS "C" TOPSOIL. ROOT PRUNING SHALL BE CENTERED ON EXISTING TREE OR AT ADDITIONAL LOCATIONS WHERE DIRECTED BY THE ENGINEER.
2. ROOT PRUNING SHALL BE ACCOMPLISHED BY A ROOT CUTTING METHOD THAT IS NOT DETRIMENTAL TO THE TREE. THE METHOD USED SHALL BE APPROVED BY THE ENGINEER.
3. WHEN REQUIRED, TREES SHALL BE PRUNED TO BALANCE ROOT PRUNING AND ROOT REMOVAL. TREE PRUNING SHALL BE DONE PRIOR TO ROOT PRUNING AND ROOT REMOVAL. (SEE PROJECT PLANS AND/OR SPECIFICATIONS).
4. ROOT BARRIER WHEN SPECIFIED SHALL BE FABRICATED FROM A HIGH DENSITY, HIGH IMPACT PLASTIC SUCH AS POLYVINYL CHLORIDE, ABS OR POLYETHYLENE AND SHALL HAVE A MINIMUM THICKNESS OF 0.06". THE PLASTIC SHALL HAVE 1/2" - 3/4" HIGH RAISED VERTICAL RIBS ON THE INNER SURFACE SPACED NOT MORE THAN 6" - 8" APART. ROOT BARRIER SHALL BE INSTALLED WITH RAISED RIBS PLACED TOWARDS THE TREE.
5. PROTECT EXISTING SPRINKLER SYSTEMS, WATER METERS, AND SERVICE LATERALS, AND ALL OTHER UNDERGROUND UTILITIES IF POSSIBLE. IF THESE FACILITIES ARE DAMAGED BY THE CONTRACTOR, THEY SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
6. RESEED TO MATCH EXISTING LAWNS IN EXCAVATED AREAS.

**CITY OF TORRANCE**

DATE ISSUED	<b>ROOT BARRIER AND PRUNING AT EXISTING TREE LOCATIONS</b>	STANDARD NO.
23 SEP 2009	ROBERT J. BESTE PUBLIC WORKS DIRECTOR R.C.E. NO. 50737	<b>T402</b>
		SHEET 1 OF 1

TT\T402

TT/T1001



**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

DATE ISSUED

19 FEB 2008

**TYPICAL CURBSIDE STREET CLOSURE FOR LOCAL STREET**

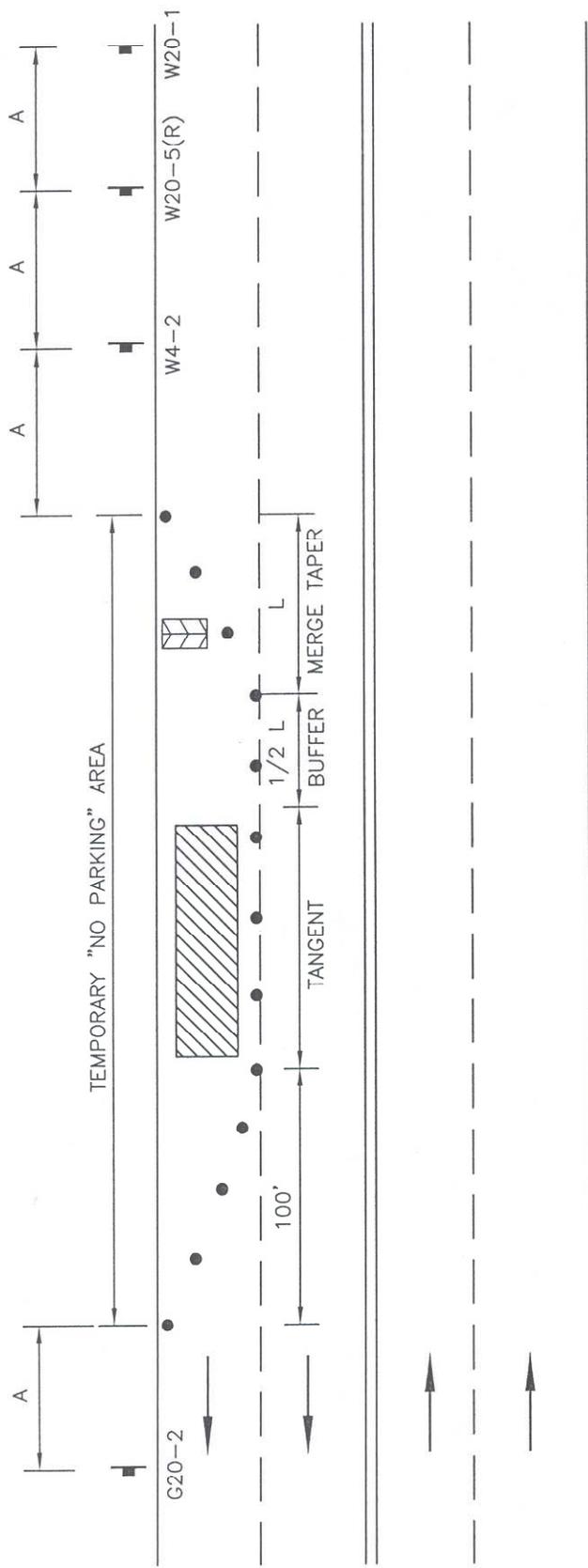
ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

STANDARD NO.

**T1001**

SHEET 1 OF 1

TT/T1004



CONSTRUCTION SIGNS:

 W20-1 ROAD WORK AHEAD  
 W20-5(R): RIGHT LANE CLOSED AHEAD  
 W4-2 : LANE END (SYMBOL)  
 G20-2 : END ROAD WORK (OPTIONAL)

DESIGN SPEED	MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT		BUFFER LENGTH (1/2 L)
	MERGE TAPER LENGTH (L)	DELINEATOR SPACING (TANGENT)	
30 MPH	180 FT.	60 FT.	90 FT.
35 MPH	245 FT.	70 FT.	125 FT.
40 MPH	320 FT.	80 FT.	160 FT.
45 MPH	540 FT.	90 FT.	270 FT.
50 MPH	600 FT.	100 FT.	300 FT.

- LEGEND:
- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
  - SIGN WITH FLAG TREE
  - ▨ WORK AREA
  - FLASHING LEFT ARROW
  - TRAFFIC DIRECTION

**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

DATE ISSUED  
19 FEB 2008

**ARTERIAL & COLLECTOR  
RIGHT LANE CLOSURE**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737



STANDARD NO.  
**T1004**  
SHEET 1 OF 1

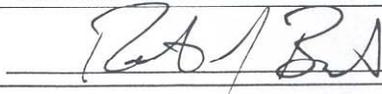
TT/T1005

DATE ISSUED  
19 FEB 2008

**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

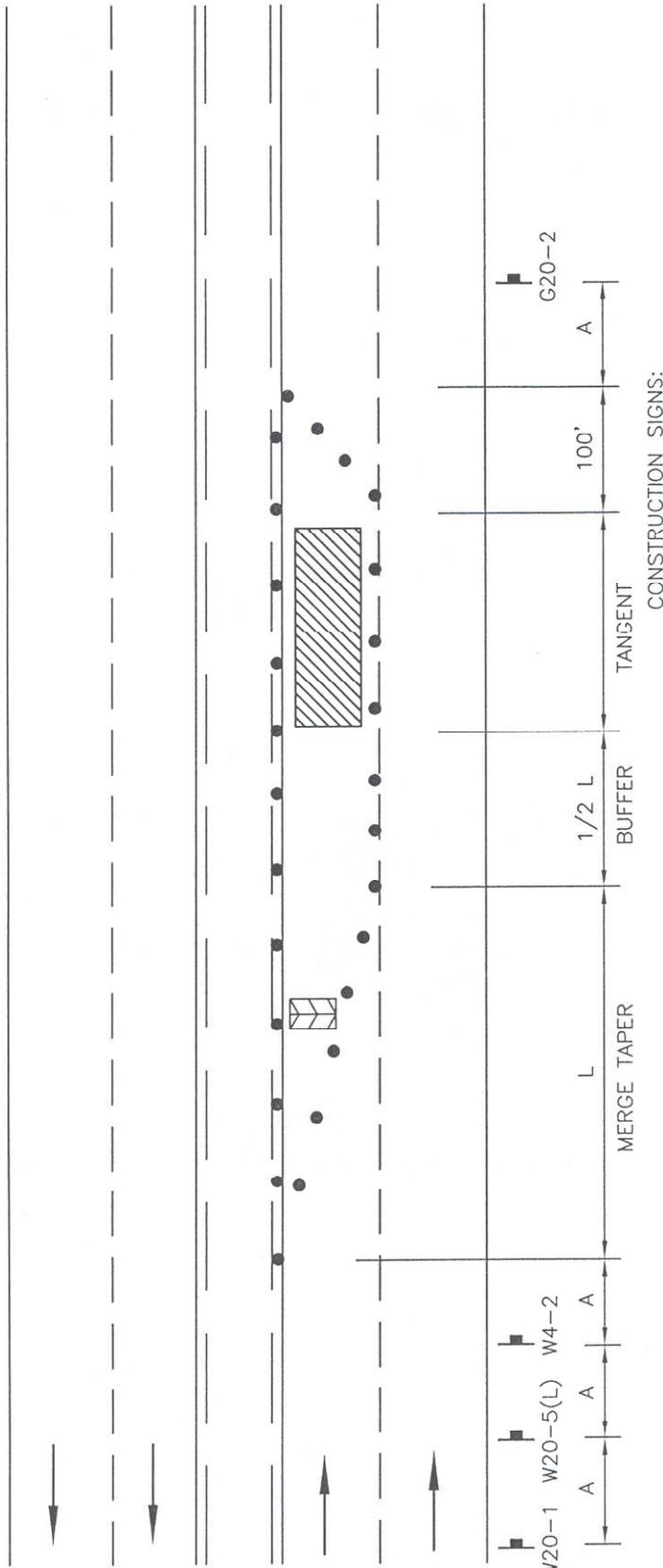
**ARTERIAL & COLLECTOR  
LEFT LANE CLOSURE**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737



STANDARD NO.  
**T1005**

SHEET 1 OF 1



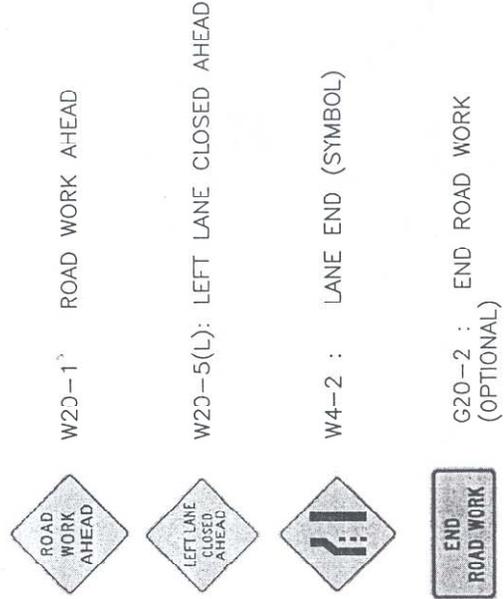
CONSTRUCTION SIGNS:

W20-1 : ROAD WORK AHEAD

W20-5(L): LEFT LANE CLOSED AHEAD

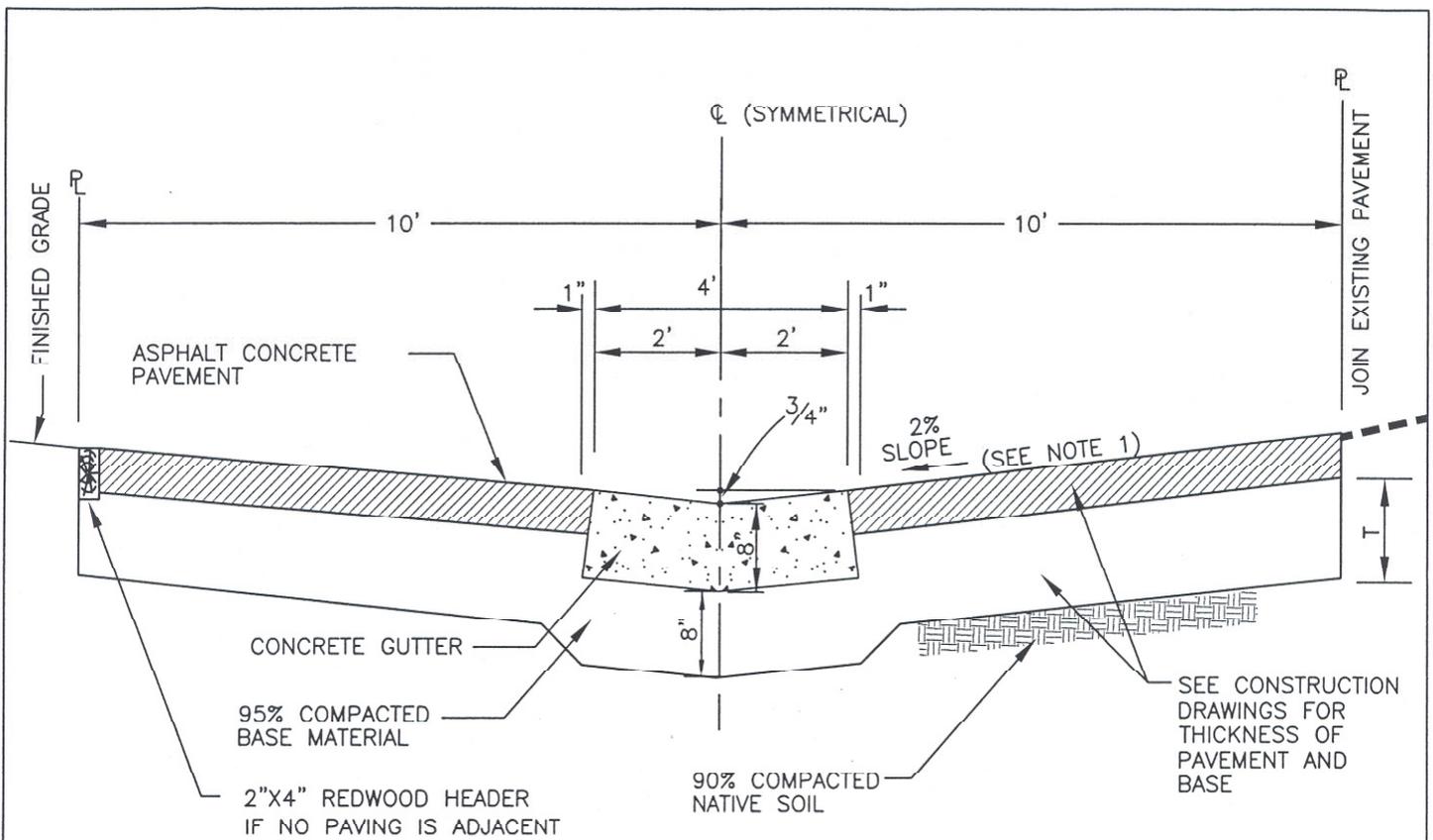
W4-2 : LANE END (SYMBOL)

G20-2 : END ROAD WORK (OPTIONAL)



DESIGN SPEED	MERGE TAPER LENGTH (L)	DELINEATOR SPACING		DISTANCE BETWEEN SIGNS (A)	BUFFER LENGTH (1/2 L)
		(TAPER)	(TANGENT)		
30 MPH	180 FT.	30 FT.	60 FT.	100 FT.	90 FT.
35 MPH	245 FT.	35 FT.	70 FT.	100 FT.	125 FT.
40 MPH	320 FT.	40 FT.	80 FT.	100 FT.	160 FT.
45 MPH	540 FT.	45 FT.	90 FT.	350 FT.	270 FT.
50 MPH	600 FT.	50 FT.	100 FT.	350 FT.	300 FT.

- LEGEND:
- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
  - ▬ SIGN WITH FLAG TREE
  - ▭ FLASHING RIGHT ARROW
  - ▨ WORK AREA
  - TRAFFIC DIRECTION



## TYPICAL SECTION

NOT TO SCALE

### NOTES:

1. IF APPROVED BY THE COMMUNITY DEVELOPMENT DIRECTOR OR PUBLIC WORKS DIRECTOR SLOPE MAY VARY FROM 1% MIN. TO 5% MAX. TO MATCH EXISTING CONDITIONS AND TO FACILITATE JOINS. IF MIN. AND MAX. SLOPES CAN NOT BE MET, OFFSET THE FLOW LINE FROM CENTERLINE.
2. SMOOTH TROWEL 8" WIDE FLOWLINE IN CONCRETE GUTTER.
3. EXPANSION JOINTS IN GUTTER SHALL BE INSTALLED AT 40'-50' INTERVALS WITH FOUR NO.4 SMOOTH DOWELS (18" LONG).
4. WEAKENED PLANE JOINTS IN GUTTER SHALL BE INSTALLED AT 20'-25' INTERVALS.
5. T: THICKNESS OF CRUSHED AGGREGATE BASE (CAB) OR CRUSHED MISCELLANEOUS BASE (CMB).

### CITY OF TORRANCE

DATE ISSUED

SEPT 2006

### TYPICAL SECTION ALLEY

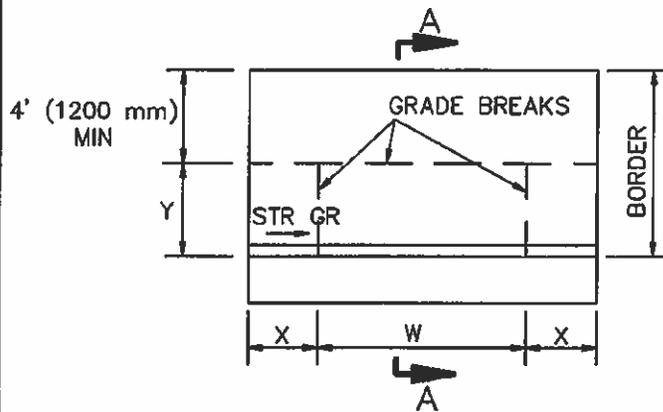
ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.F. NO. 50737

STANDARD NO.

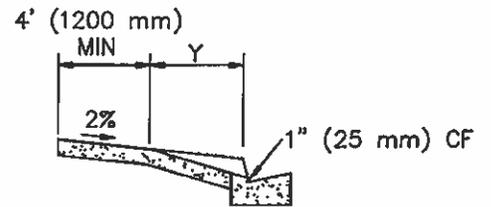
**T101**

SHEET 1 OF 1

APPENDIX III  
STANDARD PLANS  
FOR  
PUBLIC WORKS CONSTRUCTION  
(SPPWC)

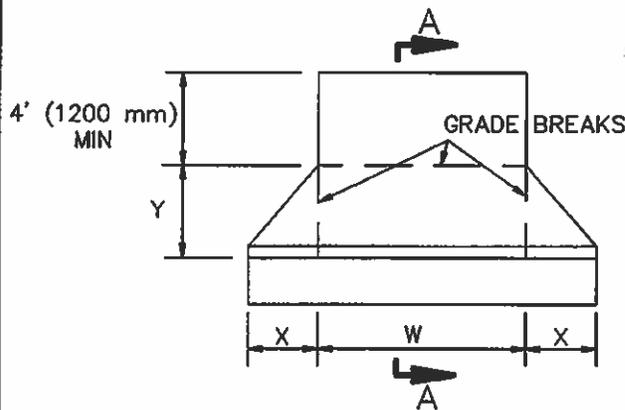


TYPE A

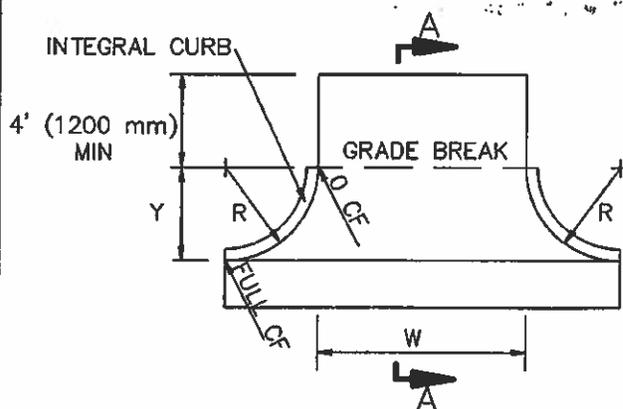


SECTION A-A

CURB FACE, inches (mm)	X, inches (mm)	Y, inches (mm)
6" (150) or less	3'-0" (900)	4'-0" (1200)
7" (175)	3'-6" (1050)	4'-9" (1425)
8" (200)	4'-0" (1200)	5'-8" (1700)
9" (225)	4'-6" (1350)	6'-6" (1950)
10" (250)	5'-0" (1500)	7'-3" (2175)
11" (275)	5'-6" (1650)	8'-0" (2400)
12" (300) or more	6'-0" (1800)	8'-9" (2625)



TYPE B



TYPE C

NOTES:

1. RESIDENTIAL DRIVEWAYS SHALL BE 4" (100 mm) THICK PCC.
2. COMMERCIAL DRIVEWAYS SHALL BE 6" (150 mm) THICK PCC.
3. WEAKENED PLANE JOINTS SHALL BE INSTALLED AT BOTH SIDES OF A DRIVEWAY AND AT 10' (3.0 m) INTERVALS.
4. CURB FOR TYPE C DRIVEWAY SHALL BE INTEGRAL AND MATCH ADJACENT CONSTRUCTION.
5. REFER TO LOCAL DEVELOPMENT REGULATIONS FOR AMERICANS WITH DISABILITIES ACCESS REQUIREMENTS AND MAXIMUM PERMITTED DRIVEWAY WIDTHS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1984  
REV. 1986, 2009

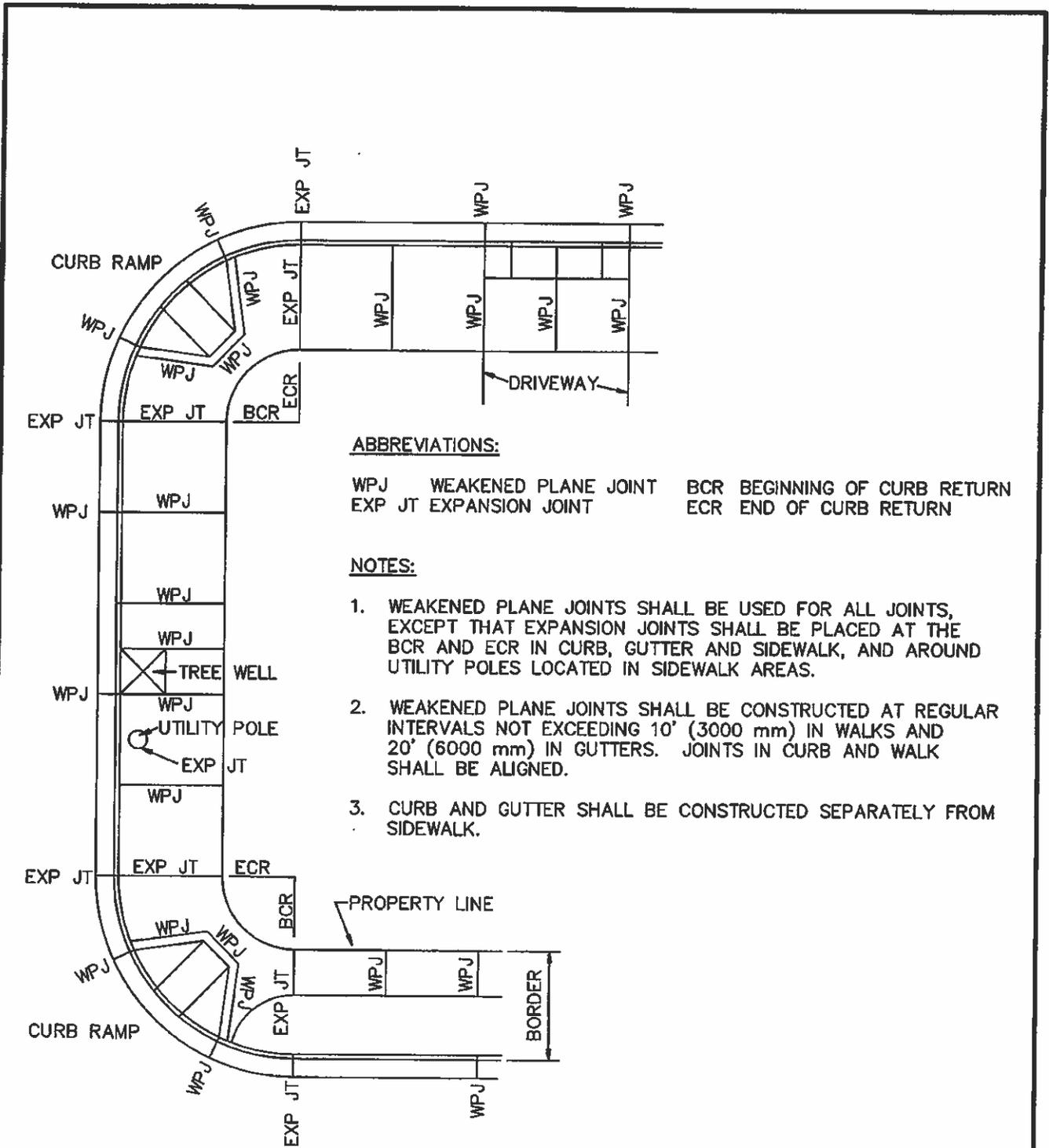
**DRIVEWAY APPROACHES**

STANDARD PLAN

**110-2**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 1



**ABBREVIATIONS:**

WPJ WEAKENED PLANE JOINT      BCR BEGINNING OF CURB RETURN  
 EXP JT EXPANSION JOINT      ECR END OF CURB RETURN

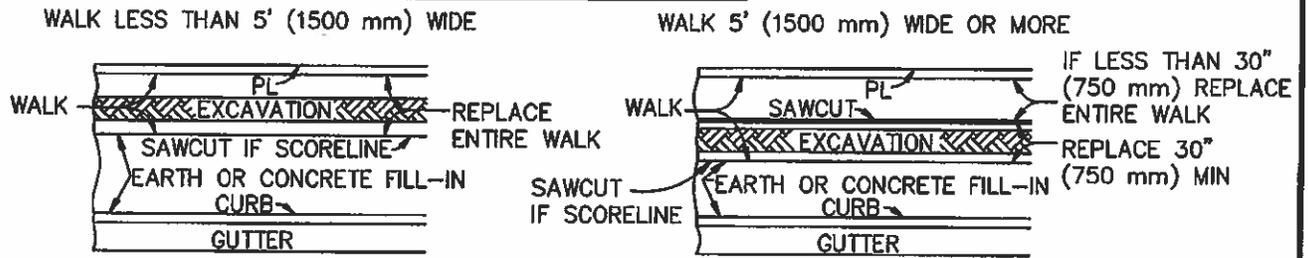
**NOTES:**

1. WEAKENED PLANE JOINTS SHALL BE USED FOR ALL JOINTS, EXCEPT THAT EXPANSION JOINTS SHALL BE PLACED AT THE BCR AND ECR IN CURB, GUTTER AND SIDEWALK, AND AROUND UTILITY POLES LOCATED IN SIDEWALK AREAS.
2. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT REGULAR INTERVALS NOT EXCEEDING 10' (3000 mm) IN WALKS AND 20' (6000 mm) IN GUTTERS. JOINTS IN CURB AND WALK SHALL BE ALIGNED.
3. CURB AND GUTTER SHALL BE CONSTRUCTED SEPARATELY FROM SIDEWALK.

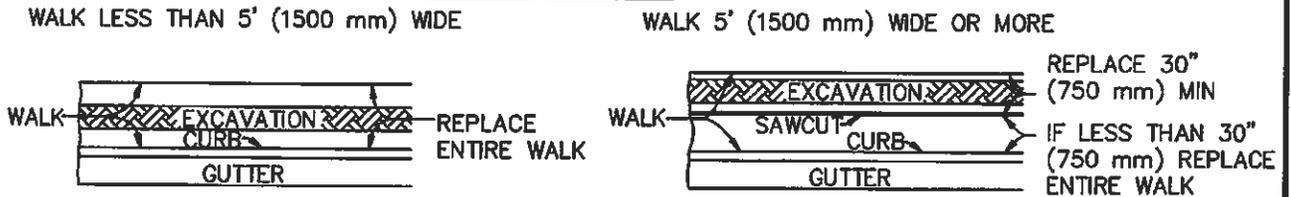
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1986, 2009	<h2 style="margin: 0;">CURB AND SIDEWALK JOINTS</h2>	STANDARD PLAN <h1 style="margin: 0;">112-2</h1>
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION		SHEET 1 OF 1

## WALK OR FILL-IN REPLACEMENT FOR EXCAVATIONS MADE PARALLEL TO CURB OR PROPERTY LINE

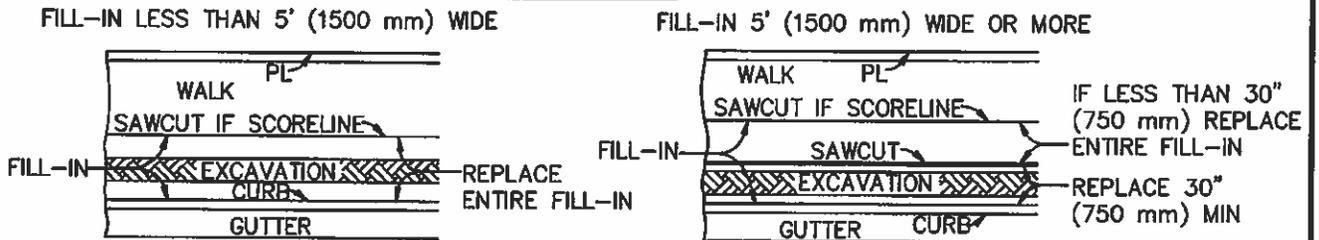
### WALK ADJACENT TO PROPERTY LINE



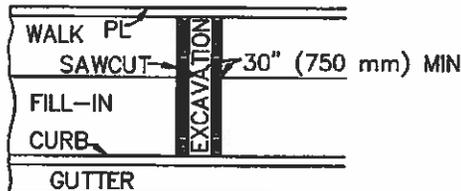
### WALK ADJACENT TO CURB



### FILL-IN REPLACEMENT



## WALK OR FILL-IN REPLACEMENT FOR EXCAVATIONS MADE NORMAL TO CURB OR PROPERTY LINE



THESE REQUIREMENTS ALSO APPLY TO ENDS OF PARALLEL EXCAVATIONS.

IF AN EXCAVATION FALLS WITHIN 30" (750 mm) OF AN EXPANSION JOINT, CONSTRUCTION JOINT, WEAKENED PLANE JOINT, OR EDGE, THE CONCRETE SHALL BE REMOVED AND REPLACED TO THE JOINT OR EDGE.

IF AN EXCAVATION FALLS WITHIN 12" (300 mm) OF A SCORELINE, THE CONCRETE SHALL BE REMOVED AND REPLACED TO THE SCORELINE. THE SCORELINE SHALL BE SAWCUT BEFORE CONCRETE REMOVAL. THE MINIMUM LENGTH OF REPLACEMENT IN BOTH CASES SHALL BE 30" (750 mm).

### STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
 PUBLIC WORKS STANDARDS INC.  
 GREENBOOK COMMITTEE  
 1993  
 REV. 1996, 2009

## SIDEWALK & DRIVEWAY REPLACEMENT

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

# 113-2

SHEET 1 OF 2

## NOTES

1. CONCRETE WALK, FILL-IN AND DRIVEWAYS REMOVED IN CONNECTION WITH CONSTRUCTION SHALL BE REPLACED TO NEATLY SAWED EDGES. ALL CUTS SHALL BE PARALLEL TO OR PERPENDICULAR TO THE CURB; ON CURVES, THE CUT SHALL BE RADIAL TO THE CURB.
2. DRIVEWAY APRONS IN WHICH THE "W" DISTANCE IS LESS THAN 11' (3300 mm) SHALL BE REPLACED IN THEIR ENTIRETY IF CUT IN ANY AREA.
3. DRIVEWAY APRONS IN WHICH THE "W" DISTANCE IS 11' (3300 mm) OR MORE MAY BE CUT WITHIN THE "W" SECTION. THE MINIMUM REPLACEMENT SHALL BE 30" (750 mm) IN LENGTH. THE MINIMUM DISTANCE ALLOWED BETWEEN SUCH CUTS SHALL BE 14' (4200 mm).
4. DRIVEWAY APRONS IN WHICH THE "W" DISTANCE IS 11' (3300 mm) OR MORE MAY BE CUT IN THE "X" OR "R" SECTION. REPLACEMENT SHALL BE THE ENTIRE "X" OR "R" SECTION.
5. DRIVEWAY APRONS SHALL BE REPLACED FROM THE BACK OF THE CURB TO THE FRONT EDGE OF THE WALK, EXCEPT, WHERE WALK IS ADJACENT TO CURB, REPLACEMENT SHALL BE FROM BACK OF CURB TO BACK OF WALK.
6. WALK PORTIONS OF DRIVEWAYS SHALL BE REPLACED AS SHOWN ABOVE FOR EXCAVATIONS MADE PARALLEL OR NORMAL TO CURB.
7. REPLACEMENT OF THE "X" OR "R" SECTION SHALL MATCH EXISTING CONSTRUCTION.

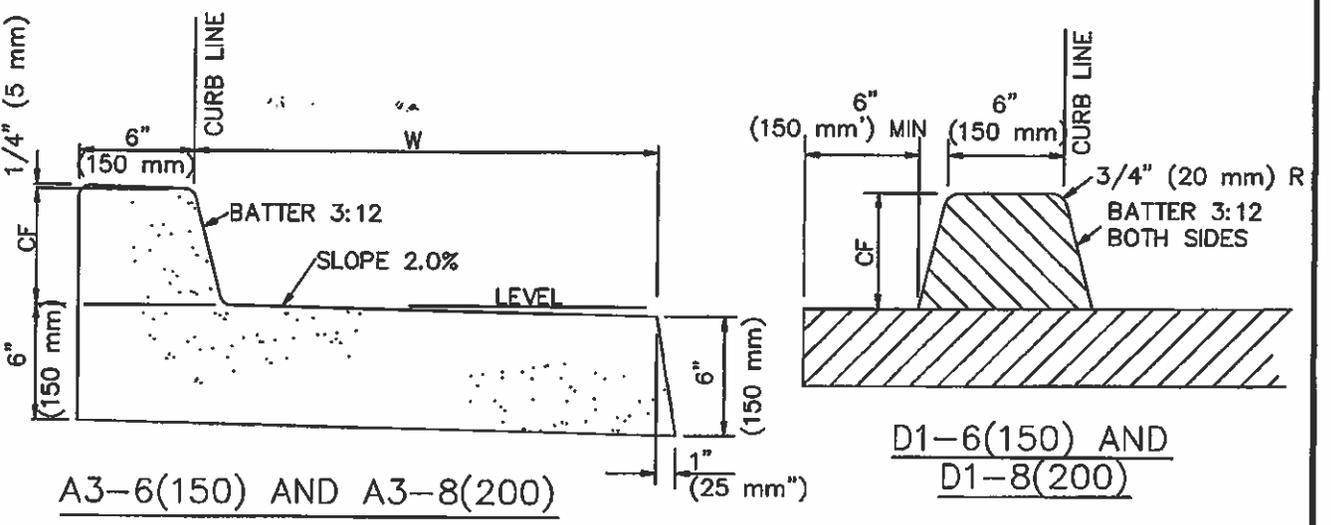
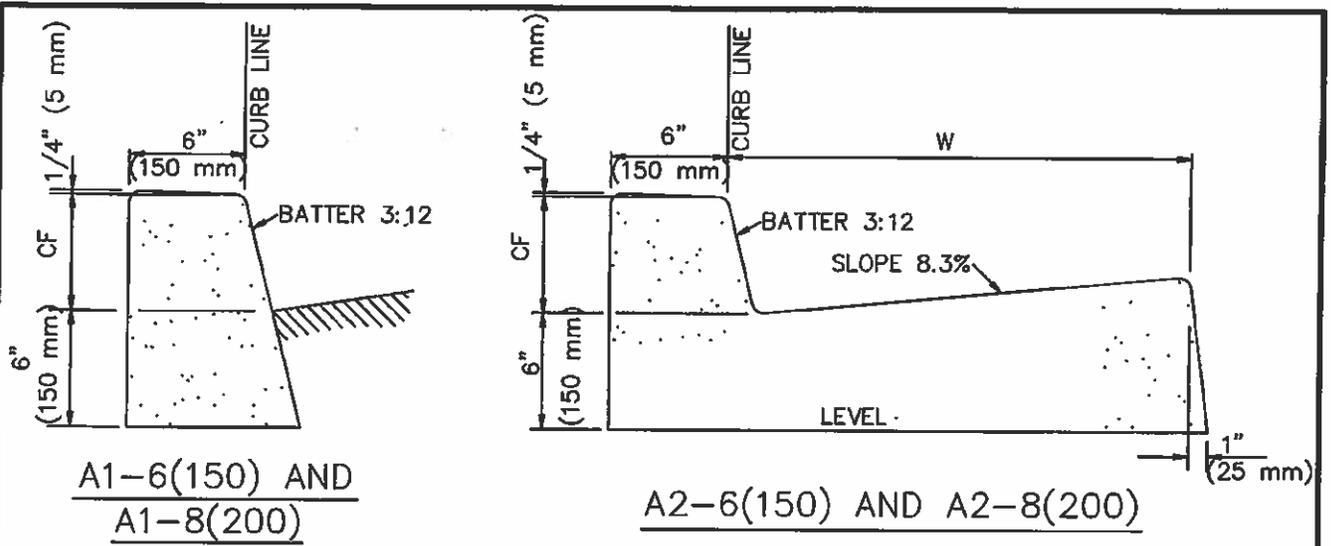
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**SIDEWALK & DRIVEWAY REPLACEMENT**

STANDARD PLAN

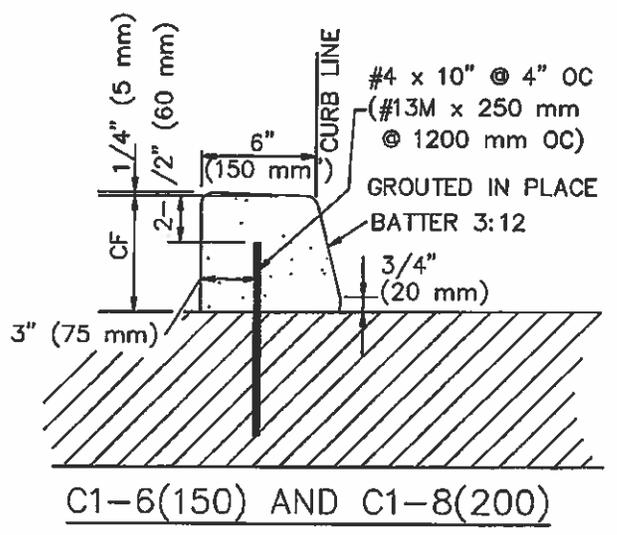
**113-2**

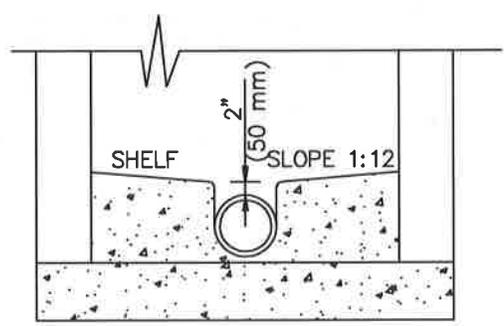
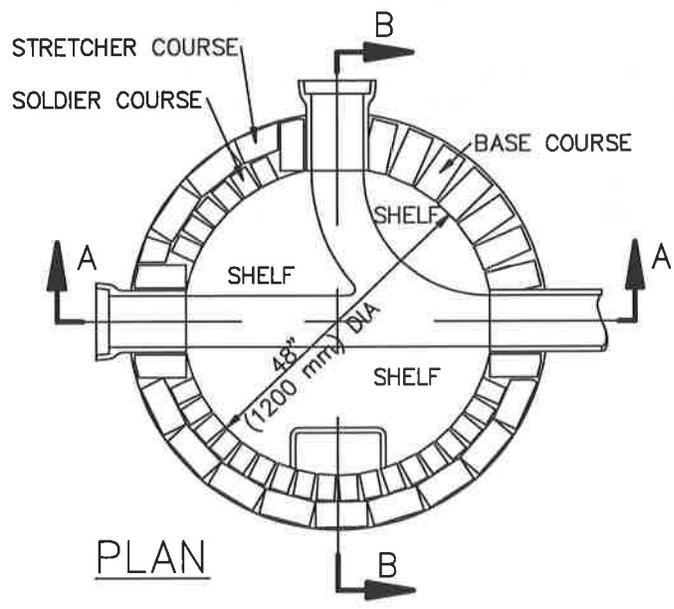
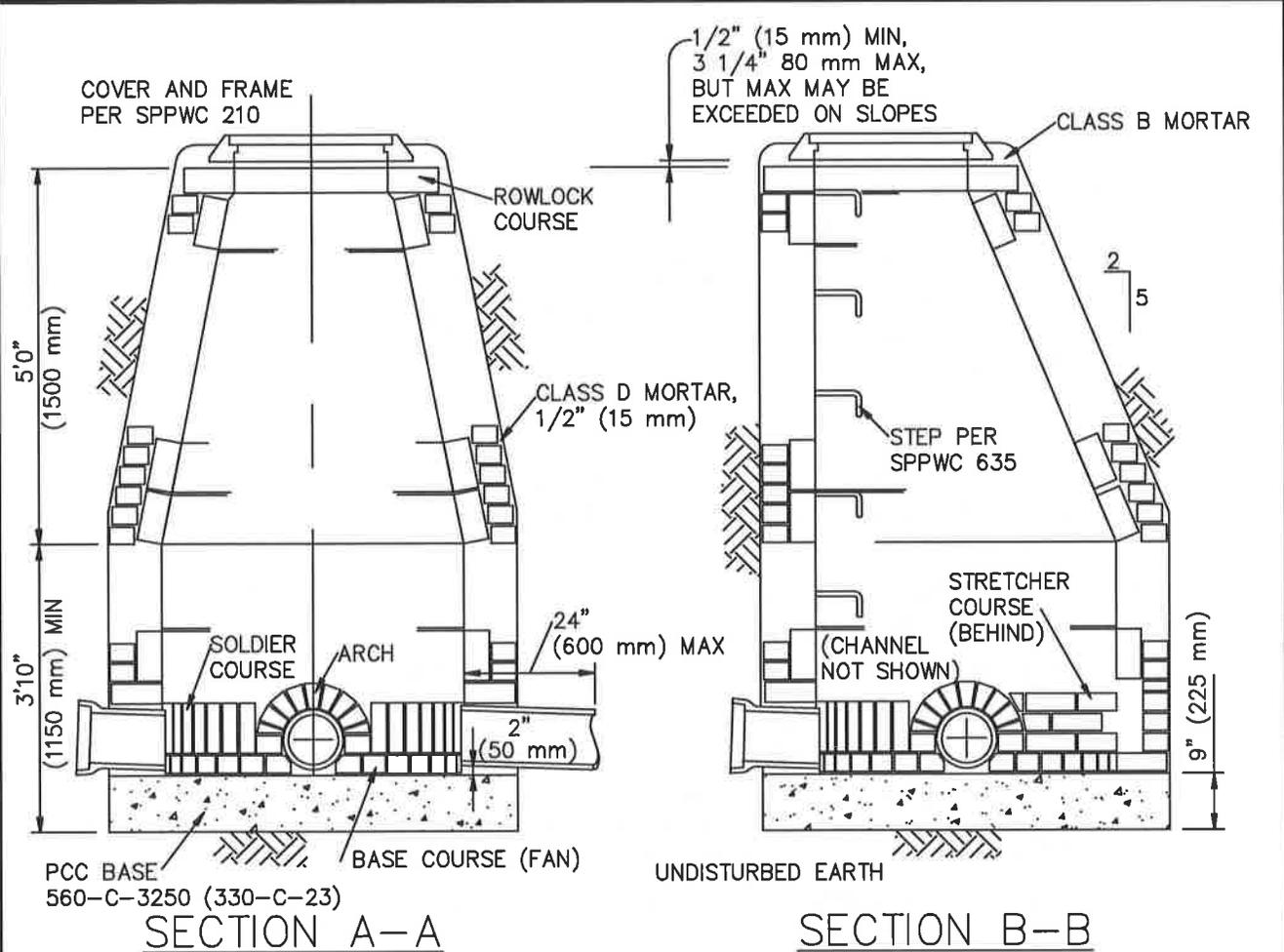
SHEET 2 OF 2



NOTES:

1. THE LAST NUMBER IN THE DESIGNATION IS THE CURB FACE (CF) HEIGHT, INCHES (mm).
2. GUTTER WIDTH, W, IS 24" (600 mm) UNLESS OTHERWISE SPECIFIED.
3. TYPES A1, A2, A3 AND C1 SHALL BE CONSTRUCTED FROM PCC.
4. TYPE D1 CURB SHALL BE CONSTRUCTED FROM ASPHALT CONCRETE.
5. TYPE C1 CURB SHALL BE ANCHORED WITH STEEL DOWELS AS SHOWN OR WITH AN EPOXY APPROVED BY THE ENGINEER.
6. ALL EXPOSED CORNERS ON PCC CURBS AND GUTTERS SHALL BE ROUNDED WITH A 1/2" (15 mm) RADIUS.

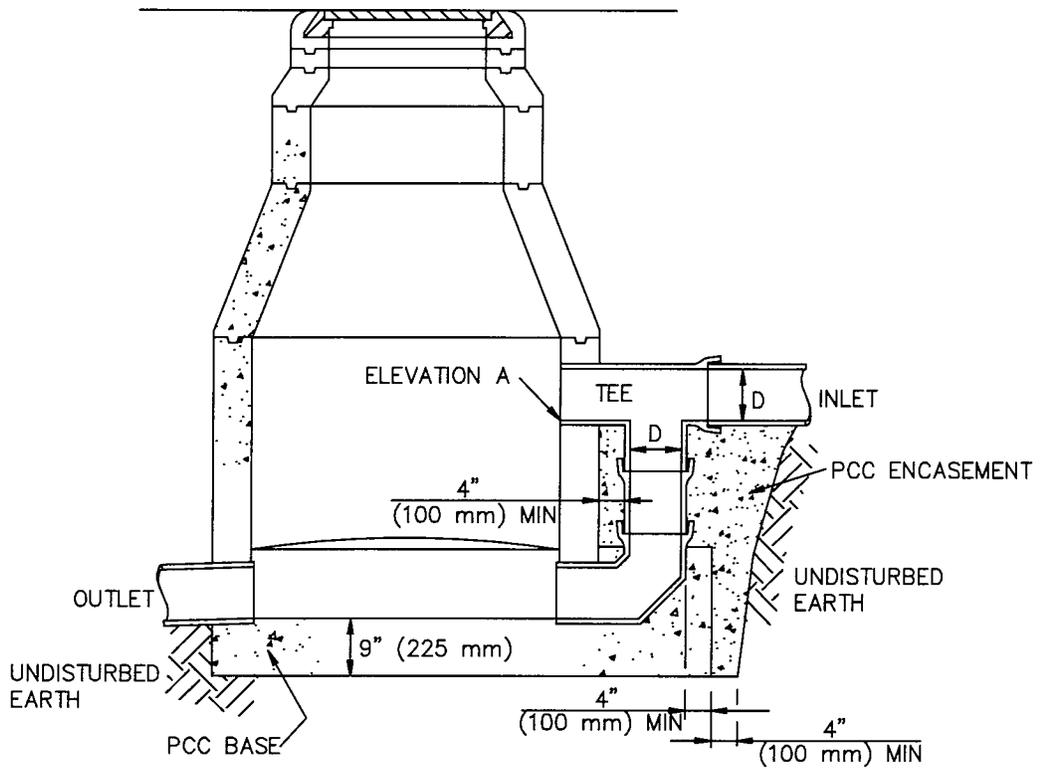




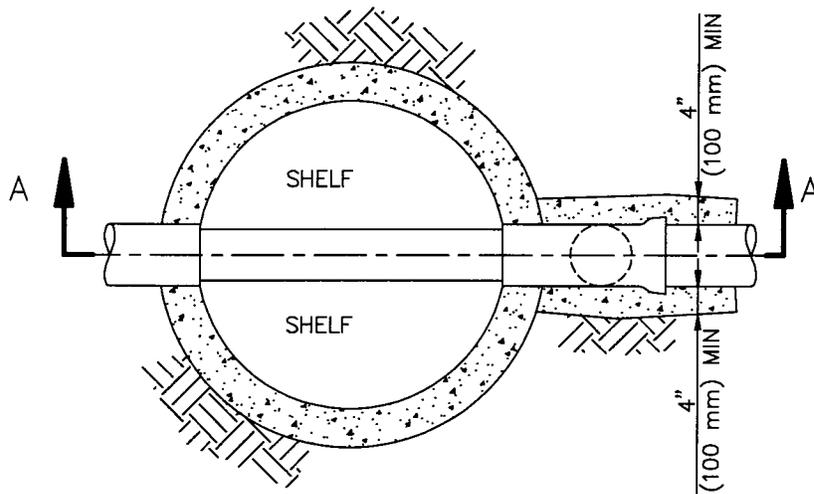
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 2005, 2009	<h2 style="margin: 0;">BRICK SEWER MANHOLE</h2>	STANDARD PLAN <h2 style="margin: 0;">203-2</h2>
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION		
		SHEET 1 OF 2

NOTES:

1. CONCRETE BASE: DURING CONSTRUCTION, ALL PIPES SHALL BE RIGIDLY SUPPORTED BY BRICK PIERS 12" (300 mm) DEEP, LOCATED JUST OUTSIDE THE STRUCTURE. CONSTRUCT TOP OF CONCRETE BASE 2" (50 mm) BELOW INVERT OF LOWEST PIPE. FILL SPACE BENEATH PIPE WITH MORTAR AND SHOVE FROM BOTH SIDES WITH BASE COURSE BRICK TO FORM A WATER-TIGHT JOINT.
2. BASE OF FAN COURSE: LAY BRICK FLAT ON RADIAL LINES WITH TOPS TO SAME LEVEL.
3. ARCHES: LAY SPALLED BRICK ON EDGE TO FORM A TRUE RADIAL ARCH WITH FULL MORTAR JOINT AROUND ALL PIPE OPENINGS. TURN ARCH OF TWO SUCH COURSES OVER PIPES 15" (375 mm) OR MORE IN DIAMETER.
4. SOLDIER COURSES: LAY INSIDE BRICK ON RADIAL LINES WITH FIRST FOUR COURSES VERTICAL. LAY SUCCEEDING COURSES WITH A UNIFORM BATTER TO OBTAIN AN INSIDE DIAMETER OF 24" (600 mm) AT TOP OF LAST OR FRACTIONAL SOLDIER COURSE. USE SPLIT BRICK TO CLOSE SOLDIER COURSE.
5. STRETCHER COURSES: LAY OUTSIDE BRICK FLAT IN A DEEP BED OF MORTAR. SHOVE BRICK TOGETHER AGAINST ADJACENT SOLDIER COURSE.
6. ROWLOCK COURSE: LAY LAST COURSE OF BRICK ON EDGE ACROSS SOLDIER AND STRETCHER COURSES ON RADIAL LINES, WITH TOPS PARALLEL AND 4 1/2" (120 mm) BELOW FINISHED GRADE.
7. JOINTS: INSIDE JOINTS SHALL BE NEATLY STRUCK AND SHALL NOT EXCEED 3/8" (10 mm) IN THICKNESS.
8. STEPS: MANHOLE STEPS SHALL CONFORM WITH SPPWC 635 TYPE 3. THE TOP STEP SHALL BE PLACED JUST UNDER THE MANHOLE FRAME. THE LOWEST STEP SHALL BE PLACED BETWEEN 8" (200 mm) AND 24" (600 mm) ABOVE THE SHELF.
9. WALL THICKNESS: BRICKWORK SHALL BE 8" (200 mm) THICK TO A DEPTH OF 22' (6.5 m). BRICKWORK BELOW 22' (6.5 m) DEEP SHALL BE 12" (300 mm) THICK.
10. A FLEXIBLE JOINT SHALL BE INSTALLED AT THE FIRST JOINT FROM MANHOLE FOR ALL CONNECTIONS EXCEPT THOSE WITH REINFORCED CONCRETE PIPE.



SECTION A-A



PLAN

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1993  
REV. 2005, 2009

**DROP SEWER MANHOLE**

STANDARD PLAN

**202-2**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 2

NOTES:

1. EXCEPT AS SHOWN ON THIS PLAN, MANHOLES SHALL CONFORM TO SPPWC 200 OR 203.
2. PIPE FOR THE DROP INLET SHALL BE THE SAME MATERIAL AS THE SEWER UNLESS APPROVED ADAPTERS ARE USED. IF SO, THE PIPE MAY BE VCP, ABS SOLID WALL, ABS COMPOSITE, PVC PLASTIC, OR POLYETHYLENE.
3. FOR BRICK MANHOLES, A BRICK ARCH IS ALSO REQUIRED OVER THE UPPER INLET PIPE.
4. IF TWO OR MORE DROP INLETS ARE REQUIRED IN A SINGLE MANHOLE, EACH SHALL BE CONSTRUCTED SEPARATELY.

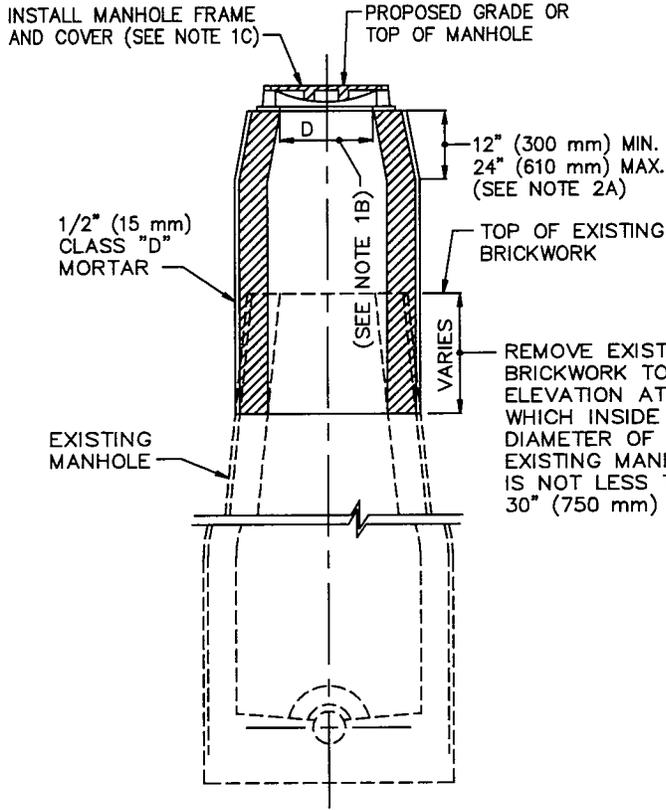
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**DROP SEWER MANHOLE**

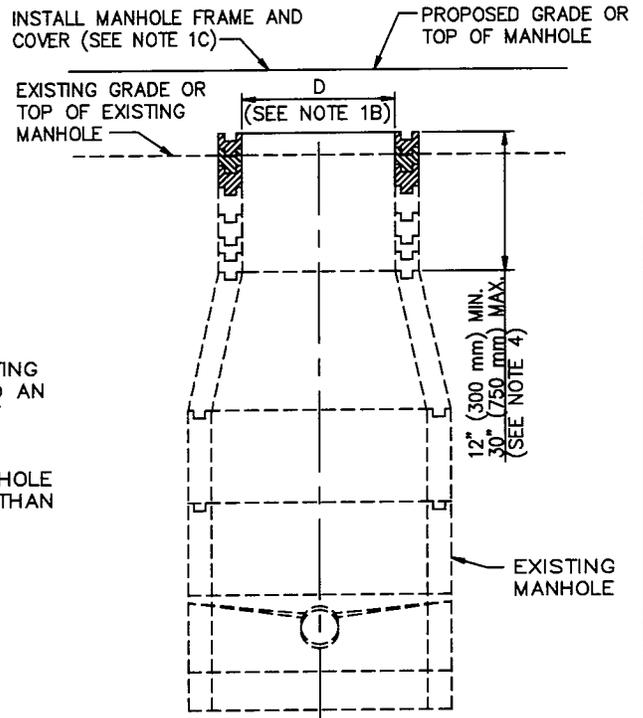
STANDARD PLAN

**202-2**

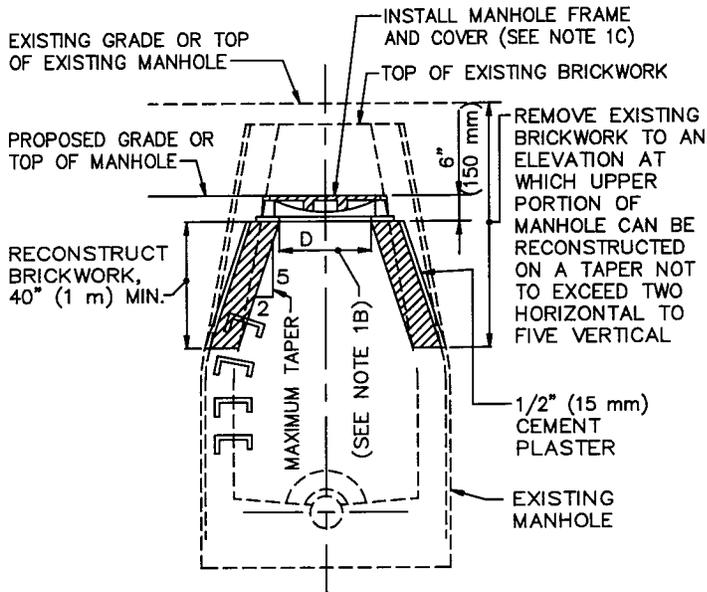
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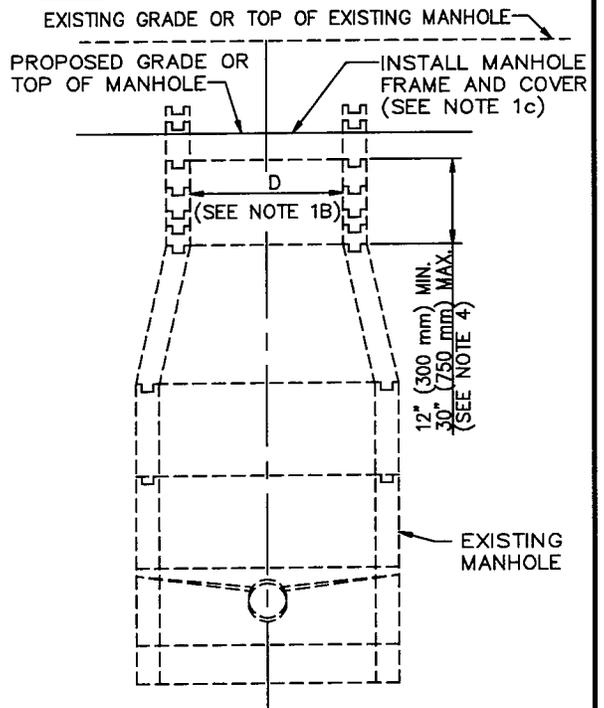
RAISING EXISTING BRICK MANHOLES



RAISING EXISTING PRECAST CONCRETE SEWER MANHOLES



LOWERING EXISTING BRICK MANHOLES



LOWERING EXISTING PRECAST CONCRETE SEWER MANHOLES

BRICK MANHOLES

PRECAST CONCRETE SEWER MANHOLES

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARD, INC.  
GREENBOOK COMMITTEE  
1984  
REV. 1996, 2009

**SEWER MANHOLE ADJUSTMENT**

STANDARD PLAN  
**205-2**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 3

NOTES:

1. GENERAL

- A. EXCEPT AS INDICATED HEREON OR ON THE PLANS, MANHOLES SHALL CONFORM TO: SPPWC 200, PRECAST CONCRETE SEWER MANHOLE AND SPPWC 203, BRICK SEWER MANHOLE.
- B. DIMENSION "D" SHALL BE THE SAME AS THE SIZE OF MANHOLE FRAME AND COVER TO BE USED.
- C. THE CONTRACTOR MAY REUSE THE EXISTING MANHOLE FRAME AND COVER, UNLESS DAMAGED DURING THE WORK OR WHEN OTHERWISE SHOWN IN THE CONTRACT DOCUMENTS. ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH IDENTICAL NEW ITEMS AT NO EXPENSE TO THE AGENCY.
- D. EXISTING STEPS LOCATED WITHIN REMOVAL LIMITS SHALL BE REPLACED. WHEN REMOVAL OF EXISTING STEPS BEYOND THE MANHOLE REMOVAL LIMITS IS SHOWN ON THE PLANS, THE STEPS SHALL BE REMOVED TO A DEPTH OF 2" (50 mm) BEYOND THE INSIDE FACE OF THE BRICK MANHOLE AND THE HOLES SHALL BE FILLED WITH CLASS "D" MORTAR.

2. RAISING EXISTING BRICK MANHOLES

- A. BRICK MANHOLES TO BE RAISED LESS THAN 1' (300 mm) MAY BE EXTEND VERTICALLY, PROVIDED THAT AT A DEPTH OF 2 1/2' (750 mm) BELOW THE TOP OF THE MANHOLE AT ITS NEW ELEVATION, THE INSIDE DIAMETER OF THE MANHOLE IS 30" (750 mm) OR GREATER.
- B. BRICK MANHOLES TO BE RAISED LESS THAN 3 1/2" (90 mm) MAY BE RAISED BY APPLYING CLASS "D" MORTAR TO THE TOP OF THE EXISTING BRICKWORK. IF THE BRICK MANHOLE IS TO BE RAISED 3 1/2" (90 mm) OR MORE, A NEW COURSE OR COURSES OF BRICKWORK SHALL BE PLACED ON TOP OF THE EXISTING BRICKWORK.

3. LOWERING EXISTING BRICK MANHOLES

- A. WHERE A BRICK MANHOLE IS TO BE LOWERED LESS THAN 1' (300 mm), THE FRAME MAY BE RESET ON THE EXISTING BRICKWORK AND THE 40" (1 m) MINIMUM BRICKWORK RECONSTRUCTION OMITTED, PROVIDED THAT THE BASE OF THE FRAME DOES NOT OVERHANG THE BRICKWORK ON THE INSIDE SURFACE OF THE MANHOLE MORE THAN AN AVERAGE OF 1 1/2" (35 mm) IN ANY QUADRANT NOR MORE THAN 2" (50 mm) AT ANY POINT.

4. RAISING EXISTING PRECAST CONCRETE SEWER MANHOLES

- A. PRECAST CONCRETE MANHOLES TO BE RAISED LESS THAN 3" (75 mm) MAY BE RAISED BY APPLYING CLASS "D" MORTAR TO THE TOP OF THE EXISTING MANHOLE, PROVIDED THE TOTAL HEIGHT OF MORTAR, EXISTING AND NEWLY APPLIED, DOES NOT EXCEED 3" (75 mm).
- B. WHERE THE PRECAST CONCRETE MANHOLE IS TO BE RAISED 3" (75 mm) OR MORE, OR WHERE THE TOTAL HEIGHT OF MORTAR, EXISTING AND NEWLY APPLIED, WOULD EXCEED 3" (75 mm), GRADE RINGS SHALL BE UTILIZED. CLASS "D" MORTAR MAY BE USED FOR FINAL ADJUSTMENT, BUT NOT MORE THAN 3" (75 mm) IN HEIGHT. WHERE RAISING THE MANHOLE WOULD RESULT IN THE UPPER SEGMENT OF THE SHAFT BEING MORE THAN 30" (750 mm) IN HEIGHT, REMOVE THE REDUCER AND THE UPPER SEGMENT OF THE SHAFT, INSTALL ADDITIONAL RINGS OR PIPE TO THE LOWER SEGMENT OF THE SHAFT, AND REINSTALL THE REDUCER AND GRADE RINGS AS REQUIRED.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

**SEWER MANHOLE ADJUSTMENT**

**205-2**

SHEET 2 OF 3

5. LOWERING EXISTING PRECAST CONCRETE SEWER MANHOLES

- A. REMOVE SUFFICIENT GRADE RINGS TO LOWER THE MANHOLES AS REQUIRED, APPLY CLASS "D" MORTAR TO A HEIGHT NOT EXCEEDING 3" (75 mm) FOR ADJUSTMENT TO FINAL GRADE.
- B. WHERE REMOVAL OF GRADE RINGS WOULD RESULT IN THE UPPER SEGMENT OF THE SHAFT BEING LESS THAN 12" (300 mm) IN HEIGHT, REMOVE THE REDUCER AND SUFFICIENT SECTIONS OF THE LOWER SEGMENT OF THE SHAFT AND REINSTALL ANY NECESSARY SEGMENT OF THE LOWER SHAFT, THE REDUCER, AND THE GRADE RINGS TO CONFORM TO THE REQUIREMENTS OF THIS PLAN.
- C. EXISTING GRADE RINGS NEED NOT BE REMOVED IF EXISTING MORTAR IS REMOVED, AND AT LEAST 1 1/2" (35 mm) OF MORTAR MAY BE PLACED ON TOP OF THE EXISTING GRADE RINGS TO RESEAT THE FRAME.

6. REPLACEMENT OF BRICK REDUCER WITH PRECAST CONCRETE REDUCER AND SHAFT  
UNLESS OTHERWISE INDICATED ON THE PLANS, THE CONTRACTOR MAY INSTALL A PRECAST CONCENTRIC CONCRETE REDUCER, CONCRETE GRADE RINGS, AND CONCRETE PIPE IN LIEU OF RECONSTRUCTING A BRICK REDUCER, PROVIDED:

- A. THE MAXIMUM ID OF SEWER PIPE CONNECTED TO THE MANHOLE DOES NOT EXCEED 8" (200 mm).
- B. THE CONTRACTOR SECURES PRIOR APPROVAL FROM THE ENGINEER TO INSTALL THE CONCENTRIC REDUCER ONTO THE MANHOLE SHAFT. THE ENGINEER MAY, AS PART OF THE INSTALLATION REQUIREMENTS, REQUIRE THE CONTRACTOR TO COAT THE INSIDE OF THE REDUCER, RINGS, AND PIPE WITH AN APPROVED COATING.
- C. THE CONCRETE GRADE RINGS, THE CONCRETE REDUCER, AND ANY CONCRETE PIPE SHALL BE JOINED TOGETHER AND BEDDED ONTO THE EXISTING BRICK MANHOLE WITH CLASS "D" MORTAR. THE DEPTH, WIDTH, AND THICKNESS OF THE MORTAR SHALL BE OF SUFFICIENT DIMENSIONS TO PROPERLY AND ADEQUATELY JOIN AND BED THE COMPONENT PARTS.

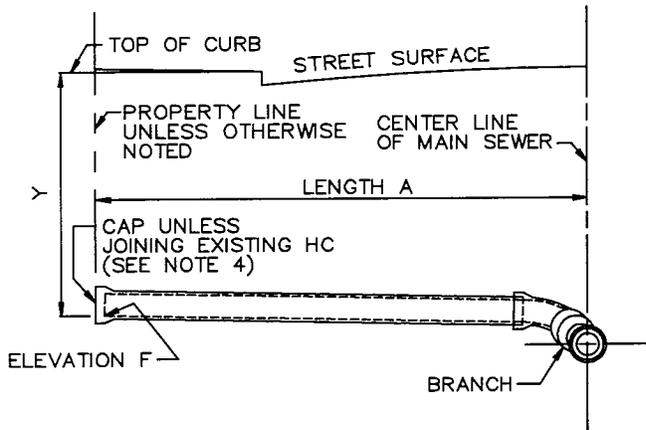
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**SEWER MANHOLE ADJUSTMENT**

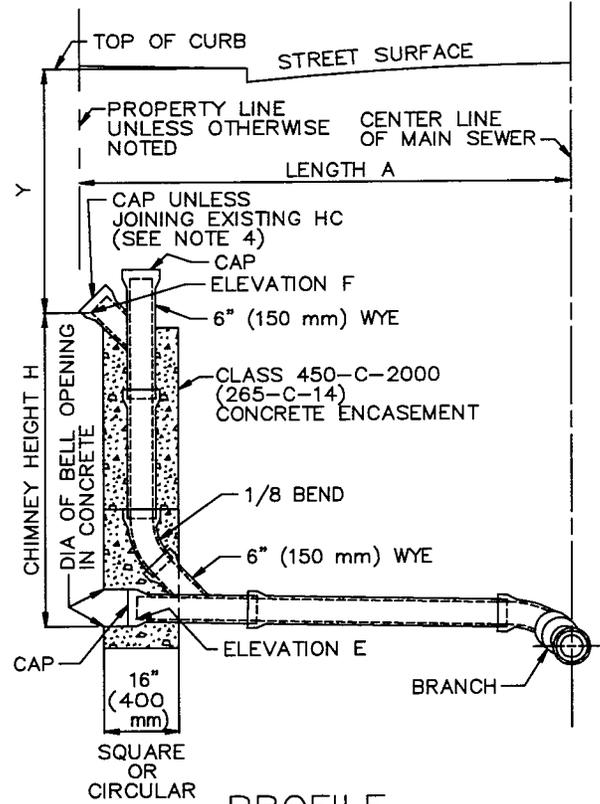
STANDARD PLAN

**205-2**

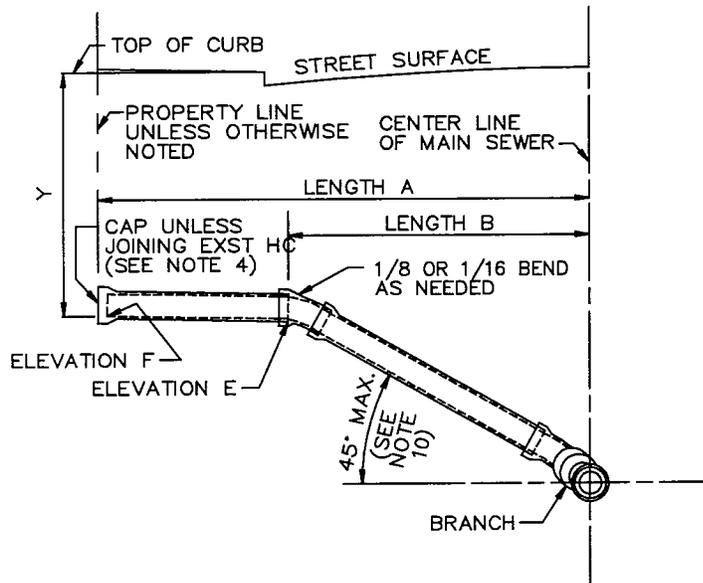
SHEET 3 OF 3



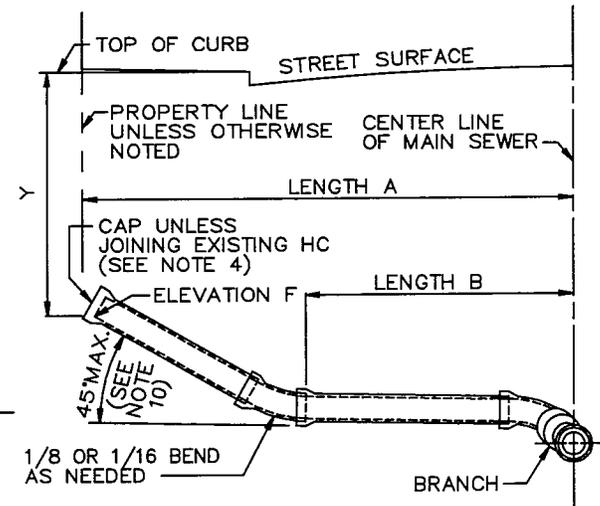
PROFILE TYPE A



PROFILE TYPE B



PROFILE TYPE C



PROFILE TYPE D

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1984  
REV. 1986, 2009

**HOUSE CONNECTION SEWER**

STANDARD PLAN

**222-2**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 2

NOTES

1. EXCEPT AS OTHERWISE INDICATED ON THE PLANS, ALL HOUSE CONNECTION SEWERS SHALL BE TYPE "A" AND SHALL BE CONSTRUCTED ON STRAIGHT LINES AND GRADES BETWEEN CONTROL POINTS AND ELEVATIONS.
2. DIMENSIONS:
  - A.  $Y = 6'$  (1.85 m)
  - B. LENGTHS "A" AND "B" - SEE PLANS
  - C. HEIGHT "H" - SEE PLANS
  - D. ELEVATIONS "E" AND "F" - SEE PLANS
3. ALL HOUSE CONNECTION SEWER PIPE SHALL BE 150 mm (6") UNLESS OTHERWISE INDICATED AND MAY BE ANY OF THE FOLLOWING:
  - A. VC PIPE
  - B. PE PIPE
  - C. ABS SOLID WALL PIPE
  - D. ABS COMPOSITE PIPE
  - E. PVC PLASTIC PIPE

PROVIDED THAT CHANGES FROM ONE TYPE OF MATERIAL OR SIZE TO ANOTHER SHALL BE MADE ONLY BY MEANS OF SUITABLE ADAPTERS APPROVED BY THE ENGINEER.

4. THE UPPER END OF THE HOUSE CONNECTION SHALL BE SEALED BY INSTALLING A CAP AND SEALING THE CAP WITH 1" (25 mm) THICK TYPE "F" MORTAR AROUND THE CIRCUMFERENCE OF THE CAP.
5. EXCEPT AS CONTROLLED BY ELEVATIONS INDICATED ON THE PROJECT PLANS, THE MINIMUM SLOPE FOR ALL PIPE SHALL BE 2% (S=0.02 MINIMUM).
6. THE FIGURE IN A CIRCLE ON THE PLANS ADJACENT TO A HOUSE CONNECTION SEWER STATION INDICATES THE DEPTH IN FEET (METERS) BELOW THE EXISTING TOP OF CURB TO WHICH THE INVERT OF THE UPPER END OF THE HOUSE CONNECTION SEWER SHALL BE CONSTRUCTED. IF NO DEPTH IS INDICATED, THE INVERT OF THE UPPER END SHALL BE THE ELEVATION SHOWN ON THE PROFILE. WHERE NEITHER DEPTH NOR ELEVATION IS INDICATED, THE INVERT SHALL BE 6' (1.85 m) BELOW THE TOP OF THE EXISTING CURB.
7. BRANCHES SHALL BE EITHER TEES OR WYES AND SHALL BE ROTATED UPWARD FROM THE HORIZONTAL TO AN ANGLE OF 22-1/2° TO 45° WHEN TEES ARE USED. BENDS ARE NOT REQUIRED BUT MAY BE USED AT THE OPTION OF THE CONTRACTOR. WHEN THE BRANCH ROTATION DOES NOT CONFORM TO THE SLOPE OF THE HOUSE CONNECTION SEWER, PULLED JOINTS MAY BE USED FOR ADJUSTMENT.
8. THE MAXIMUM DEFLECTION AT EACH JOINT FOR 4" (100 mm) AND 6" (150 mm) VITRIFIED CLAY PIPE HOUSE CONNECTION SEWERS SHALL BE 4", WHICH IS EQUAL TO A PULL OF 9/16" (14 mm) FOR A 6" (150 mm) PIPE AND 3/8" (10 mm) FOR A 4" (100 mm) PIPE. (PULL IS DEFINED AS THE SEPARATION OF THE ABUTTING PIPE ENDS ON THE CONVEX SIDE OF THE CURVE MEASURED AT THE OUTSIDE PIPE BARREL.)
9. CONNECTION OF A BUILDING SEWER SMALLER THAN 6" (150 mm) TO A 6" (150 mm) HOUSE CONNECTION SEWER SHALL BE MADE USING AN APPROVED INCREASER TEE OR AN INCREASER FOLLOWED BY A TEE.
10. ALL HOUSE CONNECTION SEWERS OR PORTIONS THEREOF CONSTRUCTED ON A SLOPE EXCEEDING 45° SHALL BE ANCHORED PER SPPWC 221.
11. HOUSE CONNECTION SEWERS CONSTRUCTED PURSUANT TO A HOUSE CONNECTION PERMIT SHALL CONFORM TO ALL APPLICABLE STATUTES AND ORDINANCES.

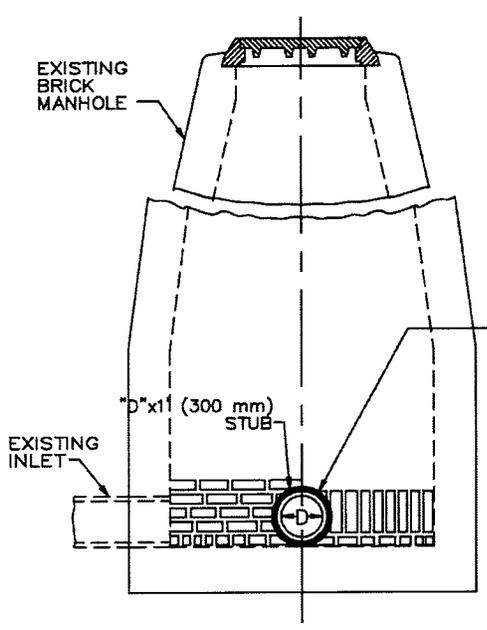
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

**HOUSE CONNECTION SEWER**

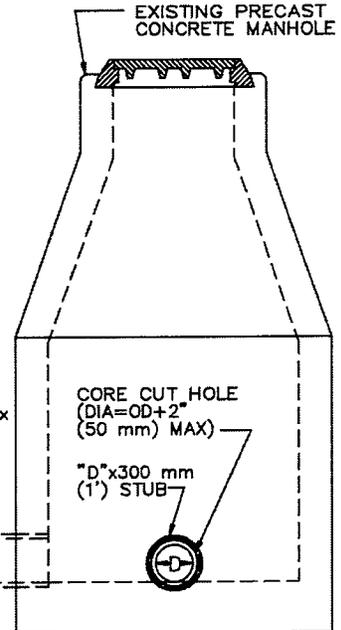
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SHEET 2 OF 2

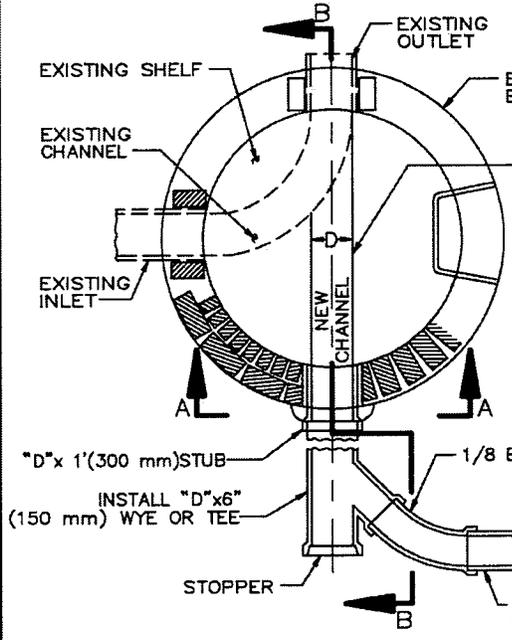


SECTIONAL ELEVATION A-A

CORE CUT HOLE OR  
BREAK OUT BRICKS  
CAREFULLY AND NEATLY  
TO FORM MINIMUM  
OPENING OF OD + 2"  
(50 mm). SECURELY FASTEN "D"x  
1' (300 mm) STUB INTO  
HOLE WITH CEMENT MORTAR

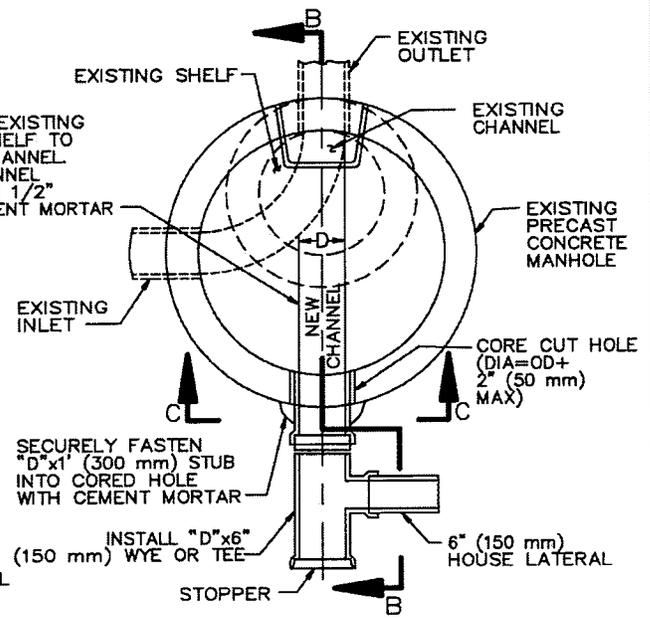


SECTIONAL ELEVATION C-C

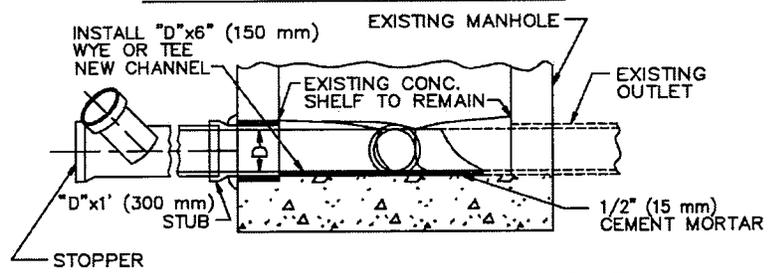


SECTIONAL PLAN OF BASE

CHISEL OUT EXISTING  
CONCRETE SHELF TO  
FORM NEW CHANNEL.  
SMOOTH CHANNEL  
SURFACE WITH 1/2"  
(15 mm) CEMENT MORTAR



SECTIONAL PLAN OF BASE



SECTIONAL ELEVATION B-B  
CHANNEL BASE

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS, INC.,  
GREENBOOK COMMITTEE  
1984  
REV. 1996, 2009

**BREAKING INTO EXISTING MANHOLES**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN  
**208-2**  
SHEET 1 OF 2

NOTES:

1. INVERT ELEVATION OF "D" x 1' (300 mm) STUB AT THE INSIDE FACE OF MANHOLE TO BE 0.10' (30 mm) HIGHER THAN EXISTING OUTLET INVERT ELEVATION.
2. THE CORE CUT HOLE SHALL BE MADE WITH EQUIPMENT SPECIALLY DESIGNED TO CUT A SMOOTH HOLE WITHOUT SPALLING OR DAMAGE TO THE REINFORCING STEEL OR STRUCTURE.
3. "D" TO BE 8" (200 mm) MINIMUM.
4. ALL WORK SHALL BE UNCOVERED AND CONVENIENT FOR THE INSPECTION.
5. ALL CEMENT MORTAR SHALL BE CLASS "D" PER SSPWC 201-5.1.

HOUSE LATERAL NOTES:

1. WYE SHALL BE LAID WITH 1/8" (3 mm) RISE PER 1" (300 mm) AND 6" (150 mm) SPUR AT 45° FROM HORIZONTAL UNLESS OTHERWISE NOTED ON PLANS.
2. "D" X 4" (100 mm) WYE OR TEE AND 4" (100 mm) HOUSE LATERAL MAY BE SUBSTITUTED FOR "D" X 6" (150 mm) WYE OR TEE AND 6" (150 mm) HOUSE LATERAL.
3. USE TYPE "D" OR "G" JOINTS PER SSPWC 208-2.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**BREAKING INTO EXISTING MANHOLES**

STANDARD PLAN

**208-2**

SHEET 2 OF 2



APPENDIX IV

CONSTRUCTION & DEMOLITION  
WASTE MANAGEMENT PLAN  
(WMP) RECYCLING SUMMARY

Building Permit Number: \_\_\_\_\_

**CITY OF TORRANCE**

**Construction & Demolition Waste Management Plan (WMP)**

**THE REQUIREMENT IS TO REUSE OR RECYCLE AT LEAST 50% OF PROJECT WASTE AND**

**100% OF EXCAVATED SOIL AND LAND-CLEARING DEBRIS**

- 1) As part of your application, you must complete the front and back of this page and the "estimate" or left side of the table on the backside of this page to the best of your ability, indicating that you will recycle at least 50% of the waste from the project and 100% of excavated soil and land-clearing debris.
- 2) As your project proceeds, collect and keep receipts of all waste disposed, recycled, reused or donated. Receipts must show material type, weight of material, how the material was treated and the facility used.
- 3) To final your project, you must then fill out the "actual" or right side of the table on the backside of this sheet, and submit it again with all the receipts to verify that at least 50% of the project's waste and 100% of excavated soil and land-clearing debris was diverted from the landfills.

Please note, if you are contracting with a different company to haul your waste or using a roll off box from another company, that company must have a business license to operate in the City of Torrance.

**A COPY OF THIS WMP AND RECEIPTS (SHOWING MATERIAL TYPE, WEIGHT, TREATMENT AND FACILITY USED) FOR ALL RECYCLING AND DISPOSAL SHALL BE SUBMITTED BEFORE THE PROJECT WILL RECEIVE FINAL BUILDING APPROVAL. (FOR DEMO PERMITS, THE RECEIPTS FOR THE DEMOLITION WASTE SHOULD BE PROVIDED BEFORE THE FIRST FOOTING INSPECTION AFTER THE BUILDING PERMIT HAS BEEN ISSUED.)**

Project Name: \_\_\_\_\_

Location: \_\_\_\_\_

Requesting Infeasibility Exemption:       Yes       No

Contractor Name: \_\_\_\_\_ Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_ Contact Phone: \_\_\_\_\_

Recycler: \_\_\_\_\_ Recycler Contact: \_\_\_\_\_

Recycler Address: \_\_\_\_\_ Recycler Contact Phone: \_\_\_\_\_

	CITY USE ONLY	
	Application (Date)	Final (Date)
Approved		
Further explanation needed (see attached)		
Denied		
Infeasibility Exemption Approved		
Reviewed By		

Submit this form and the attached Waste Management Plan Table to: **WMP Compliance Official  
Alison Sherman, Public Works  
asherman@TorranceCA.Gov  
Fax: 310-781-6902**

For questions or for in-person visit (by appointment only), please call 310-781-6900

**CITY OF TORRANCE**

**Construction & Demolition Waste Management Plan Table**

Project Name: \_\_\_\_\_

Total Estimated Waste Generated by Project: \_\_\_\_\_ (in tons).  
 (Ask your hauler, recycler or site cleanup vendor to assist you. Use receipts from your previous jobs for estimates)

Complete and return with Building Permit Application			Complete and return with receipts prior to final building approval		
Material Type	Estimated Reused/ Recycled	Estimated Disposed/ Landfilled	Actual Reused/ Recycled	Actual Disposed/ Landfilled	Vendor or Facility Used (Destination)
	(In Tons)	(In Tons)	(In Tons)	(In Tons)	
Asphalt & Concrete					
Bricks/Masonry/Tiles					
Building Materials (doors, windows, fixtures, etc.)					
Cardboard					
Excavated dirt and land-clearing debris					
Dirt					
Landscape Debris (Plant & Tree Trimmings)					
Scrap Metal					
Unpainted Wood & Pallets					
Other (painted wood & drywall, roofing, etc.)					
Mixed C&D*					
Trash/Garbage					
<b>TOTAL</b>					

If you are requesting an infeasibility exemption and the estimated amount reused/recycled is less than 50%, please explain why (attach additional sheets if necessary):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Prepared by (print): \_\_\_\_\_ Date: \_\_\_\_\_

\* *Mixed C&D* is defined as a mixture of three or more materials (e.g. wood, drywall, roofing, etc.) from construction or demolition sites that will be taken to a facility capable of recycling those commingled materials.

Signature: \_\_\_\_\_ Phone Number: \_\_\_\_\_

*Must be signed by Contractor or Owner. Signatory accepts financial responsibility for penalties for non-compliance.*

### Conversion Rates

The following conversion rates are estimates to help complete the Waste Management Plan by converting materials into tonnage format. The ranges vary widely, depending on how the materials are handled (compacted, loose, chipped, etc.). Use the conversion factors and receipts from any previous projects to help you estimate the potential amount of materials and diversion. Take into consideration the type and load of vehicles that will be used to haul the materials. Ask your hauler or recycler to assist you in estimating these numbers.

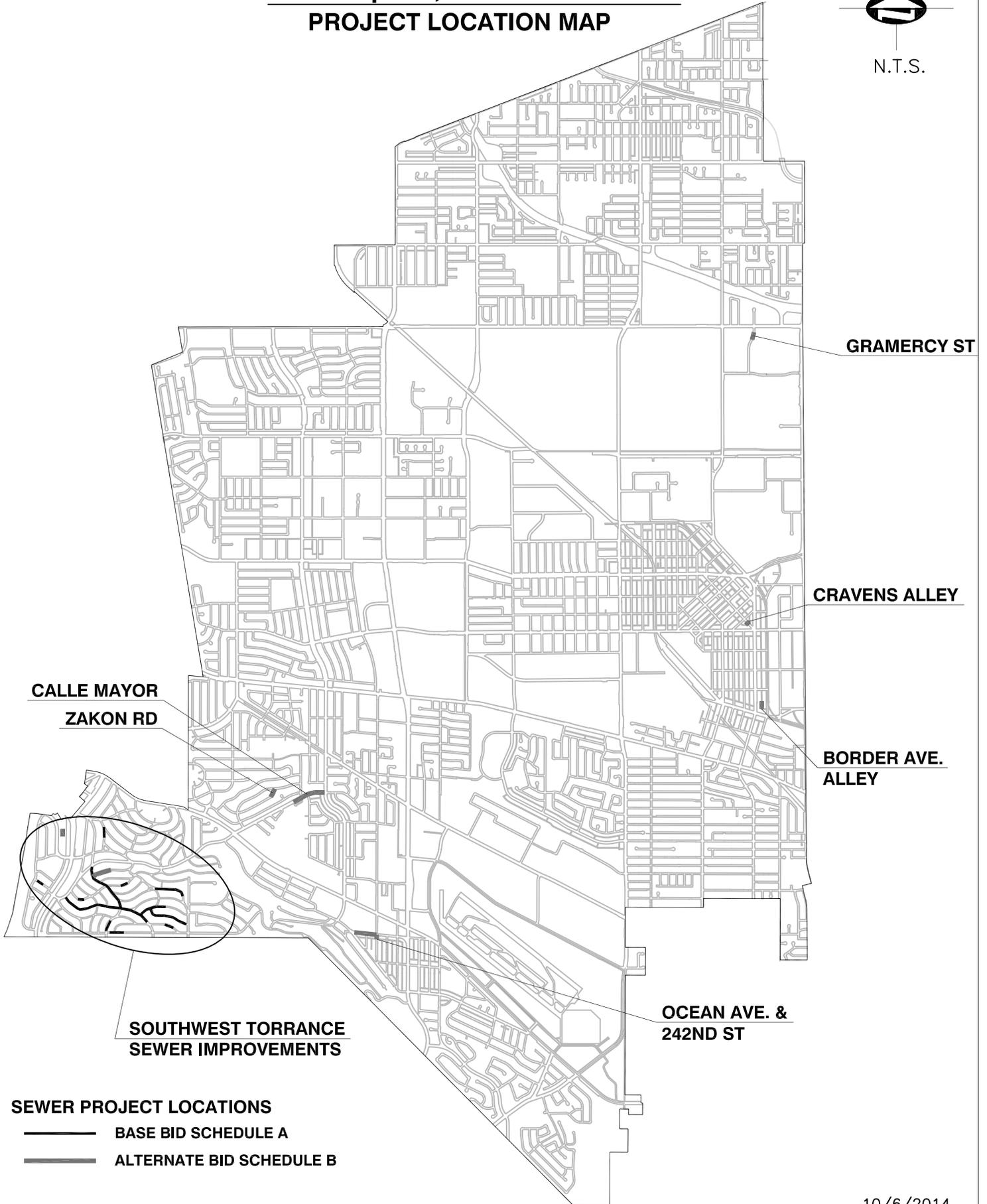
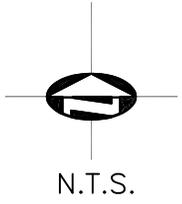
<b>Material</b>	<b>Lbs/cy</b>	<b>Tons/cy</b>
Asphalt	1,400 lbs/cy	0.7 tons/cy
Brick	2,430 lbs/cy	1.21 tons/cy
Cardboard	100 lbs/cy	0.05 tons/cy
Concrete	2,600 lbs/cy (Sources range from 1,000 to 4,000)	1.3 tons/cy
Dirt/Soils	2,660 lbs/cy	1.33 tons/cy
Drywall	700 lbs/cy	0.35 tons/cy
Wood (chipped)	300 - 650 lbs/cy	0.15 – 0.3 tons/cy
Mixed C&D Debris	900 lbs/cy	0.45 tons/cy
Mixed Waste/Trash	100 - 350 lbs/cy	0.5 - 0.175 tons/cy

APPENDIX V  
DRAWINGS SCHEDULE A

# City of Torrance - Public Works Department

## Miscellaneous Sewer Main Improvements and Repairs, CIP No. I-61/I-149

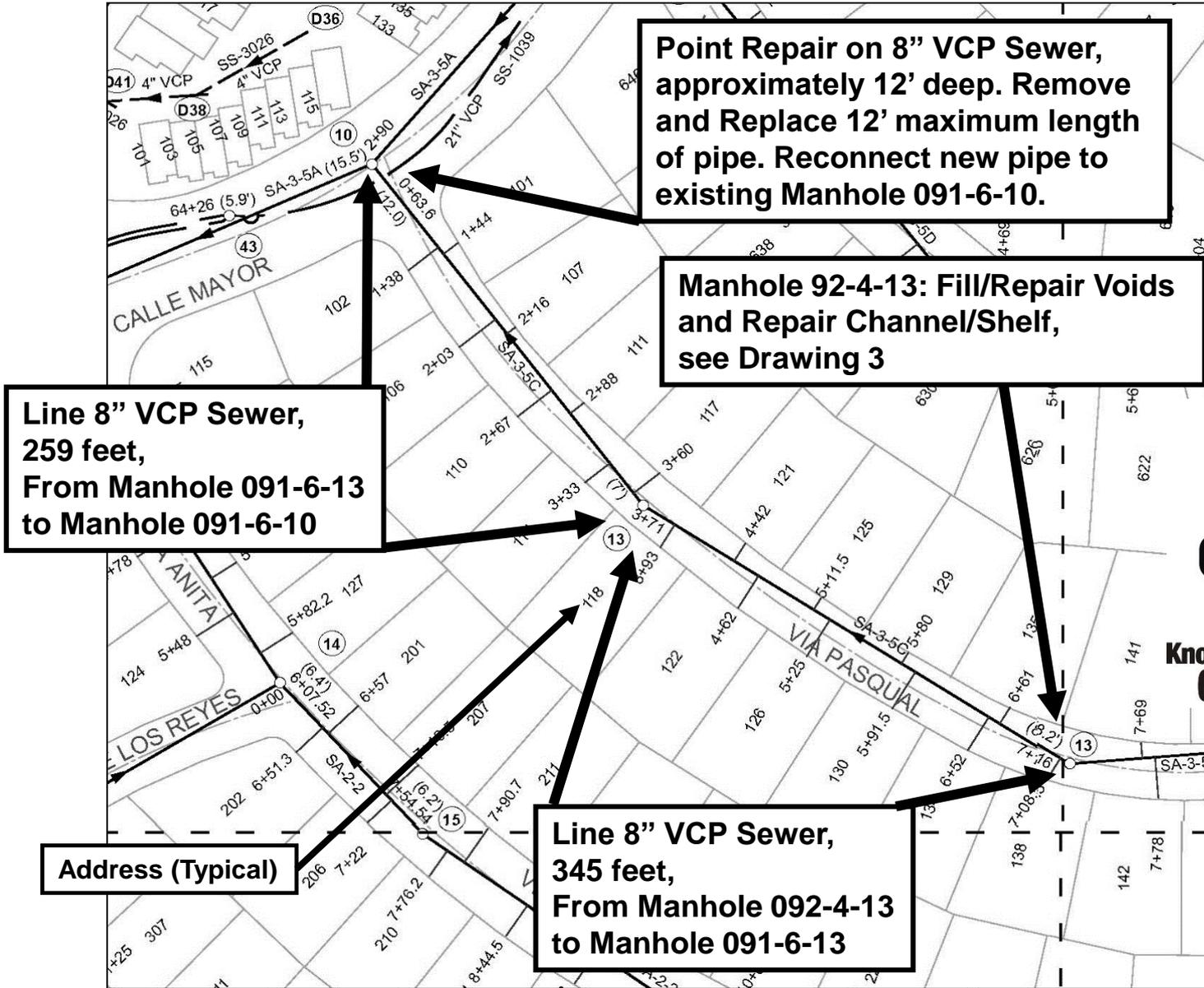
### PROJECT LOCATION MAP



#### SEWER PROJECT LOCATIONS

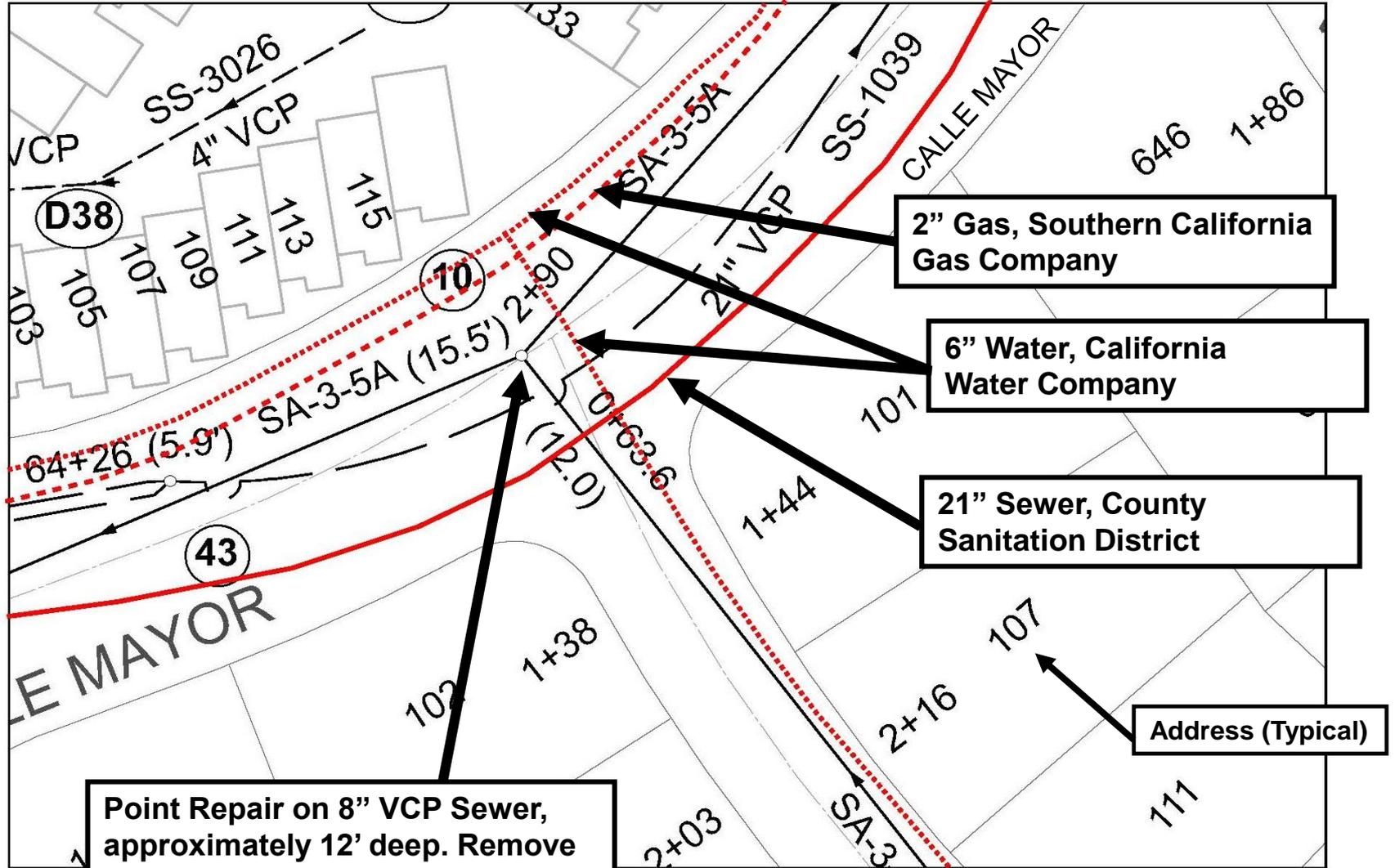
- BASE BID SCHEDULE A
- ALTERNATE BID SCHEDULE B

# City Sewer Basemap Sheet 91, Grid 6 and Sheet 92, Grid 4



**Know what's below.  
Call 811 before you dig.**

# City Sewer Basemap Sheet 91, Grid 6



2" Gas, Southern California Gas Company

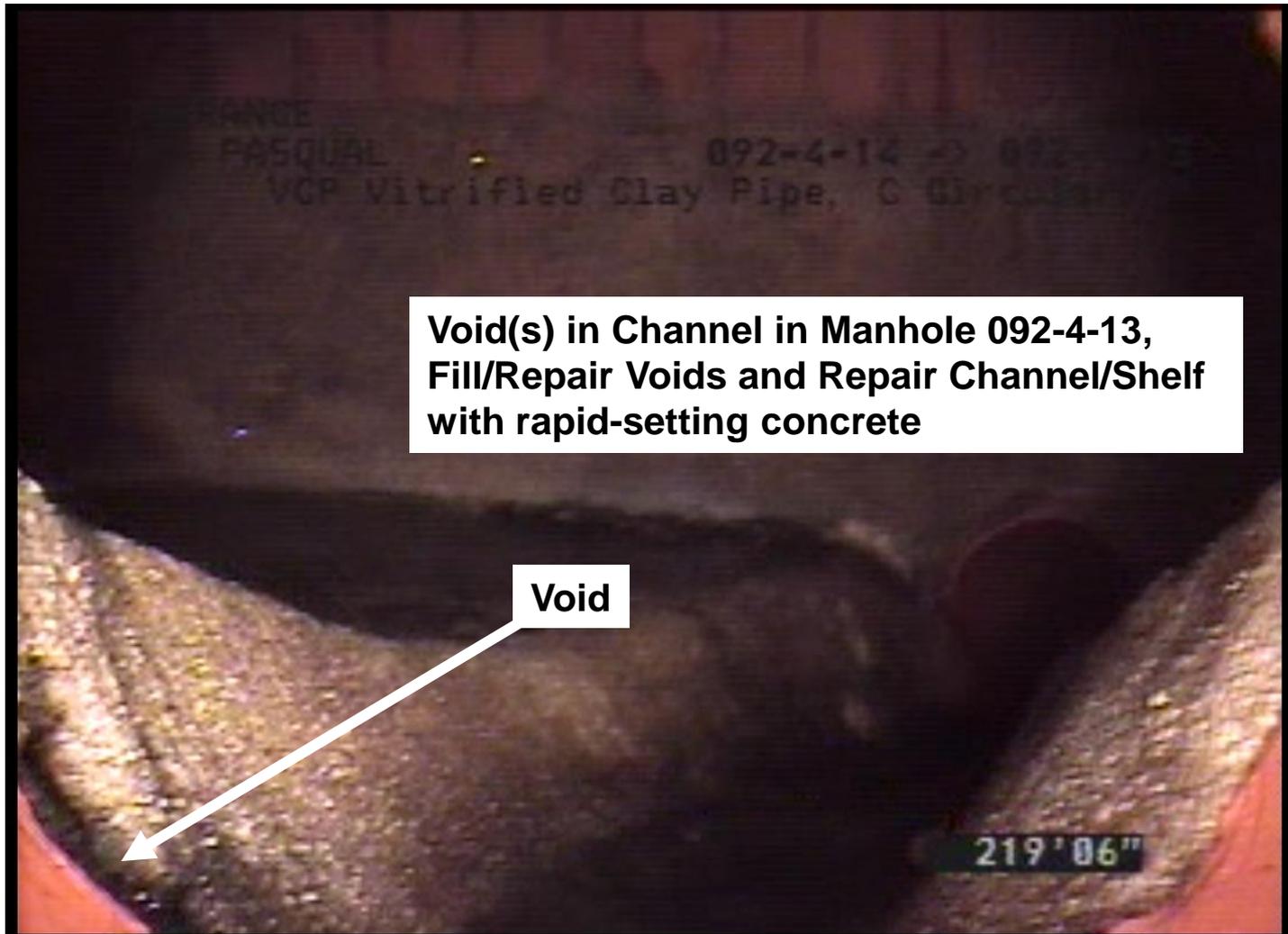
6" Water, California Water Company

21" Sewer, County Sanitation District

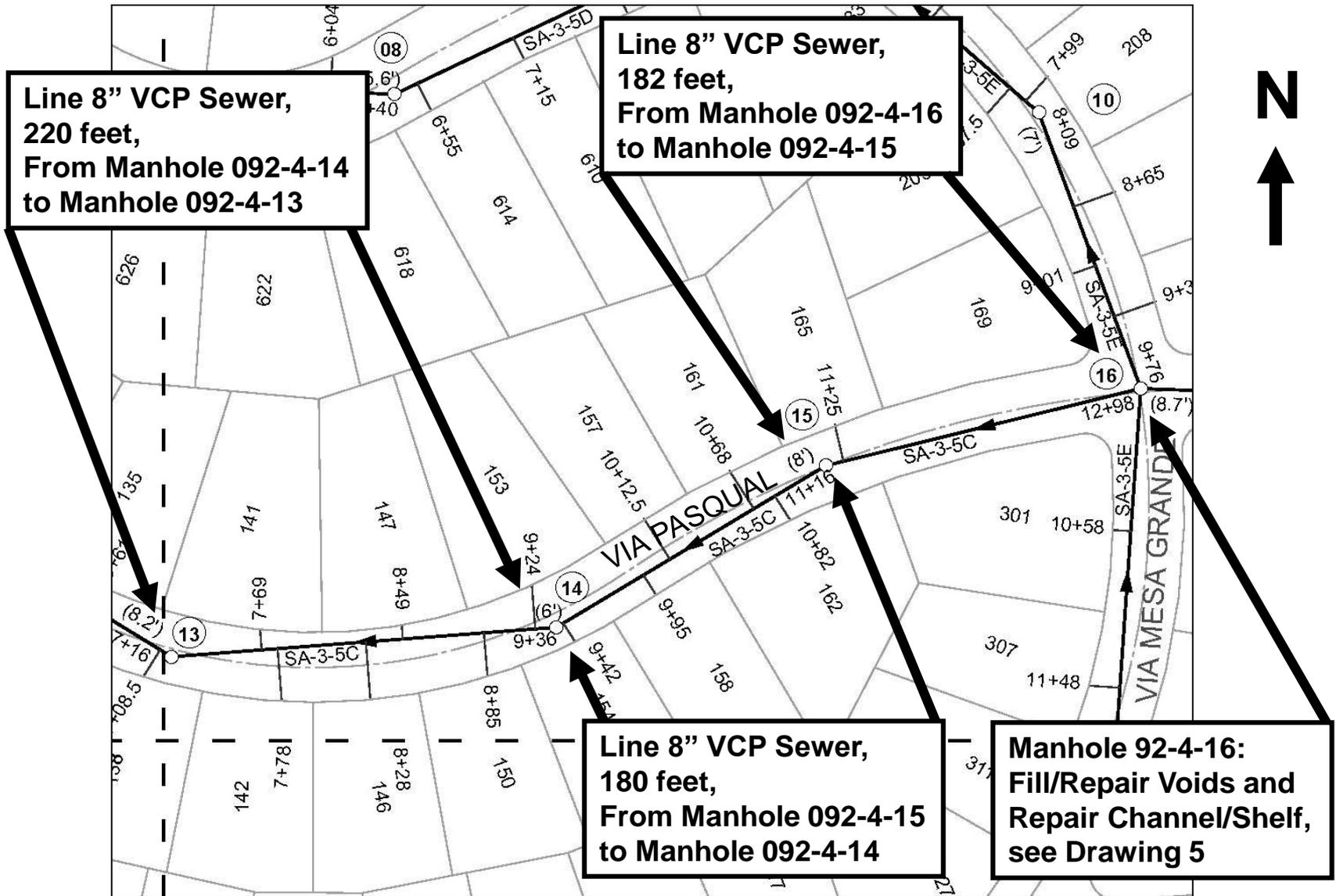
Address (Typical)

Point Repair on 8" VCP Sewer, approximately 12' deep. Remove and Replace 12' maximum length of pipe. Reconnect new pipe to existing Manhole 091-6-10.

City Sewer Basemap Sheet 92, Grid 4

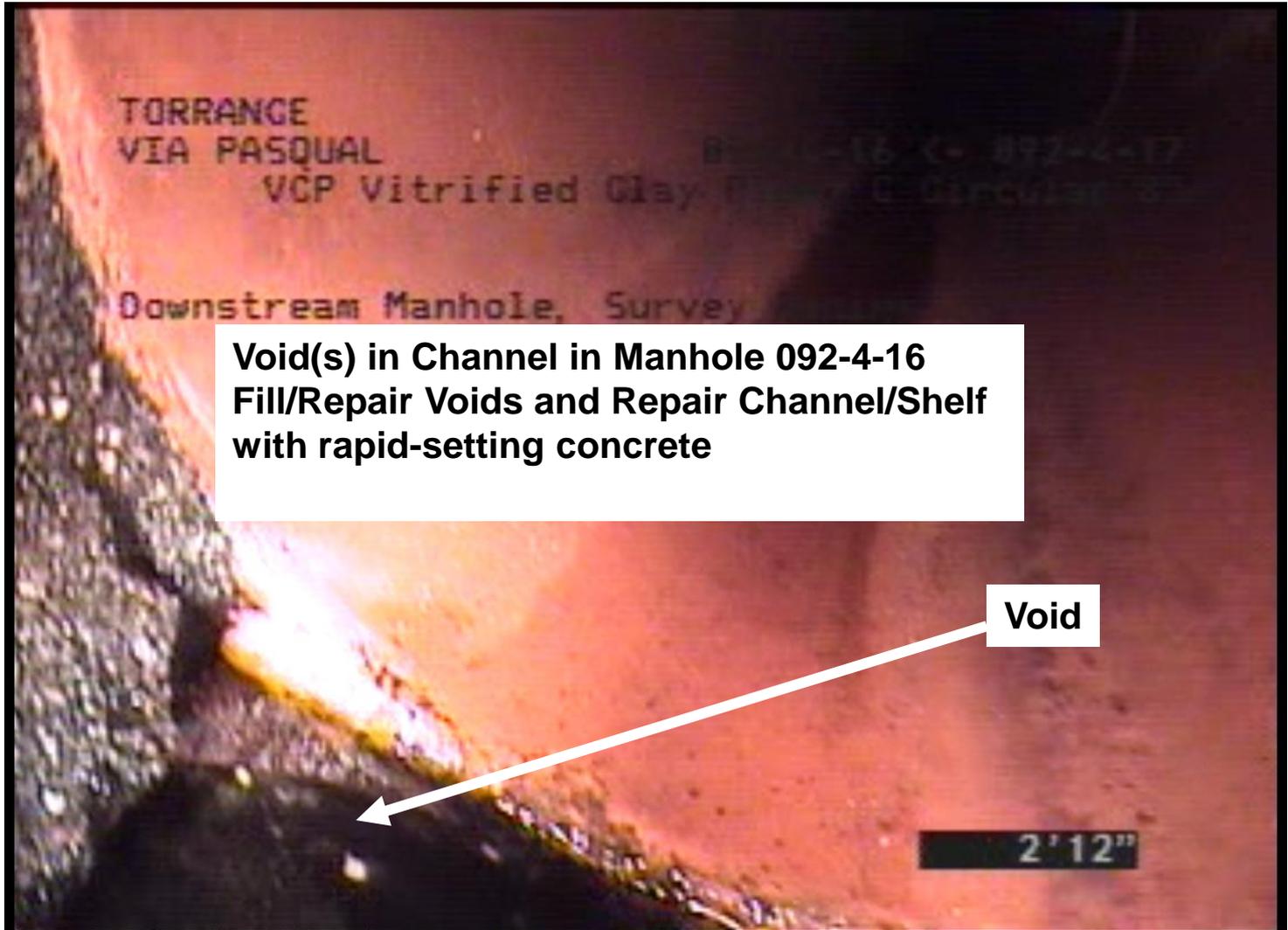


# City Sewer Basemap Sheet 92, Grid 4

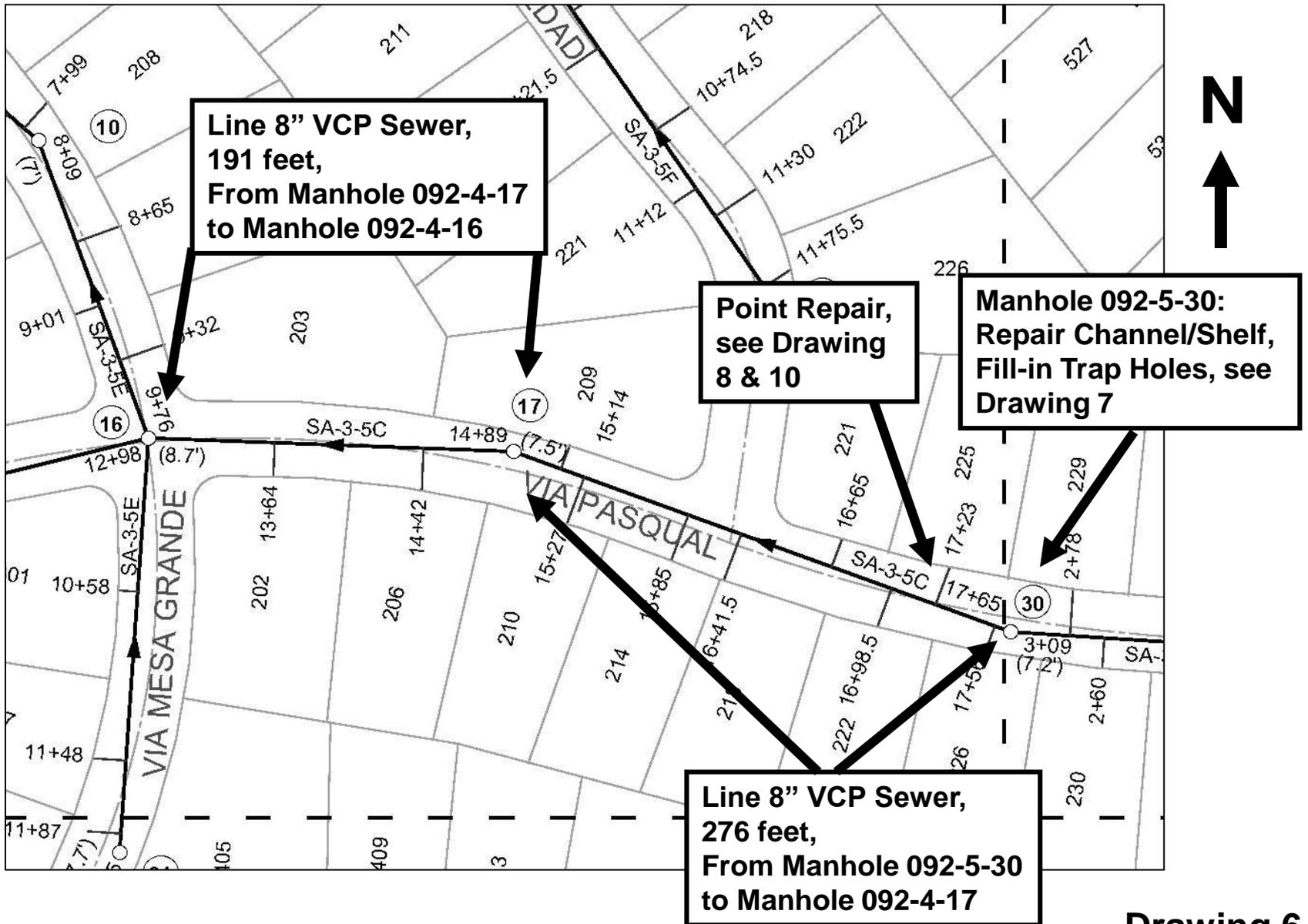


Drawing 4

City Sewer Basemap Sheet 92, Grid 4



# City Sewer Basemap Sheet 92, Grid 4 and Grid 5



Drawing 6

City Sewer Basemap Sheet 92, Grid 5



**Chip-away existing concrete, As necessary, to properly repair channels, flowlines and shelves.**

**Fill-in Trap Holes (2) with Rapid-setting Concrete, Repair Manhole Channels, Flowlines and Shelves.**



City Sewer Basemap Sheet 92, Grid 5



**Point repair (approximately 3 LF)  
on existing 8" VCP Sewer  
approximately 42' from manhole 092-5-30  
Including lateral and wye connection.  
See drawing 10.**

# City Sewer Basemap Sheet 92, Grid 5



**Line 8" VCP Sewer,  
259 feet,  
from Manhole 092-5-31  
to 092-5-27 Manhole  
See drawing 42**

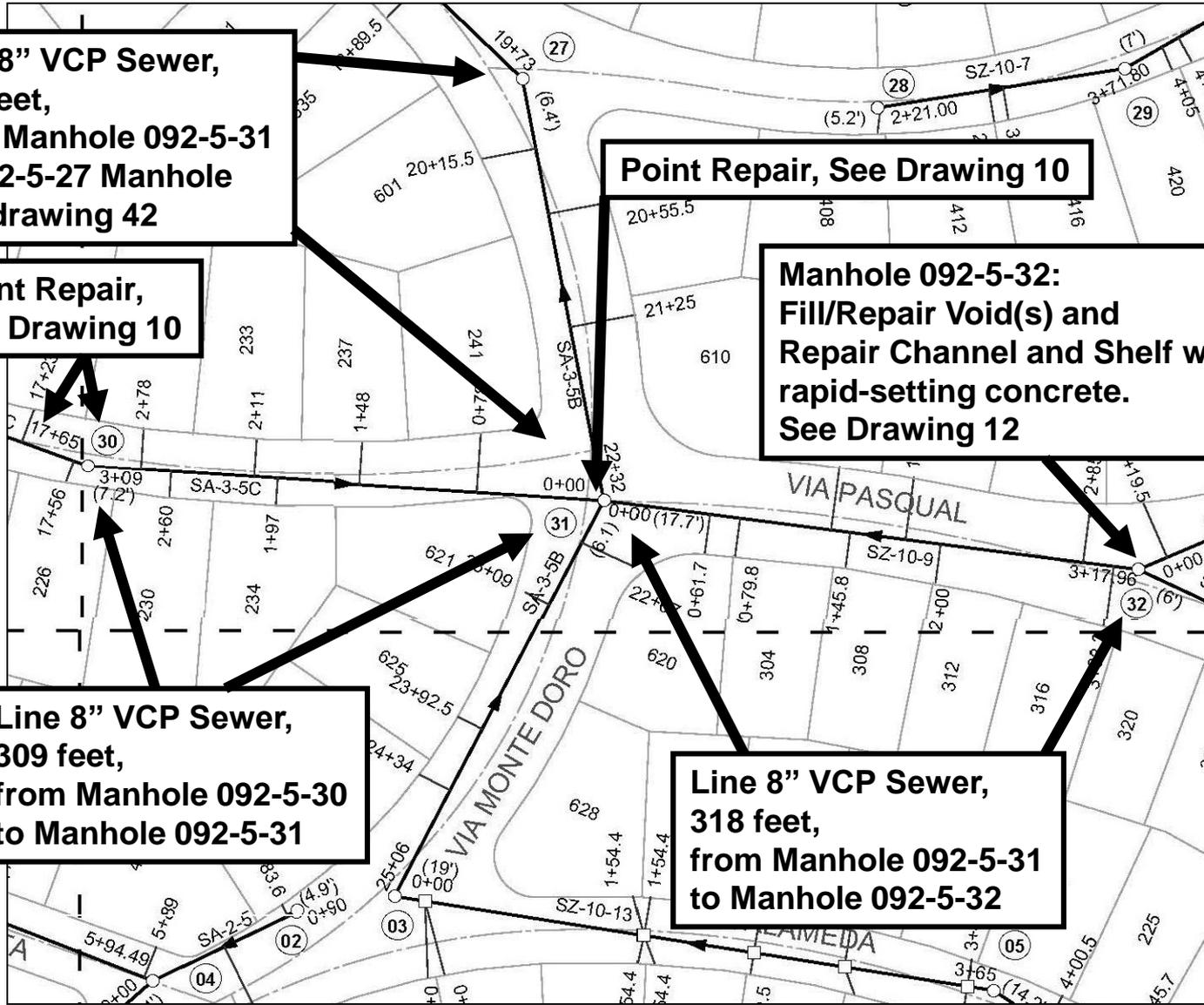
**Point Repair,  
see Drawing 10**

**Point Repair, See Drawing 10**

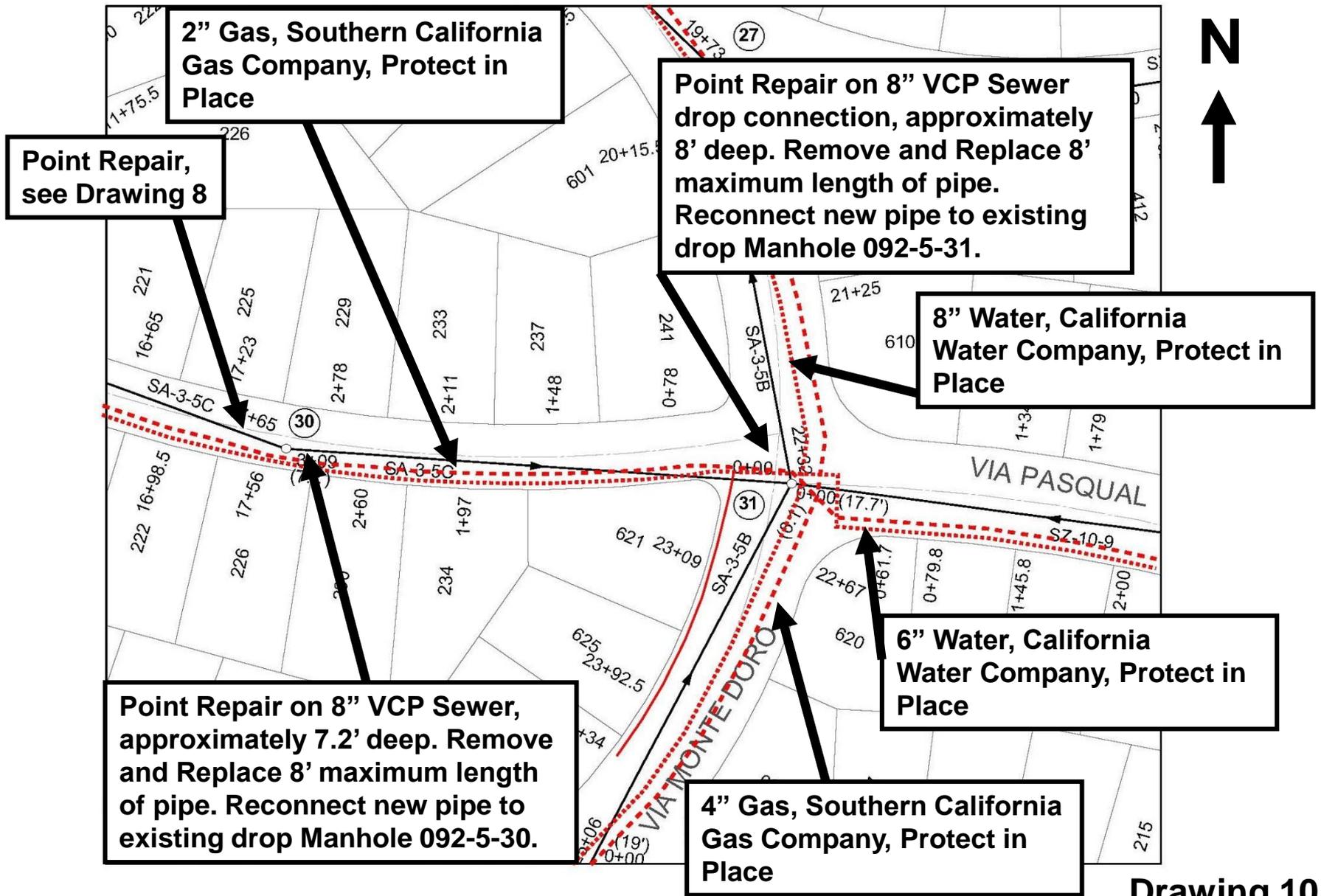
**Manhole 092-5-32:  
Fill/Repair Void(s) and  
Repair Channel and Shelf with  
rapid-setting concrete.  
See Drawing 12**

**Line 8" VCP Sewer,  
309 feet,  
from Manhole 092-5-30  
to Manhole 092-5-31**

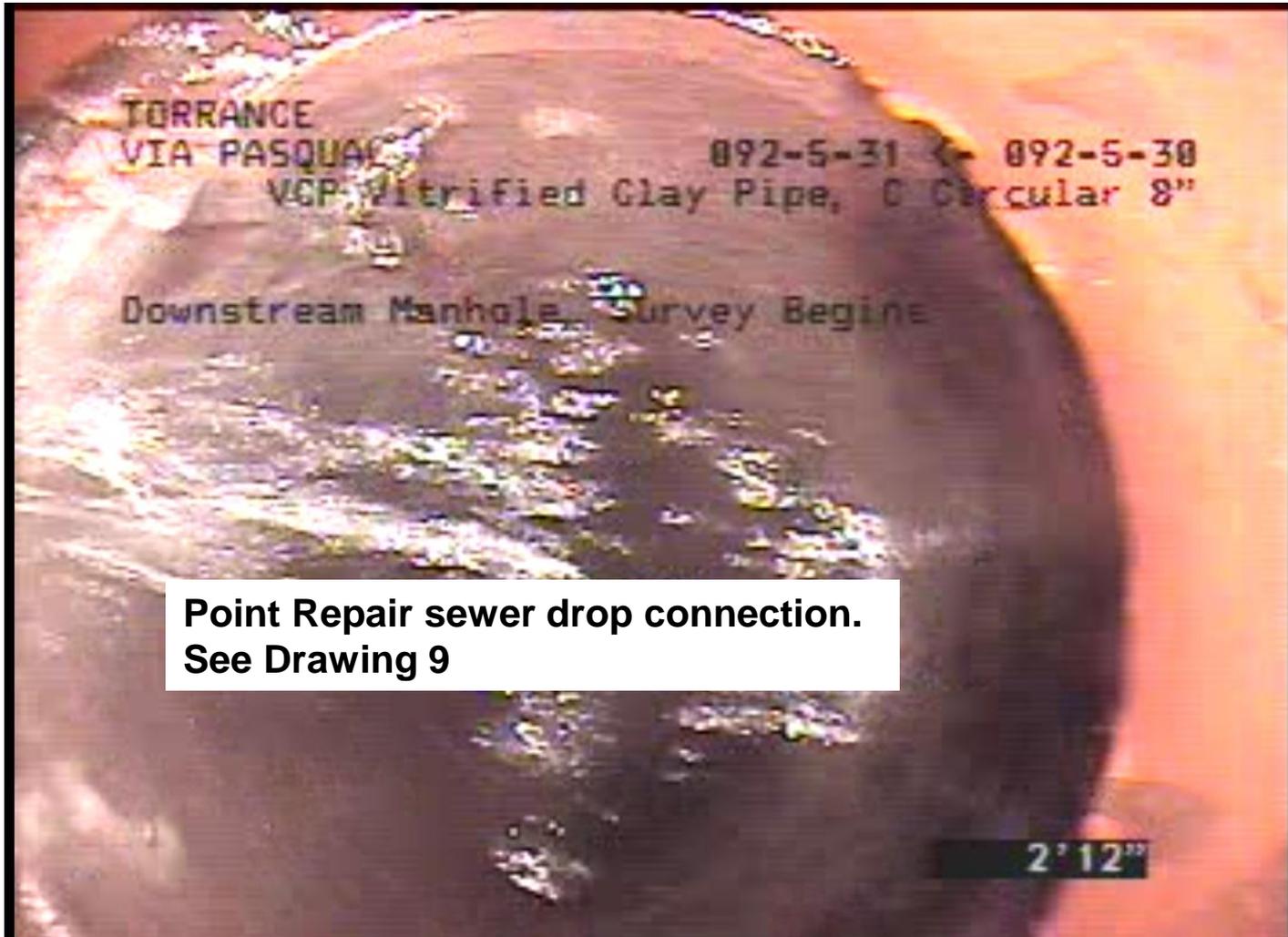
**Line 8" VCP Sewer,  
318 feet,  
from Manhole 092-5-31  
to Manhole 092-5-32**



# City Sewer Basemap Sheet 92, Grid 5

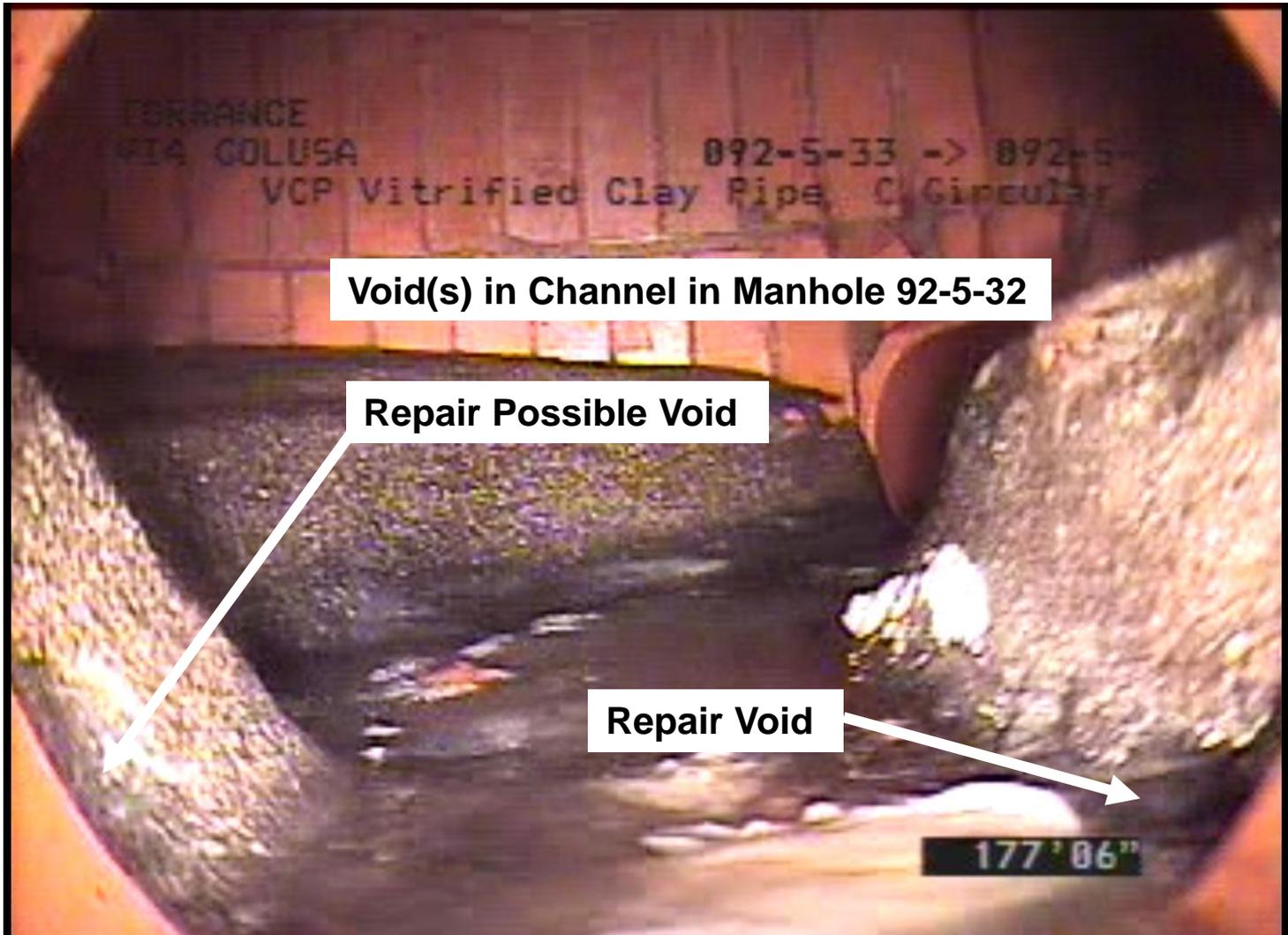


City Sewer Basemap Sheet 92, Grid 5

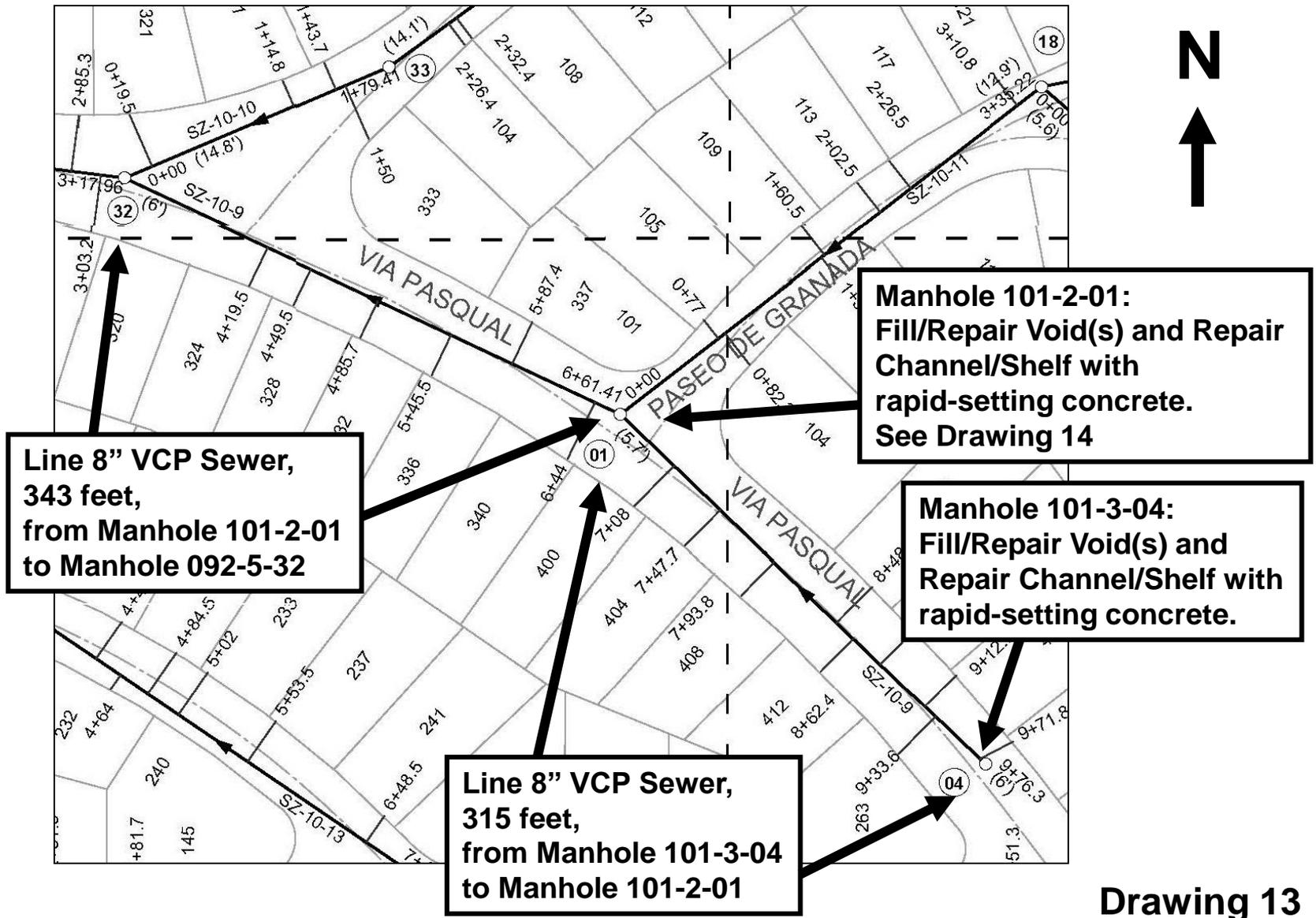


**Point Repair sewer drop connection.  
See Drawing 9**

City Sewer Basemap Sheet 92, Grid 5

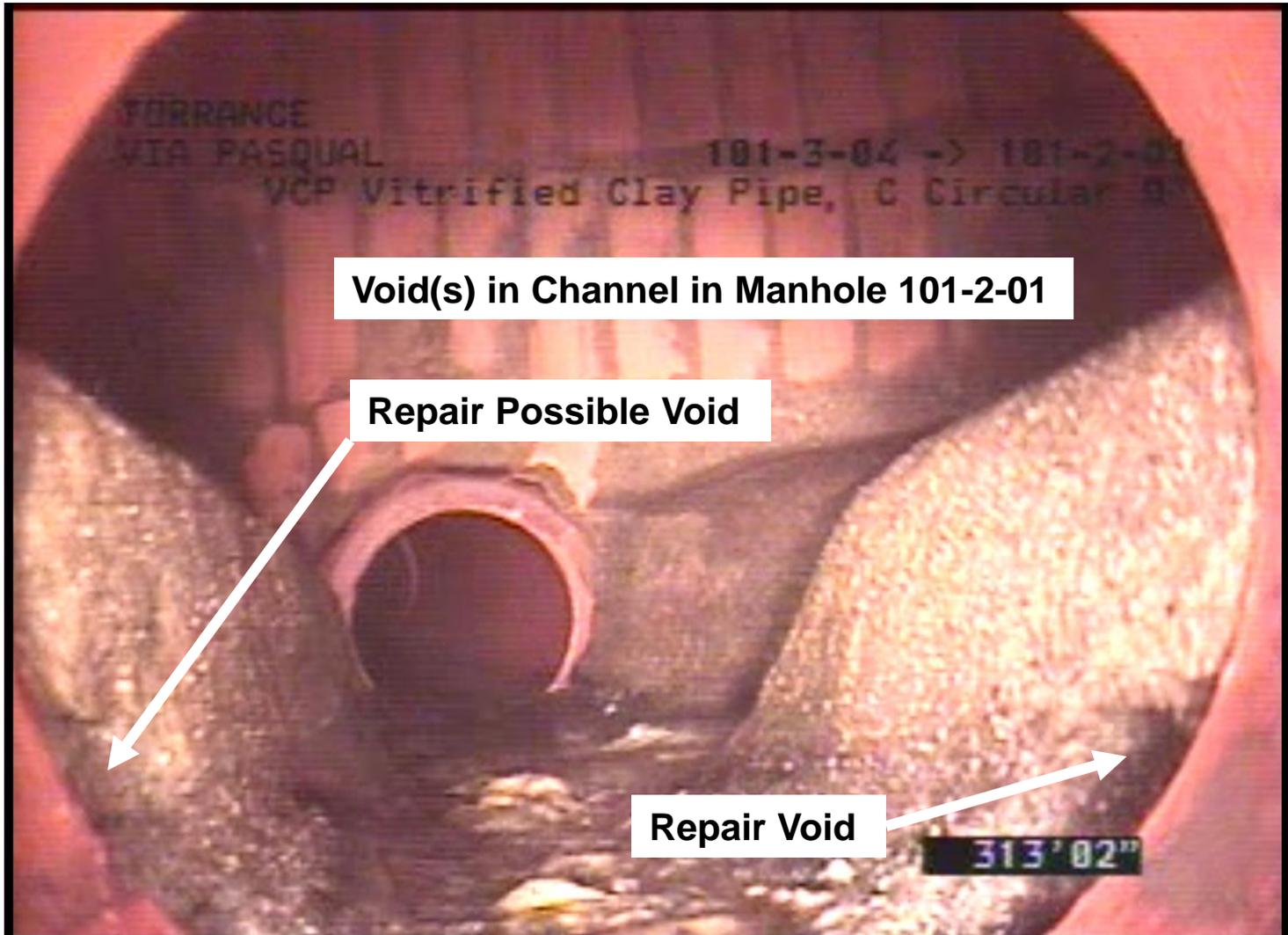


# City Sewer Basemap Sheet 92, Grid 5, Sheet 101, Grid 2 and 3

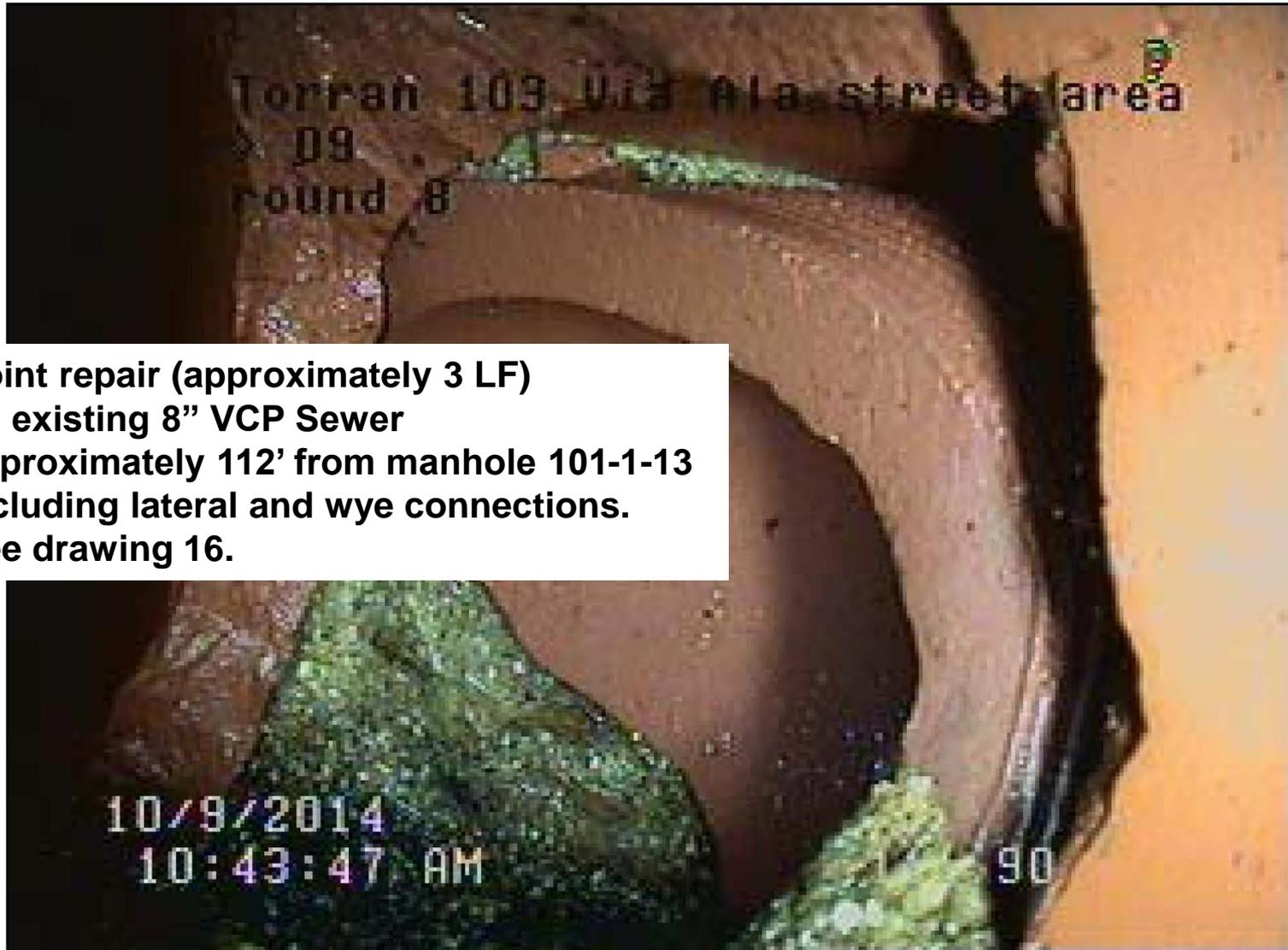


Drawing 13

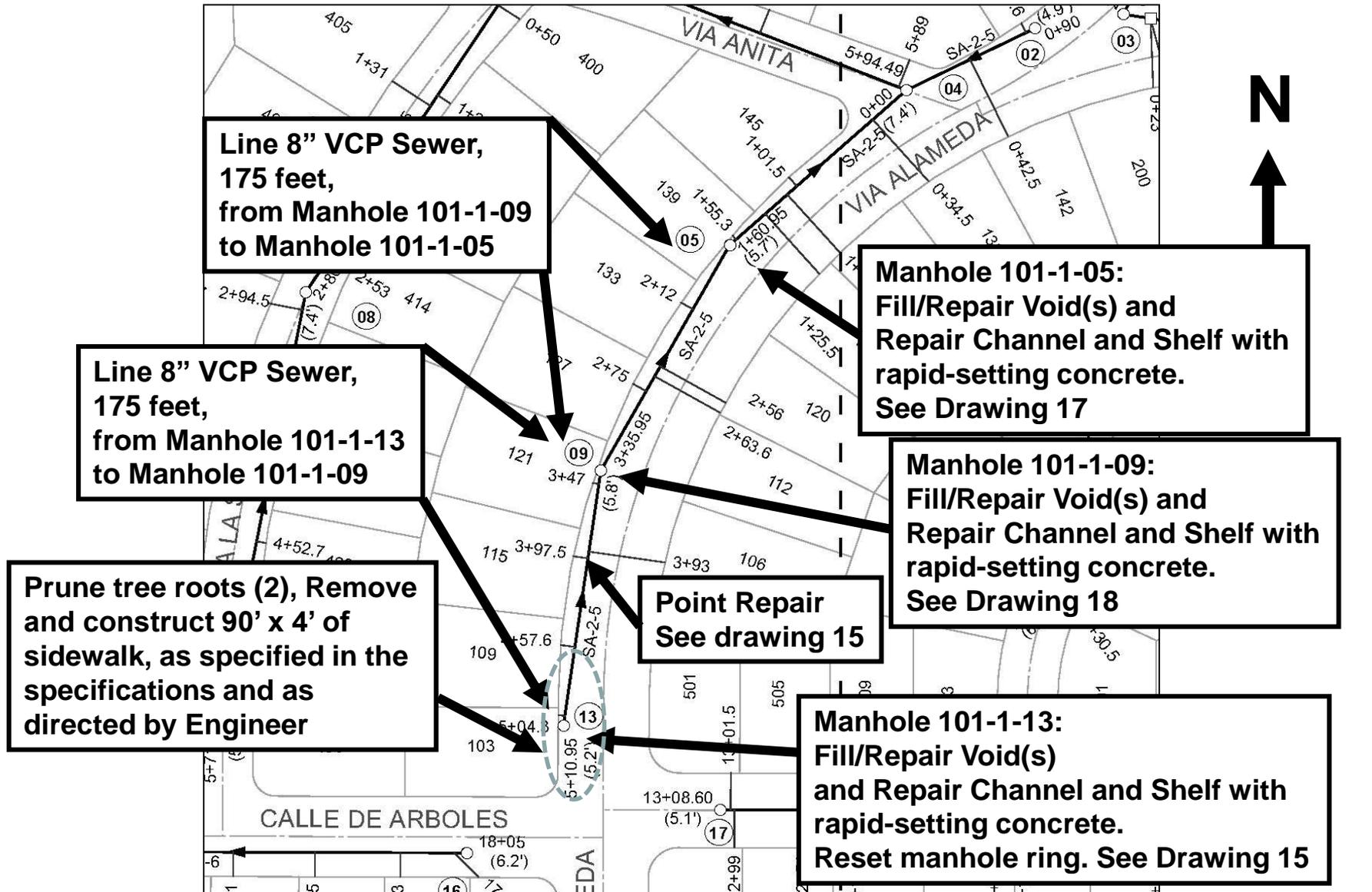
City Sewer Basemap Sheet 101, Grid 2



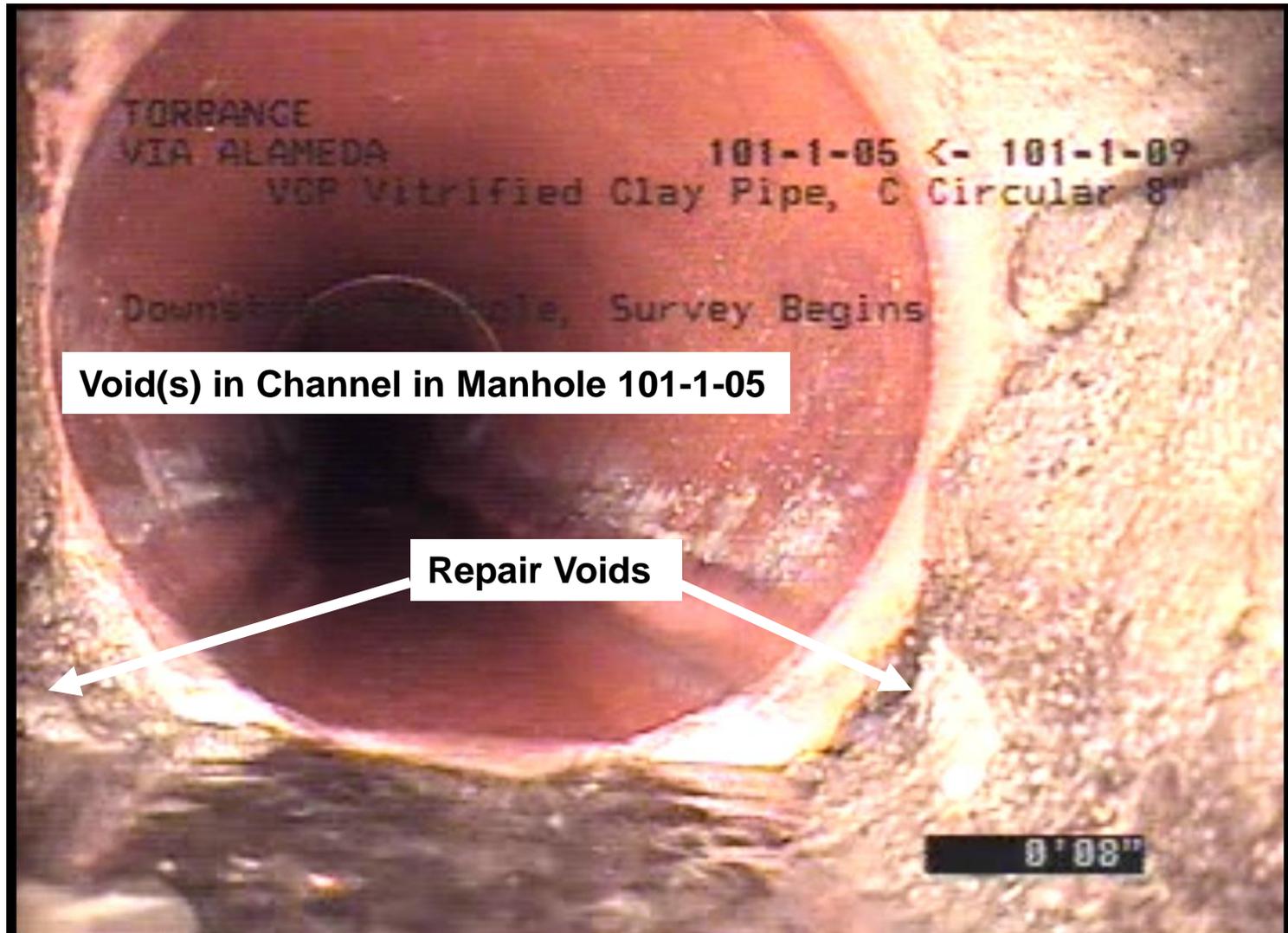
City Sewer Basemap Sheet 101, Grid 1



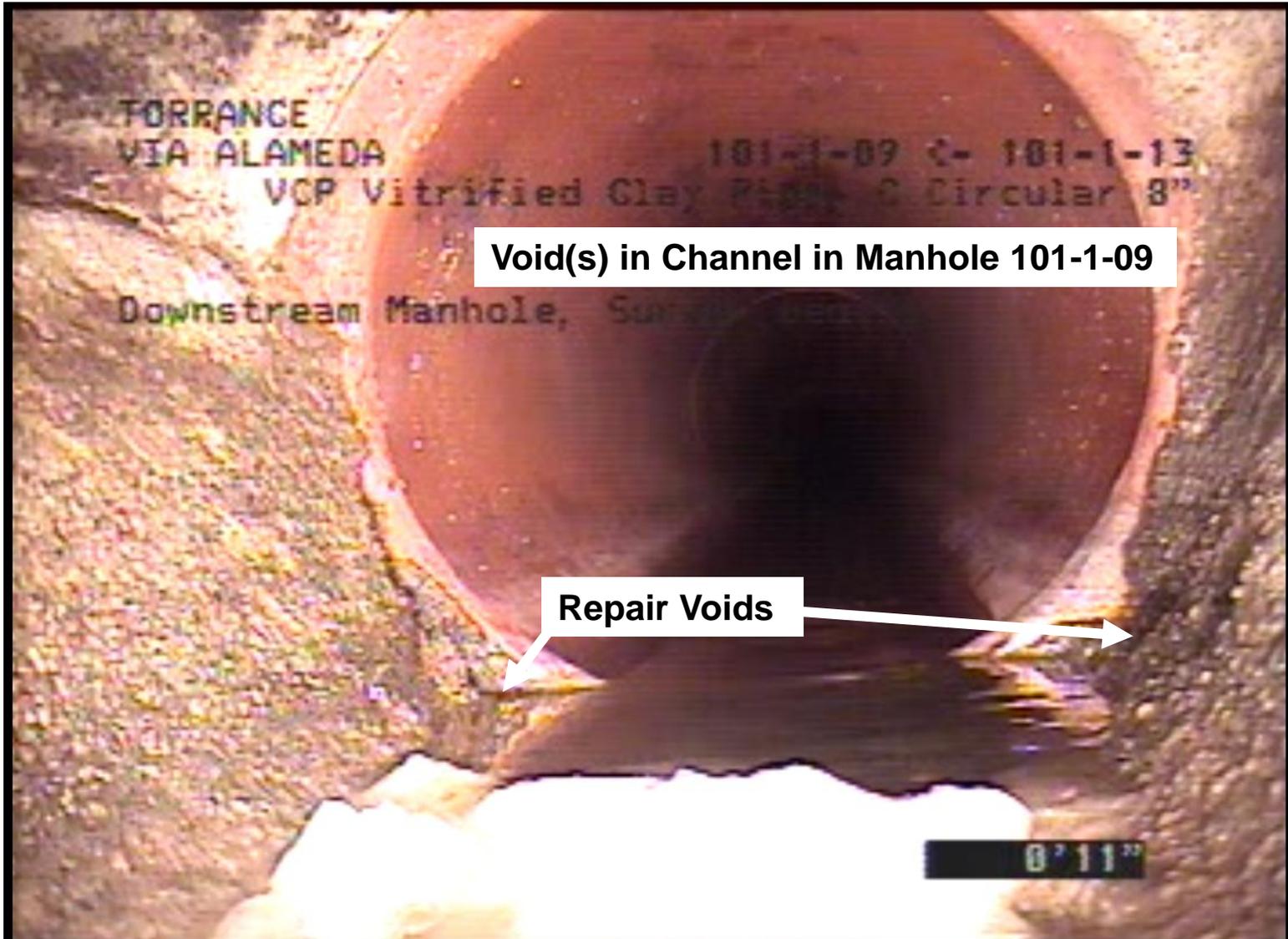
# City Sewer Basemap Sheet 101, Grid 1



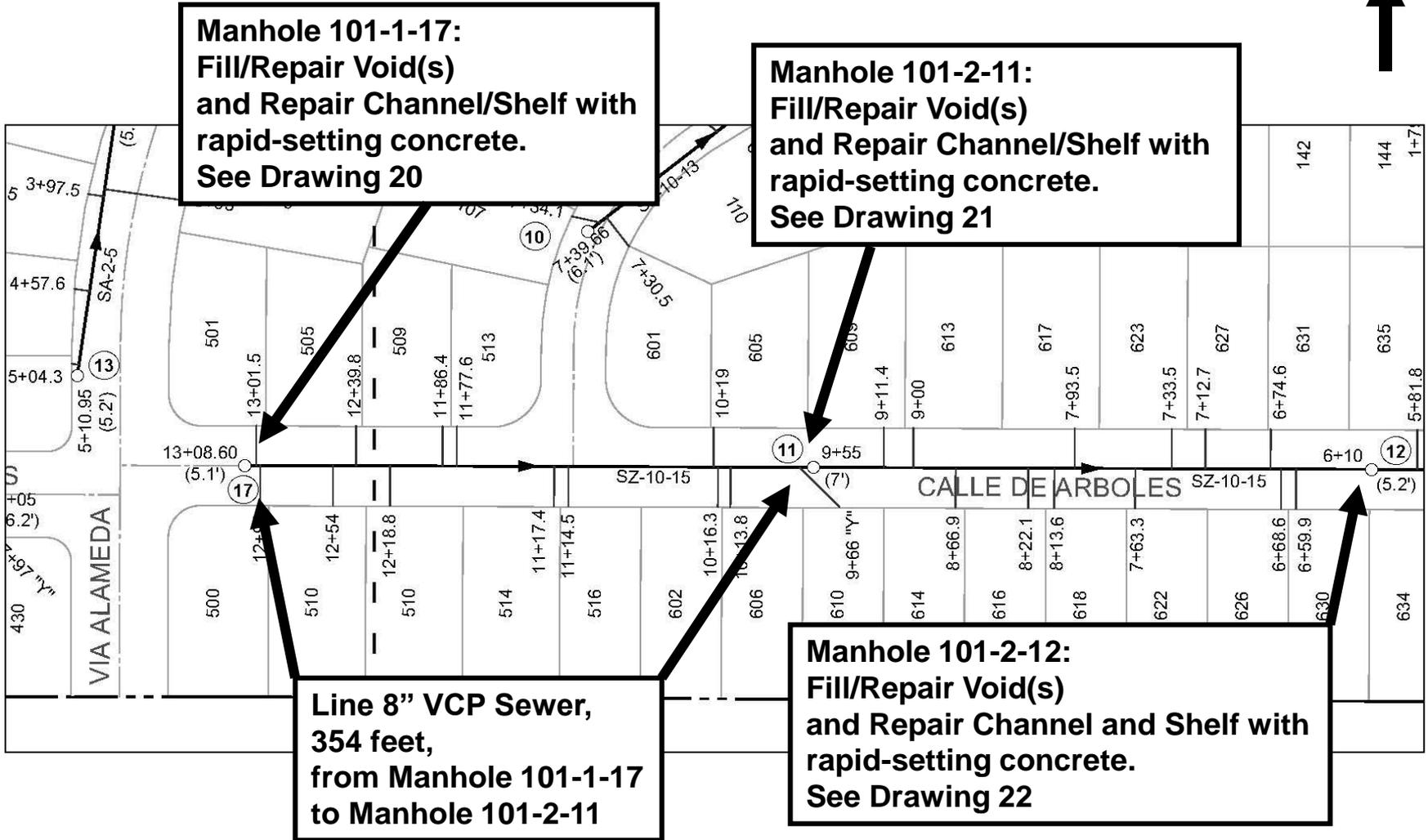
City Sewer Basemap Sheet 101, Grid 1



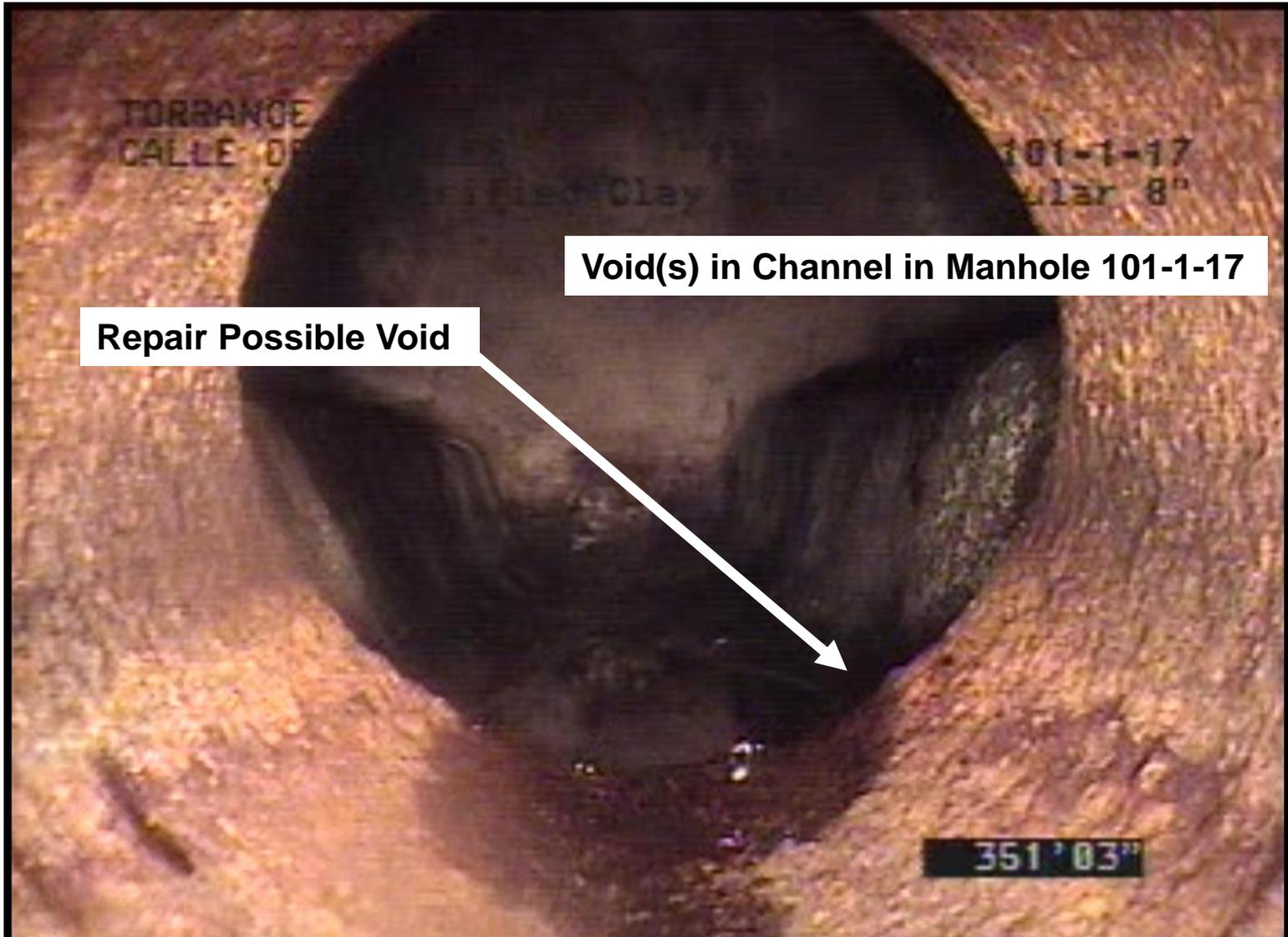
City Sewer Basemap Sheet 101, Grid 1



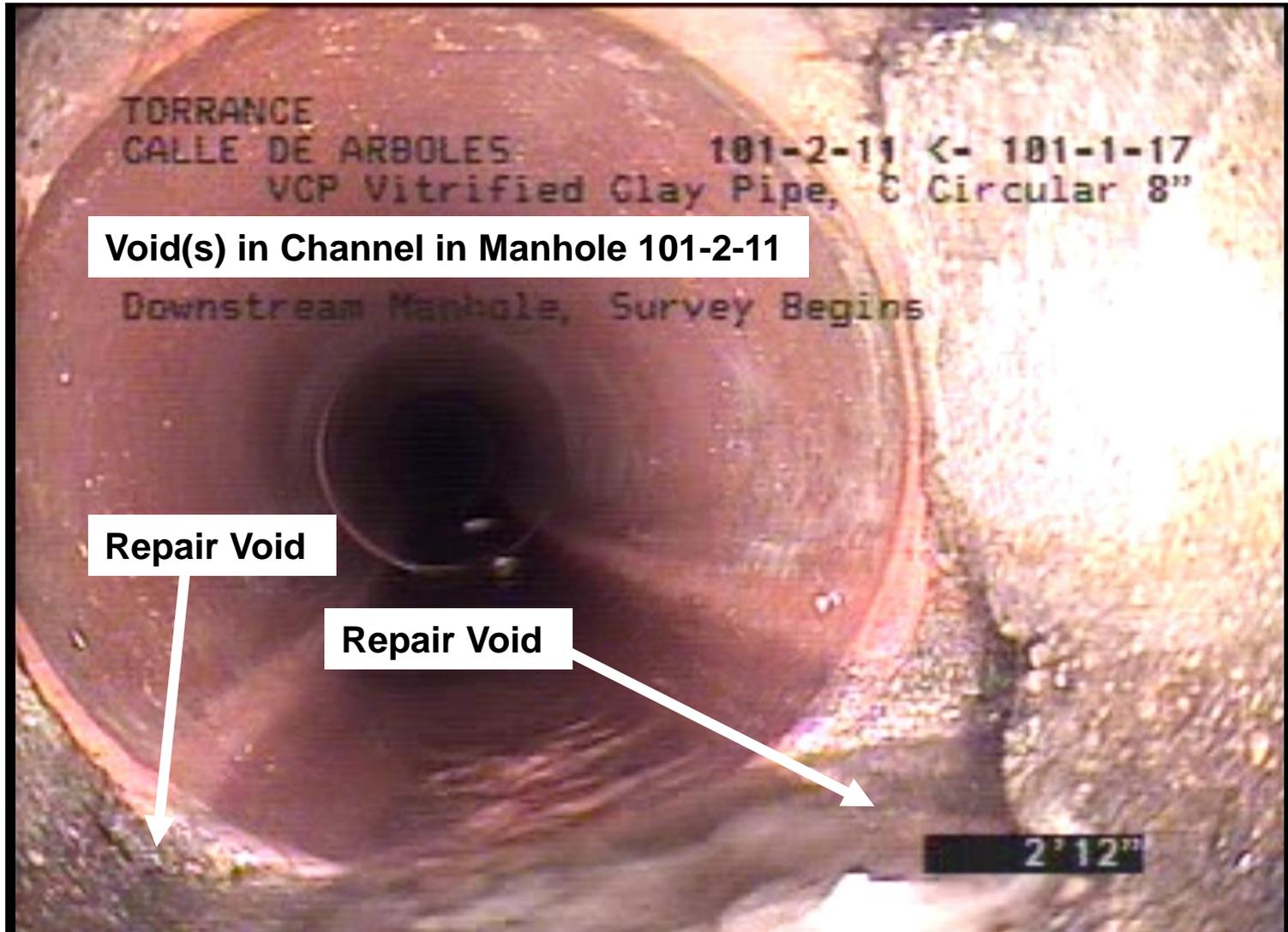
# City Sewer Basemap Sheet 101, Grid 1 and 2



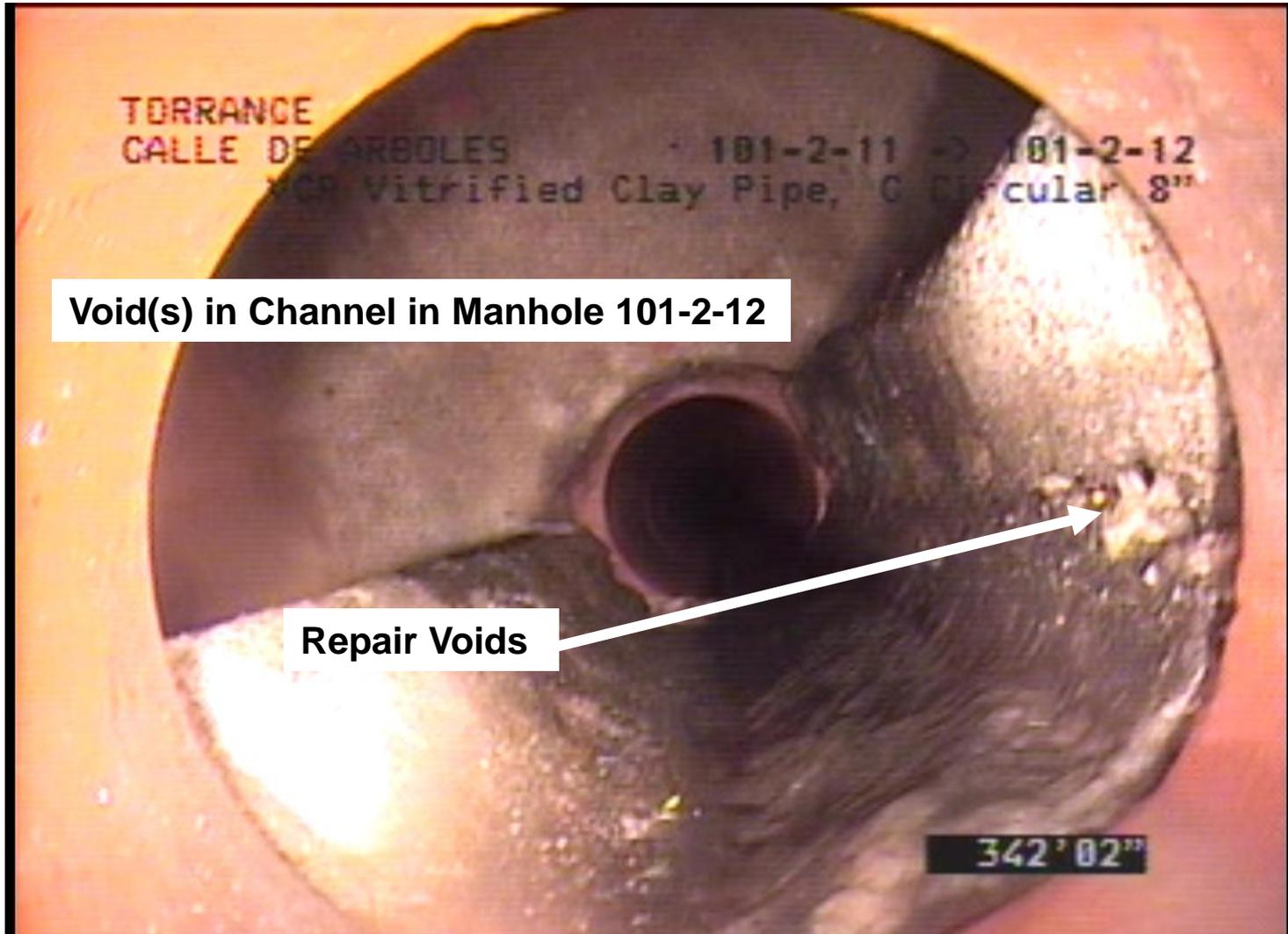
City Sewer Basemap Sheet 101, Grid 1



City Sewer Basemap Sheet 101, Grid 2



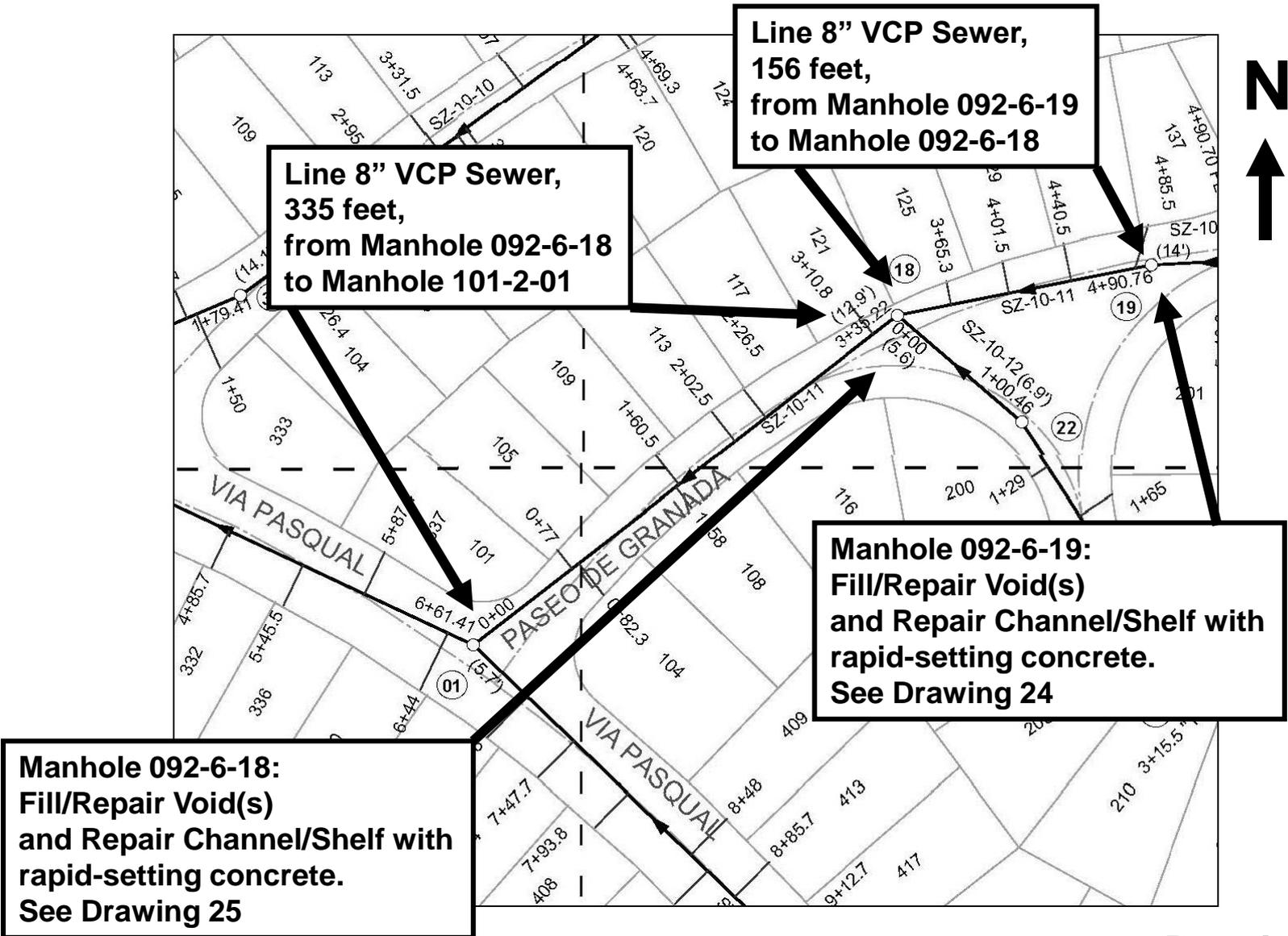
City Sewer Basemap Sheet 101, Grid 2



**Void(s) in Channel in Manhole 101-2-12**

**Repair Voids**

City Sewer Basemap Sheet 92, Grid 6 & Sheet 101 Grid 2

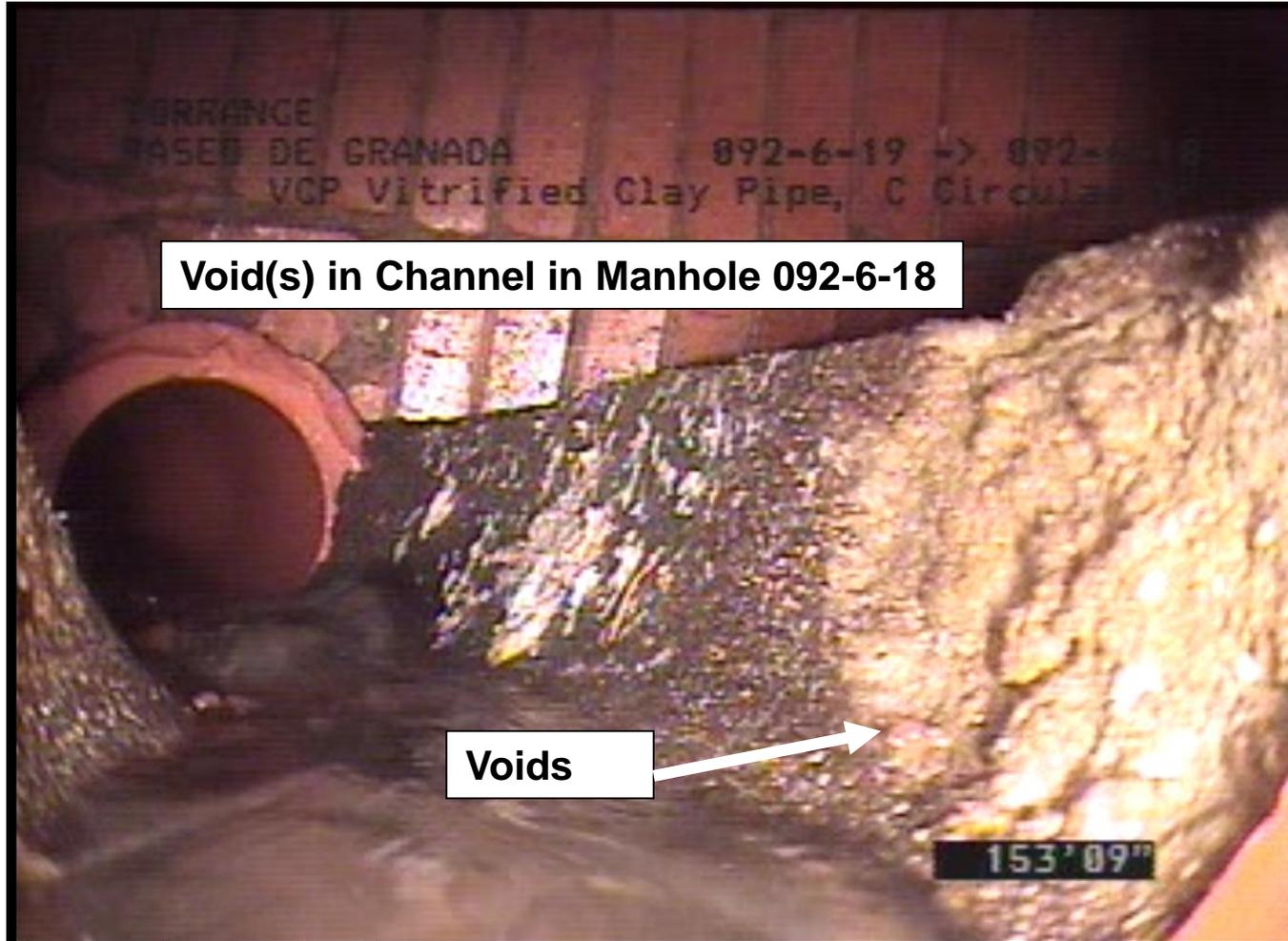


City Sewer Basemap Sheet 92, Grid 6

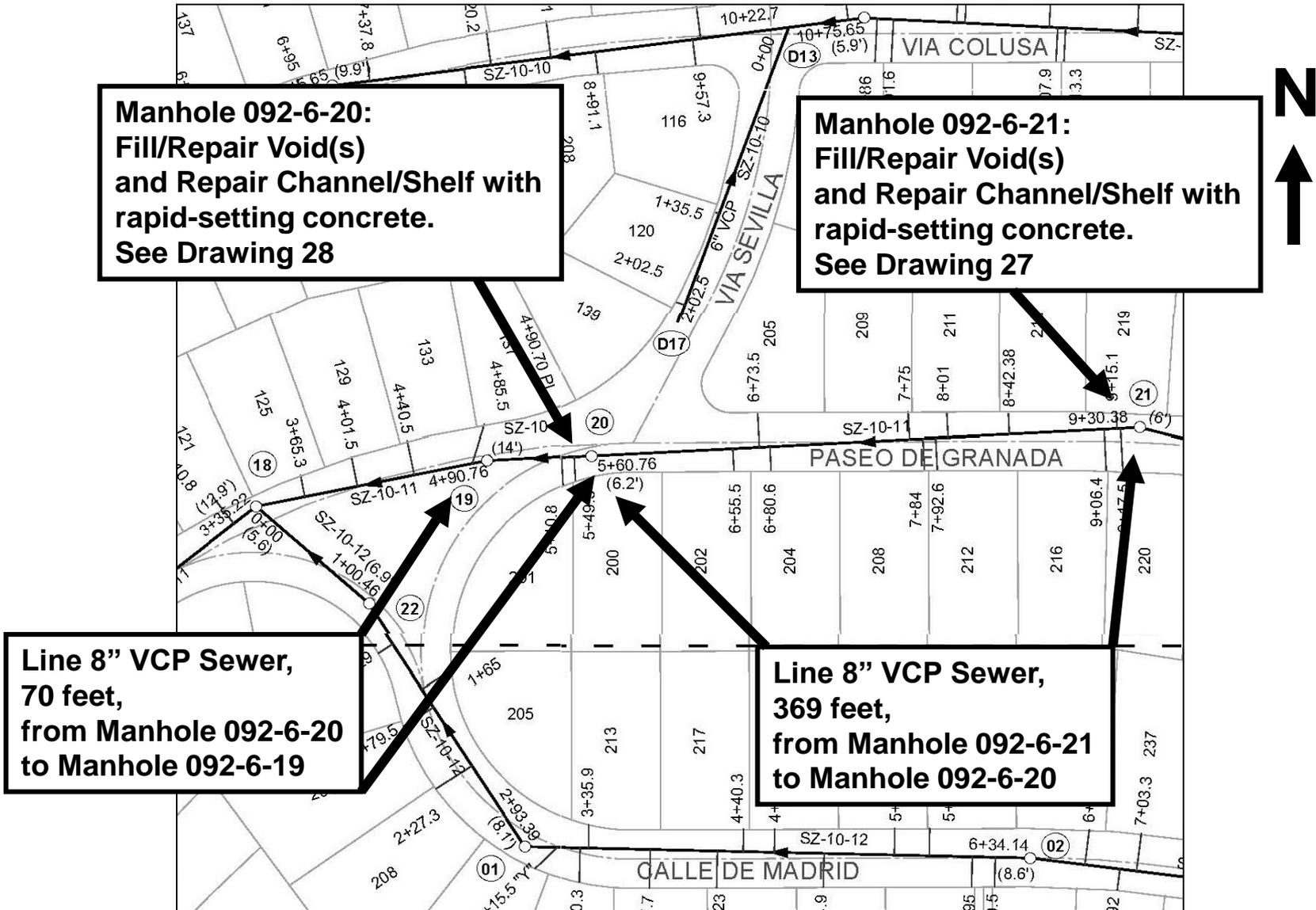


Drawing 24

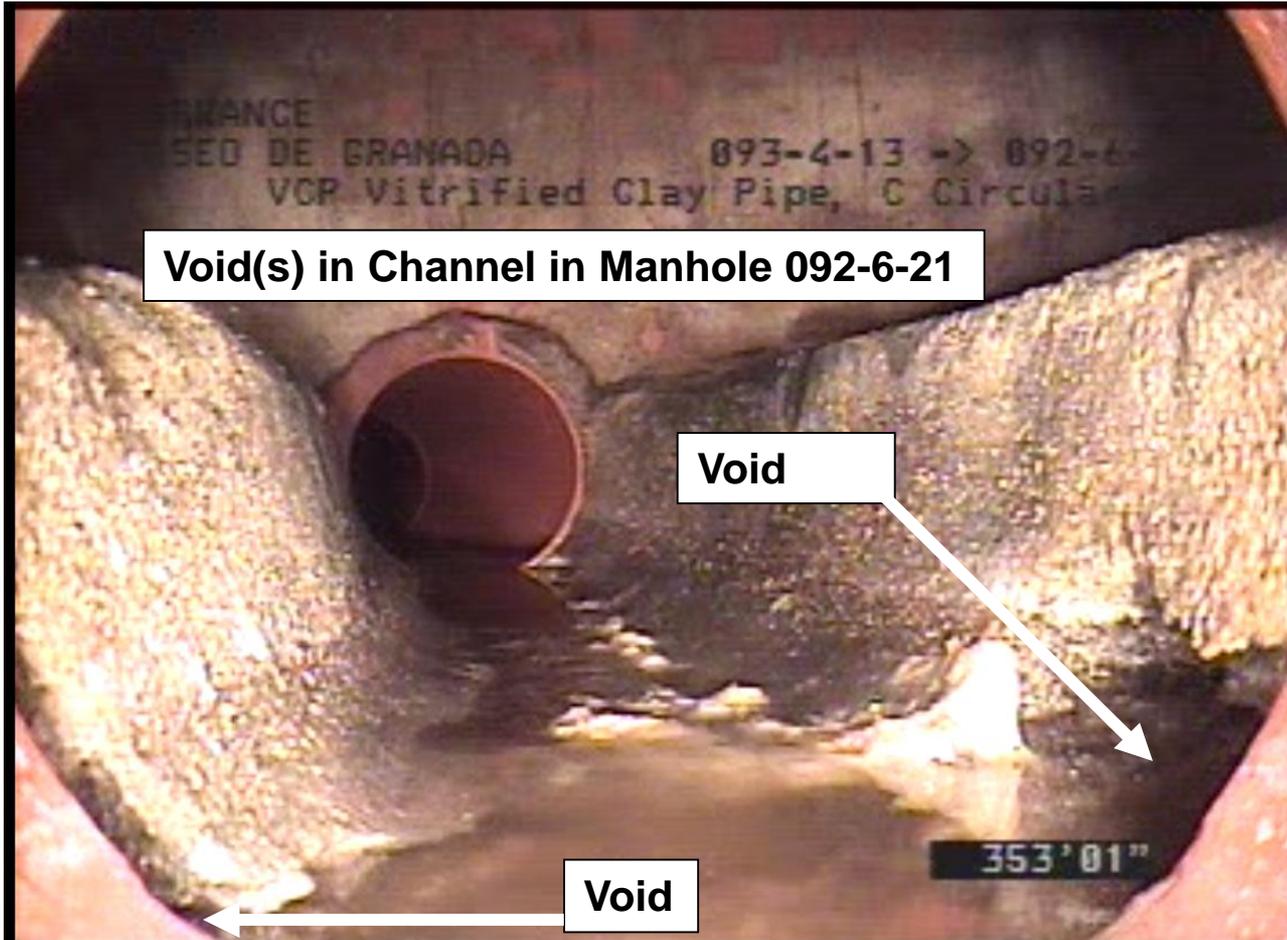
City Sewer Basemap Sheet 92, Grid 6



# City Sewer Basemap Sheet 92, Grid 6



City Sewer Basemap Sheet 92, Grid 6



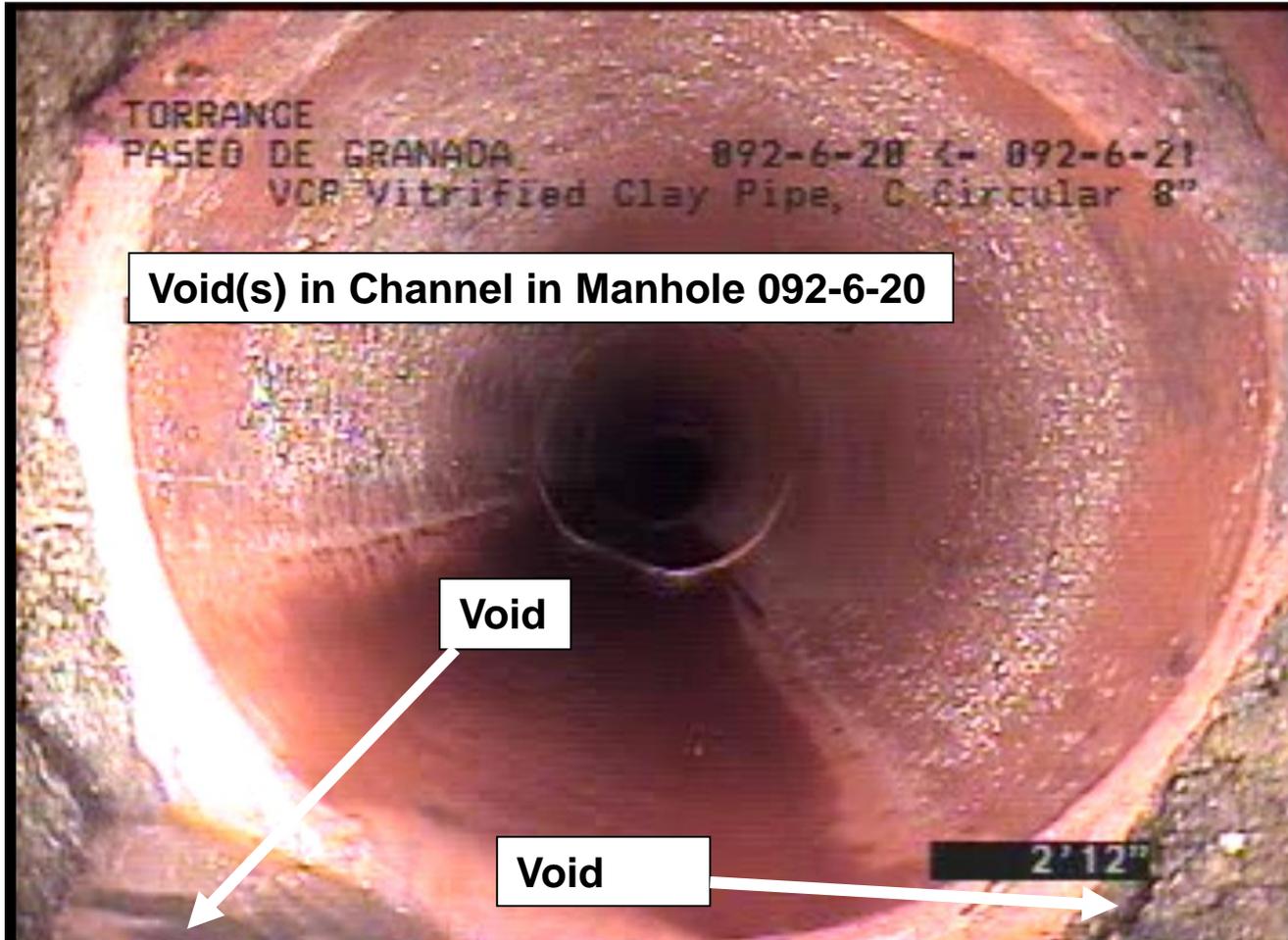
Void(s) in Channel in Manhole 092-6-21

Void

Void

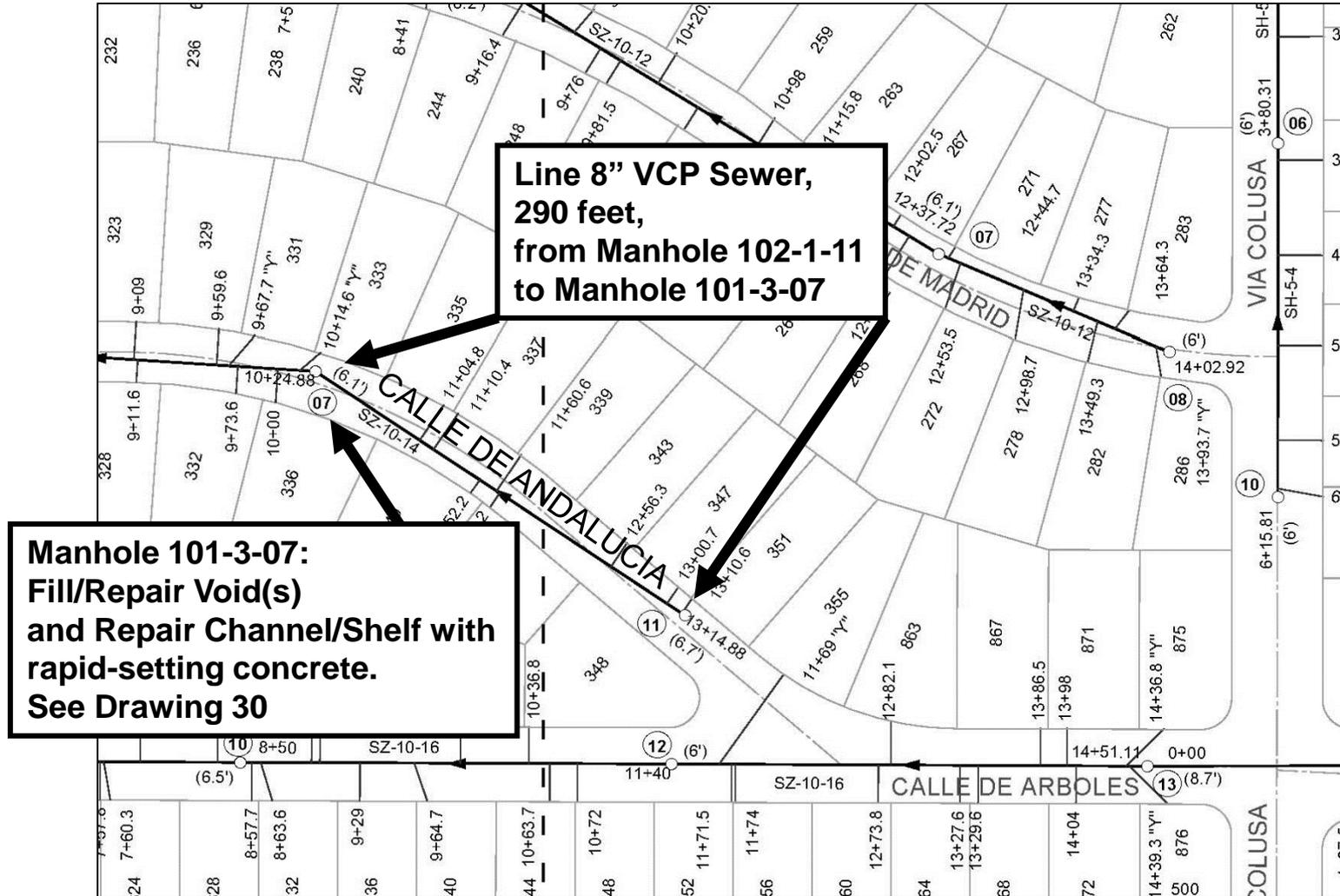
353'01"

City Sewer Basemap Sheet 92, Grid 6



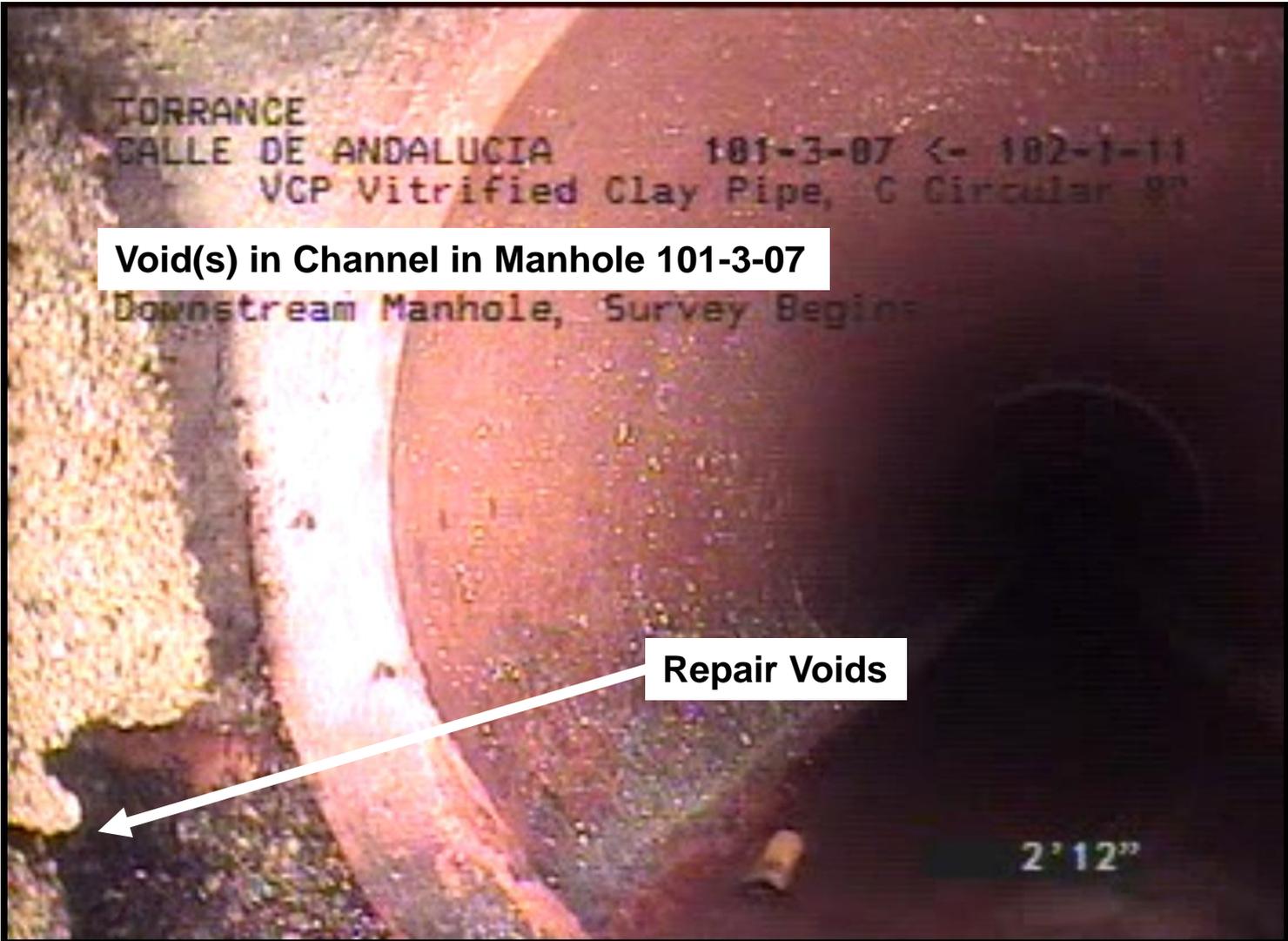
Drawing 28

City Sewer Basemap Sheet 101, Grid 3 and Sheet 102, Grid 1

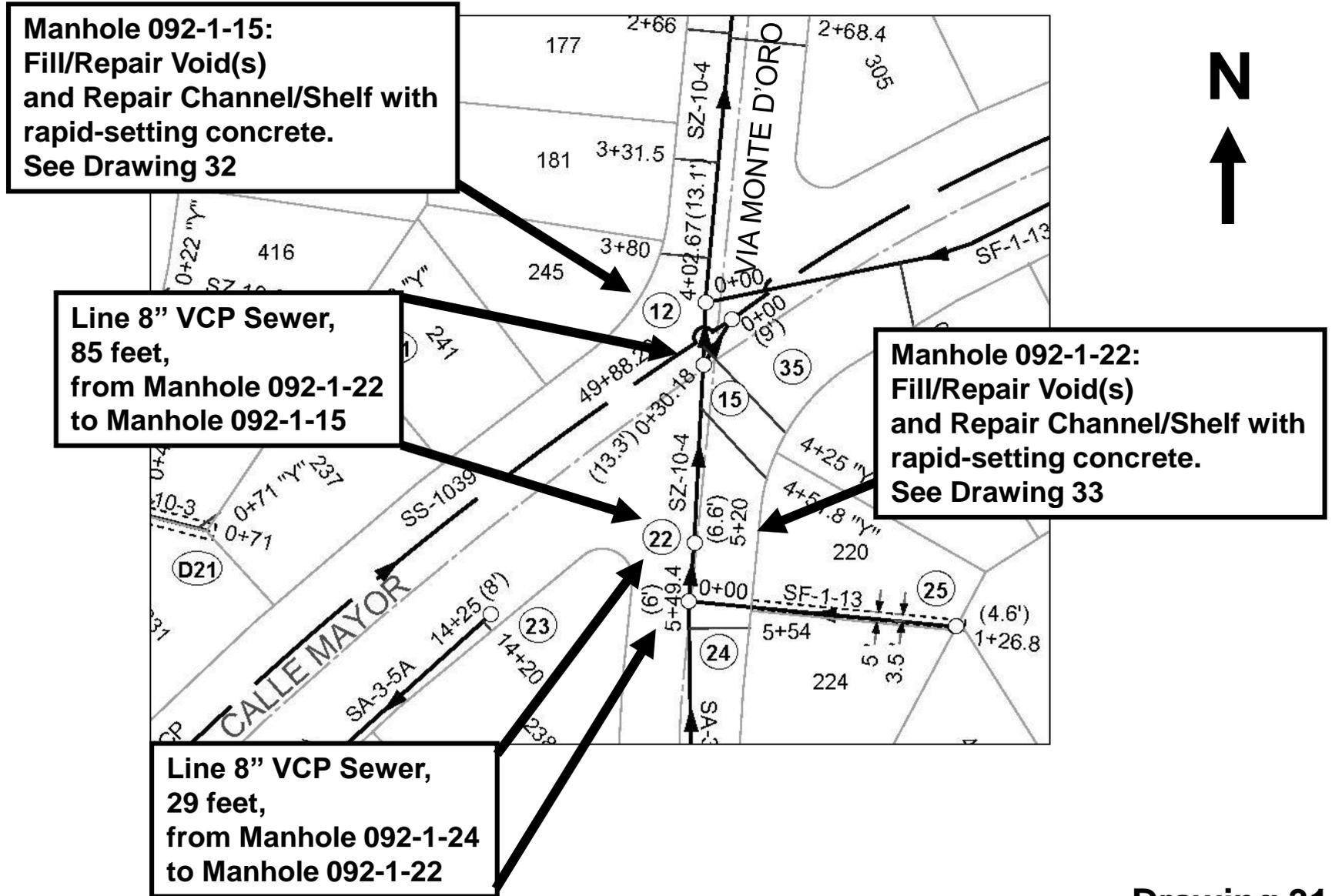


**Manhole 101-3-07:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 30**

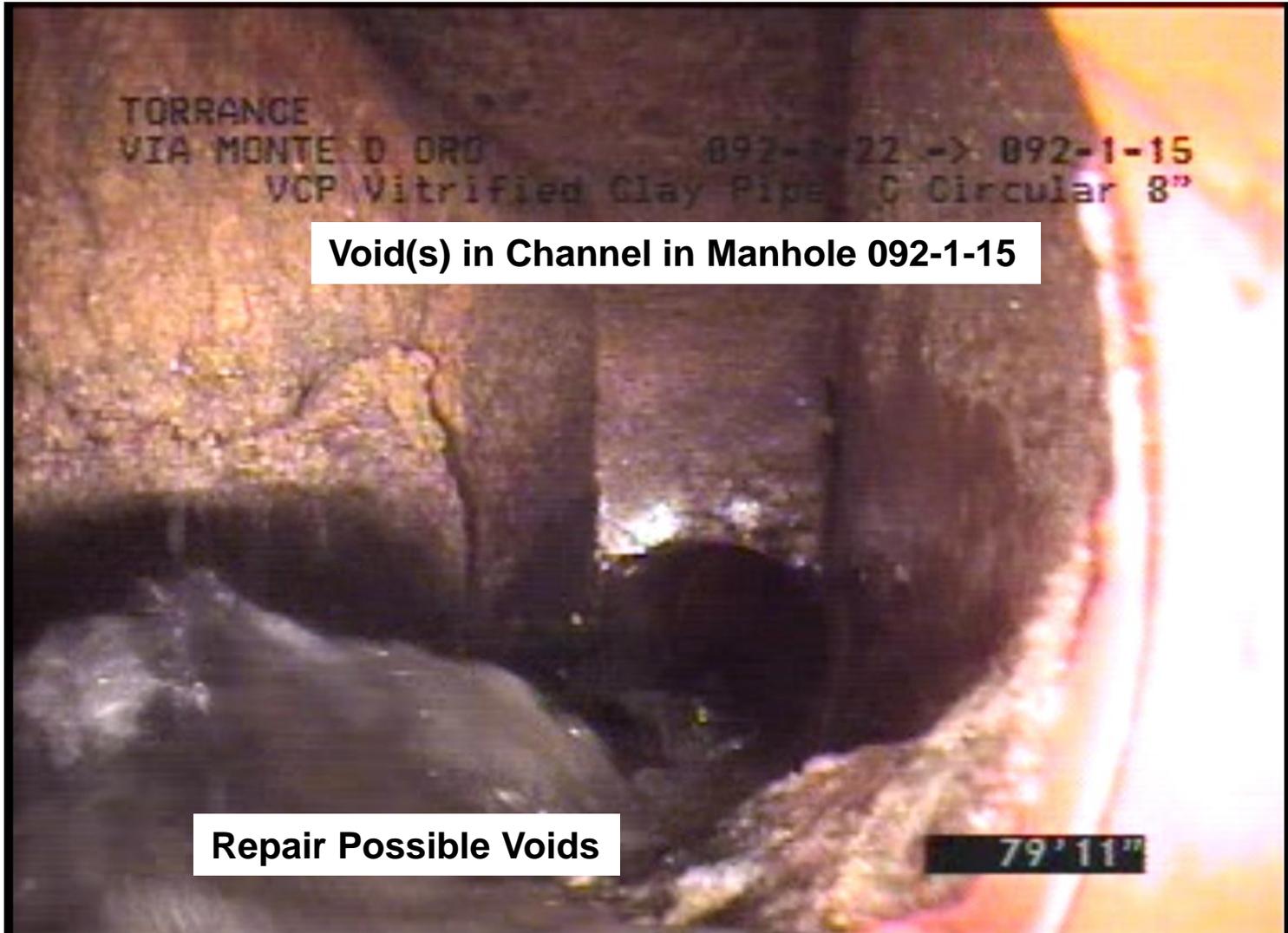
City Sewer Basemap Sheet 101, Grid 3



# City Sewer Basemap Sheet 92, Grid 1



City Sewer Basemap Sheet 92, Grid 1



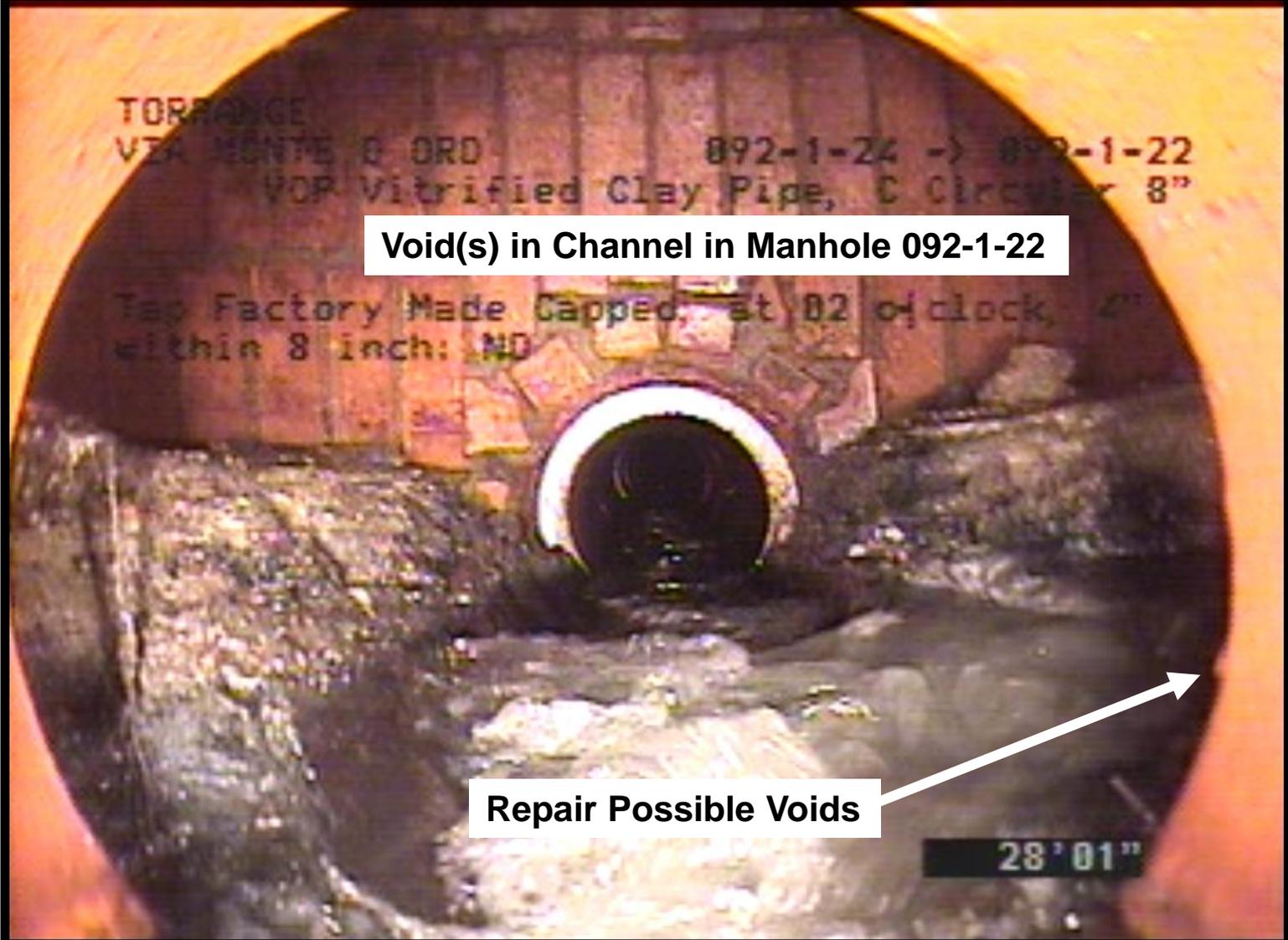
TORRANCE  
VIA MONTE D ORO 092-1-22 -> 092-1-15  
VCP Vitrified Clay Pipe C Circular 8"

**Void(s) in Channel in Manhole 092-1-15**

**Repair Possible Voids**

79' 11"

City Sewer Basemap Sheet 92, Grid 1



Drawing 33

# City Sewer Basemap Sheet 92, Grid 1

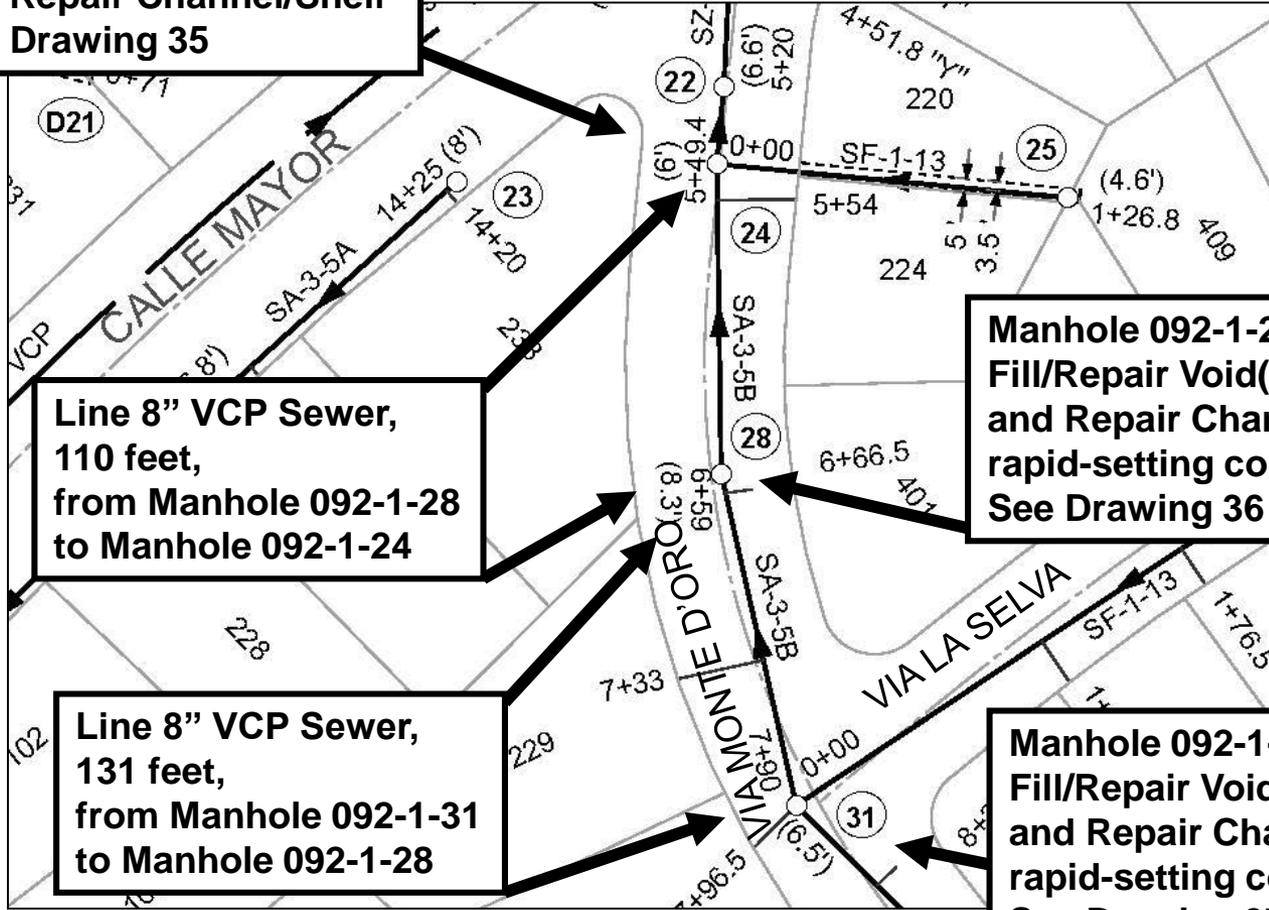
**Manhole 092-1-24:  
Fill/Repair Void(s)  
and Repair Channel/Shelf  
See Drawing 35**

**Line 8" VCP Sewer,  
110 feet,  
from Manhole 092-1-28  
to Manhole 092-1-24**

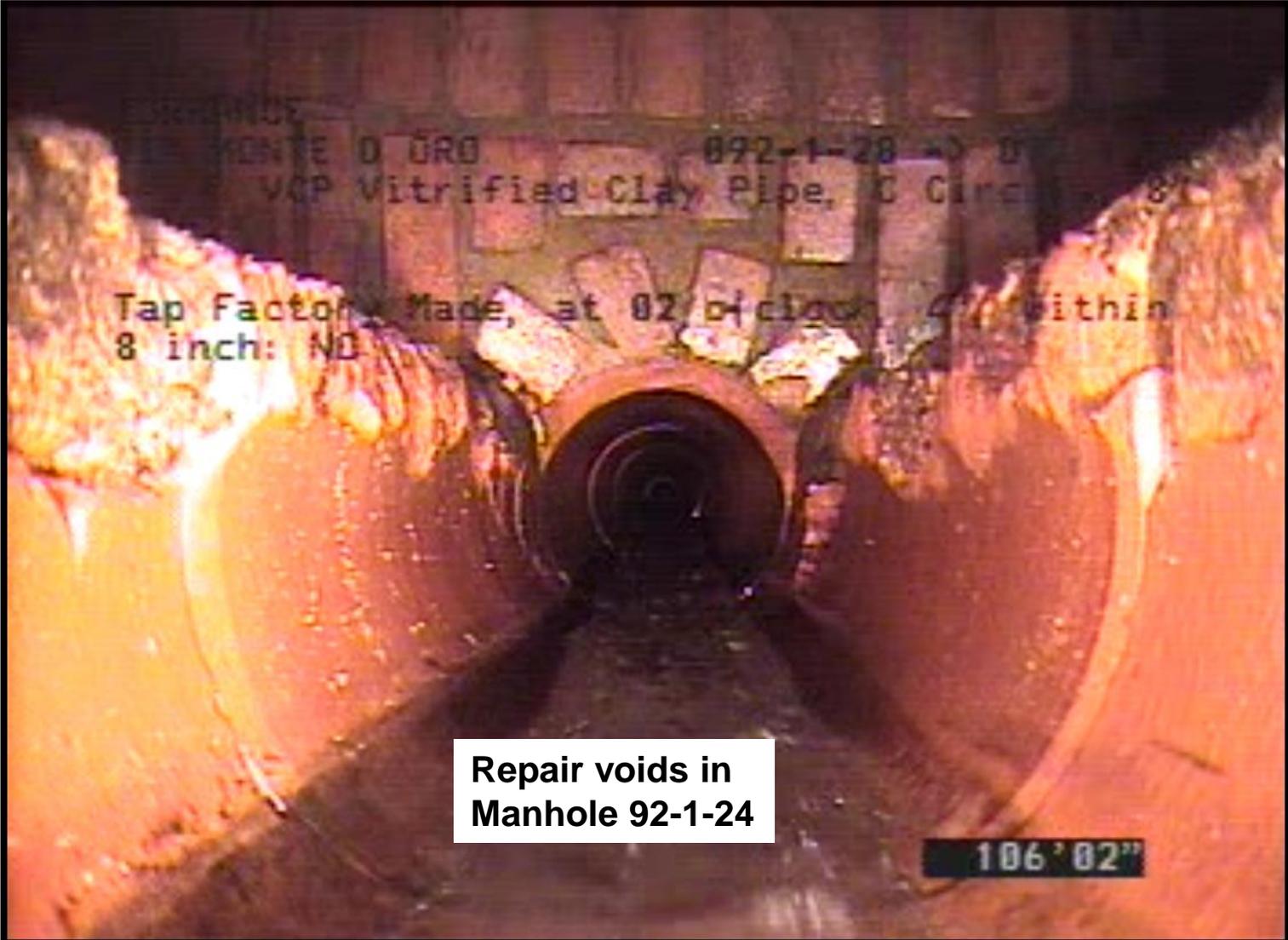
**Line 8" VCP Sewer,  
131 feet,  
from Manhole 092-1-31  
to Manhole 092-1-28**

**Manhole 092-1-28:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 36**

**Manhole 092-1-31:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 37**



City Sewer Basemap Sheet 92, Grid 1

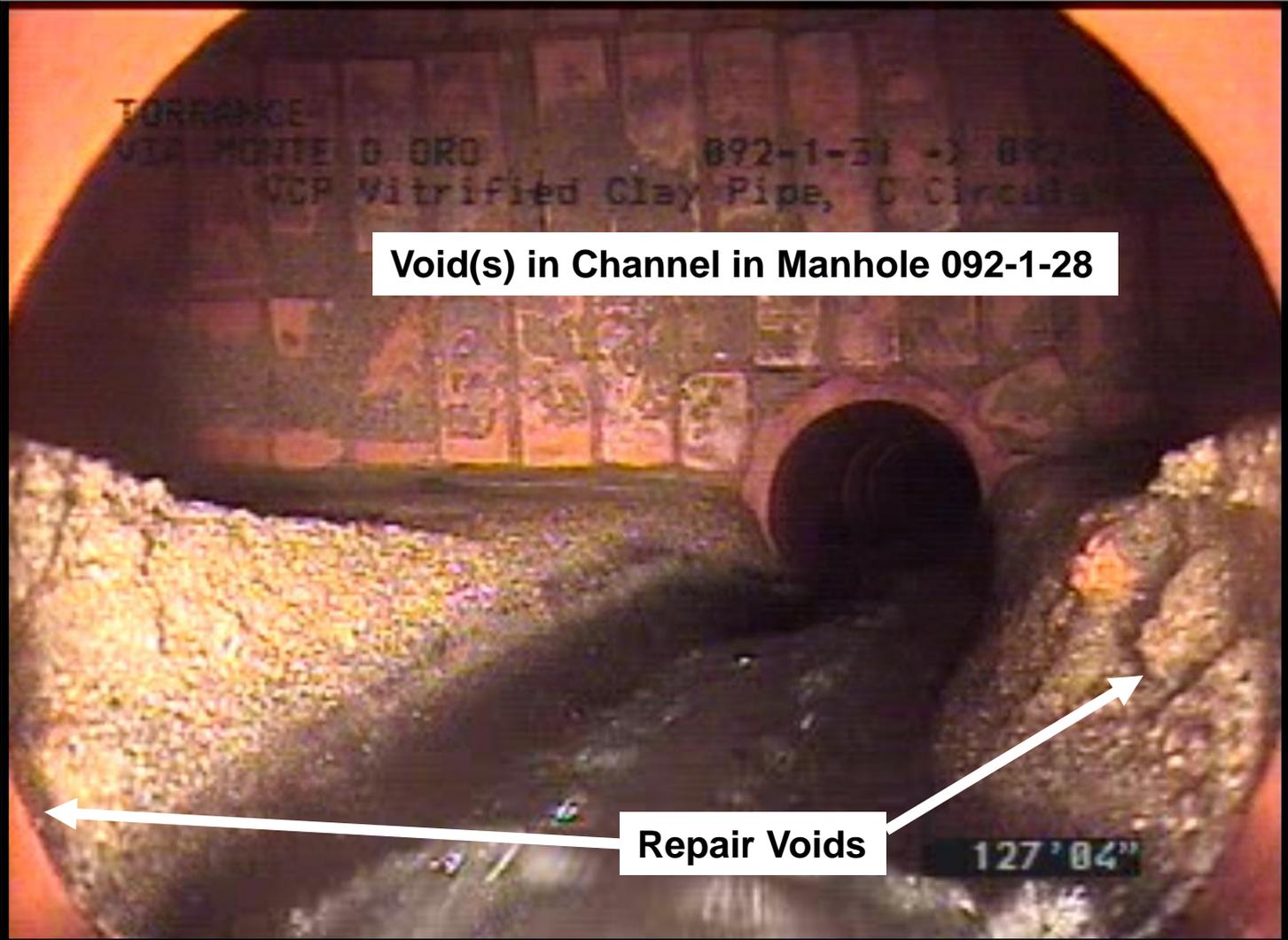


MANHOLE  
MANHOLE 0 090 092-1-28 40 0  
VCP Vitrified Clay Pipe, 8 Circ 8  
Tap Factory Made, at 02 o'clock 4' within  
8 inch: NO

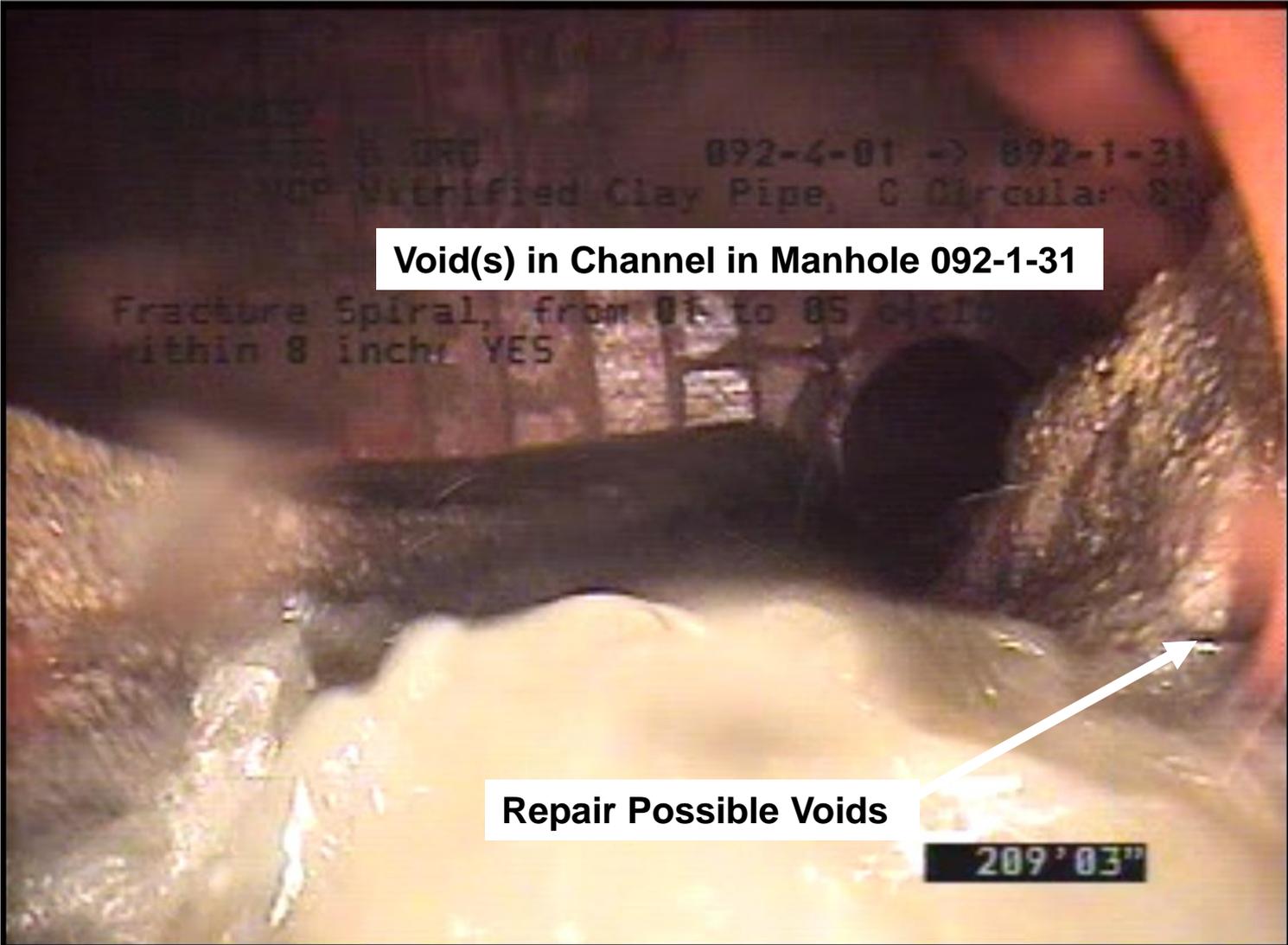
Repair voids in  
Manhole 92-1-24

106' 02"

City Sewer Basemap Sheet 92, Grid 1



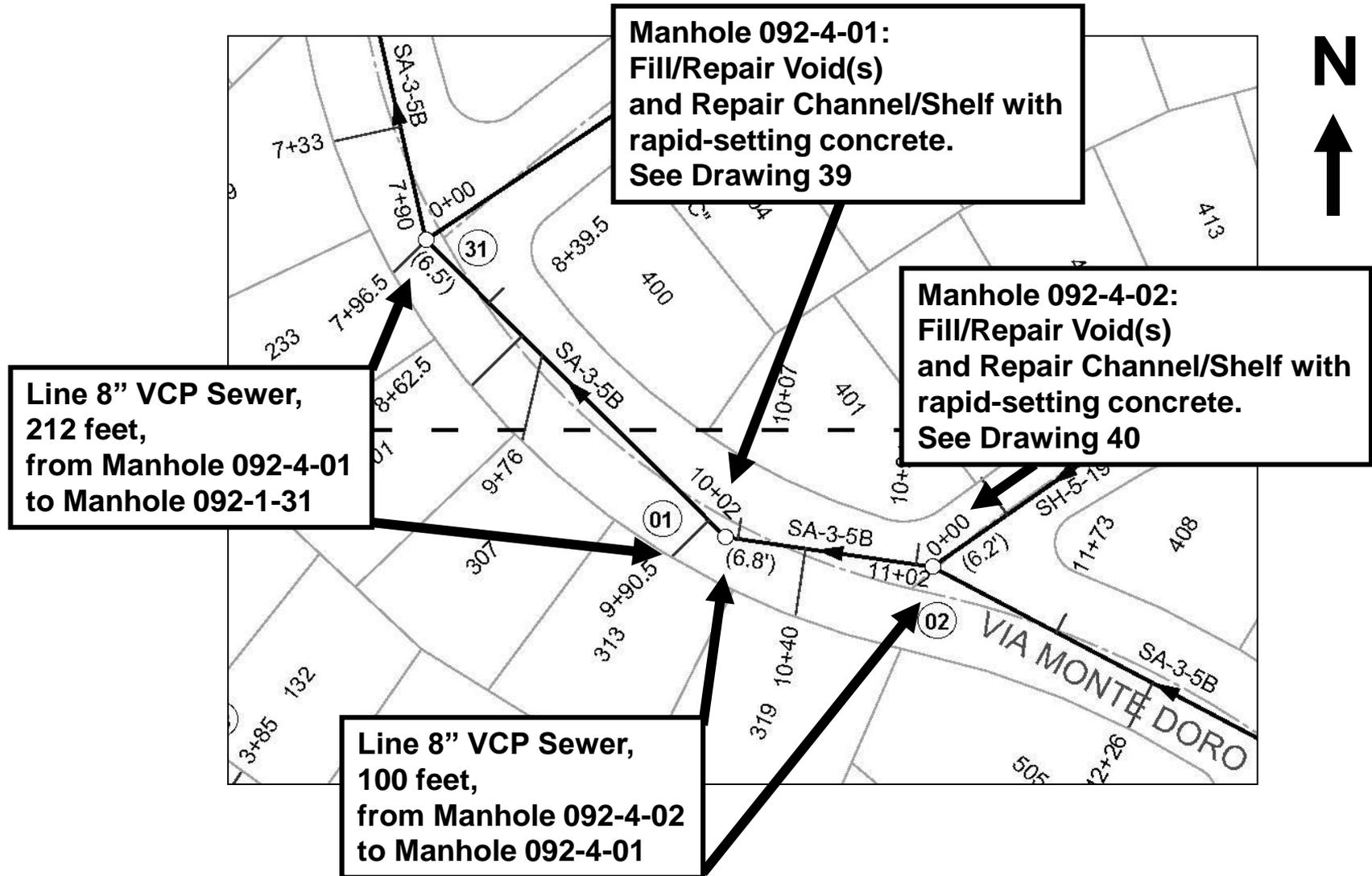
City Sewer Basemap Sheet 92, Grid 1



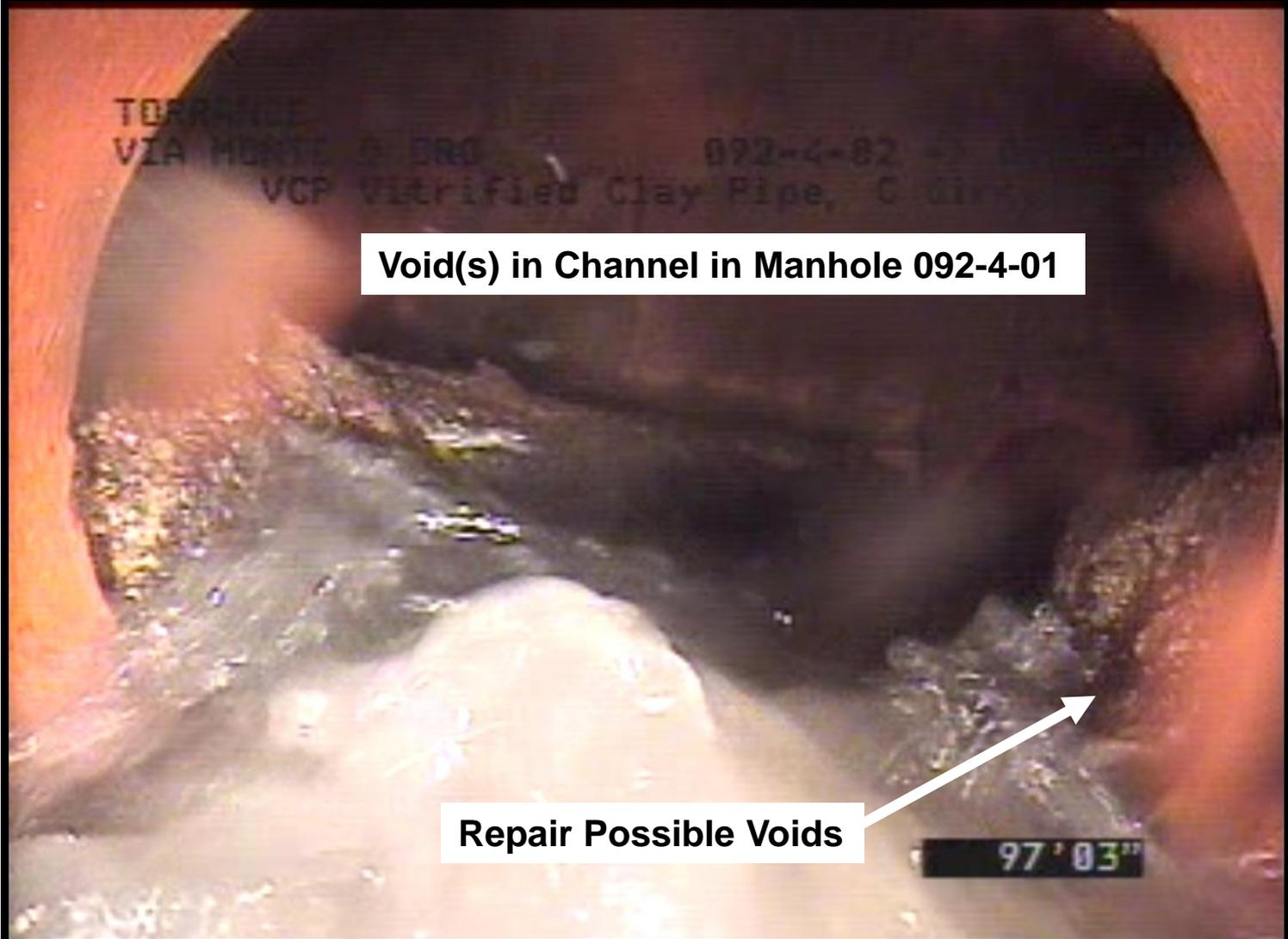
**Void(s) in Channel in Manhole 092-1-31**

**Repair Possible Voids**

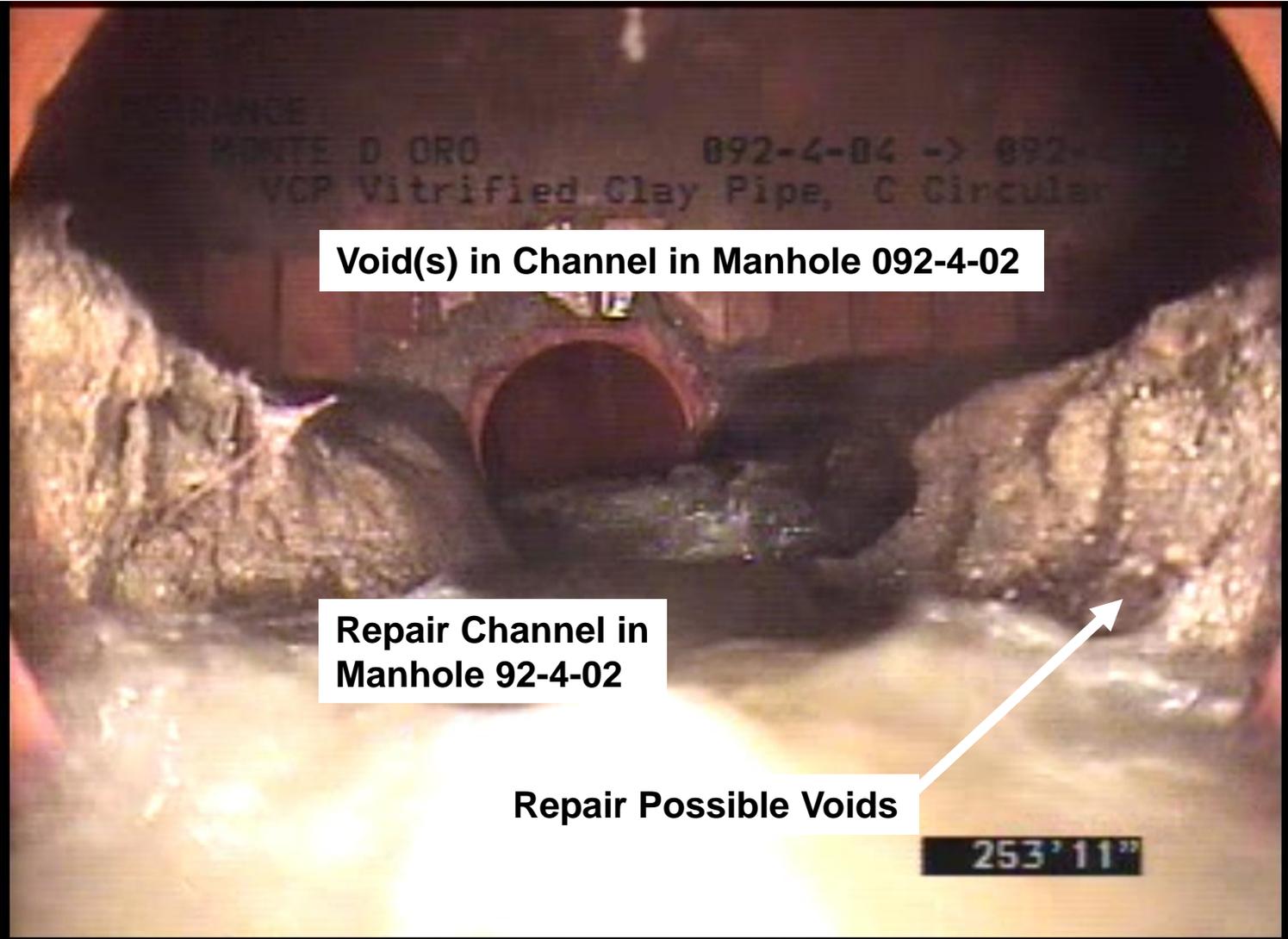
# City Sewer Basemap Sheet 92, Grid 1 & 4



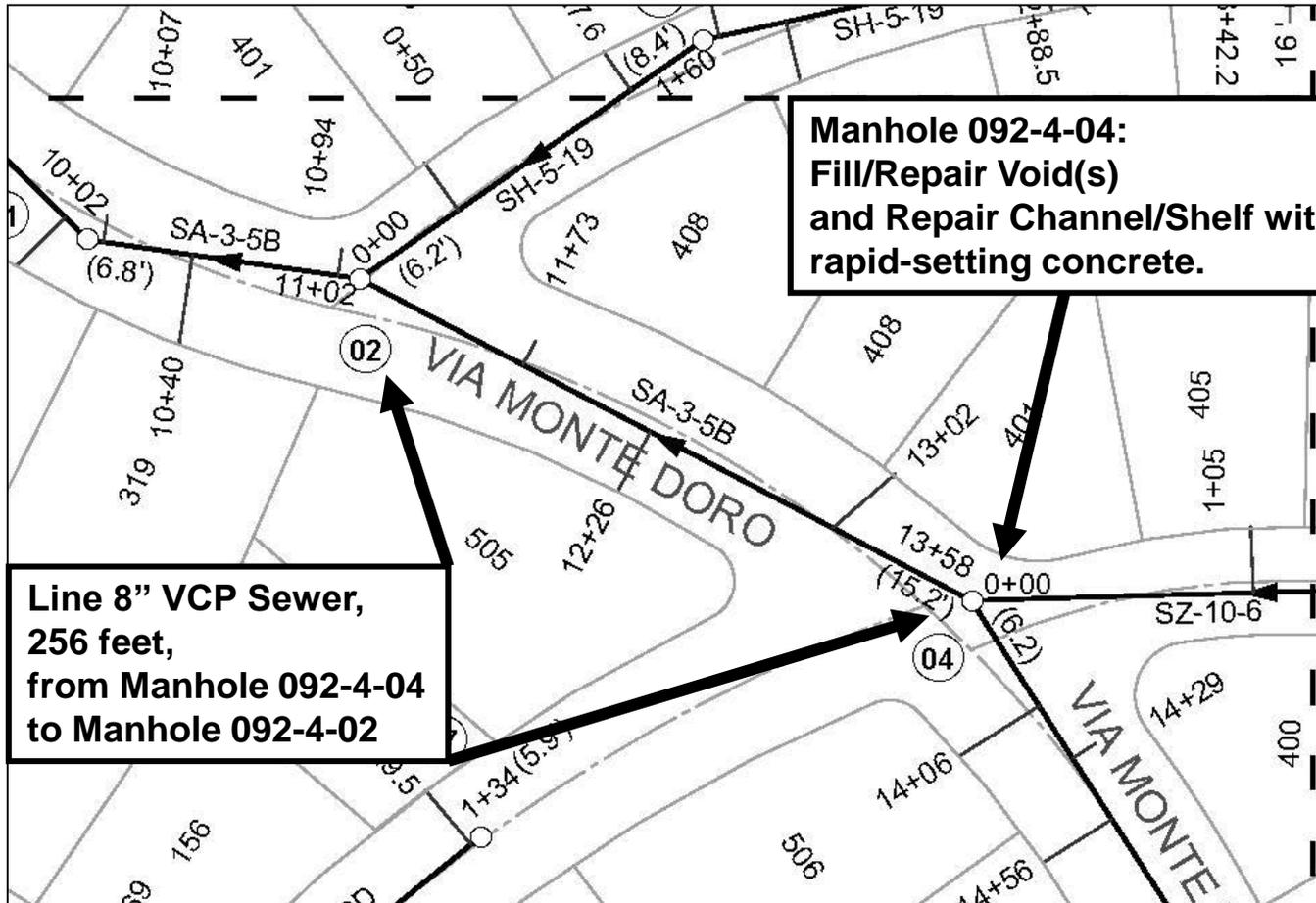
City Sewer Basemap Sheet 92, Grid 4



City Sewer Basemap Sheet 92, Grid 4



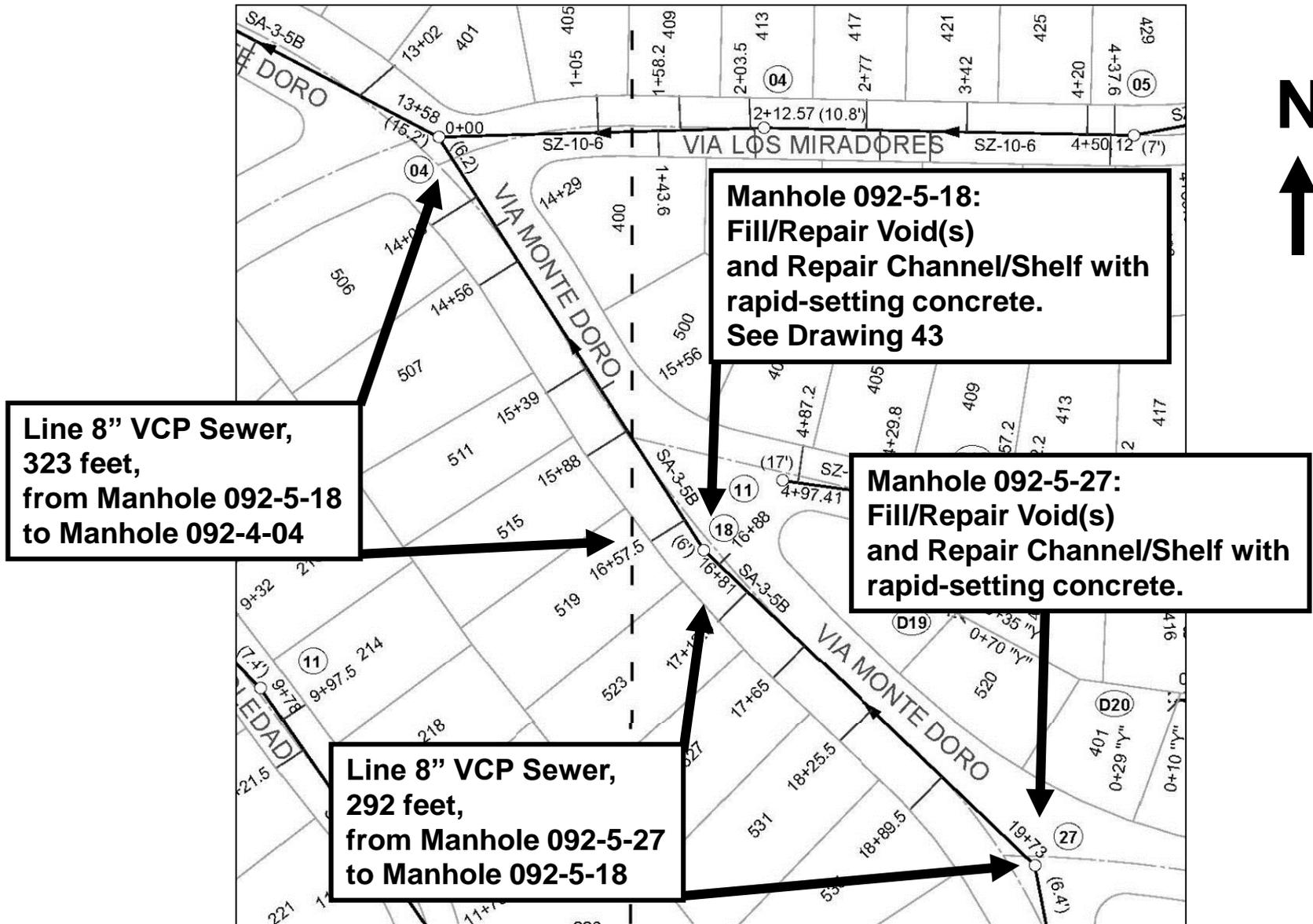
# City Sewer Basemap Sheet 92, Grid 4



**Manhole 092-4-04:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.**

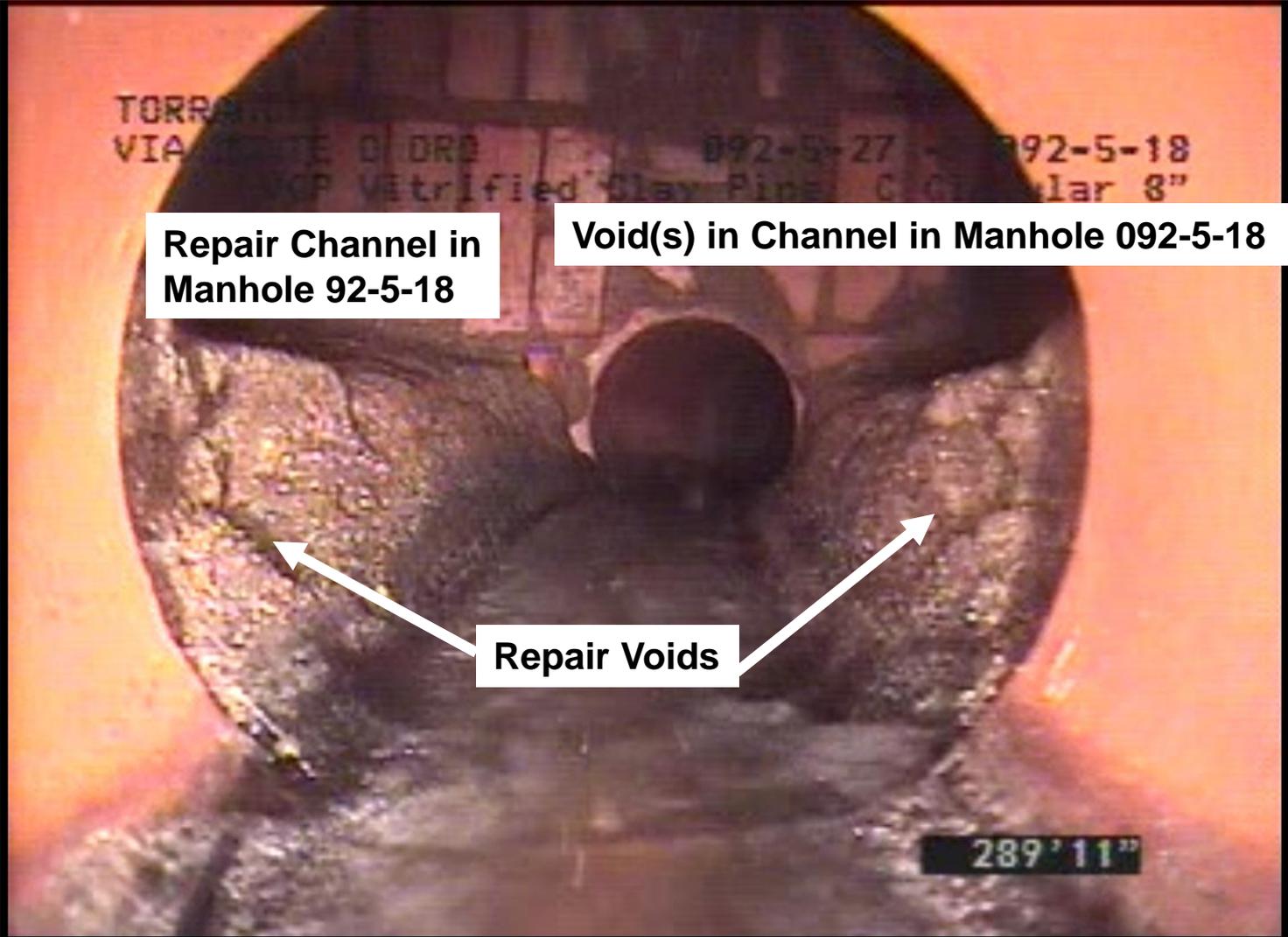
**Line 8" VCP Sewer,  
256 feet,  
from Manhole 092-4-04  
to Manhole 092-4-02**

# City Sewer Basemap Sheet 92, Grid 4 & 5



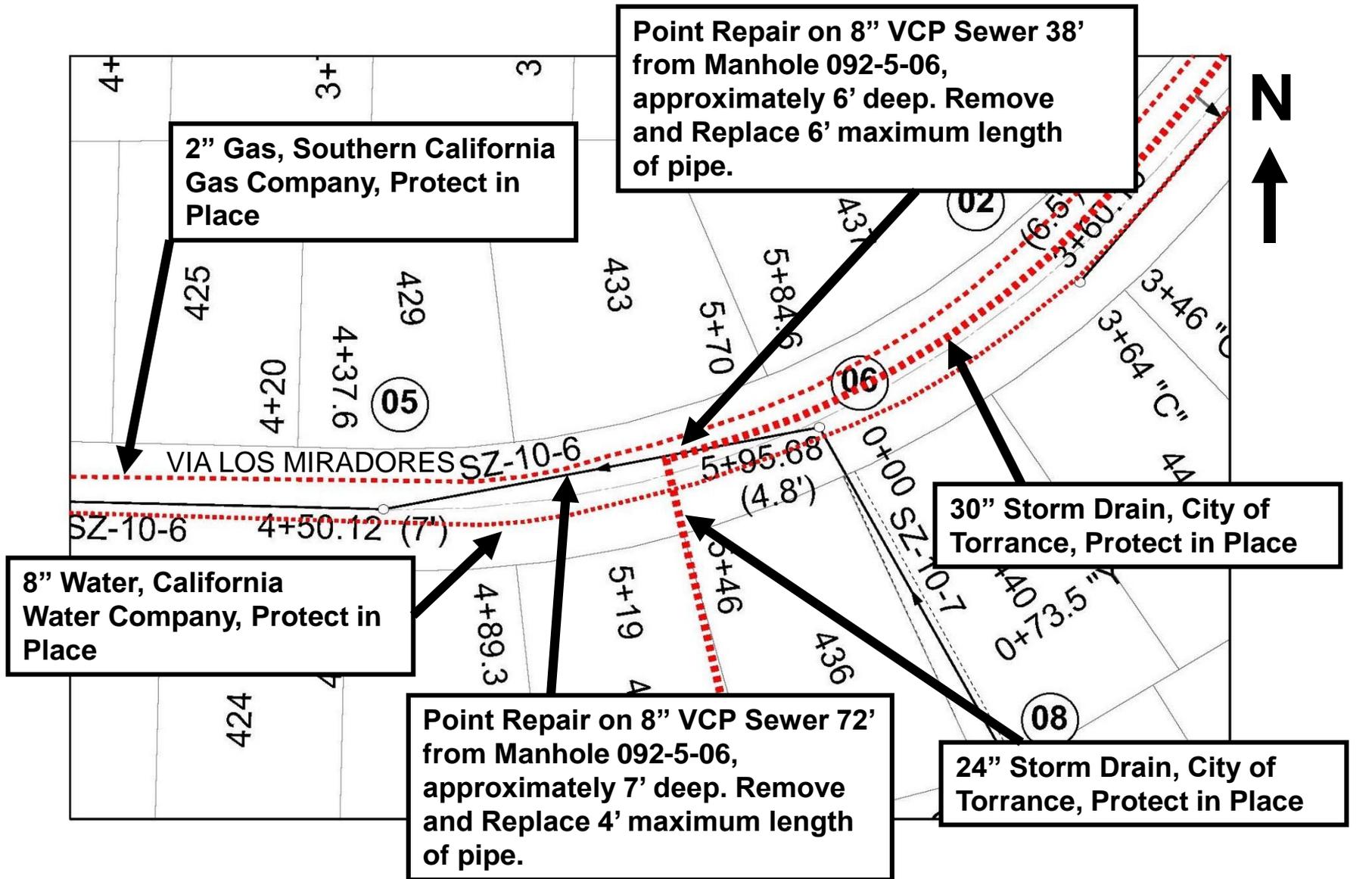
Drawing 42

City Sewer Basemap Sheet 92, Grid 5

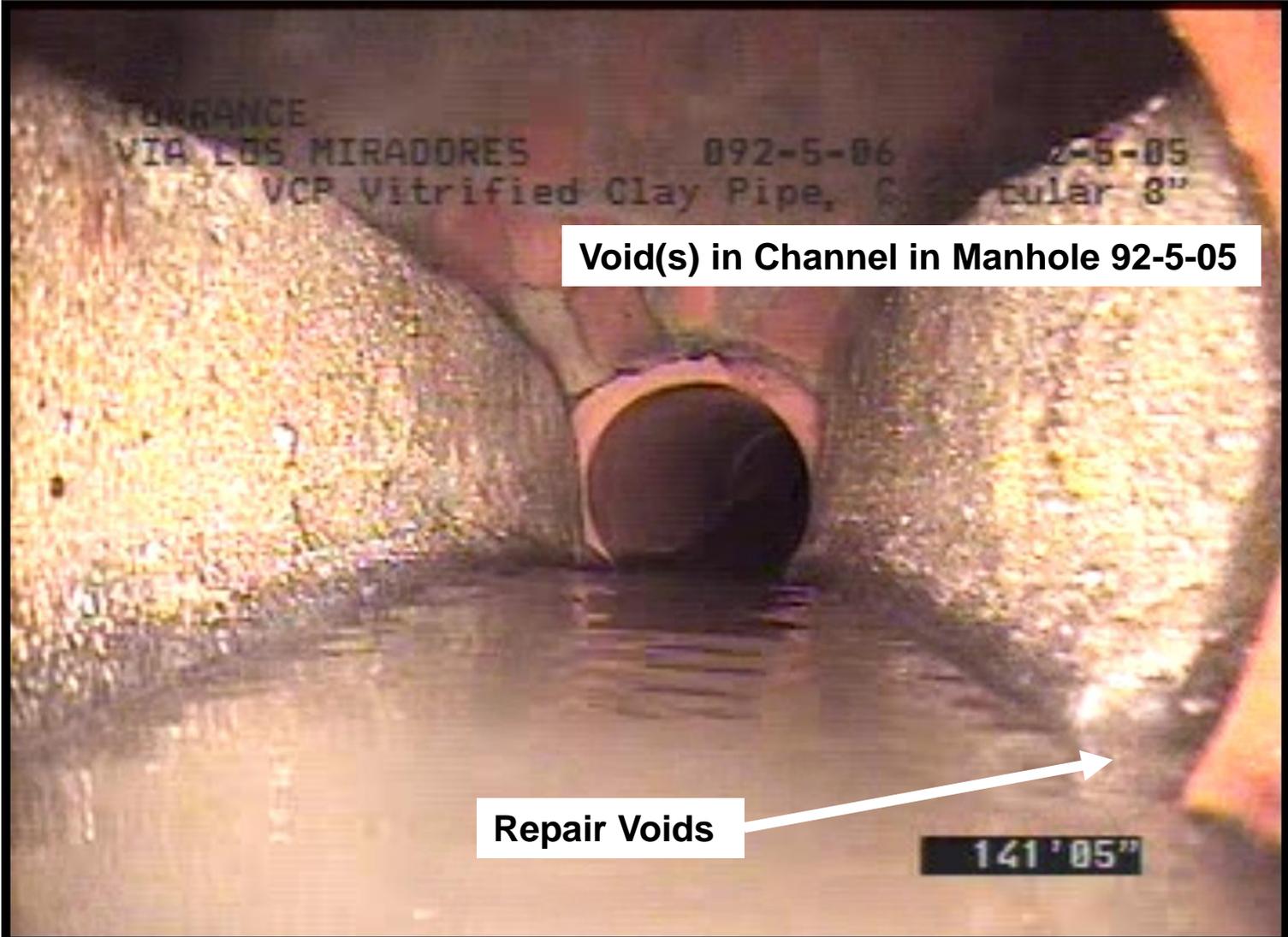




# City Sewer Basemap Sheet 92, Grid 5



City Sewer Basemap Sheet 92, Grid 5



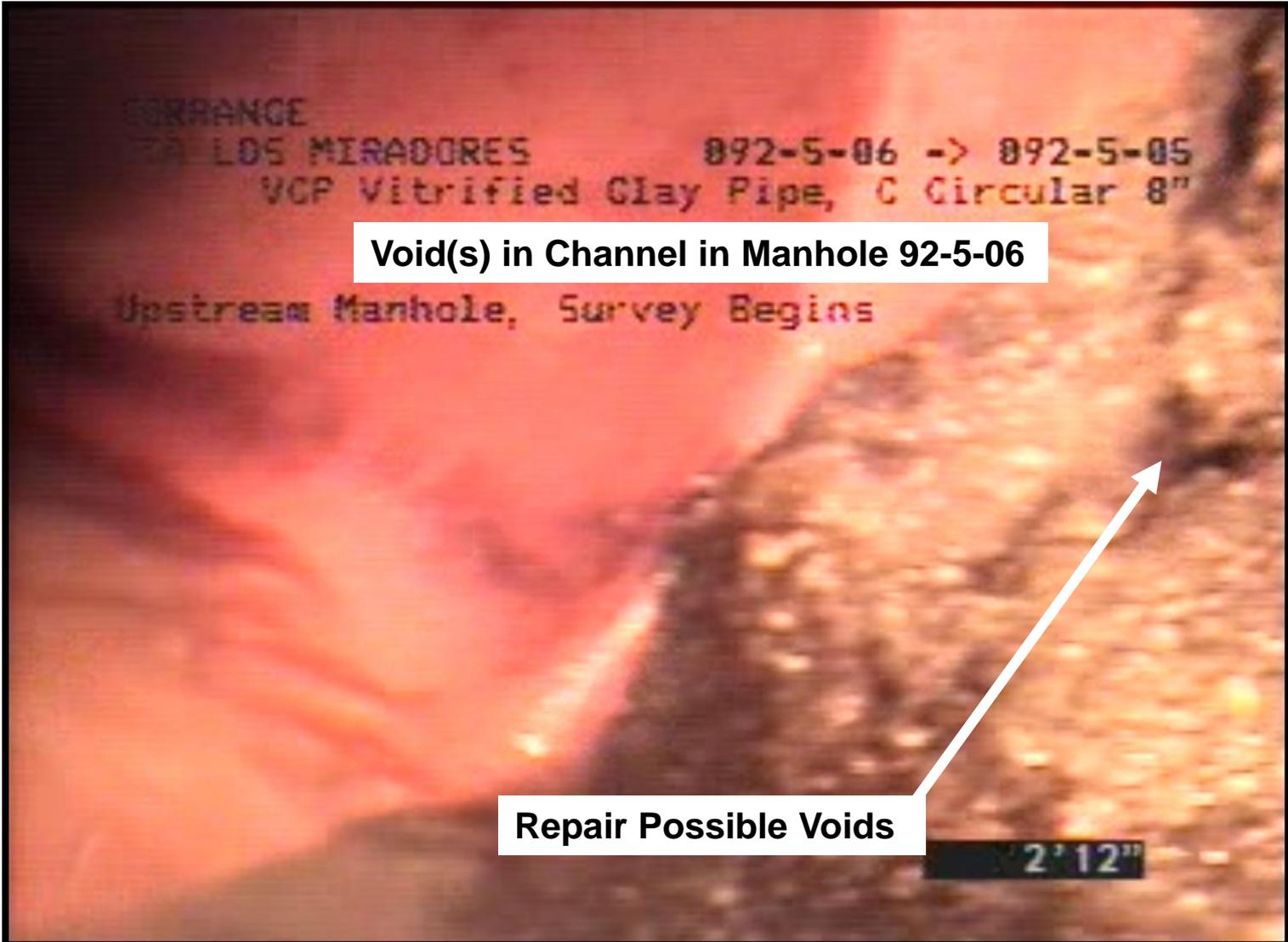
TORRANCE  
VIA LOS MIRADORES 092-5-06 2-5-05  
VCP Vitrified Clay Pipe, Circular 8"

**Void(s) in Channel in Manhole 92-5-05**

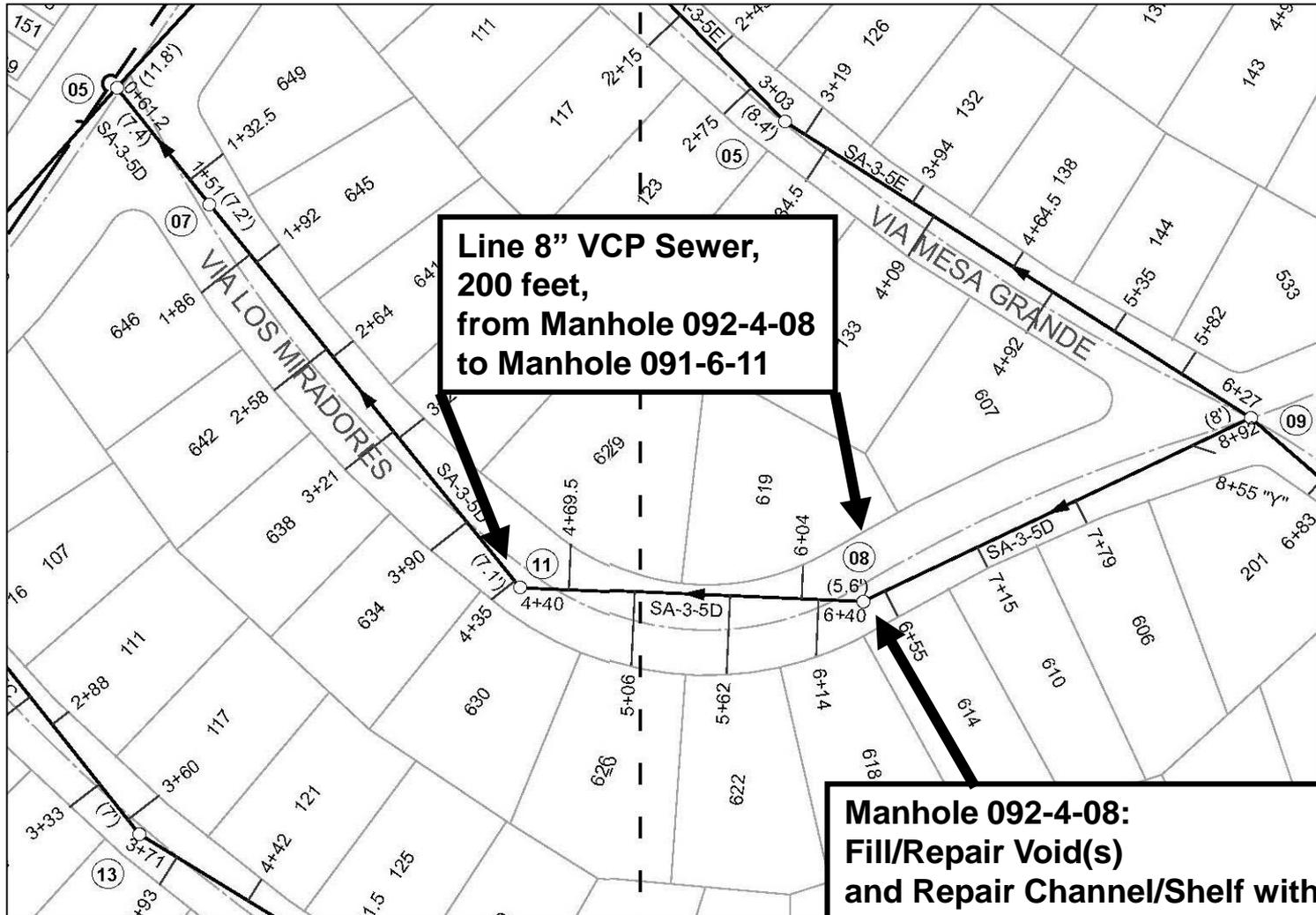
**Repair Voids**

141'05"

City Sewer Basemap Sheet 92, Grid 5



City Sewer Basemap Sheet 91, Grid 6 and  
Sheet 92, Grid 4

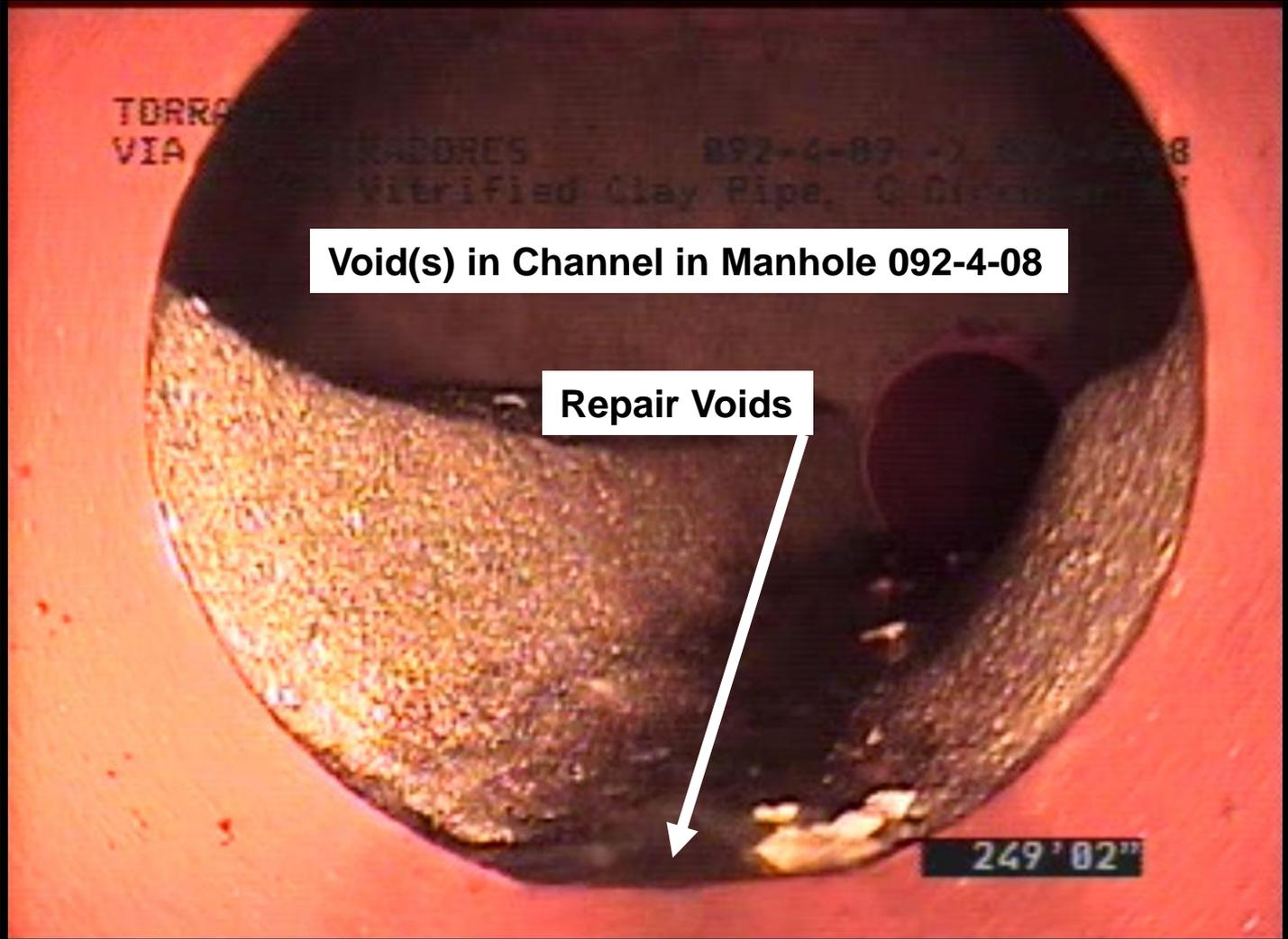


**Line 8" VCP Sewer,  
200 feet,  
from Manhole 092-4-08  
to Manhole 091-6-11**

**Manhole 092-4-08:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 49**

**Drawing 48**

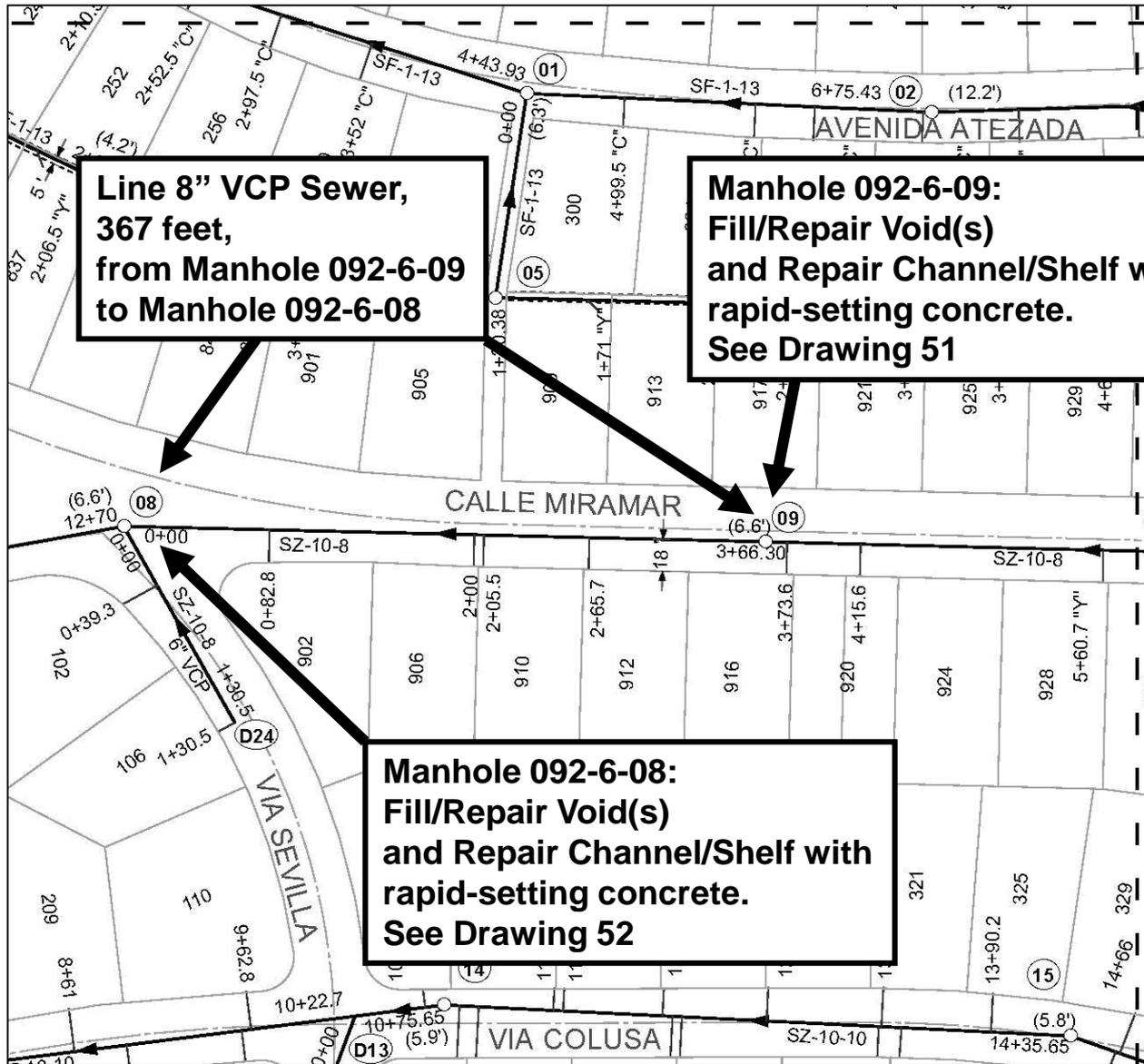
City Sewer Basemap Sheet 92, Grid 4



**Void(s) in Channel in Manhole 092-4-08**

**Repair Voids**

# City Sewer Basemap Sheet 92, Grid 6



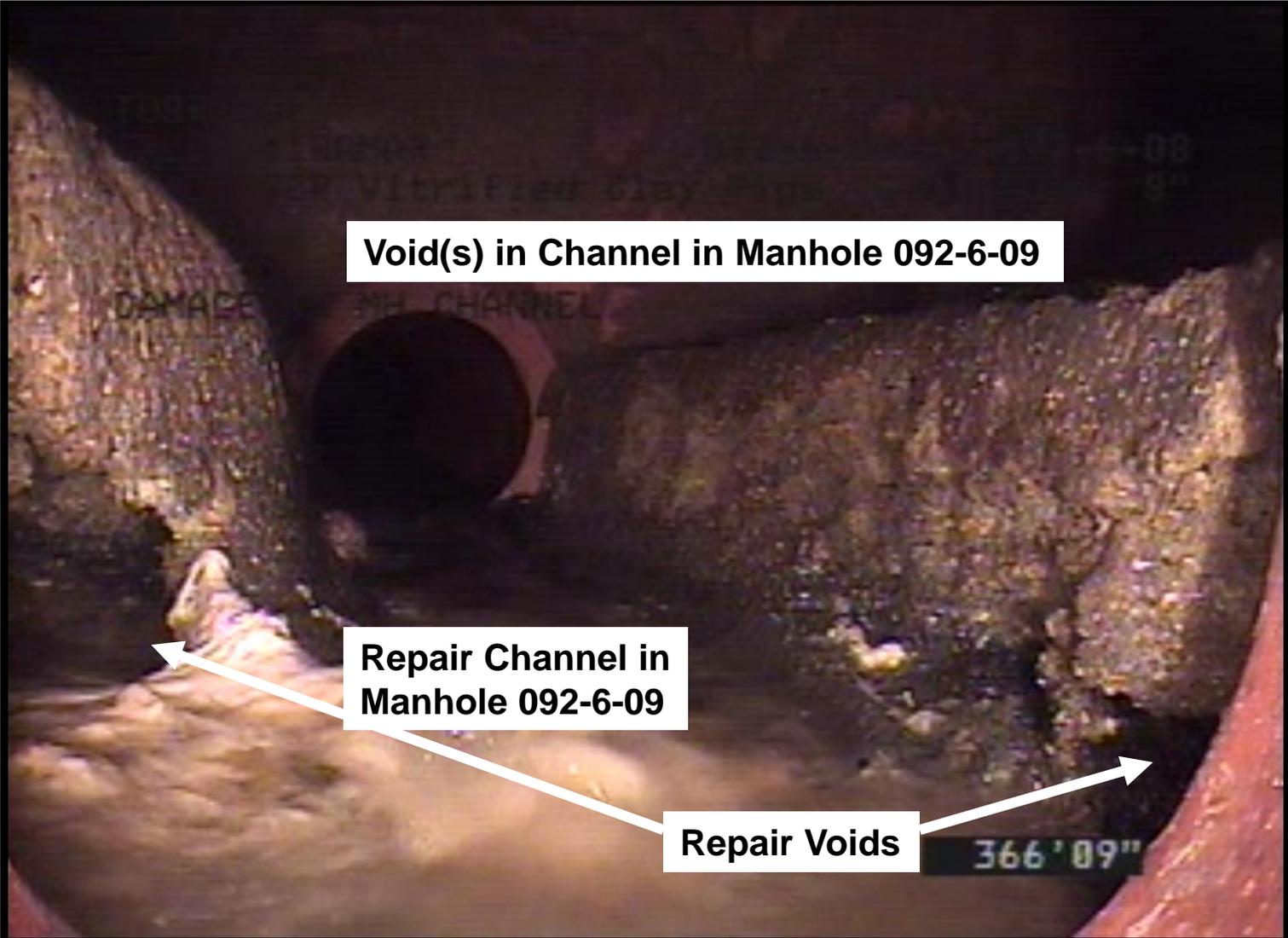
**Line 8" VCP Sewer,  
367 feet,  
from Manhole 092-6-09  
to Manhole 092-6-08**

**Manhole 092-6-09:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 51**

**Manhole 092-6-08:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 52**



City Sewer Basemap Sheet 92, Grid 6



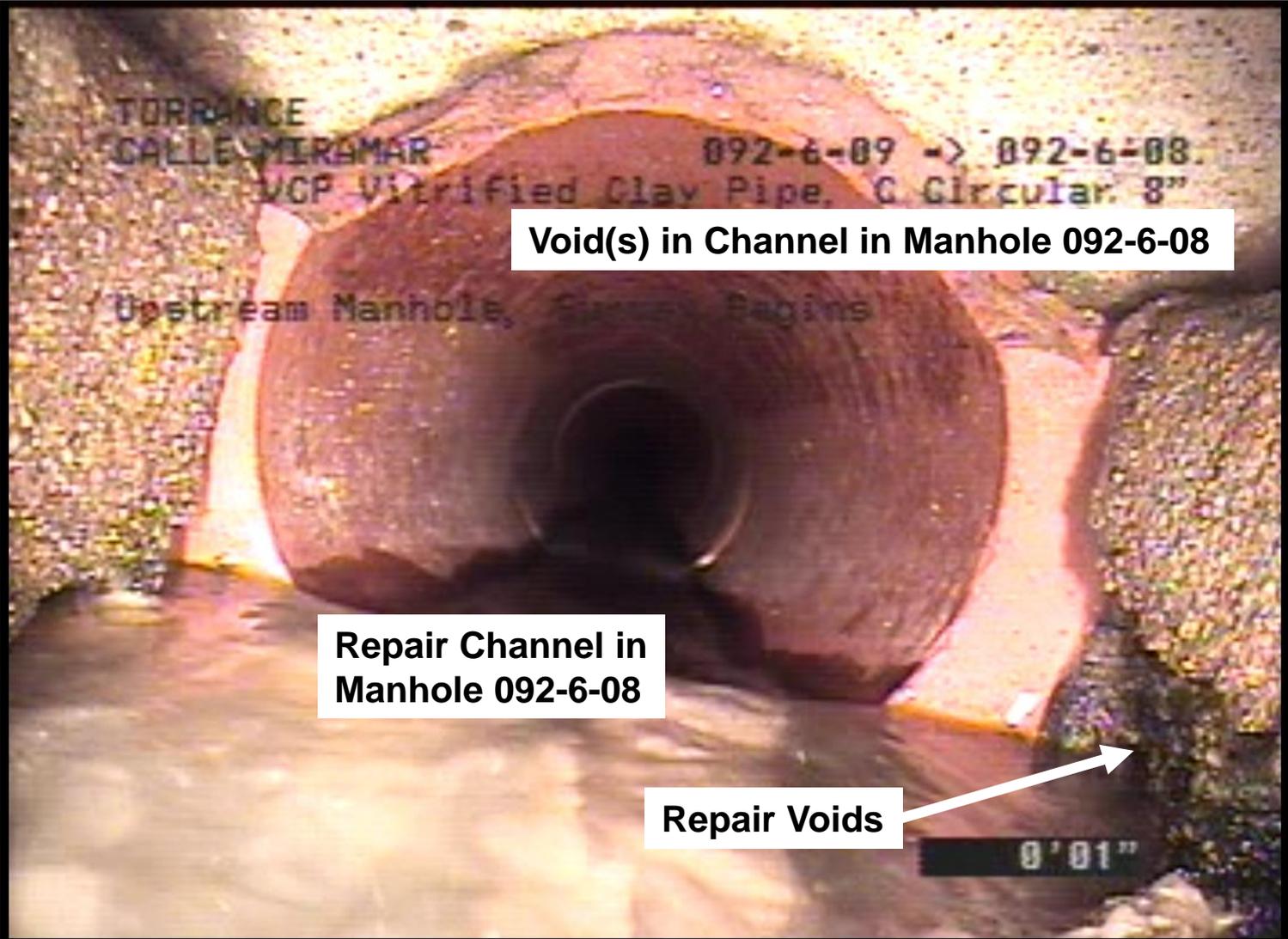
Void(s) in Channel in Manhole 092-6-09

Repair Channel in Manhole 092-6-09

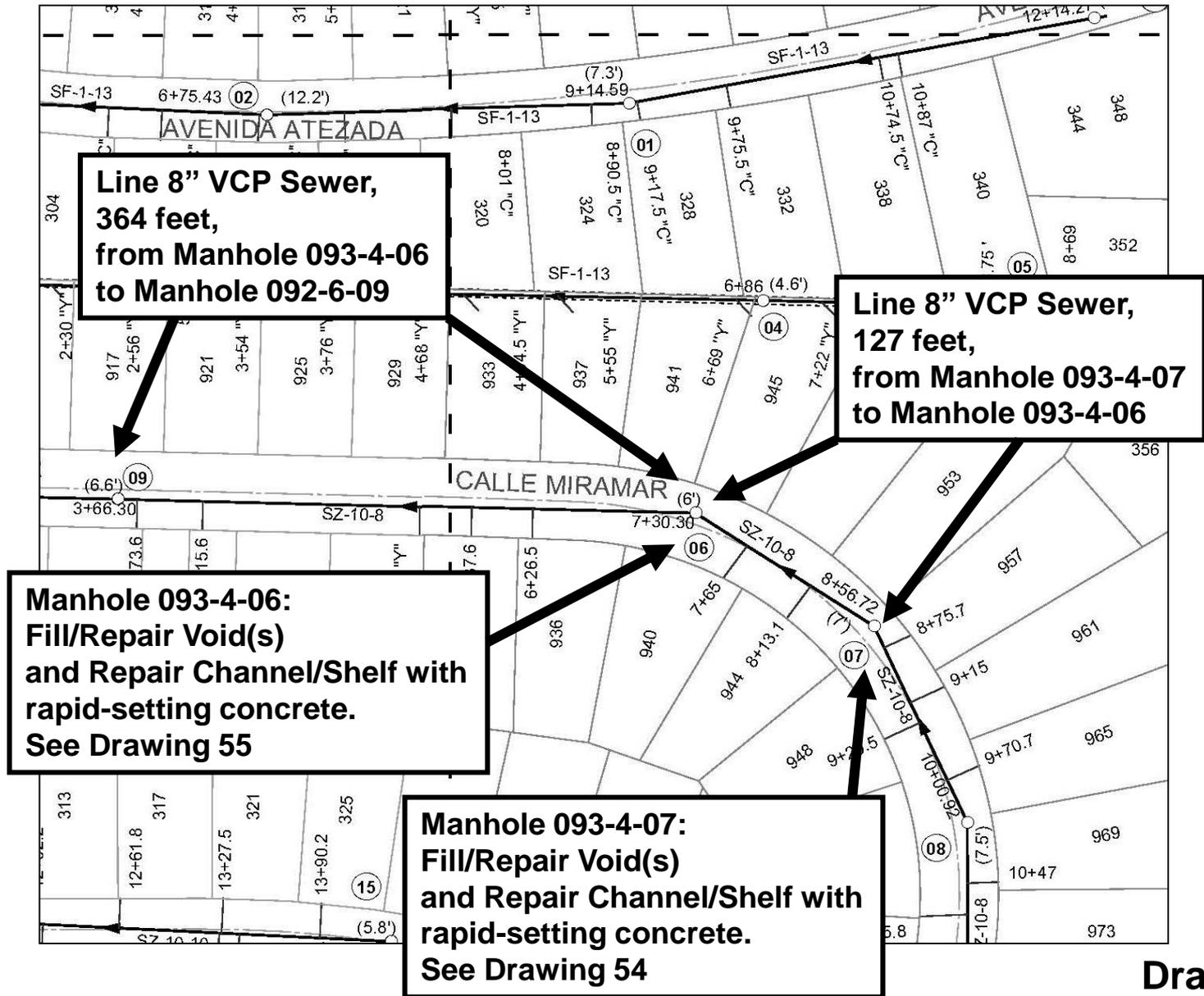
Repair Voids

366'09"

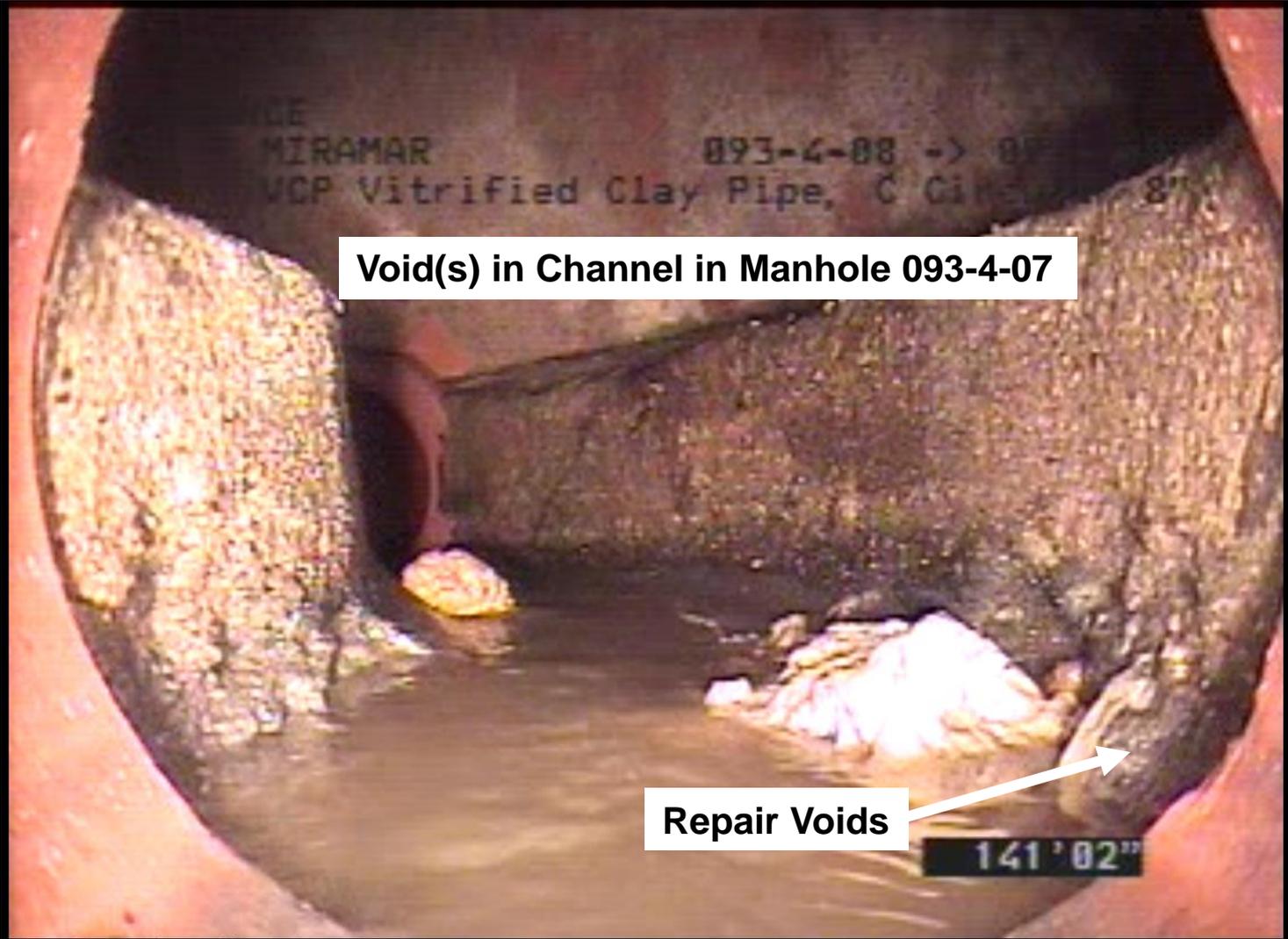
City Sewer Basemap Sheet 92, Grid 6



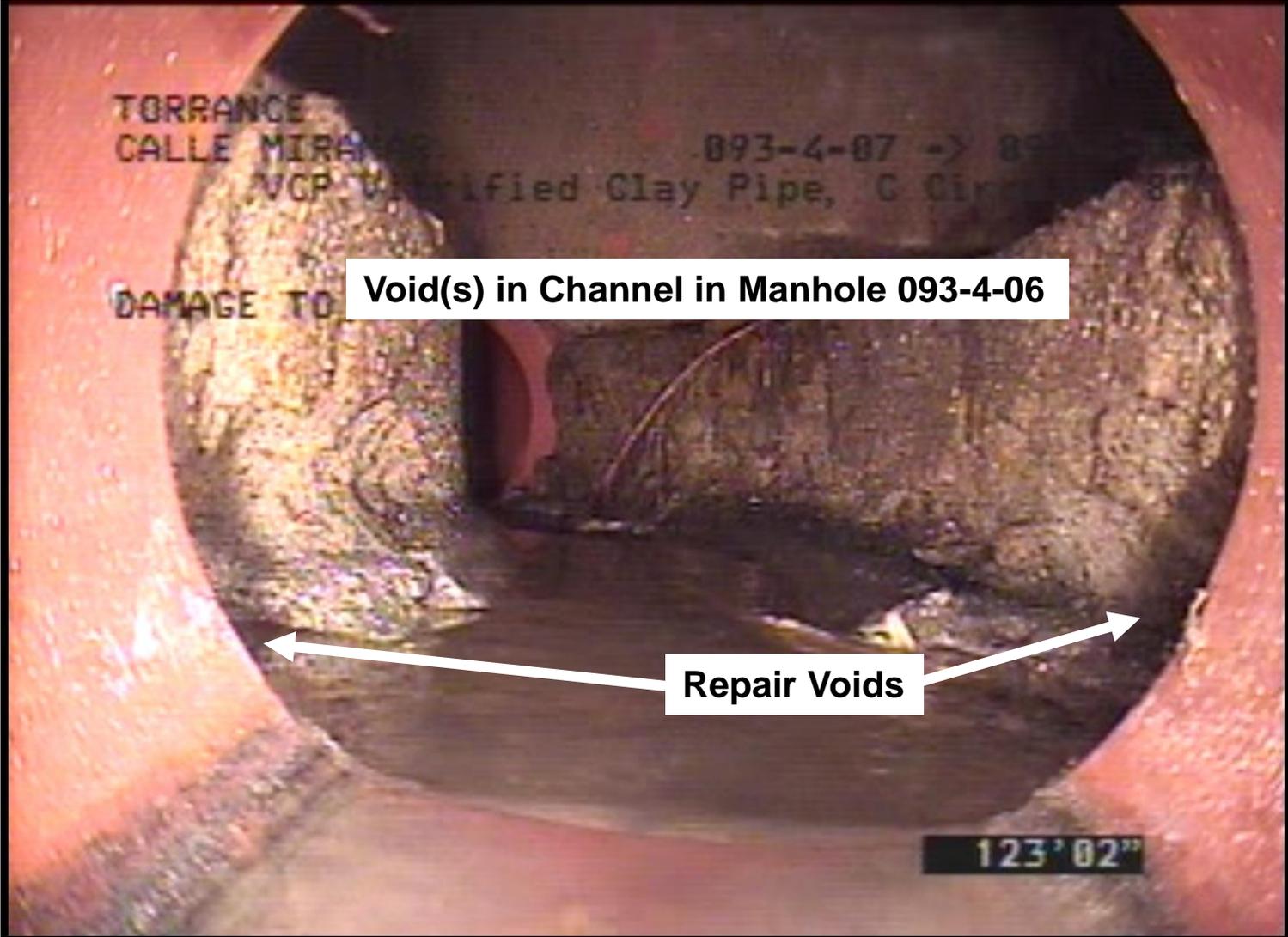
# City Sewer Basemap Sheet 93, Grid 4 & Sheet 92, Grid 6



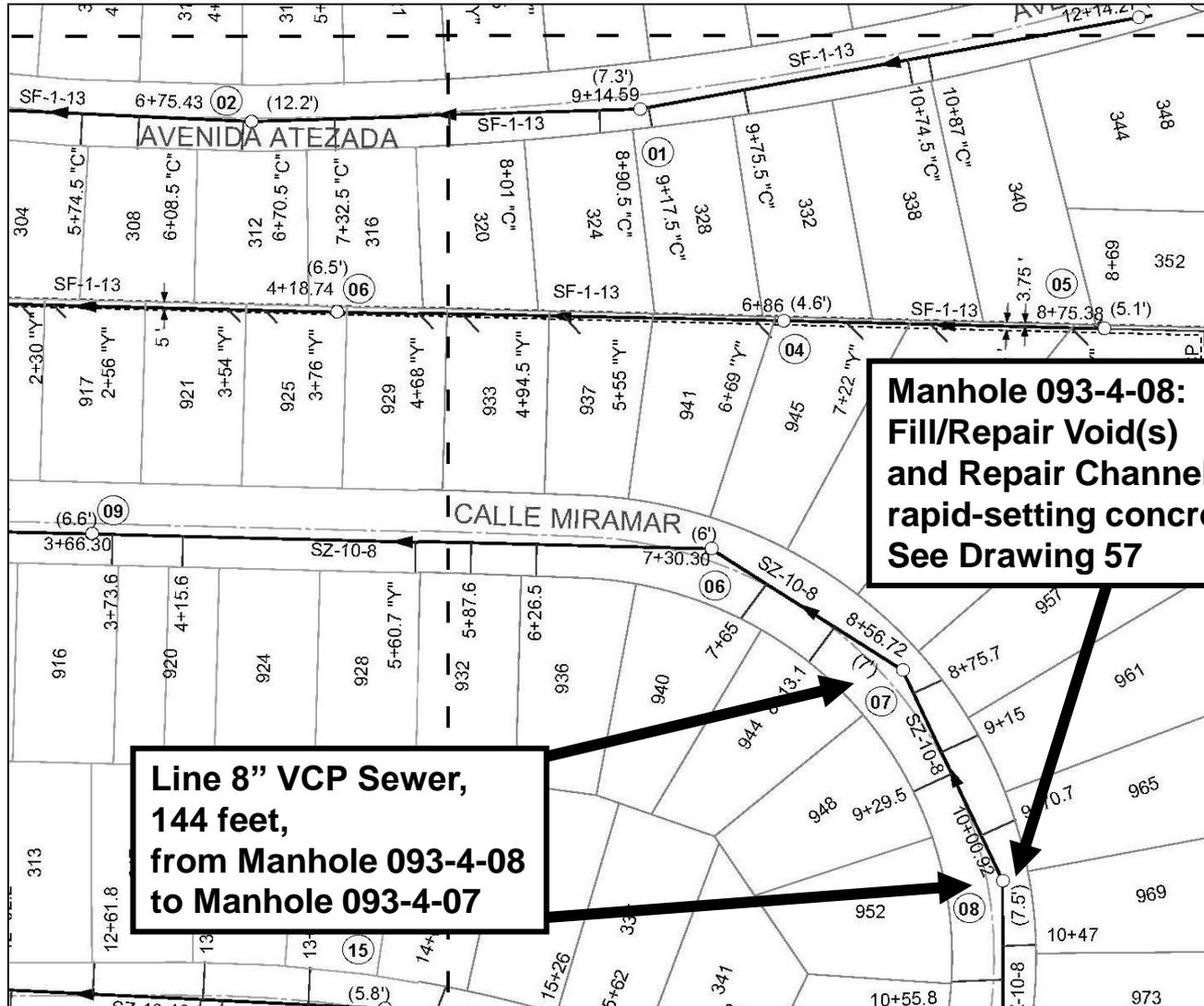
City Sewer Basemap Sheet 93, Grid 4



City Sewer Basemap Sheet 93, Grid 4



# City Sewer Basemap Sheet 93, Grid 4



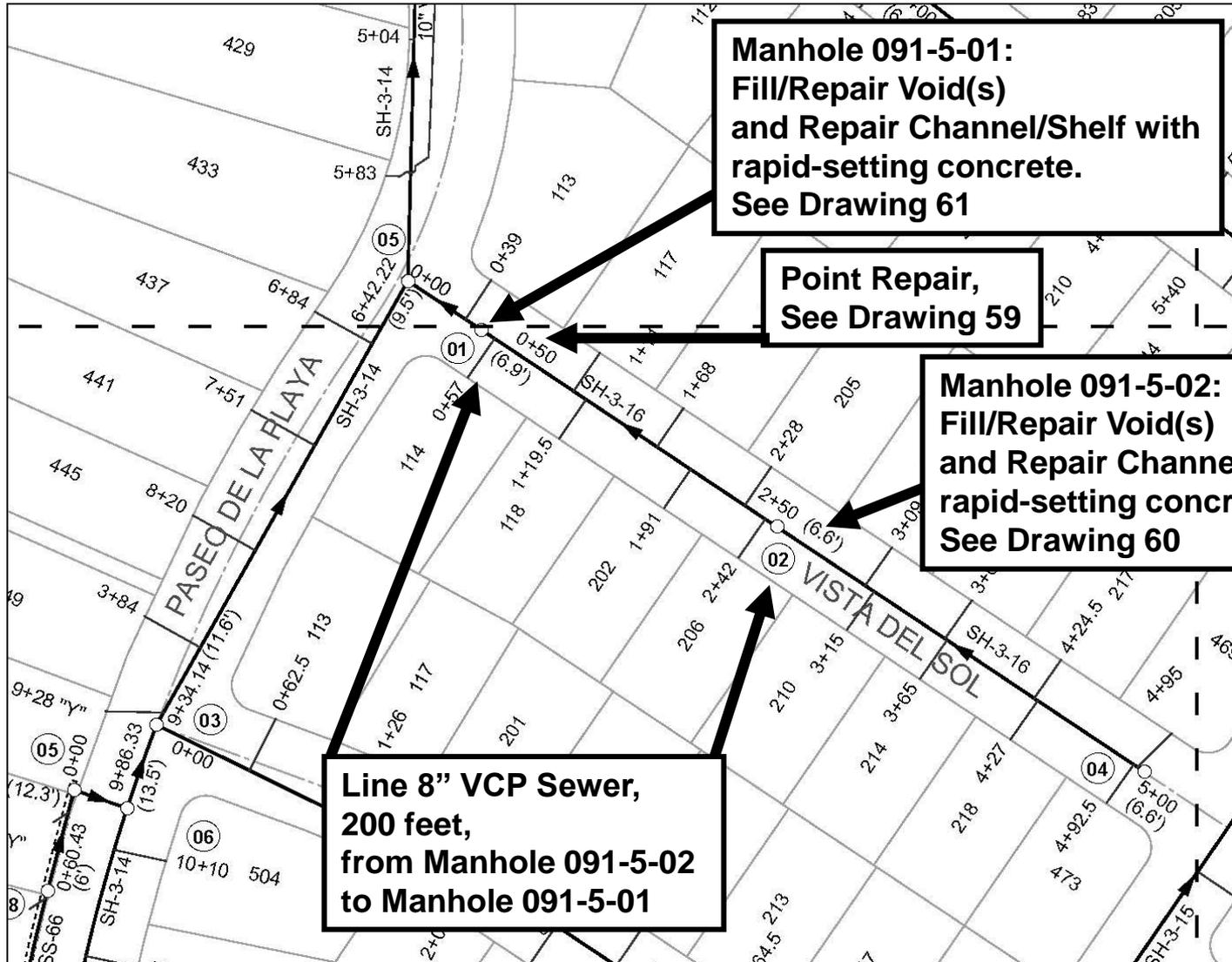
**Manhole 093-4-08:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 57**

**Line 8" VCP Sewer,  
144 feet,  
from Manhole 093-4-08  
to Manhole 093-4-07**

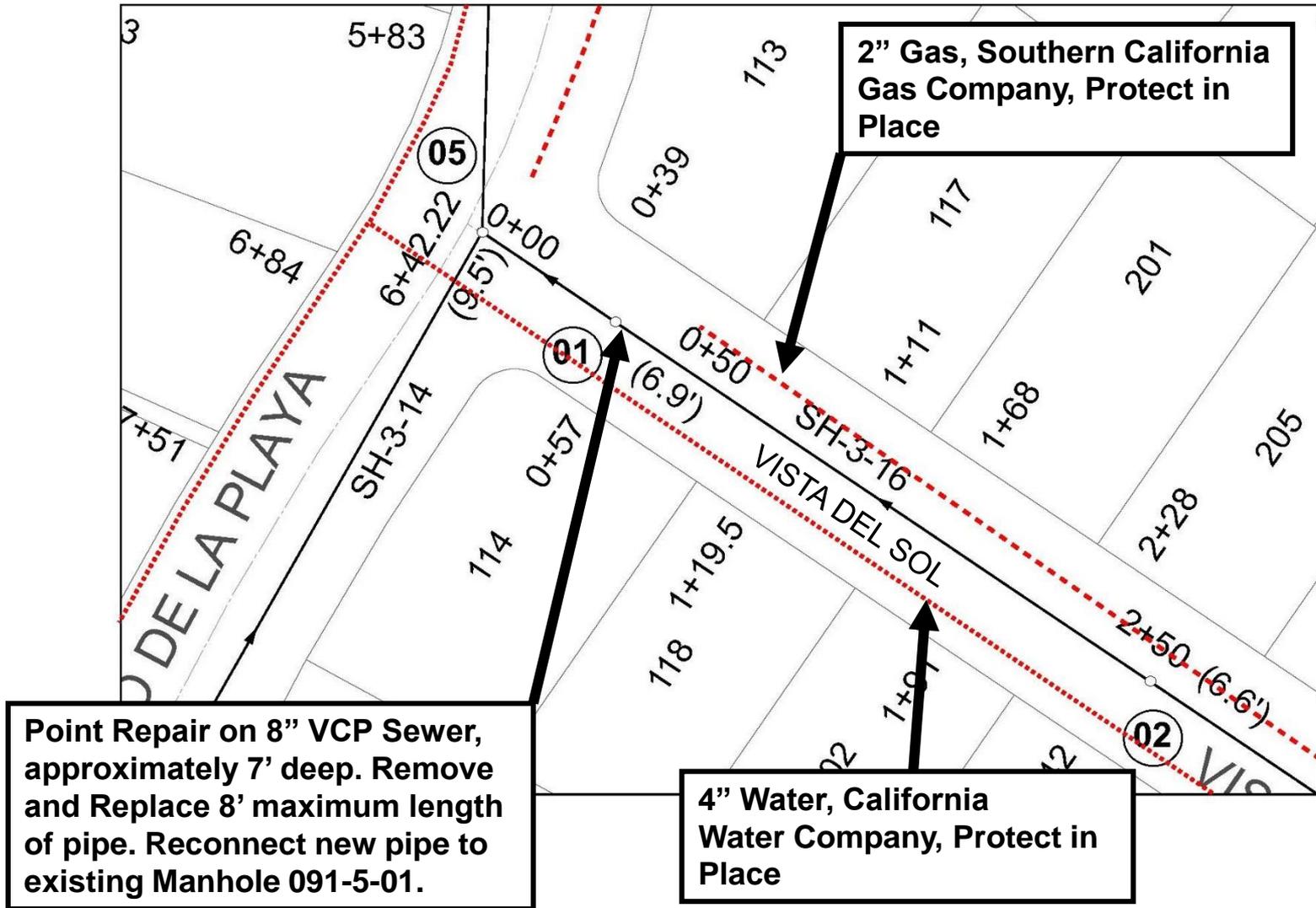
City Sewer Basemap Sheet 93, Grid 4



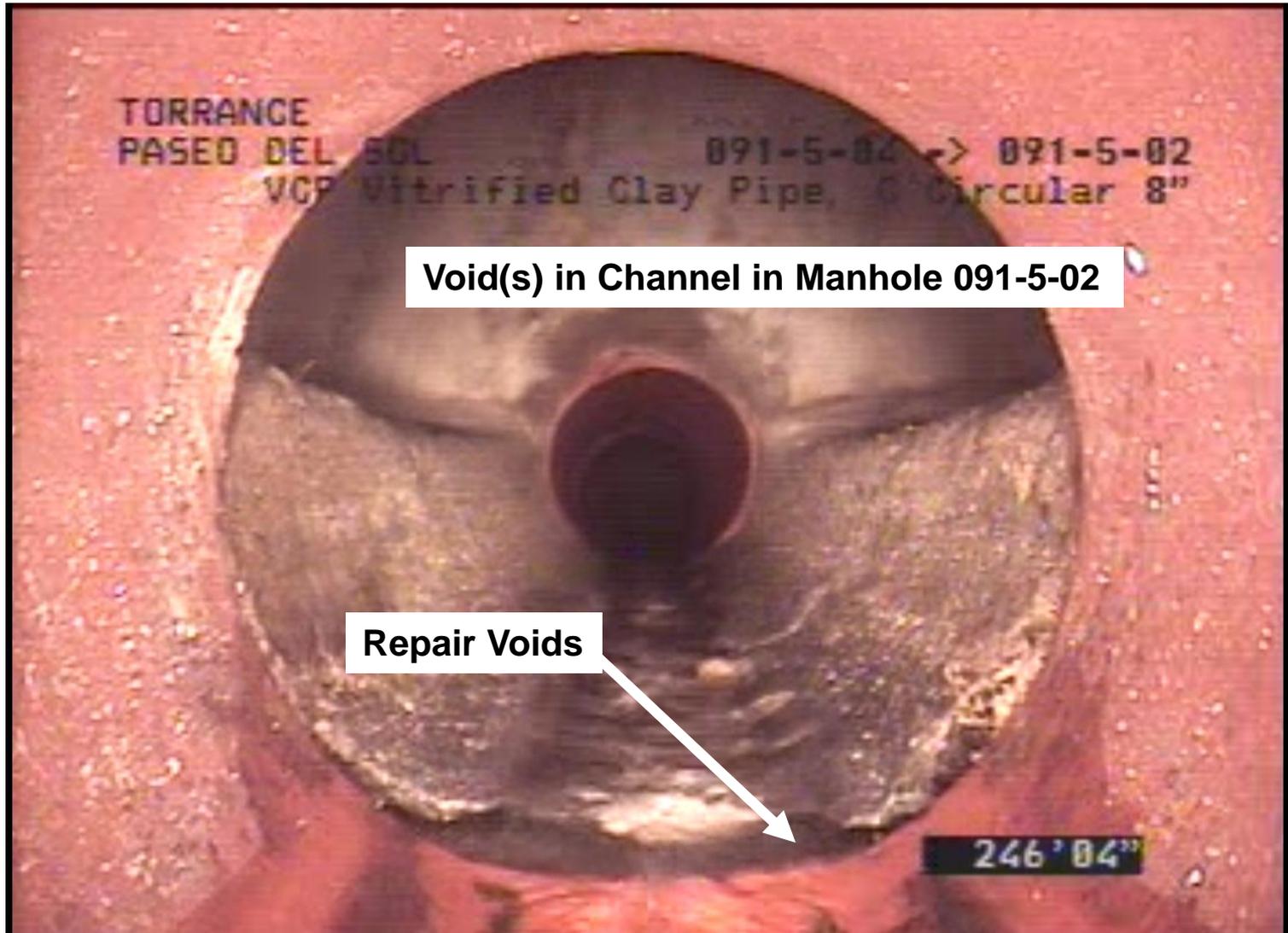
# City Sewer Basemap Sheet 91, Grid 5



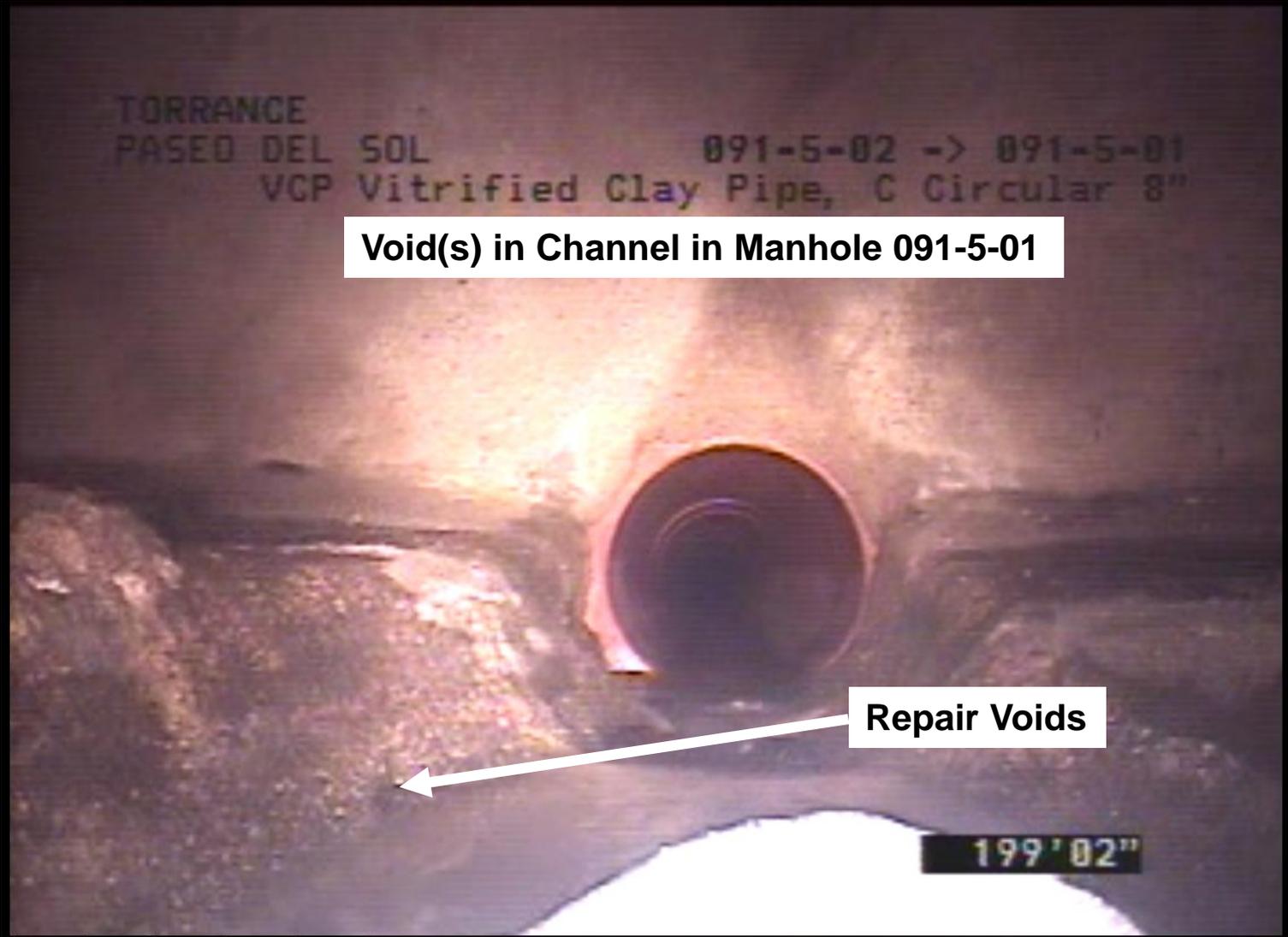
# City Sewer Basemap Sheet 91, Grid 5



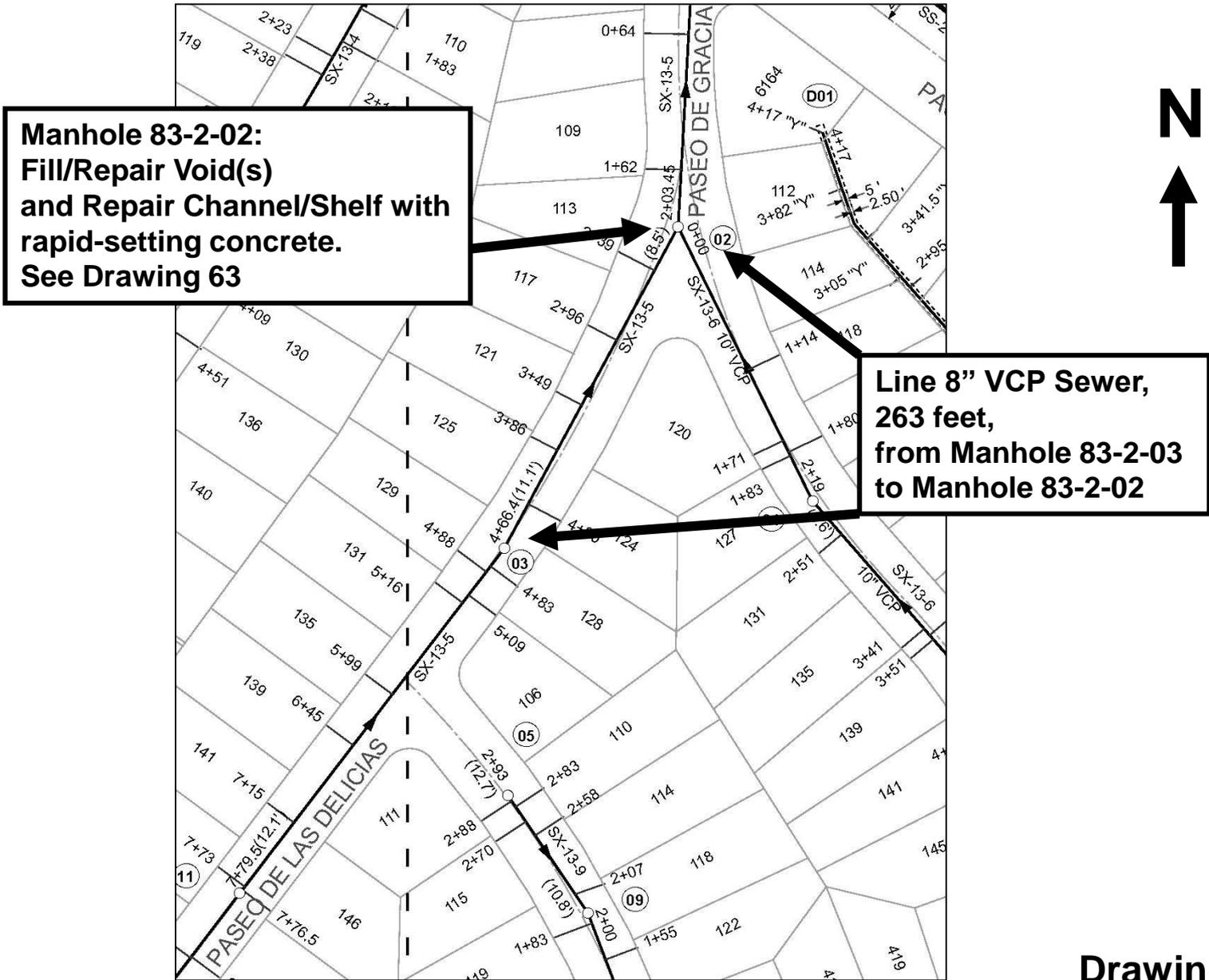
City Sewer Basemap Sheet 91, Grid 5



City Sewer Basemap Sheet 91, Grid 5



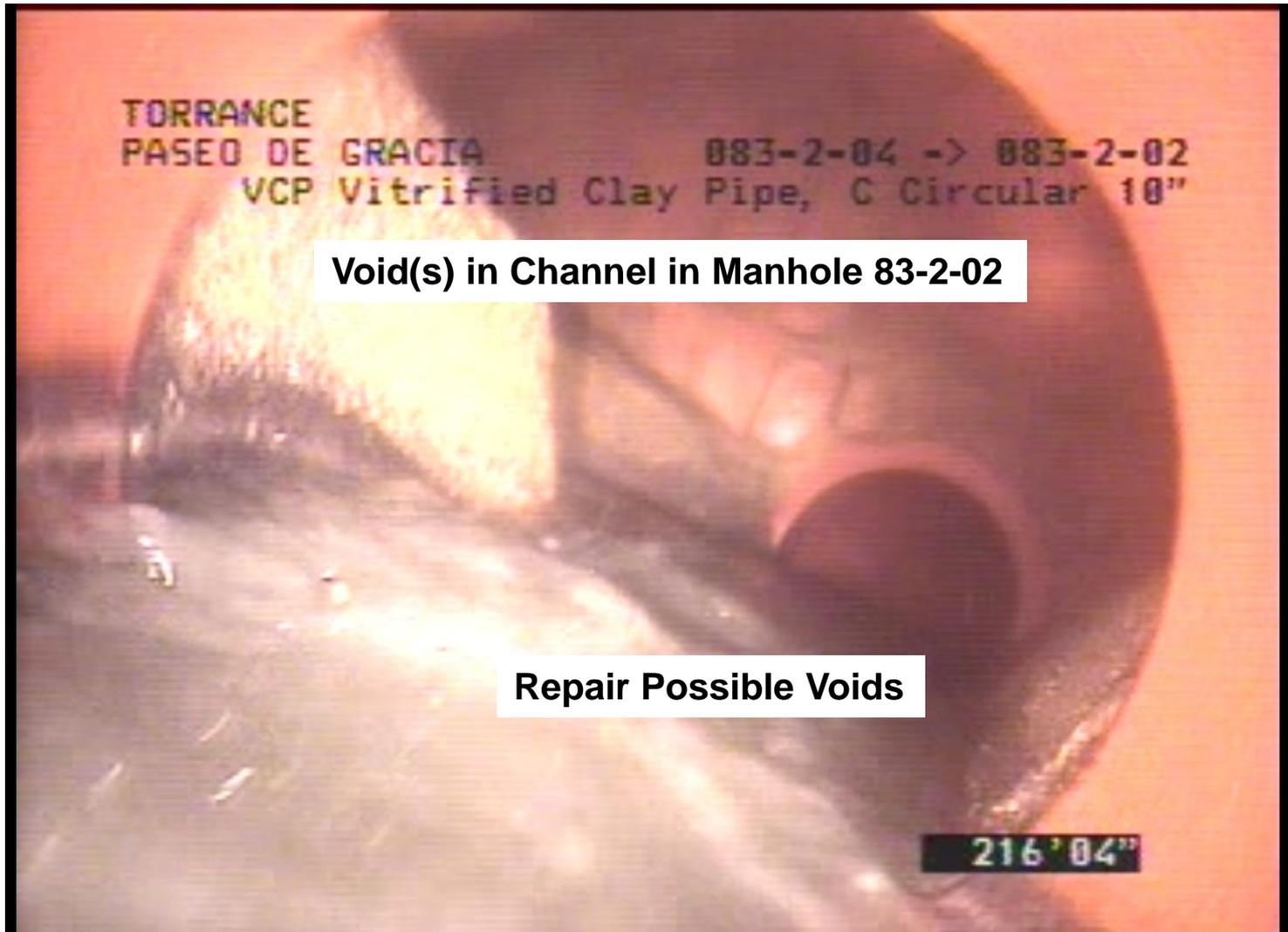
# City Sewer Basemap Sheet 83, Grid 2



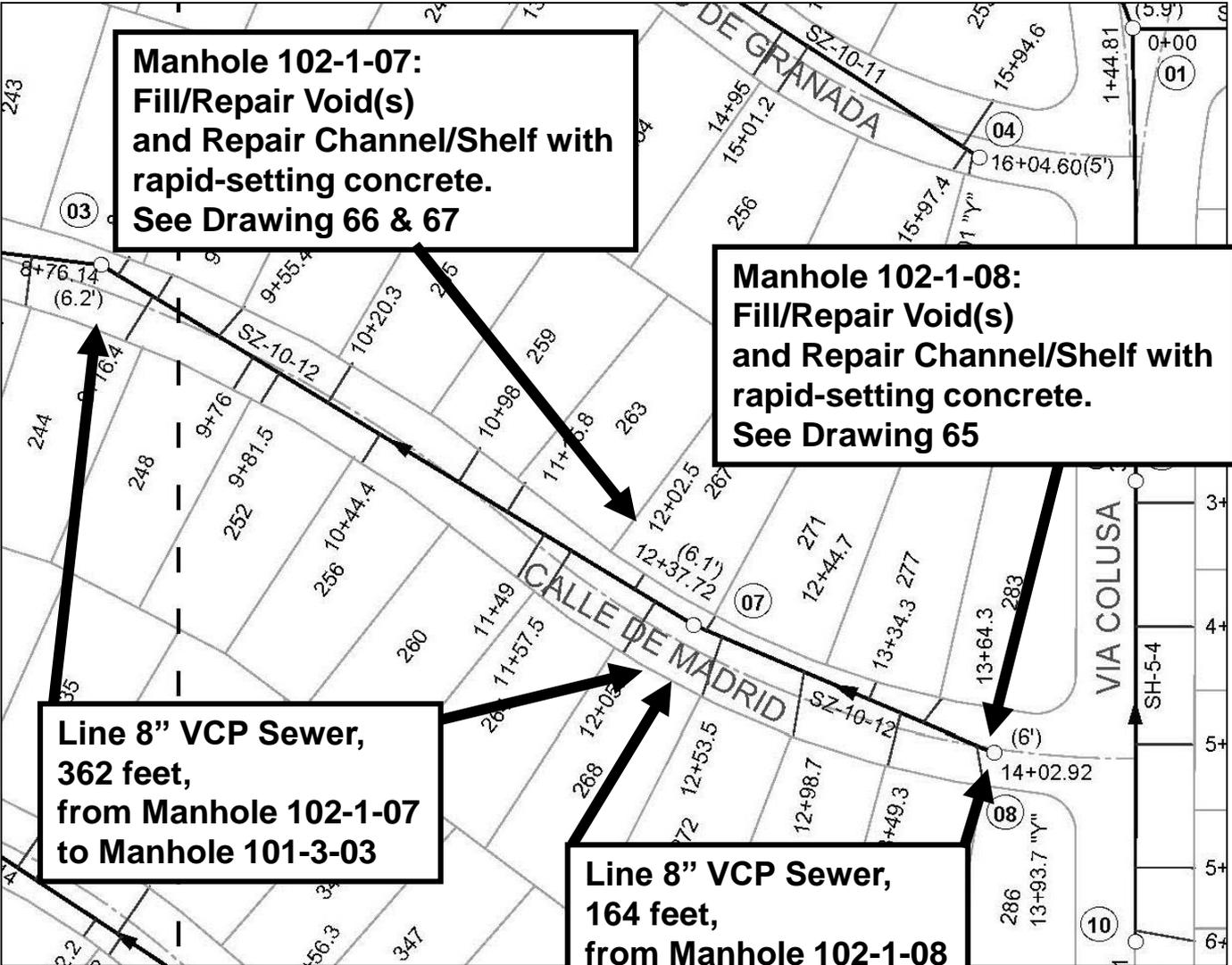
**Manhole 83-2-02:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 63**

**Line 8" VCP Sewer,  
263 feet,  
from Manhole 83-2-03  
to Manhole 83-2-02**

City Sewer Basemap Sheet 83, Grid 2



City Sewer Basemap Sheet 101 Grid 3 and Sheet 102, Grid 1



**Manhole 102-1-07:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 66 & 67**

**Manhole 102-1-08:  
Fill/Repair Void(s)  
and Repair Channel/Shelf with  
rapid-setting concrete.  
See Drawing 65**

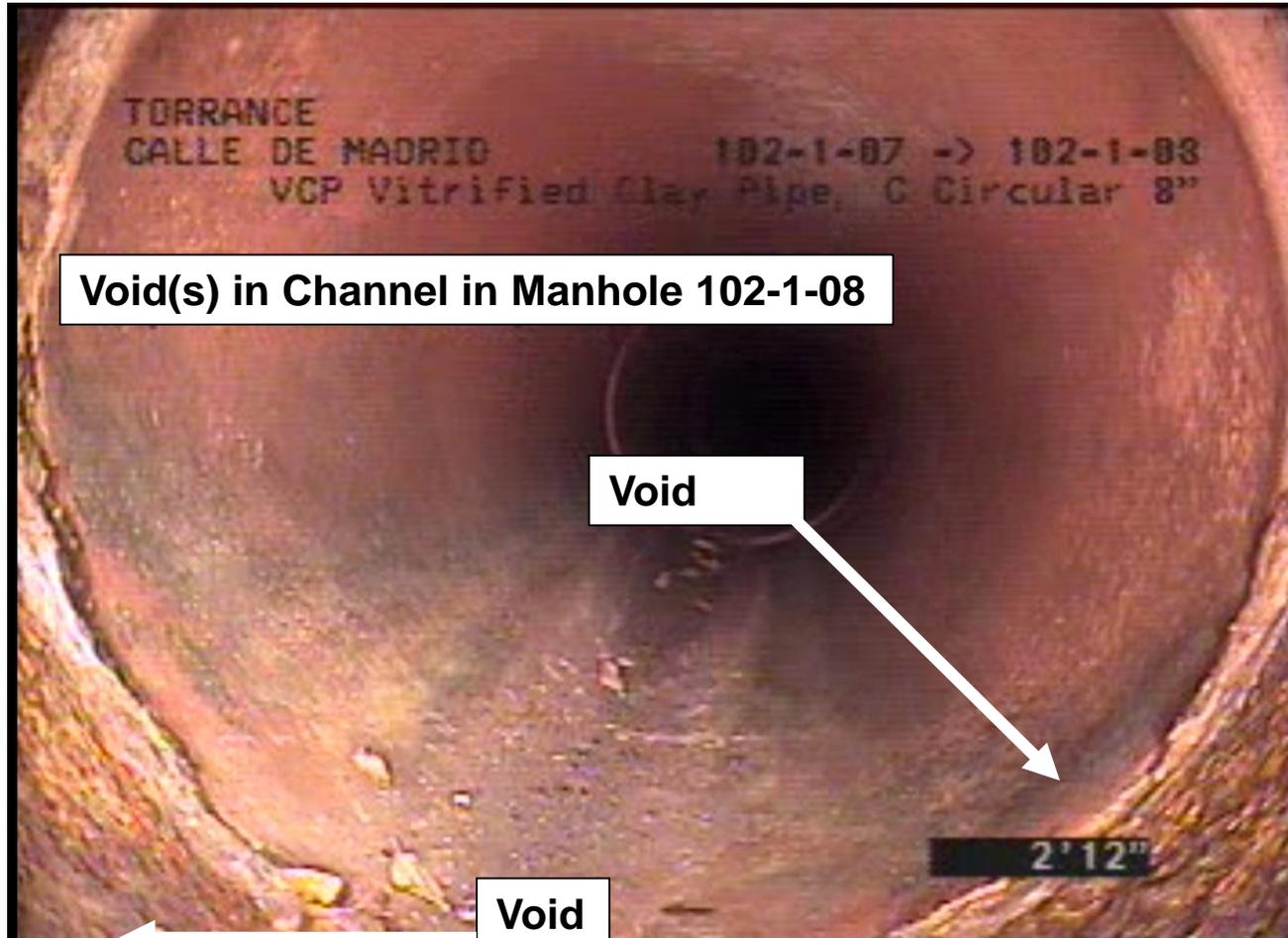
**Line 8" VCP Sewer,  
362 feet,  
from Manhole 102-1-07  
to Manhole 101-3-03**

**Line 8" VCP Sewer,  
164 feet,  
from Manhole 102-1-08  
to Manhole 102-1-07**

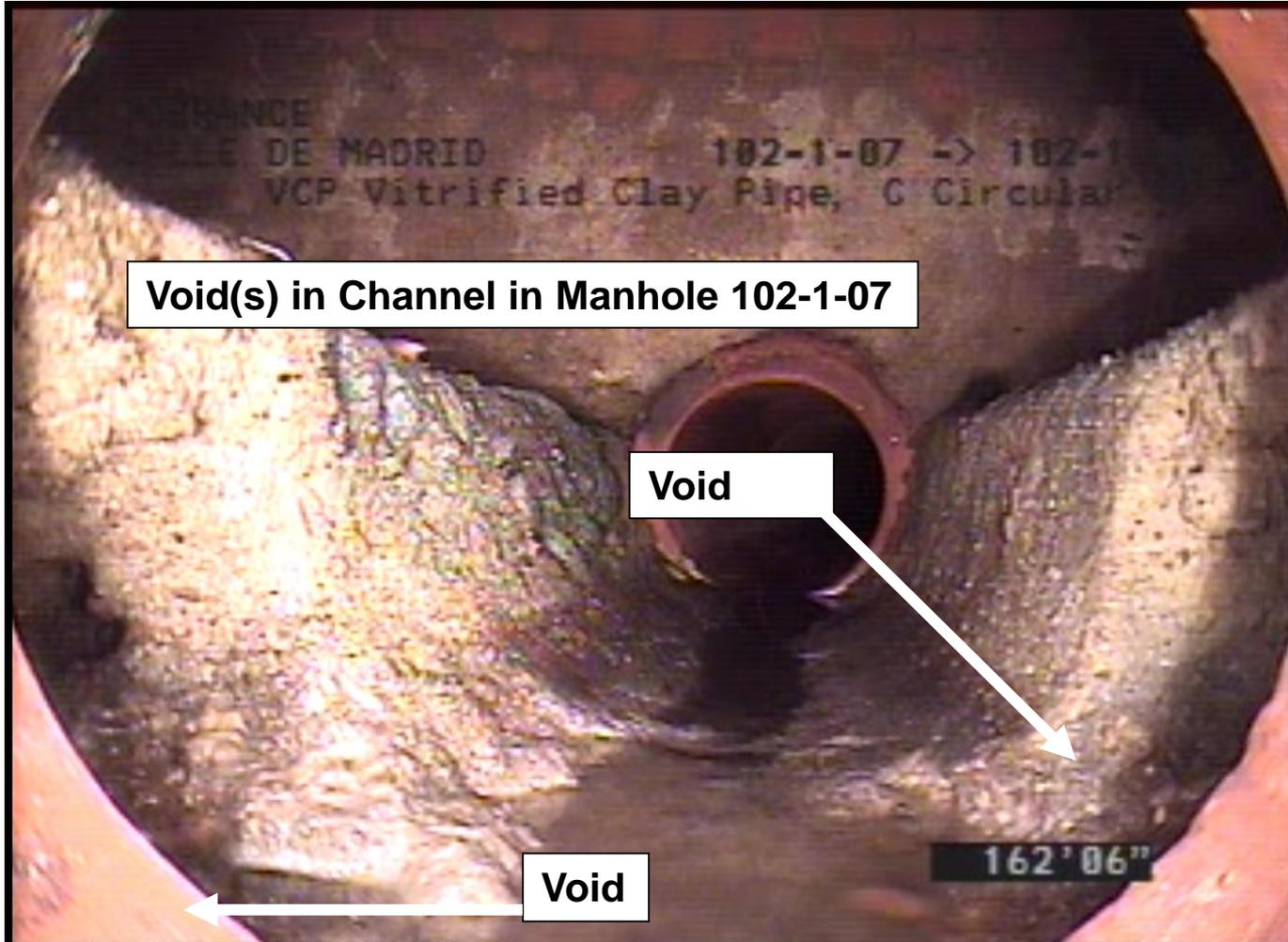


**Drawing 64**

City Sewer Basemap Sheet 102, Grid 1

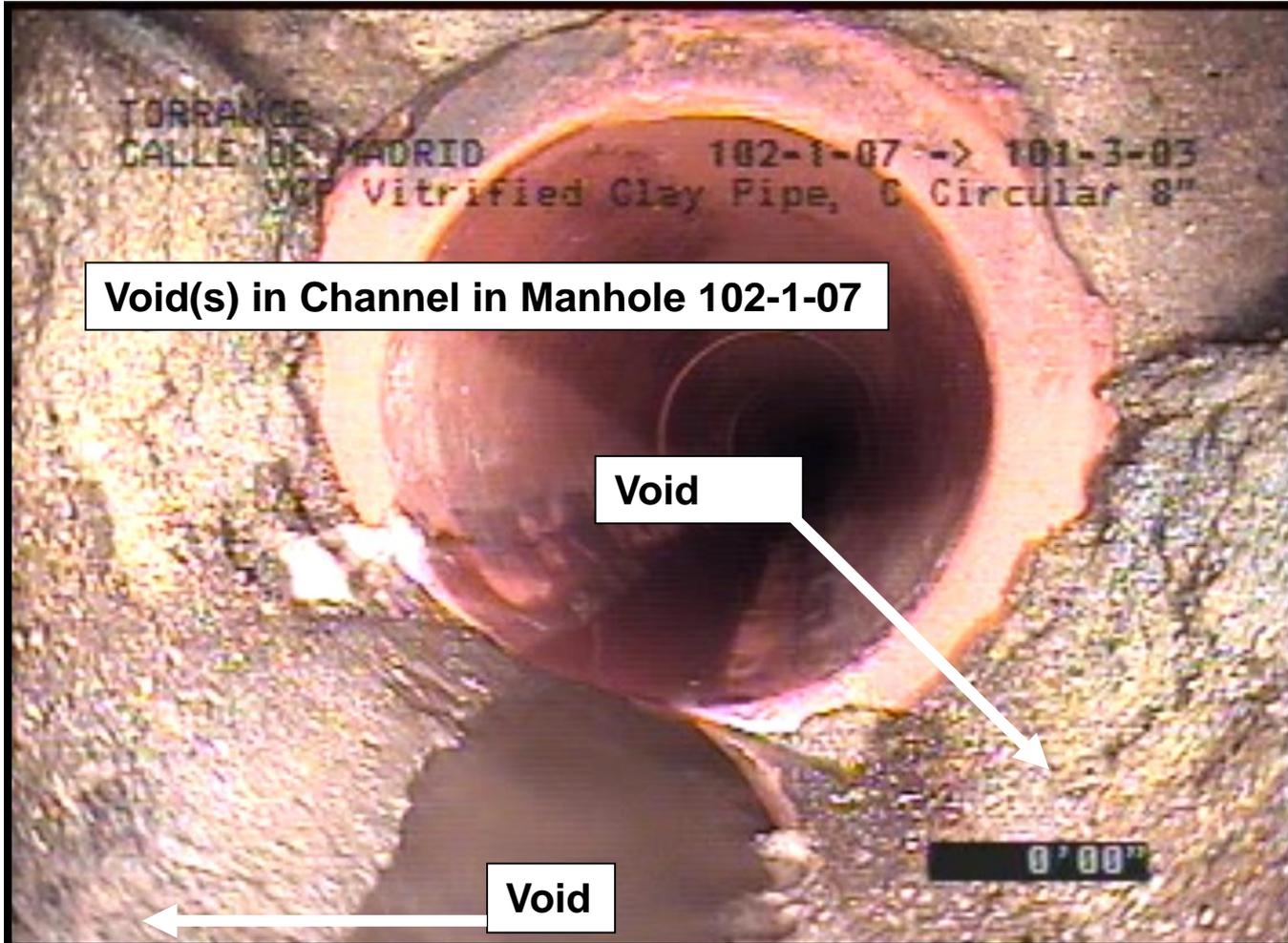


City Sewer Basemap Sheet 102, Grid 1



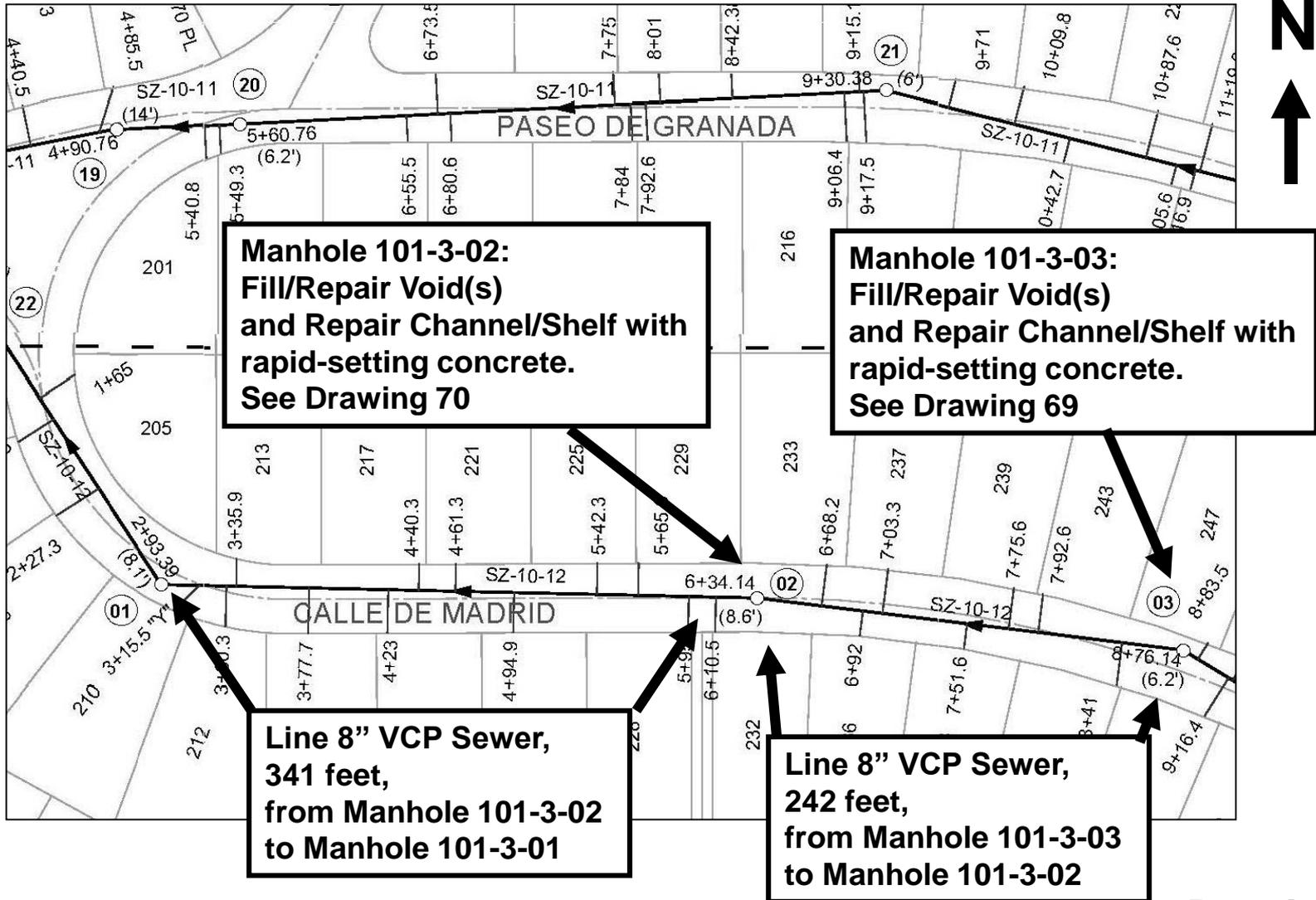
Drawing 66

City Sewer Basemap Sheet 102, Grid 1



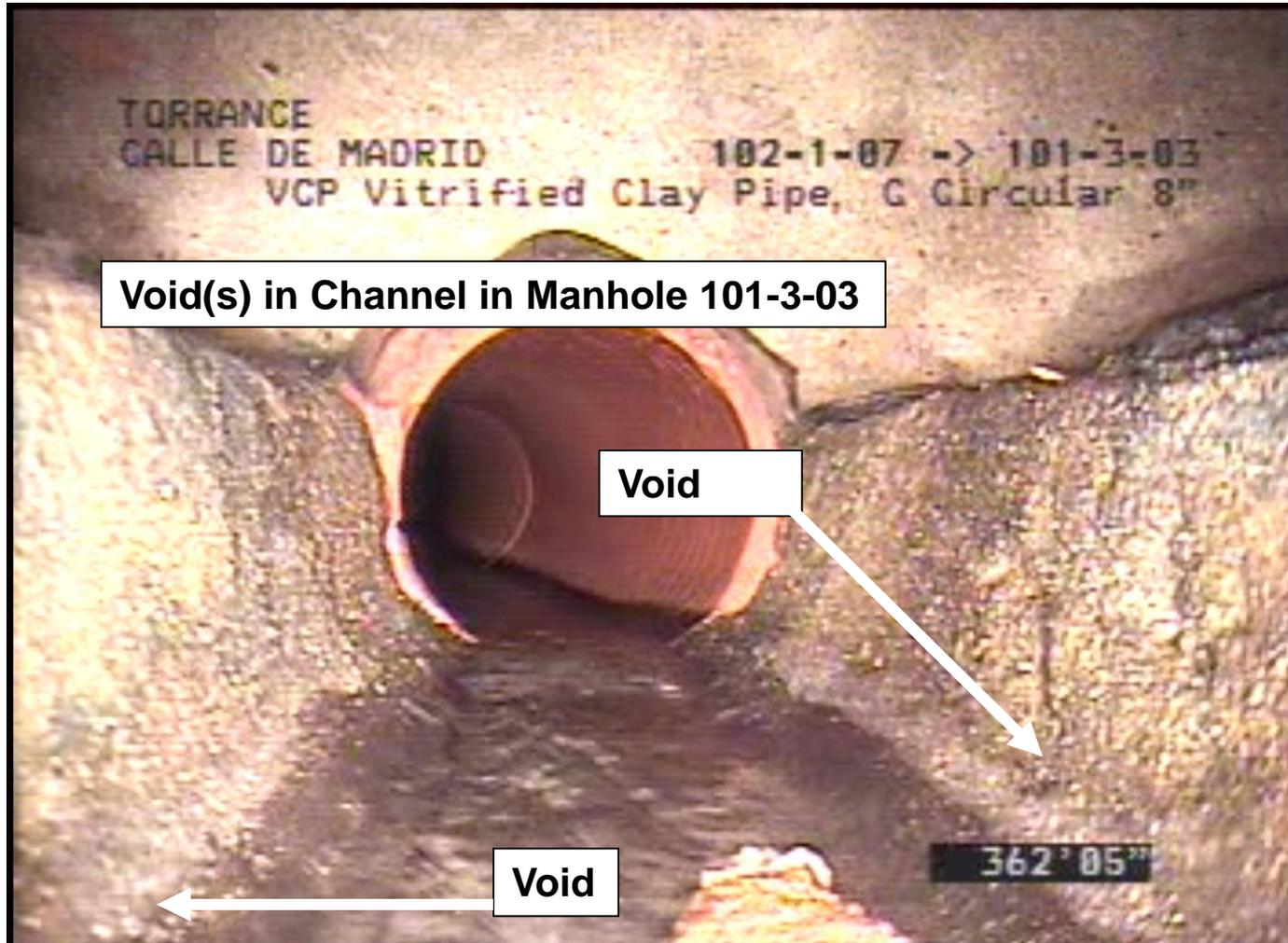
Drawing 67

# City Sewer Basemap Sheet 101, Grid 3

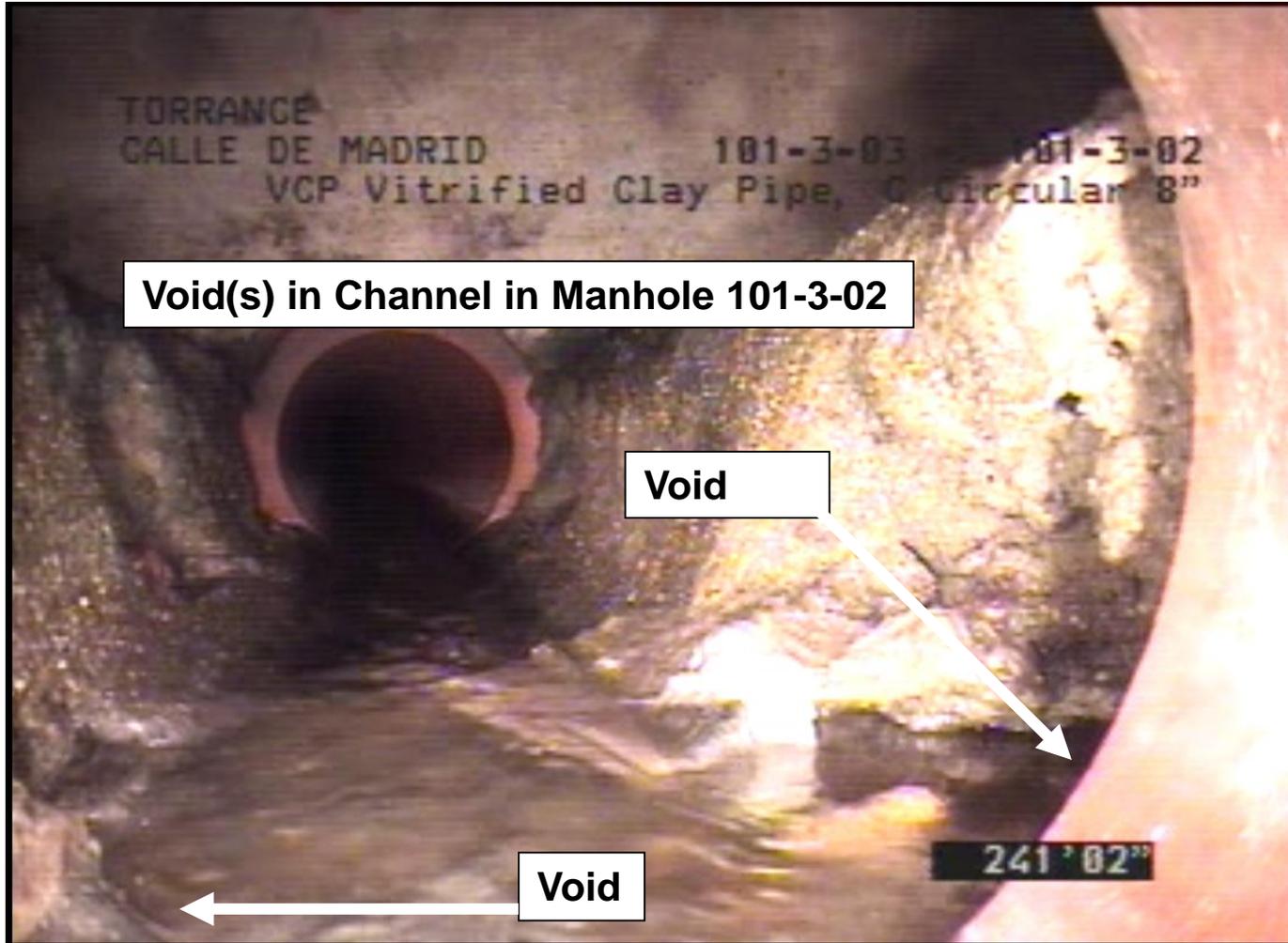


Drawing 68

City Sewer Basemap Sheet 101, Grid 3

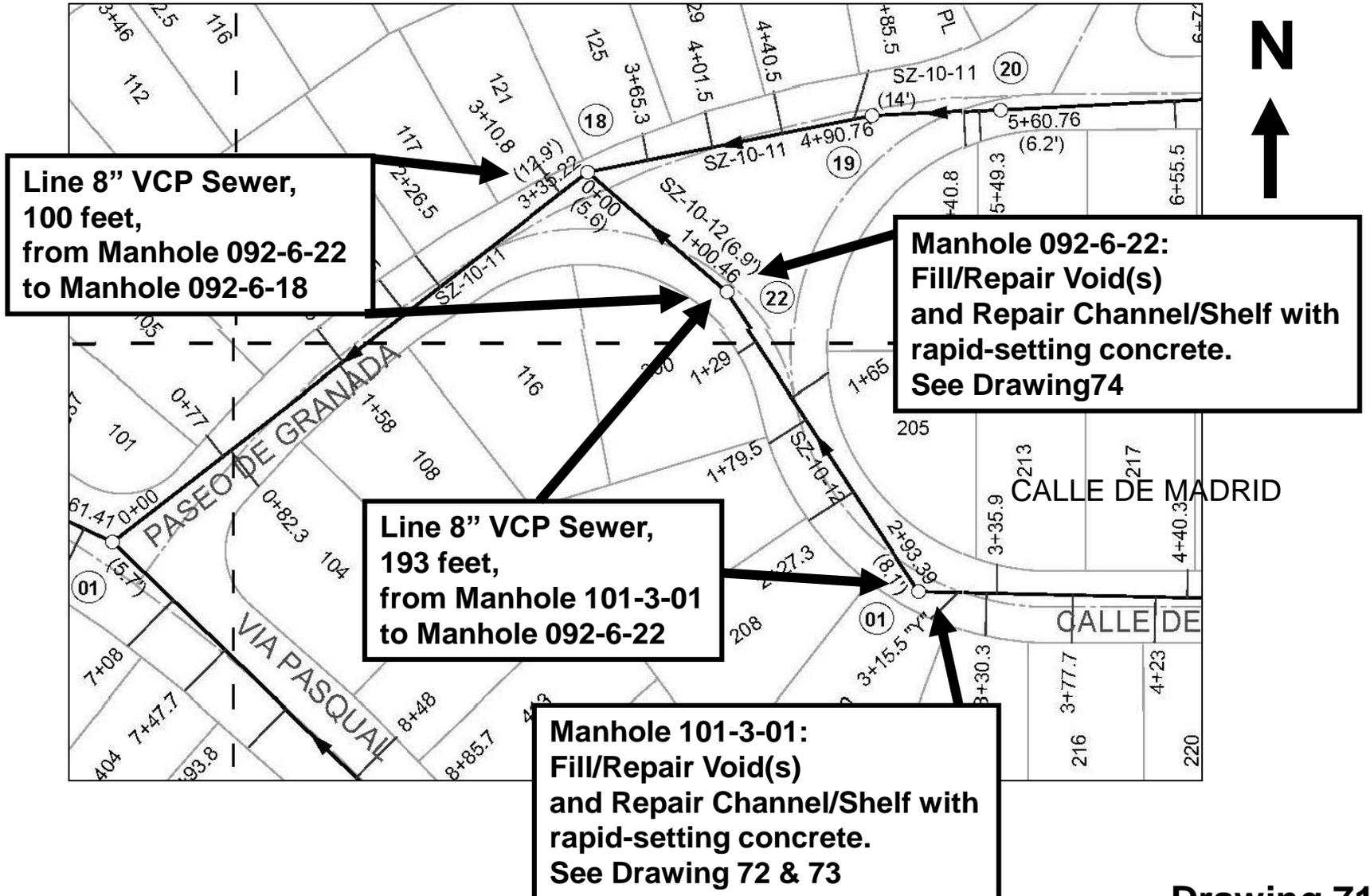


City Sewer Basemap Sheet 101, Grid 3

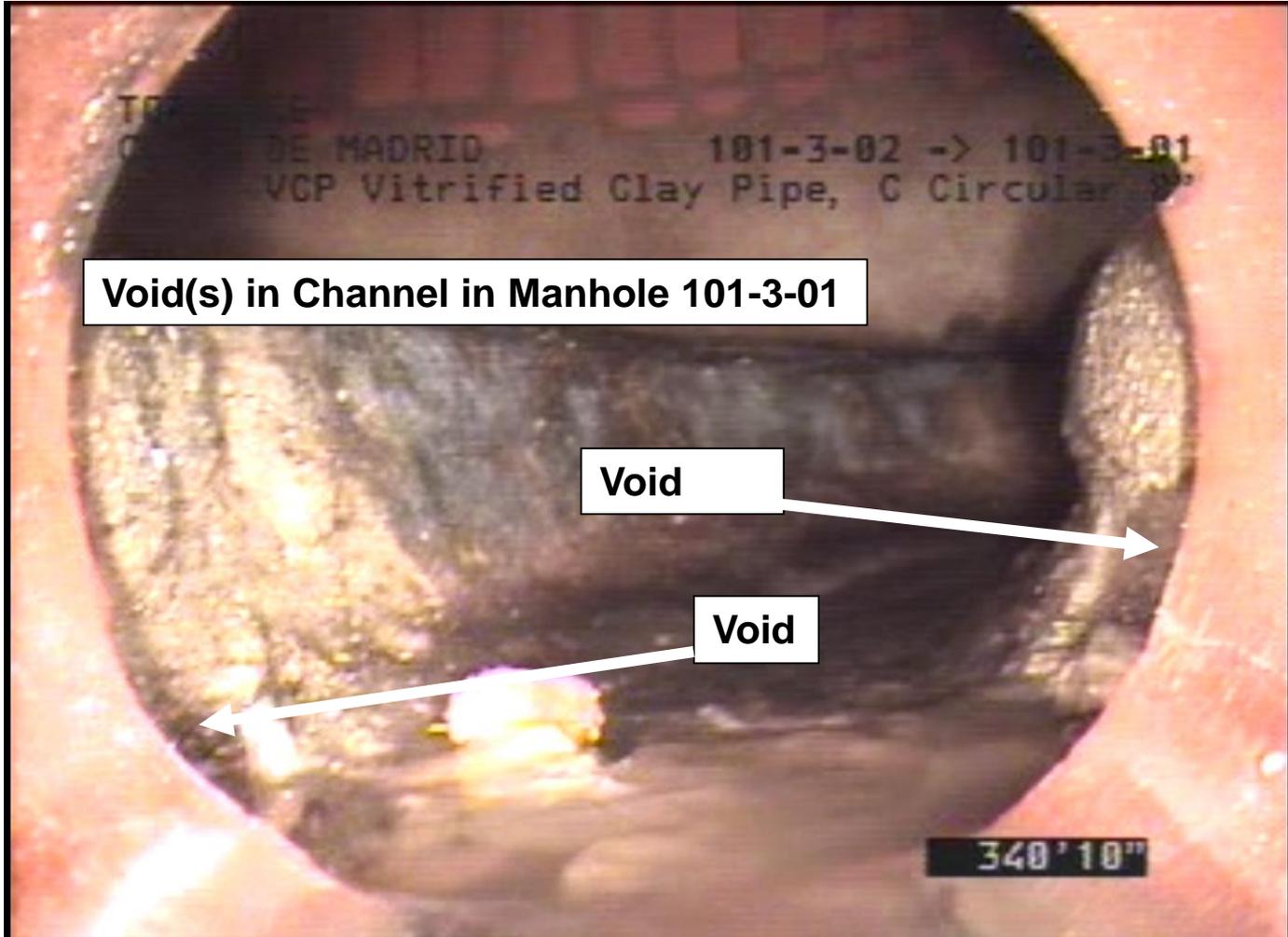


Drawing 70

City Sewer Basemap Sheet 92, Grid 6 and Sheet 101,  
Grid 3

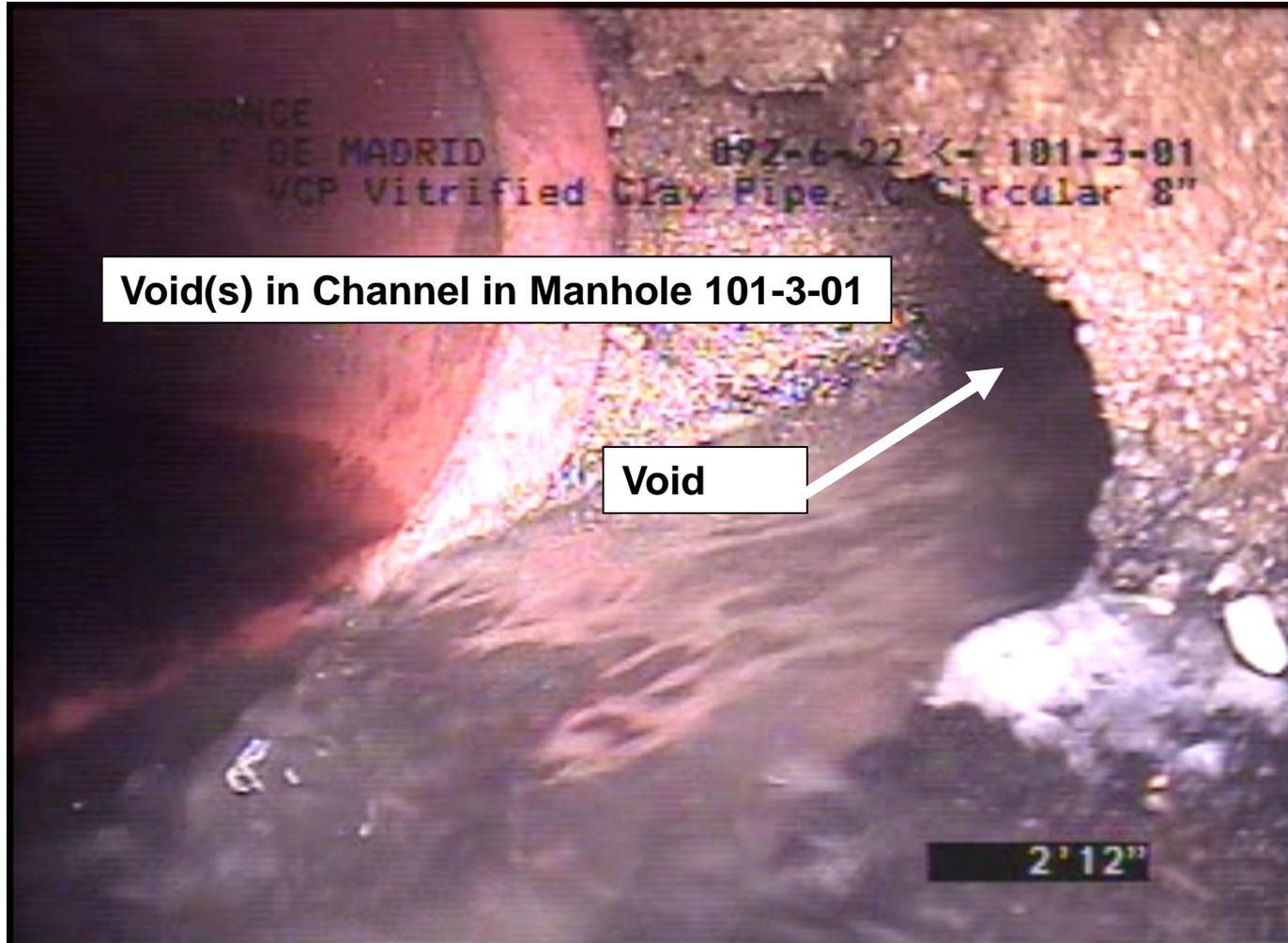


City Sewer Basemap Sheet 101, Grid 3



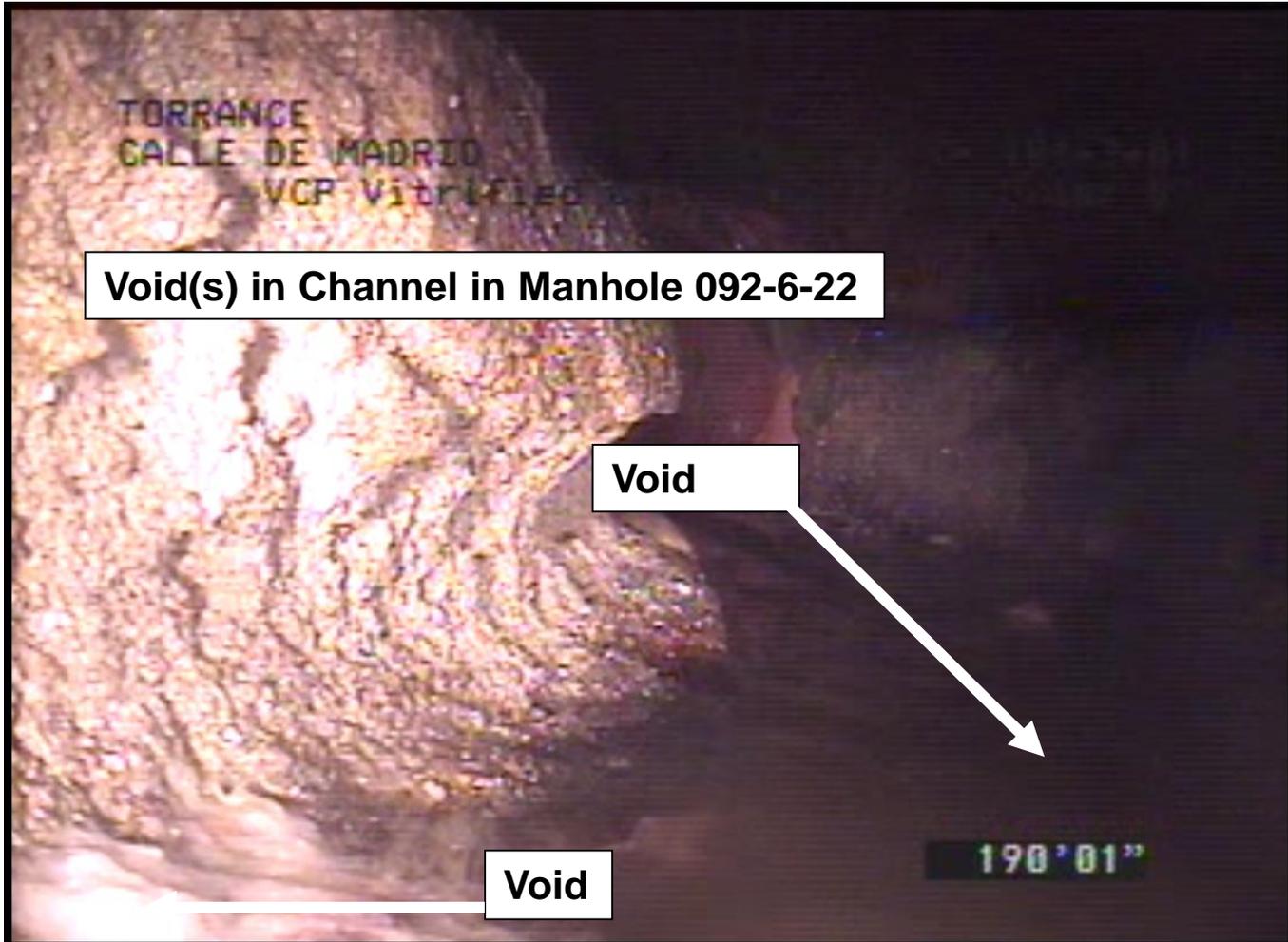
Drawing 72

City Sewer Basemap Sheet 101, Grid 3



Drawing 73

City Sewer Basemap Sheet 92, Grid 6



Drawing 74

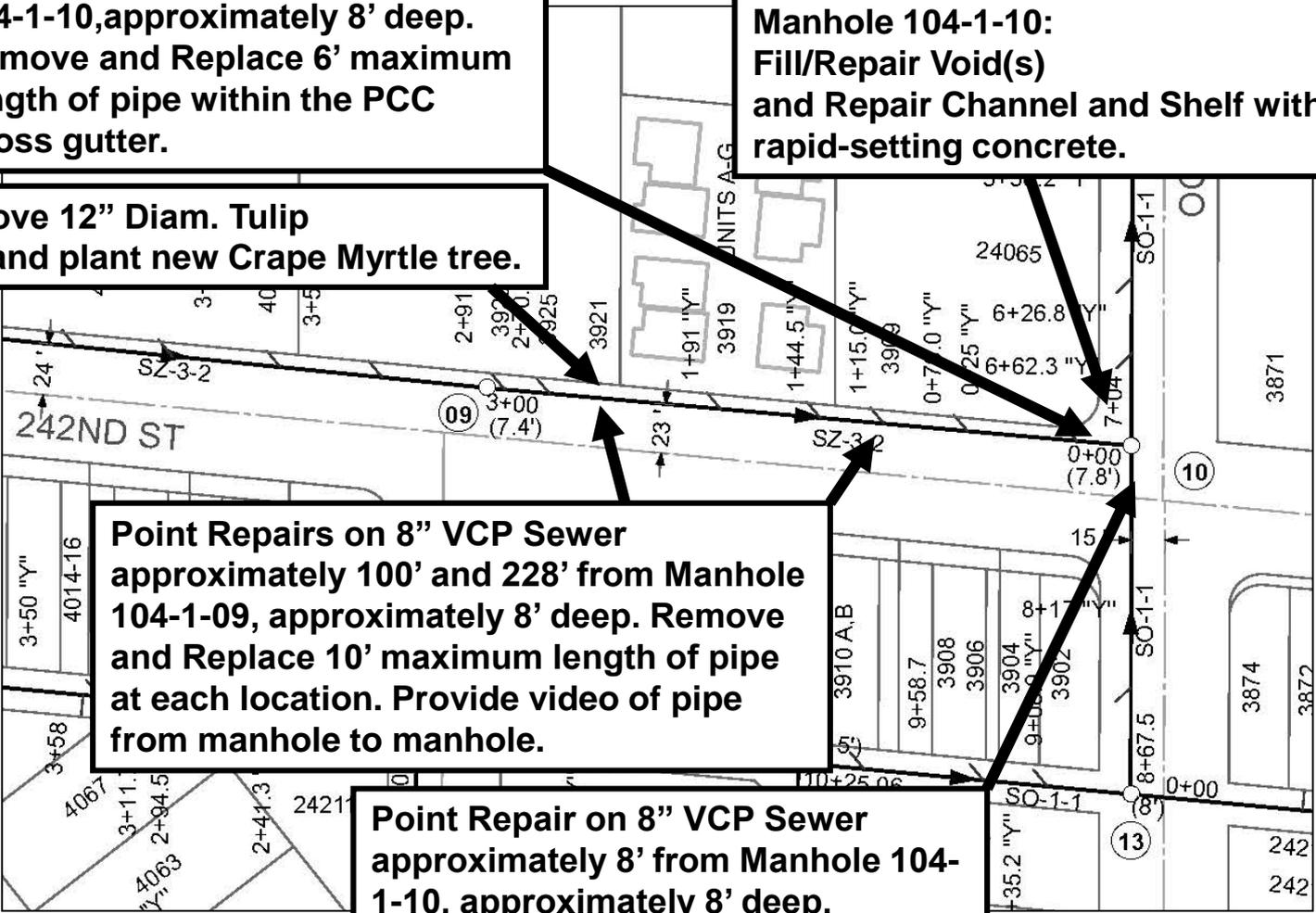
# City Sewer Basemap Sheet 104, Grid 1



**Point Repair on 8" VCP Sewer  
Approximately 10' from Manhole  
104-1-10, approximately 8' deep.  
Remove and Replace 6' maximum  
length of pipe within the PCC  
Cross gutter.**

**Manhole 104-1-10:  
Fill/Repair Void(s)  
and Repair Channel and Shelf with  
rapid-setting concrete.**

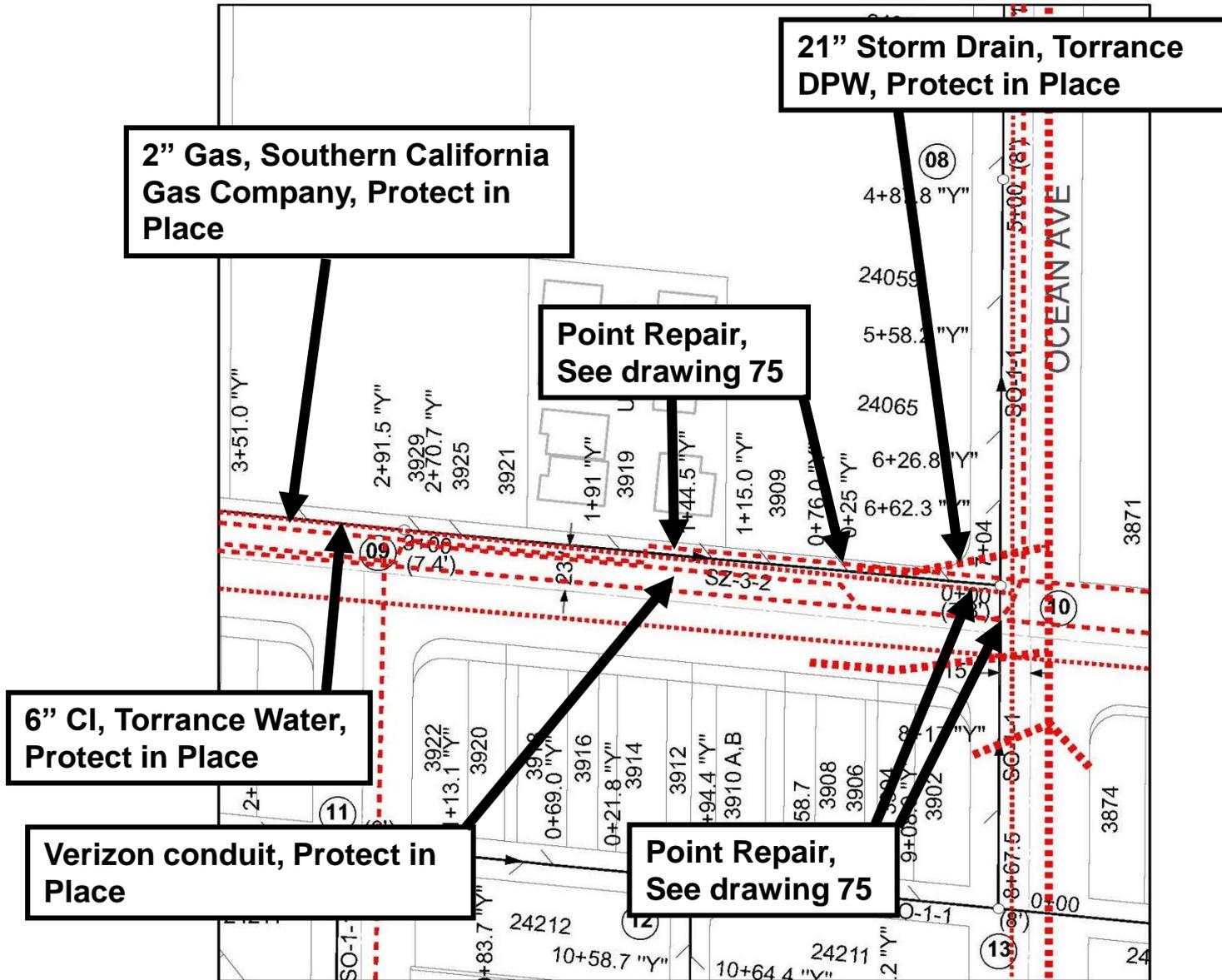
**Remove 12" Diam. Tulip  
tree and plant new Crape Myrtle tree.**



**Point Repairs on 8" VCP Sewer  
approximately 100' and 228' from Manhole  
104-1-09, approximately 8' deep. Remove  
and Replace 10' maximum length of pipe  
at each location. Provide video of pipe  
from manhole to manhole.**

**Point Repair on 8" VCP Sewer  
approximately 8' from Manhole 104-  
1-10, approximately 8' deep.  
Remove and Replace 6' maximum  
length of pipe.**

# City Sewer Basemap Sheet 104, Grid 1



Drawing 76





APPENDIX VI  
DRAWINGS SCHEDULE B

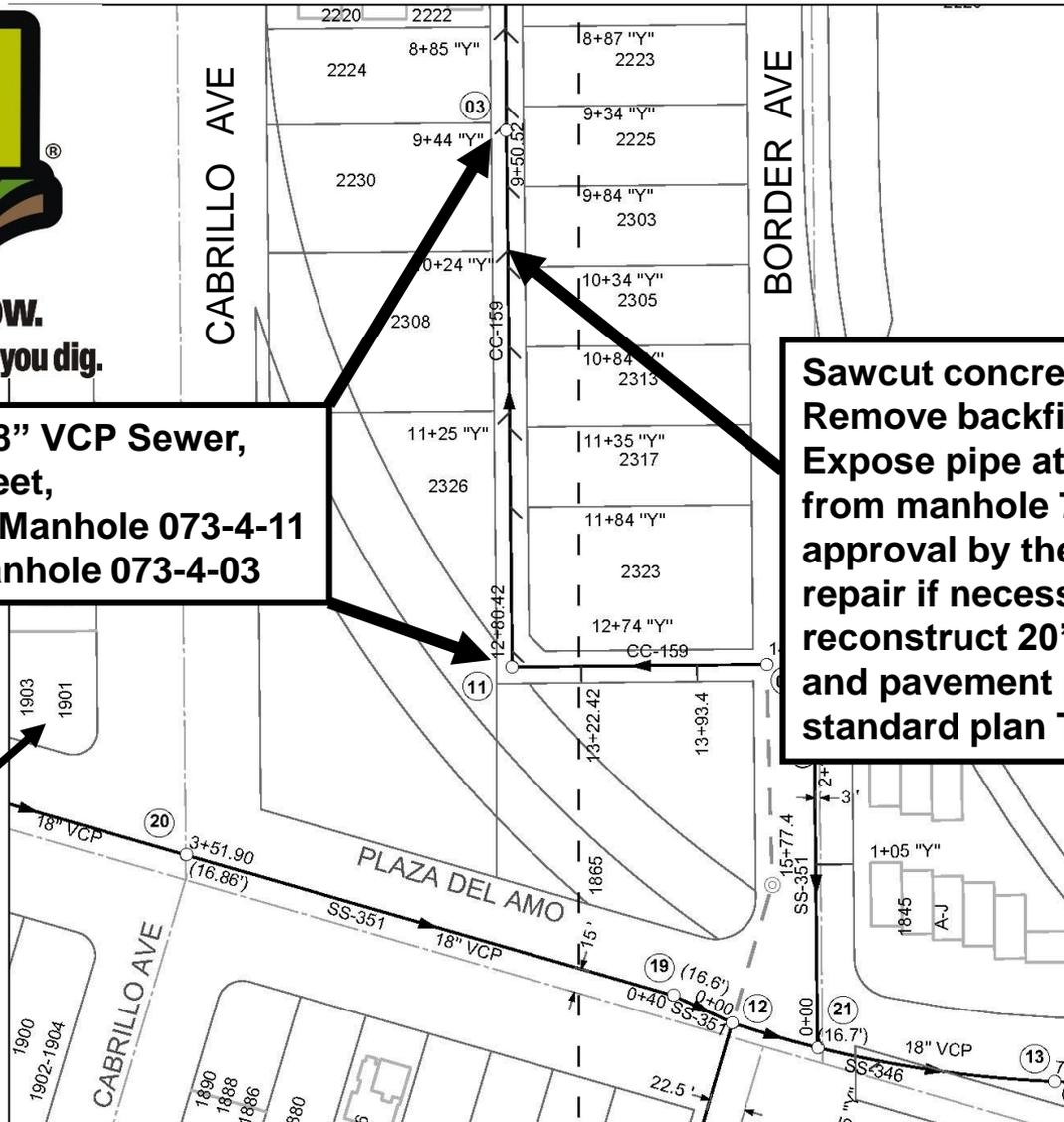
# City Sewer Basemap Sheet 73, Grid 4



**Know what's below.  
Call 811 before you dig.**

**Line 8" VCP Sewer,  
330 feet,  
from Manhole 073-4-11  
to Manhole 073-4-03**

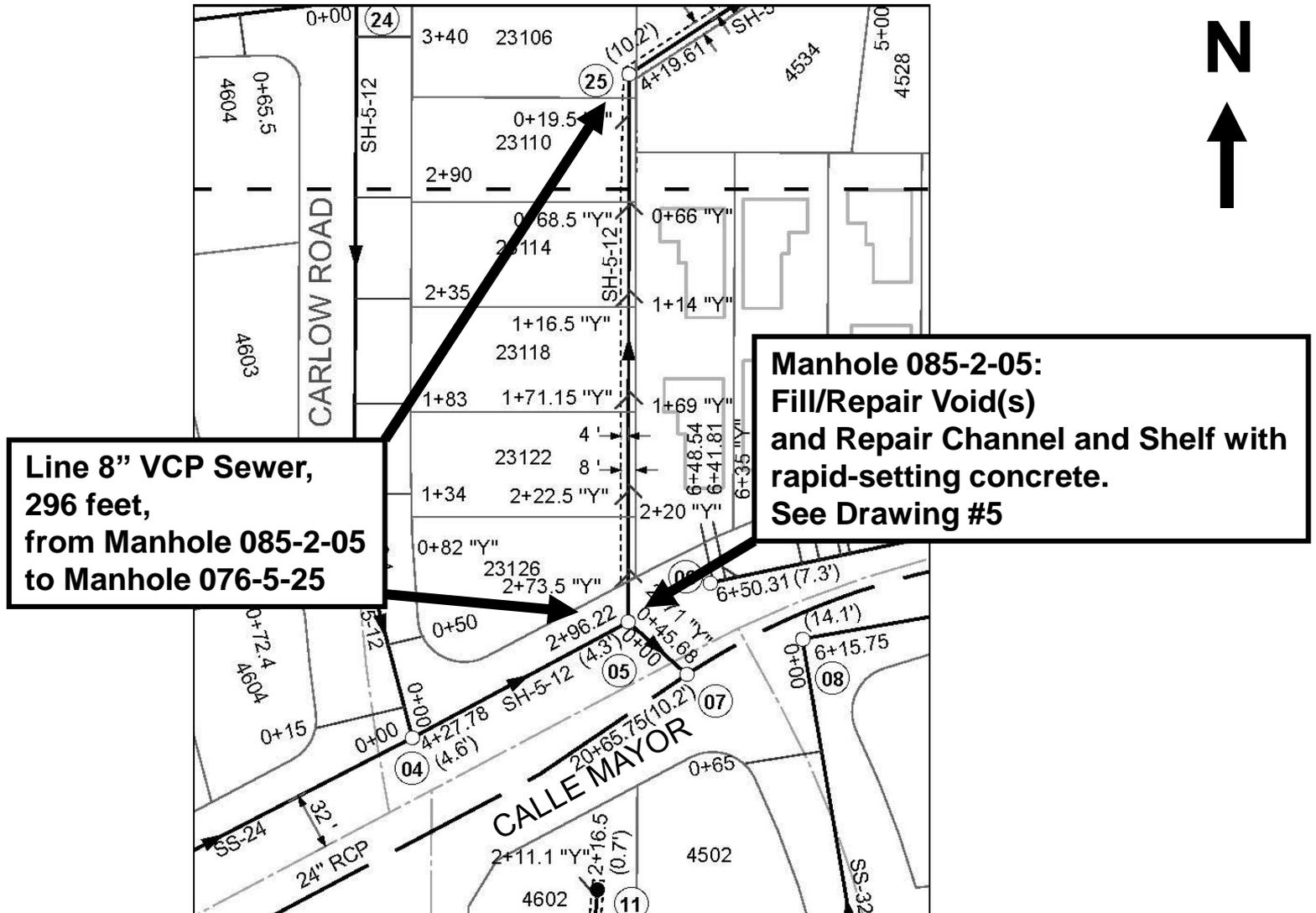
**Address (Typical)**



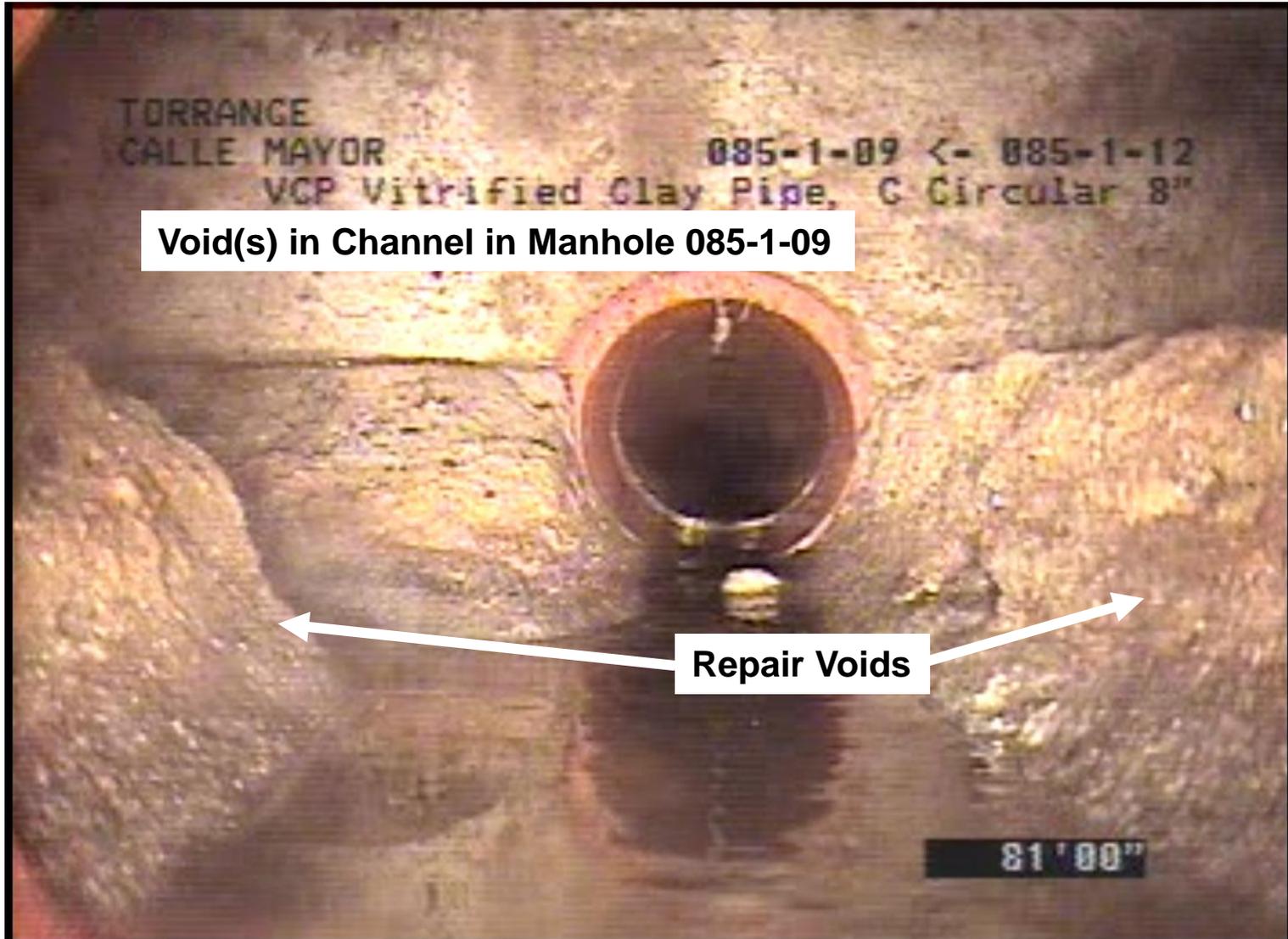
**Sawcut concrete gutter at joints,  
Remove backfill down to pipe to  
Expose pipe at approximately 50'  
from manhole 73-4-03. After  
approval by the engineer, point  
repair if necessary, backfill and  
reconstruct 20' of 4' wide gutter  
and pavement per City of Torrance  
standard plan T101.**



# City Sewer Basemap Sheet 85, Grid 2 & Sheet 76, Grid 5

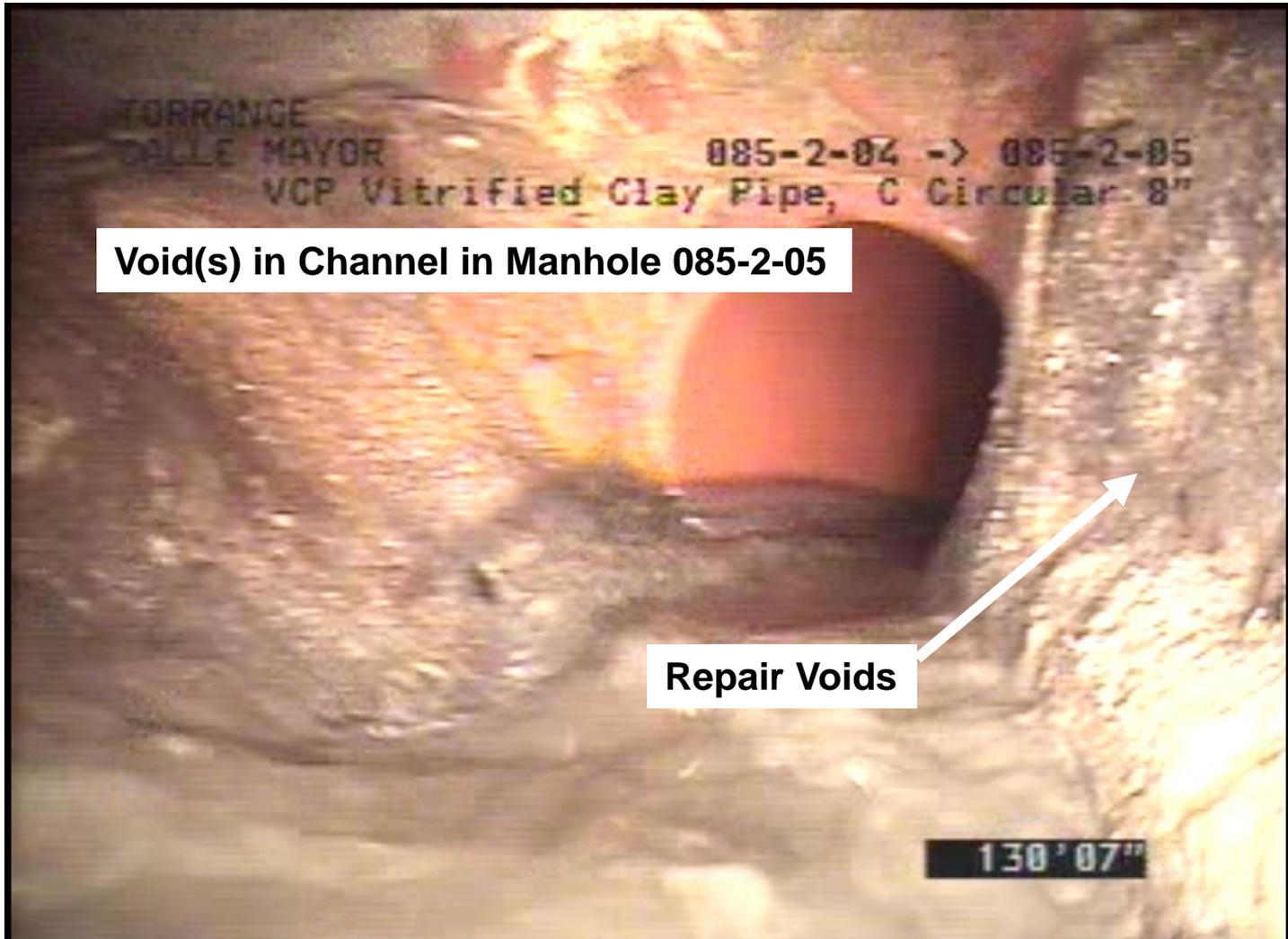


City Sewer Basemap Sheet 85, Grid 2



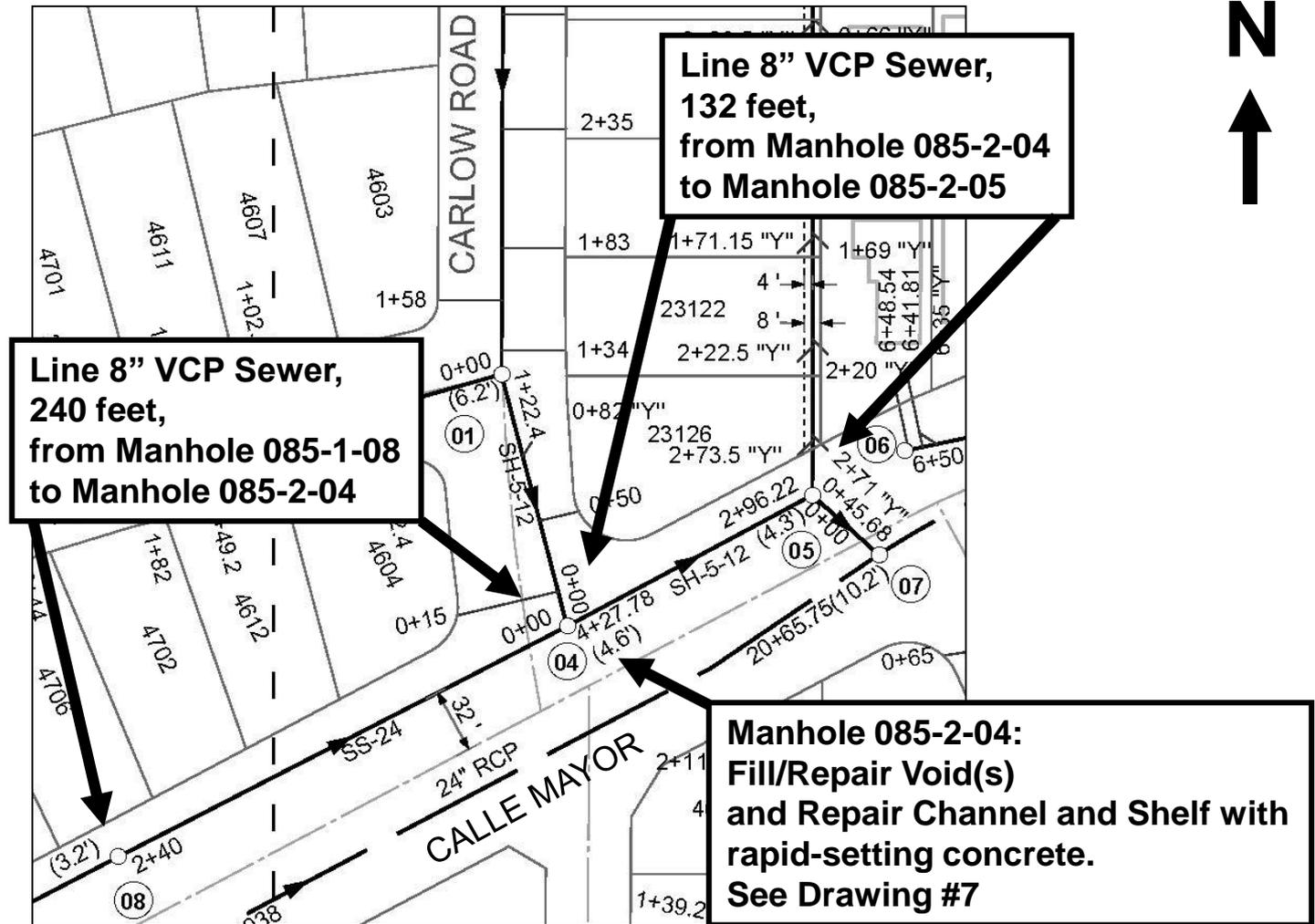
Drawing 4

City Sewer Basemap Sheet 85, Grid 2



Drawing 5

# City Sewer Basemap Sheet 85, Grid 1 and 2



City Sewer Basemap Sheet 85, Grid 2

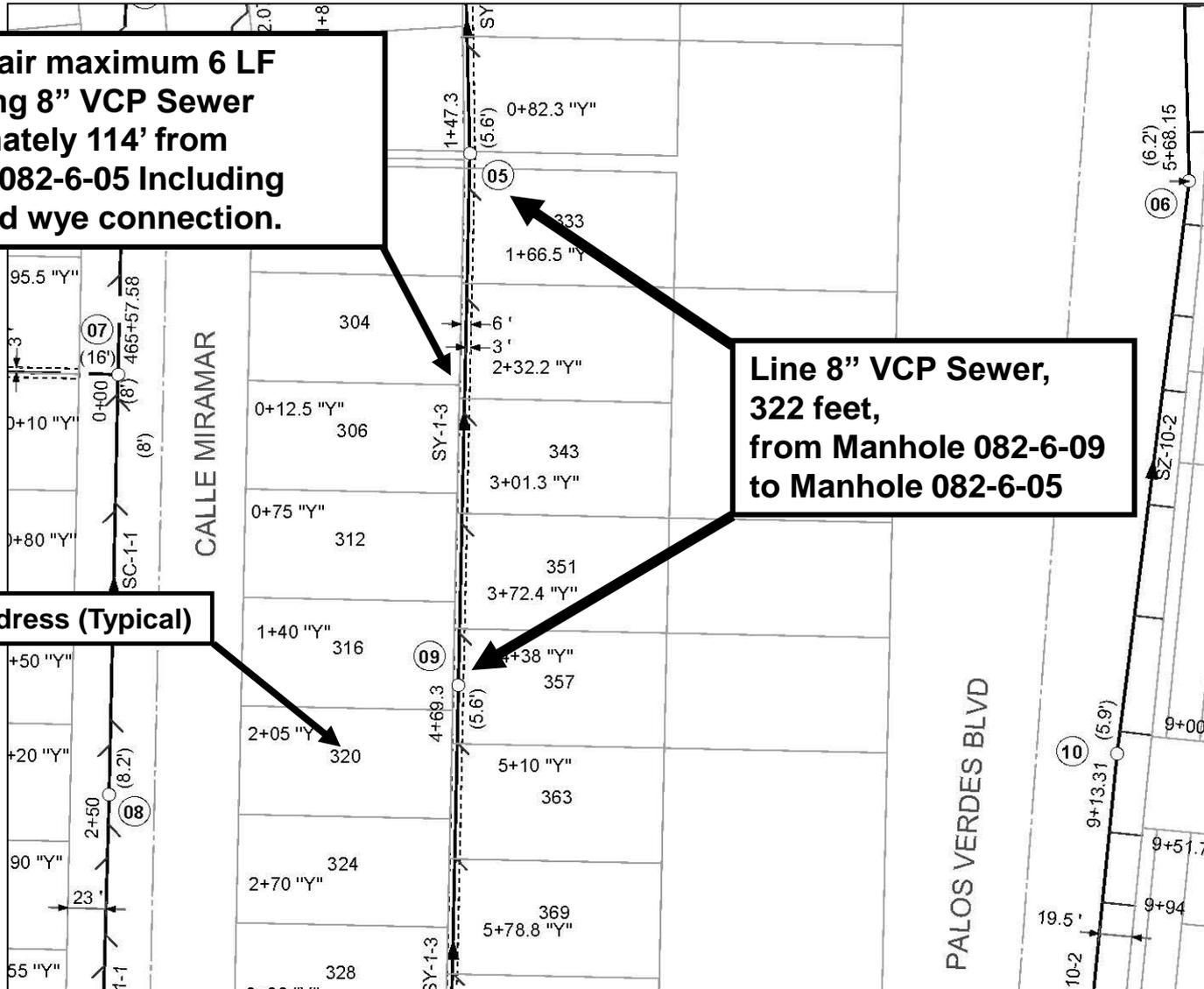


# City Sewer Basemap Sheet 82, Grid 6

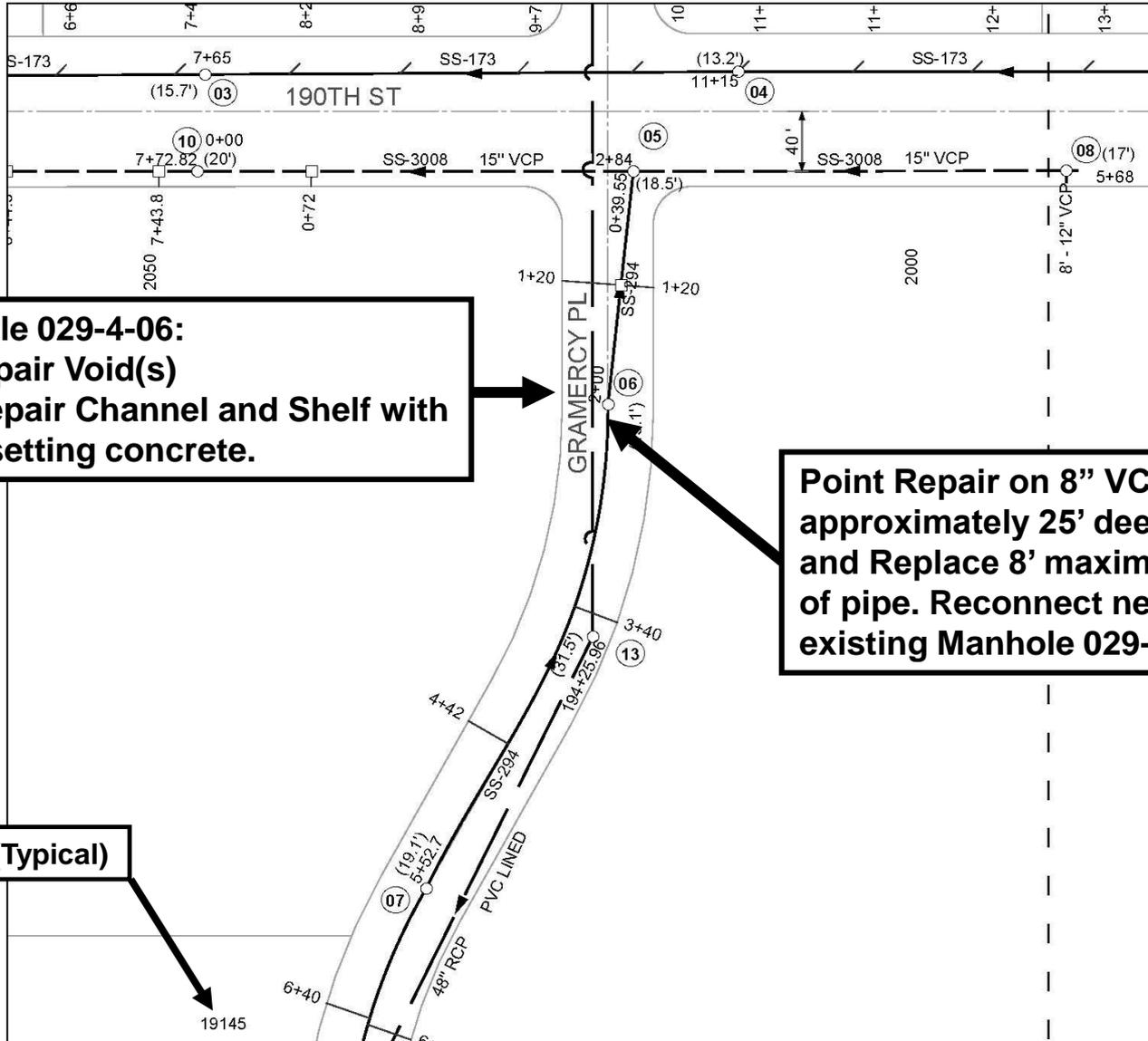
**Point repair maximum 6 LF on existing 8" VCP Sewer approximately 114' from manhole 082-6-05 including lateral and wye connection.**

**Line 8" VCP Sewer, 322 feet, from Manhole 082-6-09 to Manhole 082-6-05**

**Address (Typical)**



# City Sewer Basemap Sheet 29, Grid 4



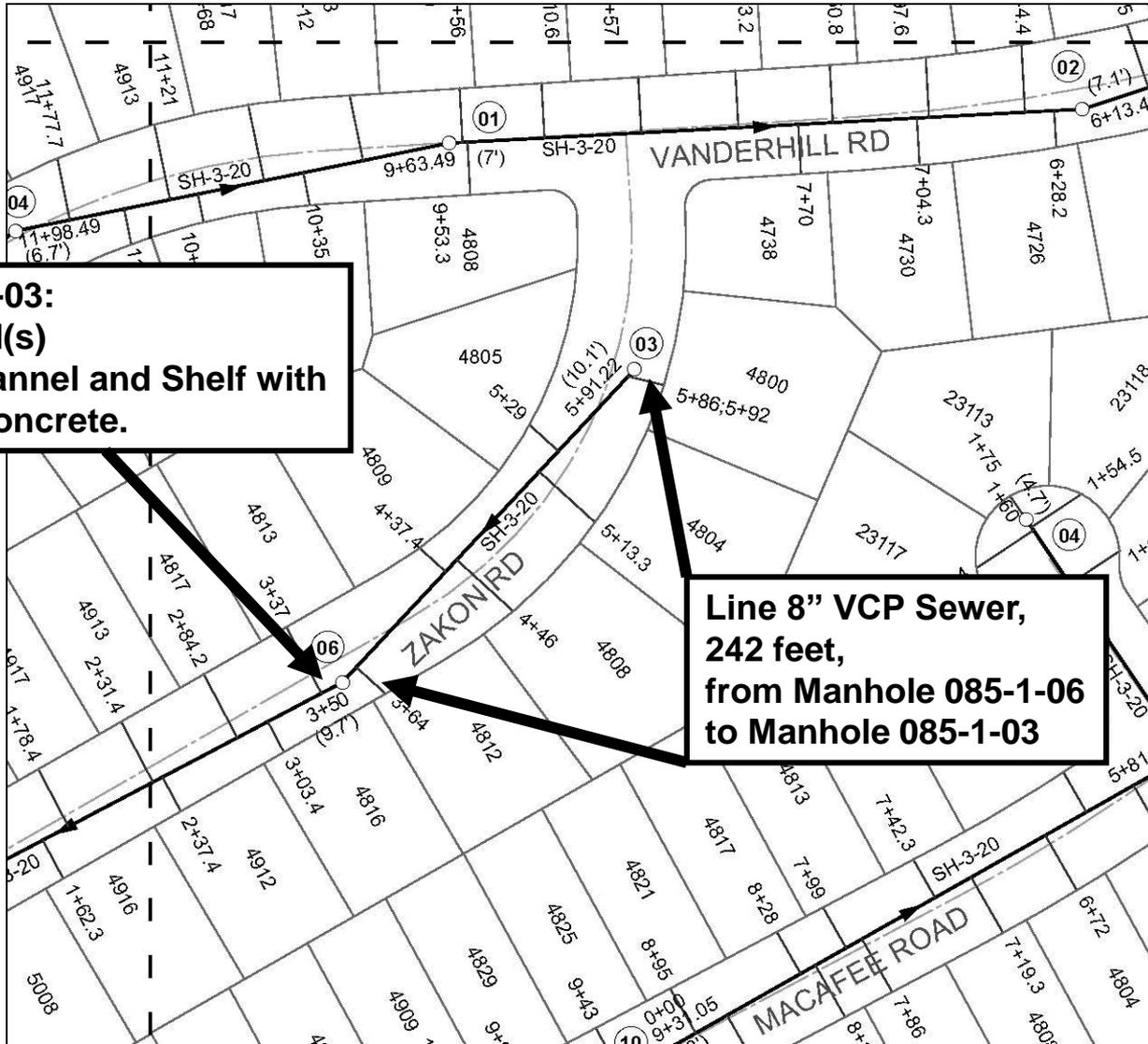
**Manhole 029-4-06:  
Fill/Repair Void(s)  
and Repair Channel and Shelf with  
rapid-setting concrete.**

**Point Repair on 8" VCP Sewer,  
approximately 25' deep. Remove  
and Replace 8' maximum length  
of pipe. Reconnect new pipe to  
existing Manhole 029-4-06.**

**Address (Typical)**



# City Sewer Basemap Sheet 85, Grid 1

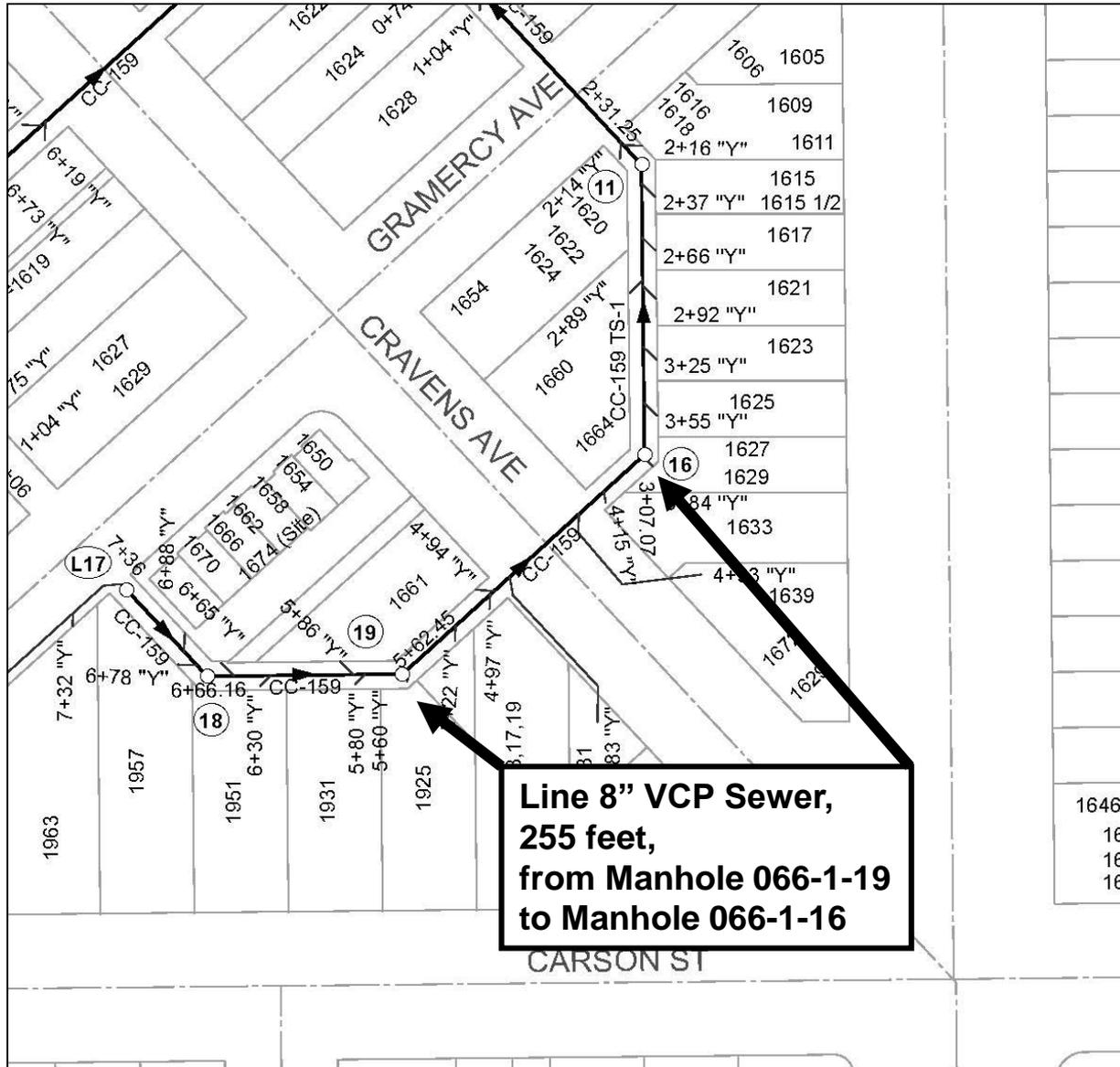


**Manhole 085-1-03:  
Fill/Repair Void(s)  
and Repair Channel and Shelf with  
rapid-setting concrete.**

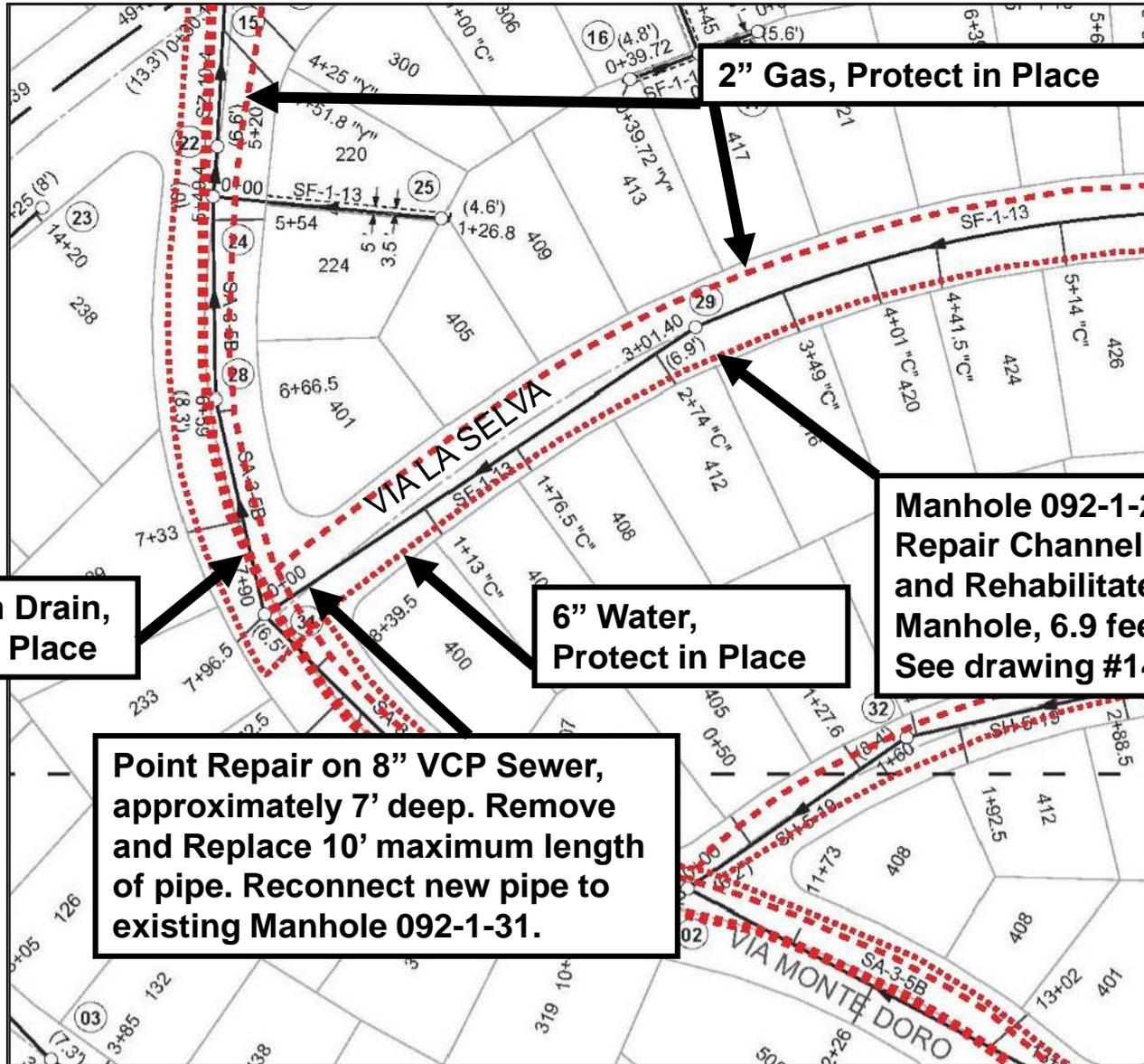
**Line 8" VCP Sewer,  
242 feet,  
from Manhole 085-1-06  
to Manhole 085-1-03**



# City Sewer Basemap Sheet 66, Grid 1



# City Sewer Basemap Sheet 92, Grid 1



**2" Gas, Protect in Place**



**Manhole 092-1-29:  
Repair Channel and Shelf  
and Rehabilitate (Line)  
Manhole, 6.9 feet deep.  
See drawing #14**

**27" Storm Drain,  
Protect in Place**

**6" Water,  
Protect in Place**

**Point Repair on 8" VCP Sewer,  
approximately 7' deep. Remove  
and Replace 10' maximum length  
of pipe. Reconnect new pipe to  
existing Manhole 092-1-31.**

City Sewer Basemap Sheet 92, Grid 1



Void(s) in Channel in Manhole 092-1-29

Repair Possible Voids

283' 06'''