

CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT

**353 Santa Monica Drive
Channel Islands Beach, CA 93035
Ventura County, California**

Sewer Rehabilitation Project – Silver Strand Beach/Hollywood by the Sea

CONTRACT DOCUMENTS | CONTRACT SPECIFICATIONS



Advertised: June 10th, 2020

Pre-bid Conference: June 18th, 2020

Bid due/Opening: July 8th, 2020

May 2020



CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT

353 Santa Monica Drive
Oxnard, CA 93035

Ventura County, California

Sewer Rehabilitation Project – Silver Strand Beach/Hollywood by the Sea

CONTRACT DOCUMENTS | CONTRACT SPECIFICATIONS

Peter Martinez

Pete Martinez
General Manager

May 2020

INVITATION FOR BIDS

CONTRACT DOCUMENTS

FOR

**SEWER REHABILITATION PROJECT –
SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

Contract No. (2020-01)



May 2020

Channel Islands Beach Community Services District
353 Santa Monica Drive
Channel Islands Beach, CA 93035
(805) 985-6021

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PART 1

BIDDING

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NOTICE OF MANDATORY PRE-BID MEETING

FOR THE CONSTRUCTION OF

**SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

Contract No. (2020-01)

FOR THE

Channel Islands Beach Community Services District
Ventura County, California

Attendance at the pre-bid conference/site visit is mandatory. Bidders are responsible to understand the Project (Refer to Section 4 of the Instructions to Bidders); information related to how to set up a site visit will be provided at the pre-bid meeting.

Bidders must complete and upload to Public Purchase all Bid Submittal Forms and Business Information Forms provided in this IFB. Bidders currently on the District's Pre-qualified Contractors List do not need to complete the Business Information Forms.

The pre-bid conference will be held at the time and place stated below:

Date & Time:

9:00 a.m. on Thursday, June 18, 2020

Location:

The pre-bid conference will be held virtually using the following call in information and link provided:

[CIBCS D Sewer Rehabilitation Pre-Bid Meeting](https://bit.ly/307JjJG)

<https://bit.ly/307JjJG>

Conference ID – 696 211 63#

Call-in Number – (209) 213-3938

Tentative Itinerary:

Preliminary question and answer session will begin at 9:00 a.m.

Questions and requests for substitution pertaining to this project must be submitted to the District electronically via the Public Purchase electronic bidding system on or before 5:00 p.m. on Monday, June 29, 2020.

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NOTICE INVITING ELECTRONIC PROPOSALS (BIDS)

FOR THE CONSTRUCTION OF

**SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

Contract No. (2020-01)

FOR THE

Channel Islands Beach Community Services District
Ventura County, California

NOTICE IS HEREBY GIVEN that the Board of Directors of said District invites and will receive sealed proposals (Bids) via its electronic bidding system up to the hour of **5:00 p.m. on the July 8, 2020**, for the furnishing to said District of all transportation, labor, materials, tools, equipment, services, permits, utilities, and other items necessary to construct said work. At said time, it will be the responsibility of the prospective bidder to log into the Public Purchase system for the Channel Islands Beach Community Services District to view the apparent lowest bidder for the project in question.

Contract Documents for the Project may be obtained through the District's Public Purchase electronic bidding system. Upon award of a Contract, Contractor will be furnished one (1) sets of plans and specifications.

Bids shall conform to and be responsive to the Contract Documents for the work.

Bidders must complete, and submit with bid, all information requested on the Bid Forms. District shall evaluate the apparent low bid to determine responsiveness and responsibility of bidder and determine if Bidder is qualified for successful performance of District construction projects in a timely manner and does not guarantee work with the District.

A contract may be awarded to the lowest, responsible bidder submitting a responsive bid for a specific project.

Each Bid shall be submitted through the Public Purchase system for the Channel Islands Beach Community Services District as part of the Contract Documents and must be accompanied by a scanned copy of the cashier's check, a certified check, or a Bidder's bond in an amount not less than ten percent (10%) of the amount of the Bid, made payable to the order of or for the benefit of the District. Each Bid shall be submitted electronically at or before the time in this notice provided. The check or bond shall be given as guarantee that the Bidder will enter into a contract with the District and furnish the required payment and performance bonds and certificates of insurance and endorsements if awarded the work, and will be declared forfeited if the Bidder refuses to timely enter into said contract or furnish the required bonds or certificates of insurance and endorsements if his Bid is accepted. A hardcopy of the Bidder's bond, cashier's check or certified check must be received at the District offices within two business days of closing bid date.

Pursuant to California Public Contracts Code Section 22300, the Contractor will be entitled to post approved securities with the District or an approved financial institution in order to have the District release funds retained by the District to insure performance of the Contract.

The District has endeavored to develop particularly fair and equitable provisions relating to indemnification, liability and related insurance for both the District and the Contractor. It is imperative that the Bidders carefully review this notice, and the accompanying forms, relating to the District's insurance requirements.

The successful Bidder will be held to comply with the insurance requirements as specified by the District herein, and in the event of Bidder's failure or inability to meet the insurance requirements after the award of Bid, the District shall have the right to consider such failure to be a material noncompliance by the successful Bidder and will look to exercise its right by (a) rejecting the Bid(s); or (b) declaring a forfeiture of the Bid bond.

It is recommended that Bidder carefully review District insurance requirements with its insurance agent/representative to determine Bidder's ability to comply with the insurance requirements, as specified.

Bidders are required to execute a certificate, which must be submitted with Bid indicating that Bidder has reviewed and understands the insurance requirements and that Bidder has the ability to provide insurance in accordance with Section 11 of the Construction Agreement.

This Project must be constructed and completed between specific calendar or working dates as specified in the contract. Liquidated Damages as specified in Section 6 of the Construction Agreement will be imposed if the Contractor fails to comply with the completion time specified in Section 4 of the Construction Agreement. Contractor is expected to begin work immediately upon receipt of District's Notice to Proceed.

The Board of Directors of the District reserves the right to select the schedule(s) under which the Bids are to be compared and contract(s) awarded, to reject any and all Bids, and to waive any and all irregularity in any Bid.

By the order of the Board of Directors of the Channel Islands Beach Community Services District.



Pete Martinez – General Manager

6/4/2020

Date

**PART 1 – BIDDING
INSTRUCTIONS TO BIDDERS**

1. GENERAL

1.1 Definitions for capitalized terms used in this Invitation for Bids (IFB) are located on Page 3 of the General Conditions.

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

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

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

1.4 The Bid shall be for all the Work to be performed as shown and specified in the Contract Documents included hereto and generally described as supplying all labor, equipment, materials, and forces necessary to complete the Work.

1.5 Bids shall be submitted on the Bid Forms provided by District, and in the manner described in this IFB (via Public Purchase).

1.6 A Bidder may withdraw its Bid by a signed written request any time prior to the date and time for receiving Bids designated in this IFB. The withdrawal of a Bid does not prejudice the right of a Bidder to file a new Bid so long as the new Bid is delivered prior to the closing time specified for all Bids.

1.7 A mandatory pre-bid conference, which may include a job walk, will be held as noted in this IFB.

1.8 A Bid delivered to District at the time set for opening shall be deemed irrevocable, and Bidder may not withdraw this Bid for a period of ninety (90) calendar days after the date set for opening. Extensions to this 90-day period may be requested in writing by District prior to the expiration date, and may be extended pursuant to agreement by Bidder.

1.9 The Contract Documents provided to Bidder shall be provided by District at its election and may consist of the Notice Inviting Bids, Instructions to Bidders, Bid forms, the Construction Agreement, any addenda, General Conditions, Supplemental Conditions, Project Plans and Specifications, and/or Greenbook Standard Specifications for Public Works Construction.

1.10 The Contract Documents are divided into parts, divisions, sections, articles, paragraphs and drawings in keeping with accepted industry practice in order to separate categories of subject matter for convenient reference thereto. There has been no attempt to divide the Specifications, the Specification sections or the Plans/Drawings into work performed by the various building trades, work by separate Contractors, or work required for separate facilities in the project. The Contract Documents are complementary and what is called for by one shall be as binding as if called for by all.

1.11 Specifications are bound into these documents in the same order as they appear in the Table of Contents pages. Specifications section names and the section page numbers are shown at the bottom of each page.

2. LICENSING REQUIREMENTS FOR CONTRACTORS

In accordance with the provisions of California law, the District has determined that, at the time a Bid is submitted, the Bidder is acting in the capacity of Contractor and is required to be properly licensed in accordance with the laws of this State. Accordingly, the Contractor shall possess a valid **Class [A]** license at the time that Contractor submits its Bid. Contractor's License Declaration is required as a part of the Contract documentation with the Bid submittal and failure to do so is grounds for declaring the Bid non-responsive. Failure of the Bidder to obtain proper and adequate licensing for an award of a Contract shall constitute a failure to execute the Contract and shall result in the forfeiture of the security of the Bidder.

3. DOCUMENT INTERPRETATION AND ADDENDA

3.1 INTERPRETATION. The Contract Documents are intended to fully inform the Bidder and to provide all details reasonably required for the execution of the proposed Work. Any person contemplating the submission of a Bid shall have thoroughly examined all of the various parts of these Contract Documents, and should there be any doubt as to the meaning or intent of said Contract Documents, the Bidder shall immediately request from the District, in writing an interpretation thereof.

3.2 ADDENDA. Any interpretation or change in said Contract Documents will be made only in writing in the form of an Addendum to the Contract Documents, which will be furnished to all Bidders receiving a set of the Contract Documents. Questions received less than three (3) business days prior to the Bid Opening date may not be answered. Only formal responses by Addenda will be binding. Bidders shall acknowledge the receipt of all Addenda by indicating in the appropriate place in the Bid that they have received all Addenda. The District shall not be responsible for any other explanation or interpretations of said documents.

4. BIDDER'S UNDERSTANDING

4.1 Each Bidder shall carefully inspect and examine the project site and shall be thoroughly familiar with all the Contract Documents. Failure to do so will not relieve the successful Bidder of its obligation to enter into a Contract and complete the contemplated work in strict accordance with the Contract Documents. The Bidder shall verify and completely satisfy itself with all information concerning site and subsurface conditions.

4.2 The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, the character, quality, and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the Contract Documents.

4.3 During the preparation of the Contract Documents, the District may have investigated the surface and subsurface conditions. Logs of test borings, topographic maps, reports or other information relating to surface and subsurface conditions obtained by the District's investigations, if any, are available for review by any interested party at the District's office located at 353 Santa Monica Drive, Channel Islands Beach, CA 93035, during normal working hours. Any and all documents relating to investigations of the surface and subsurface

conditions including, but not limited to, logs of test borings, topographic maps, reports, or other information shall not be considered a part of the Contract Documents unless otherwise specified in the Supplemental Conditions or Project Plans and Specifications.

Any investigations conducted by the District of surface and subsurface conditions were made for the purpose of study and design. It is expressly understood and agreed that District assumes no responsibility whatsoever in respect to the sufficiency or accuracy of borings, or of the logs of test borings, topographic maps, reports, or of other investigations that have been made, or of the interpretations made thereof. There is no warranty or guarantee, either expressed or implied, that the conditions indicated by said documents and investigations are representative of those actually existing conditions or throughout such area, or any part thereof, or that unforeseen developments may not occur or that other materials or conditions may not be encountered.

Contractor is responsible for properly examining the site and making additional investigations as it may elect. Information derived from inspection of logs, test borings or topographic maps, or from drawings or other documents showing location of utilities and structures will not in any way relieve the Contractor from any risk or from properly fulfilling all the terms of the Contract Documents.

4.4 Each Bidder shall be aware of and, if awarded a Contract, shall comply with Federal, State, and local laws, statutes, and ordinances relative to the execution of the Work. This requirement includes, but is not limited to, applicable regulations concerning minimum wage rates, non-discrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, the burning and non-burning requirements, permits, fees, and similar subjects.

5. DRAWINGS

Where the Drawings are reduced in size from the original signed Mylar, a graphic scale will be provided. If a dimension is not clearly specified, it shall be obtained from the District.

No information derived from such inspection of records of investigations or compilation thereof made by the District or from the ENGINEER, or his assistants, will relieve the Bidder or Contractor in any way from its risk of properly fulfilling the terms of the Contract.

6 TYPE OF PROPOSAL

6.1 UNIT PRICE ITEMS

Unless specifically stated otherwise, if the quantity of a unit-priced item is designated on the Bid Forms as an estimated quantity, and the actual quantity of the unit-priced item varies by more than twenty-five percent (25%) of the estimated quantity, an equitable adjustment in the Contract Price shall be made upon demand of either party. The equitable adjustment shall be based upon increase or decrease in costs due solely to the variations exceeding twenty-five percent (25%) of the estimated quantity. If the variation in the estimated quantity is such as to cause an increase in the time necessary for completion, the Contractor may request in writing, an extension of time to be received by the District within ten (10) days from the beginning of the delay. Upon the receipt of a written request for an extension, the ENGINEER will ascertain the facts and make an adjustment for extending the completion date as, in the

judgment of the ENGINEER, is justified. Adjustments under this Section shall be made by Change Order.

6.2 LUMP SUM ITEMS

When the work is to be submitted on a lump sum basis, a lump sum price shall be submitted in the appropriate place. The total amount to be paid to the Contractor for the Bid items shall be the amount of the lump sum item as adjusted for additions or deletions resulting from changes in the scope by the District. Lump sum items are shown as "LS" under the unit column in the Schedule of Work Items section of the Bid Form. For example, a lump sum item such as potholing may involve a number of potholes, however, no matter how many are required, all the work is included in the submitted lump sum amount.

In accordance with the Plans and Specifications, a Schedule of Values, which is an itemized list of the value or cost of each Bid item of work, shall be submitted to the ENGINEER prior to or at the pre-construction meeting.

6.3 MOBILIZATION AND DEMOBILIZATION

The cost of mobilization and demobilization of the Work shall not exceed ten percent (10%) of the total amount of the Bid excluding the cost of bonds and insurance unless otherwise stated in the Supplemental Conditions.

7. SPECIAL BIDDING REQUIREMENTS

In the event there is a need for special bidding procedures and requirements for parts of the work under this Contract, such requirements will be set forth in the Supplemental Conditions.

8. PREPARATION OF BIDS

8.1 All blank spaces in the Bid form must be completed in ink, in both words and figures where required. No modifications shall be made to the forms. Any modification to the Bid forms not specifically called for in the Contract Documents may result in the District rejecting the Bid as non-responsive.

8.2 Any Bid may be deemed non-responsive which contains omissions, erasures, alterations, additions of any kind, prices uncalled for, obviously unbalanced prices, or which in any manner shall fail to conform to the conditions of the IFB.

8.3 An authorized signatory shall execute the Bid form.

If the Bidder is a joint venture/partnership, it shall submit with its Bid a duly notarized venture/partner-executed irrevocable Power of Attorney that designates one of the ventures as a Management Sponsor along with a signed copy of the Joint Venture/Partnership Agreement. The Management Sponsor shall be empowered to execute the Bid on behalf of the Bidder and to act for and bind the Bidder in all matters relating to the Bid. The Power of Attorney shall specifically state that each venture/partner shall be jointly and severally liable for any and all of the duties and obligations of the Bidder that is assumed under the Bid and under any contract arising therefrom. The Management Sponsor shall execute the Bid on behalf of the joint venture/partnership in its legal name.

8.4 The Bidder shall submit with its Bid a notarized Non-collusion Affidavit executed by the Bidder by the person or persons set forth above, otherwise the Bid will be regarded as not properly filed.

9. STATE AND LOCAL SALES AND USE TAXES

The state and local sales and use taxes, as required by the laws and statutes of the state and its political subdivisions, shall be paid by the Contractor. Prices quoted in the Bid shall include sales tax, unless provision is made in the proposal form to itemize the tax separately.

10. SUBMISSION OF BIDS

All Bids must be submitted at the time and place and in the manner prescribed in the IFB. Bids must be made on the Bid forms provided herein. If the IFB requires a hardcopy, each Bid must be submitted in a sealed envelope, marked to indicate its contents without being opened, and addressed in conformance with the instructions in the Contract Documents. If the IFB requires use of the electronic bidding system, Bids must be made on the Bid forms provided in the system.

11. SUBSTITUTIONS "OR-EQUAL"

Except for District-selected equipment items and items where "no substitution" is clearly specified; materials, articles, devices, products, fixtures, form, type of construction, or process are indicated or specified for the purpose of establishing a standard of quality and facilitating the description of the material or process desired by District. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable in design, and shall be deemed to be followed by the words "Or Equal". Such requests shall be made in writing by the Contractor to the District stating in detail how the proposed product differs in composition and performance from the designated product and shall be accompanied by complete data on which the District may make a determination on the merits of the proposed substitution.

In accordance with Public Contract Code Section 3400, Contractor may, in such cases, submit requests substantiating the substitution of "equal" items within thirty-five (35) days after the award of the Contract unless otherwise stated in the Supplemental Conditions or Project Plans and Specifications. If the District rejects the substitution of an "Or Equal" item, the Contractor shall provide the specified item without extra cost to the District.

12. MODIFIED AND ALTERNATIVE BIDS

12.1 Bids must not deviate from what is requested in this IFB.

12.2 A Bid shall be rejected when the Bidder imposes conditions or exceptions that would modify requirements of the IFB.

13. NAMING OF SUBCONTRACTORS

The Bidder shall submit in the Bid the names and business addresses of each subcontractor that will perform work under this Contract in excess of one-half of one percent ($\frac{1}{2}\%$) of the amount of the total Bid, and shall list the portion of the work that will be done by such subcontractor. If the Bidder fails to identify specifically any such subcontractor for any portion

of the work to be performed under the Contract in excess of one-half of one percent (1/2%), the Bidder agrees to perform that portion of the work. No listed subcontractor shall be substituted without prior District approval in accordance with Public Contract Code section 4107. Any proposed subcontractors must be properly and currently licensed as required by the subletting and subcontracting Fair Practice Act, commencing with Section 4100 of the Public Contract Code.

14. DISCREPANCIES IN BID ITEMS

14.1 The Bidder shall furnish a price for each individual Bid item, unless otherwise stated in the Schedule of Work Items. Failure to do so may render the Bid(s) incomplete and non-responsive and may cause its rejection. The Bid shall state the Unit Prices, the total amount of each Bid item, and the "Total Bid Price" for which the Bidder proposes to supply the labor, goods, and completely perform the Contract. If the Unit Price and the total amount stated by a Bidder for any item do not agree, the Unit Price alone shall be considered as representing the Bidder's intention, and the total price for that item shall be corrected by District to conform thereto. District will correct the extended Unit Price and math errors to determine the Total Amount of Bid.

14.2 Should any Unit Price be left blank, out of balance, or not accurately reflect the cost, the Bid may be considered non-responsive.

14.3 Should any Unit Price or total price be left blank the Bid will be considered non-responsive unless the blank item can be calculated from the information available (i.e., total price can be determined by multiplying the Unit Price by the estimated quantity).

If any one line item is left blank, and the above situations do not apply, no attempt shall be made to reconcile the amounts. The Bid in this case shall be considered non-responsive.

14.4 If the cumulative total price for all the individual items and the Total Amount of Bid stated by a Bidder do not agree, the sum of the cumulative total price for each of the unit items shall be considered as representing the Bidder's intention and the Total Amount of Bid entered by the Bidder shall be corrected by District to conform thereto.

15. MISTAKES IN BIDS (AFTER OPENING)

15.1 Bidder, who seeks to rescind its Bid due to a mistake or error in preparation of its Bid, shall notify District in writing within five (5) days of public opening.

15.2 Bidders alleging mistakes in Bids may seek relief in accordance with Section 5100, et seq. of the California Public Contracts Code.

16. BIDDERS INTERESTED IN MORE THAN ONE BID

No person, firm, or corporation shall be allowed to make or file, or be interested in more than one (1) Bid for the same work. A person, firm, or corporation submitting a sub-proposal to a Bidder, or that has quoted prices or material to a Bidder, is not thereby disqualified from submitting a sub-proposal or quoting prices to other Bidders.

17. BID SECURITY (Bid Bond)

Bids must be accompanied by a certified check, cashier's check drawn on a bank in good standing and payable to the District, or a Bidder's bond in favor of the District issued by a Surety authorized to issue such bonds in the State of California, in an amount not less than ten percent (10%) of the total amount of the proposal submitted. This Bid security shall be given as a guarantee that the Bidder will not withdraw the Bid for a period of ninety (90) calendar days after Bid opening, and that if awarded the Contract, the successful Bidder will execute the attached Contract and furnish the referenced documents within the time period specified in the Contract Documents. Failure of the Contractor who is awarded the Contract to sign the Contract or provide the District with all of the referenced documents within the time period specified by the Contract Documents shall result in the forfeiture of the Bid security to the District.

The Attorney-in-fact that executes a Bid bond on behalf of a Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond. If the Bidder elects to furnish a Bid bond, Bidder shall use the Bid bond form bound herewith, or one conforming substantially thereto in form and content.

18. AWARD OF CONTRACT

Within ninety (90) calendar days after the opening of Bids, the District may accept one of the Bids and issue a Notice of Intent to Award to the lowest responsive and responsible Bidder in accordance with Article 20, Basis of Award, below. The Notice of Intent to Award shall be sent by U.S. mail or by other commercial business delivery method to all Bidders. If the District receives no protest within five (5) business days of the date of Notice of Intent to Award, pursuant to Section 24.2 below, the District may issue a Notice of Award to the lowest responsive and responsible Bidder. The Notice of Award shall be mailed or delivered to the office designated in the Bid. In the event of failure of the lowest responsive and responsible Bidder to sign and return the Contract with an acceptable performance bond and labor and materials bond, certificates of insurance and policies, certificate regarding worker's compensation insurance, and other required documents within the time specified in the Contract Documents, the District may award the Contract to the next lowest responsive and responsible Bidder. Such award, if made, will be made within ninety (90) calendar days after the Bid opening date.

19. RETURN OF BID SECURITY

Within sixty (60) calendar days *after the award* of the Contract, the District will return the Bid securities, except Bidder bonds and guarantees that have been forfeited, to all Bidders whose Bids are not to be further considered in awarding the Contract. Retained Bid securities will be held until the Contract has been finally executed, but in no case longer than sixty (60) calendar days after award of the Contract, after which all Bid securities, other than Bid bonds and guarantees which have been forfeited, will be returned to the respective Bidders whose proposals they accompanied.

20. BASIS OF AWARD

If awarded, the award will be made by the District on the basis of the Bid from the lowest responsive and responsible Bidder that, in the District's sole and absolute judgment, will best serve the interest of the District.

21. EXECUTION OF CONTRACT

The successful Bidder shall, within fifteen (15) calendar days after receiving the Notice of Award, sign and deliver the Contract to the District together with the acceptable bonds, certificates of insurance and policies, certificate of worker's compensation insurance, and other documents as required in the Contract Documents. Within twenty-one (21) calendar days after receiving the signed Contract and all other required documents that are found acceptable to the District, the District's authorized agents will sign the Contract. Signature by both parties constitutes execution of the Contract.

22. PERFORMANCE BOND

The successful Bidder shall file a Performance Bond with the District on the form bound herewith in the full amount of the Contract Price, as security for the faithful performance of the Contract for the construction of the work, and to cover all warranties against defective workmanship or materials, or both, for a period of one (1) year after the filing date of Notice of Completion. The Surety furnishing this bond shall have a sound financial standing, be a State of California admitted Surety insurer and either submit those documents set forth in California Code of Civil Procedures, section 995.660, items (1) through (4), so that the District may determine whether the bond is sufficient in accordance with California Code of Civil Procedure section 995.660, or have a Best rating of A VII or better.

23. LABOR AND MATERIALS BOND (Payment Bond)

The successful Bidder shall file with the District at the time of execution of the Contract, a Labor and Materials Bond on the form bound herewith in the amount of one-hundred percent (100%) of the Contract Price, as security for the payment of all persons supplying labor and materials for the construction of the work. The Surety furnishing this bond shall have a sound financial standing, be a State of California admitted Surety insurer and either submit those documents set forth in California Code of Civil Procedures, section 995.660, items (1) through (4), so that the District may determine whether the bond is sufficient in accordance with California Code of Civil Procedure section 995.660, or have a Best rating of A VII or better.

24. POWER-OF-ATTORNEY

The Attorney-in-fact (Resident Agent) that executes the Performance Bond or Labor and Materials Bond on behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bonds.

25. BID PROTESTS

25.1 IFB PROTESTS. The purpose of this IFB is to obtain competitive Bids and/or proposals from Bidders. Any Bidder that believes a particular specification or requirement is impractical, unduly restrictive, or ambiguous may advise District of its concerns, within ten (10) business days of issuance of this IFB, by filing a written protest with District's Contracts Officer. The protest will be evaluated, and, if deemed warranted, the IFB Documents may be revised by issuing an Addendum. Any Bidder, that has not filed its protest within ten (10) business days after issuance of this IFB, will be deemed, at the minimum, to have accepted this IFB as reasonable, not unduly restrictive, and unambiguous.

25.2 CONTRACT AWARD PROTEST. Bidders are permitted to protest District's decision to award a Contract. Unless otherwise specified in the IFB, the Bidder shall have five (5) business days from the date of issuance of the Notice of Intent to Award, or similar announcement, to file a protest.

The protest must be filed in writing with the Contracts Administrator and must specify, in detail, the grounds upon which the protest is based. A valid protest must:

1. Come from an actual Bidder for the Contract;
2. Come from a Bidder which has a lower Bid than the successful Bidder; and,
3. Contain the following information:
 - a. Name, address, and telephone number of the Protestor.
 - b. The title and Job/Contract number of the award being protested.
 - c. A detailed statement citing the provisions being protested, including the reasons for the protest.

If a protest is filed on the grounds that the (protesting) Bidder is the lowest responsive responsible Bidder, the Contract shall not be awarded until either the protest has been withdrawn or the District's Contract Officer has issued a Notice of Decision on the matter.

A protest shall not be considered valid if filed by a Bidder who cannot show that it should be awarded the Contract if its protest is accepted.

There is no basis for protest if the District in its sole discretion determines to reject all bids based on the best interests of the District.

The Contracts Officer will issue a written final decision by first-class mail and/or by electronic means, such as facsimile transmission or e-mail, within ten (10) business days of receiving the written protest and prior to Contract Award.

26. NOTICE TO PROCEED

Once the successful Bidder signs and returns the Contract with an acceptable performance bond and labor and materials bond, certificates of insurance and policies, certificate regarding worker's compensation insurance, and other required documents within the time specified in the Contract Documents (refer to Section 21 above), the District will fully execute the Contract and issue a Notice to Proceed which states the date to proceed with construction. Bidders should be prepared to start work upon the Notice to Proceed.

27. RETENTION

Pursuant to Section 10261 (b) of the Public Contract Code, when the District has made a finding prior to bid that a specified project is substantially complex and therefore requires a higher retention amount than five percent (5%), the District shall include both this finding and the actual retention for the specified project amount in the Invitation for Bids. Any changes in retention shall be located in the Supplemental Conditions of the Construction Contract included in the Invitation for Bids.

28. DISTRICT RIGHTS

28.1 District may investigate the qualifications of any Bidder under consideration inclusive of, but not limited to, the information provided in the Bid form.

28.2 District may require confirmation of information furnished by the Bidder, and require additional evidence of qualifications to perform the work described in this IFB.

28.3 District reserves the right to:

1. Reject any or all of the Bids for any reason whatsoever, at its discretion, including multiple Bids, if multiple Bids are received;
2. Reject any Bids prejudicial to interests of the District or to other Bidders;
3. Reject any Bid that, in the opinion of District, is so unbalanced in comparison to other Bids received and/or to District's internal estimates that it does not accurately reflect the cost to perform the Work;
4. Cancel the entire Bid;
5. Issue subsequent Bids;
6. Seek the assistance of outside technical experts to evaluate Bids, disqualify the Bid(s) upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder(s);
7. Waive any errors or informalities in any Bid, to the extent permitted by law;
8. District may, prior to, or after Contract award, delete any Bid line item at the line item Bid price. If District elects to request additive or deductive item cost in Bidding, as stated in the Supplemental Conditions, then District shall follow Public Contract Code Section 20103.8. Further, if District chooses determining the lowest Bidder other than as in Public Contract Code Section 20103.8(a), it will specify the same in the Supplemental Conditions. If District elects to delete any Bid line item after award, it shall be done pursuant to a Change Order.
9. Investigate the qualifications on any Bidder under consideration, inclusive of, but not limited to, the information provide in the Bid Submittal Forms. The District may require confirmation or additional evidence of qualifications to perform the work.

END INSTRUCTIONS TO BIDDERS

PART 2

CONTRACT DOCUMENTS

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**PROPOSAL TO
CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT
FOR THE CONSTRUCTION OF**

**SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

Contract No. (2020-01)

Name of Bidder: _____

Business Address: _____

Phone Number: _____

TO THE GOVERNING BODY OF THE
CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT:

Pursuant to and in compliance with the IFB and the other documents relating thereto, the undersigned Bidder, being fully familiar with the terms of the Contract Documents, local conditions affecting the performance of the Contract, the character, quality, quantities, and scope of the work, and the cost of the work at the place where the work is to be done, hereby proposes and agrees to perform within the time stipulated in the Contract, including all of its component parts and everything required to be performed, and to furnish any and all of the labor, material, tools, equipment, transportation, services, permits, utilities, and all other items necessary to perform the contract and complete in a workmanlike manner, all of the work required in connection with the construction of said work all in strict conformity with the plans and specifications and other Contract Documents, including addenda Nos.: ____, ____, ____, and ____, on file in the office of the Owner for the prices hereinafter set forth.

The undersigned as Bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any person, firm, or corporation; and Bidder proposes and agrees, if the proposal is accepted, that Bidder will execute a contract with the Owner in the form set forth in the Contract Documents and that Bidder will accept in full payment thereof the following prices, to wit:

SCHEDULE OF WORK ITEMS
(Exhibit A to Construction Agreement)

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
1.	Lump Sum	Mobilization, Permits, Cleanup, & Demobilization (must not exceed 10%)	Lump Sum	\$_____
2.	Lump Sum	Record Documents	Lump Sum	\$_____
3.	204 V.L.F.	48" Manhole Rehabilitation (25 manholes)	\$_____	\$_____
4.	23 EA	Replace 24" Manhole Covers	\$_____	\$_____
5.	2 EA	Replace 36" Manhole Covers	\$_____	\$_____
Silver Strand Beach Area 1				
6.	Lump Sum	Sunset Dr: CO 36-60 to MH 36-61 518 L.F. of 8" CIPP liner installation for full length of pipe.	Lump Sum	\$_____
7.	Lump Sum	Hollywood Bl: CO 36-62 to MH 36-63 4 L.F. of 8" CIPP liner spot repair in 1 location along reach	Lump Sum	\$_____
8.	Lump Sum	Hollywood Bl: CO 36-76 to MH 36-77 4 L.F. of 8" CIPP liner spot repair in 1 location along reach	Lump Sum	\$_____
9.	Lump Sum	Panama Dr: MH 36-77 to MH 36-78 259 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$_____
Silver Strand Beach Area 2				
10.	Lump Sum	Anacapa Ave: MH 37-51 to MH 37-68 555 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$_____
11.	Lump Sum	Roosevelt Bl: MH 36-82 to MH 36-83 112 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$_____
Silver Strand Beach Area 3				
12.	Lump Sum	Rossmore Dr: CO 37-75 to MH 37-73 522 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$_____
13.	Lump Sum	Cahuenga Dr: CO 37-76 to MH 37-74-A 338 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$_____
14.	Lump Sum	Highland Dr: MH 37-89-A to MH 37-89 404 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$_____

**SCHEDULE OF WORK ITEMS
(Exhibit A to Construction Agreement)**

ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
Silver Strand Beach Area 4				
15.	Lump Sum	Ocean Dr: MH 37-39 to MH 37-41 4 L.F. of 10" CIPP liner spot repair in 1 location along reach	Lump Sum	\$ _____
16.	Lump Sum	Bardsdale Ave: CO 37-38 to MH 37-39-A 284 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$ _____
17.	Lump Sum	Tujunga Ave: CO 37-36 to MH 37-37-A 286 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$ _____
18.	Lump Sum	Hueneme Ave: CO 37-34 to MH 37-35 12 L.F. of 8" CIPP liner spot repair in 3 locations along reach	Lump Sum	\$ _____
19.	Lump Sum	Ojai Ave: CO 37-30 to MH 37-31 8 L.F. of 8" CIPP liner spot repair in 2 locations along reach	Lump Sum	\$ _____
Silver Strand Beach Area 5				
20.	Lump Sum	Ocean Dr: MH 38-21 to MH 38-23 4 L.F. of 8" CIPP liner spot repair in 1 location along reach	Lump Sum	\$ _____
21.	Lump Sum	Ocean Dr: MH 38-07 to MH 38-09 177 L.F. of 8" CIPP liner installation for full length of pipe	Lump Sum	\$ _____
22.	Lump Sum	Ocean Dr: MH 23-03 to MH 23-05 4 L.F. of 8" CIPP liner spot repair in 1 location along reach	Lump Sum	\$ _____
23.	Lump Sum	Sawtelle Ave: CO 23-00 to MH 23-01 12 L.F. of 8" CIPP liner spot repair in 3 locations along reach	Lump Sum	\$ _____
TOTAL AMOUNT OF BID ITEMS 1 THROUGH 23			\$	_____

Contracting Firm: _____

Note: All items listed in the Schedule of Work Items described in detail in Specification Section 012000, Measurement and Payment.

Award of Contract, if awarded, will not be made for less than the sum of all the Base Bid Items 1 through 23. Any additive or deductive work item on the Schedule of Work Items may be selected by District after evaluation of Bids or, if required, after start of construction.

Each individual Bid item shall be determined from visiting the work site, reviewing the Plans and Specifications, and all other portions of the Contract Documents, and shall include all items necessary to complete the Work, including the assumption of all obligations, duties, and responsibilities necessary to the successful completion of the Contract, and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the Work: tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform and complete the Work; and bonds, insurance and submittals; all as per the requirements of the Contract Documents, whether or not expressly listed or designated.

It is understood that the foregoing quantities are approximate only and are solely for the purpose of facilitating the comparison of Bids, and that the Contractor's compensation will be computed upon the basis of the actual quantities in the completed work whether they be more or less than those shown.

- A. The General Contractor (Contractor) must perform at least fifty-one percent (51%) of the total project work awarded and may sublet no more than forty-nine percent (49%) of the total project work awarded to any one subcontractor.

The name and location of place of business of each subcontractor who will perform work or labor or render service to the General Contractor in or about the construction of the work, or improvements, in an amount in excess of one-half of one percent (1/2%) of the General Contractor's total Bid, and the portion of the work that will be done by each subcontractor is set forth as follows:

<u>Name of Subcontractor</u>	<u>Location of Office</u>	<u>Work Subcontracted</u>
_____	_____	_____
<u>License #:</u> _____		

<u>Name of Subcontractor</u>	<u>Location of Office</u>	<u>Work Subcontracted</u>
_____	_____	_____
<u>License #</u> _____		

Except as hereinabove provided, Contractor acknowledges and agrees that Contractor will perform all required work in accordance with Section 4106 of the Public Contract Code.

- B. Person who inspected site of the proposed work for Bidder:

Name: _____ Date of Inspection: _____

- C. It is agreed that, if requested by the District, the Bidder shall furnish a notarized financial statement, references, and other information, sufficiently comprehensive to permit an appraisal of his current financial condition.
- D. ACCOMPANYING THIS BID IS _____ (Insert the words "cash", "Bidder's bond", or "certified check", as the case may be) in an amount equal to at least ten percent (10%) of the total amount of the Bid, payable to:

CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT

The undersigned deposits the above-named security as a proposal guarantee and agrees that it shall be forfeited to the District as liquidated damages in case this proposal is accepted by the District and the undersigned fails to execute a contract with the District as specified in the Contract Documents or fails to furnish the required payment and performance bonds and insurance certificates and endorsements. Should the District be required to engage the services of an attorney in connection with the enforcement of this Bid, Bidder promises to pay District's reasonable attorney's fees, incurred with or without suit.

- E. Bidders shall indicate opposite each item listed below the name of the manufacturer or Supplier proposed to be used under the Contract. Award of a Contract under this proposal (Bid) will not imply approval by the District of a manufacturer or Supplier listed by the Bidder. However, if a manufacturer or Supplier is acceptable to the District, the successful Bidder shall furnish the items from the manufacturer or Supplier indicated. Each contracting Bidder shall inform in writing each named manufacturer or Supplier that the so named is listed for information purposes only and may be substituted, changed, or omitted by the successful Bidder, subject to the approval of the Bidder, without subjecting the District to any liability for the substitution, change, or omission. The successful Bidder shall reimburse the District for any expenses incurred by the District as a result of the successful Bidder's failure to so notify each named manufacturer or Supplier. Lead time for delivery of equipment from date of ordering shall also be shown.

<u>Item</u>	<u>Manufacturer</u>	<u>Lead Time Calendar Days</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

F. The names of all persons interested in the foregoing proposals as principals are as follows: (NOTE – If Bidder or other interested is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a general partnership, state true name of firm also names of all individual partners composing firm; if a limited partnership, the names of all general partners and limited partners; if Bidder or other interested person is an individual, state first and last name in full; if the Bidder is a joint venture, state the complete name of each venturer.)

G. Licensed in accordance with the California State Contractor's License Law.

Contractor's License No. _____

Signature of Bidder: _____

Business Address, Complete: _____

Dated: _____, 2020 Telephone Number: _____

NOTE: If Bidder is a corporation, the legal name of the corporation shall be set forth above, together with the signature of the officer or officers authorized to sign Contracts on behalf of the corporation and the corporate seal; if Bidder is a partnership, the true name of the firm shall be set forth above, together with the signature of the partner or partners authorized to sign Contracts on behalf of the partnership; if the Bidder is an individual, his signature shall be placed above; if the Bidder is a joint venture, the name of the joint venture shall be set forth above with the signature of an authorized representative of each venturer.

CONTRACTOR'S LICENSE DECLARATION

(Business and Professions Code Section 7028.15)

The undersigned declares that he or she is _____
of _____,
the party making the foregoing Bid (Hereinafter, the "Bidder").

1. Bidder's Contractor's License Number is as follows: _____,
2. The expiration date of Bidder's Contractor's License is: _____.
3. Bidder acknowledges that Section 7028.15(e) of the Business and Professions Code provides as follows:

"Unless one of the foregoing exceptions applies, a Bid submitted to a public agency by a Contractor who is not licensed in accordance with this chapter shall be considered non-responsive and shall be rejected by the public agency. Unless one of the foregoing exceptions applies, a local public agency shall, before awarding a contract or issuing a purchase order, verify that the Contractor was properly licensed when the Contractor submitted the Bid.

Any contract awarded to, or any purchase order issued to, a Contractor who is not licensed pursuant to this chapter is void."

The undersigned declares under penalty of perjury that the foregoing is true and correct.

Executed on _____, 2020, at _____
_____ (Insert city and state where declaration signed)

Signature

Typed Name

Title

Name of Bidder

**ACKNOWLEDGMENT OF INSURANCE REQUIREMENTS
AND CERTIFICATION OF ABILITY TO
PROVIDE COVERAGES SPECIFIED**

I, _____, the _____,
(Name of Signer) (President, Secretary, Manager, Owner or Representative)

of _____

certify that Section 11 of the Construction Agreement has been read and understood,

and that _____
(Name of Company/Corporation/Owner)

is able to provide the coverages required by District on the forms required by District.

Company/Owner understands no changes will be made to requirements after award of Contract.

Signature of President, Secretary, Manager, Owner or Representative

Typed or Printed Name

Title

Date

THIS BOND FORM TO BE FULLY EXECUTED

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS,

That we, _____, as principal, and
_____, as Surety, are held and firmly
bound unto Channel Islands Beach Community Services District in the sum of

Dollars (\$), to be paid to the said District, its successors and assigns, for which
payment, will and truly be made, we bind ourselves, our heirs, executors and
administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if the certain proposal of the above bounden _____
_____ is accepted by Channel Islands Beach Community Services
District and if the above bounden

_____, his heirs, executors, administrators,
successors and assigns, shall duly enter into and execute a Contract for such
construction, and shall execute and deliver the Labor and Material, and the Faithful
Performance Bonds and other Contract Documents described, within fifteen (15) days
from the date of the award and notice of the above bounden _____
_____ and from said District, that said for Contract is ready execution,
then this obligation shall become null and void; otherwise, it shall be and remain in full
force and effect.

BIDDER

PRINCIPAL

SURETY

THIS AFFIDAVIT TO BE FULLY EXECUTED
NON-COLLUSION AFFIDAVIT

Affirmed in the STATE OF CALIFORNIA,

the COUNTY OF VENTURA,

and the CITY OF _____

on the _____ day of _____
(Day) (Month)

by _____, affiant, the
(Printed Name of Signatory)

(Title: President, Secretary, Manager, Owner or Representative of)

(Name of Company or Corporation or Owner)

as the person, corporation or company who makes the accompanying proposal,
having first been duly sworn, deposes and says:

That such proposal is genuine, and not sham or collusive, nor made in the interest or
behalf of any person not herein named, and that the Bidder has not directly or indirectly
induced or solicited any other Bidder to put in a sham Bid, or any other person, firm
or corporation to refrain from Bidding, and that the Bidder has not in any manner
sought by collusion to secure for itself an advantage over any other Bidder.

Signature of:

PROPOSER'S BUSINESS INFORMATION (PreQual)

Table of Contents

NOTE: If you are not currently on the District's Prequalified Contractors list, the following information must be completed and uploaded to Public Purchase. The District will review Business Information to determine if the apparent low bidder is responsible. If the District finds the apparent low bidder to be non-responsible, the District will complete the process with the next lowest bidder.

- A Business Information
- B Business Requirements
- C Financial Information
- D Safety
- E References/Relevant Projects

MINIMUM REQUIREMENTS FOR THIS SOLICITATION/CATEGORY:

A Business Information

Legal
Business

Name: _____ Date: _____

Address: _____

Street Address

Suite #

City

State

ZIP Code

Contact: _____ Title: _____

Phone: _____ Email: _____

Length of time in business: _____ Length of time at current location: _____ Federal Tax No. _____

In the last five years, has your firm changed names or license numbers? _____

If yes, provide prior names and licenses. _____

California State Contractor's License No.: _____

Department of Industrial Relations Registration No.: _____

Names and titles of officers of the Business:

Is your firm incorporated? YES NO

Name and remittance address that will appear on invoices:

Is your firm a sole proprietorship doing business under a different name? YES NO

If yes, please indicate sole proprietorship name and the name under which you are doing business:

B Business Requirements

1. Contractor has submitted evidence of a liability insurance policy with a policy limit of at least \$5,000,000 per occurrence (refer to Section 11 of the Construction Agreement for specific insurance requirements).

Yes No

2. Contractor has submitted evidence of current workers' compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code section 3700 et. seq.

Yes No

3. Contractor has carefully reviewed the insurance and indemnification requirements set forth in Section 4, and has signed the attached Acknowledgment of District Insurance and Indemnification Requirements (on Page 7).

Yes No

4. Has your contractor's license been revoked at any time in the last five years?

Yes No

5. Has a surety firm completed a contract on your behalf, or paid for completion because your firm was default terminated by the project owner within the last five (5) years?

Yes No

6. At the time of submitting this proposal, is your firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works contract, pursuant to either Labor Code section 1777.1 or Labor Code section 1777.7?

Yes No

If the answer is "Yes," state the beginning and ending dates of the period of debarment.

7. At any time during the last five years, has your firm or any of its owners or officers been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?

Yes No

(Contractor may be immediately disqualified if the answer to any of the questions in D through G above is "yes.")

8. At any time in the last five years, has your firm been assessed and paid liquidated damages after completion of a project under a construction contract with either a public or private owner?

Yes No

If yes, explain on a separate sheet of paper, identifying all such projects by owner, owner's address, the date of completion of the project, amount of liquidated damages assessed and all other information necessary to fully explain the assessment of liquidated damages.

9. In the last five years has your firm, or any firm with which any of your company's owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?

Yes No

If "yes," explain on a separate sheet of paper. State whether the firm involved was the firm applying for pre-qualification here or another firm. Identify by name of the company, the name of the person within your firm who was associated with that company, the year of the event, the owner of the project, the project and the basis for the action.

NOTE: "Associated with" refers to another construction firm in which an owner, partner or officer of your firm held a similar position, and which is listed in response to question 1 on page 8 of this form.

10. In the last five years, has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?

Yes No

If "yes," explain on a separate sheet of paper. Identify the year of the event, the owner, the project and the basis for the finding by the public agency.

11. In the past five years, has any claim against your firm concerning your firm's work on a construction project been filed in court or arbitration?

Yes No

If "yes," on separate sheets of paper identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

12. In the past five years, has your firm made any claim against a project owner concerning work on a project or payment for a contract and filed that claim in court or arbitration?

Yes No

If "yes," on separate sheets of paper identify the claim by providing the project name, date of the claim, name of the entity (or entities) against whom the claim was filed, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending, or if resolved, a brief description of the resolution).

13. Within the last five years, has there ever been a period when your firm had employees but was without workers' compensation insurance or state-approved self-insurance?

Yes No

*5 points for either "No" or "Yes" indicating 1 such instance.
0 points for any other answer.*

14. In the last five years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

Yes No

5 points for either "No" or "Yes" indicating 1 such instance.

3 points for "Yes" indicating 2 such instances.

0 points for "Yes" or if more than 2 such instances.

C Financial Information

1. Attach to your Bid Form Submittal a complete set of current financial statements (as current as December 2019, if possible), including an accountant's opinion and footnotes, for two (2) preceding fiscal years.

Financial Statement include at a minimum: balance sheet, statement of income and retained earnings, and statement of cash flow.

2. Surety Company: _____
Name, address, and phone number

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

4. Is your firm currently the debtor in a bankruptcy case?

Yes No

If "yes," please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

5. Was your firm in bankruptcy at any time during the last five years? (This question refers only to a bankruptcy action that was not described in answer to question 7, above.)

Yes No

If "yes," please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court's discharge order, or of any other document that ended the case, if no discharge order was issued.

6. During the last five years, has a surety company ever denied your firm bond coverage, or has there ever been a period of time when your firm had no surety bond in place during a public construction project when one was required?

Yes No

If yes, provide details on a separate signed sheet indicating the date when your firm was denied coverage and the name of the company, or companies, which denied coverage; and the period during which you had no surety bond in place.

D Prevailing Wages

1. In the last 5 years, were there any occasion(s) in which your firm was required to pay either back wages or penalties for your own firm's failure to comply with the state's prevailing wage laws?

Yes No

2. In the last five years, has there been more than one occasion on which your own firm has been penalized or required to pay back wages for failure to comply with the Federal Davis-Bacon prevailing wage requirements?

Yes No

3. In the last five years, has your firm been found to have violated any provision of California apprenticeship laws or regulations, or the laws pertaining to use of apprentices on public works?

Yes No

If yes, provide the date(s) of such findings, and attach copies of the Department's final decision(s).

4. Provide the name, address and telephone number of the apprenticeship program sponsor(s) (approved by the California Division of Apprenticeship Standards) that will provide apprentices to your company for use on any public work project for which you are awarded a contract by Channel Islands Beach Community Services District

5. If your firm operates its own State-approved apprenticeship program:

a) Identify the craft or crafts in which your firm provided apprenticeship training in the past year.

b) State the year in which each such apprenticeship program was approved, and attach evidence of the most recent California Apprenticeship Council approval(s) of your apprenticeship program(s).

c) State the number of individuals who were employed by your firm as apprentices at any time during the past three years in each apprenticeship and the number of persons who, during the past three years, completed apprenticeships in each craft while employed by your firm.

E Safety

- Has any safety regulatory agency (examples: CalOSHA, Federal OSHA, MSHA, Department of Water Resources, Division of Dam Safety, etc.) cited and assessed penalties against your firm (company-wide) for any violations of its safety or health regulations in the past five years?

Yes No

If “yes,” attached a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, the amount of penalty paid, if any. If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

- Has the EPA, Air Quality Management District, Regional Water Quality Control Board, Department of Water Resources, or any other regulatory agency for environmental laws cited either your firm or the owner of a project on which your firm was the contractor, in the past five years?

Yes No

If “yes,” attach a separate signed page describing each citation.

- How often do you require documented safety meetings to be held for construction employees and field supervisors during the course of a project? _____

- List your firm’s Experience Modification Rate (EMR) (California workers’ compensation insurance) for each of the past three premium years:

NOTE: Your workers’ compensation insurance carrier issues an Experience Modification Rate to your firm annually.

Current year: _____

Previous year: _____

Year prior to previous year: _____

If your EMR for any of these three years is or was 1.00 or higher you may, if you wish, attach a letter of explanation.

- Provide the following OSHA Recordable Injury and Illness Statistics for the current year and previous 3 years:

	2019	2018	2017	2016
Fatalities				
Lost Work Days Cases				
Lost and Restricted Day Cases				
Other Reportable Injury Cases				
Total Lost and Restricted Days				
OSHA Recordable Incident Rate				
OSHA Lost Time Incident Rate				
Total Hours Worked				

6. Submit the following items:
 - a) Table of Contents of Contractor's current Safety Plan or Program
 - b) Table of Contents of Contractor's Injury and Illness Prevention Program (IIPP)
 - c) OSHA 300 and 400 logs for the Current year and previous 5 years
 - d) If a fatality has been recorded on the firm's OSHA logs in the last 5 years, please provide a separate signed page describing the circumstances of each fatality and what corrective actions were implemented.

Contractor further acknowledges that it shall be required to submit its full Injury and Illness Prevention Plan for review and acceptance by District, upon award of a contract with the District.

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CONFIDENTIAL – INFORMATION PROVIDED HEREIN NOT SUBJECT TO DISCLOSURE

5. Performance History / Relevant Projects

This information provided in determining bidder responsibility, and is considered a confidential document not subject to public disclosure under California law.

PROJECT NAME AND LOCATION	ROLE	DESCRIPTION OF WORK	OWNER'S NAME, ADDRESS, PHONE NO., AND CONTACT PERSON	CONTRACT VALUE	ESTIMATED COMPLETION DATE
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	

	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	
	<input type="checkbox"/> Prime <input type="checkbox"/> Sub			\$	

Please list at least three references for projects of similar size and scope, including governmental agencies if available.

1) AGENCY/COMPANY: _____
PROJECT NAME: _____
ADDRESS: _____

CONTACT PERSON: _____ EMAIL: _____
PHONE NUMBER: _____ LENGTH OF CONTRACT: _____
WORK PERFORMED: _____
INITIAL COST/CHANGE ORDERS: _____

2) AGENCY/COMPANY: _____
PROJECT NAME: _____
ADDRESS: _____

CONTACT PERSON: _____ EMAIL: _____
PHONE NUMBER: _____ LENGTH OF CONTRACT: _____
WORK PERFORMED: _____
INITIAL COST/CHANGE ORDERS: _____

3) AGENCY/COMPANY: _____
PROJECT NAME: _____
ADDRESS: _____

CONTACT PERSON: _____ EMAIL: _____
PHONE NUMBER: _____ LENGTH OF CONTRACT: _____
WORK PERFORMED: _____
INITIAL COST/CHANGE ORDERS: _____

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**CONSTRUCTION AGREEMENT FOR CHANNEL ISLANDS BEACH COMMUNITY
SERVICES DISTRICT**

**SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

THIS AGREEMENT, Contract No. 2020-01, is made and entered into, to be effective, this ____ day of _____, 2020, by and between [company name], hereinafter referred to as "Contractor", and CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT, Ventura County, California, by and through its Board of Directors, hereinafter referred to as "District".

SECTION 1

GENERAL CONDITIONS

Contractor certifies and agrees that it is fully familiar with all the terms, conditions and obligations of the Contract Documents as hereinafter defined, the location of the job site, and the conditions under which the work is to be performed, and that it enters into this Contract based upon its investigation of all such matters and is in no way relying upon any opinions or representations of District. It is agreed that this Contract represents the entire agreement. It is further agreed that the Contract Documents, which include the Notice Inviting Bids, Instructions to Bidders, Bid forms/Contractor's Bid, the Construction Agreement, any Change Orders or Addenda, General Conditions, Supplemental Conditions, Project Plans and Specifications, and/or Greenbook Standard Specifications for Public Works Construction are incorporated into this Contract by reference, with the same force and effect as if the same were set forth at length herein, and that Contractor and its subcontractors, if any, will be and are bound by any and all of said Contract Documents, insofar as they relate in any part or in any way, directly or indirectly, to the work covered by this Contract.

The Contractor's signing of the Contract signifies its acceptance of the time of completion as being sufficient for completion of the Work, as well as acceptance of all of the other terms and conditions of the Contract Documents.

SECTION 2

PROJECT

The project is described as:

**SEWER REHABILITATION – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

The scope of this project involves rehabilitation of approximately 3,500 L.F. of sanitary sewer piping ranging in size from 8-inch to 10-inch by cured-in-place pipe (CIPP) methods as outlined in these Contract Documents. There are eighteen (18) segments to be lined; 8 segments will be spot repairs and 10 segments will be fully lined. The sewer main will be cleaned at each location to remove debris, roots, grease and scale buildup to produce a surface that is suitable for installation of CIPP lining. After cleaning, the sewer main will be inspected with a remote video camera to verify the length and pipe diameter before material is installed. Contractor will video inspect each pipeline segment after installation of the trenchless liner to verify proper installation. Contractor must install top hats at laterals where root intrusion has been identified and open all live laterals after installation of the lining material. Other work includes sewer manhole rehabilitation and replacing manhole covers and frames.

SECTION 3

PLANS AND SPECIFICATIONS

Project shall be performed in accordance with the attached Plans and Specifications. Said Plans and Specifications including Project Plans and Specifications and/or Greenbook Standard Specifications for Public Works Construction and any revision, amendments, or addenda thereto are attached hereto and incorporated herein as part of this Contract and referred to by reference. The work to be done must also be in accordance with the Contract Documents, which are incorporated herein and referred to by references.

SECTION 4

TIME OF COMMENCEMENT AND COMPLETION

Contractor agrees to commence the Project on the date set forth in the "Notice to Proceed" sent by District and shall diligently prosecute the work to Final Completion within fifty (50) business days from the date set forth in the Notice to Proceed, excluding delays caused or authorized by the District as set forth in Section 5.3.3 of the General Conditions included in these Contract Documents. The time for completion includes five (5) days determined by District likely to be inclement weather when Contractor will be unable to work.

SECTION 5

TIME IS OF THE ESSENCE

Time is of the essence on this Contract. As required by the Contract Documents, Contractor shall prepare and obtain approval of all shop drawings, details and samples, and do all other things necessary and incidental to the prosecution of Contractor's work in conformance with an approved construction progress schedule.

Contractor shall coordinate the work covered by this Contract with that of all other Contractors, subcontractors and of the District, in a manner that will facilitate the efficient completion of the entire work in accordance with Section 4 herein of this Construction Agreement. District shall have complete control of the premises on which the work is to be performed and shall have the right to decide the time or order in which the various portions of the work shall be installed or the priority of the work of other subcontractors, and in general, all matters representing the timely and orderly conduct of the work of Contractor on the premises.

SECTION 6

LIQUIDATED DAMAGES FOR DELAY

The parties agree that if the total work called for under this Contract, in all parts and requirements, is not completed within the time specified in Section 4 above, plus the allowance made for delays or extensions authorized under Section 5 of the General Conditions, the District will sustain damage that would be extremely difficult and impracticable to ascertain. The parties therefore agree that Contractor will pay to District the sum of One Thousand Dollars (\$1000) per day for each and every calendar day during which completion of the project is so delayed.

Contractor agrees to pay such Liquidated Damages and further agrees that District may offset the amount of Liquidated Damages from any monies due or that may become due Contractor under this Contract.

SECTION 7

CONTRACT PRICE

District agrees to pay and the Contractor agrees to accept as full consideration for the faithful performance of this Contract, subject to any subsequent additions or deductions as provided in approved Change Orders, the sum of [Bid price] (\$XXX,XXX) as itemized on the attached Exhibit "A". Payments shall be made in accordance with provisions in Section 7 of the General Conditions.

SECTION 8

SUBSTITUTION OF SECURITIES IN LIEU OF RETENTION OF FUNDS

Pursuant to California Public Contracts Code Section 22300, the Contractor will be entitled to post approved securities with the District or an approved financial institution in order to have the District release funds retained by the District to insure performance of the Contract. Contractor shall be required to execute an addendum to this Contract in a form required by District, together with escrow instructions and any other documents in order to effect this substitution.

SECTION 9
COMPLETION

Within ten (10) days after the contract completion date of the Project, Contractor shall file with the District's ENGINEER its affidavit stating that all workers and persons have been paid in full, and that there are no claims outstanding against the Project for either labor or material, except those certain items, if any, to be set forth in an affidavit covering disputed claims, or items in connection with Stop Notices that have been filed under the provisions of the statutes of the State of California. District may require affidavits or certificates of payment and/or releases from any subcontractor, laborer or material Supplier.

SECTION 10
SURETY BONDS

Contractor shall, before entering upon the performance of this Agreement, furnish bonds approved by the District Counsel; one in the amount of one-hundred percent (100%) of the Contract price Bid, to guarantee the faithful performance of the work and one-year warranties required under Section 13 of this Construction Agreement, and the other in the amount of one-hundred percent (100%) of the Contract Price to guarantee payment of all claims for labor and materials furnished. This Contract shall not become effective until such Bonds are supplied to and approved by the District. The amount of said Bonds shall be adjusted to include any increases in the value of the Contract Price and any time extensions granted under this Contract.

SECTION 11
INSURANCE

Minimum Scope and Limits of Insurance: Contractor shall procure and maintain for the duration of the contract, *and for five (5) years thereafter*, insurance against claims for injuries or death to persons or damages to property that may arise from, or in connection with, the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

Coverage – Coverage shall be at least as broad as the following:

1. **General Liability – Commercial General Liability (CGL)** – Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least five million dollars (\$5,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to

Channel Islands Beach Community Services District or the general aggregate limit shall be twice the required occurrence limit.

2. **Automobile Liability** – Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
3. **Workers' Compensation Insurance** – The Contractor shall provide workers' compensation coverage as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than one million dollars (\$1,000,000) per accident for bodily injury or disease. **Waiver of Subrogation** (also known as Transfer of Rights of Recovery Against Others to Us): The Contractor hereby agrees to waive rights of subrogation to obtain endorsement necessary to affect this waiver of subrogation in favor of the Channel Islands Beach Community Services District, its directors, officers, employees, and authorized volunteers, for losses paid under the terms of this coverage which arise from work performed by the Named Insured for the Channel Islands Beach Community Services District; this provision applies regardless of whether or not the Channel Islands Beach Community Services District has received a waiver of subrogation from the insurer.
4. **Contractor's Pollution Liability** – (optional: if project involves environmental hazards) with limits no less than five million dollars (\$5,000,000) per occurrence or claim, and ten million dollars (\$10,000,000) policy aggregate.

If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the Channel Islands Beach Community Services District requires, and shall be entitled to, the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum of insurance and coverage shall be available to the Channel Islands Beach Community Services District.

Other Required Provisions – The Commercial General Liability policy and Contractors Pollution (if necessary) are to contain, or be endorsed to contain, the following provisions:

1. **Additional Insured Status:** Channel Islands Beach Community Services District, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 10 11 85 or, if not available, through the addition of **both** CG 20 10 10 01 and CG 20 37 10 01, with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance.
2. **Primary Coverage:** For any claims related to this project, the Contractor's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13

as respects to the Channel Islands Beach Community Services District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the Channel Islands Beach Community Services District, its directors, officers, employees, and authorized volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

Contractor shall name the following entities as additional insured:

Contractor shall name the Channel Islands Beach Community Services District, its directors, council members, officers, engineers, employees, and agents as additional insured on Contractor's general liability insurance as described above.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Channel Islands Beach Community Services District.

Acceptability of Insurers – Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII or equivalent, or as otherwise approved by Channel Islands Beach Community Services District.

The Contractor agrees and he/she will comply with such provisions before commencing work. All of the insurance shall be provided on policy forms and through companies satisfactory to Channel Islands Beach Community Services District. The Channel Islands Beach Community Services District reserves the right to obtain complete, certified copies of all required insurance policies, including the policy declarations page with endorsement number. Failure to continually satisfy the Insurance requirements is a material breach of contract.

Responsibility for Work – Until the completion and final acceptance by Channel Islands Beach Community Services District of all the work under and implied by this agreement, the work shall be under the Contractor's responsible care and charge. The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections, and repairs occasioned or rendered necessary by causes of any nature whatsoever.

Deductibles and Self-Insured Retentions – Insurance deductibles or self-insured retentions must be declared by the Contractor, and approved by the Channel Islands Beach Community Services District. At the election of Channel Islands Beach Community Services District, the Contractor shall either cause the insurer to reduce or eliminate such self-insured retentions as respects the Channel Islands Beach Community Services District, its directors, officers, employees, and authorized volunteers or the Contractor shall provide a financial guarantee satisfactory to the Channel Islands Beach Community Services District guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the Channel Islands Beach Community Services District.

Verification of Coverage – Evidences of Insurance – Contractor shall furnish the Channel Islands Beach Community Services District with copies of certificates and amendatory endorsements effecting coverage required by this contract. All certificates and endorsements are to be received and approved by the Channel Islands Beach Community Services District before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor’s obligation to provide them. The Channel Islands Beach Community Services District reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration pages and Endorsement pages, required by these specifications, at any time. Failure to continually satisfy the Insurance requirements is a material breach of contract.

Continuation of Coverage – The Contractor shall, upon demand of Channel Islands Beach Community Services District deliver evidence of coverage showing continuation of coverage for at least five (5) years after completion of the project. Contractor further waives all rights of subrogation under this agreement. When any of the required coverages expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement and evidence of waiver of rights of subrogation against Channel Islands Beach Community Services District (if builder’s risk insurance is applicable) to Channel Islands Beach Community Services District at least ten (10) days prior to the expiration date.

Sub-Contractors – In the event that the Contractor employs other Contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above (via as broad as ISO CG 20 38 04 13). The Contractor shall, upon demand of Channel Islands Beach Community Services District, deliver to Channel Islands Beach Community Services District copies such policy or policies of insurance and the receipts for payment of premiums thereon.

SECTION 12

RISK AND INDEMNIFICATION

Indemnification and Agreement to Defend and Hold Harmless

To the extent permitted by law, Contractor shall defend, indemnify, and hold harmless Channel Islands Beach Community Services District, its directors, officers, employees, and authorized agents from and against all claims, damages, losses and expenses, including reasonable attorneys’ fees and costs to defend arising out of the performance of the work described herein, and caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone whose acts any of them may be liable except where caused by the active negligence, sole negligence, or willful misconduct of the Channel Islands Beach Community Services District, its directors, officers, employees and authorized agents.

SECTION 13

WARRANTY

The Contractor agrees to perform all work under this Contract in accordance with the Contract Documents.

Contractor warrants to make, at its own expense, all repairs or replacements necessitated by defects in materials or workmanship, supplied under terms of this Contract, and pay for any damage to other works resulting from such defects, which become evident within one (1) year after the date of Final Acceptance of the work by the Board of Directors (and filing the Notice of Completion) as described in Section 6.4 of the General Conditions or within such longer period of time as described in District Standard Specification 01 78 36 or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. This warranty period shall apply to the entire Work completed under this Contract with the exception of those portions of Work occupied and used by the District pursuant to Section 6.2.3 of the General Conditions, Use Prior to Completion.

Contractor further assumes responsibility for a guarantee for all work and materials provided by any subcontractor or manufacturers of packaged equipment components. The Contractor also agrees to hold the District harmless from liability of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written demand for the same from the District. If the Contractor fails to make the repairs and replacements promptly, the District may do the work, and the Contractor and its labor and materials bond insurer per Section 10 of the Construction Agreement shall be liable for the cost thereof.

All repairs and replacements by the Contractor during the warranty period shall carry a one (1) year warranty on those items from the date the defective materials or workmanship was corrected. District may, at its election, require extension of the material bond to cover the additional warranty period. This obligation is in addition to any liability imposed by law and is not intended to waive any other rights the District may have.

The Contractor's warranty shall cover and include any work installed on property not owned by the District, whether public or private, and shall include the repair of damage to improvements and existing conditions on such other property caused by the settlement or otherwise resulting from the Contractor's operations unless the owner of such other property shall in writing release the District from liability and responsibility for work or damage on such other property.

As a precedent to final inspection, the Contractor shall deliver to the District all the manufacturers' warranties for equipment, materials and machinery installed as required by the Contract, with the District named as a beneficiary. In addition, for all equipment, materials and machinery bearing a manufacturer's warranty that extends

for a longer period of time than the Contractor's warranty, the Contractor shall secure and deliver the warranties to the District in the same manner and shall ensure that the District is named as a beneficiary.

The Contractor's obligations under this clause are in addition to the Contractor's other express or implied assurances under this Contract or state law and in no way diminish any other basis of responsibility for faulty materials, equipment or work.

SECTION 14

SAFETY

In the performance of this contract, the Contractor shall comply with all applicable federal, state and local statutory and regulatory requirements including, but not limited to California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act, related to their scope of work and operations. In case of conflict in regulations, the most stringent shall apply. The Contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. Safety precautions shall include, but shall not be limited to: adequate life protection and life-saving equipment; adequate illumination; instructions in accident prevention for all employees, such as the use of machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, fall protection, and other safety devices; equipment and wearing apparel as are necessary, or lawfully required, to prevent accidents, injuries, or illnesses (including, but not limited to, exposure to the Coccidioides fungus and Valley Fever); and adequate facilities for the proper inspection and maintenance of all safety measures.

Contractor must obtain all applicable Division of Occupational Safety and Health (CAL-OSHA) permit(s) and others required by California Labor Code and California Government Code, prior to the initiation of any practices, work, method, operation, or process related to the work covered in the contract. Permits required by governmental authorities will be obtained at Contractor's expense.

It is a condition of this contract, and shall be made a condition of each subcontract which the Contractor enters into pursuant to this contract, that the Contractor, and any subcontractor, shall not permit any employee in performance of the contract to work in surroundings or under conditions that are unsanitary, hazardous or dangerous to his/her health or safety, as determined under Cal/OSHA health and safety standards.

The Contractor shall be responsible for the safeguarding of all utilities. At least two (2) working days before beginning work, the Contractor shall call the Underground Service Alert (USA) in order to determine the location of sub-structures. The Contractor shall immediately notify Channel Islands Beach Community Services District and the utility owner if he/she disturbs, disconnects, or damages any utility.

In accordance with Section 6705 of the California Labor Code, the Contractor shall submit to Channel Islands Beach Community Services District specific plans to show details of provisions for worker protection from caving ground during excavations of trenches of five feet (5') or more in depth. The excavation/trench safety plan shall be submitted to, and accepted by, Channel Islands Beach Community Services District prior to starting excavation. The trench safety plan shall have details showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such a plan varies from the shoring system standards established by the Construction Safety Orders of the California Department of Industrial Relations (Cal/OSHA), the plan shall be prepared by a California registered civil, or structural, engineer. As part of the plan, a note shall be included stating that the registered civil or structural engineer certifies that the plan complies with the Cal/OSHA Construction Safety Orders, or that the registered civil or structural engineer certifies that the plan is not less effective than the shoring, bracing, sloping or other provisions of the Safety Orders. In no event shall the Contractor use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders. Submission of this plan in no way relieves the Contractor of the requirement to maintain safety in all areas. If excavations or trench work requiring a Cal/OSHA permit are to be undertaken, the Contractor shall submit his/her permit with the excavation/trench work safety plan to Channel Islands Beach Community Services District before work begins.

SECTION 15
ASSIGNMENT

No assignment by the Contractor of this Contract or any part hereof, or of funds to be received hereunder, will be recognized by the District unless such assignment has had prior written approval and consent of the District and the Surety.

SECTION 16
ATTORNEYS' FEES

If any action at law or in equity is necessary to enforce or interpret the terms of this Contract, the prevailing party shall be entitled to reasonable attorneys' fees, costs and necessary disbursements in addition to any other relief to which it may be entitled. If any action is brought against the Contractor or any subcontractor to enforce a Stop Notice or Notice to Withhold, which names the District as a party to said action, the District shall be entitled to reasonable attorneys' fees, costs and necessary disbursements arising out of the defense of such action by the District. The District shall be entitled to deduct its costs for any Stop Notice filed, whether court action is involved or not.

SECTION 17
COUNTERPARTS

This Agreement may be executed in counterparts, including by facsimile or electronic transmission, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original, and all such counterparts together shall constitute one and the same instrument.

SECTION 18
NOTICES

Any notice required or permitted under this Contract may be given by ordinary mail at the address set forth below. Any party whose address changes shall notify the other party in writing.

TO DISTRICT: Street and Mailing Address:
Channel Islands Beach Community Services District
353 Santa Monica Drive
Channel Islands Beach, CA 93035

TO CONTRACTOR: [Contractor]
 [address]
 [city, state zip]

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the date first hereinabove written.

CONTRACTOR: _____

By _____

Its _____

Print Name _____

Contractor's State License No. _____

DISTRICT:

CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT

By _____
General Manager

BOND NO. _____

FAITHFUL PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the Channel Islands Beach Community Services District, has awarded to

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

**SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

(the "Work")

Contract No.: 2020-01; and

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract.

NOW, THEREFORE, we, _____, as
Principal, and _____, as Surety, are held and firmly
bound unto the Channel Islands Beach Community Services District (hereinafter
called "Owner"), in the sum of _____

DOLLARS (\$_____) this amount being not less than one-
hundred percent (100%) of the total bid price of the Contract awarded by Owner to the
Principal, lawful money of the United States of America, for payment of which sum
well and truly to be made, we bind ourselves, our heirs, executors, administrators and
successors, jointly and severally, firmly by these presents. In addition to the total sum
of the Faithful Performance Bond provided above, Surety agrees to pay all reasonable
attorneys' fees incurred by Owner in any action to enforce Surety's obligations under
this Faithful Performance Bond.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby
bonded Principal, its heirs, executors, administrators, successors, or assigns, shall in
all things stand to and abide by and well and truly keep and perform all the
undertakings, terms, covenants, conditions and agreements in the said Contract and
any alteration thereof, made as therein provided, including, but not limited to, the
provisions regarding Contract duration and liquidated damages, all within the time and
in the manner therein designated in all respects according to their true intent and

meaning, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period of one (1) year after the completion of the Work and its acceptance by Owner, during which time if Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the Owner from loss or damage made evident during the period of one (1) year from the date of acceptance of the Work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. Notwithstanding anything in this paragraph to the contrary, the obligation of Surety hereunder shall continue so long as any obligation of Principal remains.

FURTHER, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or modification of the Contract Documents, or of the work to be performed thereunder, shall in any way affect its obligations on this bond; and it does hereby waive notice of any change, extension of time, alteration or modification of the Contract Documents or of work to be performed thereunder.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety named therein, on the _____ day of _____, 2020, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

(Name) _____
Principal
(Seal)
Name: _____
Title: _____
Signature: _____
(Must be Notarized – Attach Original Acknowledgment)

(Name) _____
Surety
(Seal)
Name: _____
Title: _____

Signature: _____
(Must be Notarized – Attach Original Acknowledgment)

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BOND NO. _____

**PAYMENT BOND
(Labor and Materials)**

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the Channel Islands Beach Community Services District, has awarded to

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

**SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA**

(the "Work")

Contract No.: 2020-01; and

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the payment of labor and materials, equipment or other supplies in connection with the performance of said Contract,

NOW, THEREFORE, we, _____, as
Principal, and _____, as Surety, are held and firmly
bound unto the Channel Islands beach Community Services District (hereinafter called
"Owner"), in the sum of _____

DOLLARS(\$ _____) this amount being not less than one-
hundred percent (100%) of the total bid price of the Contract awarded by Owner to the
Principal), lawful money of the United States of America, for payment of which sum
well and truly to be made, we bind ourselves, our heirs, executors, administrators and
successors, jointly and severally, firmly by these presents.

If said Principal, or any subcontractor of said Principal, fails to pay for any
materials, equipment, or other supplies, or for rental of same, used in connection with
the performance of Work contracted to be done, or for amounts due under applicable
State law for any work or labor thereon, or for amounts due under the Unemployment
Insurance Code with respect to work or labor performed under the Contract, or for any
amounts required to be deducted, withheld, and paid over to the State of California
Employment Development Department pursuant to § 13020 of the Unemployment
Insurance Code, said Surety will pay the same in the amount not exceeding the sum
specified above, and, in the event suit is brought upon this bond, a reasonable

attorney's fee to be fixed by the court. This bond is conditioned for the payment in full of the claims of all claimants and shall inure to the benefit of Owner and of any persons, companies or corporations, or their respective assigns, entitled to file claims under applicable State law, including, but not limited to, California Civil Code § 9100.

PROVIDED, that no alterations in the work to be done or the materials to be furnished, or changes in the time of completion, which may be made pursuant to the terms of said Contract, shall in any way release either said Principal or said Surety thereunder, and no extensions of time granted under the provision of said Contract shall release either said Principal or said Surety, and notice of any non-material alterations or extension of the Contract is hereby waived by said Surety. As used herein, the word "material" shall mean any change in excess of twenty percent (20%) of the Contract Price or Contract Time.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety named therein, on the _____ day of _____, 2020, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

(Name) _____
Principal
(Seal)
Name: _____
Title: _____
Signature: _____
(Must be Notarized – Attach Original Acknowledgment)

(Name) _____
Surety
(Seal)
Name: _____
Title: _____
Signature: _____
(Must be Notarized – Attach Original Acknowledgment)

PART 3

CONDITIONS OF CONTRACT

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GENERAL CONDITIONS

DEFINITIONS

The following capitalized terms are used in the General Conditions or other Contract Documents. Their intent and meaning shall be as follows. Certain other capitalized terms are included in this IFB and are defined within the Section of the document to which they refer to.

Addenda/Addendum – means additional information not included in the original IFB which may contain additional specifications, provisions, standard forms or other information, especially pricing information.

As-Builts – A copy of the Plans used by the Contractor to record changes to the Work as specified in the Contract Documents issued by District for the Project. As-Builts shall be used to create Record Drawings.

Bid – A form, or forms, completed in their entirety stating the Bidder's offer to both furnish all materials and to perform all Work required under the Contract. Bid may also be referred to as a Proposal.

Bidder – Any individual, firm, corporation, partnership, joint venture, or other combination thereof submitting a Bid for Work contemplated. A Bidder may act directly or through a duly authorized representative.

Bid Bond – The cash, certified check or Bidder's Surety bond executed by an admitted Surety insurer accompanying the Bid as a guaranty that the Bidder, if awarded a Contract, will enter into a Contract with District for the performance of the Work required under the Contracts Documents.

Board of Directors (Board) – The Board of Directors of the Channel Islands Beach Community Services District.

Bond – Bid Bond, Faithful Performance Bond, or Payment Bond or other instrument of security.

Business Days – District business days are Monday through Friday, 8 am to 4:30 pm or business hours as specified in related City, County or other agency permits required to perform Work.

Change Order – A written order by the District's ENGINEER, made bilaterally by District and Contractor or unilaterally by District, which covers alterations, changes, additions, or deletions to the Contract Documents or the Work in any manner which are necessary for the proper completion of the Work and which may result in adjustments to the Contract price, period of performance, or both.

Claim – A written statement by the Contractor requesting additional time and/or money from District arising out of acts or omissions of District and/or differing conditions during the performance of the Contract which the Contractor could not have reasonably anticipated at the time of entering into the Contract, and which is submitted in response to District's rejection of, or failure to approve, Contractor's Request for Change, or otherwise issue a Change Order modifying the Contract, adjusting the Contract price and/or period of performance in a manner consistent with that which the Contractor believes is appropriate. The Claim shall be submitted in the manner and in the time consistent with the requirements set forth in detail herein.

Code – Codes of the State of California as well as any other federal or local law, statute, ordinance, rule or regulation.

Consultant – Any consultant retained by District or its (sub)consultant(s) that provides design or construction phase services for support of this Project.

Contract / Contract Documents – The following documents constitute a part of and comprise the Contract/Contract Documents: Notice Inviting Bids, Instructions to Bidders, Bid Form/Contractor's Bid, the Construction Agreement, any Change Orders or addenda, General Conditions, Supplemental Conditions, Project Plans and Specifications, District Standard Specifications and Standard Plans and/or Greenbook Standard Specifications for Public Works Construction.

Contractor – The individual, partnership, joint venture, corporation, or other combination thereof, identified as such in the Contract, and referred to throughout the Contract Documents as if singular in number and who directly Contracts with District. The term "Contractor" means the Contractor or its authorized representative.

Contract Price – The total amount of money for which the Contract is awarded, as modified by any Change Orders.

Days – Unless otherwise specifically stated, the term "days" will be understood to mean consecutive calendar days.

Drawings – See Plans.

District – Channel Islands Beach Community Services District

ENGINEER – District's Director of Engineering or his designee or District's appointed representative for the Project.

Extra Work – New or unforeseen work, or added work of a different character or function and for which no basis for payment is prescribed in the Contract Documents; or that involves revisions of the details of the Work in such manner as to render inequitable payment under items upon which the Contractor Bid in its Bid; or that work to be done under "stipulated prices" as given in the Schedule of Work Items in the Bid Form.

Faithful Performance Bond – A bond required from the Contractor at the time of execution of a contract which guarantees faithful performance of the Contract by the Contractor.

Field Order – Written notice by District to Contractor of immediate correction of the Work.

Final Acceptance – Action taken by District Board of Directors accepting the Work as fully completed as evidenced by Board authorization to ENGINEER to file a Notice of Completion for the Project.

Final Completion – Action taken by ENGINEER certifying that the Work is fully completed under the Contract Documents prior to District's Final Acceptance of the Work.

Final Inspection – ENGINEER will inspect Work for the purposes of ascertaining that the Work has been fully completed in accordance with the requirements of the Contract Documents.

General Conditions – Legal and contractual instructions to the Contractor setting forth both the Contractor and District responsibilities for business related activities pertaining to the contract. The term "General Conditions" used in the Specifications shall be interpreted to refer to the General Conditions of the Contract Documents.

General Manager – The individual designated by District as its Chief Executive Officer and agent.

Inspector – The individual(s) designated by the District as the field project representative with delegated authority to enforce the requirements of the Contract Documents, subject to the approval of the General Manager.

Invitation to Bid – The following documents constitute the Invitation to Bid: Also referred to as Contract Documents including the Notice Inviting Bids, Instructions to Bidders, Bid Form/Contractor's Bid, the Construction Agreement, any Change Orders or addenda, General Conditions, Supplemental General Conditions, Project Plans and Specifications, District Standard Specifications and Standard Plans and/or Greenbook Standard Specifications for Public Works Construction.

Law – Any federal, state or local law, statute, ordinance, rule, regulation or code.

Liquidated Damages – The amount the Contractor shall pay to District, as determined by rates and amounts as fixed and agreed in the Contract Documents, due to the Contractor's failure to complete the Work as scheduled or to submit and/or update the schedule within the time specified, or for non-compliance with other specified requirements.

Notice Inviting Bids – A public notice fixing the date and location for the receipt of Bids that is part of the IFB/Contract Documents.

Notice to Proceed – A written notice given by District to the Contractor fixing the date on which the time for performance under the Contract will commence.

Or Equal – Any product, equipment, material, supply, or service which is proposed by the Contractor for use in the Work, which is equal to or better than, and is as suitable as the product, material, equipment, supply or service specified in the Contract Documents as to function, performance, reliability, quality, and general configuration.

Owner – Channel Islands Beach Community Services District

Payment Bond – A bond required from a Contractor to secure payment to Subcontractors, laborers, mechanics and Suppliers employed on the Work of the Contract.

Plans – The part of the Contract Documents consisting of the illustrative plans, profiles, typical and general cross-sections, working drawings, or exact reproductions thereof, which show the location, character, dimensions and details of the Work to be done. Refers to all plans relating to the Project including Project Plans and Specifications which are prepared specifically for the Project and the District's Standard Specifications and Standard Plans.

Plans and Specifications – Refers to **all** plans and specifications relating to the Project including Project Plans and Specifications which are prepared specifically for the Project and the District's Standard Specifications and Standard Plans, and/or Greenbook Standard Specifications for Public Works Construction.

Project(s) – The entire scope of Work covered by all Contract Documents.

Project Plans and Specifications – Refers to plans, specifications and technical requirements prepared specifically for the Project that are **either different than, more stringent than,** or are **not** addressed in, the District's Standard Specifications and Standard Plans and/or Greenbook Standard Specifications for Public Works Construction.

Proposal – A standard form supplied by District, which when completed in its entirety and executed, shall constitute a Bid from Contractor.

Record Drawings – Construction drawings from completed past projects maintained by District as a record of how facilities were actually constructed. These are generally created from the original Plans, addendum and Change Order drawings, and the Contractor's As-Built copy of the construction plans.

Schedule of Work Items – A list of Bid item(s) included in the Bid Form submitted by Contractor including the approximate quantities, item descriptions, total price per item, and total amount of Bid.

Specifications – Elements of the Contract Documents which describe in writing the commercial and technical requirements and technical specifications necessary to construct the Project. Refers to all specifications related to the Project including the Project Plans and Specifications, Standard Specifications and Standard, and/or Greenbook Standard Specifications for Public Works Construction.

Subcontractor – One who is licensed pursuant to California Business and Professions Code, Section 7000 et. seq., and who Contracts directly with the prime Contractor or with another Subcontractor to perform some part of the Work. A Subcontractor does not have any direct contract with District related to the Work.

Supplemental Agreements – Written agreements between District and the Contractor, covering schedules, drawings, instructions, alterations, amendments and extensions to the Contract including addenda and Change Orders.

Supplier – An individual, organization, or firm who is not required for the purposes of the Work to be licensed pursuant to California Business and Professions Code as a Contractor or Subcontractor, within the meanings of those terms as defined herein above, who provides equipment and/or materials for the Work to the Contractor or a Subcontractor, including that fabricated to a special design, but who does not perform labor at the site except for labor or labor supervision required by some manufacturers as part of their equipment installation for warranty or other purposes or for operation of rented equipment, and only to the extent such labor or labor supervision is exempted from licensing requirements under the California Business and Professions Code, including but not limited to Section 7040 et seq. The term “Supplier” also includes fabricator, manufacturer, or vendor.

Surety or Sureties – The bondsmen or party or parties who guarantee the fulfillment of the Contract, or a portion of the Contract including payments issued by Contractor, by bond and whose signatures are affixed to the bond.

Terms – The terms “Approved”, “Directed”, “Satisfactory”, “Accepted”, “Acceptable”, “Proper”, “Required”, “Necessary”, and “Or Equal” mean as approved, directed, satisfactory, accepted, acceptable, proper, required, necessary, and Or Equal, in the opinion of the ENGINEER.

Unit Price – The amount stated in the Contractor’s Bid for a single unit of an element of the Work.

Work – All the Work specified in the Contract Documents necessary to complete the requirements of the Contract, including the furnishing of all labor and materials. Also, the completed construction or parts thereof required to be provided under the Contract Documents, including all materials, equipment, and supplies incorporated or to be incorporated in the construction.

Work Days – Work Days include the District’s Business Days and excludes Saturday, Sunday, and National Holidays.

SECTION 1. CONTRACT

1.1 CONTRACT PROVISIONS

1.1.1 The Contract Documents, as defined above, form the Contract between the District and the Contractor. The Contract represents the entire integrated agreement between the parties and supersedes all prior negotiations, representations or agreements, either written or oral. These General Conditions are a part of the Contract Documents. The Contract may be amended or modified only as set forth in the Contract Documents. The Contract Documents shall not be construed to create a contractual relationship of any kind between the District and any other Contractor or subcontractor or Supplier of any tier other than the District and Contractor.

1.1.2 Contractor acknowledges that it has read every clause in the Contract Documents, has examined the location where the Work is to be done; has made all inquiries and investigations necessary to enable it to understand thoroughly the intent of all parts of the Contract Documents, and the nature of the Work; and agrees that it will not make any claim for compensation, extension of time or other allowance of any sort, based upon or arising out of any alleged misunderstanding by it of any part of the Contract Documents.

1.1.3 Contractor shall, for the price Bid, furnish all supervision, labor, materials, transportation and equipment necessary to execute the Work in every respect in a thorough, skillful, workmanlike manner in accordance with the Contract Documents and to the satisfaction of the District. All work shall, during its progress and until its completion, conform to the lines, elevations and grades shown on said plans and profiles.

1.1.4 Whenever a reference is made to any portion of this Contract or any other applicable law or ordinance, the reference applies to all existing and future amendments and additions.

1.1.5 The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Contract Documents is to include all work necessary for the completion of the Contract. The Contractor shall perform all work in conformance to the Contract Documents unless otherwise directed in writing by the ENGINEER per the General Conditions, Section 5.3 – Change Orders.

1.2 ORDER OF PRECEDENCE

If there is a conflict between any of the documents referenced in or required under this Contract, the order of precedence in controlling the Work shall be:

1. Permits from outside agencies required by law and applicable codes or laws
2. Change Orders
3. Addenda
4. Construction Agreement
5. Supplemental Conditions
6. Project Plans and Specifications
7. General Conditions
8. District's Standard Specifications and Standard Drawings
9. Greenbook Standard Specifications for Public Works Construction (most recent edition and supplements adopted as of the date of the advertisement of the bid)

Any combination of the Contract and other of above mentioned documents may be provided to Contractor as Contract Documents.

1.3 PLANS AND SPECIFICATIONS

1.3.1 All sections of the Specifications shall be read and interpreted as constituting a whole and whatever is specified in one section shall be construed as applying to all sections.

1.3.2 The division of the Specifications into a number of sections, paragraphs, or articles is for convenience only, and no other construction or interpretations shall be made. In this respect, no section of the Specifications is written for an individualized trade, occupation or profession.

1.3.3 The Plans, together with the Specifications, will govern the Work to be done. Anything mentioned in these Specifications and not shown on the Plans, or shown on the Plans and not mentioned in these Specifications, shall be of like effect as though shown or mentioned in both. The Contractor shall perform all activities at no extra cost to the District that are reasonably inferable from the Contract Documents as being necessary to produce and/or achieve the intended results.

1.3.4 The District may furnish from time to time such plans, detail, profiles and information as may be considered necessary for the Contractor's guidance or clarification in addition to those provided in the Contract Documents and shall become a portion of the Plans and Specifications. In cases where the Work or any portion thereof is to be performed in accordance with drawings, specifications or lists of data submitted by the Contractor and approved by the District, such approved drawings, submittals, etc., shall become portions of the Plans and Specifications regarding the specific matters to which such approval applies. The Contractor shall be solely responsible for the correctness of the measurements and other essential information submitted by it and for the correlation of the various portions and features of the Work which are or may be affected by such measurements and information.

1.3.5 Any change required by the District in the drawings, submittals, etc., submitted for approval by the Contractor, shall be considered as necessary in order to comply with the requirements of the Plans and Specifications, and shall not be the basis of any claim for extra compensation over and above the Bid price for the Work, except where changes involving Extra Work are expressly authorized and ordered in accordance with the section of the Contract Documents relating to Change Orders.

1.3.6 A copy of the Plans and Specifications shall be kept upon the Work site at all times during its progress and access shall at all times be accorded the ENGINEER.

1.4 OWNERSHIP OF PLANS, SPECIFICATIONS, SHOP DRAWINGS. The Contract Documents including shop drawings and submittals were prepared for the Work of this Contract only and are the sole property of the District. No part of the Contract Documents shall be used by the Contractor for any other construction or for any other purpose except with the written consent of the District. Any unauthorized use of the Contract Documents is at the sole risk and liability of the user.

1.5 INSURANCE. The Contractor shall purchase and maintain insurance, in amounts equal to the requirements in the form and manner provided for in Section 11 of the Construction Agreement.

1.6 BONDS. The Contractor shall purchase and maintain Bonds, in amounts equal to the requirements in the form and manner provided for in Section 10 of the Construction Agreement and Sections 21, 22, and 23 of the Instructions to Bidders.

SECTION 2. DISTRICT

2.1 ADMINISTRATION OF THE CONTRACT

2.1.1 The District will administer the Contract, unless notice is given to the Contractor that a Construction Manager or like entity has been retained to administer the Contract.

2.1.2 The ENGINEER shall serve as the agent of District and will observe the accomplishment of the Work in accordance with the provisions of the Contract. The ENGINEER will decide any and all questions which may arise as to the interpretations of the Contract Documents, as to the quality and acceptability of materials furnished and Work performed, as to the manner of performance, and as to the rate of progress of the Work. All questions as to the acceptable performance of the Contract on the part of the Contractor shall be decided by the ENGINEER.

2.1.3 All instructions, rulings, and decisions of the ENGINEER shall be in writing, and shall be final and binding on the Contractor unless formal written objection is made as specified herein.

2.1.4 It is expressly agreed that the ENGINEER shall not have the power to waive any of the obligations of the Contract Documents for the furnishing by the Contractor of good and suitable material, and for performing the Work as herein described. Failure or omission on the part of the ENGINEER to reject defective or inferior work or materials, or the ENGINEER's release of the Contractor from obligations to remedy the defective or inferior work, shall not imply acceptance of the Work. Upon discovery of said defective work, the Contractor shall immediately tear out, remove, and properly replace the defective work without additional compensation. Neither shall such failure or omission, nor any acceptance by the ENGINEER, or by the Board be construed as relieving the responsibilities of the Contractor or its sureties, for a sum of money as may be needed to remove and replace, or to repair, any or all work or materials which is found to be defective or inferior. In such instance, in lieu of the recovery of said sum of money, the ENGINEER may permit the Contractor to perform, at the Contractor's own expense, the work of removing and replacing or repairing work or materials found to be defective or inferior.

2.1.5 If, in the opinion of the ENGINEER, Work is not being done in accordance with any applicable codes or laws or any portion of the Contract Documents, written notice as provided in Section 18 of the Construction Agreement shall be given to the Contractor or its authorized agent. Written notice to any foreman or agent in charge of any portion of the Work in the absence of the Contractor shall be considered as notice to the Contractor.

2.1.6 If in the judgment of the ENGINEER, it is undesirable or impracticable to replace any defective or nonconforming Work, the compensation to be paid to the Contractor shall be reduced by Change Order by such amount as in the judgment of the District shall deem equitable.

2.2 ACCESS TO SITE. The ENGINEER and other District officers, employees and agents, shall at all times have reasonable access to the jobsite and the Work. The Contractor shall be responsible for the safety of the District's representatives while at the job site. The ENGINEER and other District officers, employees, and agents shall at all times have reasonable access to all places of manufacture where materials are being manufactured, produced, or fabricated for use under this Contract.

2.3 ACCESS TO RECORDS. The ENGINEER and other District officers, employees, and agents, shall have reasonable access during normal business hours to Contractor's records such as payrolls, vouchers, purchase orders, etc. as the District may deem appropriate to monitor compliance with the Contract Documents.

2.4 OBSERVATION OF THE WORK

2.4.1 Inspectors employed by or on behalf of the District shall be authorized to observe all work done and all materials furnished. Such observation may extend to all or any part of the Work and to the preparation, fabrication or manufacture of the materials to be used. The Inspector is not authorized to revoke, alter or waive any requirements of the Contract Documents. The Inspector is authorized to call to the attention of the Contractor any failure of the Work or materials to conform

to the Contract Documents. Inspector shall have the authority to reject materials or suspend the Work until any questions at issue can be referred to and decided by the ENGINEER.

2.4.2 The Inspector shall, in no case, act as foreman or perform other duties for the Contractor, nor interfere with the management of the Work by the latter. Any advice that the Inspector may give the Contractor shall not be construed as binding to the ENGINEER or in any way as releasing the Contractor from fulfilling all the terms of the Contract.

2.4.3 ENGINEER'S observation of a method of procedure, process or system of operations of the Contractor, or failure of the ENGINEER to warn the Contractor that the method or methods of construction adopted by it are hazardous to persons or to property, shall not relieve the Contractor of its obligations hereunder, including the obligations of indemnification of the District, nor give rise to any claims against the District.

2.5 RIGHT TO STOP WORK. If the Contractor fails to correct Work which is not in accordance with the Contract Documents or for any cause whatsoever, the District may order the Contractor to stop the Work, or any portion of the Work, until the cause for such order has been eliminated; however, the District's right to exercise this provision shall not be for the benefit of the Contractor or any other person or entity. If the District stops the Work because of conduct by the Contractor, its agents, representatives or subcontractors, no compensation in time or money shall be owed to the Contractor for such stoppage.

2.6 RIGHT TO CARRY OUT THE WORK. If the Contractor defaults or neglects to carry out Work in accordance with the Contract Documents and fails within ten (10) days or within the time specified, whichever is less, after receipt of written notice from the District to commence and continue correction of such default or neglect with diligence and promptness, the District may by any means acceptable to it, without prejudice to other remedies the District may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost or estimated cost of correcting such deficiencies, including compensation for additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor and/or its Surety shall pay the difference to the District.

SECTION 3. CONTRACTOR RESPONSIBILITIES

3.1 SUPERVISION

3.1.1 The Contractor shall supervise and direct the Work, using its best skill and attention, and shall determine, subject to applicable law, the means and methods to be implemented. The Contractor is at all times responsible for the Work site until Final Acceptance of the Project. The Contractor shall at all times during the performance of the Contract prosecute the Work with such labor and equipment as, in the opinion of the ENGINEER, are appropriate to complete the different portions of the Work in the order required and within the specified time, and to secure a satisfactory quality of Work.

3.1.2 Representation on Work site. The Contractor shall at all times, while the Work is in progress, be represented at the Work site in person, or by superintendents, foremen, managers, or other duly designated and authorized representatives or agents. The work of such representatives shall be limited to supervisory duties only. The Contractor shall not designate a subcontractor as its representative. In the event the Contractor's representative's authority is limited in any way, the Contractor shall notify the District within ten (10) days after entering into the Contract of such limitation.

3.1.3 Contractor's Representative. When a Contractor cannot be in person on the Work site during its progress, it shall designate in writing to the ENGINEER the name of its authorized

representative in charge of the Work. When a Contractor consists of a multiple entity such as, but not limited to, two or more persons, partnerships, corporations, firms or other entities, such Contractor shall designate in writing to the ENGINEER the name of the authorized representative in charge of the Work and the Work site.

3.2 MATERIALS

3.2.1 All materials shall be new and of the specified quality and fully equal to samples, where samples are required or requested. The Contractor shall furnish to the ENGINEER for review or test, whenever requested and free of charge, samples of all materials proposed to be used in the Work. It shall also submit any required detailed drawings of articles or equipment for District approval. Rejected materials must be immediately removed from the Work site and shall not be brought again upon the Work site or used in the Work.

3.2.2 Except for District-selected equipment items and items where “no substitution” is clearly specified; materials, articles, devices, products, fixtures, form, type of construction, or process are indicated or specified for the purpose of establishing a standard of quality and facilitating the description of the material or process desired by District. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable in design, and shall be deemed to be followed by the words “Or Equal”. Such requests shall be made in writing by the Contractor to the District stating in detail how the proposed product differs in composition and performance from the designated product and shall be accompanied by complete data on which the District may make a determination on the merits of the proposed substitution.

In accordance with Public Contract Code Section 3400, Contractor may, in such cases, submit requests substantiating the substitution of “equal” items within thirty-five (35) days after the award of the Contract unless otherwise stated in the Supplemental Conditions or Project Plans and Specifications. If the District rejects the substitution of an “Or Equal” item, the Contractor shall provide the specified item without extra cost to the District.

3.2.3 Contractor shall be responsible for the materials including proper storage and handling from the time it receives materials until Final Acceptance of the Work and Contractor shall replace or repair, at its own cost in a manner satisfactory to ENGINEER, any of the materials which are lost or damaged after the Contractor’s receipt of same.

3.2.4 Materials furnished by District. In cases where the District furnishes all or a portion of the equipment or materials to be used in the Work (“materials”), the Contractor shall accept delivery of such materials as may be provided. If the Contractor is required to haul such materials under this Contract to the Work site, it shall pick them up promptly after notification by the ENGINEER, and shall pay at its own cost any demurrage or other charges which have accrued due to its failure to pick up the materials promptly.

3.2.5 Any District furnished materials which remain unused at the completion of the Work shall be delivered by the Contractor to the District storage yard designated by the ENGINEER.

3.2.6 All compensation to be received by the Contractor for handling and protecting District furnished material is included in the Contract Price, and no extra compensation will be paid to the Contractor for complying with the provisions of this section.

SECTION 4. LEGAL RESPONSIBILITIES

4.1 COMPLIANCE WITH THE LAW. The Contractor shall, at its own cost and expense, observe and keep fully informed regarding all existing and future federal, state, city, county, local agency or special District laws and regulations which may in any manner affect those engaged or employed on

the Project, or the materials to be used or furnished, or which may in any respect govern, control or otherwise affect the Project or the conduct of the Work or any part thereof. The Contractor shall, at its own cost and expense, furnish all materials and facilities required to comply with such laws and regulations. The Contractor shall furnish copies of all valid licenses and certifications required of Suppliers, subcontractors, or employees for the Work upon the request of the ENGINEER.

4.2 PERMITS AND LICENSES. The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

4.3 LABORERS AND SUBCONTRACTORS

4.3.1 SKILLED WORKERS. Only skilled and properly licensed and/or certified workers shall be employed on work requiring special qualification. When required in writing by the District, the Contractor or any subcontractor shall discharge any person who is, in the opinion of the District, incompetent, unfaithful, disorderly or otherwise not qualified, and shall not again employ such discharged person on the Work except with the consent of the District. This includes, but is not limited to the discharge or discipline of any employee of the Contractor or its subcontractors or agents who harass or otherwise engage in inappropriate behavior towards District personnel or the public or other workers. Such discharge shall not be the basis of any claim for compensation or damages from the Contractor to the District.

4.3.2 DAVIS-BACON ACT. Contractor will pay and will require all subcontractors to pay all employees on said Project a salary or wage at least equal to the prevailing rate of per diem wages as determined by the Secretary of Labor in accordance with the Davis-Bacon Act for each craft or type of worker needed to perform the Contract. The provisions of the Davis-Bacon Act shall apply only if the Contract is in excess of One Thousand Dollars (\$1,000.00) or when twenty-five percent (25%) or more of the Contract is funded by federal assistance. If the aforesaid conditions are met, a copy of the provisions of the Davis-Bacon Act to be complied with are incorporated herein as a part of this Contract and referred to by reference.

4.3.3 GENERAL PREVAILING RATE. District has ascertained from the State of California Director of Industrial Relations, the general prevailing rate of per diem wages and the general prevailing rate for legal holiday and overtime work in the locality in which the work is to be performed for each craft or type of work needed to execute this Contract, and copies of the same are on file in the Office of the ENGINEER of District. The Contractor agrees that no less than said prevailing rates shall be paid to workers employed on this public works contract as required by Labor Code Section 1774 of the State of California.

4.3.4 DEPARTMENT OF INDUSTRIAL REGULATIONS. Contractor must comply with the requirements set forth in California Senate Bill (SB) 854 (Ch. 28, 2014). SB 854's requirements include, but are not limited to, the following:

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

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

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

4.3.4.4 The Contractor must post job site notices prescribed by regulation.

4.3.4.5 The Contractor must submit a certified payroll records at least monthly to the Labor Commissioner in a format prescribed by the Labor Commissioner.

4.3.5 FORFEITURE FOR VIOLATION. Contractor shall, as penalty to the District, forfeit Two Hundred Dollars (\$200.00) for each calendar day or portion thereof for each worker paid (either by it or any subcontractor under it), less than the prevailing rate of per diem wages as set by the Director of Industrial Relations, in accordance with Section 1770 of the Labor Code for the work provided for in this Contract, all in accordance with Section 1775 of the Labor Code of the State of California.

4.3.6 APPRENTICES. Section 1777.5 of the Labor Code of the State of California, regarding the employment of apprentices is applicable to this Contract if the prime contract involves Thirty Thousand Dollars (\$30,000.00) or more.

4.3.7 WORKDAY. In the performance of this Contract, not more than eight (8) hours shall constitute a day's work, and Contractor shall not require more than eight (8) hours of labor in a day from any person employed by him hereunder except as provided in Section 4.3.2 and 4.3.3 above. Contractor shall conform to Article 3, Chapter 1, Part 7 (Sections 1810 et seq. and including Section 1815) of the Labor Code of the State of California and shall forfeit to the District as a penalty, the sum of Twenty-Five Dollars (\$25.00) for each worker employed in the execution of this Contract by Contractor or any subcontractor for each calendar day during which any worker is required or permitted to labor more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) week in violation of said Article. Contractor shall keep an accurate record showing the name and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Project.

4.3.8 EMPLOYER PAYMENTS. Per diem wages shall be deemed to include, per Labor Code Section 1773.1, travel and subsistence among other employer payments.

4.3.9 RECORD OF WAGES; INSPECTION. Contractor agrees to maintain accurate payroll records showing the name, address, social security number, work classification, straight-time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by it in connection with the Project and agrees to require that each of its subcontractors does the same. The applicable Contractor or subcontractor or its agent having authority over such matters shall certify all payroll records as accurate. Contractor further agrees that its payroll records and those of its subcontractors shall be available to the employee or his representative, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards, and shall comply with all of the provisions of Labor Code Section 1776, in general.

4.3.10 NON-DISCRIMINATION IN EMPLOYMENT. Projects under this Contract will obligate the Contractor and Subcontractors not to discriminate in employment practices. Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of Contract. The Contractor must be prepared to comply in all respects with the requirements regarding nondiscrimination including but not limited to California Labor Code Section 1735.

4.3.11 SUBCONTRACTORS

4.3.11.1 The Contractor shall perform not less than the percentage of the Work specified by the Contract Documents using the Contractor's own employees. At all times throughout the course of the Project, all subcontractors shall be licensed as required by California law. Contractor is responsible for the performance of all work done by each Subcontractor. The

District reserves the right to require discharge or replacement of a Subcontractor that is not qualified to perform the work or violates any provision of the Contract Documents. The contract between the Contractor and Subcontractor shall include a copy of Labor Code Sections 1771, 1775, 1776, 1777.5, 1813 and 1815. The Contractor shall comply with the Subletting and Subcontracting Fair Practices Act (Public Contract Code § 4100 et seq.).

4.3.11.2 The Contractor agrees to be fully responsible to the District for the acts and omissions of any Subcontractor, and for the acts and omissions of persons directly or indirectly employed by the Contractor. Nothing contained in the Contract Documents shall create any contractual relation between any Subcontractor and the District.

4.3.11.3 The Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Contract Documents, assumes toward the District. Each subcontract agreement shall preserve and protect the rights of the District under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its subcontractors.

4.3.12 CONTRACTING AND ASSIGNMENT. Subcontractors not specifically listed in the Bid proposal will not be recognized as such and will not be allowed to work on the Project unless the value of said Work is less than one-half of one percent ($\frac{1}{2}\%$) of the total Contract Price. All persons engaged in the Work of construction will be considered as employees of the Contractor, and not as independent Contractors. No assignment of any portion of the Work or of any obligation or duty under the Contract is permitted without the express prior written consent of District, and as otherwise authorized by the Contract Documents.

4.4 JOINT AND SEVERAL LIABILITY. If the Contractor is a joint venture or partnership, each venturer or partner shall be jointly and severally liable for any and all of the duties and obligations of the Contractor that are assumed under or arise out of the Contract. Each of such venturers or partners waives notice of the breach or non-performance of any undertaking or obligation of the Contractor contained in, resulting from or assumed under the Contract, and the failure to give any such notice shall not affect or impair such venturer's or partner's joint and several liability hereunder.

4.5 PATENTS. The Contractor shall assume all costs arising from the use of any patented article, material, device, equipment, product design or process used or furnished by the Contractor in connection with, or incorporated in, the Work to be done. The Contractor shall be responsible for and indemnify and defend and hold harmless District, its Subcontractors, the ENGINEER, the Consultant, if any, and each of their directors, officers, engineers, employees and agents from all damages, costs and expenses (including attorney's fees, expert witness fees, court costs, and other costs and expenses of, litigation) that may, at any time arise or be set up by reason of any infringement or alleged infringement of any patent rights as a consequence of the installation or use of any such article, material, device, equipment or process in or about any Work under the Contract Documents. The Contractor's bond for faithful performance shall be deemed to apply expressly to this provision of these General Conditions.

4.6 PERSONAL LIABILITY. No director, officer, engineer, employee, or agent of District, its Consultant, or its ENGINEER shall be personally responsible for any liability arising under or by virtue of the Contract.

4.7 TERMINATION.

4.7.1 This Contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this Agreement through no fault of the terminating party, provided that no termination may be effected unless the other party is

given: (1) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and (2) an opportunity for consultation with the terminating party prior to termination.

4.7.2 This Contract may be terminated in whole or in part in writing by the District for its convenience, provided that the Contractor is given (1) not less than ten (10) calendar days' notice (delivered by certified mail, return receipt requested) of the intent to terminate, and (2) an opportunity for consultation with the terminating party prior to termination.

4.7.3 If termination for default or convenience is effected by the District, an equitable adjustment in the price provided for in this Contract shall be made, but (1) no amount shall be allowed for anticipated profit on unperformed services or other work, and (2) any payment due to the Contractor at the time of termination may be adjusted to cover any additional costs to the District because of the Contractor's default. If the Contractor effects termination for default, the equitable adjustment shall include a reasonable profit for services or other work performed, but no adjustment will be allowed for anticipated profits. The equitable adjustment for any termination shall provide for payment to the Contractor for services rendered and expenses incurred prior to the termination, in addition to termination settlement costs reasonably incurred by the Contractor relating to commitments that had become firm prior to the termination.

4.7.4 Upon receipt of a termination action under Sections 4.7.1 or 4.7.2 above, the Contractor shall (1) promptly discontinue all affected work (unless the notice directs otherwise), and (2) deliver or otherwise make available to the District all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the Contractor in performing this Contract whether completed or in process.

4.7.5 Upon termination under Sections 4.7.1 or 4.7.2 above, the District may take over the work and may award another party an agreement to complete the work under this Contract.

4.8 PARTIAL INVALIDITY. In the event any article, section, sub article, Sections, sentence, clause, or phrase (collectively referred to hereinafter as "Contract Elements" or singularly as "Contract element") contained in the Contract Documents shall be determined, declared, or adjudged invalid, illegal, unconstitutional, or otherwise unenforceable, such determination, declaration, or adjudication shall in no manner affect the other Contract Elements, which shall remain in full force and effect as if the Contract element declared, determined, or adjudged invalid, illegal, unconstitutional, or otherwise unenforceable, was not originally contained in the Contract Documents.

4.9 WAIVER OF RIGHTS. Except as otherwise specifically provided in the Contract Documents, no action or failure to act by District, Consultant, ENGINEER, Contractor or its Subcontractor shall constitute a waiver of any right or duty afforded any of them under the Contract Documents, nor shall any such actions or failure to act constitute an approval of or acquiescence in any breach thereunder.

4.10 TAXES. The Contractor shall pay all sales, consumer, use and other taxes.

4.11 WARRANTY OF TITLE. No materials, supplies, or equipment for the Work under this Contract shall be purchased subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest therein or any part thereof is retained by the seller or Supplier. The Contractor warrants clear and good title to all materials, supplies, and equipment installed and incorporated in the Work and agrees upon completion of the Work to deliver the premises together with all improvements and appurtenances constructed or placed thereon by Contractor to District free from any claims liens, encumbrances or charges and further agrees that neither he nor any person, firm or corporation furnishing any material or labor for any work covered by the Contract shall have any right to a lien upon the premises or any improvement or appurtenance thereon, provided that this shall not preclude the Contractor from installing metering devices or other equipment of utility companies or of municipalities, the title of which is commonly retained by the utility company or the municipality. Nothing contained in this article, however, shall defeat or impair the right of such persons furnishing materials

or labor under any bond given by the Contractor for its protection, or any right under any law permitting such persons to look to funds due the Contractor in the hands of the District. The provisions of this section shall be inserted in all subcontracts and materials contracts, and notices of its provisions shall be given to all persons furnishing materials for the Work when no formal contract is entered into for such materials.

4.12 LANDS AND RIGHTS-OF-WAY. The lands and rights-of-way for the facility to be constructed will be provided by District. The Contractor shall make its own arrangements and pay all expenses for additional area required outside the limits of District's land and rights-of-way.

Work in public right-of-way shall be done in accordance with the requirements of the permit issued by the public agency in whose right-of-way the Work is located in addition to conforming to the Contract Documents. If a project-specific permit is not required, the Work shall conform to the standards of the public agency that has jurisdiction over the area where work is performed in addition to conforming to the Contract Documents.

SECTION 5. SCOPE OF WORK

5.1 GENERAL. Contractor shall complete the Work in accordance with the Contract Documents and by the completion date set within the Contract Documents at the Contract Price fixed in the Contract. Contractor at Contractor's sole cost and expense shall perform all labor and services and furnish all the materials, tools, and appliances necessary or proper for performing and completing the Work in accordance with the Contract Documents. All the labor, services and materials shall be performed and furnished strictly pursuant to, and in conformity with the Contract Documents, and the directions of the ENGINEER as given from time to time during the progress of the work under the terms of the Contract, and also in accordance with the Contract Documents and the submittals to be furnished from time to time as provided herein.

5.2 INTERPRETATION OF CONTRACT DOCUMENTS. Should it appear to Contractor that the Work to be performed or that the Contract Documents are not sufficiently detailed or explained, or should any questions or doubts arise as to the true meaning of any part of the Contract Documents, or shall an error, conflict, ambiguity or mistake be apparent or discovered in the Contract Documents, including the quantity estimates, the Contractor shall make a written request to the District immediately or no later than five (5) days upon discovery of need for correction, clarification or interpretation of the point(s) in question. Upon receipt of such request, the ENGINEER shall provide the Contractor a written interpretation correcting, clarifying or interpreting the point(s) in question, which interpretation shall be final and become a part of the Contract.

Should any interpretation, in the opinion of the Contractor, exceed the scope of the Contract Documents, written notice shall be given to the District within seven (7) calendar days of the receipt of the District's interpretation and prior to proceeding with the Work in question unless directed otherwise by the District. The District may amend its original interpretation, authorize Extra Work as a Change Order and authorize an extension of time, if applicable, in accordance with SECTION 5.3, Change Orders herein or the District may direct the Contractor to proceed with the original interpretation.

If the Contractor proceeds with the work without receiving an interpretation from the District, the District shall be relieved of any liability and Contractor shall be responsible for all resulting damage and defects.

Any Work or material not herein specified or shown on the Contract Documents, but which by fair implication in the judgment of the ENGINEER, should be included therein, shall be accomplished or furnished by the Contractor as part of the Contract requirements.

5.3 CHANGE ORDERS

5.3.1 GENERAL

5.3.1.1 The ENGINEER on the ENGINEER'S own initiative (District Initiated Change Order) or in response to a written request from the Contractor (Contractor Initiated Change Order) or by unilateral direction (Unilateral Change Order) may by written Change Order require additions to, deletions of or modifications of the requirements of the Work. For example, Change Orders may modify the design, line, grade, form, location, dimensions, plan, component, equipment or quantity of the Work.

5.3.1.2 Change Orders that diminish the quantity or amount of work to be done, shall entitle the District to a reasonable credit and shall not constitute the basis for a claim for damages or anticipated profits by the Contractor on the diminished work; provided that, if a change renders useless any work already done or materials already furnished or used in the Work, the ENGINEER, shall make reasonable allowance therefore, which allowance shall be binding upon both parties.

5.3.1.3 A Change Order shall specify the adjustment in Contract time, if any, for the changed Work. If Extra Work cannot be completed by the completion date, the Contractor shall be entitled to an adjustment in Contract time according to proof provided by the Contractor to the ENGINEER including, but not limited to, a detailed schedule analysis, including the appropriate and required schedule fragments, evidencing the justification of and need for the adjustment.

5.3.1.4 A Change Order shall specify the adjustment of the Contract Price, if any, for the changed Work.

5.3.1.5 DISTRICT INITIATED CHANGE ORDERS. The ENGINEER may require additions to, deletions of, or modifications to the requirements of the Work that may involve an adjustment in the Contract Price or the Contract Time via a Change Order issued by the District. The District shall provide the Contractor with prompt notice of its desire to issue said Change Order and shall consult with the Contractor in an attempt to mutually agree upon the estimated cost and time impacts, if any, as a result of said change. If District and Contractor fail to reach an agreement, the District shall be entitled to issue a Unilateral Change Order pursuant to Section 5.3.1.12.

5.3.1.6 The ENGINEER may authorize minor variations from the requirements of the Contract Documents that do not involve an adjustment in the Contract Price or the Contract time and are consistent with the overall intent of the Contract Documents. These variations may be accomplished by a Field Order and will require the Contractor to promptly perform the work involved. If the Contractor believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract time the Contractor shall request a Change Order pursuant to Section 5.3.1.9.

5.3.1.7 Contractor shall not proceed with any changed work unless and until the ENGINEER issues a Change Order, unless expressly instructed in writing to proceed with the Extra Work pending resolution of the Change Order.

5.3.1.8 During construction and prior to performing any of the Work at the jobsite, the Contractor shall verify the dimensions and quantities specified by the Contract Documents, and shall immediately notify the ENGINEER of all discrepancies that are discovered. If the ENGINEER determines that instructions to address a discrepancy are necessary, the instructions will be given by Field Order or Change Order.

5.3.1.9 CONTRACTOR INITIATED CHANGE ORDERS. If the Contractor determines that an event, circumstance or condition gives rise to a change in the Contract Price or the Contract Time, Contractor shall submit to the ENGINEER a written request for change order within fourteen (14) calendar days of the date of the event or fourteen (14) calendar days from the date the Contractor first discovered (or should have discovered in the exercise of reasonable prudence) that the event, circumstance or condition would give rise to a change in the Contract

Price or Contract Time. If Contractor fails to provide said written notice within fourteen (14) calendar days, Contractor agrees that it waives its right to collect any and all costs incurred as a result of said event, circumstance or condition, and further agrees that it waives the right to seek any extension of the Contract Time as a result of the event, circumstance or condition. Contractor further agrees that the failure to provide said timely notice (14 calendar days) of an alleged change shall preclude Contractor from submitting or pursuing any and all claims or protests arising from said event, circumstance or condition.

5.3.1.10 The Contractor may request a Change Order pursuant to Section 5.3.1.9 because of the availability of an improved technology or design that would meet or exceed the requirements of the Contract Documents.

5.3.1.11 Contractor shall not proceed with any changed work unless and until the ENGINEER issues a Change Order, unless expressly instructed in writing to proceed with the Extra Work pending resolution of the Change Order.

5.3.1.12 UNILATERAL CHANGE ORDERS. If at any time the District and the Contractor cannot reach agreement as to a Change Order, the District may, at its sole discretion, issue a Unilateral Change Order to Contractor directing contractor to perform the ordered Extra Work and furnish the labor, materials and equipment required for its completion. Contractor agrees that upon issuance of a Unilateral Change Order that it shall diligently prosecute the required Work to completion. The District shall in its sole discretion determine a fair and reasonable adjustment to the Contract Price and Contract Time. If Contractor disagrees with the time or price adjustment set forth in the Unilateral Change Order, it shall pursue a Protest pursuant to Section 5.4.

5.3.1.13 Work performed pursuant to a Change Order is subject to all of the provisions of the Contract Documents and the Contractor's bonds and insurance shall be bound with reference thereto as under the original Contract. If required, the Contractor shall provide the ENGINEER with new bonds and certificates of insurance and endorsements reflecting the Change Order. The cost to the Contractor or the credit to the District for revised bonds and insurance premiums shall be included in the revised Contract Price.

5.3.1.14 The Contractor shall pursuant to the requirements of Section 5.3.1.9, and before the following conditions are disturbed, notify the District of any differing site conditions including but not limited to: (1) material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety code, that is required to be removed to a Class I, Class II or Class III disposal site in accordance with provisions of existing law; (2) subsurface or latent physical conditions at the site differing from those indicated; or (3) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work provided for in the Contract Documents.

The District shall promptly investigate the conditions and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, the District shall issue a Change Order in accordance with this Section 5.

5.3.2 PROCESS FOR ISSUING CHANGE ORDERS

5.3.2.1 The ENGINEER may issue a Change Order designating the changed Work, adjustment to the completion time, if any, and adjustment to the Contractor's payment or credit, if any. Within three (3) work days of the receipt of the Change Order, the Contractor shall either (1) sign the Change Order indicating the Contractor's acceptance of the terms of the Change Order, or (2) return the Change Order without signing it and propose modifications. If the Contractor returns the Change Order without signing it, the ENGINEER may issue a revised

Change Order, or reissue the original Change Order or issue a Unilateral Change Order pursuant to Section 5.3.1.12 and direct the Contractor to perform the ordered Work subject to the Contractor's rights of protest and dispute resolution.

5.3.2.2 Alternatively, the ENGINEER may submit a Change Order designating the changed work and requesting an estimate of the cost or credit and schedule for the work. Within ten (10) business days, the Contractor shall prepare and submit to the ENGINEER a written estimate of cost and schedule for the work. The ENGINEER may thereafter issue a Change Order as provided in 5.3.1.5 above.

5.3.2.3 Adjustment in the price paid for a Change Order due the Contractor shall be determined by one or more of the following methods in the following order of precedence:

1. Unit Prices contained in the Contract Documents.
2. Mutually agreed lump-sum or Unit Prices, based upon current prevailing fair prices for equipment, materials, labor, overhead, and profit. If requested by the ENGINEER, the Contractor shall furnish an itemized breakdown of the quantities and prices used in computing proposed lump-sum and Unit Prices for the Extra Work.
3. Mutually agreed prices for labor, materials, and equipment actually used based on the following (time and materials):

(a) Cost of labor plus fifteen percent (15%) for workers directly engaged in the performance of the Work. Cost of labor shall include actual wages paid including employer payments to or on behalf of the workers for health and welfare, pension, vacation, and similar purposes plus payments imposed on payroll amounts by applicable laws and regulations, plus subsistence and travel (other employer payments to employees.)

(b) Cost of material plus fifteen percent (15%). Cost of material shall include sales tax, freight, and delivery charges. The District reserves the right to furnish such material as it deems advisable and the Contractor shall not be paid the fifteen percent (15%) markup on such materials.

(c) Cost of equipment plus fifteen percent (15%) for tools and equipment actually engaged in the performance of the Work. Equipment rates shall be the lesser of the actual rental rates or those listed for such equipment in the California Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates, which is in effect on the date the Work is performed, regardless of ownership and any rental or other agreement, if such may exist, for use of such equipment entered into by the Contractor. If it is deemed necessary by the ENGINEER to use equipment not listed in that publication, a suitable rental rate for such equipment will be established by the ENGINEER. The Contractor shall furnish any cost data that might assist the ENGINEER in the establishment of such rental rate.

No rental charge shall be made for use of tools or equipment having a replacement cost of five hundred dollars (\$500) or less. No payment will be made for equipment on standby or idle time. Payment for equipment will only be made for actual time of use as verified by the ENGINEER. The equipment rental rates shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. The cost of labor for operators of equipment shall be separately paid for as provided herein. Small tools are part of the Contractor's markup.

(d) Subcontractor invoices to the Contractor plus five percent (5%). Subcontractor invoices shall be based upon the above described cost of labor plus fifteen percent (15%), cost of material plus fifteen percent (15%), and tool and equipment rental rates plus fifteen percent (15%). The five percent (5%) markup to the Subcontractor's

invoice shall be applied only one time for each separate Extra Work transaction, regardless of the number of tiers of Subcontractors performing the Extra Work.

(e) The Contractor shall submit to the ENGINEER for verification, on a daily basis, work sheets showing an itemized breakdown of labor, materials, tools, and equipment used in Extra Work. No labor, materials, or equipment will be determined to be actually used unless it has been verified daily by the ENGINEER. Payment shall be made solely for labor, materials or equipment actually used.

(f) No separate payment shall be made for any item not set forth specifically above, including without limitation, Contractor's overhead, profit, general administrative expense, supervision, bonds and insurance premiums, or damages claimed for delay in prosecuting the remainder of the Work; as such items are deemed included in the percentage markups described previously. The total payment made as provided above shall constitute full compensation for the changed Work.

5.3.3 UNCONTROLLABLE CIRCUMSTANCES/EXCUSABLE DELAYS

5.3.3.1 Upon Contractor's written request and submission of substantiating documentation of a delay caused by an Uncontrollable Circumstance (as defined in this Section 5.3.3 below), the ENGINEER shall extend the time fixed in Section 4 of the Construction Agreement for completion of the Project by the number of days Contractor has thus been delayed, if District finds that the delay is justified. Contractor shall submit the written request to District for such time extension pursuant to Section 5.3.1.9 above. District's decision will be conclusive on the parties to this Contract. Failure to file such request within the time allowed shall be deemed a waiver of the claim by Contractor.

Documentation and determination of delays shall be handled in the same manner as Change Orders, Protests and Claims as set forth in these General Conditions. Uncontrollable Circumstances means any act, event or condition that (1) is beyond the reasonable control of the Contractor that justifies not timely performing an obligation or complying with any condition required under the Contract Documents and (2) materially expands the scope of, interferes with, or delays the Contractors performance obligations under the Contract Documents, but only if such act, event or condition is not the result of the willful or negligent act, error or omission, failure to exercise reasonable diligence, or breach of the Contract Documents on the part of the Contractor.

Examples of acts, events or conditions that qualify as Uncontrollable Circumstances are naturally occurring events (except inclement weather normal for the area where the Work is being performed) such as earthquakes, fires, tornadoes, hurricanes and other acts of God; terrorism, sabotage, and other acts of a declared public enemy; and labor disputes, except labor disputes involving employees of the Contractor. Acts, events, and conditions that are not considered Uncontrollable Circumstances include but are not limited to Contractor's inability to obtain timely materials or equipment; work related injuries, safety violations; errors, neglect or omission by the Contractor or its Subcontractors in performance of the Work, inclement weather conditions normal for the Work area; any mechanical failure of equipment; or any electrical power outages except as a direct result of an independent uncontrollable circumstance.

5.3.3.2 No requests by Contractor for additional compensation or damages for delays will be allowed unless Contractor satisfies District that such delays were unavoidable and not the result of any action or inaction of Contractor and that Contractor took available measures to mitigate such damages. Extensions of time and extra compensation as a result of differing site conditions will be determined in accordance with Section 5.3.2 of the General Conditions. The District's decision will be conclusive on all parties to this Contract.

5.4. PROTESTS

5.4.1 If the Contractor considers any Work required of it to be outside the requirements of the Contract, or if it considers any instruction, meaning, requirement, ruling or decision of the District or its representative to be unauthorized pursuant to the Contract, it shall within seven (7) calendar days after such demand is made, or instruction given, or receipt of a decision, file a written protest with the District stating clearly and in detail its objections and reasons therefore. The Contractor shall not proceed with any protested work unless and until the ENGINEER gives written notice directing the Contractor to proceed with the Work, once directed to proceed with the Work, the Contractor shall do so without delay. ENGINEER shall have right to request information necessary to determine protest.

5.4.2 If a written protest is not issued within seven (7) calendar days, said protest shall be time barred and the Contractor's failure to provide such notice or the installation of any such Work without authorization shall be construed as relieving the District of any claim either for added costs or for extensions of time.

5.4.3 The District will review the Contractor's timely written protest and provide a decision within thirty (30) days, but if a decision is not issued within thirty (30) days, the protest will be deemed denied. If after reviewing the District's decision or the passage of thirty (30) days without receiving a decision, the Contractor shall have seven (7) days to notify the ENGINEER, in writing, that the Contractor disagrees with the decision and that a claim will be submitted pursuant to Section 5.5 below.

5.4.4 The Contractor's claim shall be in writing and include all documentation necessary to substantiate the claim as set forth in Section 5.4.4.1 below. Resolution of the claim shall proceed in accordance with Section 5.5. The failure of the Contractor to either fail to file the notice of claim or, thereafter, a claim, in a timely manner is a waiver of the protest and claim.

5.4.4.1 Written documentation necessary to substantiate the claim shall include at a minimum, the following:

1. Statement of claim and the basis for it.
2. List of documentation relating to claim, including specifications, plans, reports, schedules, Field Orders, requests for clarification, etc.
3. Chronology of events and correspondence.
4. Cost analysis, including all backup financial records supporting the costs analysis and any extended overhead claim analysis.
5. Detailed critical path schedule analysis and backup source documents supporting a delay claim.

Information submitted shall be sufficient to justify the claim.

5.4.5 Claims submitted pursuant to this Section shall include the following certification statement. Failure to include and sign the certification statement shall result in the Contractor waiving all rights to the subject claim. The Contractor shall submit under penalty of perjury with each claim its and each Subcontractor's written certification that:

1. The claim is made in good faith.
2. Supporting data are accurate and complete to the best of the Contractor's knowledge and belief.
3. The amount requested accurately reflects the Contract adjustment for which the Contractor believes the District is liable.

4. The Contractor understands that if a false claim is submitted, it will be considered fraud and the Contractor may be subject to criminal prosecution and any other available relief pursuant to Governmental Code section 12650, et seq.

5.5 PROCEDURES FOR RESOLVING CLAIMS (PCC SECTION 9204)

A The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

B Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

C For purposes of this section:

1. "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:
 - a) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.
 - b) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.
 - c) Payment of an amount that is disputed by the public entity.
2. "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.
3.
 - a) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.
 - b) "Public entity" shall not include the following:
 - i. The Department of Water Resources as to any project under the jurisdiction of that department.
 - ii. The Department of Transportation as to any project under the jurisdiction of that department.
 - iii. The Department of Parks and Recreation as to any project under the jurisdiction of that department.
 - iv. The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.
 - v. The Military Department as to any project under the jurisdiction of that department.
 - vi. The Department of General Services as to all other projects.
 - vii. The High-Speed Rail Authority.

4. "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.
 5. "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.
- D
1.
 - a) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.
 - b) The claimant shall furnish reasonable documentation to support the claim.
 - c) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.
 - d) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.
 2.
 - a) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.
 - b) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.
 - c) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through

negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

- d) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.
 - e) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.
3. Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.
 4. Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.
 5. If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.
- E The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.
 - F A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.
 - G This section applies to contracts entered into on or after January 1, 2017.
 - H Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.
 - I This section shall remain in effect only until January 1, 2020, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2020, deletes or extends that date.

(Added by Stats. 2016, Ch. 810, Sec. 1. (AB 626) Effective January 1, 2017. Repealed as of January 1, 2020, by its own provisions.)

SECTION 6. PROSECUTION AND PROGRESS OF THE WORK

6.1 PROGRESS OF WORK

6.1.1 Unless otherwise specified, the Contractor shall commence the Work upon the issuance of the Notice to Proceed or the date specified within the Notice to Proceed (the "Notice to Proceed Date") and shall diligently prosecute the Work to its completion. A Notice of Completion shall be recorded for the Work, but the District's failure to do so, timely or otherwise, shall not be raised as a defense to the untimely assertion of any rights by Contractor, its Subcontractors or Suppliers of any tier.

6.1.2 The continuous prosecution of the Work by the Contractor shall be subject only to the delays defined in this Contract. The start of Work shall include attendance at preconstruction conferences, preparation and submittal of submittals, equipment lists, and schedule of values, schedules, requests for substitutions and other similar activities. Submittals shall be prepared in accordance with the Contract Documents and shall be made in the time limits indicated. Except as specifically authorized by the District, no Work shall commence on site before the Notice to Proceed Date or after the Notice to Proceed Date but before all applicable Contract requirements have been satisfied.

Notwithstanding this Section 6.1.2, under no circumstances shall the Contractor proceed to work under any verbal authorization or issuance of Notice to Proceed by District where the Contractor is not in receipt of the Contract Documents full executed by Contractor and District authorizing the Project, including but not limited to the Construction Agreement.

6.1.3 The Work shall be brought to completion, as determined by the District, in the manner provided in the Contract Documents and in the number of calendar days set forth in the Section 4 of the Construction Agreement.

6.1.4 Failure to reach completion as determined by the District within the Contract time and in the manner required by the Contract Documents shall subject the Contractor to liquidated damages as stipulated in Section 6 of the Construction Agreement unless extensions of time are granted in accordance with the Contract Documents.

6.1.5 The Contractor shall at all times keep on the premises sufficient material and employ sufficient supervision and workers to prosecute the Work at a rate necessary to reach completion of the Work as required within the Contract Documents. Work shall not start, nor shall the Work be left in an incomplete state for an indeterminate period of time, while equipment and materials are in transit.

6.1.6 It shall be the responsibility of the Contractor to maintain its schedule so as not to delay the progress of the Work or the schedules of other contractors and workers who may be employed by the District on any Work in the vicinity of the Work to be done pursuant to this Contract, and it shall conduct its operations so as not to interfere with the Work of such contractors or workers. The Contractor is required by virtue of this Contract to cooperate in every way possible with other contractors or workers in order to complete the Work within the Contract time. No additional compensation will be paid to Contractor for such cooperation, except as otherwise provided. If the Contractor delays the progress of the Work or the progress of other Contractors or workers, it shall be the responsibility of the Contractor to take some or all of the steps outlined below to improve its progress.

6.1.7 If, in the opinion of the District, the Contractor falls behind with the Work or current update of the Contract schedule and is not entitled to an extension of time, the Contractor shall take some or all of the steps outlined below to improve its progress at no additional charge to the District, and shall submit operation plans to demonstrate the manner in which the desired rate of progress may be regained.

6.1.7.1 Increase construction personnel in such quantities and crafts as will substantially eliminate the backlog of Work and allow the Contractor to complete the Work within the Contract time.

6.1.7.2 Increase, when permitted, the number of working hours per shift, shifts per working day, working days per week or the amount of construction equipment or any combination of the foregoing, sufficient to substantially eliminate the backlog of Work.

6.1.7.3 Reschedule activities to achieve maximum practical concurrence of accomplishment of activities; and/or

6.1.7.4 Expedite delivery of materials and equipment.

6.1.8 Should the Contractor at any time during the progress of the Work, refuse, neglect or be unable for avoidable reasons to supply sufficient material, supervision or workers to prosecute the Work at a rate necessary to complete the Work within the Contract time or in accordance with the currently accepted updated construction schedule, the District shall have the right to terminate the Contract as provided in Section 4.7 of the General Conditions. If the Contractor does not comply with a notice to correct default from the District within the time specified in the notice, the District shall have the right to provide the materials and workers to finish the Work and/or terminate the Contract. The expenses incurred by the District to complete such Work shall be deducted from any monies due or which may become due under the Contract and/or the construction fund for the Work. In the event the expenses incurred exceed the amounts due to the Contractor of the construction fund for the Work, the Contractor or its Surety shall reimburse the District for any such shortage in funds.

6.2 USE PRIOR TO FINAL COMPLETION

6.2.1 District shall have the right to use all or a portion of the Work at no additional cost to District, even if Substantial Completion of the Work, as more particularly described in Section 6.3 – Substantial Completion, has not occurred and even if the Work has not been finally accepted.

6.2.2 If District elects to take possession of and to use any completed or partially completed portions of the Work prior to Substantial Completion of the Work, the ENGINEER shall document in writing to the Contractor the scope of Work it wishes to take possession of and an inspection shall be made by the Contractor and ENGINEER of said scope of Work. Based on such inspection, the ENGINEER will attempt to list all incomplete and/or deficient items of Work observed, and provide the Contractor with such a list. However, the absence of an item from the list shall not relieve the Contractor of responsibility to perform all of the Work in accordance with the Contract Documents, and any and all areas so occupied will be subject to Final Inspection after the Contractor achieves Substantial Completion. If the use of these portions of the Work by District delays the progress of the Work or causes additional expense to the Contractor, the Contractor shall file a written request for extension of time and/or Extra Work as specified in Section 5.3.1.9.

6.2.3 The warranty period for portions of the Work placed into service prior to Final Acceptance of the Work shall be one (1) year commencing on the date of the District's written notification to the Contractor that all incomplete and/or deficient items of Work observed by the ENGINEER as described in 6.2.2 above, have been completed and/or corrected by the Contractor. However, if during Final Inspection any incomplete and/or deficient items are observed in any portions of Work

placed into service prior to Final Completion, and such incomplete and/or deficient items are not the result of or caused by District's occupancy, the guarantee period for any such portions of Work shall not be deemed to have commenced at any time prior, and shall commence on the date of Final Acceptance once any such incomplete and/or deficient Work is completed and/or corrected in connection therewith.

6.3 SUBSTANTIAL COMPLETION

6.3.1 Substantial Completion of the Work means the Work has progressed to the point that District can beneficially occupy or utilize the Work as a whole for the purpose for which it is intended, and the Work complies with applicable codes and regulations, including if required, issuance of certificates of occupancy, or certificate of suitability for use from the appropriate governmental agencies, as determined by the ENGINEER at ENGINEER'S sole discretion.

6.3.2 When the Contractor considers that Substantial Completion has been achieved, the Contractor shall notify the ENGINEER, formally, in writing [Notice of Substantial Completion of the Work] that the Work is substantially complete to the required stage and is ready for inspection. The Contractor shall include with its Notice of Substantial Completion of the Work a list of minor items, (including the Contractor's punchlist) to be completed or corrected that would not affect beneficial occupancy or suitability for use.

6.3.3 After receipt of the Contractor's Notice of Substantial Completion of Work, the ENGINEER and Contractor, and any other representative as the ENGINEER deems appropriate, shall make an inspection of the Work to determine whether the Work has been completed in accordance with the Contract Documents and to review the Contractor's punchlist.

6.3.3.1 If, in the ENGINEER'S sole opinion, the Work has not achieved Substantial Completion, the parties shall cease the inspection and all costs incurred by District as a result of the premature inspection shall be deducted from the payments due the Contractor. Contractor shall thereafter perform all remaining Work to reach Substantial Completion, and re-submit its Notice of Substantial Completion of Work. The inspection of the Work will recommence as set forth above.

6.3.3.2 If the Work has achieved Substantial Completion, a punchlist shall be prepared by the ENGINEER and shall include those items listed by the Contractor to be completed or corrected as well as those items observed during the inspection. Failure to include any items on the punchlist shall not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents, nor shall the punchlist amend the Contract Documents. All deficiencies and/or items identified on the punchlist must be corrected within thirty (30) days of said initial inspection conducted at the Substantial Completion phase, unless otherwise specified in writing by the ENGINEER.

6.4 FINAL INSPECTION, FINAL COMPLETION AND FINAL ACCEPTANCE

6.4.1 FINAL INSPECTION. The Contractor shall notify the ENGINEER in writing when all punchlist items have been completed, all Work is completed in accordance with the Contract Documents and all clean-up has been done. Clean-up shall be completed when all waste, materials, excess materials, tools, and equipment such as scaffolding, temporary structures, and unneeded facilities such as fencing and sanitary facilities are removed from the Project. The ENGINEER will then make Final Inspection for the purposes of ascertaining that the Work has been fully completed in accordance with the requirements of the Contract Documents.

6.4.2 FINAL COMPLETION. After the ENGINEER has made the Final Inspection and is satisfied that the Work has been completed in accordance with the Contract Documents, including all punch list items, and is satisfied that all submittals have been made and accepted, including but not limited to all materials required by the Contract Documents and all As-Builts, record drawings by the Contractor, if required by the Contract, and any other required record documents have been completed and accepted, all Change Orders have been executed, all final quantities agreed to, and all other requirements of the Contract Documents, except for possible future warranty and guarantee Work have been accomplished, the ENGINEER shall certify, in writing, the full completion of the Work and the date thereon.

6.4.3 FINAL ACCEPTANCE. Final Acceptance of the Work shall occur upon the District's Board of Directors' approval of the Final Completion of the Work and upon recordation of a Notice of Completion with the County Recorder.

SECTION 7. PAYMENT FOR WORK

7.1 PROGRESS PAYMENTS

7.1.1 Each month Contractor shall be paid a sum (less retention) equal to the value of the Work (based on the Schedule of Values) performed up to the last day of the previous calendar month, less the aggregate of the previous payments. The monthly payments shall be made on the basis of monthly progress estimates that shall be submitted by the Contractor and approved by the ENGINEER. Quantities used in computing partial payments shall be considered as estimates only and shall be subject to revision in subsequent estimates. Work completed as estimated shall be an estimate only and no inaccuracy or error in said estimate shall operate to release the Contractor or any Surety from damages arising from such work or from the enforcement of each and every provision of this Contract and the District shall have the right subsequently to correct any error made in any estimate for payment. Materials delivered but not incorporated or installed in the Work will not be included in progress payments unless allowed by Supplemental Conditions or Project Plans and Specifications.

7.1.2 If a progress payment received from the Contractor is undisputed and properly submitted, payment shall be made within thirty (30) days after receipt of progress payment, and if not so paid, Public Contract Code section 20104.50 may apply. If, however, the progress payment is determined not to be proper or correct, the District may, at its option, correct the progress payment and pay the amended amount or return the progress payment no later than seven (7) days after receipt, accompanied by a document setting forth in writing the reasons it is not proper.

7.1.3 A deduction of five percent (5%) will be made and held as retention from each progress payment; however, if Contractor has, in the judgment of the District, satisfactorily completed ninety-five percent (95%) of the work as determined from the Construction schedule, the General Manager may recommend a reduction of the withholding rate to an amount not less than 125 percent of the work yet to be completed, as determined by the General Manager, if the reduction has been approved, in writing, by the surety on the performance bond and by the surety on the payment bond.

7.1.4 Notwithstanding any other provision in this Contract, as provided in Public Contract Code section 22300 and subject to the requirements thereof, Contractor may substitute securities for monies withheld by the District to ensure proper performance under this Contract. The substitution of securities or the deposit of the amount retained shall be at the sole expense of and request of Contractor.

7.1.5 The Contractor shall pay each Subcontractor and/or Supplier in the time periods required by law.

7.2 APPLICATIONS FOR PAYMENT

7.2.1 In Contracts with a duration of sixty (60) days or longer, on or before the seventh (7th) day of each calendar month, the Contractor shall submit to the ENGINEER a progress payment for the value of work done and materials used to the last day of the previous calendar month. Progress payments shall be made in the format provided by the District.

7.2.2 Unless modified in the Supplemental Conditions or Project Plans and Specifications, payment for materials delivered, but not yet incorporated into the Work shall be paid as follows: materials accepted to the Work site or to an acceptable location by District shall be paid at the actual cost of materials. Labor for installation of such materials will be paid upon installation of materials.

7.2.3 Contractor warrants that upon submittal of the progress payment that all work for which previous progress payments have been made and payments received from the District shall, to the best of the Contractor's knowledge, information and belief, be free and clear of claims, security interests or encumbrances in favor of the Contractor, Subcontractors, Suppliers or other persons, or entities making a claim by reason of having provided labor, materials and equipment related to the Work and that all work for which payment is demanded has been performed in accordance with the Contract and that the amount claimed is due. With each progress payment, Contractor shall certify that the As-Built drawings have been updated and jointly reviewed with the District for the month that payment is requested.

7.2.4 Contractor agrees to furnish, if and when required by District, receipts, vouchers, releases and/or waivers of claims for labor, material, equipment and services performed by Contractor and any and all subcontractors performing Work or furnishing materials under this Contract or any subcontract with Contractor, all in a form satisfactory to District, and it is agreed that no payment shall be made except at District's option until and unless such receipts, vouchers or releases and/or waivers, or any and all of them, have been furnished. Any progress payment made prior to acceptance of the Work by District shall not be construed as evidence of acceptance of any part of Contractor's Work.

7.3 FINAL ACCEPTANCE AND PAYMENT. Within five (5) calendar days following the Board of Director's Final Acceptance of the Work, the District shall file a Notice of Completion with the County Recorder's office. Thirty (30) days after the filing of the Notice of Completion, and subject to the Contractor's evidence of compliance with Section 7.5 below, the District will pay or release to the Contractor all retention funds due him under the provisions of the Contract Documents.

7.4 STOP NOTICES

7.4.1 For each properly filed and unreleased stop notice, the District shall withhold from current progress payments an amount equal to one-hundred-twenty-five percent (125%) of each stop notice amount.

7.4.2 Upon request by the Contractor, payments may be made jointly to the Contractor and a stop notice claimant. Any such payment shall be deemed to be a payment to the Contractor.

7.5 RELEASE OF CLAIMS. Before the District pays or releases to the Contractor his retention for the work, the Contractor shall submit unconditional lien releases from all Subcontractors and/or Suppliers who have submitted a preliminary notice or stop notice. The release shall state that the Contractor has satisfied all claims and indebtedness of every nature in any way connected with the work, including (but not limiting the generality of the foregoing) all payrolls, amounts due to subcontractors', accounts for labor performed and materials furnished, incidental services, liens, and judgments. If any lien or claim remains unsatisfied after all retention has been released or payments made to the Contractor, the Contractor shall refund to the District all monies that the latter may be

compelled to pay in discharging such a lien or claim, including all costs and a reasonable attorney's fee.

7.6 RIGHT TO AUDIT. District shall have the right to audit, during the Contractor's normal business hours at the office of the Contractor, any of the Contractor's books and records to the extent they are relevant or calculated to lead to relevant evidence relating to any claim submitted by the Contractor or the Contractor's performance under the Contract. This right shall include, without limitation, the right to examine the books, records, documents, Bid records, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs, including claimed unabsorbed overhead costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The Contractor further agrees that the right to audit encompasses all subcontracts and is binding upon Subcontractors. Additionally, the Contractor shall make available within ten (10) days to the District's auditing, all requested schedules, plans, accounting records and documents and other financial data, and upon request, shall submit true copies of requested records to the District.

7.7 ASSIGNMENT OF ANTI-TRUST CLAIMS. Contractor agrees to assign District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (U.S.C Sec. 15) or under the Cartwright Act [Chapter 2, commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code], arising from purchases of goods, services or materials pursuant to the Contract. This assignment becomes effective at the time the District tenders final payment to the Contractor, without further acknowledgment by the parties. The Contractor shall have the rights set forth in Section 4553 and 4554 of the Government Code.

7.8 BANKRUPTCY. The Contractor shall immediately notify the District of its own or of any of its subcontractor's filing for bankruptcy protection and provide the District with a copy of the Bankruptcy Case Number and title of the Court in which the petition for bankruptcy was filed. Filing for bankruptcy protection shall be a default of this Contract and grounds for termination as provided by Section 4.7, Termination of the General Conditions.

SECTION 8. MISCELLANEOUS

8.1 GOVERNING LAW. The Contract Documents have been negotiated between District and the Contractor and shall be subject to and interpreted under the laws of the State of California.

By entering into the Contract, the Contractor consents and submits to the jurisdiction of the Courts of the State of California, County of Ventura, over any action at law, suit in equity, and/or other proceeding that may arise out of the Contract Documents.

SUPPLEMENTAL CONDITIONS

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PART 4

PLANS AND SPECIFICATIONS

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TECHNICAL SPECIFICATIONS
FOR
SEWER REHABILITATION PROJECT – SILVER STRAND
BEACH/HOLLYWOOD BY THE SEA

CONTRACT NO. 2020-01

May 2020



CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT

353 Santa Monica Drive
Channel Islands Beach, CA 93035

Approved by:

Peter Martinez



Pete Martinez
General Manager
CHANNEL ISLANDS BEACH
SERVICES DISTRICT

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SILVER STRAND BEACH/HOLLYWOOD BY
THE SEA
Contract No. 2020-01**

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SECTION 011100 COORDINATION OF WORK, PERMITS, AND REGULATIONS

1.01 DESCRIPTION

The work involves rehabilitation of approximately 3,500 LF of sanitary sewer gravity piping ranging in size from 8-inch to 10-inch by cured-in-place pipe (CIPP) methods as outlined in these Contract Documents. Other work includes manhole rehabilitation and replacing the manhole covers at each CIPP repair location. Contract includes sewer bypassing, as necessary, to perform the rehabilitation work. When a sewer bypass pump is in use, 24-hour pump watch with a certified mechanic will be required.

1.02 LOCATION OF PROJECT SITE

The project site is located in residential areas throughout Silver Strand Beach including public roadways in Channel Islands Beach, Ventura County, California. Streets affected by this project are listed below:

1. Sunset Dr.
2. Hollywood Bl.
3. Panama Dr.
4. Anacapa Dr.
5. Roosevelt Bl.
6. Rossmore Dr.
7. Cahuenga Dr.
8. Highland Dr.
9. Ocean Dr.
10. Bardsdale Ave.
11. Tujunga Ave.
12. Hueneme Ave.
13. Ojai Ave.
14. Sawtelle Ave.

1.03 WORK SEQUENCE AND SCHEDULE

The general sequence of Work shall be as follows:

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A. Preparation

1. Before beginning Work, submit proposed schedule of work, bypass pumping plan (if necessary), spill response plan, traffic control plan, insurance and bonds. Take preconstruction photographs. Bypass pumping plan shall include a contingency back-up plan in case the bypass pumping system fails.
2. Traffic Control Plans must be in conformance with the California Manual on Uniform Traffic Control Devices (CA MUTCD) regulations and guidelines.
3. Verify field conditions and notify the Owner's Representative if discrepancies or conflicts are found.
4. Submit shop drawings and other submittals.
5. Begin manufacturing and shipping materials and equipment after receiving approved submittals.

B. Rehabilitation/Construction Sequence

1. Depending upon the Contractor's Means and Methods, two mobilizations may be required. The first mobilization would be for cleaning and CCTV. The second mobilization would be for the CIPP rehabilitation work.
2. Contractor is required to have approved Sewer Bypass Plan, if necessary, before site mobilization. In addition to items described in Technical Specification Section 330134, Sewer and Manhole Wastewater Bypass Pumping, the Contractor shall describe approved strategies for cleaning, CCTV and CIPP activities to not interfere with sewer bypass equipment.

Pumping system shall be of sufficient capacity to handle 1.5 times peak flow. If pumping is required on a 24-hr basis, engines shall be equipped in a manner to keep noise to a minimum. Standby pumps shall be provided as required. The pumped sewage shall be in an enclosed hose or pipe and shall be reinserted into the sanitary sewer system.
3. To minimize the possibility of a sewage spill, the Contractor shall divert the shortest reach of gravity pipe that is possible to complete the Work.
4. All sewage flows shall be plugged or diverted from the gravity sewer segment before TV inspection, cleaning and installation of CIPP is to occur.
5. Contractor shall divert sewer flows to the applicable parallel gravity sewer where available.
6. Contractor shall verify inside pipe diameter for each sewer segment before manufacturing CIPP.

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7. Where parallel gravity sewer is not available, Contractor shall install pumped bypass system in conformance with the Construction Plans and Section 330134.
8. Sewer service connections shall be reinstated as required at the same time as the CIPP installation. No sewer lateral shall be out of service for longer than a 12-hour period.
9. After CIPP installation has been accepted by the Owner, Contractor shall remove the temporary bypass system.
10. Contractor is required to complete the work in the order specified in the bid item list. Contractor shall install CIPP in one pipe segment at a time. The segment shall be returned to service before the next segment is diverted unless pre-approved by the CIBCSD.
11. Contractor shall not work on multiple streets at a time unless pre-approved by the District.

1.04 PERMITS

- A. The following permits for the permanent work will be obtained by the Contractor.

Name or Type of Permit	Name, Address, Telephone Number of Permitting Agency
County of Ventura Encroachment Permit	County of Ventura 800 S. Victoria Ave. Ventura, CA 93009 Cat Robles (805) 701-9563 Luis Gonzales (805) 654-2055 (Permit Tech)

The permits contain requirements that affect the cost of project work and some permanent permits require supplementary work permits and fees to execute construction. Comply with the permit requirements and obtain and pay the fees involved with the supplementary work permits.

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SECTION 012000 MEASUREMENT AND PAYMENT

1.01 WORK LISTED IN THE SCHEDULE OF WORK ITEMS

- A. Measurement and payment descriptions are included in the numbered sections of the specifications.
- B. The unit prices and lump-sum prices include full compensation for furnishing the labor, materials, tools, and equipment and doing all the work involved to complete the work included in the contract documents.
- C. The application for payment will be for a specific item based on the percentage completed or quantity installed. The percentage complete will be based on the value of the partially completed work relative to the value of the item when entirely completed and ready for service.

1.02 WORK NOT LISTED IN THE SCHEDULE OF WORK ITEMS

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

1.03 MOBILIZATION, PERMITS, CLEANUP, & DEMOBILIZATION (BID ITEM #1)

- A. Upon completion of mobilization, 50% of amount bid for this item (or 50% of stipulated 10%) cap, whichever is less, will be paid to Contractor. Remainder will be paid as part of final contract payment upon project completion.
- B. Amount bid for Mobilization/Demobilization shall not exceed 10% of Contractor's bid total for either schedule. Bids in excess of stipulated 10% cap will be deemed non-responsive.
- C. The work to be paid for under this item shall also include furnishing, setting up, and removing Contractor's operations at project site including temporary offices, utilities, staging areas, security, etc. Work shall also include furnishing any temporary construction facilities and trailers required by Contract Documents.
- D. Work to be paid for under this item shall also include protecting existing survey monuments in place and, if Contractor's operations disturb any such monuments, hiring a registered land surveyor to reestablish and reset disturbed monuments.

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- E. Payment for this item will be made at lump sum price named in Bid Schedule under Item Number 1, which price shall constitute full compensation for all Work and expenditures required to mobilize, provide bonds and insurance, obtain required permits and approved traffic control plan from the County of Ventura, take preconstruction photos and videos, prepare project schedule, prepare sewer bypass plan, prepare spill response plan, prepare Health and Safety plan, provide project sign, construct temporary bypass facilities, prepare contingency back-up plan in case the bypass pumping system fails, construct temporary traffic control facilities, perform required surveys, testing, site maintenance and cleanup, remove and reinstall existing site facilities as required, comply with all General and Supplementary conditions, demobilize, and provide cleanup of construction site complete in place, as required by Contract Documents with sole exclusion of payments to be made as defined herein for other items in Bid Schedule. This item also includes any required resubmittals.

1.04 RECORD DOCUMENTS (BID ITEM #2)

- A. Work to be paid for under this item shall include all labor, materials and equipment for record drawings and warranties including but not limited to all appurtenant Work as required by the Contract Documents.
- B. See Section 013300, Section 330132, and Section 330140 for details on record documents and submittals.

1.05 48" MANHOLE REHABILITATION (BID ITEM #3)

- A. Defined as the Contractor lining existing manholes, as specified in the contract documents. Flow management and infiltration control during installation of manhole lining shall be included in the unit price for these work items, unless otherwise authorized by the Owner. Contractor shall manage, control, divert or bypass pump the sewage flow as needed for the manhole rehabilitation described and shall clean, degrease, hydro blast, abrasive blast, chip, bush hammer and scrape off all loose, deteriorated and corroded concrete on the inside of the manhole to expose sound concrete, dispose of all spoils at a legal dump site, repair voids per specification and coat the entire internal surface of the manhole with a high performance mortar in accordance with specification Section 330132, and coat the entire surface of the manhole from the channel invert to the underside of the manhole frame with an approved corrosion protection coating system following the manufacturer's approved installation methods.
- B. Work Items will be paid on a per "vertical linear foot" unit cost in accordance with the Bid Item List as authorized/approved by the Owner. Field record data collection for manholes shall be included in the unit price for these work items.

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C. Rehabilitation will be performed on the following manholes:

Manholes to be Rehabilitated				
Area 1	Area 2	Area 3	Area 4	Area 5
MH 36-61	MH 37-51	MH 37-73	MH 37-39	MH 38-21
MH 36-63	MH 37-68	MH 37-74-A	MH 37-41	MH 38-23
MH 36-77	MH 36-82	MH 37-89-A	MH 37-39-A	MH 38-07
MH 36-78	MH 36-83	MH 37-89	MH 37-37-A	MH 38-09
			MH 37-35	MH 23-03
			MH 37-31	MH 23-05
				MH 23-01

D. Work shall be performed as specified in Section 330132, Manhole Rehabilitation.

E. Payment for 48” MANHOLE REHABILITATION will be a price per vertical linear foot (VLF) of four (4) foot diameter manholes as measured from the channel invert to the bottom of the manhole frame casting and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.06 REPLACE 24” MANHOLE COVERS (BID ITEM #4)

A. Shall include all work, equipment, and materials for the replacement and resetting of manhole frame and cover, as shown on the plans including all saw cutting, excavation and disposal of excavated material at a legal disposal site, installation of new grade rings, reinforced concrete collar, restoration of all disturbed and damaged surfaces, to pre-project conditions or better.

B. Manhole covers shall be Pamrex Safety D400 ductile iron, non-ventilated, no equal.

C. The work to be paid for under this item shall also include all materials, tools, labor, equipment, and all other appurtenances necessary to replace the manhole covers.

D. Payment for REPLACE 24” MANHOLE COVERS will be for each (EA) lid and casting replacement and shall be considered full compensation for doing all the work herein specified.

1.07 REPLACE 36” MANHOLE COVERS (BID ITEM #5)

A. Shall include all work, equipment, and materials for the replacement and resetting of manhole frame and cover, as shown on the plans including all saw cutting, excavation and disposal of excavated material at a legal disposal site, installation of new grade rings, reinforced concrete collar, restoration of all disturbed and damaged surfaces, to pre-project conditions or better.

B. Manhole covers shall be Pamrex D400 ductile iron – non-ventilated, no equal.

C. The work to be paid for under this item shall also include all materials, tools, labor, equipment, and all other appurtenances necessary to replace the manhole covers.

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- D. Payment for REPLACE 36" MANHOLE COVERS will be for each (EA) lid and casting replacement and shall be considered full compensation for doing all the work herein specified.

1.08 SUNSET DR: CO 36-60 TO MH 36-61 (BID ITEM #6)

- A. 518 L.F. of 8" CIPP liner installation for full length of pipe. Repairs are needed for root intrusion, broken pipe, and spiral cracks.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8" sewer main including curing with hot water or steam from CO 36-60 to MH 36-61; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8" CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut-outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.
- C. Contractor is required to restore access points to match existing conditions when necessary.
- D. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 4 ft, 29 ft, 57 ft, 82 ft, 256 ft, 269 ft, and 374 ft from CO 36-60. After lateral reactivation and top hat installation, Contractor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.
- E. After installing and curing, Contractor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- F. Payment for the 8" CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.09 HOLLYWOOD BL: CO 36-62 TO MH 36-63 (BID ITEM #7)

- A. 4 L.F. of 8" CIPP liner spot repair in 1 location along reach. Location is approximately 214 ft from CO 36-62. Repairs are needed for broken pipe and circumferential cracks.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8" sewer main including curing with hot water or steam from CO 36-62 to MH 36-63; all testing and removal

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of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8" CIPP liner spot repair complete, in place.

- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8" CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.10 HOLLYWOOD BL: CO 36-76 TO MH 36-77 (BID ITEM #8)

- A. 4 L.F. of 8" CIPP liner spot repair in 1 location along reach. Location is approximately 250 ft from CO 36-76. Repairs are needed for joint offset/separation and root intrusion.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8" sewer main including curing with hot water or steam from CO 36-76 to MH 36-77; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8" CIPP liner spot repair complete, in place.
- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8" CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.11 PANAMA DR: MH 36-77 TO MH 36-78 (BID ITEM #9)

- A. 259 L.F. of 8" CIPP liner installation for full length of pipe. Repairs are needed for fractures, circumferential and longitudinal cracks, infiltration, encrustation.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8" sewer main including curing with hot water or steam from MH 36-77 to MH 36-78; all testing and

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removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8" CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.

- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8" CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.12 ANACAPA AVE: MH 37-51 TO MH 37-68 (BID ITEM #10)

- A. 555 L.F. of 8" CIPP liner installation for full length of pipe. Repairs are needed for root intrusion, circumferential crack, and spiral fractures.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8" sewer main including curing with hot water or steam from MH 37-51 to MH 37-68; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8" CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.
- C. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 104 ft, 283 ft, 316 ft, 318 ft, 368 ft, and 348 ft from MH 37-51. After lateral reactivation and top hat installation, Contactor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.
- D. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.

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- E. Payment for the 8” CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.13 ROOSEVELT BL: MH 36-82 TO MH 36-83 (BID ITEM #11)

- A. 112 L.F. of 8” CIPP liner installation for full length of pipe. Repairs are needed for longitudinal cracks, encrustation, and broken pipe.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8” sewer main including curing with hot water or steam from MH 36-82 to MH 36-83; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8” CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3”) through eight inches (8”) in diameter. Existing capped laterals shall not be reinstated.
- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8” CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.14 ROSSMORE DR: CO 37-75 TO MH 37-73 (BID ITEM #12)

- A. 522 L.F. of 8” CIPP liner installation for full length of pipe. Repairs are needed for root intrusion, circumferential and longitudinal fractures, and longitudinal cracks.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8” sewer main including curing with hot water or steam from CO 37-75 to MH 37-73; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8” CIPP sewer main, complete,

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in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.

- C. Contractor is required to restore access points to match existing conditions when necessary.
- D. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 155 ft, 190 ft, 203 ft, 205 ft, 223 ft, 235 ft, 304 ft, 356 ft, 417 ft, 455 ft, and 457 ft from CO 37-75. After lateral reactivation and top hat installation, Contractor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.
- E. After installing and curing, Contractor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- F. Payment for the 8" CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.15 CAHUENGA DR: CO 37-76 TO MH 37-74-A (BID ITEM #13)

- A. 338 L.F. of 8" CIPP liner installation for full length of pipe. Repairs are needed for fractures, circumferential and longitudinal cracks, infiltration, encrustation.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8" sewer main including curing with hot water or steam from CO 37-76 to MH 37-74-A; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8" CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.
- C. Contractor is required to restore access points to match existing conditions when necessary.
- D. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 17 ft, 25 ft, 51 ft, 87 ft, 196 ft, 238 ft, 245 ft, 276 ft, 278 ft, 320 ft, 331 ft, and 338 ft from CO 37-76. After lateral reactivation and top hat installation,

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Contractor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.

- E. After installing and curing, Contractor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- F. Payment for the 8" CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.16 HIGHLAND DR: MH 37-89-A TO MH 37-89 (BID ITEM #14)

- A. 404 L.F. of 8" CIPP liner installation for full length of pipe. Repairs are needed for longitudinal fractures, circumferential fractures, spiral fractures, circumferential cracks, root intrusion, pipe fracture, infiltration, and broken pipe.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8" sewer main including curing with hot water or steam from MH 37-89-A to MH 37-89; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8" CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut-outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.
- C. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 40 ft, 60 ft, 171 ft, 196 ft, 226 ft, and 239 ft from MH 37-89-A. After lateral reactivation and top hat installation, Contractor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.
- D. After installing and curing, Contractor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- E. Payment for the 8" CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

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1.17 OCEAN DR: MH 37-39 TO MH 37-41 (BID ITEM #15)

- A. 4 L.F. of 10” CIPP liner spot repair in 1 location along reach. Location is approximately 179 ft from MH 37-39. Repairs are needed for circumferential cracks.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 10” sewer main including curing with hot water or steam from MH 37-39 to MH 37-41; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 10” CIPP liner spot repair complete, in place.
- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 10” CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.18 BARSDALE AVE: CO 37-38 TO MH 37-39-A (BID ITEM #16)

- A. 284 L.F. of 8” CIPP liner installation for full length of pipe. Repairs are needed for root intrusion and longitudinal fractures.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8” sewer main including curing with hot water or steam from CO 37-38 to MH 37-39-A; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8” CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3”) through eight inches (8”) in diameter. Existing capped laterals shall not be reinstated.
- C. Contractor is required to restore access points to match existing conditions when necessary.

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- D. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 6 ft, 42 ft, 44 ft, 80 ft, 112 ft, 115 ft, 147 ft, 150 ft, 167 ft, 183 ft, 200 ft, 220 ft, 235 ft, 253 ft, 270 ft, and 273 ft from CO 37-38. After lateral reactivation and top hat installation, Contactor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.
- E. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- F. Payment for the 8” CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.19 TUJUNGA AVE: CO 37-36 TO MH 37-37-A (BID ITEM #17)

- A. 286 L.F. of 8” CIPP liner installation for full length of pipe. Repairs are needed for root intrusion and longitudinal fractures.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, removal/disposal of debris, and top hat installation necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8” sewer main including curing with hot water or steam from CO 37-76 to MH 37-37-A; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other work necessary to install the new 8” CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3”) through eight inches (8”) in diameter. Existing capped laterals shall not be reinstated.
- C. Contractor is required to restore access points to match existing conditions when necessary.
- D. Top hats shall be installed at all break-in connections and defective wye connections on live sewer laterals, located approximately 22 ft, 25 ft, 58 ft, 75 ft, 78 ft, 95 ft, 113 ft, 145 ft, 163 ft, 165 ft, 196 ft, 253 ft, and 256 ft from CO 37-36. After lateral reactivation and top hat installation, Contactor will perform a video inspection of the new lining system to ensure that the service lateral is free from defect.
- E. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.

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- F. Payment for the 8” CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.20 HUENEME AVE: CO 37-34 TO MH 37-35 (BID ITEM #18)

- A. 12 L.F. of 8” CIPP liner spot repair in 3 locations along reach. Locations are approximately 19 ft, 281 ft, and 438 ft from CO 37-34. Repairs are needed for longitudinal cracks, broken pipe, infiltration, and root intrusion.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8” sewer main including curing with hot water or steam from CO 37-34 to MH 37-35; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8” CIPP liner spot repair complete, in place.
- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8” CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.21 OJAI AVE: CO 37-30 TO MH 37-31 (BID ITEM #19)

- A. 8 L.F. of 8” CIPP liner spot repair in 2 locations along reach. Locations are approximately 146 ft and 447 ft from CO 37-30. Repairs are needed for broken pipe, circumferential and longitudinal fracture, root intrusion, and infiltration.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8” sewer main including curing with hot water or steam from CO 37-30 to MH 37-31; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8” CIPP liner spot repair complete, in place.

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- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8” CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.22 OCEAN DR: MH 38-21 TO MH 38-23 (BID ITEM #20)

- A. 4 L.F. of 8” CIPP liner spot repair in 1 location along reach. Location is approximately 176 ft from MH 38-21. Repairs are needed for infiltration and pipe fracture.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8” sewer main including curing with hot water or steam from MH 38-21 to MH 38-23; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8” CIPP liner spot repair complete, in place.
- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8” CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.23 OCEAN DR: MH 38-07 TO MH 38-09 (BID ITEM #21)

- A. 177 L.F. of 8” CIPP liner installation for full length of pipe. Repairs are needed for circumferential and longitudinal fractures, infiltration, and pipe sag.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) sewer inside of 8” sewer main including curing with hot water or steam from MH 38-37 to MH 38-09; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow and/or temporary bypass pumping; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection; and all other

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work necessary to install the new 8" CIPP sewer main, complete, in place. Contractor shall provide Owner representative with cookie cut- outs to match the number of lateral reinstatements for each pipe segment upon completion of installation. The private sewer lateral connections may be from three inches (3") through eight inches (8") in diameter. Existing capped laterals shall not be reinstated.

- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8" CIPP liner will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.24 OCEAN DR: MH 23-03 TO MH 23-05 (BID ITEM #22)

- A. 4 L.F. of 8" CIPP liner spot repair in 1 location along reach. Location is approximately 62 ft from MH 23-03. Repairs are needed for longitudinal cracks.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8" sewer main including curing with hot water or steam from MH 23-03 to MH 23-05; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8" CIPP liner spot repair complete, in place.
- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8" CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

1.25 SAWTELLE AVE: CO 23-00 TO MH 23-01 (BID ITEM #23)

- A. 12 L.F. of 8" CIPP liner spot repair in 3 locations along reach. Locations are approximately 254 ft, 415 ft, and 425 ft from CO 23-00. Repairs are needed for infiltration, circumferential and longitudinal cracks, and broken pipe.
- B. The work to be paid for under this item shall include all bonds, insurance, supervision, labor, equipment, supplies, tools, incidentals, bonds, insurance, supervision, labor, equipment,

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supplies, tools, incidentals, cleaning, pre and post video, traffic control, and removal/disposal of debris necessary for installation and curing of thermosetting resin impregnated material cured-in-place pipe (CIPP) liner spot repair inside of 8" sewer main including curing with hot water or steam from CO 23-00 to MH 23-01; all testing and removal of all waste materials and process water by truck, and disposal at a legal disposal site; finishing and trimming of sewer liner, dewatering, control of sewage flow; and reactivate live sewer laterals at the connection point between existing sewer main and customer lateral connection and all other work necessary to install the new 8" CIPP liner spot repair complete, in place.

- C. After installing and curing, Contactor will perform a video inspection of the new lining system to ensure that the main is properly sealed and free from defect. Contractor is to provide the District with copies of all post-installation video inspections upon project completion before submitting request for final payment.
- D. Payment for the 8" CIPP Liner Spot Repair will be on a lump sum basis for this bid item and shall be considered full compensation for labor, materials, tools, equipment, and doing all the work herein specified.

END OF SECTION

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SECTION 013119 PROJECT MEETINGS

1.01 DESCRIPTION

- A. Requirements for preconstruction meeting, progress meetings, specially called meetings and post-construction meeting.
- B. Owner's Representative will schedule and conduct meetings and conferences at Work site unless otherwise indicated.

1.02 CONTRACTOR'S RESPONSIBILITIES

- A. Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
- B. For all meetings other than those required by Contract Documents or Owner's Representative, Contractor shall record minutes, including significant proceedings and decisions for each meeting. Reproduce and distribute copies of minutes within 5 days after each meeting. Provide copies to Owner's Representative, all other participants in meeting, and all other parties affected by decisions made at meeting.

1.03 PRE-CONSTRUCTION MEETING

- A. Before issuance of Notice to Proceed, a preconstruction meeting will be held at time and location designated by Owner's Representative.
- B. Meeting shall be attended by Owner's Representative, Engineer of Record, Representatives from affected cities, counties, agencies and utilities, Contractor and his superintendent, all major subcontractors and other persons designated by Owner.
- C. Agenda for preconstruction meeting shall include the following items as a minimum.
 - 1. Scheduling items.
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Procedures for schedule revisions.
 - 2. Designation of key personnel and their duties.
 - a. Designation of persons authorized to sign documents for Owner and Contractor, with examples of signature of each.

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- b. List of names, addresses and telephone numbers of those persons authorized to act for Contractor in emergencies.
 - c. Safety procedures including designation of Contractor's safety officer.
 3. Lines of communications.
 - a. Procedures for processing field decisions and Change Orders.
 - b. RFI procedures.
 - c. Submittal procedures.
 - d. Testing and inspection procedures.
 - e. Payment application and processing procedures.
 - f. Change Order procedures.
 4. Distribution of Contract Documents.
 5. Preparation of record drawings.
 6. Use of premises,
 - a. Parking availability.
 - b. Office, work, and storage areas.
 - c. Equipment deliveries and priorities.
 - d. Work restrictions.
 - e. Working hours.
 - f. Owner's occupancy requirements.
 - g. Responsibility for temporary facilities and controls including barricades, utilities, sanitary facilities, signs and other facilities required.
 - h. Procedures for moisture and mold control.
 - i. Procedures for disruptions and shutdowns.
 - j. Construction waste management and recycling.
 7. First aid.
 8. Security.

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9. Progress cleaning and housekeeping.
10. Construction permit requirements, procedures and posting.
11. Establishment of a schedule for progress meetings.
12. Other administrative items as appropriate.

1.04 PROGRESS MEETINGS

- A. Progress meetings shall be held at dates and times scheduled at preconstruction meeting unless changes are agreed to by all parties and appropriate notification of such changes has been given.
- B. Meetings shall be attended by Owner's Representative and Contractor's superintendent. When requested by Owner's Representative or Contractor; subcontractors, and Owner's consultants shall also attend.
- C. Agenda for these meetings shall include the following items:
 1. Review progress of construction since previous meeting.
 2. Discuss field observations, problems and conflicts.
 3. Identify problems which impede planned progress and develop corrective measures as required to regain projected schedule. Revise construction schedule if necessary.
 4. Plan progress during next construction period.
 5. Coordinate progress of subcontractors.
 6. Review changes proposed by Owner for their effect on construction schedule and completion time.
 7. Review Contractor's record drawings.

1.05 SPECIAL MEETINGS

- A. Upon appropriate notice to other parties, special meetings may be called by Owner's Representative or Contractor, at times agreed to by all parties involved.

1.06 POST-CONSTRUCTION CONFERENCE

- A. Post-construction conference shall be held after system demonstration but before final inspection of Work to discuss and resolve all unsettled matters.
- B. Prior to post-construction conference, bonds and insurance to remain in force, and other documents required to be submitted by Contractor will be reviewed and deficiencies identified if any.

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- C. Agenda shall include the following items:
1. Preparation of record documents.
 2. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 3. Submittal of written warranties.
 4. Requirements for submitting operations and maintenance data.
 5. Requirements for delivery of spare parts.
 6. Requirements for demonstration and training.
 7. Preparation of Contractor's punch list
 8. Contractor's schedule for addressing punch list items.
 9. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 10. Coordination with other contractors on site.
 11. Owner's partial occupancy requirements.
 12. Installation of Owner's fixtures and equipment.
 13. Responsibility for removing temporary facilities and controls.

END OF SECTION

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SECTION 013300 SUBMITTALS

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Execution Requirements: 017300
- B. Manhole Rehabilitation: 330132
- C. Sewer and Manhole Wastewater Bypass Pumping: 330134
- D. Cured-In-Place Sewer Pipe Lining: 330140
- E. SSPWC, Section 500 Pipeline Rehabilitation, Sub Section 500-2 Submittals

1.02 SHOP DRAWINGS

- A. Submit shop drawings in accordance with the General Conditions.
- B. The use of contract drawing reproductions for shop drawings is subject to rejection.
- C. Submit one (1) digital copy of each submittal using one of the following methods chose by Owner:
 - 1. Email: Send submittal as PDF attachment to Owner and Owner's Representative.
 - 2. Provide PDF copy of shop drawings on CD ROM disc or flash drive delivered to Owner in labeled plastic case.
 - 3. Multiple hard copies of submittals will not be accepted in lieu of digital submittal unless otherwise authorized or directed by the Owner.
 - 4. One digital copy of submittal with cover letter will be returned to Contractor by email or Data Tracking System (DTS) as appropriate.
 - 5. Contractor shall verify emails sent with large attachments have been successfully received by Owner and Owner's Representative. Files in excess of 10 MB in size shall not be sent as attachments to emails due to size restrictions associated with users' email systems. Clearly indicate the equipment tag or identification number, specification section, and drawing number to which each shop drawing is referenced.
- D. If the Contractor submits shop drawings of equipment by manufacturers other than those listed in the specifications, provide the following information with the submittal:
 - 1. The name and address of at least three companies or agencies that are currently using the equipment.

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2. The name and telephone number of at least one person at each of the above companies or agencies whom the Owner's Representative may contact.
 3. A description of the equipment that was installed at the above locations. The description shall be in sufficient detail to allow the Owner's Representative to compare it with the equipment that is proposed to be installed in this project.
- E. For materials originating outside of the United States for which tests are required, provide recertification and retesting by an independent domestic testing laboratory.
- F. The following shall be submitted:
1. Pulling force limit calculations
 2. Flow control
 3. Provisions for re-establishment of service connections
 4. Pressure gauge, recorder, and field equipment certifications (e.g. calibrated by an approved certified lab)
 5. Sewer bypass plan(s)
 6. Spill response plan(s)
 7. Traffic control plan(s)
 8. Top Hat installation liner system and details
 9. Rehabilitation schedule

1.03 SUBMITTAL REQUIREMENTS

- A. Make submittals promptly in such sequence as to cause no delay in the work. Schedule submission a minimum of 30 calendar days before reviewed submittals will be needed.
- B. Submittals shall contain:
1. The date of submission and the dates of any previous submissions.
 2. The project title and number.
 3. Contract identification.
 4. The names of:
 - a. Contractor.
 - b. Supplier.

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- c. Manufacturer.
- 5. Identification of the product, with the specification section number.
- 6. Field dimensions, clearly identified as such.
- 7. Relationship to adjacent or critical features of the work or materials.
- 8. Identification of deviations from contract documents.
- 9. Identification of revisions on resubmittals.
- 10. A 5-inch by 5-inch blank space for stamps of the Owner's Representative.
- 11. Contractor's stamp, initialed or signed, shall certify Contractor's review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal that the product meets the requirements of the work and of the contract documents.

1.04 SUBMITTAL FORMAT

- A. Each submittal shall have a transmittal form. A sample transmittal form is included at the end of this section. Every page in a submittal shall be numbered in sequence. Each copy of a submittal shall be collated and stapled or bound, as appropriate. Copies not collated will be rejected.
- B. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with all pertinent data, capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports. Present a sufficient level of detail for assessment of compliance with the contract documents.
- C. Each submittal shall be assigned a unique number. Submittals shall be numbered sequentially. The submittal numbers shall be clearly noted on the transmittal. Original submittals shall be assigned a numeric submittal number. Resubmittals shall bear an alphanumeric system which consists of the number assigned to the original submittal for that item followed by a letter of the alphabet to represent that it is a subsequent submittal of the original. For example, if Submittal 25 030500 requires a resubmittal, the first resubmittal will bear the designation "25-A" and the second resubmittal will bear the designation "25-B" and so on.
- D. Disorganized submittals that do not meet the requirements above will be returned without review.

1.05 RESUBMITTALS

Resubmittal of submittals will be reviewed and returned in the same review period as for the original submittal. It is considered reasonable that the Contractor shall make a complete and acceptable submittal by the second submission of a submittal item. The

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Owner's Representative reserves the right to withhold monies due to the Contractor to cover additional costs of any review beyond the second submittal.

1.06 CONTRACTOR'S JOBSITE DRAWINGS

Provide and maintain on the jobsite one complete set of prints of all drawings which form a part of the contract. Immediately after each portion of the work is installed, indicate all deviations from the original design shown in the drawings either by additional sketches or ink thereon. Upon completion of the job, deliver this record set to the Owner's Representative

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SHOP DRAWING SUBMITTAL NO. _____

Michael K. Nunley and Associates, Inc.

ATTN: _____

ATTN: _____

Sewer Rehabilitation Project – Silver

PROJECT NO.

OWNER PROJECT NO.

CONTRACTOR PROJECT NO.

ITEM NO.	COPIES	DESCRIPTION	PREVIOUS SUBMITTAL NO.	SPEC. SECTION NO.	PLAN SHEET NO.

SUBMITTED BY: _____

CONTRACTOR

_____ DATE

SUBMITTAL RETURN (TO BE COMPLETED BY ENGINEER)

ITEM NO.	COPIES	RESUBMIT		COMMENTS
		YES	NO	

COPY:

RETURNED BY: _____

ENGINEER

_____ DATE

END OF SECTION

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SECTION 015526 TRAFFIC REGULATION

1.01 DESCRIPTION

This section describes procedures for traffic regulation during construction in public streets and highways.

1.02 STANDARD SPECIFICATIONS

Wherever reference is made to the State Specifications and Plans, such reference shall mean the State of California, Business, Transportation, and Housing Agency, Department of Transportation 2018 edition Standard Specifications and 2018 edition Standard Plans edition.

1.03 GENERAL

- A. Provide safe and continuous passage for pedestrian and vehicular traffic at all times.
- B. Control traffic at those locations indicated and in conformance with the approved traffic control plans and specifications.
- C. The project sites are located within areas comprising of or near residential, commercial, and general public use. The Contractor shall familiarize itself with the project site conditions and shall perform its operations to minimize disruptions to the daily activities of the adjacent properties. The Contractor shall coordinate traffic control and provide safe access to persons whose daily activities, business deliveries, parking or storage may be impacted by the Contractor's operation.
- D. Contractor shall follow the latest edition of California Manual on Uniform Traffic Control Devices (California MUTCD) and the WATCH Manual for all temporary Traffic Control Devices.
- E. Furnish, construct, maintain, and remove detours, road closures, traffic signal equipment, lights, signs, barricades, fences, K-rail, flares, solar-powered flashing arrow signs, miscellaneous traffic devices, flagmen, drainage facilities, paving, and such other items and services as are necessary to adequately safeguard the public from hazard and inconvenience. All such work shall comply with the ordinances, directives, and regulations of authorities with jurisdiction over the public roads in which the construction takes place and over which detoured traffic is routed by the Contractor. After devices have been installed, maintain and keep them in good repair and working order until no longer required. Replace such devices that are lost or damaged, to such an extent as to require replacement, regardless of the cause of such loss or damage.
- F. Prior to the start of construction operations, notify the police and fire department in whose jurisdiction the project lies, giving the expected starting date, completion date, and the names and telephone numbers of two responsible persons who may be contacted at any hour in the event of a condition requiring immediate emergency service to

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remove, install, relocate, and maintain warning devices. In the event these persons do not promptly respond or the authority deems it necessary to call out other forces to accomplish emergency service, the Contractor will be held responsible for the cost of such emergency service.

- G. Provide a minimum of 48 hours' notice to Ventura County for any work which may affect signal loops, equipment, or devices. In the event that any underground utilities, traffic devices, pipes, or conduits are damaged and require emergency repair by Ventura County all costs incurred by Ventura County in making such repairs shall be paid by the Contractor.
 - H. Post temporary "No Parking - Tow Away" signs 48 hours prior to work in areas where parking is normally permitted. The City of Oxnard Police Department shall be notified 48 hours prior to the posting of any temporary parking restrictions along the pipeline route.
 - I. Post the construction information signs at least two weeks prior to construction.
 - J. Contractor shall install and maintain fences, barriers, and lights & signals that are necessary to give adequate warning to the public at all times.
 - K. Work shall be planned and carried out so that there will be the least possible inconvenience to the traveling public, and traffic shall not be unreasonably delayed.
 - L. Vehicular, bicycles, and pedestrian access to properties adjoining the construction activities shall be maintained at all times unless approved otherwise by the County of Ventura. Closure of parking stalls shall be scheduled by the Contractor a minimum of two weeks in advance with the District. Proposed closure of sidewalks shall be posted at least one week in advance.
 - M. Pedestrian access and circulation shall be maintained by the Contractor around
 - N. the project areas. If the use of existing walkways, pedestrian crossings, ramps or other pedestrian facilities are impacted by the Contractor's operation, the Contractor shall provide temporary facilities that will provide the same level of service to the satisfaction of Construction Inspectors.
 - O. Notify each postal address at least two working days prior to restricting parking along the project route via first class United States mail of the nature and duration of the parking restriction.
- 1.04 PEDESTRIAN TRAFFIC CONTROL
- A. Maintain and delineate a minimum of one 4-foot-wide pedestrian walkway along each public street at all times during construction. Maintain existing pedestrian accesses at intersections at all times. When existing crosswalks are blocked by construction activity, install signs directing pedestrian traffic to the nearest alternative crosswalk.

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1.05 ACCESS TO ADJACENT PROPERTIES

- A. Maintain reasonable access from public streets to adjacent properties at all times during construction. Prior to restricting normal access from public streets to adjacent properties, notify each property owner or responsible person, informing him of the nature of the access restriction, the approximate duration of the restriction, and the best alternate access route for that particular property.

1.06 SUBMITTALS

- A. Contractor shall submit a Traffic Control Plan, conforming with the latest version of the Caltrans California Manual on Uniform Traffic Control Devices.

END OF SECTION

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SECTION 017300 EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes examination of site before bidding, preparation for construction, and execution of Work.

1.02 RELATED WORK DESCRIBED ELSEWHERE

- A. 013300: Submittals
- B. 017700: Closeout Procedures
- C. 017839: Project Record Drawings

1.03 PROJECT/SITE CONDITIONS

- A. Refer to Instructions to Bidders, Section 4.
- B. Items furnished shall be capable of fulfilling their intended purpose in environment in which they are installed. Allow for local temperature extremes, climactic conditions and corrosive environments where necessary to ensure proper functioning of furnished products.

1.04 MEASUREMENT AND PAYMENT

- A. Payment for Work in this section shall be included as part of lump-sum or unit-price bid for which such Work is appurtenant, and no additional payment will be made specifically for Work in this Section.

PART 2 - MATERIALS

Not used

PART 3 - EXECUTION

3.01 PREPARATION

- A. Before beginning work, carefully and thoroughly document condition of site and existing improvements using dated photographs or videos. Where existing cracks in concrete, masonry or other materials are wider than thickness of a dime, include dime or similar visual standard in photo or video for reference.

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- B. Submit copies of documentation to Owner's Representative before beginning work. Damage not documented as preexisting before start of construction will be attributed to Contractor's activities in absence of conclusive evidence to contrary.
- C. Relocations or adjustment of existing facilities needed to facilitate construction must be accepted in writing by Owner's Representative and subsequently relocated or adjusted by Contractor as directed. If existing items are lost or damaged during construction, replace with new items of equal or better quality.
- D. Make field measurements needed to fabricate and install Work before ordering or beginning work. Make minor changes in alignments and dimensions as needed to remedy or avoid utilities and structural conflicts.
- E. Safety data sheets (SDS) shall be available and maintained at project site.

3.02 INSTALLATION/APPLICATION/ERECTION

- A. Maintain complete set of Contract Documents including shop drawings at jobsite field office or superintendent's truck at all times.
- B. Pursuant to Title 13 of California Code, Section 2449(d)(3), Contractor shall ensure all self- propelled diesel-fueled vehicles on jobsite, 25 horsepower and up and not designed for on- road driving, limit idling to no more than 5 consecutive minutes, with the following exceptions:
 - 1. Idling when queuing.
 - 2. Idling to verify vehicle is in safe operating condition.
 - 3. Idling for testing, servicing, repairing, or diagnostic purposes.
 - 4. Idling necessary to accomplish work for which vehicle was designed (such as operating a crane)
 - 5. Idling required to bring machine system to operating temperature; and
 - 6. Idling necessary to ensure safe operation of vehicle.
- C. Contractor shall be responsible for promptly paying any fines assessed for noncompliance with Title 13 idling limitations for any equipment owned or rented by Contractor or their subcontractors.
- D. Install products in accordance with shop drawings and submittals.
- E. Install products according to Manufacturer's installation and warranty requirements. Manufacturer's requirements for installation, application, connection, erection, maintenance, operating, cleaning, conditioning and startup of products shall be strictly followed.

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- F. Products shall be installed by Contractor at location shown on Plans and submittals.
- G. Install products to tolerances recommended by Manufacturer. Unless otherwise shown, install equipment true and level, using precision gauges and levels.
- H. Refer variances between Manufacturer's installation instructions and Contract Documents to Owner's Representative.
- I. Coat in workmanlike manner so as to produce an even film of uniform thickness. Pay attention to edges, angles, flanges, corners, crevices, and joints to ensure that they have been thoroughly cleaned and that they receive specified thickness of paint or coating. Finished surfaces shall be free from runs, drops, ridges, waves, shiners, laps, brush marks, and variations in color, texture and finish. Hiding shall be so complete that addition of another coat would not increase the hiding. Apply coats so as to produce film of uniform thickness.
- J. Repair damage to Work that is not cause for rejection.
- K. Repair, correct or replace Work failing tests or inspection. Repeat tests until results satisfy specifications. Repair damages resulting from tests.

END OF SECTION

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SECTION 017410 CLEANING DURING CONSTRUCTION AND FINAL CLEANING

1.01 GENERAL

- A. This section includes cleaning during construction and final cleaning on completion of the work.
- B. At all times maintain areas covered by the contract and adjacent properties and public access roads free from accumulations of waste, debris, and rubbish caused by construction operations.
- C. Conduct cleaning and disposal operations to comply with local ordinances and antipollution laws. Do not burn or bury rubbish or waste materials on project site. Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in storm or sanitary drains. Do not dispose of wastes into streams or waterways.
- D. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

1.02 CLEANING DURING CONSTRUCTION

- A. During execution of work, clean site, adjacent properties, and public access roads and dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. Provide containers for collection and disposal of waste materials, debris, and rubbish.
- D. Cover or wet excavated material leaving and arriving at the site to prevent blowing dust. Clean the public access roads to the site of any material falling from the haul trucks.

1.03 FINAL CLEANING

- A. At the completion of work and immediately prior to final inspection, clean the entire project site as follows.
- B. Clean, sweep, wash, and polish all work and equipment including finishes.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces.
- D. Repair, patch, and touch up marred surfaces to match adjacent surfaces.
- E. Broom clean paved surfaces; rake clean landscaped areas.
- F. Remove from the site temporary structures and materials, equipment, and appurtenances not required as a part of, or appurtenant to, the completed work.

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END OF SECTION

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SECTION 017700 CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes specific administrative procedures, closeout submittals, and forms to be used at substantial completion and final completion of Work.

1.02 RELATED WORK DESCRIBED ELSEWHERE

- A. Section 013300: Submittal Procedures
- B. Section 017400: Cleaning During Construction and Final Cleaning
- C. Section 017839: Project Record Documents

1.03 REFERENCES

- A. Section 6.2 of General Conditions

1.04 QUALITY ASSURANCE

- A. Upon completion of Contract, Work shall be finished, tested, and ready for operation. Work shall fulfill its intended purpose as described in Contract Documents, in submittals, and in Manufacturer's literature.
- A. Where connections or disruptions have been made to existing work, repair, reactivate, refill and recharge components, restoring them to preconstruction conditions. Follow procedures of authorities having Ownership or jurisdiction for Work involving existing utilities and services.

1.05 SUBMITTALS

Furnish the following submittals.

Submittal	Description
Record Drawings	See Section 017839

1.06 MEASUREMENT AND PAYMENT

- A. Payment for monument survey required in Contract Documents will be included in price bid for items of work for which monument survey is required.

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PART 2 - MATERIALS

Not used

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Following system demonstration, contractor shall schedule and attend final inspection and walkthrough with owner's representative. At walkthrough, owner's representative will review owner-prepared punch list of items requiring correction with contractor and present punch list to contractor within 72 hours of meeting. Contractor shall address punch list items promptly.
- B. Should Contractor elect to protest a punch list item rather than address it to Owner's satisfaction, Owner reserves right to withhold payment in an amount sufficient to hire a third party to perform unfinished work until such time as dispute between Owner and Contractor is resolved in Contractor's favor.

3.02 EXTRA STOCK/SPARE PARTS

- B. Not Used.

END OF SECTION

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SECTION 017839 PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Contractor shall keep one accurate, legible set of Record Drawings at site and available for review by Owner's Representative in Contractor's field office or in superintendent's truck throughout project.

1.02 RELATED WORK DESCRIBED ELSEWHERE

- A. Section 013300: Submittal Procedures

1.03 SUBMITTALS

- A. Furnish the following submittals.
 - 1. Project Record Drawings

1.04 DETAILED REQUIREMENTS

- A. Record drawings shall be on one set of full size project blackline prints of Contract Drawings and other drawings forming a part of contract, showing installed locations of improvements and all changes made during construction.
- B. Record drawings shall show locations by key dimensions, depths, elevations of all underground piping and Work.
- C. Show all Record Drawing changes in contrasting color to original.
- D. In showing changes in Work, or added Work, use same legends used on Contract Drawings. Show locations and elevations to same level of accuracy as original Contract Documents.
- E. Report changes and deviations promptly to Owner's Representative.
- F. Record drawings shall incorporate addenda, supplementary drawings, working drawings, change orders and clarifications.
- G. Record drawings shall incorporate survey notes, field notes and system demonstration logs.
- H. Maintain Record Drawings on an up-to-date basis with all entries reviewed by Owner's Representative. Bring record drawings to all progress meetings.
- I. Protect Record Drawings from damage or loss.

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- J. Record Drawings shall clearly show all discrepancies between Contract Documents and installed Work.
- K. Record information on how to maintain and/or service concealed Work.
- L. Concealed shall mean construction installed underground or in an area which cannot be readily inspected by use of access panels, inspection plates or other removable features.
- M. In addition to paper record drawings, provide PDF copy of record drawings on CD ROM disc or flash drive delivered to Owner in labeled plastic case.

1.05 UNIT PRICES

- A. Payment for record drawings required in Contract Documents will be included in price bid for items of work for which record drawings are required.
- B. Progress payment requests may be withheld if daily logs, schedule updates or Record Drawings are damaged, lost, or not kept current to satisfaction of Owner's Representative.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.01 GENERAL

- A. During progress payment request meetings, present current record drawing documents for review prior to submittal of progress payment request.
- B. Deliver marked record set of Record Drawings to Owner prior to final acceptance of Work. Owner will use these Record Drawings to modify original mylars to create reproducible Record Drawings.

END OF SECTION

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SECTION 330132 MANHOLE REHABILITATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section covers the work necessary to furnish, prepare surfaces, and install a lining system for rehabilitation of concrete sanitary sewer manholes, along with replacing manhole covers.
- B. Sanitary sewer manholes shall be rehabilitated using cementitious lining.
- C. Lining material shall be applied to all concrete and/or brick and mortar surfaces within the manhole, including the cone, walls, shelf, base, and invert.
- D. Reference is made to the “Applicator” throughout this specification. Applicator shall be the Contractor or subcontractor who is applying the manhole lining.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. ASTM C 94 Standard Specification for Ready-Mixed Concrete
- B. ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
- C. ASTM C 157 Standard Test Method for Length Change of Hardened Hydraulic- Cement Mortar and Concrete
- D. ASTM C 234 Standard Test Method for Comparing Concretes on the Basis of the Bond Developed with Reinforcing Steel
- E. ASTM C 267 Standard Test Methods for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes
- F. ASTM C 348 Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars
- G. ASTM C 469 Standard Test Method for Static Modulus of Elasticity and Poisson’s Ratio of Concrete in Compression
- H. ASTM C 496 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
- I. ASTM C 642 Standard Test Method for Density, Absorption, and Voids in Hardened Concrete
- J. ASTM C 666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing

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1.03 EXPERIENCE REQUIREMENTS

- A. The applicator shall be certified by the lining manufacturer as specified herein.

1.04 SUBMITTALS

- A. The Contractor shall provide submittals for items specified herein to the District for review and approval prior to ordering materials.
- B. The following items shall be submitted:
 - 1. Technical data sheet on each product used, including independent third party ASTM test results indicating the product conforms to and is suitable for its intended use per these specifications.
 - 2. Safety Data Sheets (SDS) for each product used.
 - 3. Project specific guidelines and recommendations.
 - 4. Qualification of Applicator:
 - a. Manufacturer certification that Applicator has been trained and approved in the handling, mixing, and application of the products to be used.
 - b. Certification by the protective lining manufacturer that the equipment to be used for applying the products has been approved and Applicator personnel have been trained and certified for proper use of the equipment
 - c. Five (5) recent references of Applicator indicating successful application of the manhole relining material specified herein.
 - 5. Design details for any additional ancillary systems and equipment to be used in site and surface preparation, application and testing.
 - 6. Contractor and Manufacturer Warranty information.

1.05 QUALITY ASSURANCE

- A. Applicator shall initiate and enforce quality control procedures consistent with applicable ASTM, NACE, and SSPC standards and the protective lining manufacturer's recommendations.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Materials are to be kept dry, protected from weather and stored under cover.
- B. Protective lining materials are to be stored between 50 degrees F and 90 degrees F. Do not store near flame, heat or strong oxidants.
- C. Protective lining materials are to be handled according to their material safety data sheets.

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- D. Materials shall be manufactured within 6 months of application.

1.07 SITE CONDITIONS

- A. Applicator shall conform with all local, state and federal regulations including those set forth by OSHA, RCRA and the EPA and any other applicable authorities.
- B. For manholes that have not been inspected by the District or its appointed Representative, as indicated in the Drawings, the Contractor shall inspect the manholes and alert the District or its appointed Representative immediately if the specified rehabilitation methods are not feasible.

1.08 WARRANTY

- A. The Contractor shall provide a guarantee of workmanship, materials, installation and completed product for a period of one (1) year after installation or from the date of acceptance by the District, whichever is later. During the one (1) year warranty period if the rehabilitation component fails, delaminates, peels or shows any defect, which may materially affect the integrity, strength, function and/or operation of the manhole structure, it shall be immediately repaired at the Contractor's expense.
- B. The Owner shall perform, at its own cost, warranty inspections with its own personnel or personnel independent of the installation Contractor.

PART 2 - MATERIALS

2.01 INFILTRATION CONTROL

- A. All active structure infiltration must be eliminated prior to lining application.
- B. Contractor must be an approved installer of the grouting material. Contractor to notify the District daily of quantities used.
- C. Contractor must hydroblast area to be grouted to provide a clean surface area to repair. Cost to be included with grout.
- D. Grouting ports to be included with cost of grout per gallon.
- E. Prior to applying repair materials, all leaks present in the manhole shall be stopped by the use of chemical foam grout injection.
 - 1. While being injected, the chemical sealant must be able to react/perform in the presence of water.
 - 2. The cured material must withstand submergence in water, without degradation.
 - 3. The resultant sealant (grout) formation must be impervious to water penetration.

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4. The final sealant must withstand freeze-thaw and wet-dry cycles without causing adverse changes to the sealant.
5. The final sealant formation must not be biodegradable.
6. Chemical grouting material final cure must not exceed one (1) hour.
7. Chemical grouting material must be compatible to other specified repair and liner materials.

2.02

2.02 REPAIR MATERIALS

- A. Repair materials shall be used to fill voids, structurally reinforce and/or rebuild surfaces, and provide corrosion protection as determined necessary by the District or its appointed Representative and lining applicator. Repair materials must be compatible with the specified manhole lining and shall be applied in accordance with the manufacturer's recommendations.

2.03 WATER

- A. Water used to mix product shall be clean and potable. Questionable water shall be tested by a laboratory per ASTM C94 procedure. Potable water need not be tested.

2.04 LINING MATERIAL

- A. Cementitious liner material shall be Strong-Seal MS-2® Calcium Aluminate, or approved equal.
- B. Cementitious liner shall be applied to a thickness of ½- inch minimum. The thickness minimum is in addition to any repair material required.
- C. Cementitious lining material shall be a fiber reinforced, high strength wet shotcrete material designed for rehabilitation of deteriorated concrete and brick structures. It shall be a mortar that is designed to coat both new and existing municipal wastewater structures including manholes, lift stations, wet wells, etc. It shall be designed specifically to provide an abrasion and corrosion-resistant, protective lining that can withstand severe biogenic corrosion caused by the hydrogen sulfide (H₂S) found in wastewater environments.
- D. The materials shall be trowel-applied or spray-applied utilizing proper equipment on to specified surfaces.
- E. The cementitious lining material shall meet the following requirements:

TYPICAL MATERIAL PROPERTIES		
TEST/ PROPERTY		28 DAYS
ASTM C 109	Compressive Strength, psi	>9,000
ASTM C 293	Flexural Strength, psi	>1,500

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ASTM C 596	Drying Shrinkage, %	0 @ 90% RH
ASTM C 496	Tensile Strength, psi	>800
ASTM C 882	Bond Strength by Slant Shear, psi	>2000
ASTM C 666	Freeze-Thaw – 300 cycles	No damage

PART 3 - EXECUTION

3.01 PUBLIC NOTIFICATION

- A. Maintain service usage throughout the duration of the project
 - 1. Maximum amount of time out of service shall not exceed 8 hours for any property served by the respective sewer.
- B. Deliver written notices to each home or business 48 hours before commencement of work being conducted on section. Include local telephone number of Contractor contact for inquiries or complaints.
 - 1. Contact any home or business that cannot be reconnected within time stated in written notice.

3.02 ACCEPTABLE APPLICATORS

- A. Repair mortar applicators should be trained to properly apply the repair mortar according to manufacturer's recommendations and must be NASSCO MACP certified.

3.03 EXAMINATION

- A. Appropriate actions shall be taken to comply with local, state and federal regulatory and other applicable agencies with regard to environment, health and safety.
- B. Manhole lining material shall be installed after all manhole modifications are completed.
- C. Installation of the protective lining shall not commence until the concrete substrate has properly cured and been prepared in accordance with these specifications.
- D. Temperature of the surface to be coated should be in accordance with the manufacturer's recommendations.

3.04 SURFACE PREPARATION

- A. Applicator shall inspect all surfaces specified to receive a protective lining prior to surface preparation. Applicator shall notify District or its appointed Representative of any

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noticeable disparity in the surfaces which may interfere with the proper preparation on application of the repair mortar and protective lining.

- B. Any leaks or infiltration shall be stopped using infiltration control materials in accordance with manufacturer's recommendations.
- C. Any existing ladder rungs/steps inside the manhole shall be cut and removed flush with the existing wall prior to application of repair materials.
- D. Surface preparation method(s) should be based upon the conditions of the substrate and the requirements of the protective liner to be applied.
- E. All surfaces shall be repaired as required by the manhole protective lining system in the intended service condition.
- F. Surfaces to receive protective liner shall be cleaned and abraded to produce a sound concrete surface with adequate profile and porosity to provide a strong bond between the protective lining and the substrate. This may be achieved with a high pressure water cleaning using equipment capable of 5,000 psi at 4 gpm. Other methods such as high pressure water jetting (refer to NACE Standard No. 5/SSPC-SP12), abrasive blasting, shotblasting, grinding, scarifying or acid etching may also be used. Whichever method(s) are used, they shall be performed in a manner that provides a uniform, sound clean neutralized surface that is not excessively damaged.
- G. A mild chlorine solution may be used to neutralize the surface to diminish microbiological bacteria growth prior to final rinse and lining.
- H. All debris produced from the waterblasting operation shall be removed from the structure prior to coating. No debris shall be allowed to enter the sewer system.
- I. Contractor shall install false floors to prevent debris from entering the sewer system. It is the Contractor's responsibility to dispose of any material or debris removed from the manholes. Contractor must immediately notify the District and Operations Manager or designee if any grout, debris, or foreign objects enter the sewer system.
- J. The Applicator shall test the pH of the prepared surfaces after cleaning but prior to application of the lining to verify that it is in accordance with the recommendations of the lining manufacturer. If it is not, then the Applicator shall perform additional surface preparation per the manufacturer's recommendations until the pH is within the manufacturer's recommended range.
- K. The moisture content of the prepared surface shall be in accordance with the lining manufacturer's recommendations. The Applicator shall add water or dry the surface as required.
- L. All surfaces shall be inspected during surface prep and before the repair mortar is applied.

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3.05 APPLICATION OF REPAIR MATERIALS

- A. Repair materials shall meet the specifications contained herein. The materials shall be trowel or spray applied utilizing proper equipment on to specified surfaces. The material thickness shall be such that the new material surface matches the manholes original inside diameter, or as specified by the District or its appointed Representative according to manufacturer's recommendations.
- B. Cementitious repair materials shall be troweled or sprayed on to provide a smooth surface with an average profile equivalent to coarse sandpaper to optimally receive the protective lining. No bugholes or honeycomb surfaces should remain after the final trowel procedure of the repair mortar.
- C. The repair materials shall be permitted to cure according to manufacturer recommendations.
- D. Application of the repair materials, if not performed by the lining certified applicator should be inspected by the protective lining manufacturer's representative or certified applicator to ensure proper finishing for suitability to receive the specified lining.
- E. After abrasive blast has been performed, all surfaces shall be inspected for remaining laitance prior to protective lining application. Any evidence of remaining contamination or laitance shall be removed by additional abrasive blast, shotblast or other approved method. If repair materials are used, refer to these specifications for surface preparation. Areas to be coated must also be prepared in accordance with these specifications after receiving a cementitious repair mortar and prior to application of the manhole lining material.
- F. All surfaces should be inspected during and after preparation and before the protective lining is applied.

3.06 APPLICATION OF LINING

- A. Application procedures shall conform to the recommendations of the protective lining manufacturer, including material handling, mixing, environmental controls during application, safety, and equipment
- B. Where spray equipment is required, the spray equipment shall be specifically designed to accurately ratio and apply the specified protective lining materials and shall be regularly maintained and in proper working order.
- C. Lining material shall be applied to all prepared surfaces from the manhole wall base to the base of the ring and cover unless otherwise specified. Termination points of the lining to the existing subsurface shall be keyed into the subsurface by mechanically scoring a minimum 6 mm x 6 mm (¼ inch x ¼ inch) keyway. Lining material shall be uniform in color, fully cured, free of holidays, surface imperfections, blisters and sags and adequately adhered to the subsurface.

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3.07 TESTING AND INSPECTION

- A. For each manhole rehabilitated, the Contractor shall perform thickness testing of the mortar lining at various locations prior to the mortar setting. The method of measurement shall be approved by the District or its appointed Representative.
- B. Four (4) cubes or cylinders shall be cast each day or from every pallet of product used, and shall be properly packaged, labeled and returned to manufacturer for testing in accordance with the owner's or manufacturer's directions for compression strength per ASTM C109 procedure.
- C. After the protective lining has set hard to the touch it shall be inspected with high-voltage holiday detection equipment. An induced holiday shall be made on to the coated concrete surface and shall serve to determine the minimum/maximum voltage to be used to test the lining for holidays at that particular area. The spark tester shall be initially set at 100 volts per 1 mil (25 microns) of film thickness applied but may be adjusted as necessary to detect the induced holiday. All detected holidays shall be marked and repaired by abrading the lining surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional protective lining material can be hand applied to the repair area. All touch-up/repair procedures shall follow the protective lining manufacturer's recommendations.

3.08 SAFETY

- 1. When working inside manholes and sewer lines, exercise caution and comply with CAL/OSHA requirements when working in the presence of hydrogen sulfide. Contractor is warned that the existing sewers and the structures associated with the project may contain high levels of hydrogen sulfide gas, a natural gaseous by-product of sanitary sewage. Take all the necessary precautions, such as portable hydrogen sulfide detectors per CAL/OSHA requirements, to ensure that the environment is safe for those at the work site.

END OF SECTION

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SECTION 330134 SEWER AND MANHOLE WASTEWATER BYPASS PUMPING

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials, equipment, and operational requirements for temporarily bypassing wastewater around a manhole or wastewater piping section in which work is to be performed.

It is anticipated that this Work can be completed without bypassing flow. However, if bypassing is required by the coating/lining manufacturer and/or the Contractor believes that bypassing will be necessary, this shall be accounted for in their bid proposal. Contractor shall utilize 150 gpm for 8-inch piping and 250 gpm for 10-inch piping as the basis for bidding, should bypass pumping be required.

The Contractor shall determine if it is necessary to provide bypassing around a manhole specified for rehabilitation to comply with the manufacturer's recommendations, safety requirements, or any other requirements of this specification. No additional compensation shall be made if the Contractor elects to use bypassing as part of the manhole rehabilitation process.

If bypass pumping is necessary to complete the rehabilitation, prior to submitting a bid for this project the Contractor shall familiarize himself with the sanitary sewage facilities in this area and develop an adequate bypassing plan. A written plan shall be submitted to CIBCSO for approval prior to the start of Work.

Bypassing will not be permitted in the event of excessively wet weather. CIBCSO reserves the right to determine when any bypassing will or will not be allowed.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Traffic Regulation: 015526.

1.03 Submittals

- A. Submit shop drawings in accordance with the General Conditions.
- B. Submit a spill response plan for raw sewage.
- C. Submit a written plan describing discharge location and type of pump(s) or pumping and transporting vehicles to be used for bypass pumping at least 7 days before the application.
- D. Provide description of procedures and list of equipment for flow control to ensure wastewater overflow prevention.

ISSUED FOR BID

PART 2 - MATERIALS

2.01 PUMPS AND OTHER EQUIPMENT

- A. Any sump pumps, bypass pumps, trash pumps, or other type of pump which pumps sewage/water or any type of material out of the manhole or wastewater main shall discharge this material into another manhole or appropriate vehicle or container. Under no circumstances shall this material be discharged, stored, or deposited on the ground, swale, or open environment.
- B. Provide the necessary pumps, conduits, and other equipment to divert the flow of sewage around the pipe section in which work is to be performed. The bypass system shall be of sufficient capacity to handle existing flows plus additional flow that might occur during periods of rainstorms.
- C. Furnish the necessary labor and supervision to set up and operate the pumping and bypassing system. A "setup" consists of the necessary pumps, conduits, and other equipment to divert the flow of wastewater around a pipe section, from the start to finish of work performed in the section. Pumps and equipment shall be continuously monitored by a Contractor-supplied equipment maintenance person capable of starting, stopping, refueling, and maintaining these pumps during the bypass operation.
- D. The bypass pumping system shall be in place and working before the sewer lining work begins. The sewer shall be returned to gravity flow at the end of each working day. Unattended bypass pumping is not allowed.
- E. Bypass pumping shall be limited to those hours that the Contractor is performing the Work for this project unless necessitated by an emergency beyond the Contractor's control. A representative of the Contractor must be on-site at all times that bypass pumping is in operation.
- F. Engines and pumps shall be sound insulated and placed on elastic skids, pads, or tires to absorb ground vibrations.

PART 3 - EXECUTION

3.01 METHOD

- A. Bypass the wastewater around pipe section (between two manholes) being repaired. Plug each end of the sewer being isolated and pump wastewater flow into the downstream manhole or to an appropriate vehicle (pumper or vacuum truck) or container. Provide a pumper/vacuum truck ready to operate during bypassing. Provide pumps, piping, and other equipment to accomplish this task.
- B. Flow rates in sewers are dramatically affected by rainfall, and sewer bypass operations should be avoided whenever possible during and immediately following rainfall events. Connections that can be made in less than 8 hours can be coordinated with the District to

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coincide with the lowest flows over a 24-hour period. Bypass sewer facilities that will remain in service over periods longer than 8 hours must be sized to handle the peak flow rate. The District will determine the anticipated peak flows once the Contractor advises the District where bypass operations are required.

- C. If the Contractor elects to use bypass pumping as a means of sewerage control, the methods, equipment, type of hose, etc., shall be subject to approval of CIBCSO. Hoses crossing streets, driveways, parking areas, etc., are to be ramped over to prevent damage to hoses. Bypass pumps shall be sized to handle 1.5 times the peak flow with one pump out of service. Contractor must always have a backup pump ready in case a pump fails.
 - D. Obtain all permits.
 - E. Perform complete restoration of existing facilities to equal or better condition.
- 3.02 CCTV SURVEY

For CCTV surveys, the depth of flow within the sewer shall not exceed that shown below for the respective pipe sizes as measured in the manhole.

Maximum Depth of Flow	Television Survey
6- to 10-inch pipe	20% of pipe diameter

Maximum Depth of Flow	Joint Testing/Sealing
6- to 10-inch pipe	25% of pipe diameter

3.03 TRAFFIC CONTROL

Ensure that pumps, piping, and hoses that carry raw sewage are protected from traffic. Traffic control shall be performed in accordance with Section 015526.

3.04 SEWAGE SPILLS

- A. In the event, during any form of sewage flow control, that raw sewage is spilled, discharged, leaked, or otherwise deposited in the open environment, due to the Contractor's work, the Contractor shall follow their spill response plan. A spill response plan should include:
 - 1. Names and telephone numbers of individuals to be contacted in the event of a spill.
 - 2. Evacuation plans.
 - 3. Instructions for containing the spilled material, including potential releases to the environment.
 - 4. Inventory of spill control materials and personal protective equipment (PPE).

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5. Means for proper disposal of cleanup materials including contaminated tools and clothing.
 6. Decontamination of the area following the cleanup through disinfection.
- B. This work shall be performed at the Contractor's expense at no additional cost to the Owner. Notify the Owner's maintenance personnel immediately regardless of the quantity of spill. Comply with regulatory requirements regarding the quantity of spill at no additional cost to the Owner.

END OF SECTION

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SECTION 330140 CURED-IN-PLACE SEWER PIPE LINING

PART 1 - GENERAL

1.01 DESCRIPTION

This section describes design, material, and installation into existing sewers of CIPP lining conforming to ASTM F1216 – Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube; and sanitary sewer laterals conforming to ASTM F2561 – Standard Practice for Rehabilitation of a Sewer Service Lateral.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Traffic Regulation: 015526.
- B. Sewer Manhole Wastewater Bypass Pumping: 330134

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with Section 013300.
- B. Submit plans showing points of insertion and methodologies.
- C. Submit certificates of compliance with design and test reports performed by a third party in accordance with applicable ASTM and specified test methods.
- D. Submit design calculations for hydraulic capacity.
- E. Submit certifications of the materials including the cell classification, grades, type of resins, glass fibers, and other materials used in the manufacture of the liner pipe.
- F. Submit liner size, thickness calculations, liner and resin materials, and resin manufacturer's heating requirements. Submit complete calculations including list of parameters, formulas, and other data that are necessary for the design of the liner pipe. Include soil loads, live loads, hydrostatic loads, pipe stiffness (PS), standard dimension ratio (SDR), pipe wall crushing strength, initial and long-term (50 years) values of pipe deflection, pipe bonding strain, hydrostatic collapse resistance, and constrained buckling strength. Submit drawings showing the cross sectional profile of the liner pipe wall.
- G. Submit manufacturer's installation instructions including recommendations for transportation, storage, temperature control, handling, inserting, curing, trimming, and finishing. Submit a written description of the resin curing temperatures versus time (step cooking temperatures/hours at initial, intermediate, and final stages) depending upon the sewer size, length, and liner thickness.

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- H. Submit the selected curing temperature and expected duration of curing time required to ensure proper curing and submit written concurrence from the CIPP liner manufacturer of the curing temperature, temperature monitor procedures, and duration of curing time.
- I. Submit a plan that details source of water to be used, pipeline locations, and discharge location.
- J. Submit written description of the methods and equipment proposed for repairs to the host conduit such as missing pipe, offset joints, protrusions, or other deformities to complete the CIPP rehabilitation of the host conduit. Such repairs shall be in accordance with the CIPP liner manufacturer's recommended written procedures and techniques.
- K. Submit written descriptions of the methods and equipment for the repair of defects in the CIPP liner observed during the post installation inspection.
- L. Submit plans and written descriptions for traffic control, bypass pumping, pre-insertion cleaning, and pre/postinsertion CCTV inspection.
- M. Submit results of post installation resin and liner sample analyses to confirm installed liner meets the design requirements of these construction documents.
- N. Written certification from manufacturer that installer is an approved applicator of lining materials, with a minimum of 3 years' experience in sewer rehabilitation.

1.04 MEASUREMENT AND PAYMENT

- A. Payment:
 - 1. Payment for pipe liner shall be made at the contract lump sum for each reach installed, complete in place, in accordance with the drawings and specifications.
 - 2. The price paid for pipe liner shall include full compensation for furnishing labor, materials, tools, and equipment and doing the work involved in furnishing, installing, and testing the pipe liner, service lateral reinstatement, top hate installation, preconstruction inspection and cleaning, final inspection, and postconstruction inspection, complete in place, as shown in the drawings and specified.
- B. Modification of the liner thickness or other properties to meet varying site conditions shall be incidental to the lump-sum bid amount stated in the Proposal.

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PART 2 - MATERIALS

2.01 CIPP SYSTEM

- A. The materials shall be inert to attack by domestic sewage and shall be suitable for use in an underground sewer environment. The installed material shall be light-colored or white to facilitate CCTV inspection.
- B. Manufacture the material in such a manner to produce a tight-fitting liner after installation. There shall be no measurable continuous annular space between the outside diameter of the new liner and the existing host pipe.
- C. Resin-impregnated tube liner material shall consist of one or more layers of flexible needled felt or an equivalent woven or nonwoven material, capable of carrying resin and withstanding installation pressures and curing temperatures. The material shall be able to stretch to fit irregular pipe sections and negotiate bends. The outside layer of the tube shall be plastic coated with a material compatible with the resin system used.
- D. The resin-impregnated flexible felt tube liner shall be cured by circulating heated water to effect the desired cure throughout the length of the tube, extending full length from manhole to manhole(s). The resin shall be cured into a hard impermeable pipe of the minimum specified thickness, providing a structurally sound, uniformly smooth interior and tight-fitting liner within the existing pipe.

2.02 MATERIALS

Material shall meet the following requirements:

Design Criteria	Value
Flexural Modulus (minimum) per ASTM D790	250,000 psi
Flexural Strength (ASTM D790 and D2290)	4,500 psi
Long-Term Modulus of Elasticity for CIPP (psi)	50% of Flexural Modulus
Safety Factor	2.0

2.03 DESIGN

- A. Design shall be in accordance with most current edition of ASTM F1216, Appendix X1 for "fully deteriorated pipe conditions" both gravity and pressure as applicable.
- B. Determine the thickness of the CIPP liner as the minimum thickness required to meet the design structural requirements for both internal and external loadings, excluding any sacrificial membranes or other materials that may be used for protection of the product during installation.
- C. Provide allowances for any circumferential stretching, polymerization shrinkage, and resin migration that may occur.

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- D. It is the Contractor's responsibility to check the sewer size and length prior to manufacturing. Modify the liner thickness and other properties to suit the site conditions.
- E. The sewers require lining all flow under gravity conditions.

2.04 LINER TUBE

- A. The liner tube shall consist of one or more layers of flexible needled felt or an equivalent nonwoven and/or woven material capable of carrying resin, withstanding installation pressures and curing temperatures, and is compatible with the resin system used. Fabricate the liner tube to a size that, when installed, will fit the internal circumference of the existing sewer without any annular space between liner and walls of the host pipe. Make allowances for circumferential stretching due to insertion of liner and deterioration of existing pipe walls. Fabricate liner felt layers in a manner to maintain uniform thickness.
- B. Fabricate the liner from a material which, when cured, will be chemically resistant to withstand internal exposure to sewage gases containing hydrogen sulfide, carbon monoxide, methane, petroleum hydrocarbons, saturation with moisture, and diluted sulfuric acid.
- C. Calculate the CIPP wall thickness for each diameter based on a factor of safety of 2:1 using the standard polyester resin. The thickness shall be rounded to the next highest multiple of 1.5 mm after adding an allowance of 5% to the design thickness for resin migration.
- D. Design the CIPP per ASTM F1216, Appendix X1, with the following additional requirements:
 - 1. Maximum SDR 35 in accordance with ASTM F1216.
 - 2. External Buckling Design: Where the CIPP is designed as a stand-alone pipe, a fully deteriorated condition, acceptable third-party testing, and verification of design analysis techniques (ASTM F1216, Section X1.2.2) shall be submitted by each manufacturer and/or CIPP product. This testing requirement can be accomplished with soil box testing.
- E. Verify the lengths in the field before resin impregnation and installation of the tube.
- F. Prior to insertion, provide data on the maximum allowable stresses and elongation of the tube. Mark the exterior of the manufactured tube along its length at regular intervals not to exceed 5 feet. Use these marks as a gauge to measure elongation during insertion. Should the overall elongation of a reach exceed 5%, the liner tube shall be rejected and replaced.
- G. Prior to insertion, the liner tube shall be free of visible tears, holes, cuts, foreign materials, dry spots, pinholes, delamination, and other defects. Repair defects that will affect the integrity or strength of the CIPP lining or replace the CIPP liner at no additional cost to the Owner. The method of repair shall maintain the full integrity of the liner.

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2.05 RESIN

- A. Provide a thermosetting, polyester, vinyl ester, or epoxy resin, able to cure in the presence or absence of water, and a catalyst system compatible with the unimpregnated liner material that provides the cured physical and chemical resistance strengths specified. The initiation temperature for cure shall be as recommended by the resin manufacturer.
- B. Resin shall not be affected by ultraviolet light and shall form no excessive bubbling or wrinkling during lining.
- C. The resin system shall meet the requirements of ASTM F1216.

2.06 LATERAL LINER (TOP HATS)

- A. Provide sewer lateral rehabilitation by the inversion and inflation of a resin impregnated, cured-in-place (CIPP) lateral and main connection liner outfitted with engineered, molded hydrophilic gasket seals that are designed specifically for sealing the CIPP/lateral connection interface and lateral termination. When cured, the liner extends over a predetermined length of the service lateral and the full circumference of the main pipe at the lateral connection. The materials and installation practices shall, at a minimum, adhere to the requirements of ASTM F2561-17 “Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One-Piece Main and Lateral Cured-in-Place Liner” and ASTM F3240-17 “Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long-Term Water tightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines.”
- B. Material requirements, installation practices, and test methods for the reconstruction of a sewer service lateral pipe and the main connection specified here are to be performed without excavation.
- C. Materials, equipment, and accessories specified in this section shall be products of:
 - 1. LMK Enterprises, Inc.: T Liner
 - 2. AMerick Supplies, Inc.: TOP HAT System.
 - 3. Insituform Technologies, Inc.: Service Lateral Rehabilitation System.
 - 4. Cosmic TopHat, LLC: TOP HAT Cosmic Lateral Connection Sealing System
 - 5. Or approved equal.
- D. Resin:
 - 1. The resins used to impregnate the tube shall produce a cured tube that shall be resistant to shrinkage, shall not corrode or oxidize, and shall be resistant to abrasion from solids, grit, and sand.

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2. Proven resistance to the municipal wastewater environment that may comprise, as a minimum, all of the following factors:
 - a. Immersion in septic sewage at temperatures up to 75 degrees F.
 - b. Exposure in hydrogen sulfide gas from septic sewage at temperatures up to 75 degrees F.
 - c. Shall not contain silicones, stearates, or natural waxes that would adversely affect the adhesive properties or any other chemical or physical properties of the CIPP liner.
 - d. The internal wall color of the cured liner shall be a light reflective color so that a clear detailed CCTV inspection can be accomplished.
 - e. Resin system shall be manufactured by a company selected by the CIPP supplier.

E. CIPP Lateral Lining Tube:

1. General:
 - a. One or more layers of flexible needled felt or an equivalent nonwoven material.
 - b. Tube shall be continuous in length and wall thickness shall be uniform. Overlapping sections are not allowed in the circumference or the length of the lateral liner.
 - c. Capable of conforming to offset joints, bells, 45-degree bends, 90-degree bends, and disfigured pipe sections.

F. Interface Seal:

1. Structural properties in accordance with ASTM F1216.
2. Conform to one of the following two methods:
 - a. Method A: A full-circle 16-inch long CIPP mainline liner integrally manufactured to lateral liner providing a seamless connection between mainline liner and lateral liner.
 - b. Method B: One-piece construction designed such that when expanded shall tightly fit both “T” and “Y” connections at interface between mainline and lateral pipe.
3. Shall provide a minimum of a 3-inch overlap inside the mainline and shall extend inside the lateral pipe past the first lateral joint up to 3 feet.

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- a. Designed for either a “T” or “Y” fitting and able to accommodate either condition without wrinkles or folds when installed.
- b. Provide a watertight connection between service connection and mainline.

PART 3 - EXECUTION

3.01 DELIVERY, STORAGE, AND HANDLING

- A. Exercise care during transportation, handling, storing, and installation of the CIPP lining to ensure that the material is not torn, cut, or otherwise damaged.
- B. If any part or parts of the CIPP liner material becomes torn, cut, or otherwise damaged before or during installation, it shall be repaired or replaced before proceeding with further installation and at no additional cost to the Owner.
- C. Handle and store the CIPP liner as recommended by the manufacturer to ensure installation in a sound, undamaged condition.
- D. Follow the resin manufacturer's requirements for handling and storage of the resin prior to, during, and following impregnation of the tube.

3.02 PREINSTALLATION PROCEDURES

- A. Notify the owners and residents of any homes or businesses whose service lateral will be affected by the lining work. Send written notice at least two weeks in advance of construction. In addition, deliver written notification to each such resident or business three days in advance of such lining work, further advising of the work. Include in the notifications any restrictions on use of the sewage system facilities. Describe exact days and hours when the sewer system cannot be used.
- B. Before installing the liner, clean and inspect the pipeline per ASTM F1216, Section 7. Clear the pipeline of obstructions. Perform inspection by CCTV. Provide a copy of the inspection television tape to the Owner's Representative. Inspect the existing pipeline to determine the locations of conditions that may prevent proper installation of the tube, such as protruding service taps, collapsed or crushed pipe, and reductions in cross section area of more than 40%. Correct any such deficiencies noted.
- C. Lateral lining shall only occur after the corresponding mainline sewer has been lined, tested and approved by Owner. It is the responsibility of the Contractor to ensure the proper sequence of work between the mainline and lateral lining activities. Lining of laterals before planned mainline lining activities have been completed and accepted by Owner, will require Contractor to completely re-line laterals that were previously lined along the corresponding mainline pipe segment at no cost to the Owner.
- D. The mainline sewer shall be kept in operation at all times during the rehabilitation of the lateral lines.

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- E. Contractor shall CCTV inspect the lateral line immediately prior to reconstruction and determine the overall structural condition of the lateral.

3.03 INSTALLATION

- A. Install the CIPP liner using an inversion process and hydrostatic head per the manufacturer's written recommendation and ASTM F1216.
- B. Designate a location and notify the Owner's Representative where resin impregnation will take place. Use a vacuum impregnation process with a roller system designed to uniformly distribute the resin throughout the tube.
- C. During insertion, protect the new liner and the existing pipe and manholes from any damage that might result during the insertion process.
- D. Equipment used to supply heat and pressure shall be capable of providing the necessary heat and pressure required for the installation condition.
- E. To ensure proper heat distribution of rehabilitation systems using heat exchange methods and to prevent the creation of flat bottoms in the liner profile, isolate the new liner system from inflow, infiltration, or standing water. Accomplish by temporarily stopping inflow and infiltration and removing standing water or by using a reinforced, flexible, preliner to isolate the new liner.
- F. After the new liner is completely rounded, cool it to a temperature specified by the manufacturer prior to relieving the internal pressure. In no case shall this temperature be in excess of 100°F.
- G. Cut and trim the new liner at each end to conform to the inside manhole wall. If the liner fails to make a tight seal at the manhole wall, apply a sealant to the annular space.
- H. Cut and trim the new liner in intermediate manholes, between the insertion and termination manholes, at each inside manhole wall. Seal the liner to the manhole wall with a sealant material.
- I. After CIPP liner has cured, top hats will be installed at the laterals that have problems with root intrusion.
- J. CIPP liner installation shall be accomplished remotely using air or water for inversion and curing. The cured-in-place pipe shall be smooth conforming to existing pipe and shall eliminate groundwater infiltration or connection to the outside of the host pipe/service.

3.04 RESIN IMPREGNATION

The quantity of 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 the loss of resin through cracks and irregularities in the original pipe wall. Use a serial vacuum impregnation process (or equal) to provide maximum resin impregnation throughout the

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tube. Use a roller system to uniformly distribute the resin throughout the tube to ensure uniform wetting of the liner. If the CIPP does not fit tightly against the original pipe at its termination point(s), seal the space between the pipes by filling with a resin mixture compatible with the CIPP.

3.05 CURING IN PLACE

- A. After installation of the CIPP liner into the host conduit, perform curing in accordance with the manufacturer's written recommendations. Ensure that the temperature and the period of time that the temperature is to be maintained shall be as determined by the resin/catalyst system employed and as recommended by the manufacturer. The curing of the CIPP liner shall take into account the existing host conduit material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of the soil).
- B. Fit the heat source with monitors to accurately gauge the temperature of the incoming and outgoing heat source. Place another such gauge between the CIPP liner and the pipe invert at the removal end to determine the temperature during the curing process. The temperature in the CIPP-lined host conduit during the curing process shall be as recommended by the resin manufacturer. The length of time for allowing the curing process to be completed shall be of the duration recommended by the manufacturer, during which time the Contractor shall maintain the required temperature throughout the CIPP-lined host conduit. Provide temperature strip chart data to the Owner's Representative for review to ensure that curing temperatures for the resin meet the manufacturer's recommendations.
- C. If cool-down is to be accomplished by the introduction of cool water into an inversion standpipe to replace the water being drained from a small hole made in the downstream end, cool the hardened pipe to a temperature below 100°F (38°C) before relieving static head in the inversion standpipe. Ensure that, in the release of static head, a vacuum will not be produced that could damage the newly installed CIPP liner.
- D. Vent and/or exhaust noxious fumes or odors generated during and remaining after the curing process is completed. This process shall remain in place at all manholes, laterals, etc., until noxious odors have dissipated to an acceptable level in accordance with CAL/OSHA requirements for the materials used and there is no more air pollution or potential health hazard left to the general public or the construction workers.
- E. Provide piping, pumps, valves, and other equipment to discharge curing water.

3.06 REINSTATEMENT OF SERVICES

- A. Immediately reinstate live services after rehabilitation, testing, and acceptance of sewer lines. Inactive service lines to a vacant lot, vacant building, or to an occupied residence with more than one service line serving the property shall be defined as a "live" service and shall be reinstated. Locate live services prior to rehabilitation activities. Note each service connection by its size, position from a reference manhole, and orientation with respect to the circumference of the pipe. Reconnect from the interior of the sewer line by means of a television camera and a remote controlled cutting device. No excavation will

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be allowed. Holes cut through the rehabilitation liner shall be neat and smooth and shall match the bottom of the reinstated service line. Reinstall the service opening to a minimum of 95% and a maximum of 100% of the service lateral pipe area. The new edge shall be crack free with no loose or abraded material. The seam between the host pipe and the new liner at the reinstated service shall be free of gaps, voids, or cavities and shall be no more than a hairline crack. Any gaps, voids, or cavities at this joint shall be grouted with a packer and grouting system. Seal gaps between the liner and the service by internal methods prior to the postconstruction televising.

- B. Provide a fully operational backup device for reinstating service laterals. If for any reason the remote cutting device fails during the reinstatement of a service lateral, immediately deploy the standby device to complete the reinstatement. The backup device shall be fully functional without requiring removal of parts from the primary device. The backup equipment shall be onsite throughout the reinstatement process.
- C. Install CIPP short lateral liner/interface seal from mainline sewer and extend up to 3 feet inside lateral. No cleanout is required for the installation of the connection seal and the short lateral liner system.
- D. Installer shall be capable of viewing the lateral liner contacting the lateral pipe from the beginning to the end of the repair.
- E. The addition of water pressure shall be adjusted to cause the impregnated flexible tube to invert from the mainline to lateral, holding the tube tight against the host sewer pipe.

3.07 FIELD TESTING

- A. For each inversion length of CIPP liner, prepare one sample from a section of the cured liner at the stream crossings or at the termination point in accordance with ASTM F1216. Samples shall be large enough to provide a minimum of three specimens.
- B. Test the samples for flexural, tensile, and delamination properties. Flexure properties shall be tested in accordance with ASTM D790 and shall meet the requirements of Table 1 in ASTM F1216. Tensile properties for pressure pipe conditions shall be tested in accordance with ASTM D638 and shall meet the requirements of Table 1 in ASTM F1216. Test for delamination in accordance with ASTM D903 as set forth in Section 8.4 of ASTM F1216.

3.08 INSPECTION

- A. Inspection of the finished CIPP liner shall be by CCTV. No infiltration of groundwater shall be observed.
- B. The finished liner shall be continuous between manholes and shall be free from visual defects such as foreign inclusions, reverse curvatures, flats, dry spots, pinholes, and delamination. Visual inspection shall be accomplished by review of post-rehabilitation CCTV. Should defects occur, the entire liner between manholes shall be removed and replaced at no cost to the Owner.

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- C. In the event the Owner's Representative has reasonable cause to suspect that any annular space exists between the liner and the host pipe, excavate and expose the existing sewer and remove the existing host pipe such that confirmation of the suspected annular space can be made. If an annular space equal to or greater than 5% of the pipe diameter is determined to exist, it shall be repaired in a manner approved by the Owner's Representative at no additional cost to the Owner. If it is determined that no annular space exists, the Contractor shall be reimbursed in accordance with the General Conditions.
- D. The maximum allowable size of wrinkle or bulge as shown in the inspection shall not exceed 1/4 inch in the crown or wall of the pipe. No wrinkles will be allowed in the invert of the pipe.

3.09 POSTCONSTRUCTION INSPECTION

Perform a postconstruction inspection by CCTV after completion of the project. Provide a copy of the inspection television tape to the Owner's Representative. Repair or replace any sections of the liner that have wrinkled or bulged. Repair or replace any sections of the liner that show an annular space greater than that specified above. Correct any improperly reinstated service laterals.

END OF SECTION

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APPENDIX A
Rehabilitation Areas:
Design Plans and Details

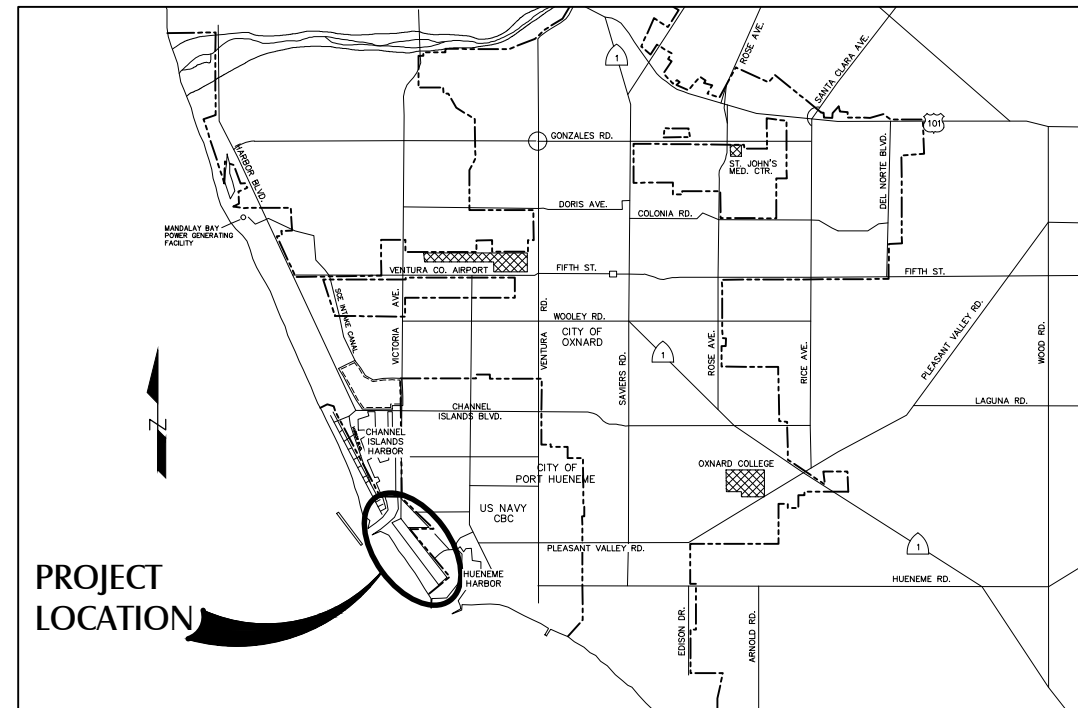
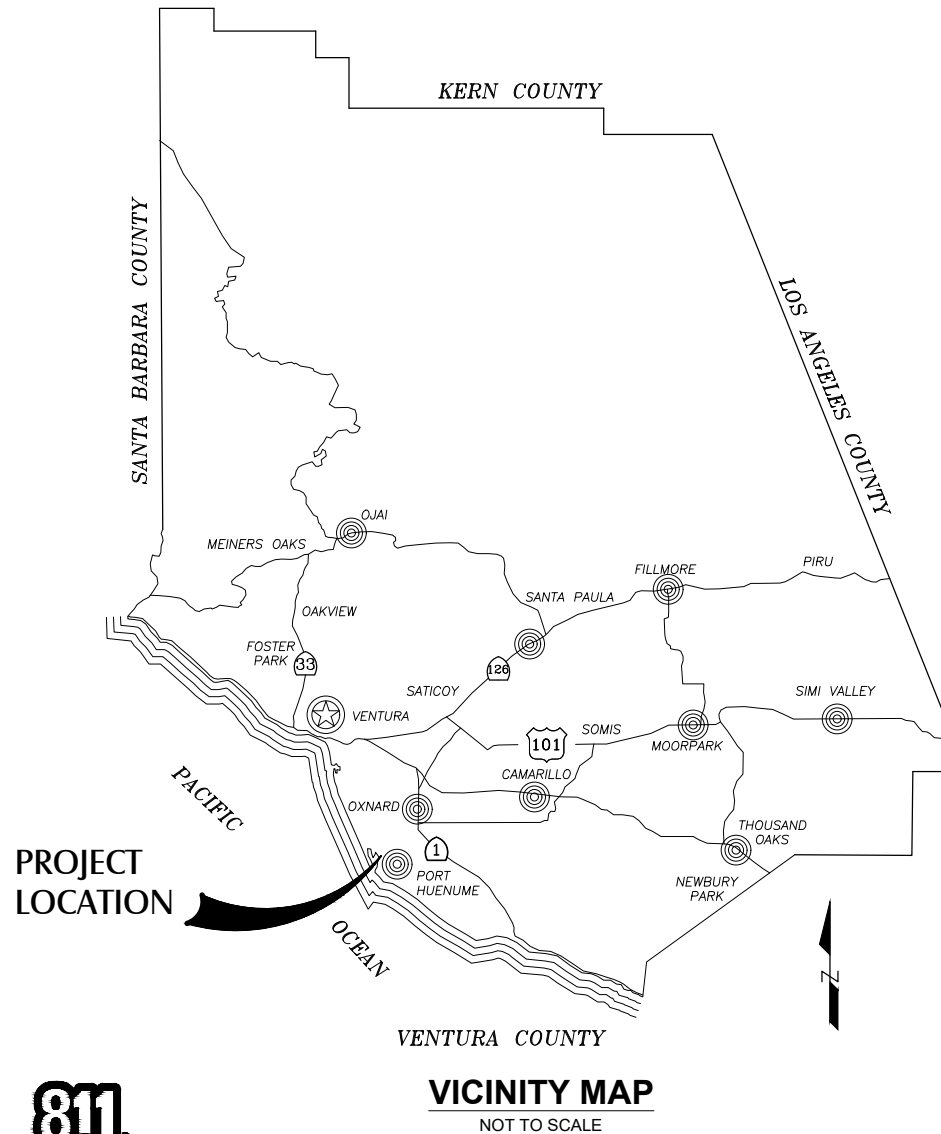
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CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT

ISSUED FOR BID
DATE: MAY 2020



Construction Plans for SILVER STRAND BEACH / HOLLYWOOD BY THE SEA SEWER LINE REHABILITATION MAY 2020



PROJECT APPROVALS

PETE MARTINEZ
C.I.B.C.S.D. General Manager
Date

CLIENT
CHANNEL ISLANDS BEACH
COMMUNITY SERVICES DISTRICT
Channel Islands Beach
Community Services
District
353 Santa Monica Drive
Channel Islands Beach, CA 93035
Tel. (805) 985-6021

PROJECT
**SILVER STRAND BEACH
/ HOLLYWOOD BY THE
SEA SEWER LINE
REHABILITATION**

REVIEWED BY:
GENERAL MANAGER

mkn
WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 320
IRVINE, CA 92614 (949) 491-1678

ENGINEER OF RECORD

[Signature]
Keenan E. Bull, PE
No. C91138 Exp. 03/31/2022

DATE
MAY 2020
SHEET
G-001
1 OF 10



DWG: M:\Channel Islands\BCHS\Channel Islands CSD-2019-001 District Engineer On Call\300.0 Engineering - CI 201 181 Reduction\301 CAD\Silver Strand Beach Sewer Line Rehab\Plansets\C-001.dwg
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GENERAL NOTES:

1. PROVIDE AND INSTALL CIPP IN ALL PIPE INDICATED ON REHABILITATION PLANS.
2. CONTRACTOR SHALL FIELD VERIFY PIPE LENGTH AND DIAMETER BEFORE ORDERING MATERIALS.
3. SUBMIT SEWAGE SPILL PREVENTION PLAN FOR APPROVAL BEFORE COMMENCING WORK.
4. BYPASS PUMPING SHALL HAVE MINIMUM CAPACITY OF 1.5 TIMES PEAK FLOW INDICATED IN THE SPECIFICATIONS.
5. TRAFFIC CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE COUNTY OF VENTURA (DEVELOPED BY CONTRACTOR).
6. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT (CIBCSO) AND MKN & ASSOCIATES, INC. (ENGINEER) HARMLESS FOR ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CIBCSO OR ENGINEER.
7. THE CONTRACTOR SHALL NOT DISTURB EXISTING SURVEY MONUMENTS OR BENCHMARKS NOTED ON THE PLANS OR FOUND DURING CONSTRUCTION. REMOVAL AND REPLACEMENT SHALL BE DONE BY A REGISTERED CIVIL ENGINEER WITH AN R.C.E. OR A LICENSED LAND SURVEYOR ONLY.
8. ALL PUBLIC TRAVELED WAYS MUST BE CLEANED DAILY OF ALL DIRT, MUD, AND DEBRIS DEPOSITED ON THEM AS A RESULT OF THE SEWER CONSTRUCTION. CLEANING IS TO BE DONE TO THE SATISFACTION OF THE CIBCSO ENGINEER.
9. AT NO TIME WILL PRIVATE PROPERTY BE USED IN CONJUNCTION WITH THE PROJECT UNLESS PROPERTY OWNER APPROVAL IS OBTAINED IN WRITING AND EVIDENCE OF SAME IS GIVEN TO CIBCSO.
10. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ALL ACCESS TO PUBLIC FACILITIES AND PRIVATE PROPERTY IN THE PROJECT AREA.
11. THE CONTRACTOR SHALL TAKE THE NECESSARY STEPS TO PROTECT THE PROJECT AND ADJACENT PROPERTY FROM ANY EROSION AND SILTATION RESULTING FROM HIS OPERATIONS BY APPROPRIATE MEANS (SAND BAGS, DIKES, SHORING, ETC.) UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY THE COUNTY OF VENTURA AND CIBCSO.
12. ALL EXISTING IMPROVEMENTS DISTURBED BY THE CONTRACTOR'S WORK INCLUDING BUT NOT LIMITED TO LANDSCAPING, IRRIGATION, SIDEWALK, CURB, GUTTER, TREES, PAVEMENT, ETC. SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE UNLESS NOTED OTHERWISE.
13. UPON COMPLETION OF EACH DAY'S WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE WORK AREA FREE OF HAZARDS AND SHALL PROVIDE NECESSARY TEMPORARY SIGNS, WARNING DEVICES AND BARRICADES.
14. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL IDENTIFY ALL EXISTING SEWER SERVICE LATERALS. ALL SERVICE LATERALS SHALL BE RECONNECTED/REINSTATED UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE CITY.
15. ALL EXISTING FACILITIES SHALL BE PROTECTED IN PLACE UNLESS SPECIFIED OTHERWISE IN THE PLANS OR BY CIBCSO.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY CIBCSO OF ANY DISCREPANCIES. COMMENCEMENT OF WORK SHALL CONSTITUTE FULL ACCEPTANCE OF EXISTING CONDITIONS.
17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE CONSTRUCTION ACTIVITIES NEAR THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
18. THE SEWER LINE SHALL BE TESTED PRIOR TO MAKING PERMANENT SERVICE CONNECTIONS.
19. CONSTRUCTION WORK HOURS ARE LIMITED TO 8:00 AM TO 6:00 PM, MONDAY THROUGH FRIDAY. WORK PROHIBITED ON SATURDAYS, SUNDAYS AND NATIONAL HOLIDAYS.
20. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS., THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK"), AND CIBCSO STANDARD PLANS.
21. ALL WORK DONE WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE BY A CONTRACTOR WITH A CLASS A LICENSE.
22. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS. PUBLIC WORKS TEMPORARY RIGHT-OF-WAY PERMITS ARE REQUIRED FOR ANY SCAFFOLDING, UTILITY TRENCHING, LUMBER DROPS, CRANES, DUMPSTERS, ETC. ON PUBLIC PROPERTY. THE PUBLIC WORKS PERMIT MUST BE ON THE JOB SITE AND AVAILABLE FOR REVIEW BY CIBCSO OFFICIALS AT ALL TIMES. IF ANY WORK HAS BEGUN BEFORE OBTAINING A PERMIT, THE JOB WILL BE STOPPED UNTIL THE PERMIT IS OBTAINED.
23. THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (USA) AT (800) 227-2600 TWO WORKING DAYS BEFORE PERFORMING ANY DIGGING. SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES THAT A DIGALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID.
24. ALL EQUIPMENT SHALL BE REMOVED FROM PROJECT SITE AT THE END OF EACH WORKING DAY AND ROADS OPENED TO VEHICULAR TRAFFIC UNLESS OTHERWISE APPROVED BY CIBCSO.
25. ALL CONSTRUCTION TO BE IN CONFORMANCE WITH THE REGULATIONS OF CAL-OSHA.

STANDARD TRAFFIC CONTROL / TRAFFIC STRIPING NOTES

1. ALL TRAFFIC CONTROL SHALL BE IN PLACE PRIOR TO ENCRDACHING INTO ANY STREETS.
2. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE FHWA'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AS AMENDED FOR USE IN CALIFORNIA.
3. ALL STRIPING MUST COMPLY WITH THE VENTURA COUNTY'S STANDARD SPECIFICATIONS.

MANHOLE REHABILITATION GENERAL NOTES

1. CONTRACTOR SHALL NOTIFY ALL RESIDENTS THAT DISCHARGE DIRECTLY TO THE MANHOLE BEING REHABILITATED 48 HOURS IN ADVANCE, GIVING THE DATE, START TIME, AND ESTIMATED COMPLETION TIME.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ACCESSING THE MANHOLES TO PERFORM THE WORK, INCLUDING DETERMINING ACCESS REQUIREMENTS AND DEVELOPING ALTERNATE ACCESS POINTS AS REQUIRED, REMOVING AND REPLACING TO EQUAL CONDITIONS MOVABLE OBSTACLES (FENCES, SHRUBS, ETC.), WORKING WITH PROPERTY OWNERS, AND RESTORING ALL AREAS DISTURBED BY THE WORK TO EQUAL OR BETTER CONDITION. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO PRIVATE PROPERTY CAUSED BY CONTRACTOR OPERATIONS.
3. ACCESS SHALL BE ALONG EXISTING SEWER EASEMENTS OR WITHIN THE EXISTING ROAD RIGHT-OF-WAYS AND WORK SHALL BE MAINTAINED WITHIN THE EASEMENTS AND RIGHT-OF-WAYS UNLESS OTHERWISE APPROVED BY THE INDIVIDUAL PROPERTY OWNER AND/OR THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NEGOTIATING WITH PROPERTY OWNERS FOR SUCH ALTERNATE ACCESS AND SHALL PAY ANY AND ALL COSTS ASSOCIATED WITH SUCH ALTERNATE ACCESS AS SPECIFIED ABOVE. ALL SUCH NEGOTIATIONS WITH PROPERTY OWNERS SHALL BE IN WRITING, AND COPIES OF THE AGREEMENTS SHALL BE SUBMITTED TO THE DISTRICT PRIOR TO USING THE ACCESS.
4. PRIOR TO INITIATING MANHOLE REHABILITATION AND INSTALLING NEW GRADE RINGS AND MANHOLE FRAMES AND COVERS, SUBMIT HIGH DEFINITION VIDEO OF MANHOLE INTERIOR TO OWNER'S REPRESENTATIVE FOR REVIEW.

UTILITY AGENCY CONTACTS

CABLE JONES INTERCABLE 2525 KNOLL DRIVE VENTURA, CA 93003	(805) 477-4439
CABLE VERIZON 201 FLYNN ROAD CAMARILLO, CA 93012	(805) 388-7302
CABLE TIME WARNER 2525 KNOLL DRIVE VENTURA, CA 93003	(805) 477-4410
SC GAS 9400 OAKDALE AVENUE CHATSWORTH, CA 91311	(818) 701-3448
SCE 10060 TELEGRAPH ROAD VENTURA, CA 93004	(805) 654-7291
WATER / SEWER CIBCSO 353 SANTA MONICA DRIVE CHANNEL ISLANDS BEACH, CA 93035-4473	(805) 985-6021
U.S.A. LOCATING	811



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APPR	EXP DATE	03/31/2022
DESCRIPTION	REG NUMBER	C91138
PROJECT ENGINEER	DATE	KEEMAN E. BULL



Channel Islands Beach Community Service District
Sewer Line Rehabilitation

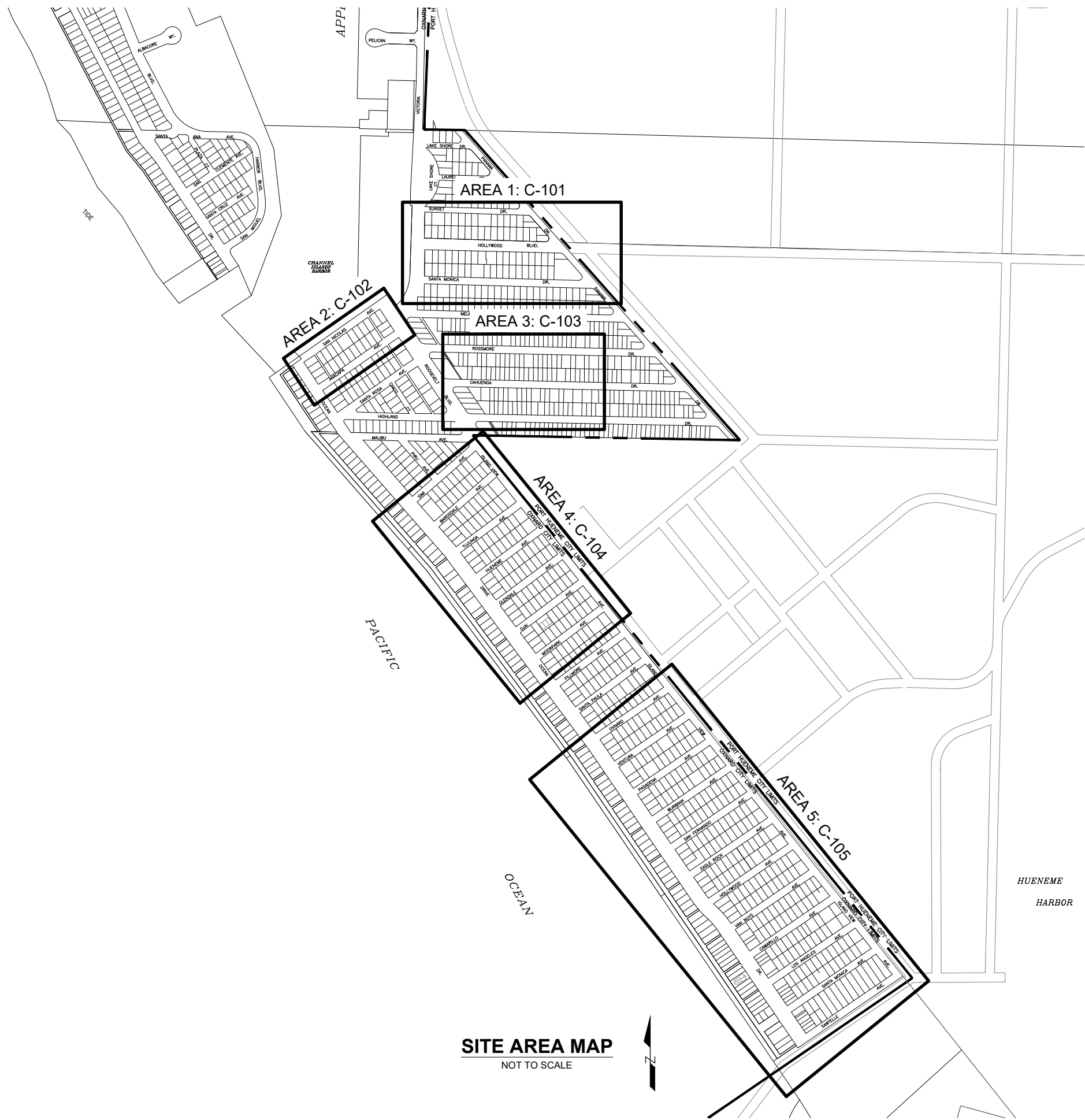
NOTES, ABBREVIATIONS, AND LEGEND

DESIGNED: KEB
DETAILED: JPF
CHECKED:
APPROVED:
DATE: MAY 2020
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PROJECT NO.

ISSUED FOR BID
DATE: MAY 2020

G-002
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2 OF 10

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SHEET INDEX

No.	TITLE	DESCRIPTION
1	G-001	TITLE SHEET
2	G-002	NOTES, ABBREVIATIONS, AND LEGEND
3	G-003	SITE AREA MAP AND SHEET INDEX
4	C-101	SITE PLANS: AREA 1 - SUNSET DR.; HOLLYWOOD BLVD. "A"; HOLLYWOOD BLVD. "B"; PANAMA DR.
5	C-102	SITE PLANS: AREA 2 - ROOSEVELT BLVD.; ANACAPA AVE.
6	C-103	SITE PLANS: AREA 3 - ROSSMORE DR.; CAHUENGA DR.; HIGHLAND DR.
7	C-104	SITE PLANS: AREA 4 - BARSDALE AVE.; OCEAN DR.; TUJUNGA AVE.; HUENEME AVE.; OJAI AVE.
8	C-105	SITE PLANS: AREA 5 - OCEAN DR., OCEAN DR.; SAWTELLE AVE.
9	C-501	DETAILS - 1
10	C-502	DETAILS - 2

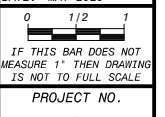
APPR	EXP DATE
KEEMAN E. BULL	03/31/2022



mkn
 WATER - WASTEWATER - REUSE
 38 EXECUTIVE PARK, SUITE 320
 IRVINE, CA 92614
 (949) 491-1678

Channel Islands Beach Community Service District
 Sewer Line Rehabilitation
 SITE AREA MAP AND SHEET INDEX

DESIGNED: KEB
DETAILED: JPF
CHECKED:
APPROVED:
DATE: MAY 2020

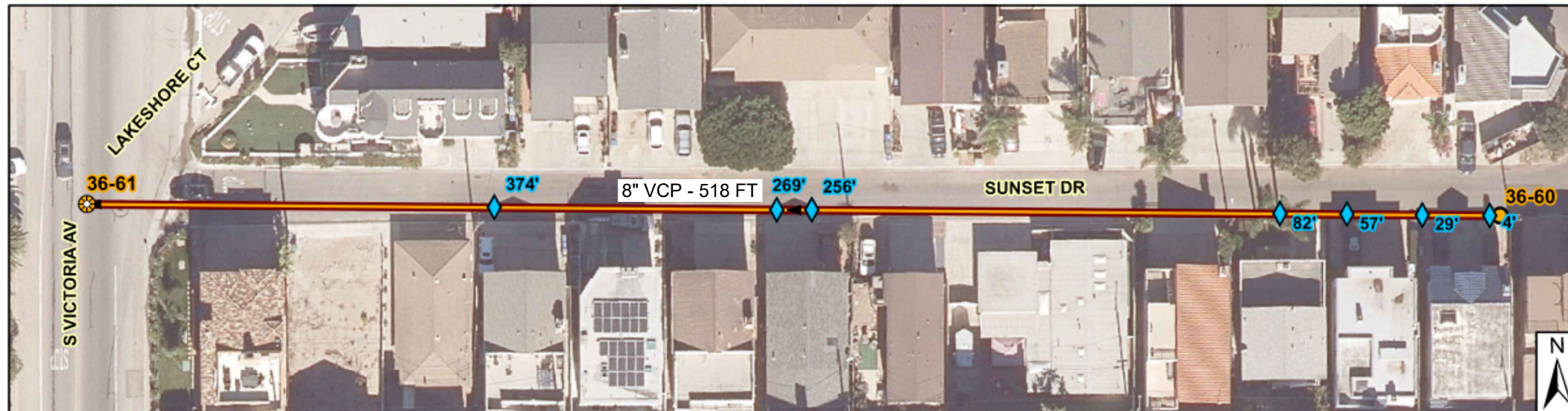


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 DATE: MAY 2020

G-003
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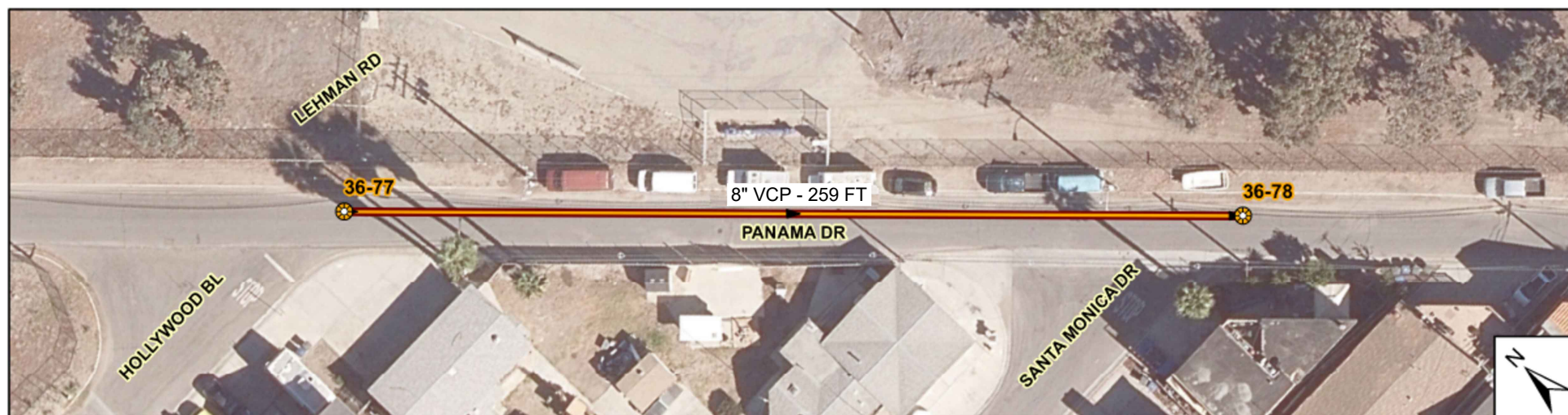
Know what's below.
Call before you dig.



SUNSET DRIVE
ID NO. GSCIP-18 N.T.S.



HOLLYWOOD BLVD.
(POINT REPAIR) N.T.S.



PANAMA DRIVE
ID NO. GSCIP-23 N.T.S.

CIPP POINT REPAIR SCHEDULE

NO.	PIPE (U/S MH OR CO - D/S MH)	LENGTH (ft.)	DIAMETER (in.)	NOTES
1	36-76 TO 36-77	4'	8"	JOINT OFFSET/SEPARATION, ROOT INTRUSION
2	36-62 TO 36-63	4'	8"	BROKEN PIPE, CIRCUMFERENTIAL CRACK

CIPP LINING SCHEDULE

LOCATION	PIPE (U/S MH OR CO - D/S MH)	PIPE LENGTH (ft.)	DIAMETER (in.)	NO. OF LATERALS
SUNSET DR.	36-60 TO 36-61	518'	8"	26
PANAMA DR.	36-77 TO 36-78	259'	8"	3

CONSTRUCTION NOTES:

- INSTALL CIPP POINT REPAIR LINER PER SPECIFICATION SECTION 33 01 40.

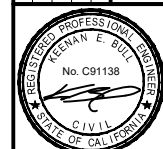
NOTE:
ALL MAPPING AND AERIAL IMAGES SHOWN WERE PREPARED BY Z-WORLD GIS IN FEBRUARY 2020

LEGEND

- JOINT OFFSET*
- SPOT REPAIR* PER SECTION 330140
- TOP HAT LOCATION*
- CLEANOUTS
- REHAB MANHOLES
- REHAB SEWER PIPES

* LOCATIONS OF POINT REPAIRS, TOP HATS, AND JOINT OFFSETS ARE MARKED WITH DISTANCE FROM THE UPSTREAM MANHOLE/CLEANOUT

APPR	DATE	03/31/2022
DESCRIPTION	REG NUMBER	C91138
PROJECT ENGINEER	KEEMAN E. BULL	



mkn
WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 920
IRVINE, CA 92614
(949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation
SITE PLANS
AREA 1 - SILVER STRAND

DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
PROJECT NO.

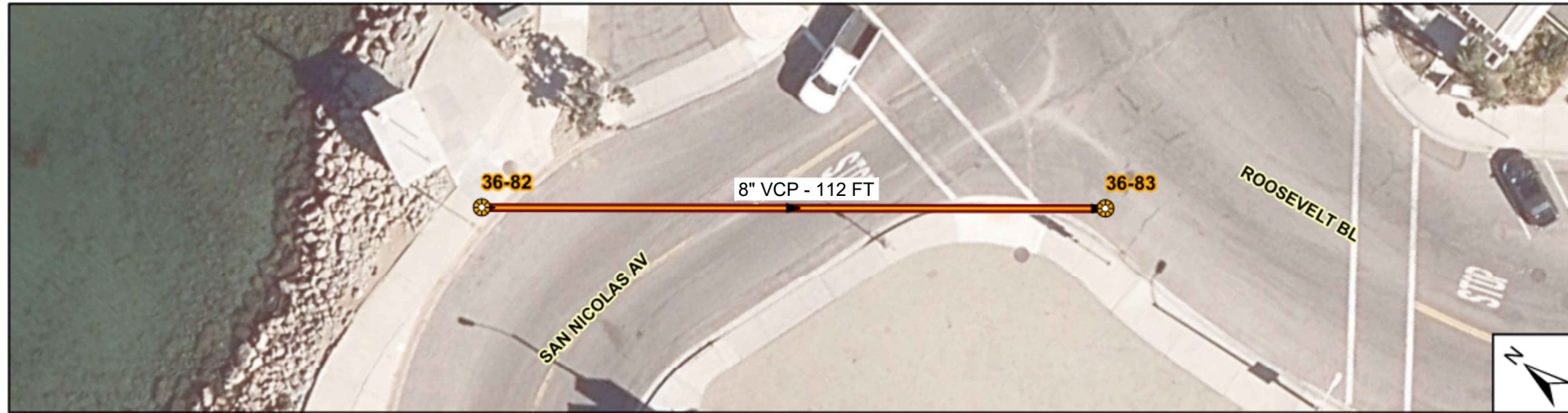
ISSUED FOR BID
DATE: MAY 2020

C-101
SHEET
4 OF 10

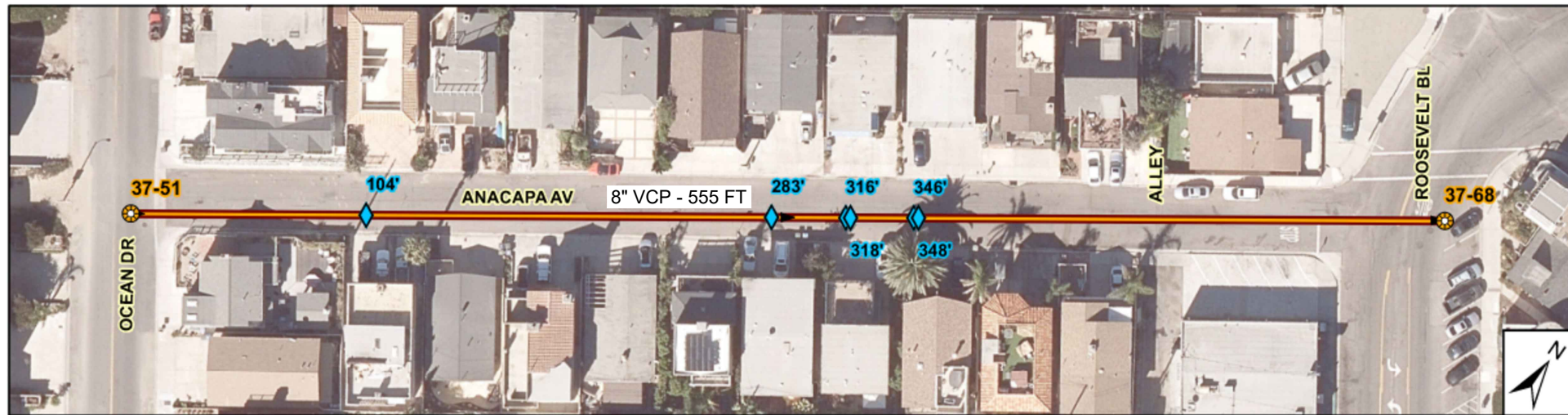
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Know what's below.
Call before you dig.



ROOSEVELT BLVD.
ID NO. GSCIP-17 N.T.S.



ANACAPA AVENUE
ID NO. GSCIP-29 N.T.S.

CIPP LINING SCHEDULE

NO.	PIPE (U/S MH OR CO - D/S MH)	PIPE LENGTH (ft.)	DIAMETER (in.)	NO. OF LATERALS
ROOSEVELT BLVD.	36-82 TO 36-83	112'	8"	2
ANACAPA AVE.	37-51 TO 37-68	555'	8"	24

CONSTRUCTION NOTES:

1. INSTALL CIPP POINT REPAIR LINER PER SPECIFICATION SECTION 33 01 40.

NOTE:
ALL MAPPING AND AERIAL IMAGES
SHOWN WERE PREPARED BY
Z-WORLD GIS IN FEBRUARY 2020

LEGEND

- JOINT OFFSET*
- SPOT REPAIR* PER SECTION 330140
- TOP HAT LOCATION*
- CLEANOUTS
- REHAB MANHOLES
- REHAB SEWER PIPES

* LOCATIONS OF POINT REPAIRS, TOP HATS, AND JOINT OFFSETS ARE MARKED WITH DISTANCE FROM THE UPSTREAM MANHOLE/CLEANOUT

APPR	DATE	03/31/2022
DESCRIPTION	REG NUMBER	C91138
PROJECT ENGINEER	KEEMAN E. BULL	



mkn
WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 920
IRVINE, CA 92614 (949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation
SITE PLANS
AREA 2 - SILVER STRAND

DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020

PROJECT NO.
C-102
SHEET
5 OF 10

ISSUED FOR BID
DATE: MAY 2020

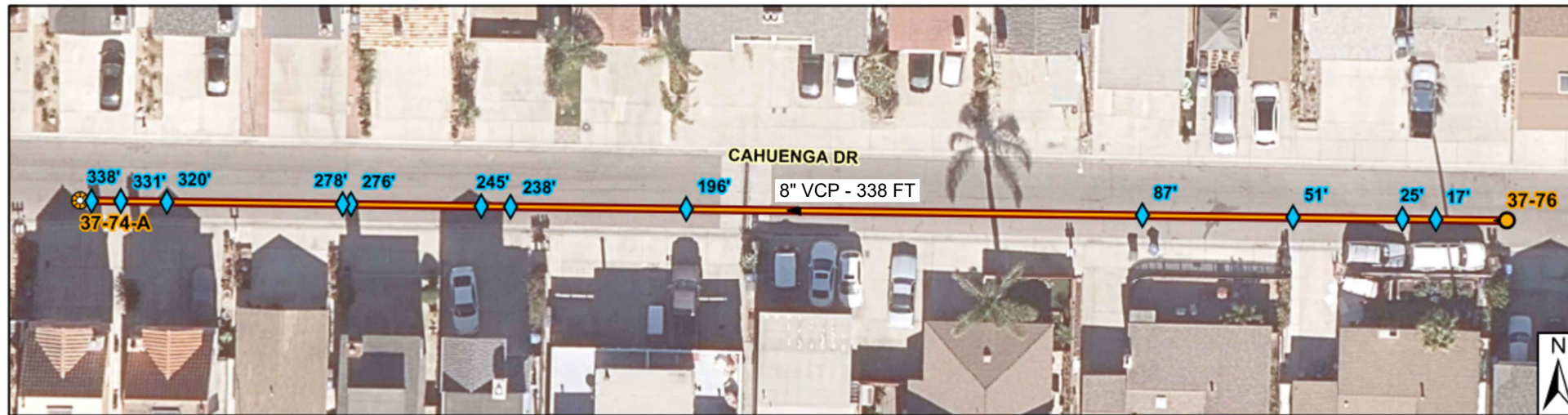
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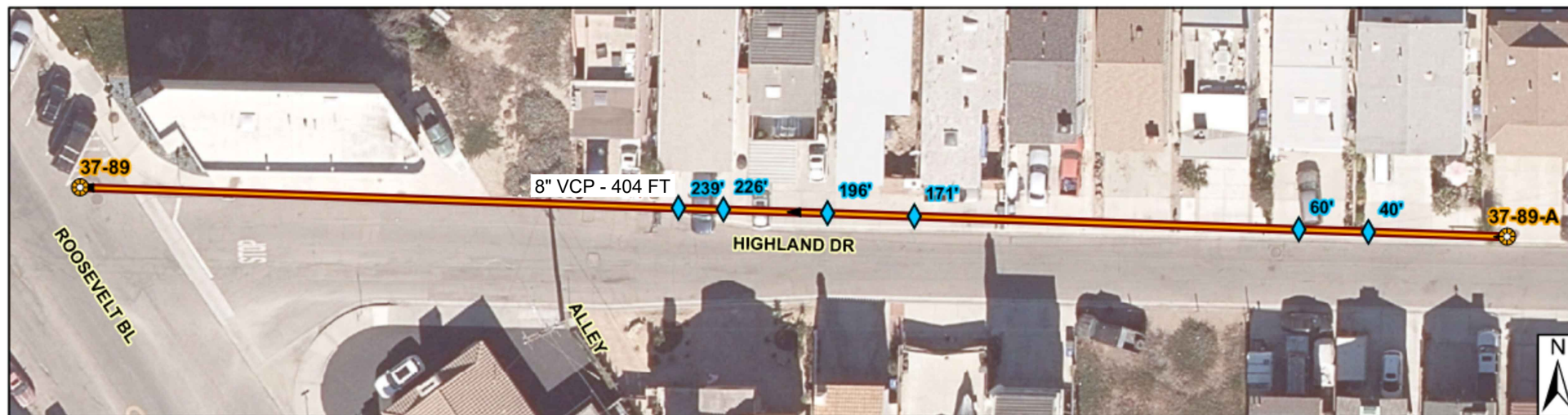
Know what's below.
Call before you dig.



ROSSMORE DRIVE
ID NO. GSCIP-25 N.T.S.



CAHUENGA DRIVE
ID NO. GSCIP-21 N.T.S.



HIGHLAND DRIVE
ID NO. GSCIP-13 N.T.S.

CIPP LINING SCHEDULE

NO.	PIPE (U/S MH - D/S MH)	PIPE LENGTH (ft.)	DIAMETER (in.)	NO. OF LATERALS
ROSSMORE DR.	37-75* TO 37-73	522'	8"	43
CAHUENGA DR.	37-76* TO 37-74A	338'	8"	28
HIGHLAND DR.	37-89A TO 37-89	404'	8"	24

CONSTRUCTION NOTES:

- INSTALL CIPP POINT REPAIR LINER PER SPECIFICATION SECTION 33 01 40.

NOTE:
ALL MAPPING AND AERIAL IMAGES SHOWN WERE PREPARED BY Z-WORLD GIS IN FEBRUARY 2020

LEGEND

- JOINT OFFSET*
- SPOT REPAIR* PER SECTION 330140
- TOP HAT LOCATION*
- CLEANOUTS
- REHAB MANHOLES
- REHAB SEWER PIPES

* LOCATIONS OF POINT REPAIRS, TOP HATS, AND JOINT OFFSETS ARE MARKED WITH DISTANCE FROM THE UPSTREAM MANHOLE/CLEANOUT

APPR	EXP DATE	03/31/2022
DESCRIPTION	REG NUMBER	C91138
PROJECT ENGINEER	KEEMAN E. BULL	



mkn
WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 920
IRVINE, CA 92614 (949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation
SITE PLANS
AREA 3 - SILVER STRAND

DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020

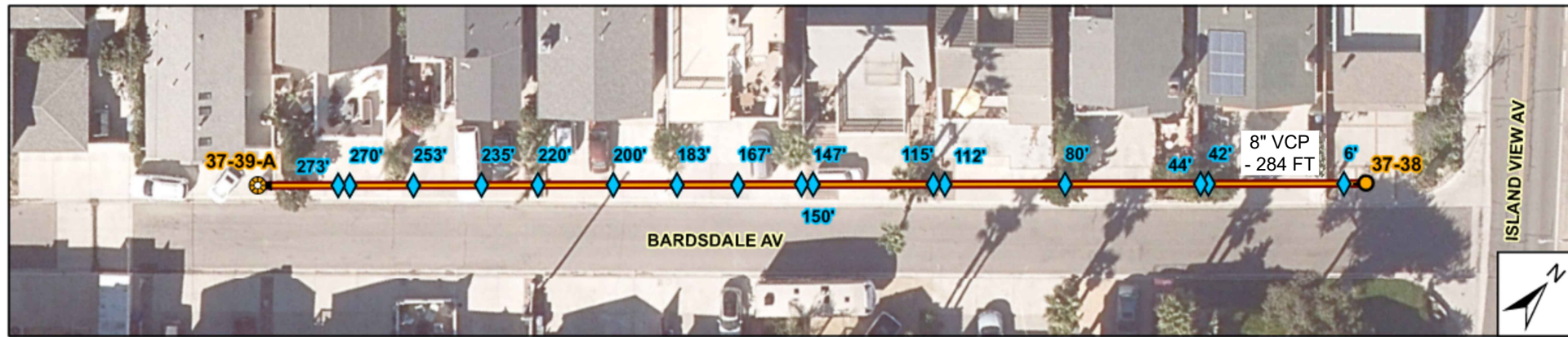
PROJECT NO.
C-103
SHEET
6 OF 10

ISSUED FOR BID
DATE: MAY 2020

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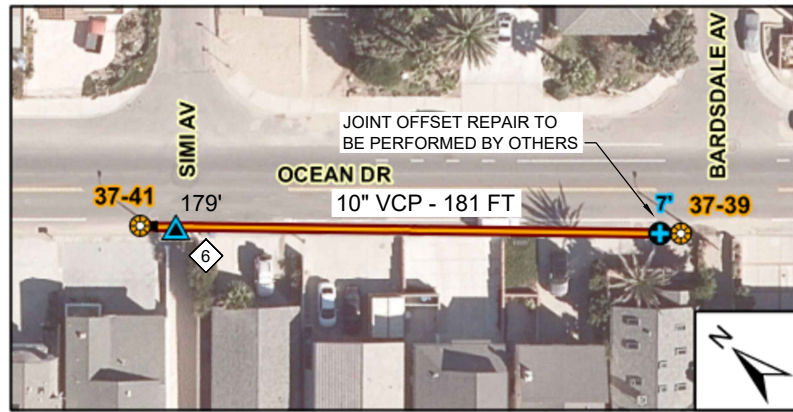
Know what's below.
Call before you dig.



BARDSDALE AVENUE

ID NO. GSCIP-20

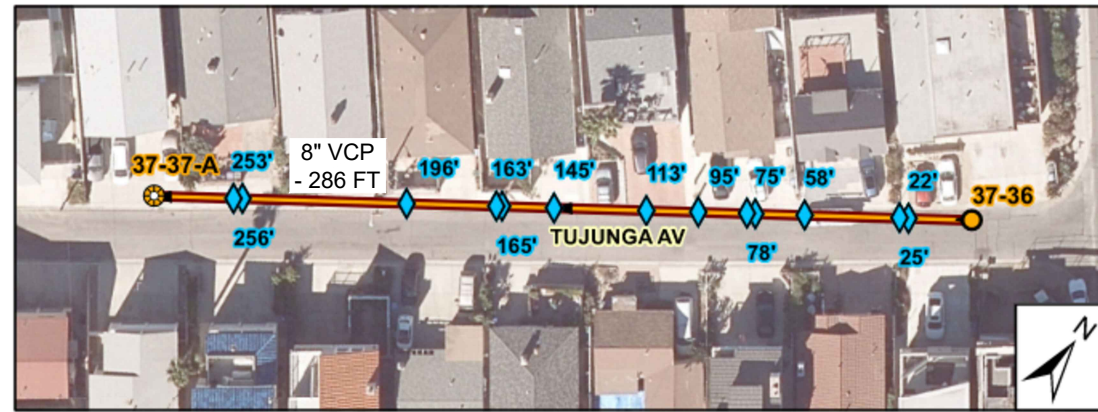
N.T.S.



OCEAN DRIVE

ID NO. GSCIP-22

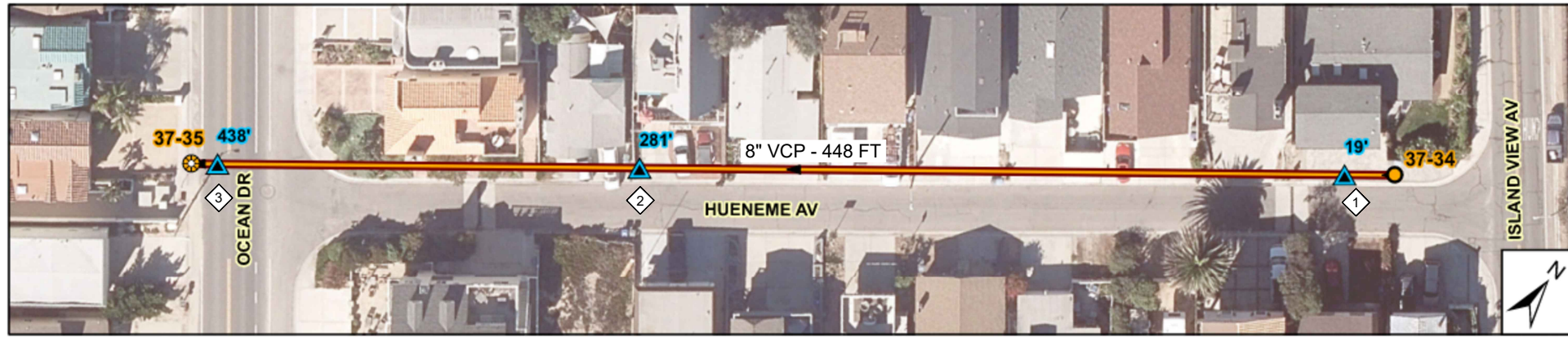
N.T.S.



TUJUNGA AVENUE

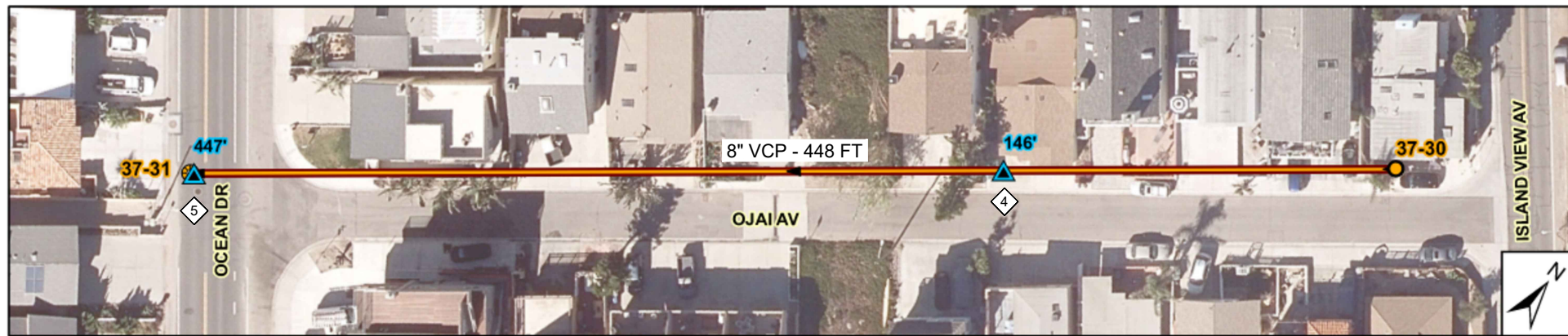
ID NO. GSCIP-26

N.T.S.



HUENE AVENUE

N.T.S.



OJAI AVENUE

N.T.S.

CIPP POINT REPAIR SCHEDULE

NO.	PIPE (U/S MH - D/S MH)	LENGTH (ft.)	DIAMETER (in.)	NOTES
1	37-34 TO 37-35	4'	8"	LONGITUDINAL CRACK, BROKEN PIPE, INFILTRATION, ROOT INTRUSION
2	37-34 TO 37-35	4'	8"	
3	37-34 TO 37-35	4'	8"	
4	37-30 TO 37-31	4'	8"	BROKEN PIPE, CIRCUMFERENTIAL FRACTURE, LONGITUDINAL FRACTURE, ROOT INTRUSION, INFILTRATION
5	37-30 TO 37-31	4'	8"	
6	37-39 TO 37-41	4'	10"	

CIPP LINING SCHEDULE

NO.	PIPE (U/S MH - D/S MH)	PIPE LENGTH (ft.)	DIAMETER (in.)	NO. OF LATERALS
BARDSDALE AVE.	37-38* TO 37-39A	284'	8"	17
TUJUNGA AVE.	37-36* TO 37-37A	286'	8"	17

CONSTRUCTION NOTES:

- INSTALL CIPP POINT REPAIR LINER PER SPECIFICATION SECTION 33 01 40.

NOTE:
ALL MAPPING AND AERIAL IMAGES SHOWN WERE PREPARED BY Z-WORLD GIS IN FEBRUARY 2020

LEGEND

- JOINT OFFSET*
- SPOT REPAIR* PER SECTION 330140
- TOP HAT LOCATION*
- CLEANOUTS
- REHAB MANHOLES
- REHAB SEWER PIPES

* LOCATIONS OF POINT REPAIRS, TOP HATS, AND JOINT OFFSETS ARE MARKED WITH DISTANCE FROM THE UPSTREAM MANHOLE/CLEANOUT

ISSUED FOR BID

DATE: MAY 2020

APPR	EXP DATE
	03/31/2022



mkn
WATER - WASTEWATER - REUSE
98 EXECUTIVE PARK, SUITE 920
IRVINE, CA 92614 (949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation
SITE PLANS
AREA 4 - SILVER STRAND

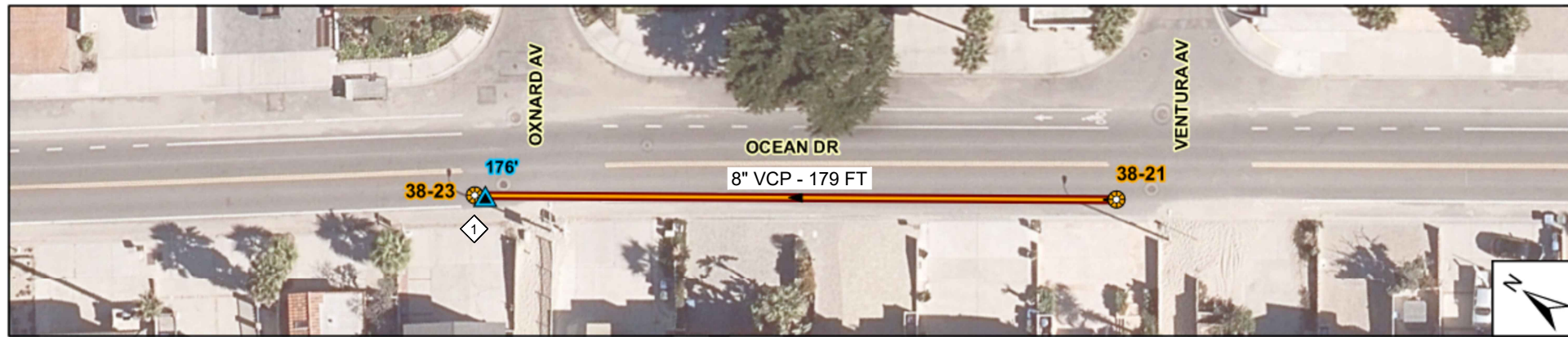
DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020

C-104
SHEET
7 OF 10

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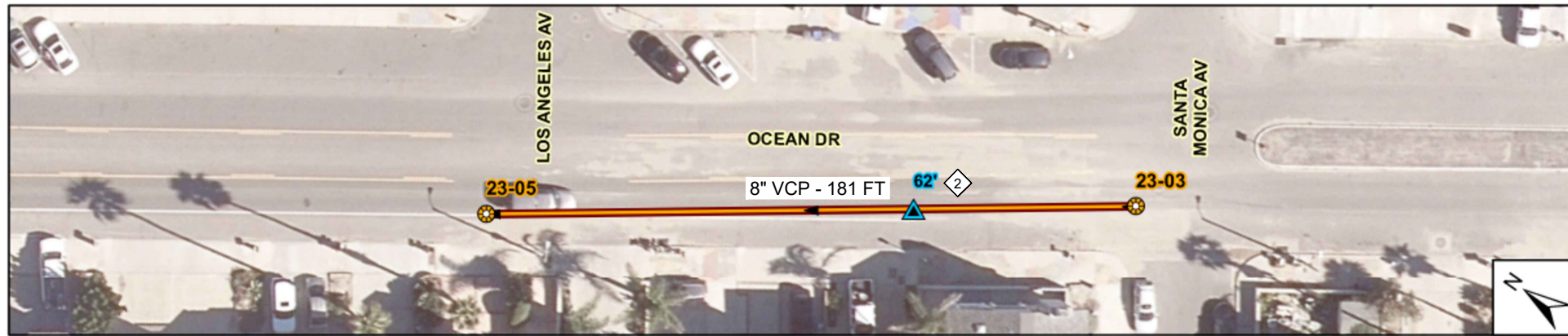


Know what's below.
Call before you dig.



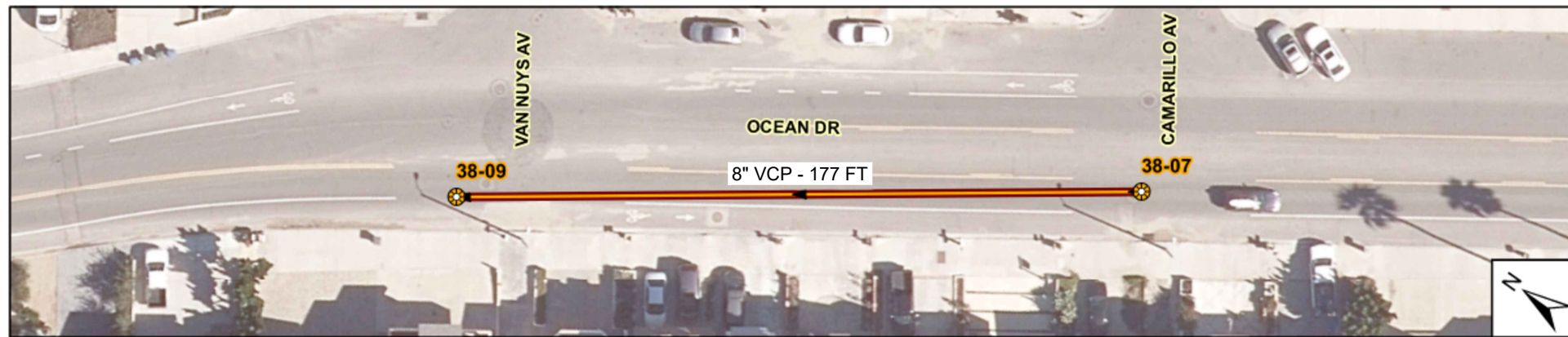
OCEAN DRIVE

N.T.S.



OCEAN DRIVE

N.T.S.



OCEAN DRIVE

ID NO. GSCIP-14

N.T.S.



SAWTELLE AVENUE

N.T.S.

CIPP POINT REPAIR SCHEDULE

NO.	PIPE (U/S MH CO - D/S MH)	LENGTH (ft.)	DIAMETER (in.)	NOTES
1	38-21 TO 38-23	4'	8	INFILTRATION, PIPE FRACTURE
2	23-03 TO 23-05	4'	8	LONGITUDINAL CRACK
3	23-00 TO 23-01	4'	8	INFILTRATION, CIRCUMFERENTIAL CRACK, LONGITUDINAL CRACK, BROKEN PIPE
4	23-00 TO 23-01	4'	8	
5	23-00 TO 23-01	4'	8	

CIPP LINING SCHEDULE

NO.	PIPE (U/S MH - D/S MH)	PIPE LENGTH (ft.)	DIAMETER (in.)	NO. OF LATERALS
OCEAN DR.	38-07 TO 38-09	177'	8	12

CONSTRUCTION NOTES:

- INSTALL CIPP POINT REPAIR LINER PER SPECIFICATION SECTION 33 01 40.

NOTE:
ALL MAPPING AND AERIAL IMAGES SHOWN WERE PREPARED BY Z-WORLD GIS IN FEBRUARY 2020

LEGEND

- JOINT OFFSET*
- SPOT REPAIR* PER SECTION 330140
- TOP HAT LOCATION*
- CLEANOUTS
- REHAB MANHOLES
- REHAB SEWER PIPES

* LOCATIONS OF POINT REPAIRS, TOP HATS, AND JOINT OFFSETS ARE MARKED WITH DISTANCE FROM THE UPSTREAM MANHOLE/CLEANOUT

APPR DATE	03/31/2022
DESCRIPTION	C91138
REG NUMBER	C91138
PROJECT ENGINEER	KEEMAN E. BULL



mkn
WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 920
IRVINE, CA 92614
(949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation
SITE PLANS
AREA 5 - SILVER STRAND

DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
PROJECT NO.

ISSUED FOR BID

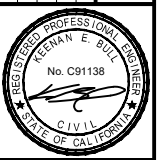
DATE: MAY 2020

C-105
SHEET
8 OF 10



Know what's below.
Call before you dig.

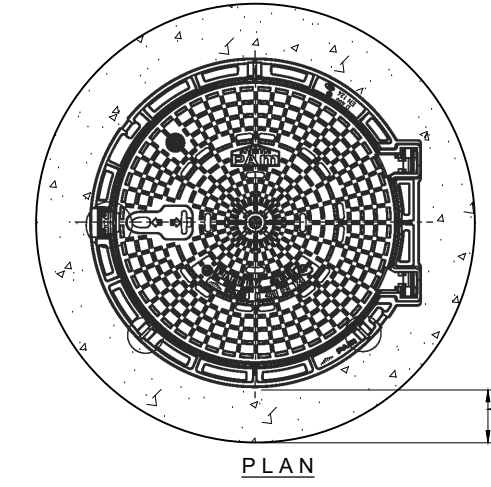
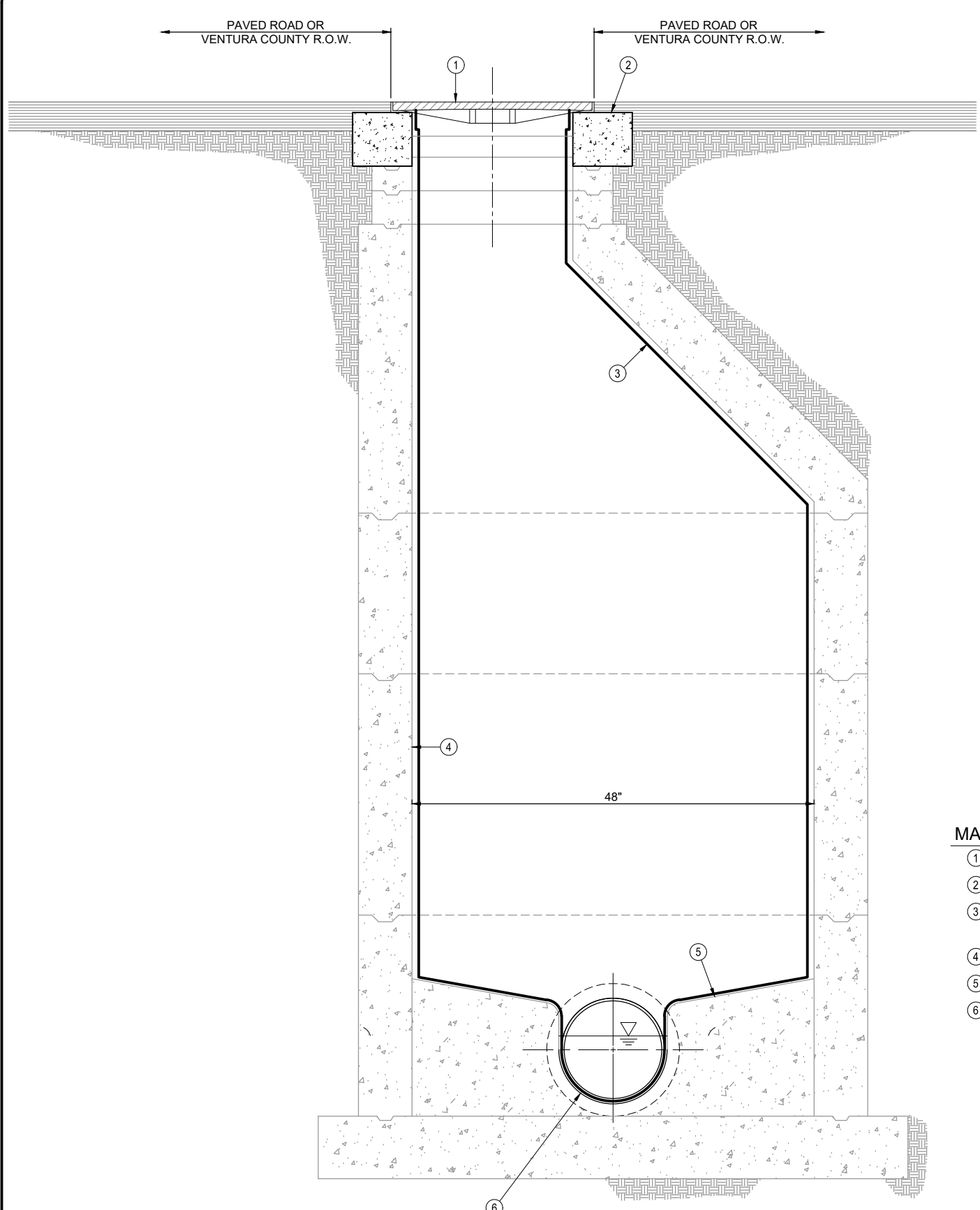
APPR	DATE	03/31/2022
DESCRIPTION	REG NUMBER	C91138
PROJECT ENGINEER	KEEMAN E. BULL	



mkn
WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 320
IRVINE, CA 92614
(949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation
DETAILS - 1

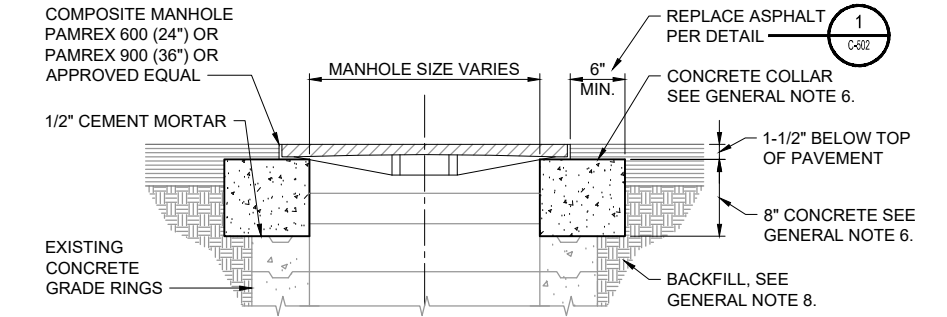
DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020
PROJECT NO. C-501
SHEET 9 OF 10



MANHOLE FRAME AND COVER
PAMREX 600 (24") OR PAMREX 900 (36")
OR APPROVED EQUAL, MARKED
"SANITARY SEWER" PER 2 3

6" MIN. PER VENTURA COUNTY STANDARDS

PLAN



COMPOSITE MANHOLE
PAMREX 600 (24") OR
PAMREX 900 (36") OR
APPROVED EQUAL

REPLACE ASPHALT PER DETAIL 1
CONCRETE COLLAR SEE GENERAL NOTE 6.
1-1/2" BELOW TOP OF PAVEMENT
8" CONCRETE SEE GENERAL NOTE 6.
BACKFILL, SEE GENERAL NOTE 8.

SECTION

- MANHOLE COMPONENTS**
- 1 MANHOLE FRAME AND COVER PER 2
 - 2 CONCRETE COLLAR PER 2
 - 3 MORTAR LINING AND COATING OF MH INTERIOR PER SPECIFICATION SECTION 330132
 - 4 SIDE WALL
 - 5 BENCH
 - 6 CHANNEL

MANHOLE FRAME AND COVER 2
NOT TO SCALE

- GENERAL NOTES:**
1. GRADE OF FRAME AND COVER SHALL MATCH PAVEMENT GRADE.
 2. 1/2" THICK CEMENT MORTAR. MORTAR SHALL BE 1 PART CEMENT TO 4 PARTS SAND.
 3. FRAME AND COVER TO BE PAMREX 600 (D400) OR APPROVED EQUAL.
 4. MANHOLE COVER AND FRAME SHALL HAVE A MINIMUM 24" OPENING.
 5. INSTALL CONCRETE COLLAR AROUND MANHOLE STRUCTURE. CONCRETE SHALL BE CLASS 560-C-3250 WITH A MAXIMUM 3" SLUMP.
 6. ASPHALT CONCRETE SHALL BE C2-PG 64-10, PLACED IN ACCORDANCE WITH SECTION 302-5.8 OF THE SSPWC.
 7. BACKFILL COMPACTION SHALL BE A MINIMUM OF 95% PRIOR TO PLACING CONCRETE COLLAR.

1

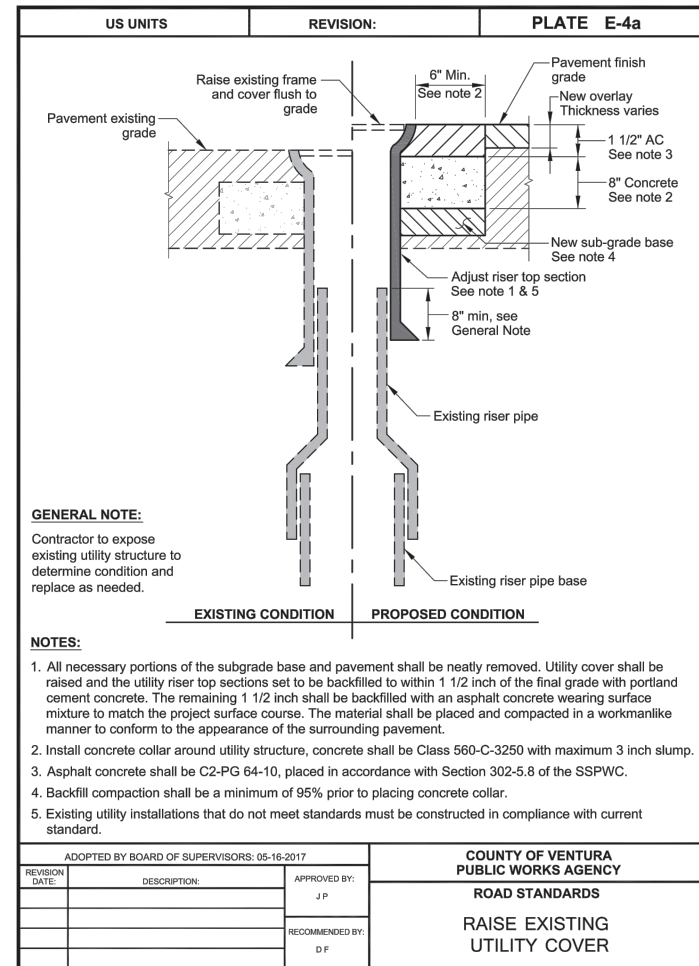
SEWER MANHOLE
NOT TO SCALE

ISSUED FOR BID
DATE: MAY 2020

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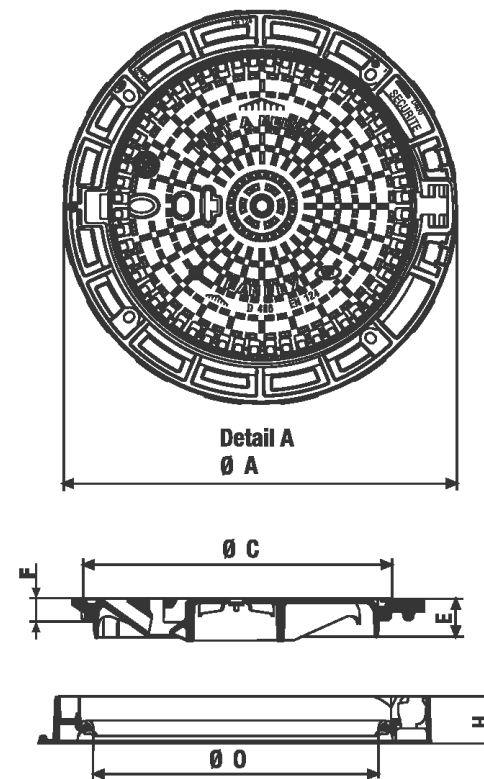


Know what's below.
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PAVEMENT REPAIRS FOR TRENCHING

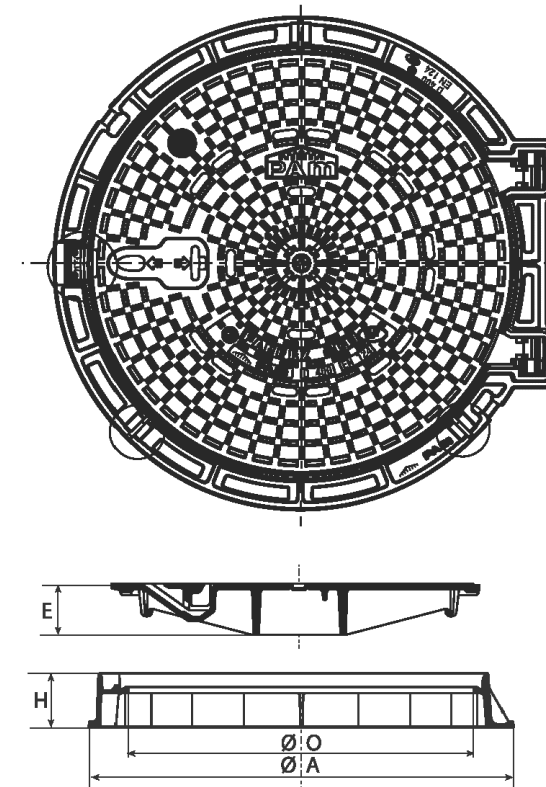
NOT TO SCALE



BADGINGS	REFERENCES	MASS (LBS.)		DIMENSIONS (IN.)		
		COVER	TOTAL	A	O	H
SANITARY SEWER	CDPA60EHSSE	122	195	33-1/2	24	4

PAMREX MANHOLE COVER DETAIL - 24"

NOT TO SCALE



COVER	TOTAL	MASS (LBS.)			DIMENSIONS (IN.)		
		A	O	H			
205	393	48"	36"	6"			

PAMREX MANHOLE COVER DETAIL - 36"

NOT TO SCALE



APPR	EXP DATE
	03/31/2022



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WATER - WASTEWATER - REUSE
38 EXECUTIVE PARK, SUITE 320
IRVINE, CA 92614 (949) 491-1678

Channel Islands Beach Community Service District
Sewer Line Rehabilitation

DETAILS - 2

DESIGNED: KEB
DETAILED: JPF
CHECKED: JJR
APPROVED:
DATE: MAY 2020

PROJECT NO.
C-502
SHEET
10 OF 10

ISSUED FOR BID

DATE: MAY 2020

APPENDIX B
CCTV and Manhole Inspection Reports



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.20	

Steps

				Step Material	
--	--	--	--	---------------	--

Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
---------------	------------------------------	--	--	----------------	--------------

Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	6.00

Wall

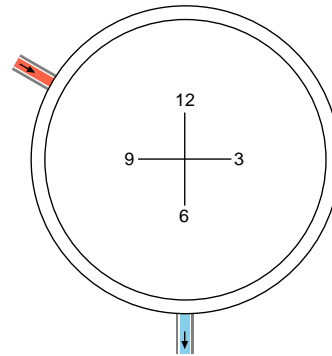
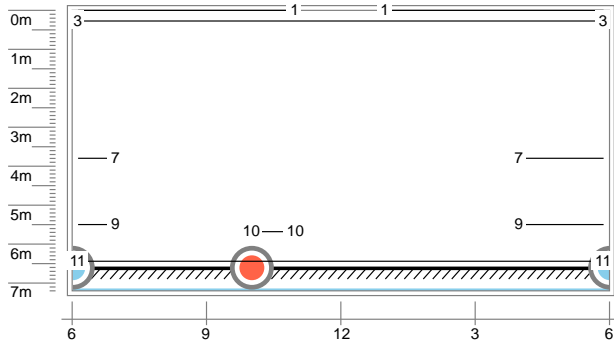
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	36.00

Bench

				Bench Height [inch]*	15.00
--	--	--	--	----------------------	--------------

Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	0.00	MGO	Reversal Inspection	Clever Scan
3	0.30	CC	Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch	
4	0.95	MGO	General Observation	Step Hole
5	2.09	MGO	General Observation	Step Hole
6	3.43	MGO	General Observation	Step Hole
7	3.81	SAV	Surface Aggregate Visible from 4 o'clock to 7 o'clock, within 8 inch	
8	4.79	MGO	General Observation	Step Hole
9	5.52	SAV	Surface Aggregate Visible from 4 o'clock to 7 o'clock, within 8 inch	



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.20	

Observations

No.	Depth	MACP Code	Observation	Remark
10	5.68	OBN	Obstacles Construction Debris, 5% of cross sectional area from 10 o'clock to 11 o'clock	Concrete
11	6.45	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch	

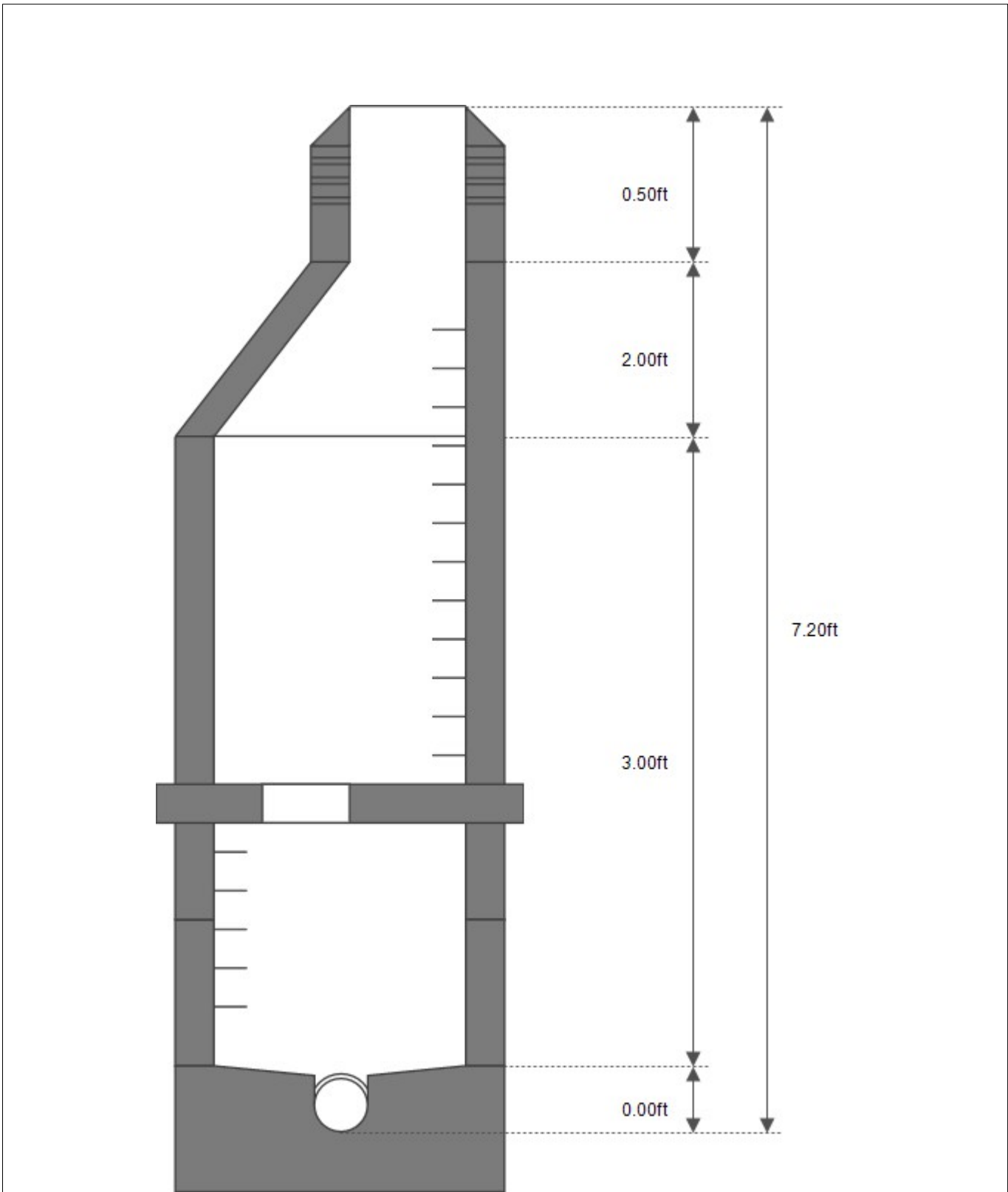
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	7.20	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	7.20	10	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

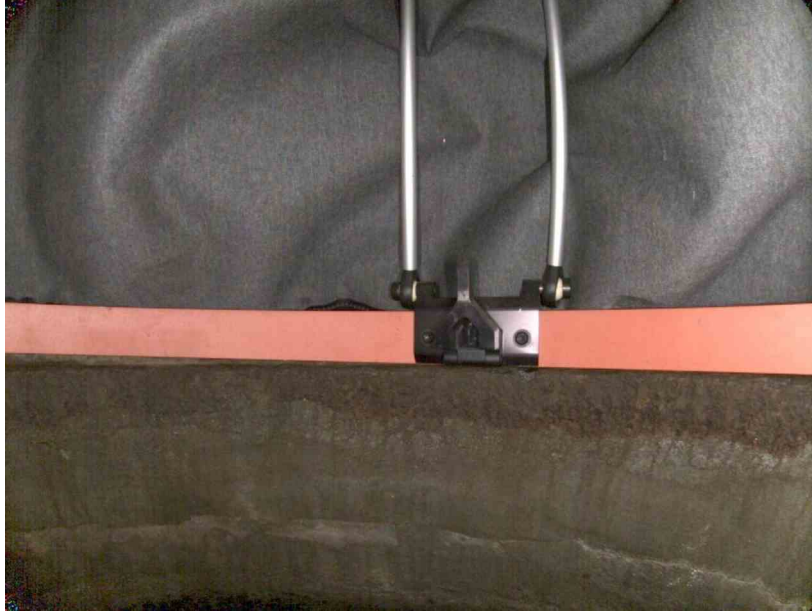
Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
--------------------------------	-------------------------	---------------------	----------------------------------	------------------------------





Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
---------------------------------------	--------------------------------	----------------------------	---	-------------------------------------



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Reversal Inspection



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Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
---------------------------------------	--------------------------------	----------------------------	---	-------------------------------------



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, 0.95
General Observation



23-01_e8346f74_246f_46bb_9af3_39d1c680baea_b5ec653f-8539-4408-997e-beec45b8e7cd_P12.jpg,
, 2.09
General Observation



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-01_e8346f74_246f_46bb_9af3_39d1c680baea_90483463-cd9b-4919-b57a-44901de64647_P12.jpg,
, 3.43
General Observation



23-01_e8346f74_246f_46bb_9af3_39d1c680baea_69d3fab2-ef4b-479f-ade1-404eff70cf0c_P12.jpg,
, 3.81
Surface Aggregate Visible from 4 o'clock to 7 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-01_e8346f74_246f_46bb_9af3_39d1c680baea_252fd239-7774-4cfe-a22f-2508924824ff_PI2.jpg,
, 4.79
General Observation



23-01_e8346f74_246f_46bb_9af3_39d1c680baea_4d0ccea5-eda1-4597-84ae-9c8824a08b4b_PI2.jpg,
, 5.52
Surface Aggregate Visible from 4 o'clock to 7 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-01	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-01_e8346f74_246f_46bb_9af3_39d1c680baea_80daa081-70dc-4ab4-86bc-08fcb2345a18_P12.jpg,
, 5.68
Obstacles Construction Debris, 5% of cross sectional area from 10 o'clock to 11 o'clock

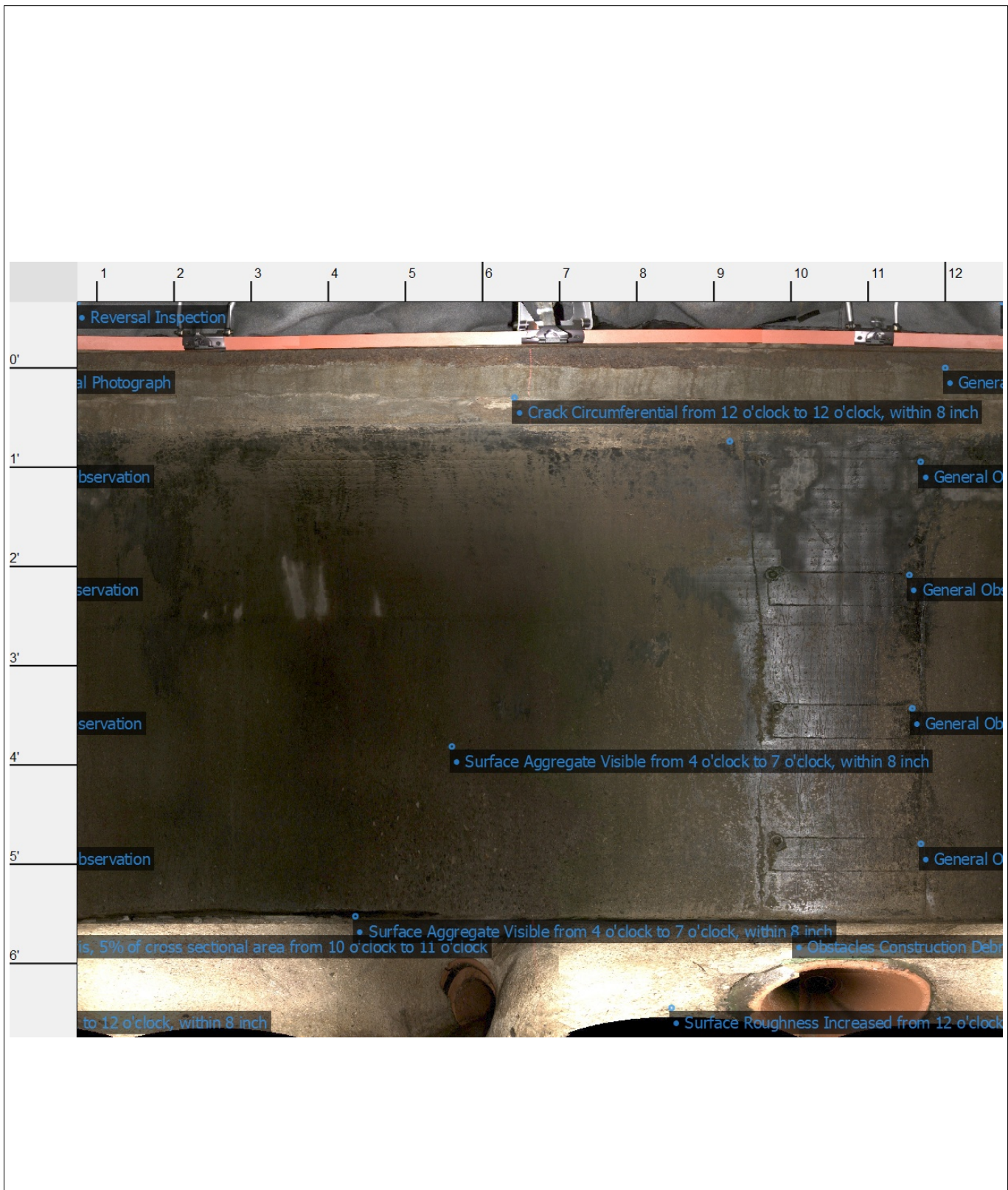


23-01_e8346f74_246f_46bb_9af3_39d1c680baea_e1109055-309b-430d-9a2d-31ce9fce9a0c_P12.jpg,
, 6.45
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	23-01			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.60	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	9.00

Wall

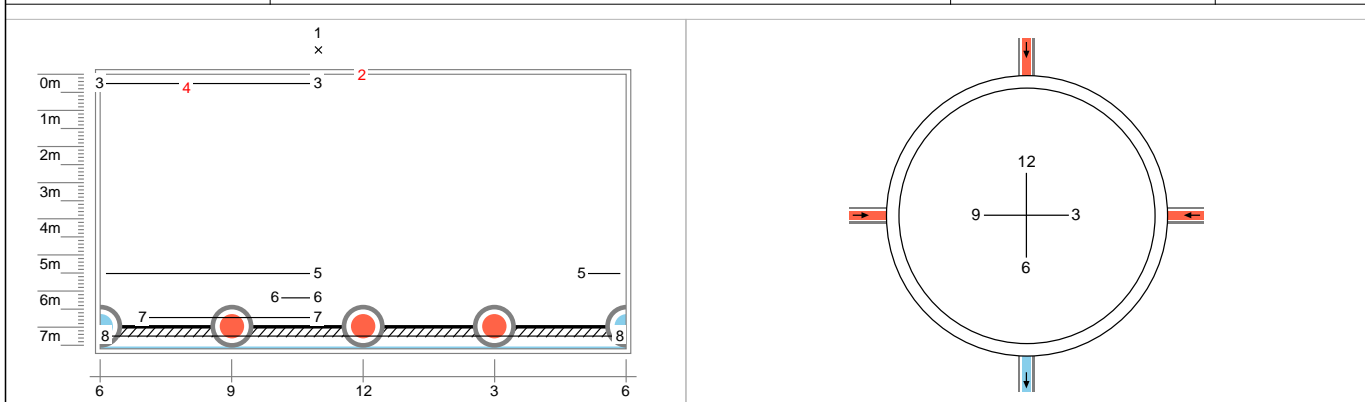
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	46.00

Bench

				Bench Height [inch]*	15.00
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Channel

Channel Material	Vitrified Clay			
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.68	MGO	Reversal Inspection	Clever Scan
2	0.04	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.28	MGO	Reversal Inspection	Brick Exposed
4	0.40	SRI	Surface Roughness Increased, from 08 to -01 o'clock, within 8 inch, S01	
5	5.52	SAV	Surface Aggregate Visible, from 05 to -01 o'clock, within 8 inch	
6	6.20	SRI	Surface Roughness Increased, from 10 to -01 o'clock, within 8 inch, F01	
7	6.75	SAV	Surface Aggregate Visible, from 07 to -01 o'clock, within 8 inch	



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.60	

Observations

No.	Depth	MACP Code	Observation	Remark
8	7.27	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	

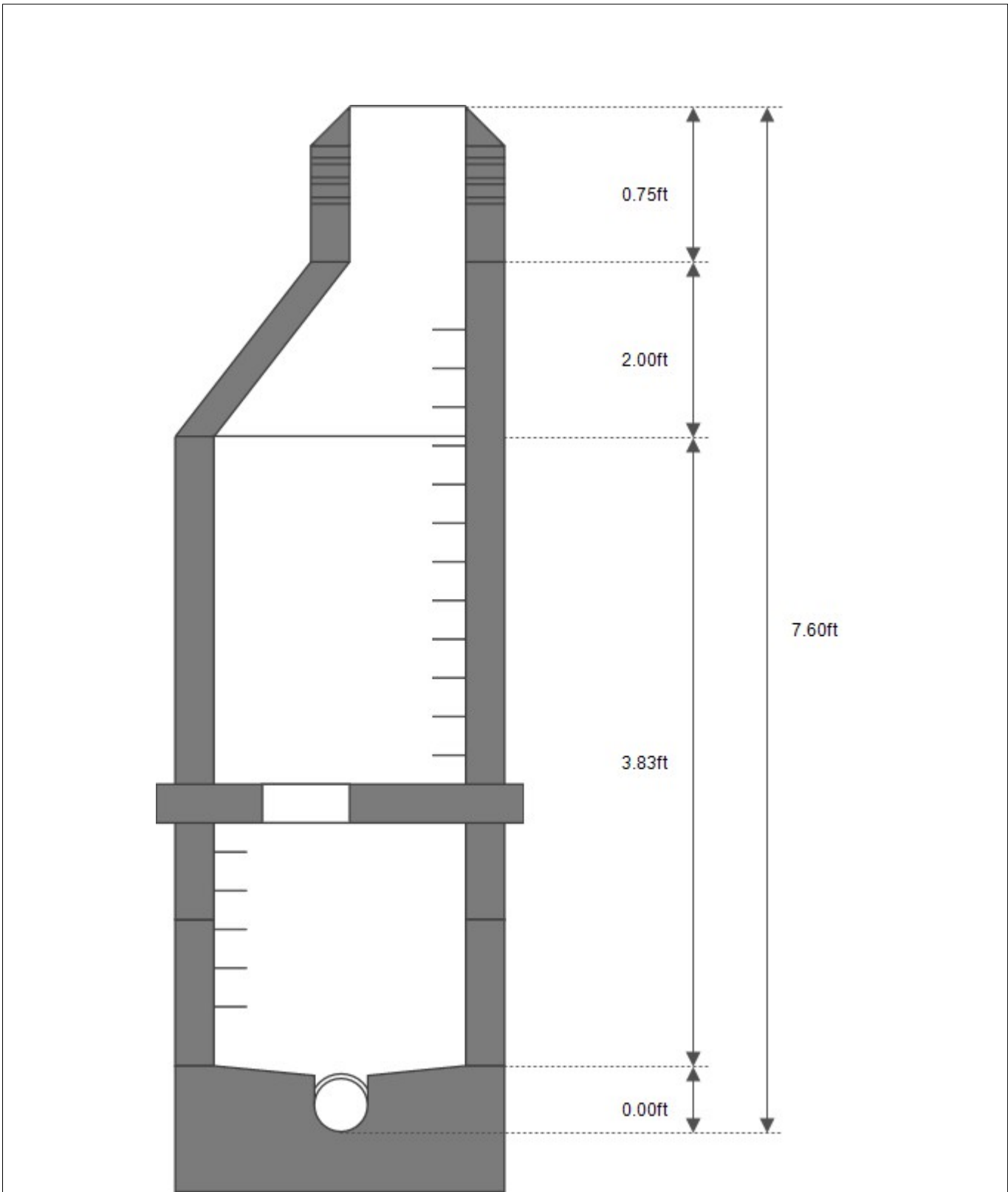
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	7.60	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	7.60	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	7.60	12	Other	Vitrified Clay Pipe	8	8	
4	Inlet	7.60	3	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_132f587b-83ad-4f54-a0d5-531b70c54409_P12.jpg,
, -0.68
Reversal Inspection



23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_326c5f2a-4e51-4bcd-ba9e-dfb18088910f_P12.jpg,
, 0.04
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_54f432c6-80c8-4192-9040-f13dad8cb246_P12.jpg,
, 0.28
Reversal Inspection



23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_14a69846-3e4b-43b0-9bb7-fb919f07bbf2_P12.jpg,
, 0.40
Surface Roughness Increased, from 08 to -01 o'clock, within 8 inch, S01



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_7b234076-fa6b-4044-bb5d-1f03e63d504a_P12.jpg,
, 5.52
Surface Aggregate Visible, from 05 to -01 o'clock, within 8 inch



23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_9db6ab04-c3ca-44fc-92b4-d1dbc7caf386_P12.jpg,
, 6.20
Surface Roughness Increased, from 10 to -01 o'clock, within 8 inch, F01



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-03	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_6e0396ac-f9fa-4104-9d2d-3f46652794dd_P12.jpg,
, 6.75
Surface Aggregate Visible, from 07 to -01 o'clock, within 8 inch

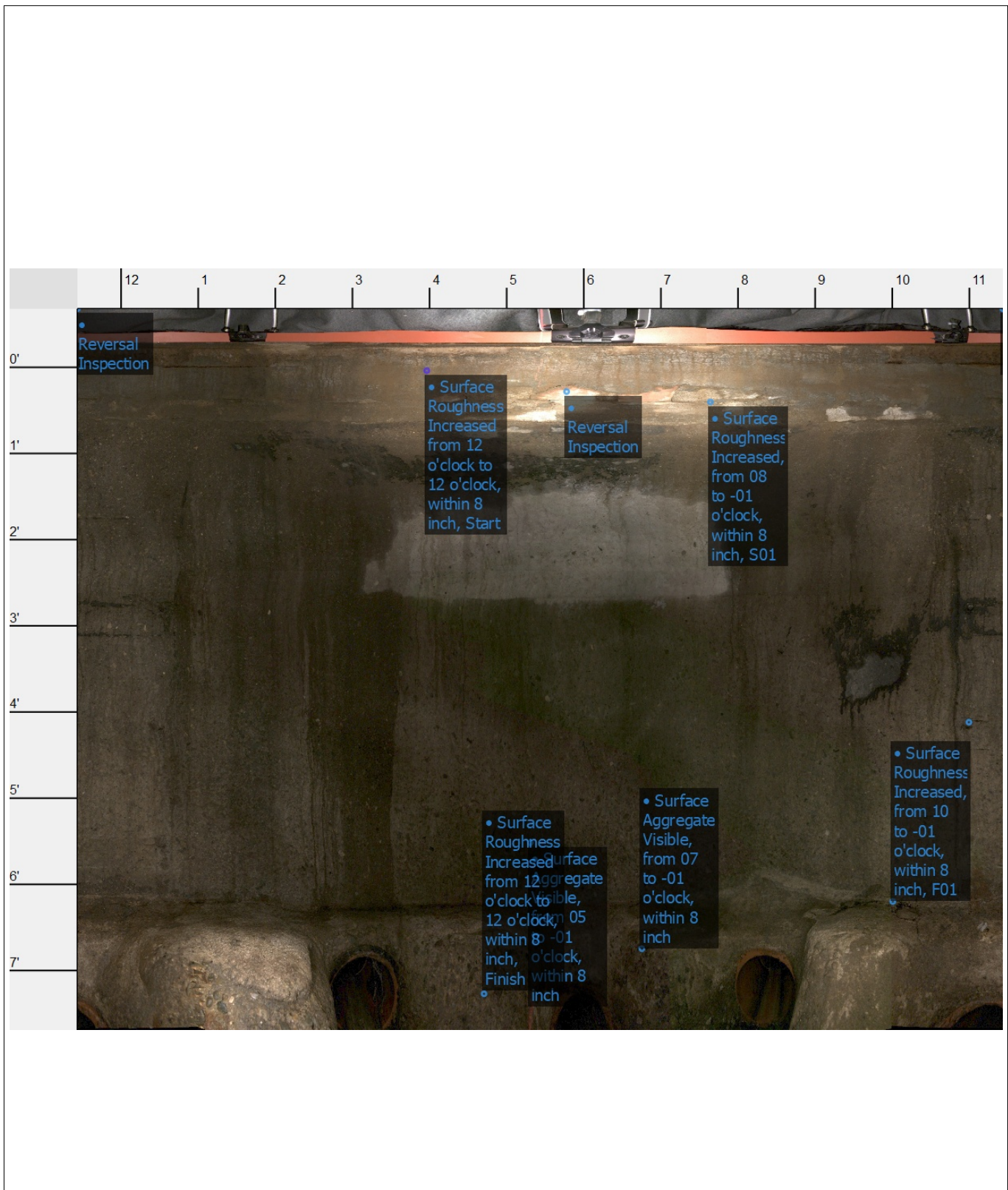


23-03_caf8412c_d397_4fc6_88c9_a9658e397a0b_77c5866e-44b5-4138-a1ec-8e62c1cd4f1e_P12.jpg,
, 7.27
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	23-03			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 8.50	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	8.00

Wall

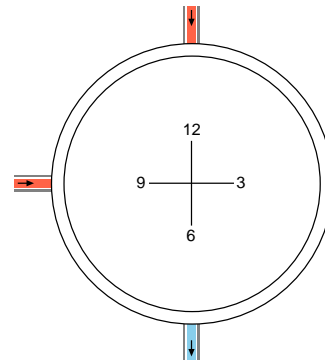
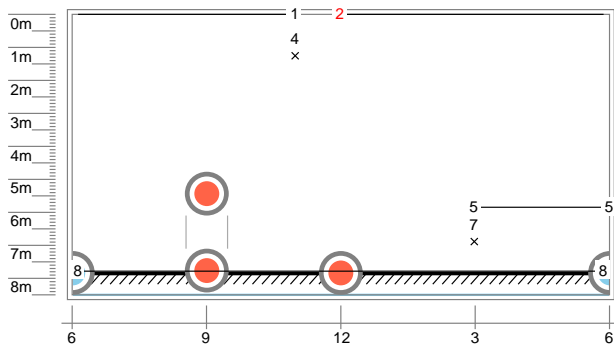
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	51.00

Bench

				Bench Height [inch]*	11.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	0.00	MGO	Reversal Inspection	Clever Scan
2	0.02	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.22	MGO	General Observation	Brick Exposed
4	1.28	SRC	Surface Reinforcement Corroded at 11 o'clock, within 8 inch	
5	5.88	SAV	Surface Aggregate Visible from 3 o'clock to 6 o'clock, within 8 inch	
6	5.92	MGO	General Observation	8" Drop Lateral
7	6.92	OBN	Obstacles Construction Debris, 5% of cross sectional area at 3 o'clock	Concrete on Bench



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 8.50	

Observations

No.	Depth	MACP Code	Observation	Remark
8	7.80	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	

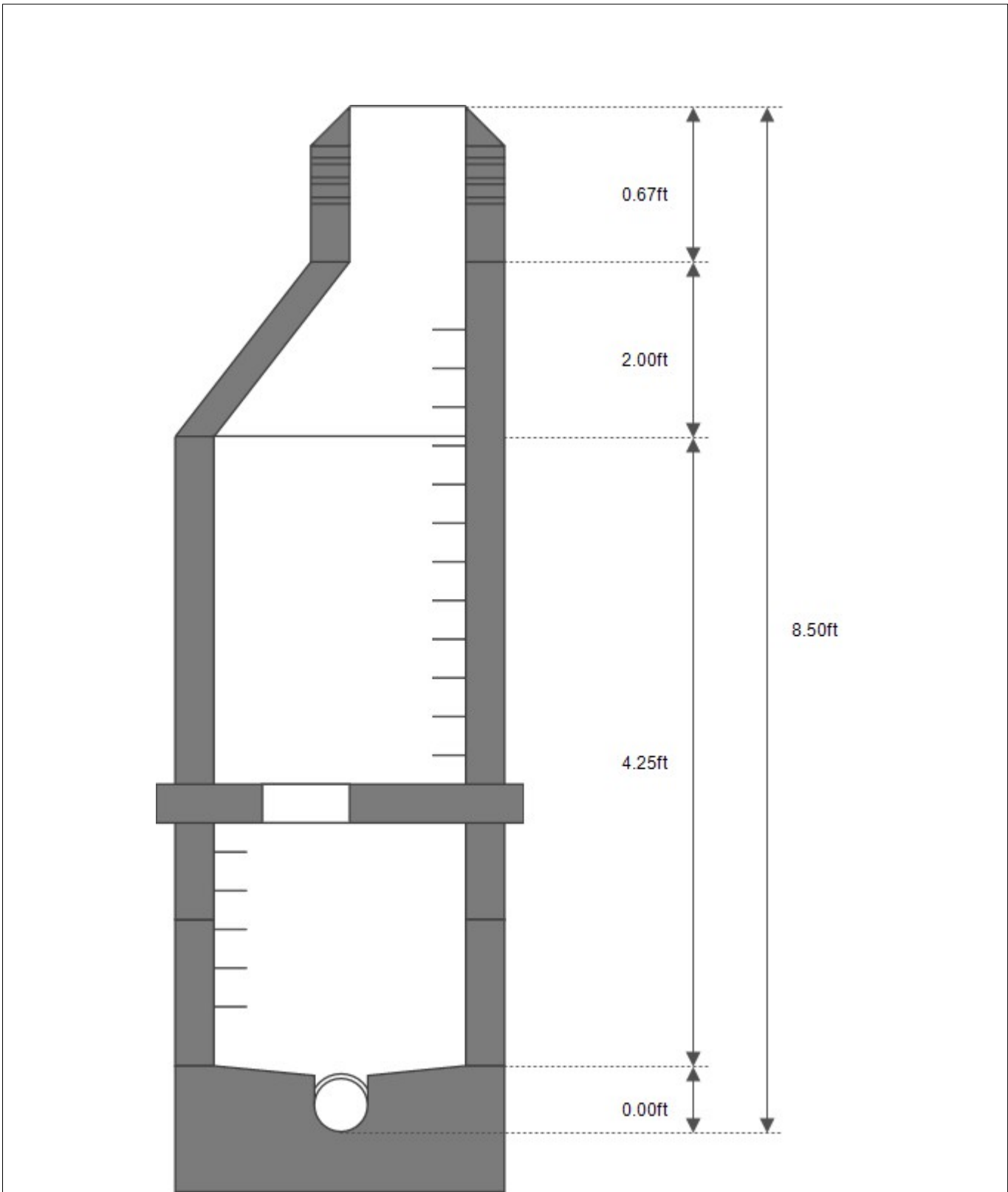
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	8.50	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	6.10	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	8.50	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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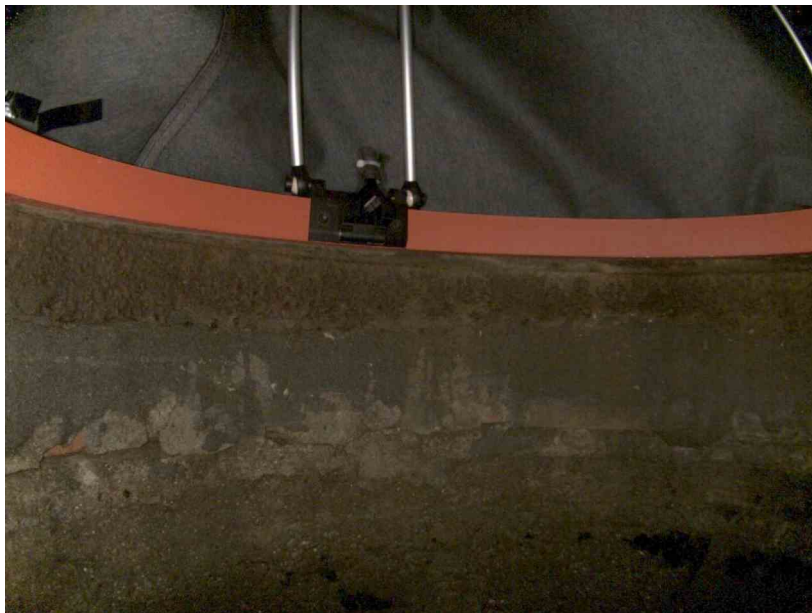


Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_a6412202-7cf7-4d2c-b269-ea626292c29d_P12.jpg,
, 0.00
Reversal Inspection



23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_dade27a8-759f-44ce-b9c0-1c1fe98f89b3_P12.jpg,
, 0.02
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_b204944d-8456-4148-b8e5-3969cc57d38e_P12.jpg,
, 0.22
General Observation



23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_df37b7ec-0ba7-4166-b649-d9fde31d91b6_P12.jpg,
, 1.28
Surface Reinforcement Corroded at 11 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_a570f22f-c49a-46ac-ab6d-dea4decc156f_P12.jpg,
, 5.88
Surface Aggregate Visible from 3 o'clock to 6 o'clock, within 8 inch



23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_cc28ec28-39b8-4895-94d1-e7705b42459b_P12.jpg,
, 5.92
General Observation



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 23-05	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_ad9305d6-3ff0-49fe-b190-6f0c8c426190_P12.jpg,
, 6.92
Obstacles Construction Debris, 5% of cross sectional area at 3 o'clock

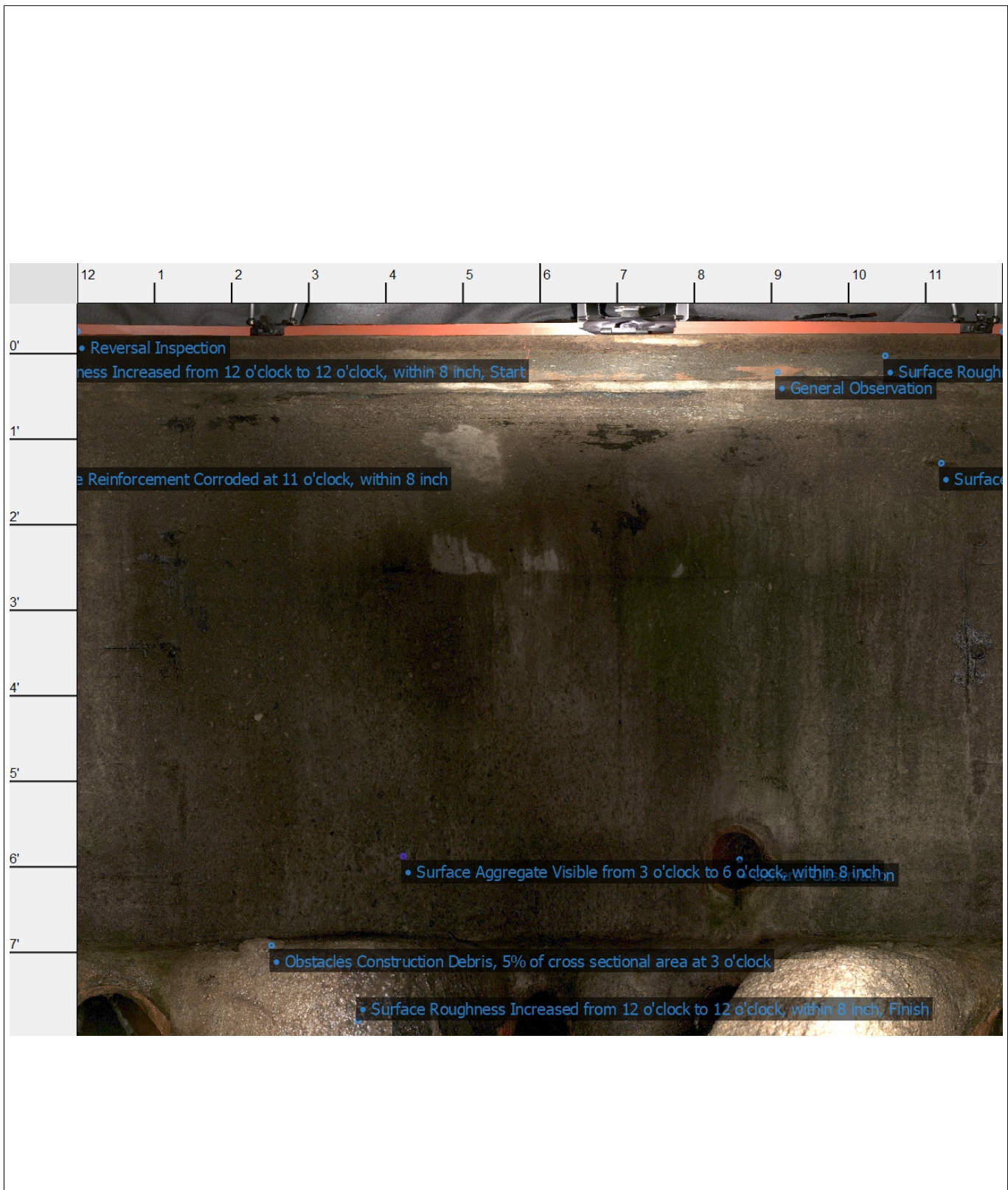


23-05_07f89197_7dd0_4207_a0d5_4ab641627b63_e1490d45-fdf9-4e33-ae1b-5db685417dfd_P12.jpg,
, 7.80
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	23-05			





Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 36-61		City Channel Island	Street [No. & Name] Victoria Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.50	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	16.00

Wall

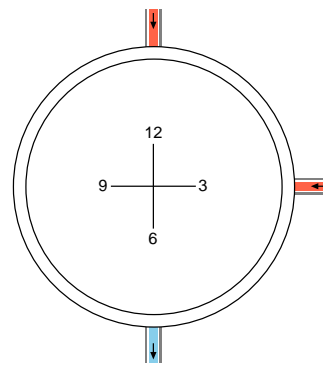
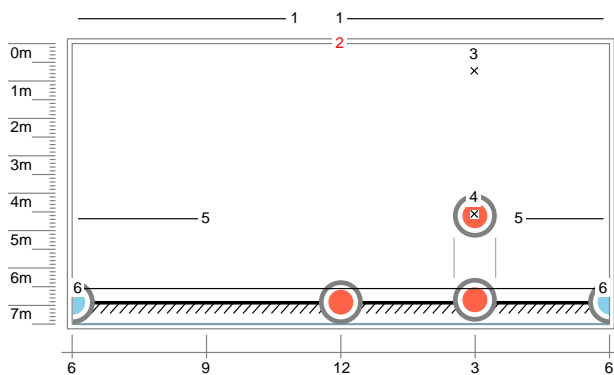
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	36.00

Bench

				Bench Height [inch]*	11.00
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Channel

Channel Material	Vitrified Clay			
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.67	MGO	Reversal Inspection	CLEVER SCAN
2	0.00	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.75	CL	Crack Longitudinal at 3 o'clock, within 8 inch	
4	4.57	B	Broken at 3 o'clock, within 8 inch	DROP LATERAL PIPE INTRUDING
5	4.69	SAV	Surface Aggregate Visible from 4 o'clock to 9 o'clock, within 8 inch	
6	6.57	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 36-61		City Channel Island	Street [No. & Name] Victoria Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.50	

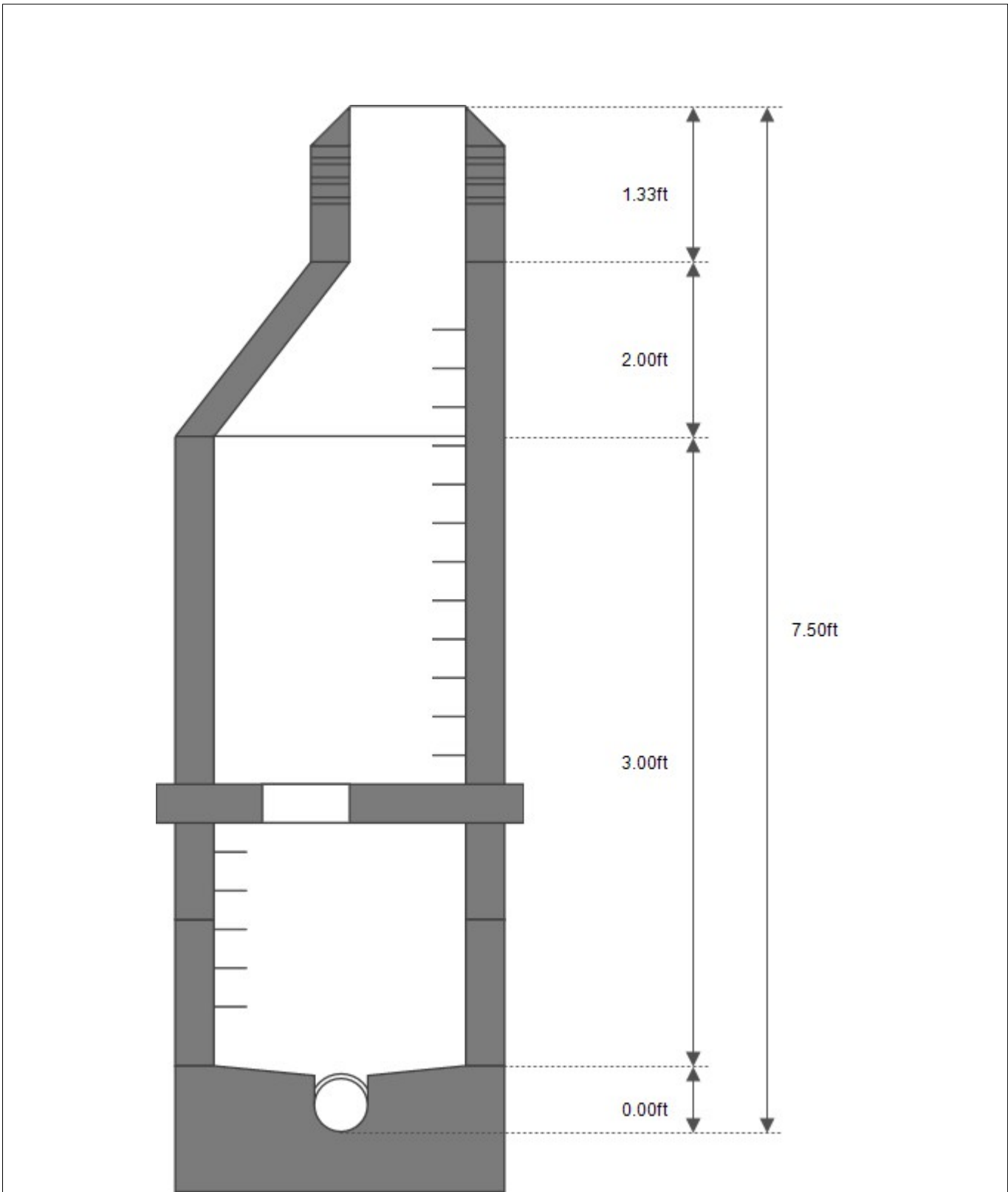
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	7.50	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	7.50	12	Other	Vitrified Clay Pipe	8	8	
3	Inlet	5.20	3	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

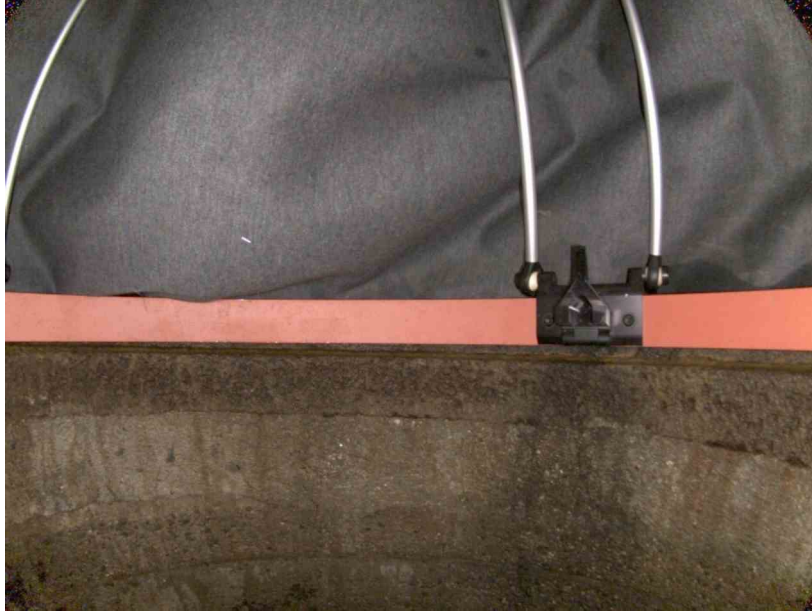
Date [MM/dd/yyyy] 5/15/2019	Manhole Number 36-61	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 36-61	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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36-61_cd22f785_8cc2_4e9f_ab8d_76fe60c0a5c6_d0e34d7d-8248-40be-9aa9-aaae4b28ffd6_P12.jpg,
, -0.67
Reversal Inspection



36-61_cd22f785_8cc2_4e9f_ab8d_76fe60c0a5c6_f381b45e-8070-4224-a25f-4b3e7d0261ed_P12.jpg,
, 0.00
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 36-61	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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36-61_cd22f785_8cc2_4e9f_ab8d_76fe60c0a5c6_b460dca5-b116-401f-8542-ed9b64b2c492_P12.jpg,
, 0.75
Crack Longitudinal at 3 o'clock, within 8 inch



36-61_cd22f785_8cc2_4e9f_ab8d_76fe60c0a5c6_445111ff-880c-4507-bf53-d0cfc50823d2_P12.jpg,
, 4.57
Broken at 3 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 36-61	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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36-61_cd22f785_8cc2_4e9f_ab8d_76fe60c0a5c6_06214432-8949-45fe-b852-6aa60ad19ea5_P12.jpg,
, 4.69
Surface Aggregate Visible from 4 o'clock to 9 o'clock, within 8 inch

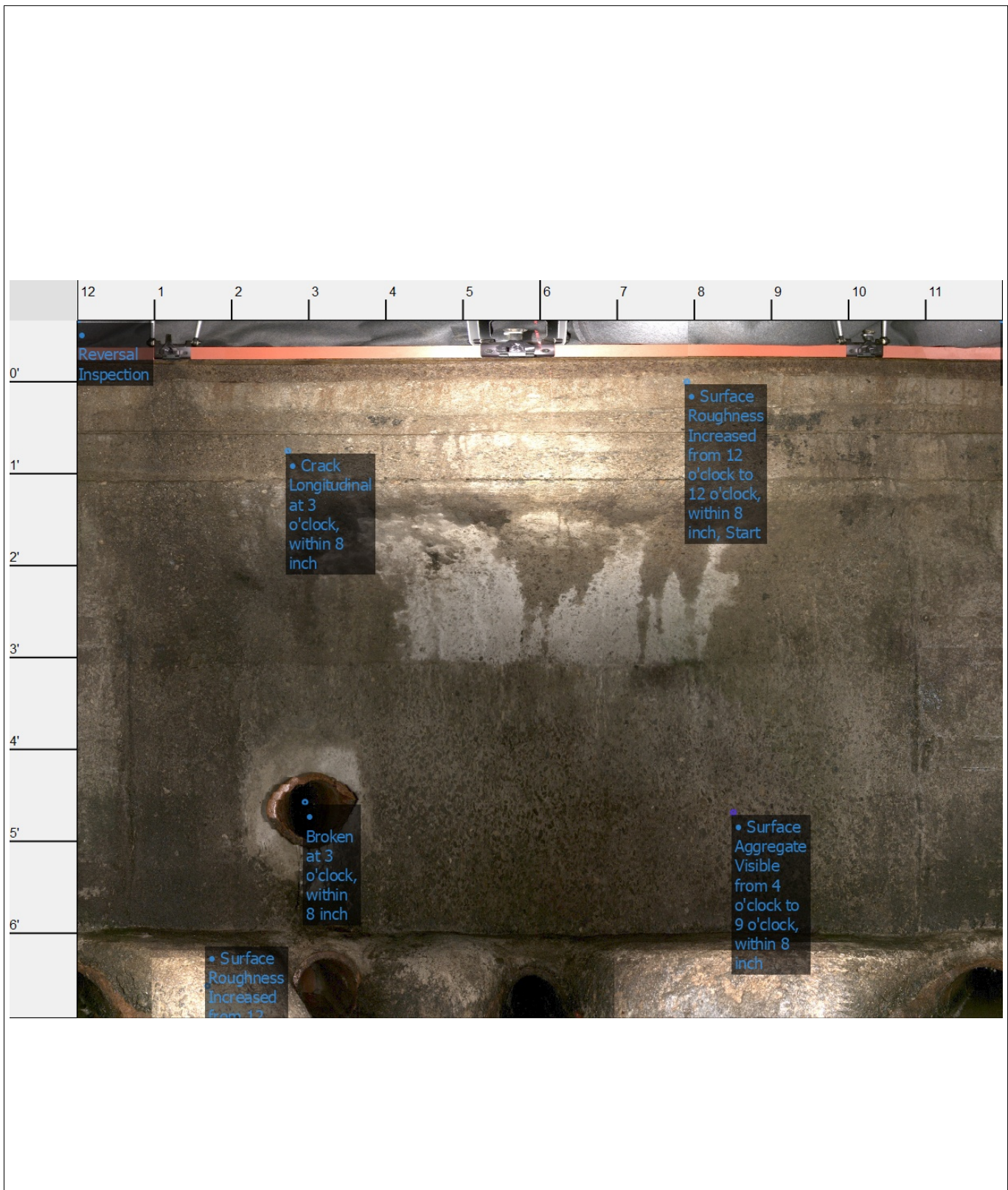


36-61_cd22f785_8cc2_4e9f_ab8d_76fe60c0a5c6_f975e6f6-4e51-4e4c-85ba-067451ce1c57_P12.jpg,
, 6.57
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	36-61			





Node Inspection

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-63		City Channel Island	Street [No. & Name] Victoria Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.90	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	13.00

Wall

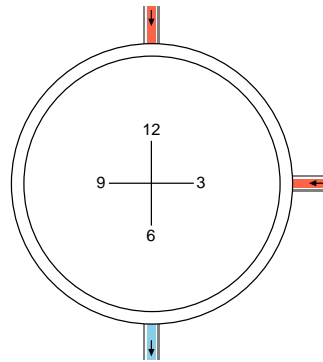
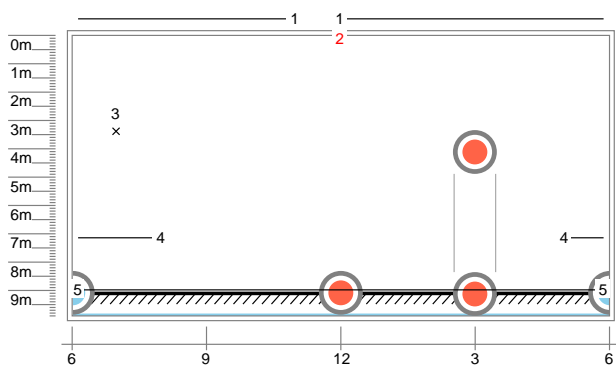
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	64.00

Bench

				Bench Height [inch]*	13.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.62	MGO	Reversal Inspection	CLEVER SCAN
2	0.15	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	3.41	SRC	Surface Reinforcement Corroded at 7 o'clock, within 8 inch	
4	7.15	SAV	Surface Aggregate Visible from 5 o'clock to 8 o'clock, within 8 inch	
5	8.99	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-63		City Channel Island	Street [No. & Name] Victoria Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.90	

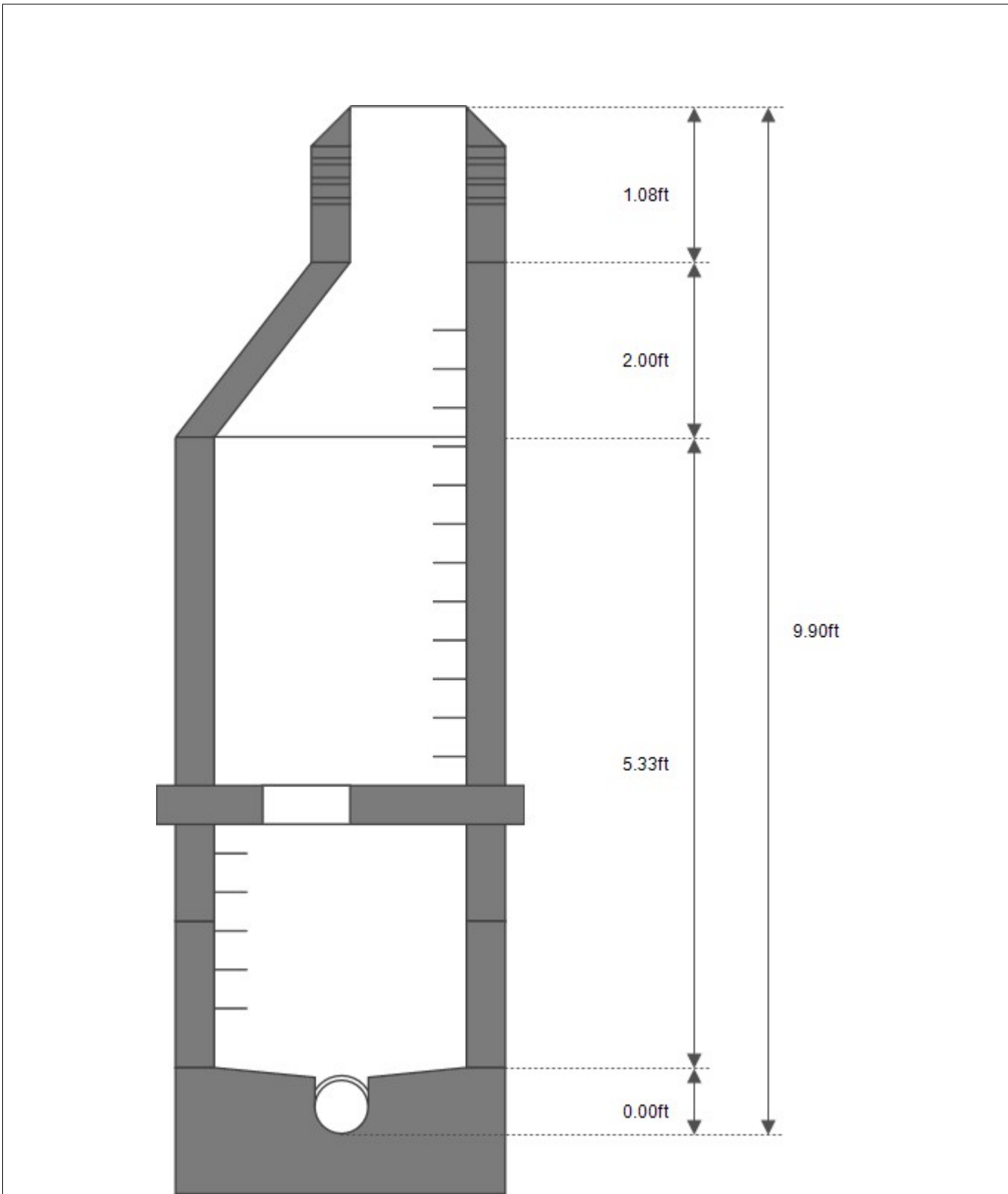
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.90	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	9.90	12	Other	Vitrified Clay Pipe	8	8	
3	Inlet	4.90	3	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

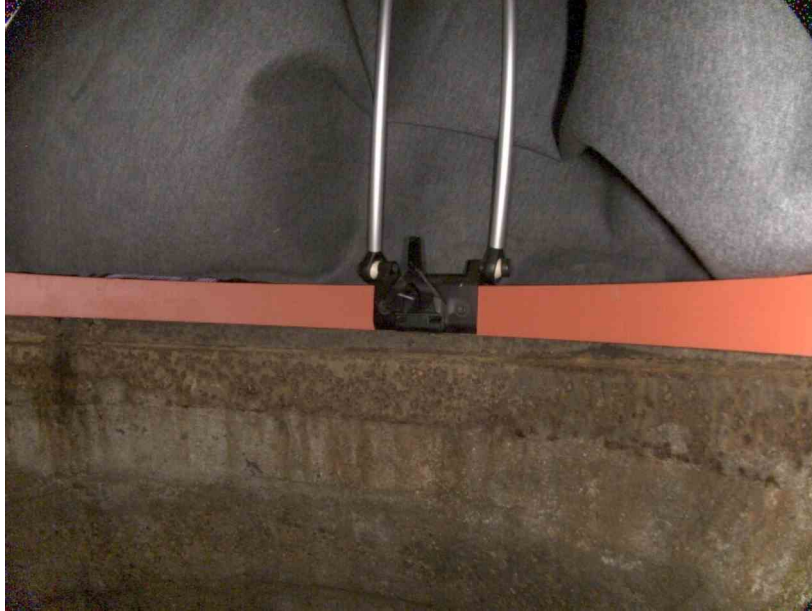
Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-63	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-63	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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36-63_91085e16_b10b_42df_8305_4acc6363b0ef_63d6cd21-ae7e-46ee-9d6f-91e4fda6234c_P12.jpg,
, -0.62
Reversal Inspection



36-63_91085e16_b10b_42df_8305_4acc6363b0ef_c3bbccb1-f81e-4f4e-9064-b68c61eaf294_P12.jpg,
, 0.15
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-63	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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36-63_91085e16_b10b_42df_8305_4acc6363b0ef_3c9fb24c-0144-441a-842a-88af86a4ca94_P12.jpg,
, 3.41
Surface Reinforcement Corroded at 7 o'clock, within 8 inch



36-63_91085e16_b10b_42df_8305_4acc6363b0ef_5f7c291a-27a9-4f38-8298-3247aa8a5a19_P12.jpg,
, 7.15
Surface Aggregate Visible from 5 o'clock to 8 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-63	City Channel Island	Street [No. & Name] Victoria Ave	Surveyed By Kyle Bahensky
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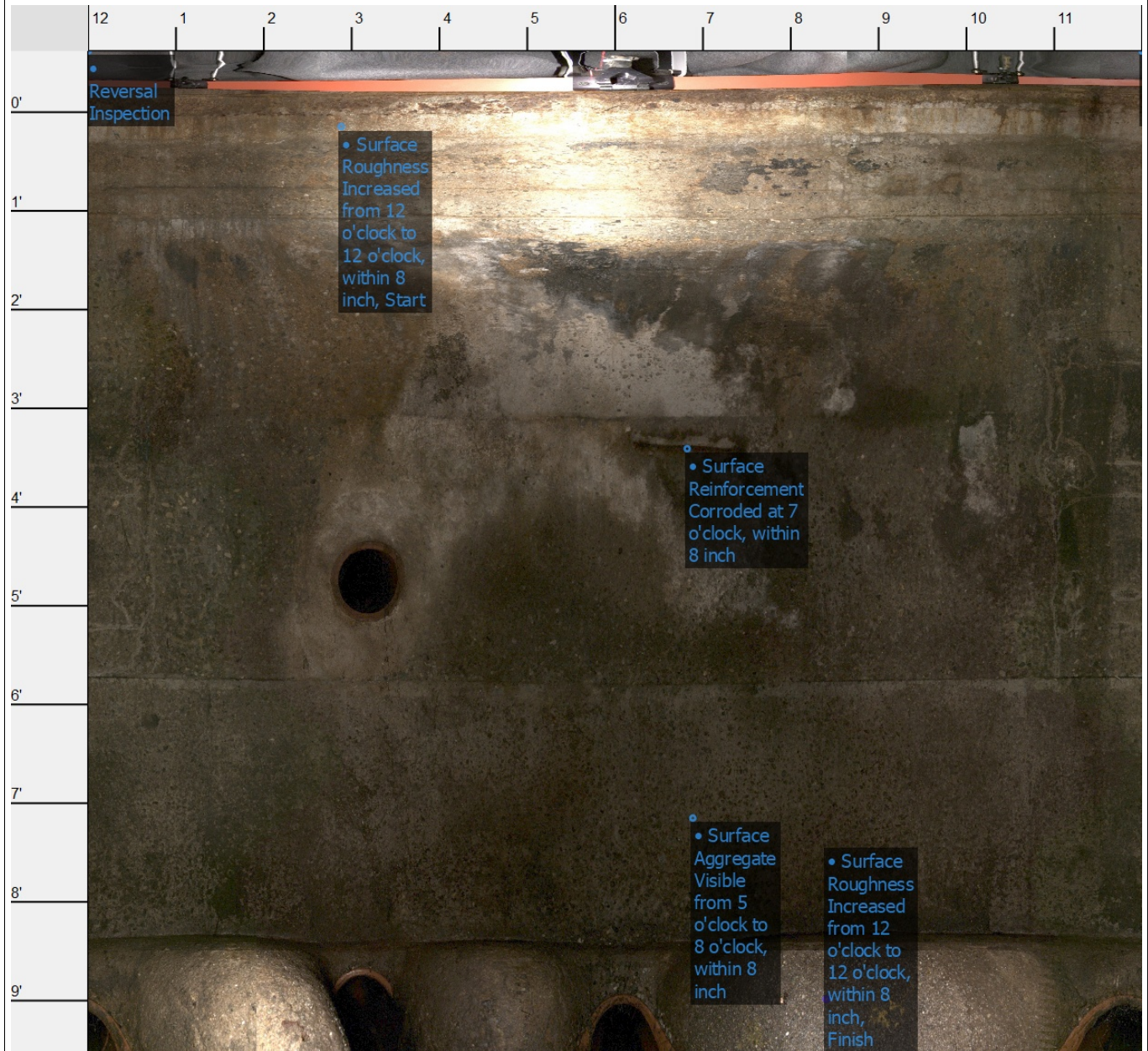


36-63_91085e16_b10b_42df_8305_4acc6363b0ef_106fe174-0aa6-45b6-b675-8d3bbcd553b8_P12.jpg,
, 8.99
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	36-63			





Node Inspection

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-77		City Channel Island	Street [No. & Name] Panama Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 7.00	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	17.00

Wall

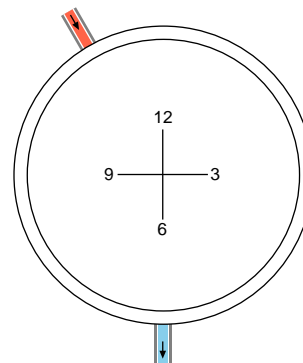
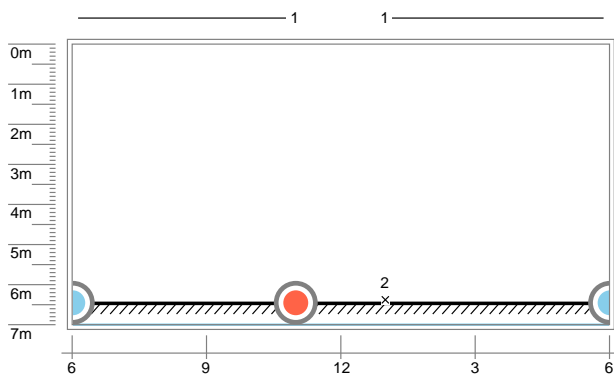
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	24.00

Bench

				Bench Height [inch]*	14.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.67	MGO	Reversal Inspection	CLEVER SCAN
2	6.39	CL	Crack Longitudinal at 1 o'clock, within 8 inch	

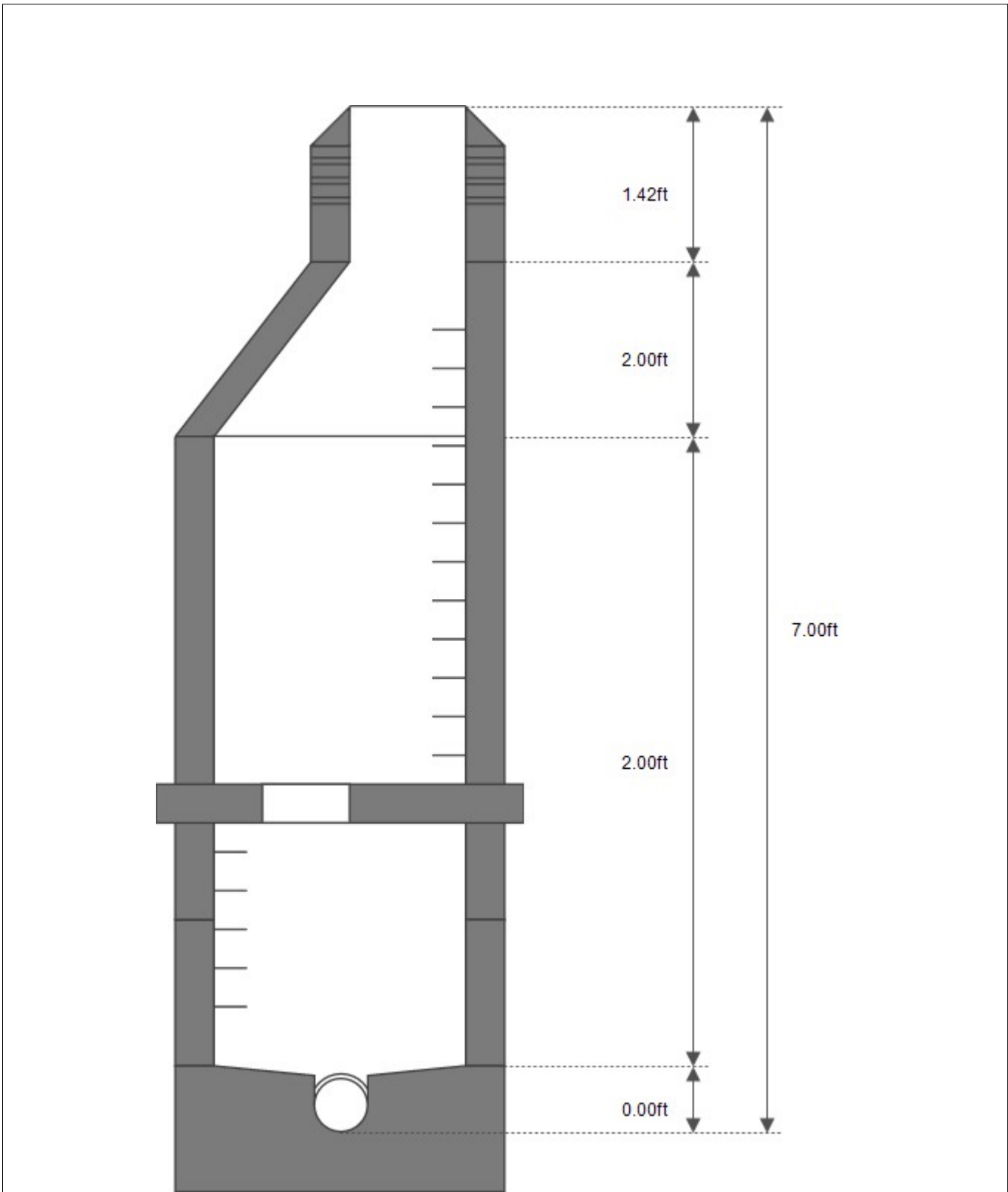
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	7.00	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	7.00	11	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-77	City Channel Island	Street [No. & Name] Panama Dr	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 7/6/2019	Manhole Number 36-77	City Channel Island	Street [No. & Name] Panama Dr	Surveyed By Kyle Bahensky
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36-77_0025346e_a47e_4222_b655_3956a2432d2c_1d430630-be11-4978-a38c-c678e2d8e445_P12.jpg,
, -0.67
Reversal Inspection

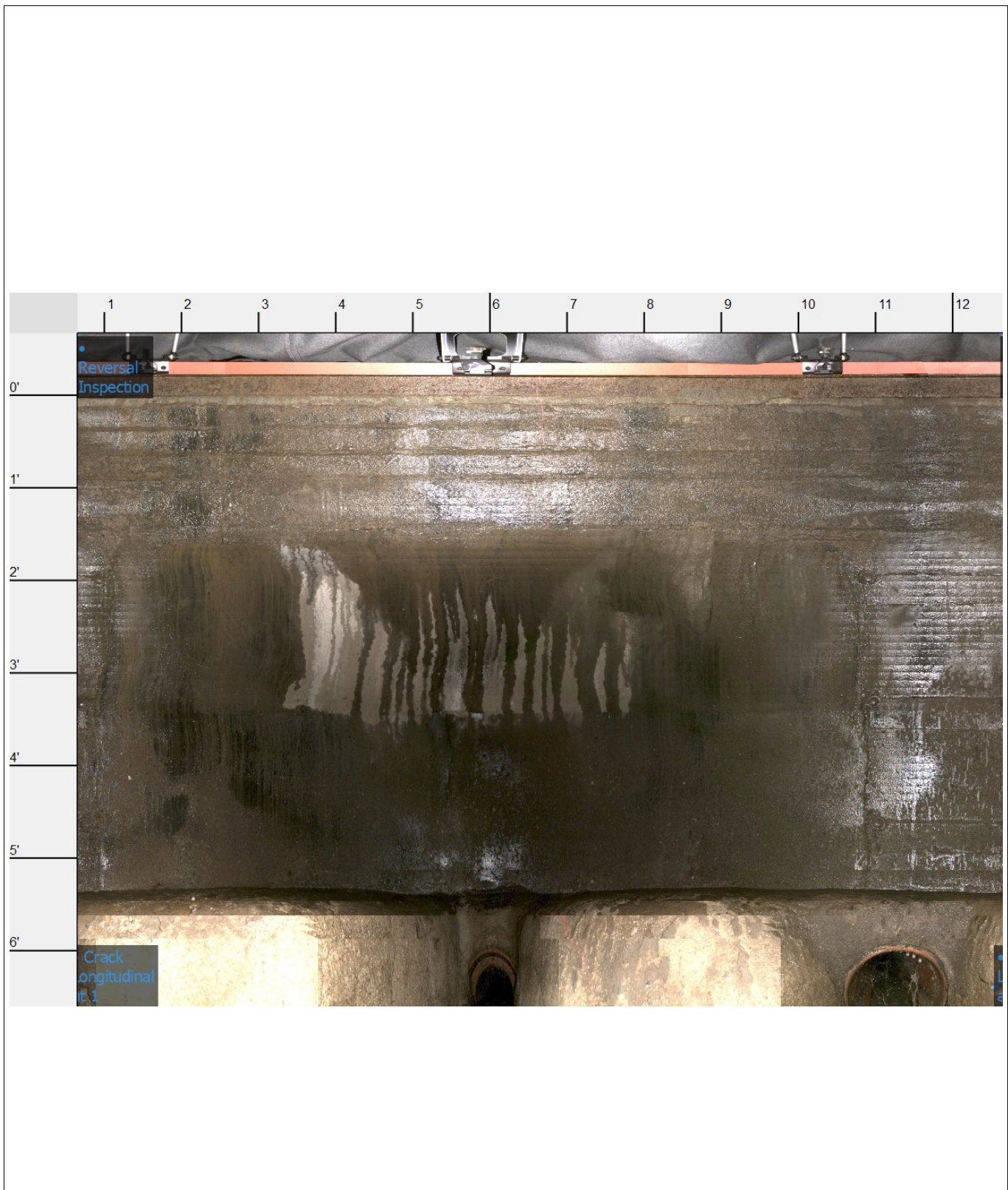


36-77_0025346e_a47e_4222_b655_3956a2432d2c_77e5ec00-e6ee-4b58-9de2-7dbc3d7dad61_P12.jpg,
, 6.39
Crack Longitudinal at 1 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	36-77			





Node Inspection

Date [MM/dd/yyyy] 7/5/2019	Manhole Number 36-78		City Channel Island	Street [No. & Name] Panama Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 6.30	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	0.00	Chimney Width [inch]*	0.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	0.00

Wall

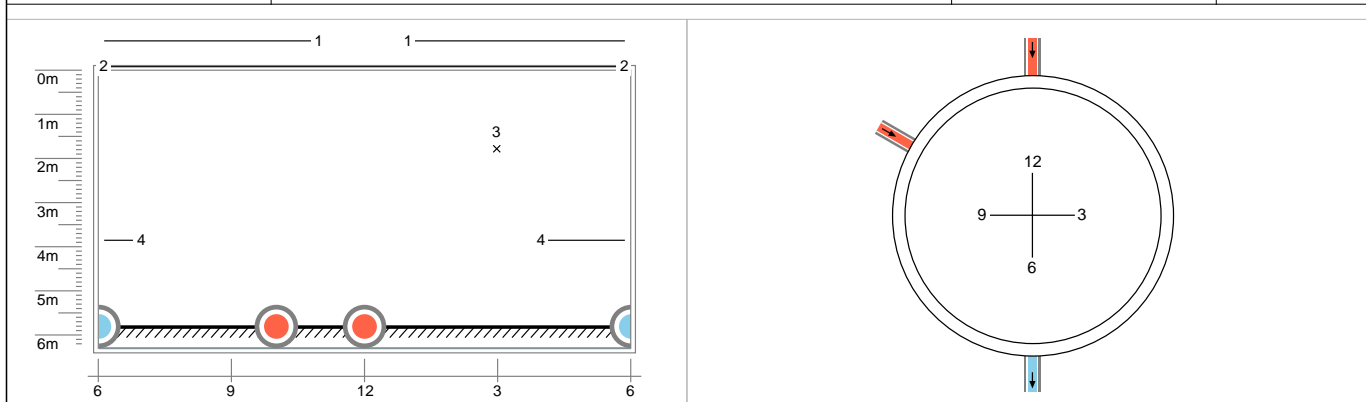
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	31.00

Bench

				Bench Height [inch]*	15.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.69	MGO	Reversal Inspection	CLEVER SCAN
2	-0.10	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch	
3	1.78	IS	Infiltration Stain at 3 o'clock, within 8 inch	
4	3.87	SAV	Surface Aggregate Visible from 4 o'clock to 7 o'clock, within 8 inch	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
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Node Inspection

Date [MM/dd/yyyy] 7/5/2019	Manhole Number 36-78		City Channel Island	Street [No. & Name] Panama Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 6.30	

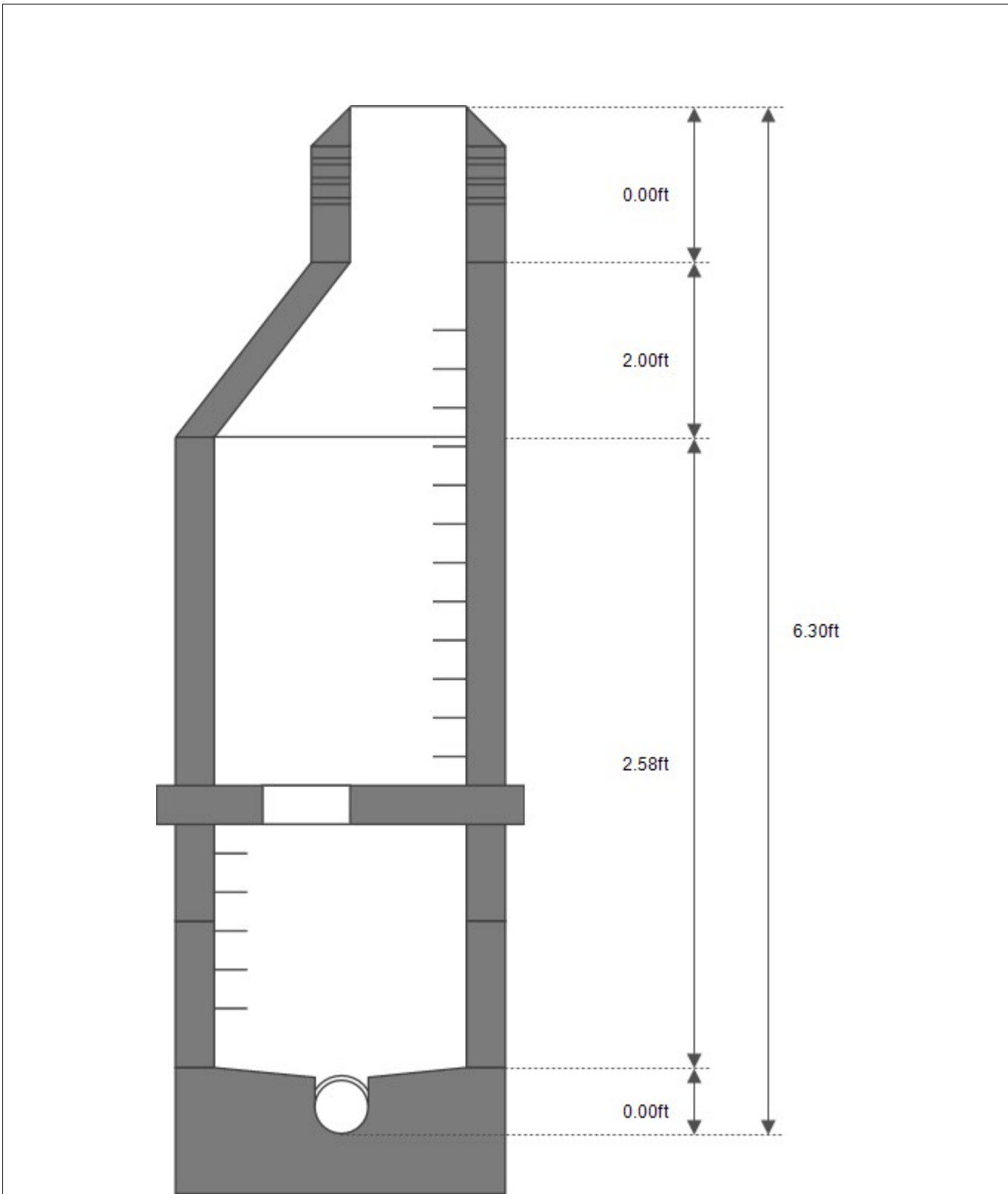
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	6.30	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	6.30	10	Other	Vitrified Clay Pipe	8	8	
3	Inlet	6.30	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

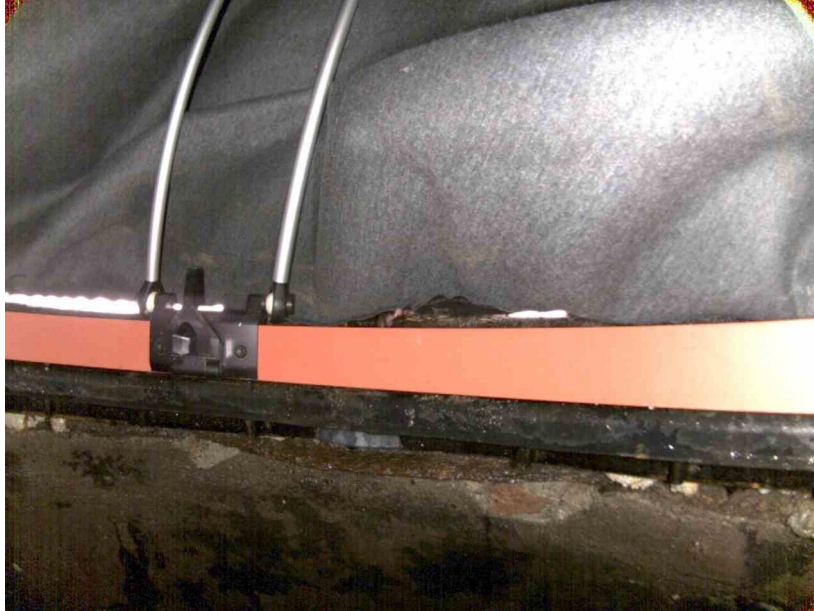
Date [MM/dd/yyyy] 7/5/2019	Manhole Number 36-78	City Channel Island	Street [No. & Name] Panama Dr	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 7/5/2019	Manhole Number 36-78	City Channel Island	Street [No. & Name] Panama Dr	Surveyed By Kyle Bahensky
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36-78_f20e677b_8ab5_4247_8921_13ab7193ed33_a2c1da1a-bc56-4672-9791-b9d4db94fe13_P12.jpg,
, -0.69
Reversal Inspection



36-78_f20e677b_8ab5_4247_8921_13ab7193ed33_13c053e4-4df7-4ac6-b56f-3c16d1ccc7e3_P12.jpg,
, -0.10
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch

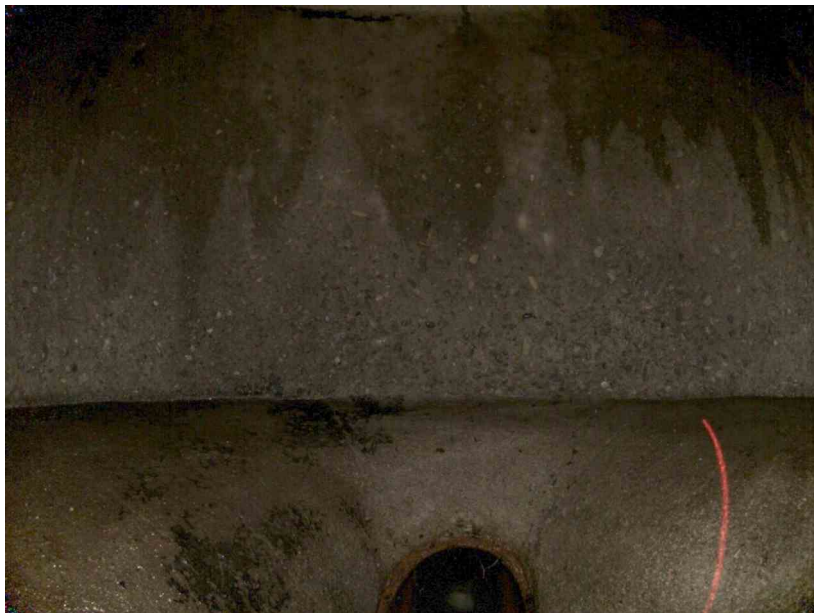


Node Pictures

Date [MM/dd/yyyy] 7/5/2019	Manhole Number 36-78	City Channel Island	Street [No. & Name] Panama Dr	Surveyed By Kyle Bahensky
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36-78_f20e677b_8ab5_4247_8921_13ab7193ed33_631e5cc8-7fab-493f-9853-2d4277167e13_P12.jpg,
, 1.78
Infiltration Stain at 3 o'clock, within 8 inch

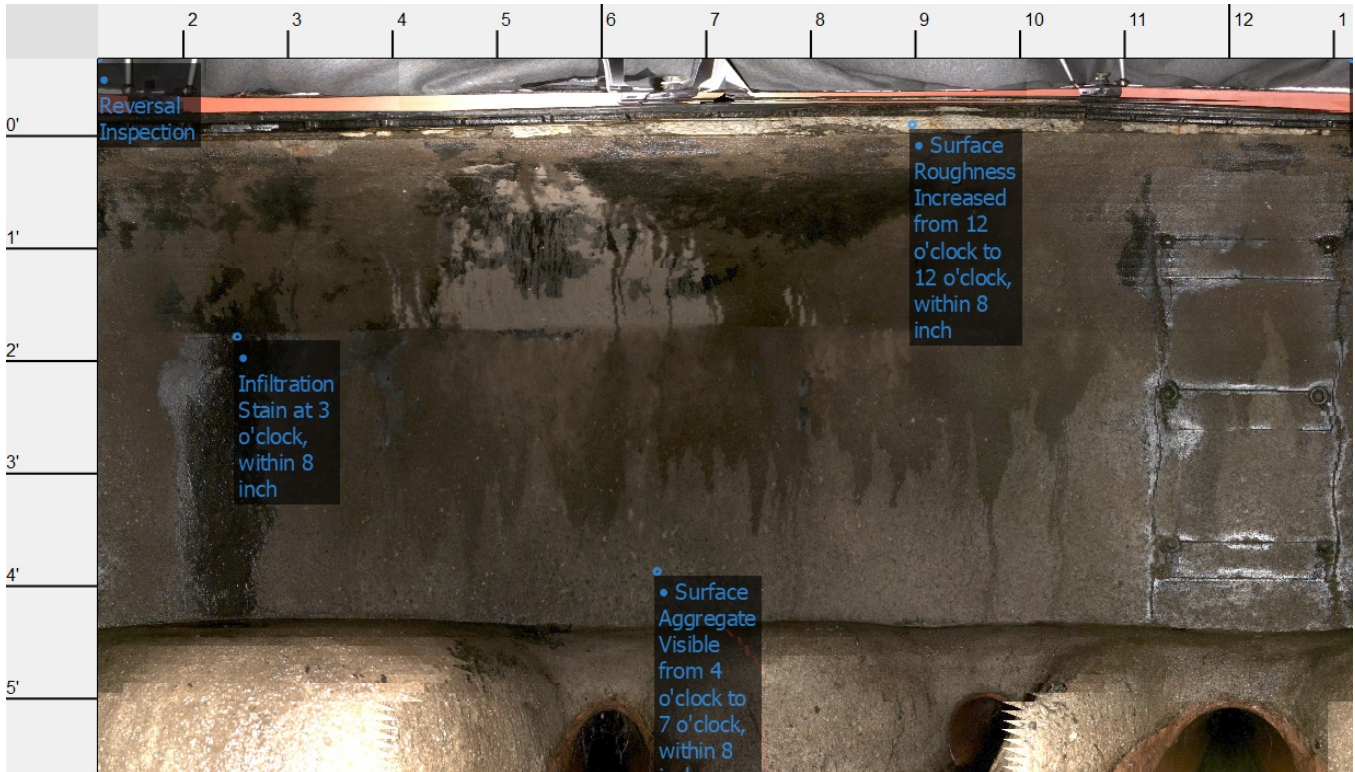


36-78_f20e677b_8ab5_4247_8921_13ab7193ed33_e7951840-1be9-43ed-acf0-0a1646173992_P12.jpg,
, 3.87
Surface Aggregate Visible from 4 o'clock to 7 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	36-78			





Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-82	City Channel Island	Street [No. & Name] San Nicolas Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 9.00	

Steps

			Step Material	Metal
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Cover

Cover Shape	Other	Cover Size [inch]	36.00	Cover Width [inch]	36.00
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)		Height [inch]*	36.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	36.00	Chimney Width [inch]*	36.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	17.00

Wall

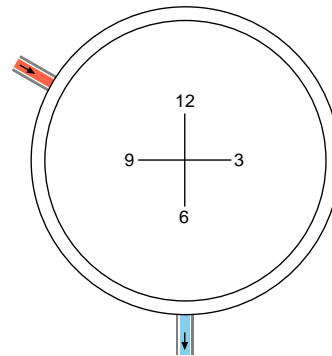
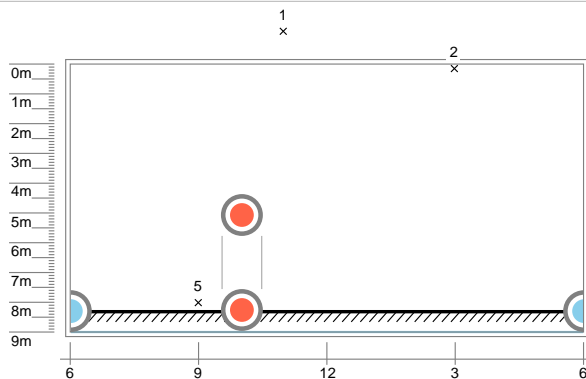
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	36.00

Bench

			Bench Height [inch]*	12.00
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Channel

Channel Material	Vitrified Clay			
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-1.12	MGO	Reversal Inspection	CLEVER SCAN
2	0.16	SAM	Surface Aggregate Missing at 3 o'clock, within 8 inch	BRICK EXPOSED
3	1.37	MGO	General Observation	4" PVC INTRUDING
4	5.77	MGO	General Observation	8" DROP LATERAL
5	8.03	DAGS	Deposits Attached Grease, 5% of cross sectional area at 9 o'clock, within 8 inch	



Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-82		City Channel Island	Street [No. & Name] San Nicolas Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.00	

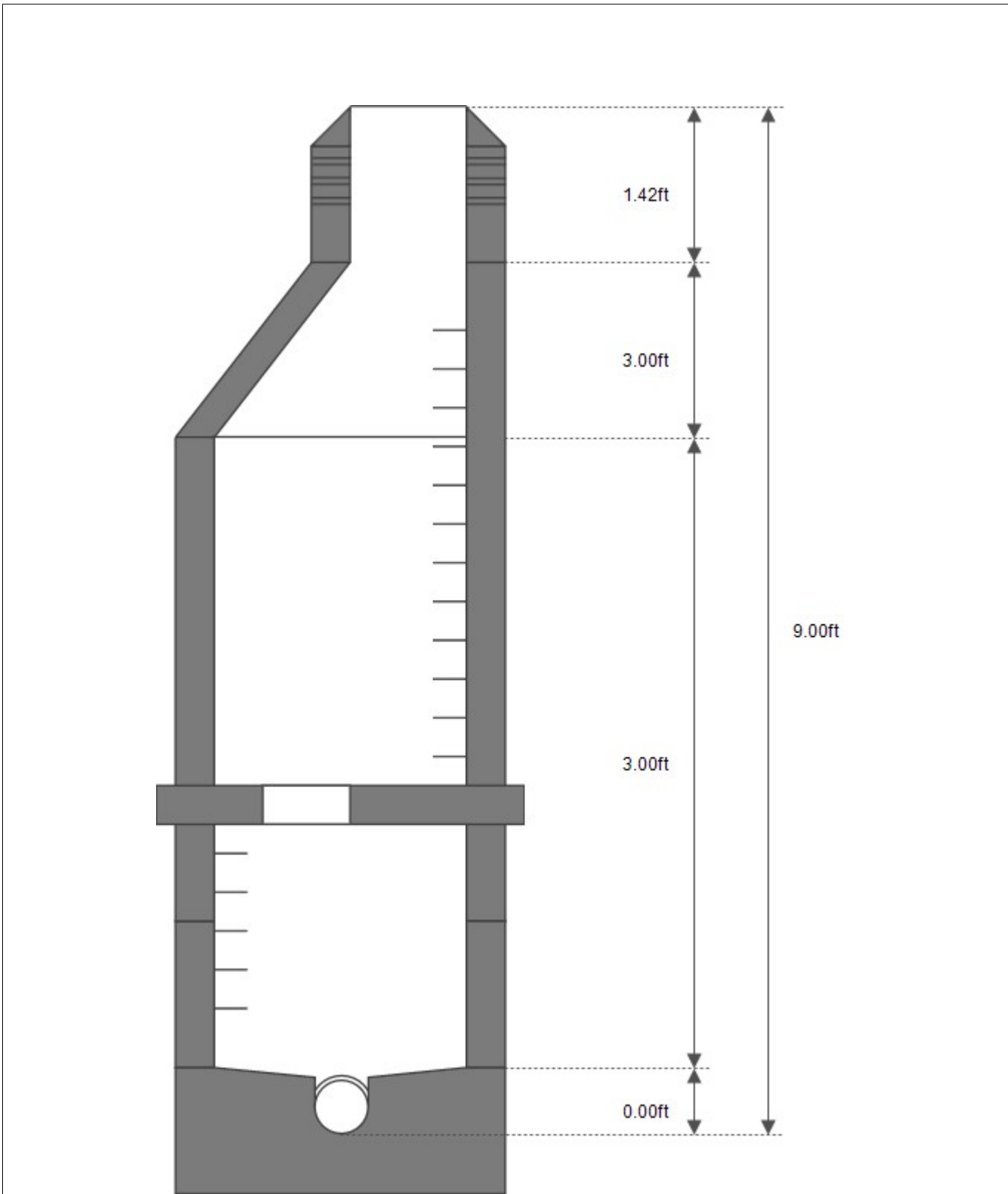
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.00	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	5.80	10	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

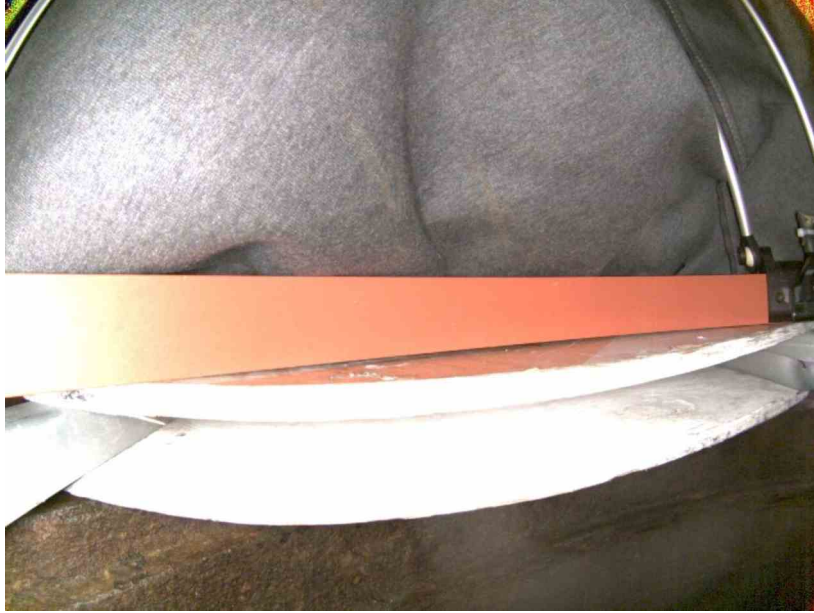
Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-82	City Channel Island	Street [No. & Name] San Nicolas Ave	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-82	City Channel Island	Street [No. & Name] San Nicolas Ave	Surveyed By Kyle Bahensky
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36-82_d8b17f0a_c20d_4a90_8fc5_f6b02c187456_b9095f92-73c7-4d3d-b0e3-ce6fb850eb18_P12.jpg,
, -1.12
Reversal Inspection



36-82_d8b17f0a_c20d_4a90_8fc5_f6b02c187456_0d644e19-155f-4653-83f7-90f999386221_P12.jpg,
, 0.16
Surface Aggregate Missing at 3 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-82	City Channel Island	Street [No. & Name] San Nicolas Ave	Surveyed By Kyle Bahensky
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36-82_d8b17f0a_c20d_4a90_8fc5_f6b02c187456_6aeac7b7-89cf-4d30-97aa-2df1b50c1f78_P12.jpg,
, 1.37
General Observation



36-82_d8b17f0a_c20d_4a90_8fc5_f6b02c187456_fc9115b5-a89d-4293-8593-786565230452_P12.jpg,
, 5.77
General Observation



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-82	City Channel Island	Street [No. & Name] San Nicolas Ave	Surveyed By Kyle Bahensky
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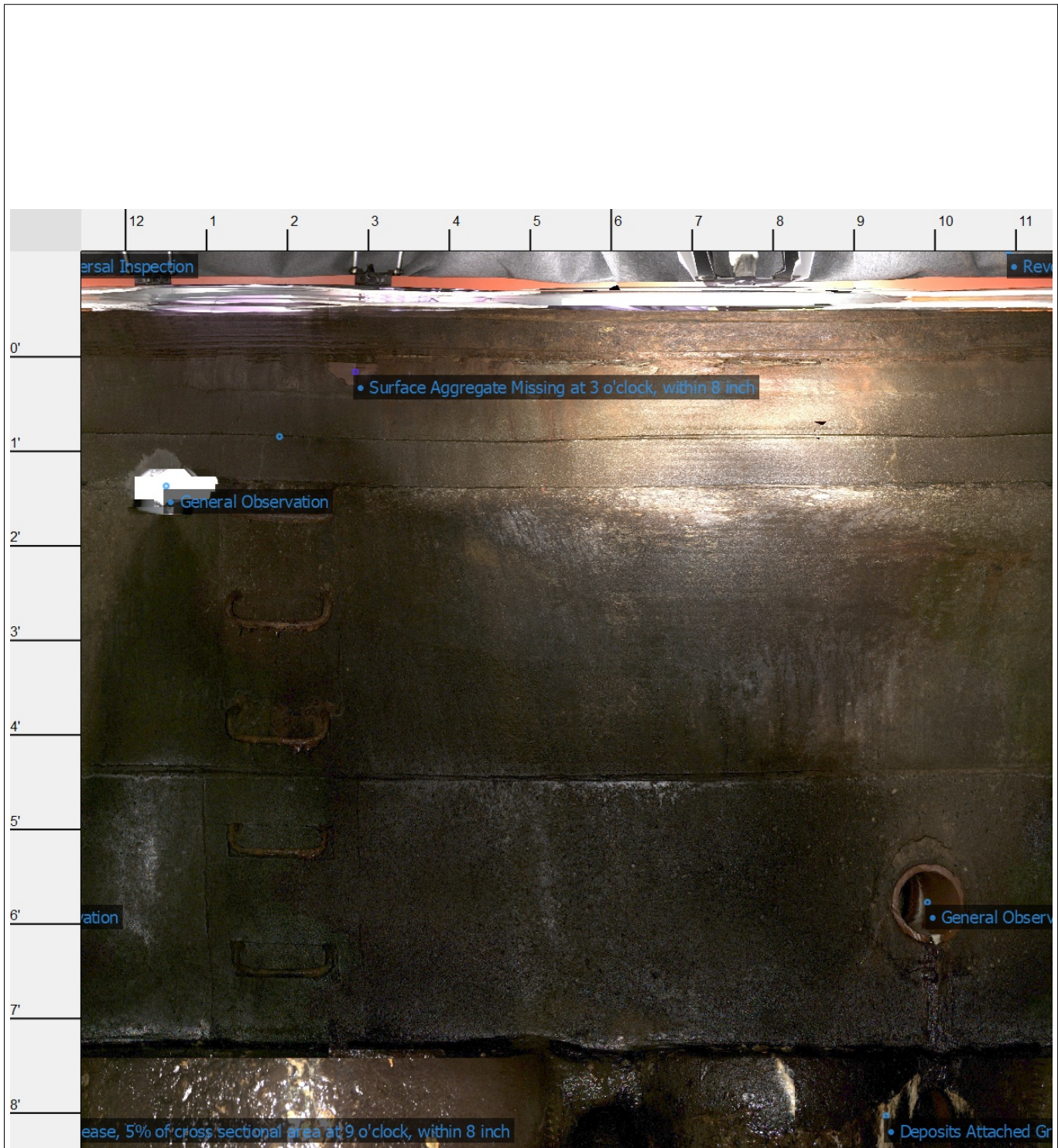


36-82_d8b17f0a_c20d_4a90_8fc5_f6b02c187456_924f9ada-9db4-4a2f-ac56-1a1e7f0c0f41_P12.jpg,
, 8.03
Deposits Attached Grease, 5% of cross sectional area at 9 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	36-82			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31	City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 9.50	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	13.00

Wall

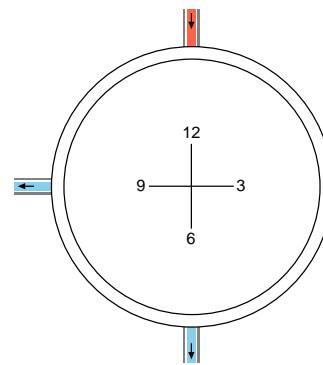
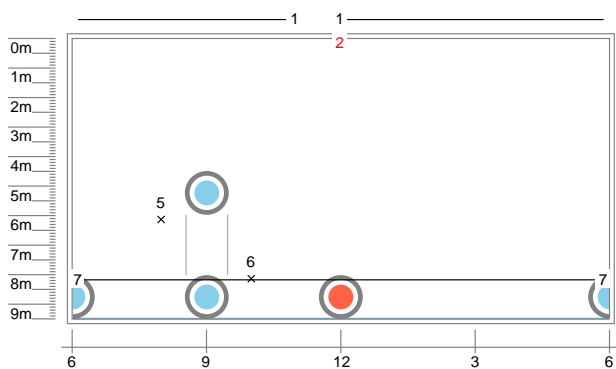
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	63.00

Bench

				Bench Height [inch]*	10.00
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Channel

Channel Material	Polyvinyl Chloride				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.66	MGO	Reversal Inspection	CLEVER SCAN
2	0.19	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	3.64	MGO	General Observation	PVC PIPE INTRUDING
4	6.03	MGO	General Observation	8" DROP LATERAL
5	6.14	B	Broken at 8 o'clock, within 8 inch	8" DROP LATERAL
6	8.16	DSC	Deposits Settled Compacted, 5% of cross sectional area at 10 o'clock, within 8 inch	
7	8.18	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31		City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.50	

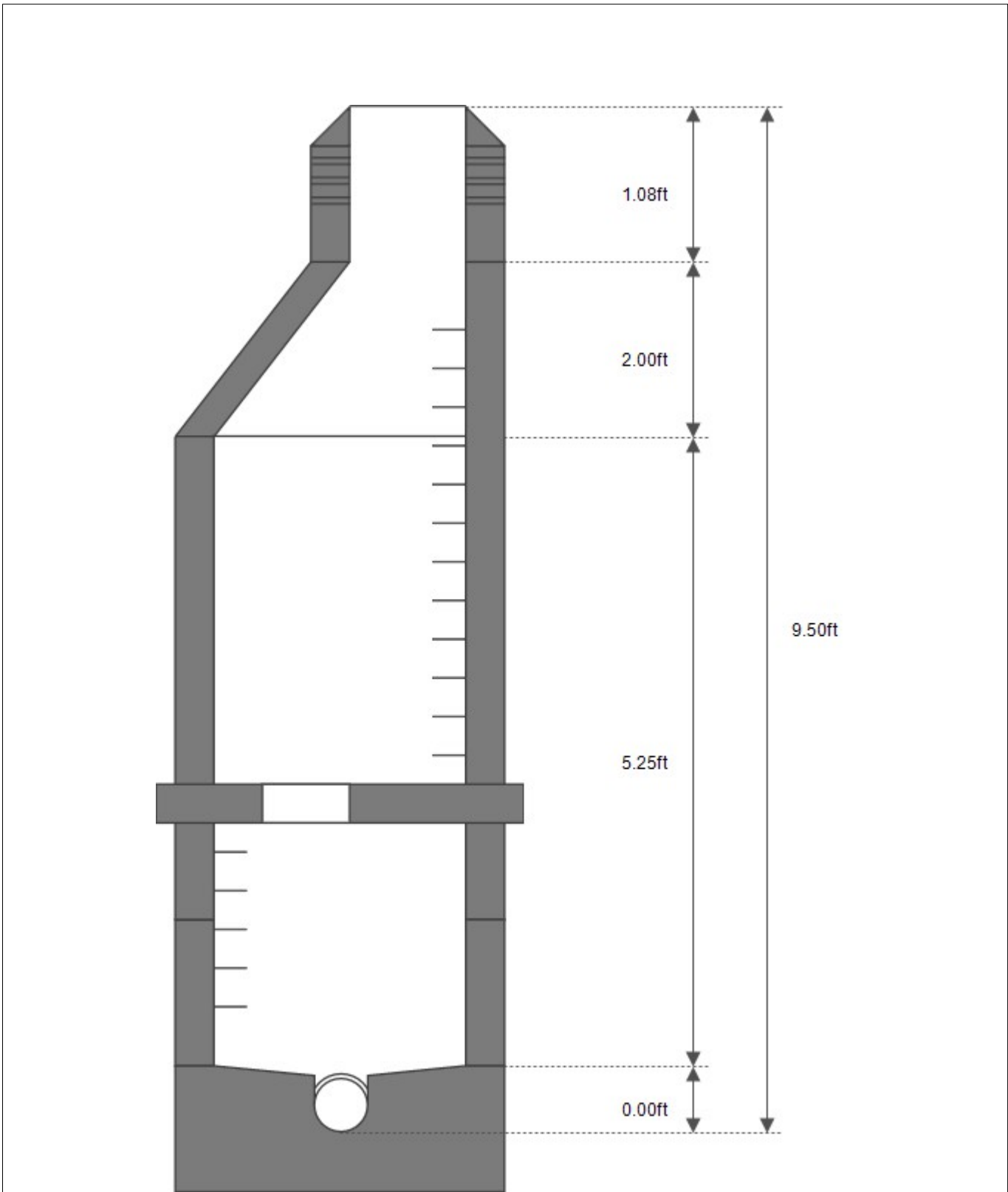
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.50	6	Other	Vitrified Clay Pipe	8	8	
2	Outlet	6.00	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	9.50	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

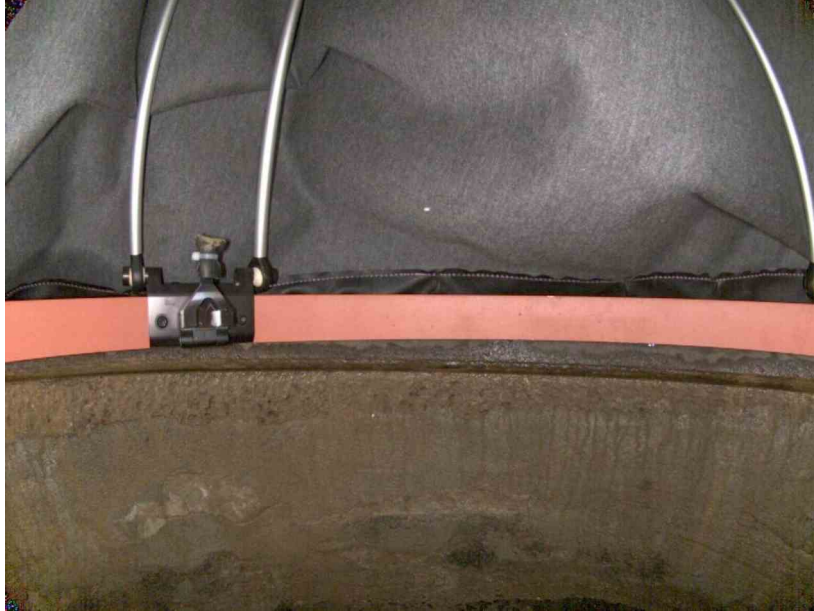
Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-31_3a06f078_e941_4f01_ba58_04484b70b803_44a9e588-ae15-4c9d-9b6f-e89b4fd32f8b_P12.jpg,
, -0.66
Reversal Inspection



37-31_3a06f078_e941_4f01_ba58_04484b70b803_1fda0964-2329-434b-9fa4-01149b331347_P12.jpg,
, 0.19
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-31_3a06f078_e941_4f01_ba58_04484b70b803_42dd6ef2-fda7-48b1-87d9-8e2815e04a58_P12.jpg,
, 3.64
General Observation



37-31_3a06f078_e941_4f01_ba58_04484b70b803_91aafa8f-91cf-4d7e-80d7-e081ea96144c_P12.jpg,
, 6.03
General Observation



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-31_3a06f078_e941_4f01_ba58_04484b70b803_334cc57d-9868-4a8b-8237-dd6125ec6c8c_P12.jpg,
, 6.14
Broken at 8 o'clock, within 8 inch



37-31_3a06f078_e941_4f01_ba58_04484b70b803_f16b28f4-f080-4b92-9262-280a38d67558_P12.jpg,
, 8.16
Deposits Settled Compacted, 5% of cross sectional area at 10 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-31	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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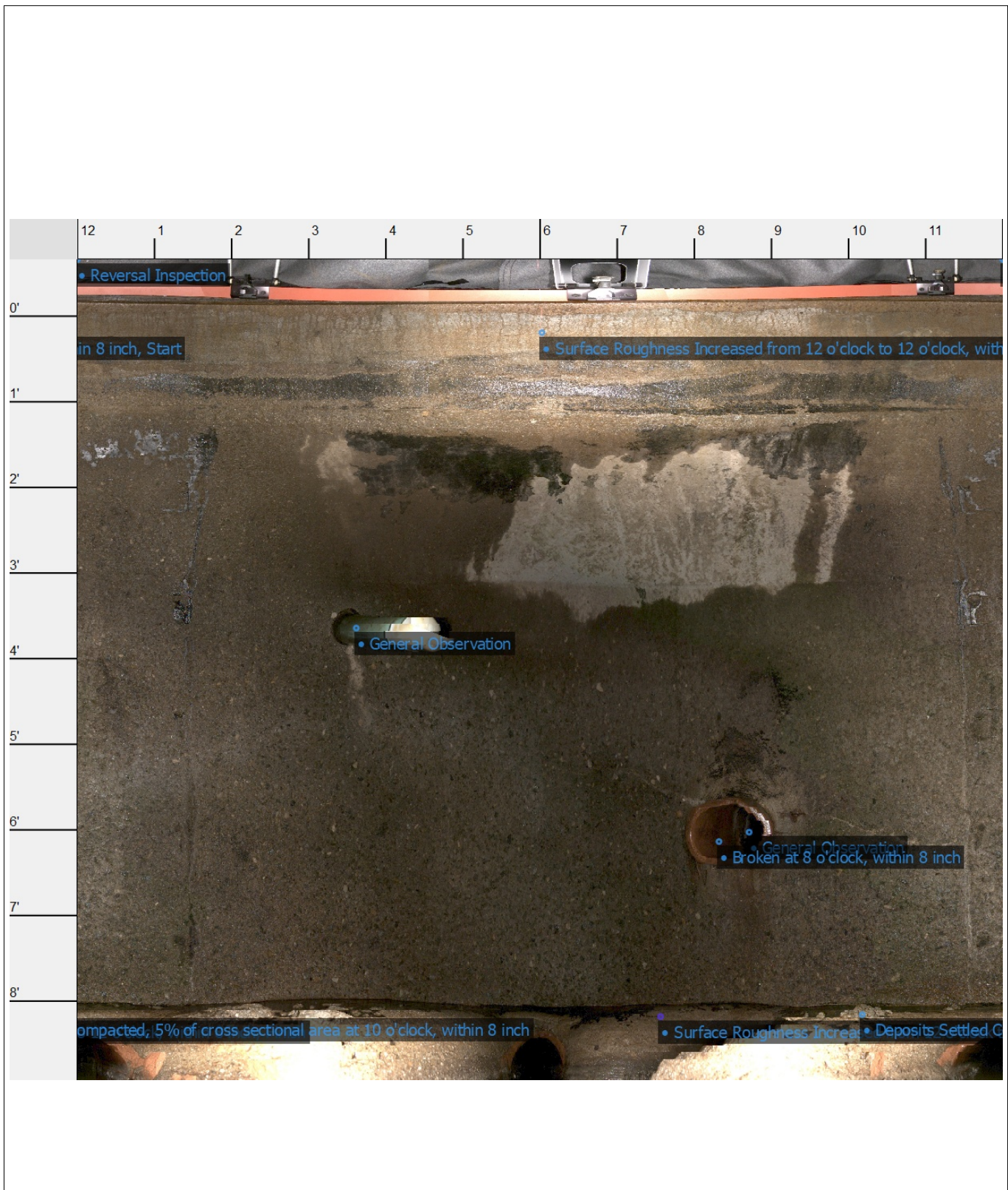


37-31_3a06f078_e941_4f01_ba58_04484b70b803_5df3d54f-4224-42d2-af69-956cb8b554bf_P12.jpg,
, 8.18
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-31			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 10.40	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	20.00

Wall

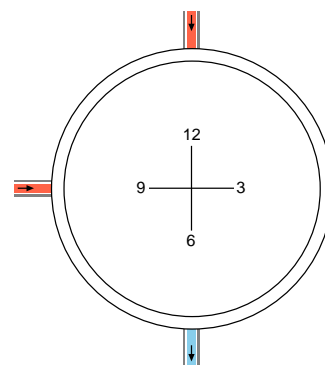
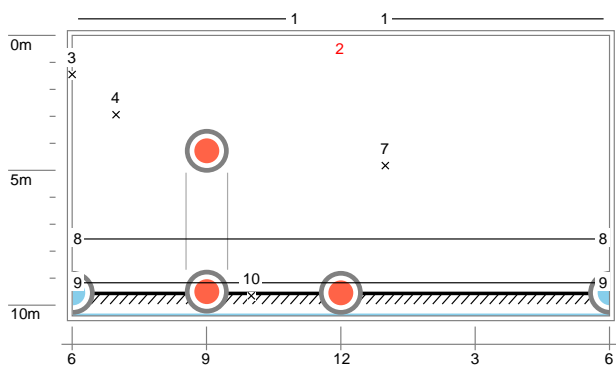
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	68.00

Bench

				Bench Height [inch]*	10.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.64	MGO	Reversal Inspection	CLEVER SCAN
2	0.57	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	1.46	OBI	Obstacles Inuding Thru Wall, 5% of cross sectional area at 6 o'clock	
4	2.96	OBI	Obstacles Inuding Thru Wall, 5% of cross sectional area at 7 o'clock	
5	3.69	MGO	General Observation	BULKHEAD
6	4.77	MGO	General Observation	8" DROP LATERAL
7	4.83	B	Broken at 1 o'clock, within 8 inch	DROP LATERAL



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35		City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 10.40	

Observations

No.	Depth	MACP Code	Observation	Remark
8	7.57	SAV	Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch	
9	9.18	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	
10	9.69	SAP	Surface Aggregate Projecting at 10 o'clock, within 8 inch	

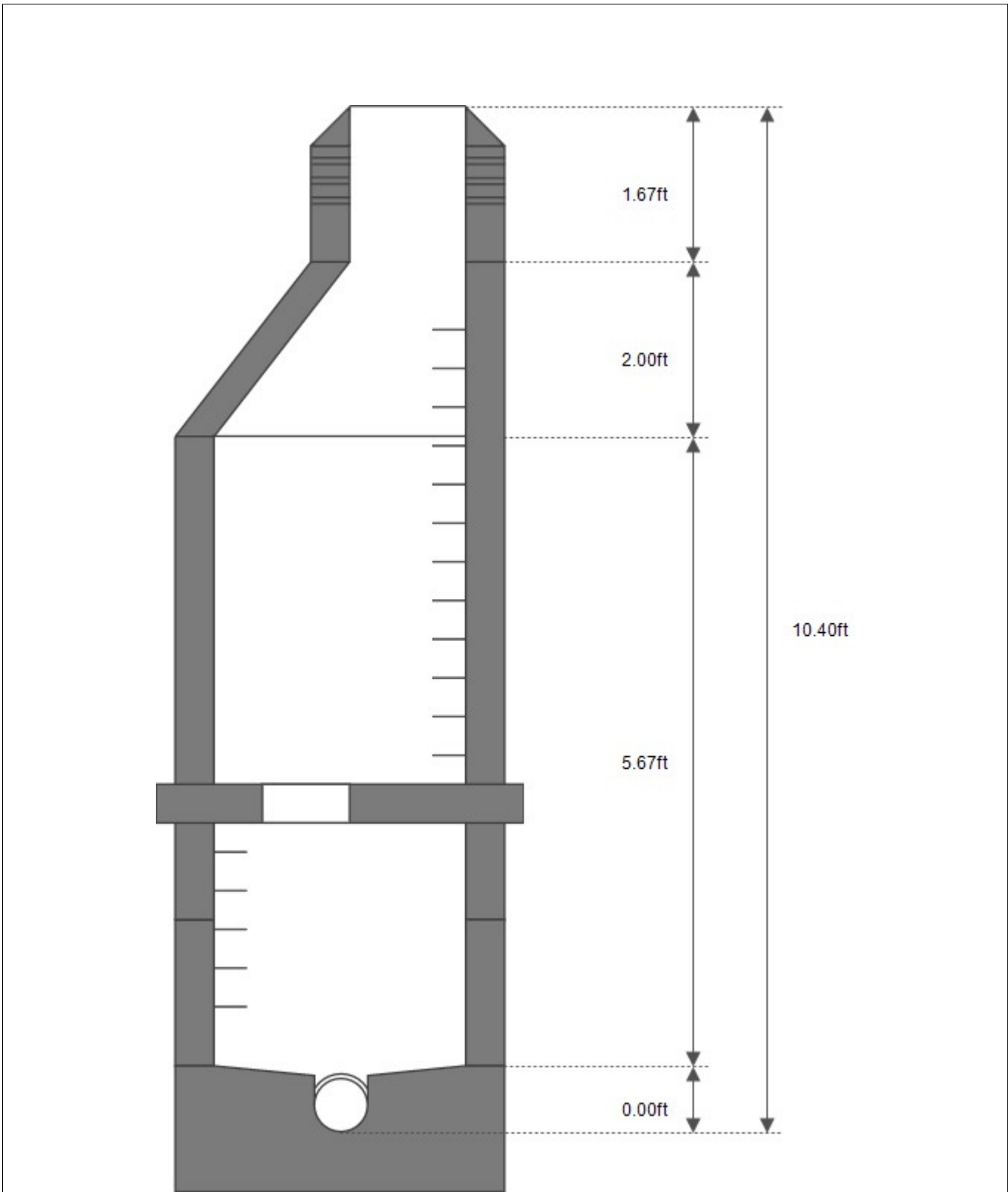
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	10.40	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	5.10	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	10.40	12	Other	Not Known	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_2e52a4f0-08dc-44cf-91f9-a209067e7590_P12.jpg,
, -0.64
Reversal Inspection



37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_eb079222-a340-4917-a881-a8747db53a69_P12.jpg,
, 0.57
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start

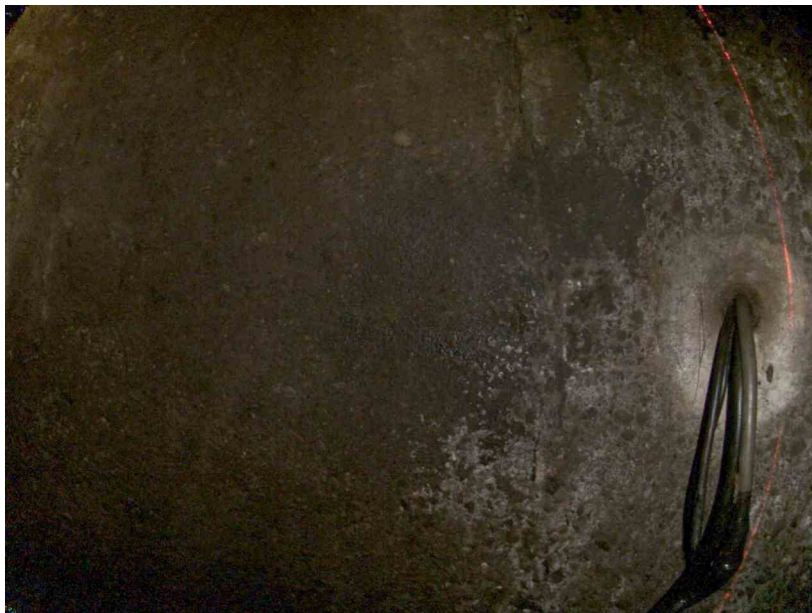


Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_696fd2d6-6fb4-46b7-ab1f-98a80bae0cfd_P12.jpg,
, 1.46
Obstacles Inuding Thru Wall, 5% of cross sectional area at 6 o'clock



37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_467c554d-d22d-49d7-ac7b-06819bd27bad_P12.jpg,
, 2.96
Obstacles Inuding Thru Wall, 5% of cross sectional area at 7 o'clock



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_155c8c4d-e413-484e-aa6e-5974ad5b9142_P12.jpg,
, 3.69
General Observation



37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_ca561af0-e1e3-4596-9b6c-12761479a12e_P12.jpg,
, 4.77
General Observation



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_ea693865-090c-408a-ae20-f61122aed053_P12.jpg,
, 4.83
Broken at 1 o'clock, within 8 inch



37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_4fc0d4c6-111f-4509-8133-d17bd359c045_P12.jpg,
, 7.57
Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-35	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_e1e2b0f8-81ca-48de-919e-fa524ad4a28d_P12.jpg,
, 9.18
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish

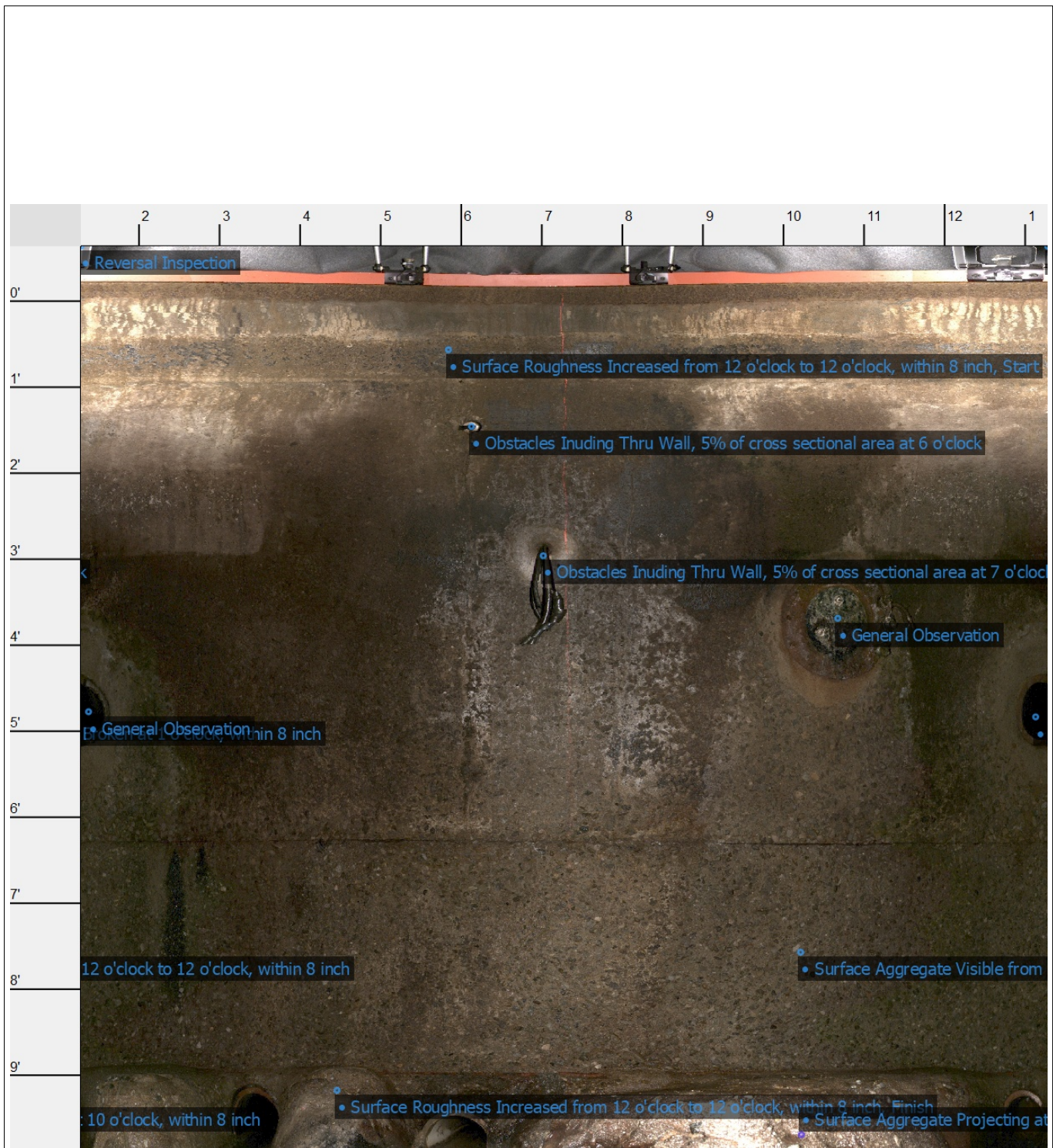


37-35_f6e7d8ee_4d76_46d5_86b4_5a5b78e4e34f_fb80f9fa-2a13-42aa-ac5b-944e72e13cb2_P12.jpg,
, 9.69
Surface Aggregate Projecting at 10 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-35			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-37-A	City Channel Island	Street [No. & Name] Tujunga Ave.	Node No.* 1
Surveyed By Kyle Bahensky	Weather		Rim to Invert [ft] 4.70	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)	Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	4.00

Wall

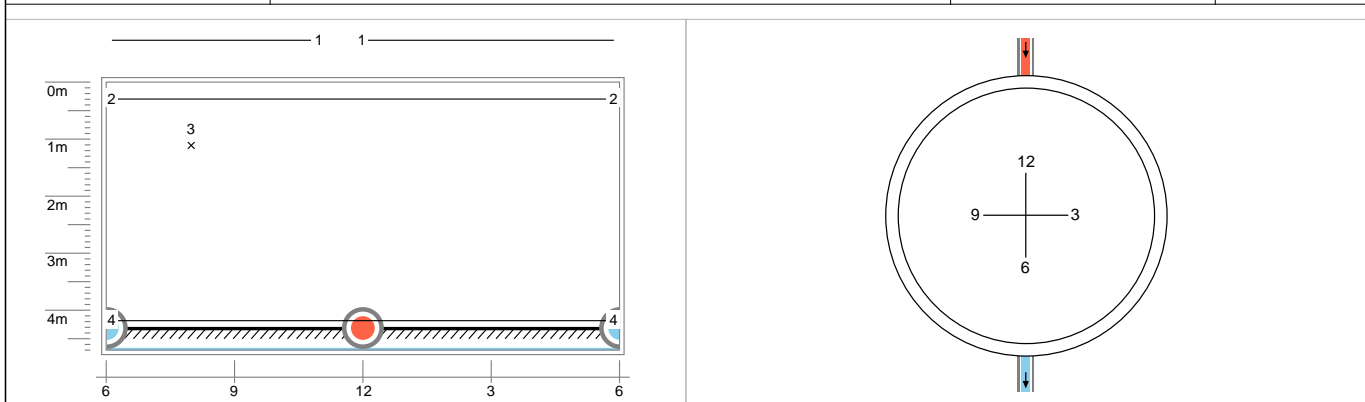
Shape*	Circular	Wall Dia/Length [inch]		Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	12.00

Bench

				Bench Height [inch]*	12.00
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Channel

Channel Material	Vitrified Clay		
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.75	MGO	Reversal Inspection	CLEVER SCAN
2	0.31	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch	
3	1.13	FL	Fracture Longitudinal at 8 o'clock, within 8 inch	
4	4.19	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-37-A		City Channel Island	Street [No. & Name] Tujunga Ave.	Node No.* 1
Surveyed By Kyle Bahensky	Weather			Rim to Invert [ft] 4.70	

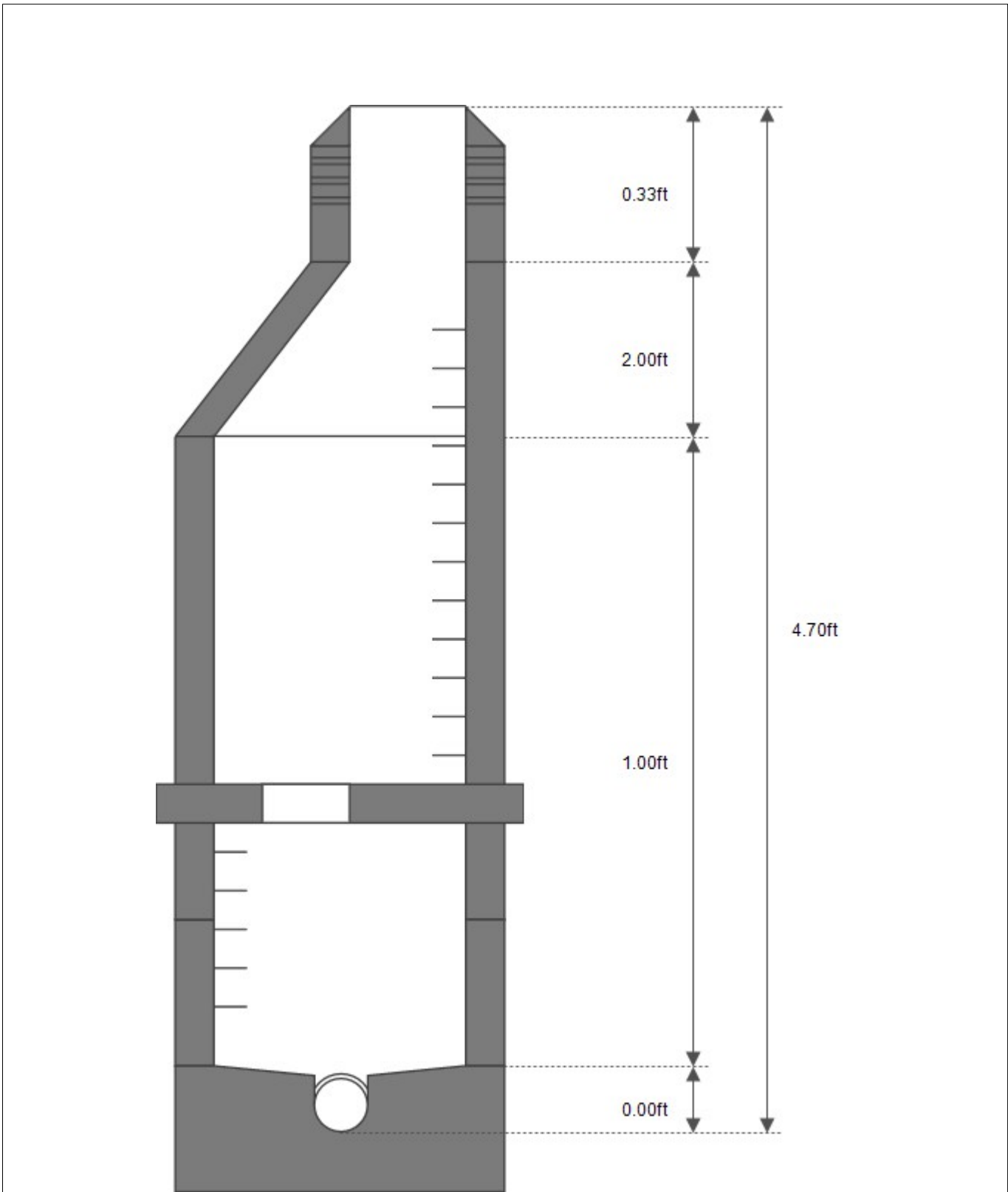
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	4.70	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	4.70	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

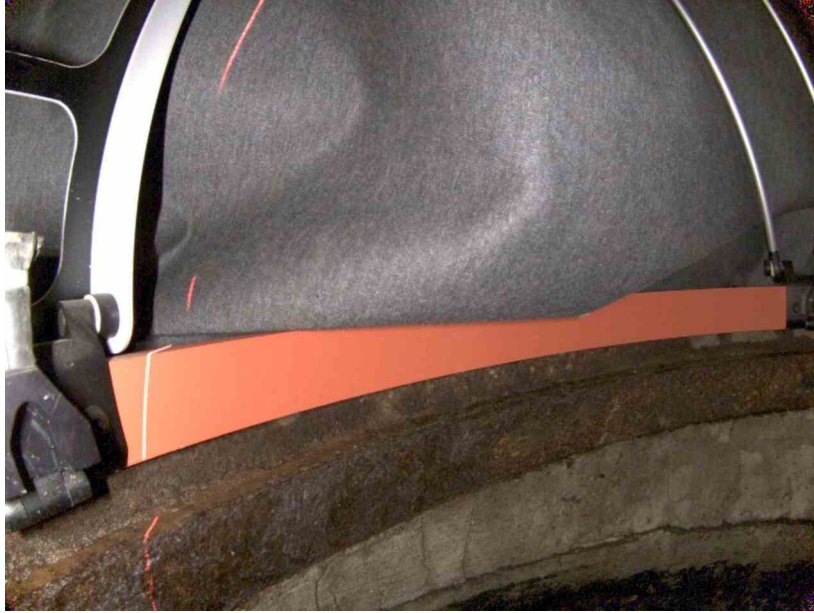
Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-37-A	City Channel Island	Street [No. & Name] Tujunga Ave.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-37-A	City Channel Island	Street [No. & Name] Tujunga Ave.	Surveyed By Kyle Bahensky
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37-37-A_f72c6802_8707_4f2c_ab45_dae33749b1ef_9514b8a0-6669-4f42-a395-662e4b900b23_P12.jpg,
, -0.75
Reversal Inspection



37-37-A_f72c6802_8707_4f2c_ab45_dae33749b1ef_f1bd72a2-e8fd-4bd1-b13d-6b6ee985a470_P12.jpg,
, 0.31
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 37-37-A	City Channel Island	Street [No. & Name] Tujunga Ave.	Surveyed By Kyle Bahensky
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37-37-A_f72c6802_8707_4f2c_ab45_dae33749b1ef_dfbea1d7-f8d9-486f-9717-9852637f3dce_P12.jpg,
, 1.13
Fracture Longitudinal at 8 o'clock, within 8 inch

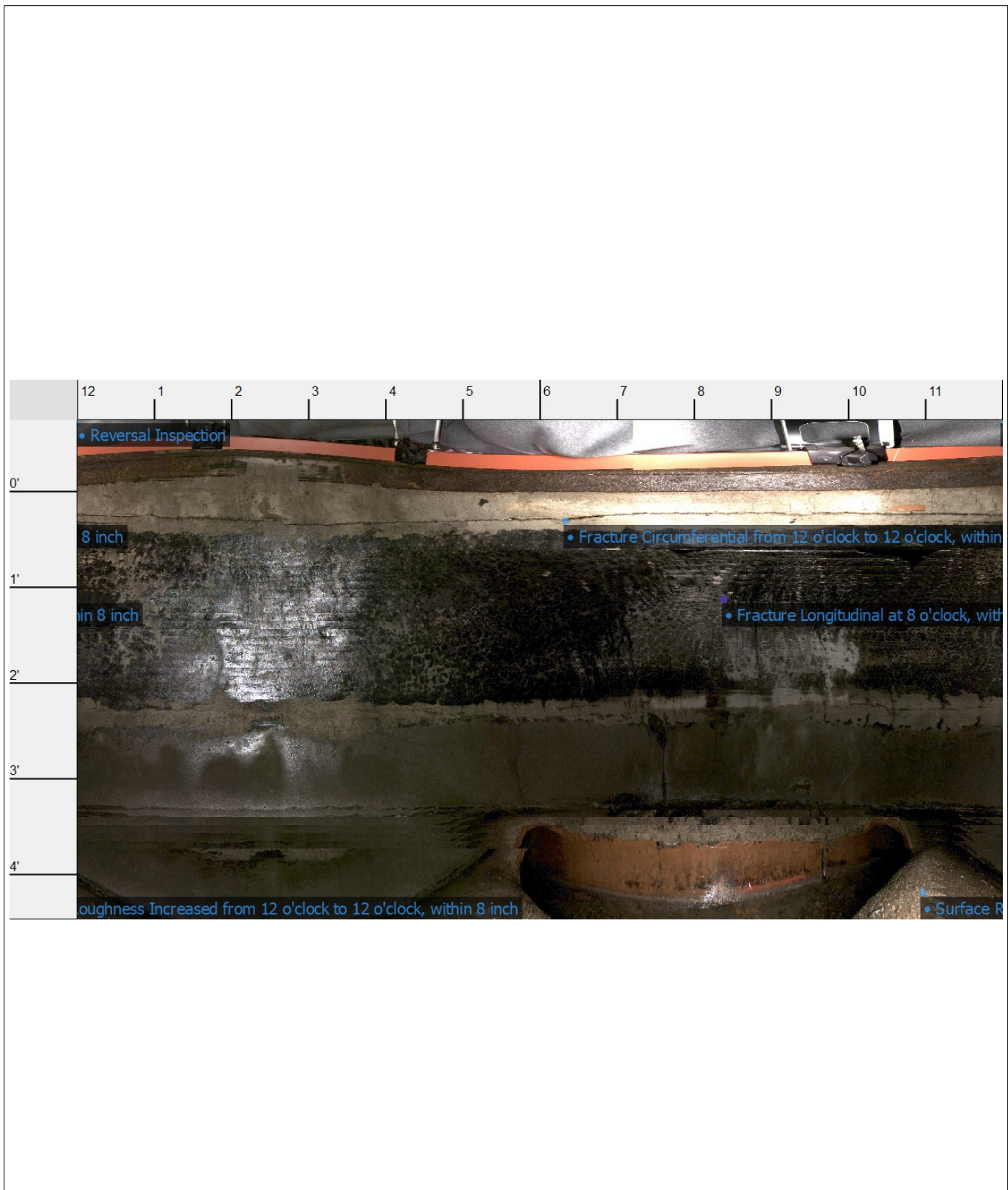


37-37-A_f72c6802_8707_4f2c_ab45_dae33749b1ef_3a91f750-6f0e-4dd4-8bfa-8dbc8c225d4f_P12.jpg,
, 4.19
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-37-A			





Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39	City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 5.60	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	8.00

Wall

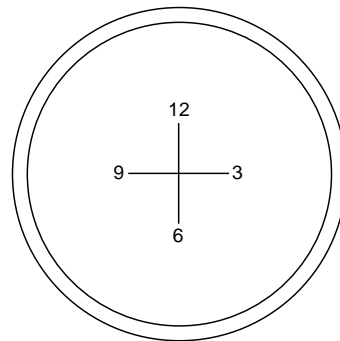
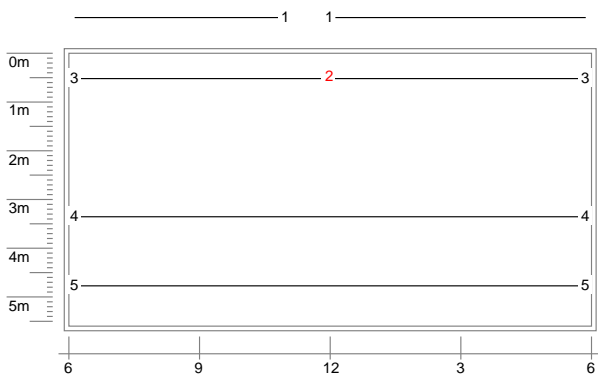
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	12.00

Bench

				Bench Height [inch]*	18.00
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Channel

Channel Material	Vitrified Clay				
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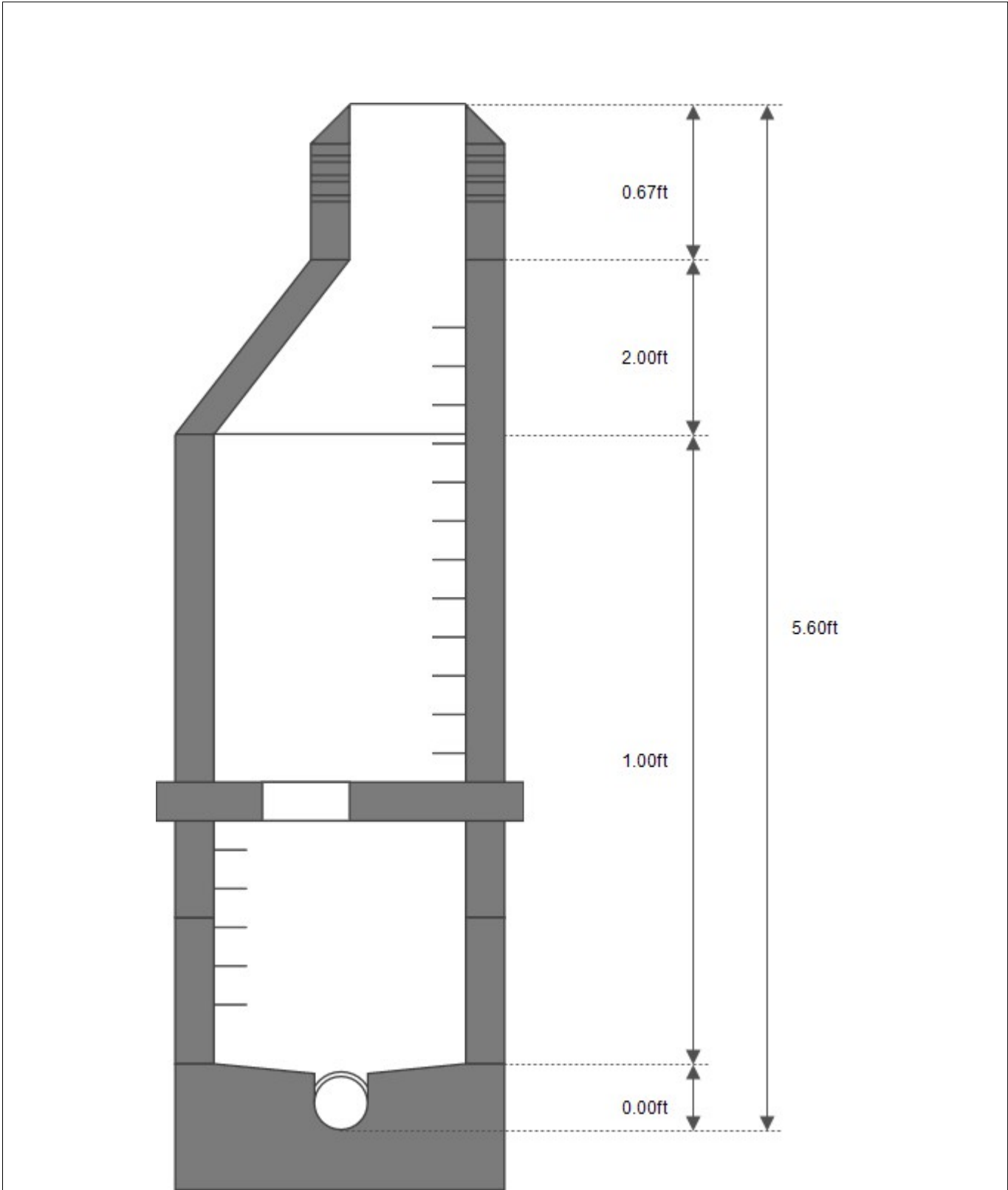
Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.74	MGO	Reversal Inspection	CLEVER SCAN
2	0.47	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.53	CC	Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch	
4	3.36	SAV	Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch	
5	4.79	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node 2D Sketch

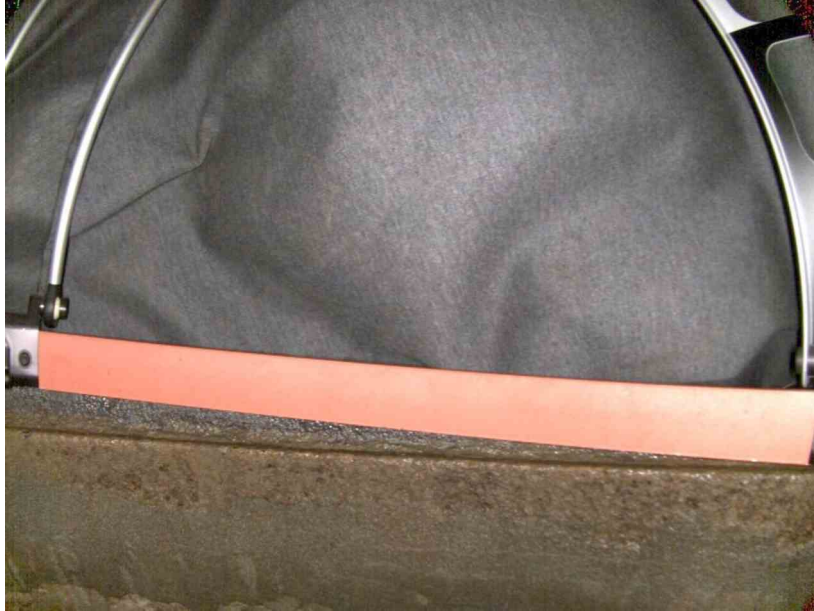
Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-39_f9d93fbc_2737_41bc_8eac_424990064008_f1e7c96c-cd59-4323-9062-73272e155f07_P12.jpg,
, -0.74
Reversal Inspection



37-39_f9d93fbc_2737_41bc_8eac_424990064008_f393c6e6-6eff-49c5-9bb6-b3b7fc70a67f_P12.jpg,
, 0.47
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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37-39_f9d93fbc_2737_41bc_8eac_424990064008_7cfdb3ba-bc5f-4c17-b98b-5c27e4a9cb64_P12.jpg,
, 0.53
Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch



37-39_f9d93fbc_2737_41bc_8eac_424990064008_ea500f4d-0d86-4fbf-a0b9-599ee40e4332_P12.jpg,
, 3.36
Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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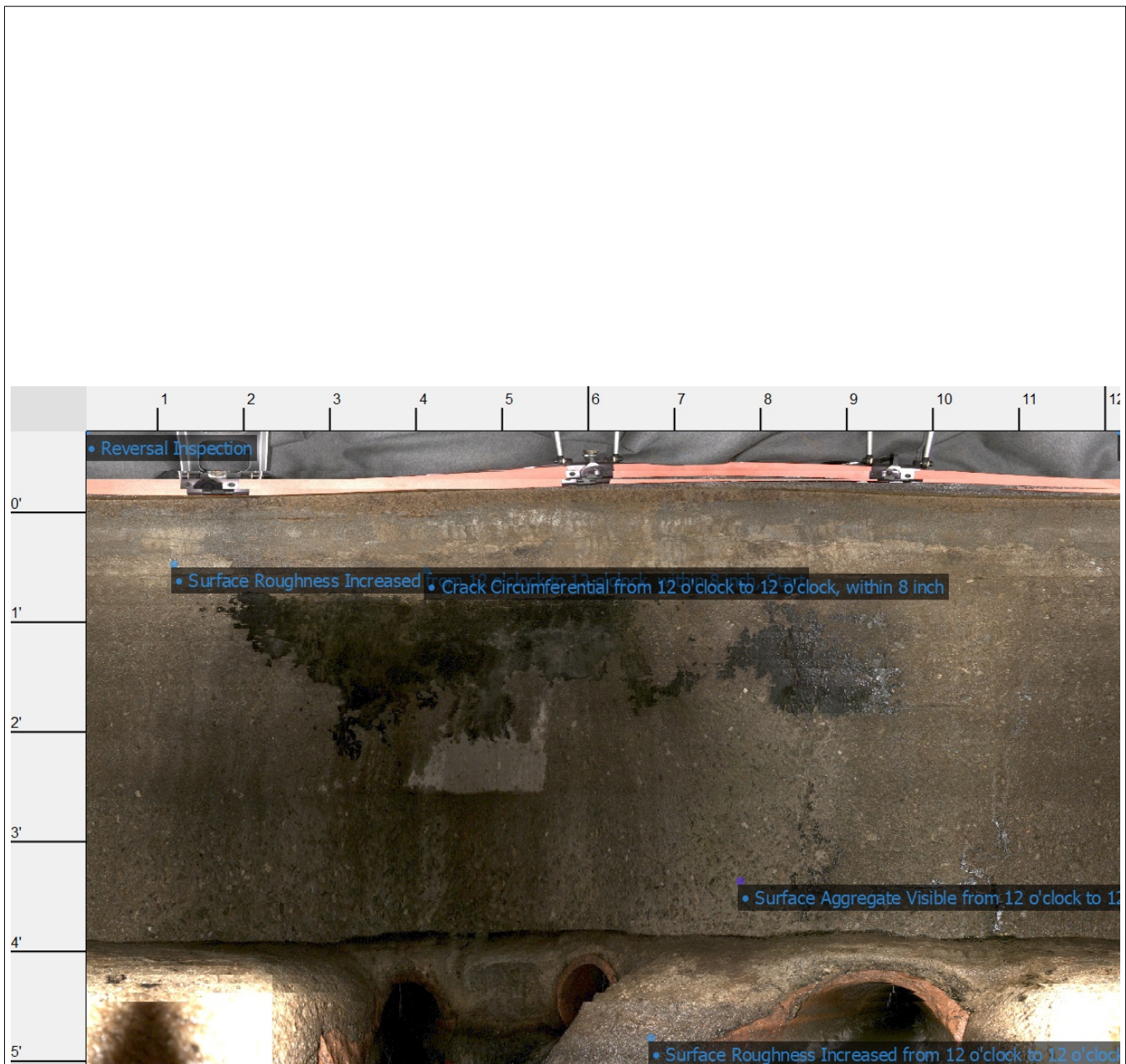


37-39_f9d93fbc_2737_41bc_8eac_424990064008_924f64bc-7839-4063-812e-13cbcd2df3f2_P12.jpg,
, 4.79
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-39			





Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39-A	City Channel Island	Street [No. & Name] Bardsdale Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 4.50	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)	Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	12.00

Wall

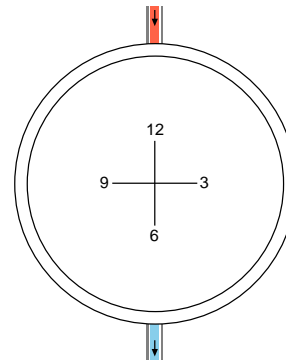
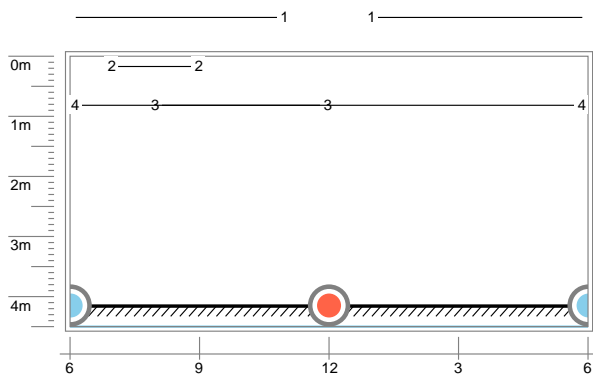
Shape*	Circular	Wall Dia/Length [inch]	0.00	Wall Width [inch]	0.00
Wall Material	Concrete (reinforced)			Height [inch]*	

Bench

				Bench Height [inch]*	14.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.66	MGO	Reversal Inspection	CLEVER SCAN
2	0.19	RFJ	Roots Fine Joint from 7 o'clock to 9 o'clock, within 8 inch	
3	0.82	RFJ	Roots Fine Joint from 8 o'clock to 12 o'clock, within 8 inch	
4	0.83	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments



Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39-A		City Channel Island	Street [No. & Name] Bardsdale Ave	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 4.50	

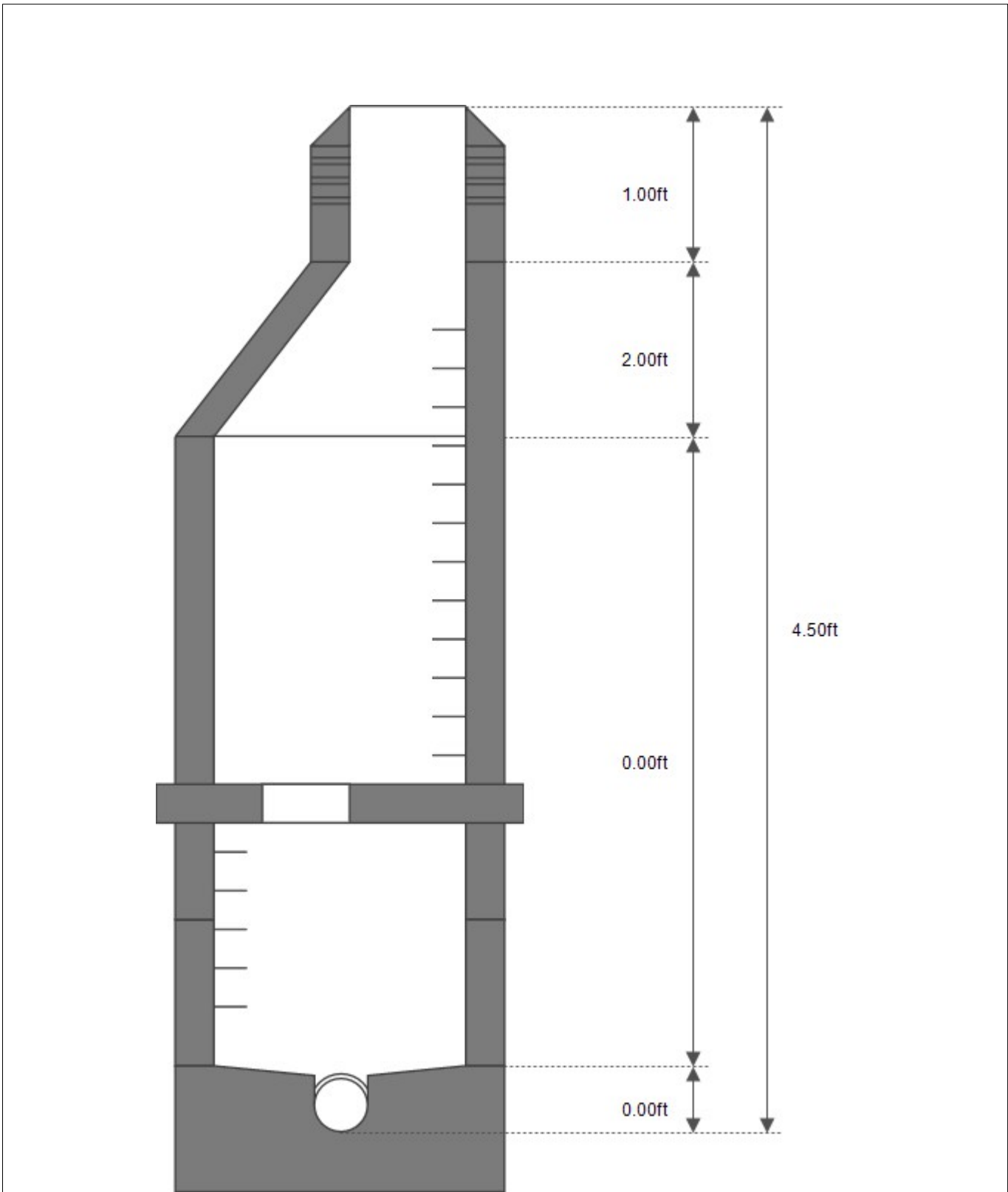
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	4.50	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	4.50	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39-A	City Channel Island	Street [No. & Name] Bardsdale Ave	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39-A	City Channel Island	Street [No. & Name] Bardsdale Ave	Surveyed By Kyle Bahensky
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37-39-A_545e9b99_6729_4fa7_8d17_f1c1b7c45969_5cd77338-dd22-4109-b2be-240dece8efc5_P12.jpg,
, -0.66
Reversal Inspection



37-39-A_545e9b99_6729_4fa7_8d17_f1c1b7c45969_dce70485-e3a8-458b-be12-30db902776b3_P12.jpg,
, 0.19
Roots Fine Joint from 7 o'clock to 9 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-39-A	City Channel Island	Street [No. & Name] Bardsdale Ave	Surveyed By Kyle Bahensky
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37-39-A_545e9b99_6729_4fa7_8d17_f1c1b7c45969_eafdd2e2-26fb-49c3-870f-206620ecf4eb_P12.jpg,
, 0.82
Roots Fine Joint from 8 o'clock to 12 o'clock, within 8 inch

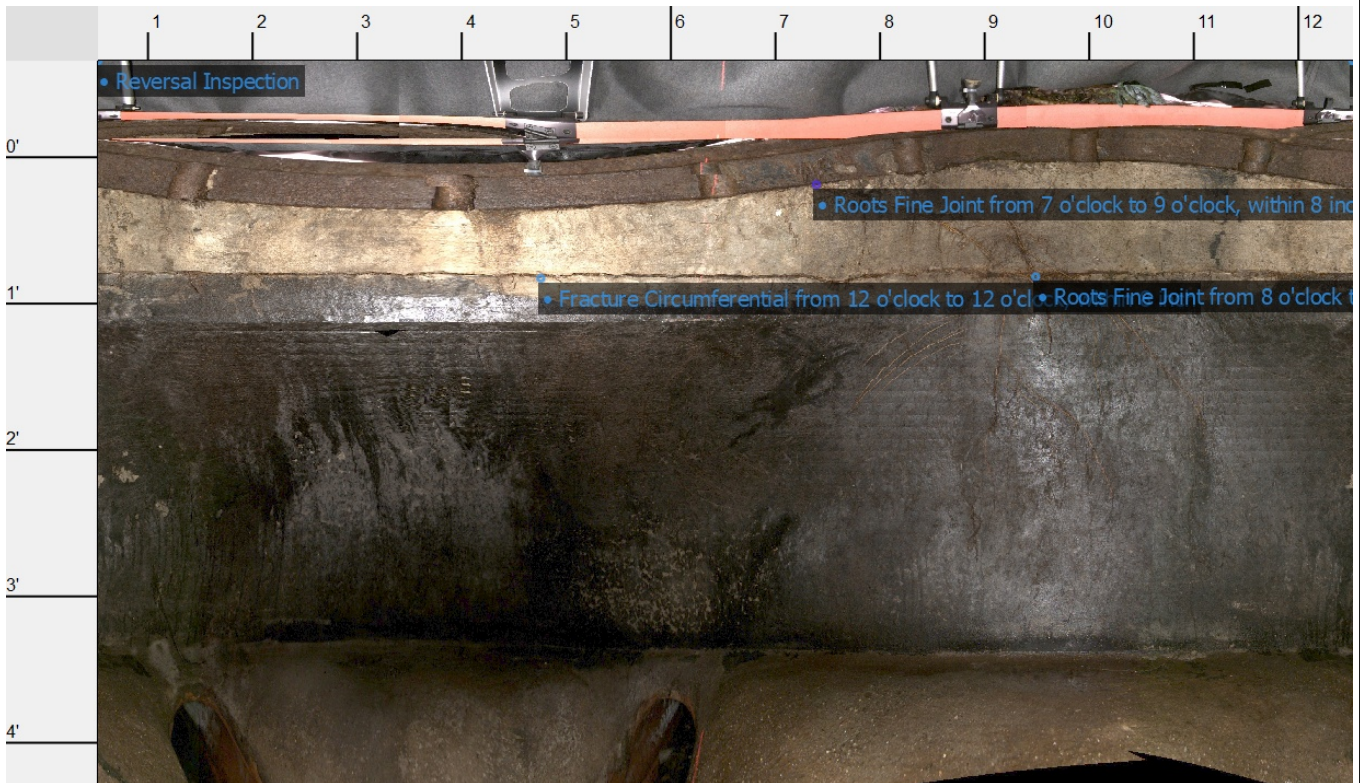


37-39-A_545e9b99_6729_4fa7_8d17_f1c1b7c45969_4a412c8f-4bc0-47dc-afd3-4bde88606715_P12.jpg,
, 0.83
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-39-A			





Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-41	City Channel Island	Street [No. & Name] Ocean Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 6.50	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)		Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	10.00

Wall

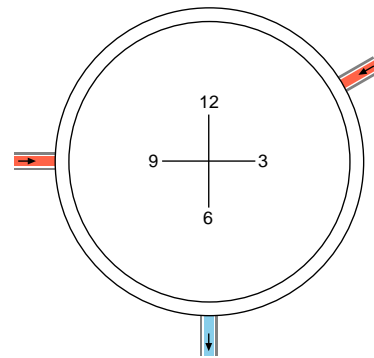
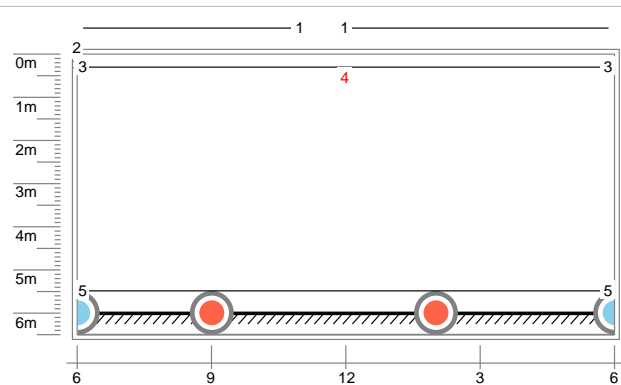
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	24.00

Bench

				Bench Height [inch]*	17.00
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Channel

Channel Material	Vitrified Clay			
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.62	MGO	Reversal Inspection	CLEVER SCAN
2	0.25	FL	Fracture Longitudinal at 6 o'clock, within 8 inch	
3	0.32	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch	
4	0.55	SAV	Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch, Start	
5	5.50	SAV	Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-41		City Channel Island	Street [No. & Name] Ocean Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 6.50	

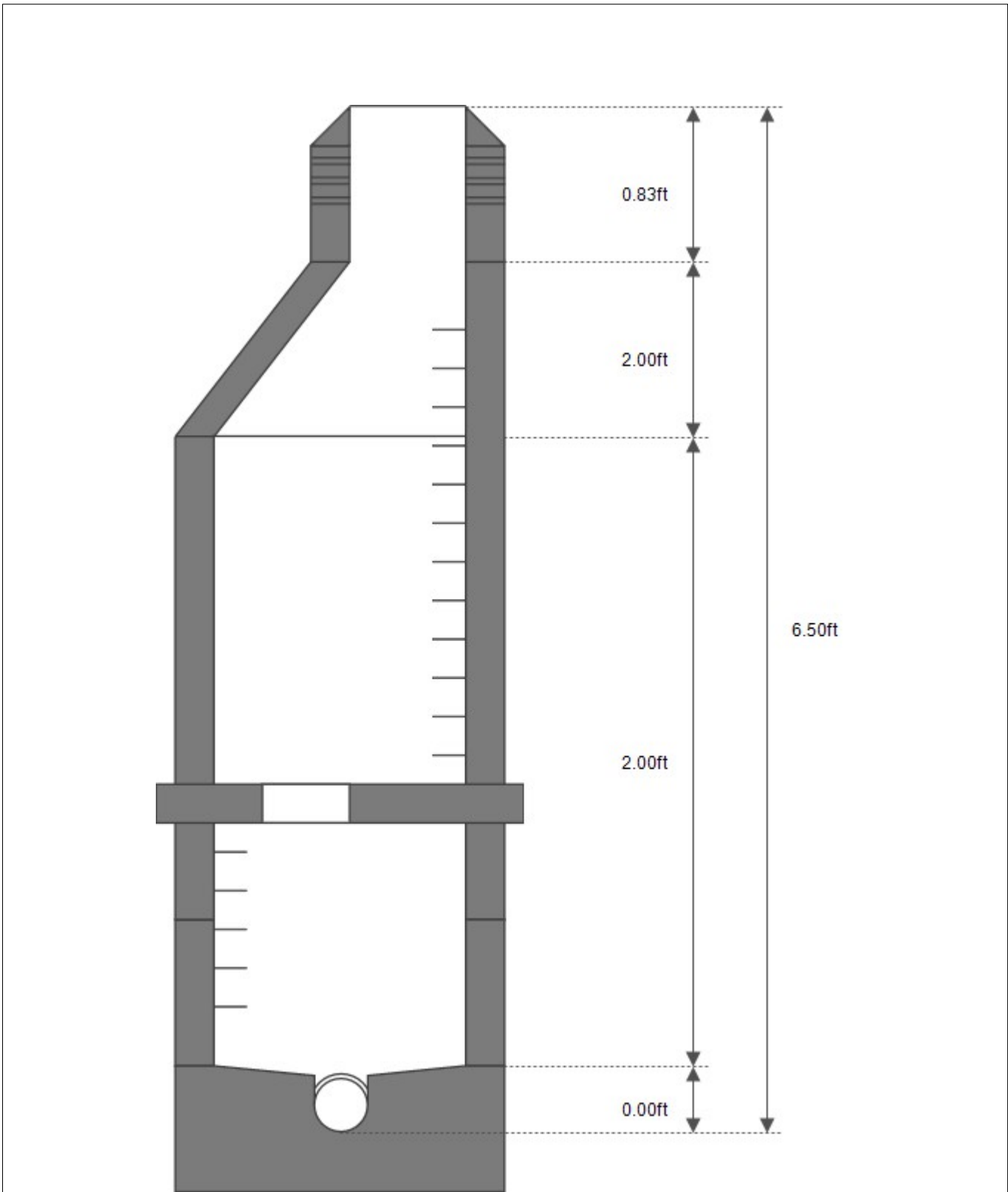
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	6.50	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	6.50	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	6.50	2	Other	Vitrified Clay Pipe	6	6	



Node 2D Sketch

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-41	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-41	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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37-39_e3463806_251b_4a10_8598_66aa7b2b50ab_a542e92e-682c-4f5c-a856-3c2bc2bf61a5_P12.jpg,
, -0.62
Reversal Inspection



37-39_e3463806_251b_4a10_8598_66aa7b2b50ab_d42f4c79-438b-47a5-a7b6-eb8b41b884d7_P12.jpg,
, 0.25
Fracture Longitudinal at 6 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-41	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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37-39_e3463806_251b_4a10_8598_66aa7b2b50ab_aff92091-f8d5-4490-8d98-ffc28d14534b_P12.jpg,
, 0.32
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch



37-39_e3463806_251b_4a10_8598_66aa7b2b50ab_b61346a6-5cef-4041-8875-f7294a920564_P12.jpg,
, 0.55
Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-41	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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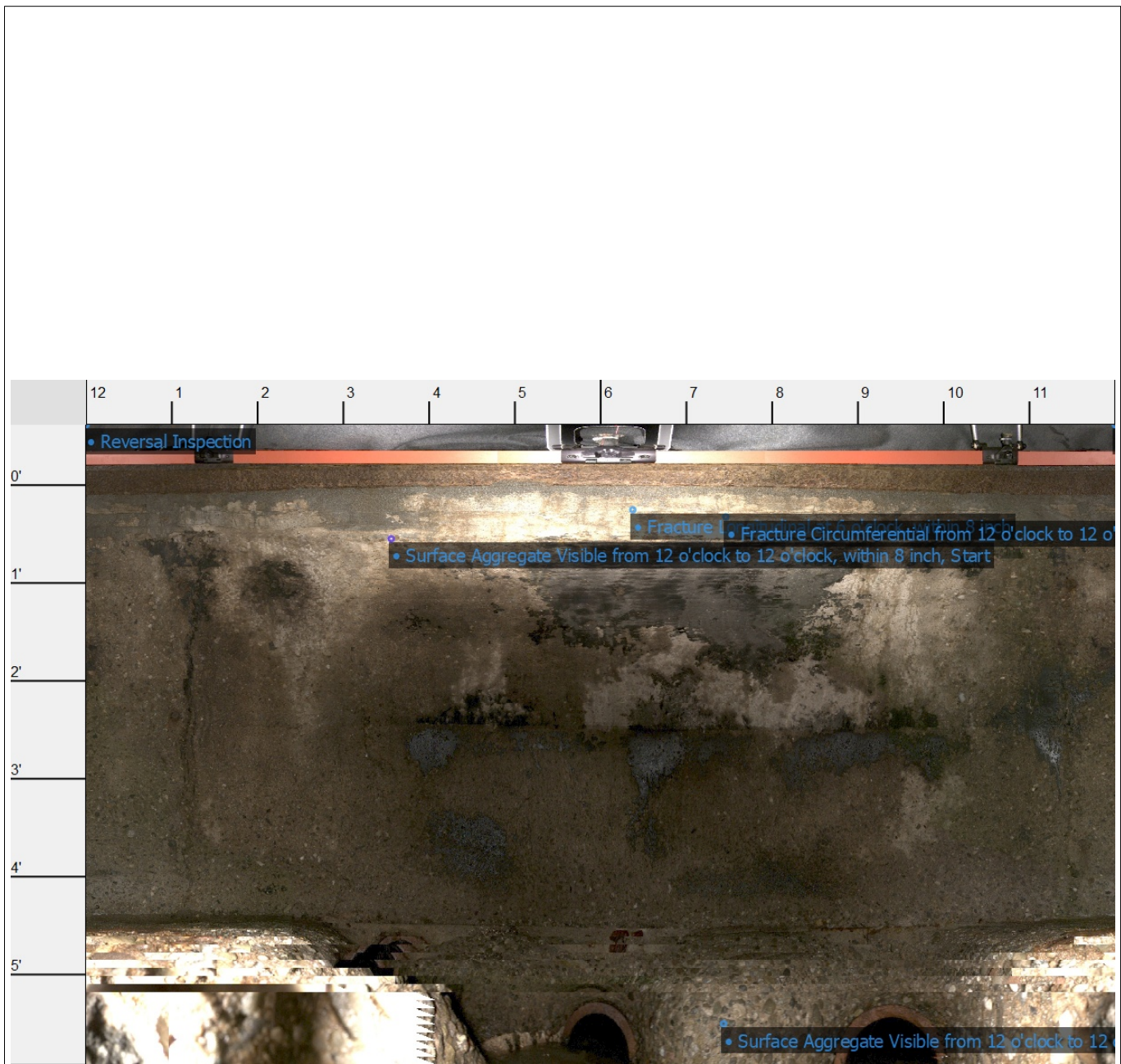


37-39_e3463806_251b_4a10_8598_66aa7b2b50ab_755413a1-c448-44fd-afd8-7411036d9010_P12.jpg,
, 5.50
Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-41			





Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-51		City Channel Island	Street [No. & Name] Ocean Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 6.90	

Steps

				Step Material	
--	--	--	--	---------------	--

Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	9.00

Wall

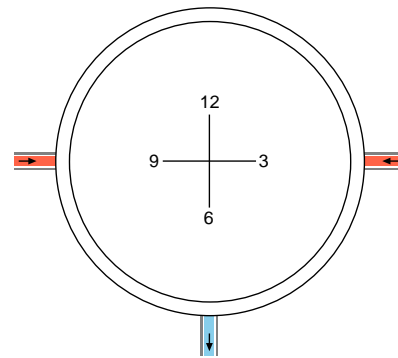
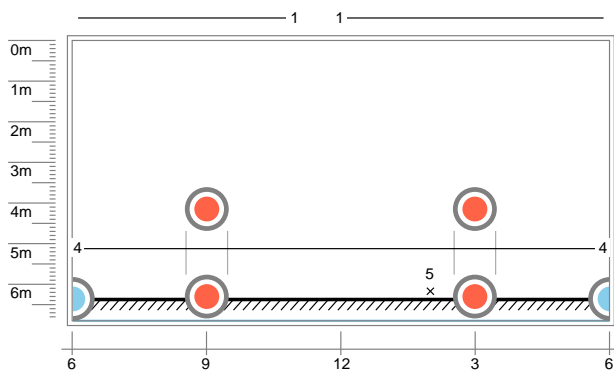
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	37.00

Bench

				Bench Height [inch]*	12.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.57	MGO	Reversal Inspection	CLEVER SCAN
2	4.59	MGO	General Observation	8" DROP LATERAL
3	4.67	MGO	General Observation	8" DROP LATERAL
4	5.14	SAV	Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch	
5	6.19	DSC	Deposits Settled Compacted, 5% of cross sectional area at 2 o'clock, within 8 inch	



Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-51		City Channel Island	Street [No. & Name] Ocean Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 6.90	

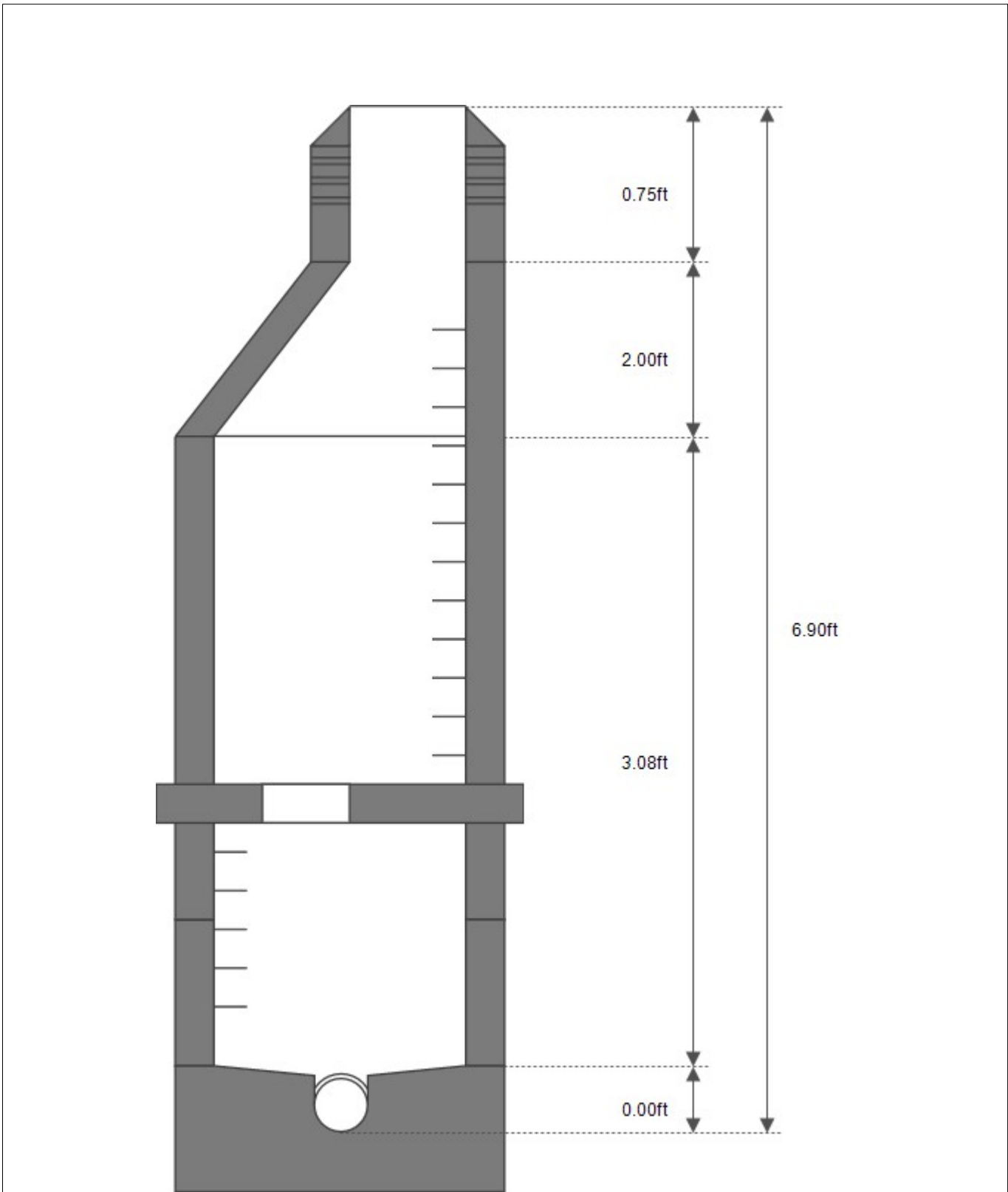
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	6.90	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	4.70	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	4.70	3	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-51	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-51	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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37-51_34621632_ace1_4c3b_9051_30e3d1d9a3a6_225cb988-2a8b-4a50-97ac-5af06f6feb0_P12.jpg,
, -0.57
Reversal Inspection



37-51_34621632_ace1_4c3b_9051_30e3d1d9a3a6_191bfa91-2aa8-4c55-849e-3db4854be88c_P12.jpg,
, 4.59
General Observation

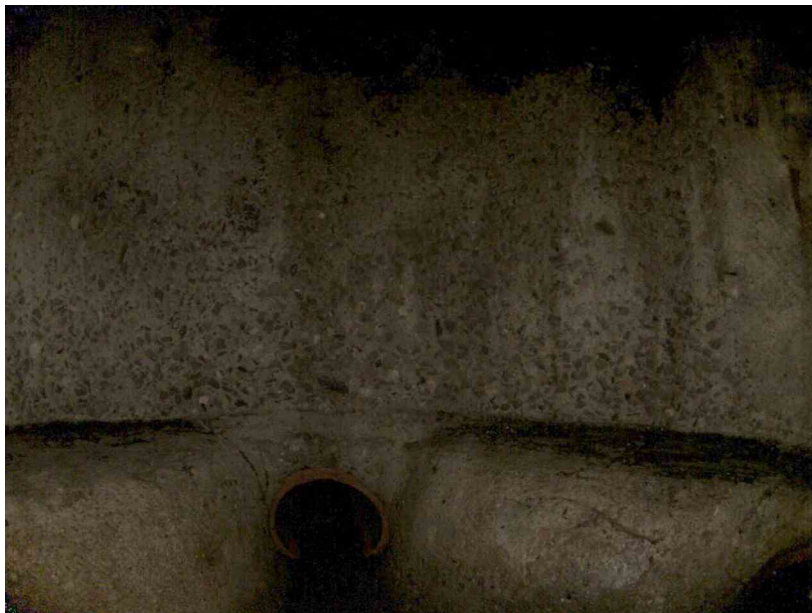


Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-51	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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37-51_34621632_ace1_4c3b_9051_30e3d1d9a3a6_8bf23683-625b-4dac-8d82-0b1faf1c940a_P12.jpg,
, 4.67
General Observation



37-51_34621632_ace1_4c3b_9051_30e3d1d9a3a6_e6a9046d-1abb-4f08-825f-f4f6fedf55bc_P12.jpg,
, 5.14
Surface Aggregate Visible from 12 o'clock to 12 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-51	City Channel Island	Street [No. & Name] Ocean Dr	Surveyed By Kyle Bahensky
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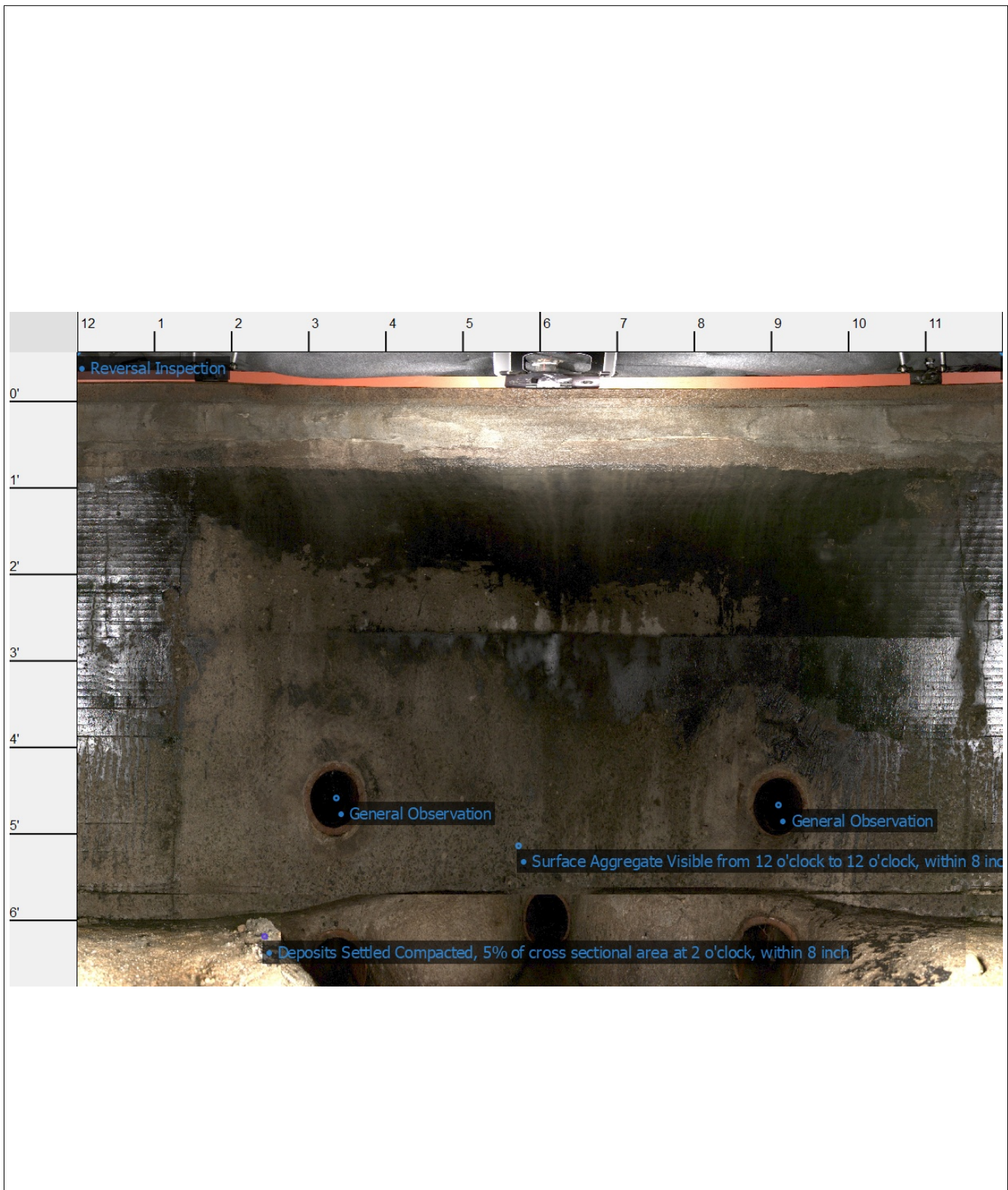


37-51_34621632_ace1_4c3b_9051_30e3d1d9a3a6_d15850d1-7919-4898-87c9-4ce2826f6222_P12.jpg,
, 6.19
Deposits Settled Compacted, 5% of cross sectional area at 2 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-51			





Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-68	City Channel Island	Street [No. & Name] Roosevelt Bl	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 9.90	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	18.00

Wall

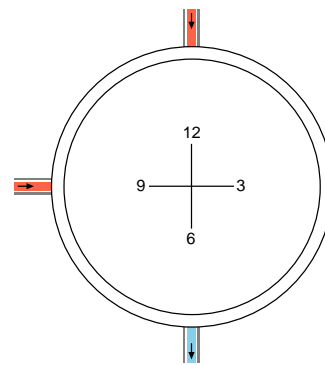
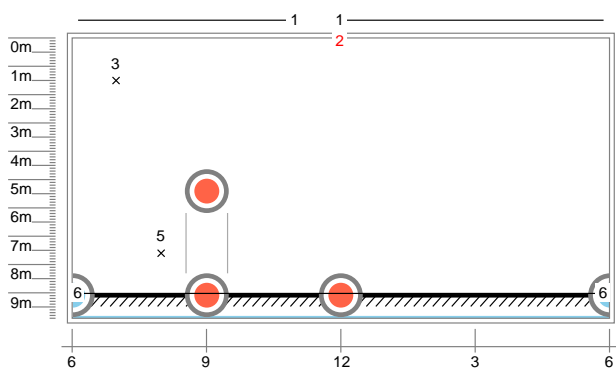
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	60.00

Bench

				Bench Height [inch]*	10.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.64	MGO	Reversal Inspection	CLEVER SCAN
2	0.16	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	1.53	CL	Crack Longitudinal at 7 o'clock, within 8 inch	
4	6.12	MGO	General Observation	DROP LATERAL
5	7.64	IS	Infiltration Stain at 8 o'clock, within 8 inch	
6	9.06	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-68		City Channel Island	Street [No. & Name] Roosevelt Bl	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.90	

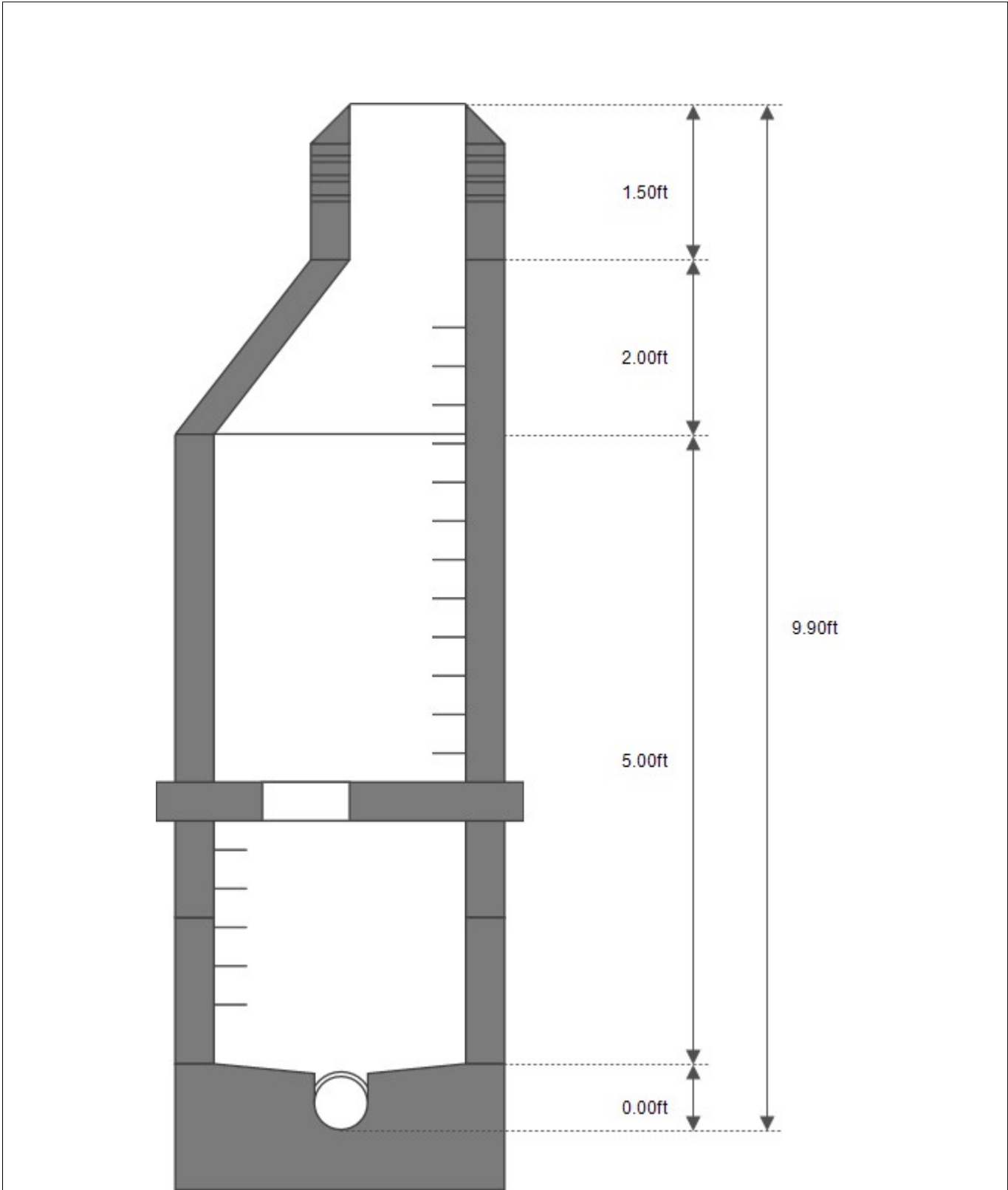
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.90	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	6.20	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	9.90	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

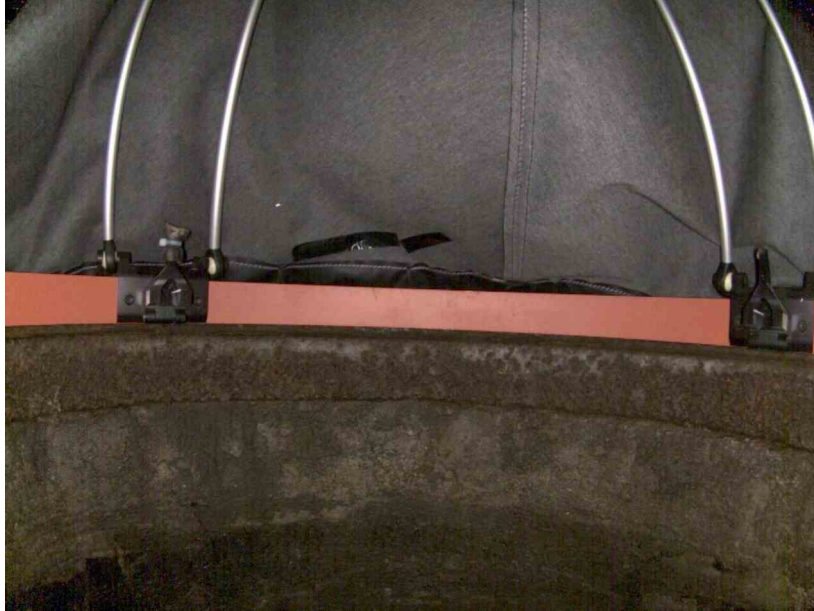
Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-68	City Channel Island	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-68	City Channel Island	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_eebec65c-2914-41bc-acf7-edcf99a71d67_P12.jpg,
, -0.64
Reversal Inspection



37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_262a9dd1-a25a-4fe9-a0ff-bd526de4f044_P12.jpg,
, 0.16
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-68	City Channel Island	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_ae7c9cc5-c9a6-4e8a-b4a1-aff349d573cc_P12.jpg,
, 1.53
Crack Longitudinal at 7 o'clock, within 8 inch



37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_3a45adca-c88b-42f1-98a7-9db734b8db86_P12.jpg,
, 6.12
General Observation

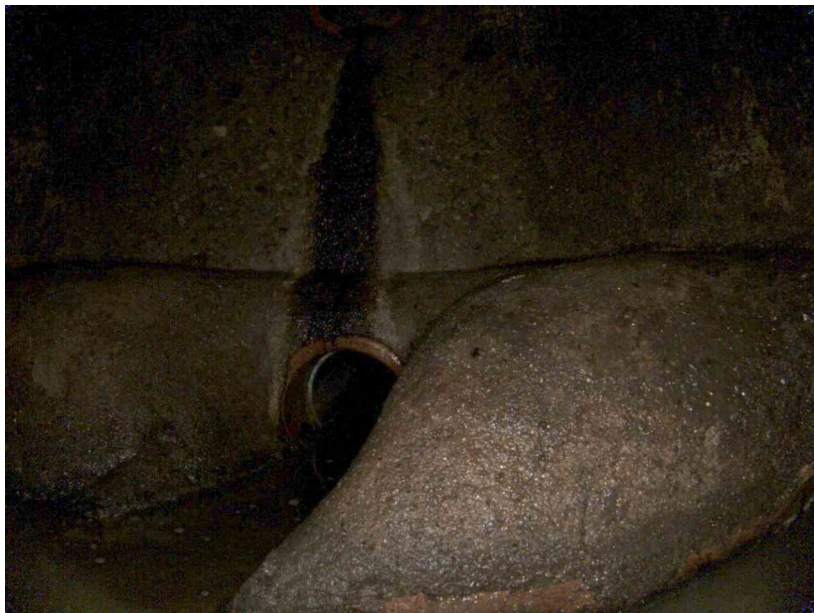


Node Pictures

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 37-68	City Channel Island	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_cceabf30-0668-4f75-8b7e-afd5d7217628_PI2.jpg,
, 7.64
Infiltration Stain at 8 o'clock, within 8 inch

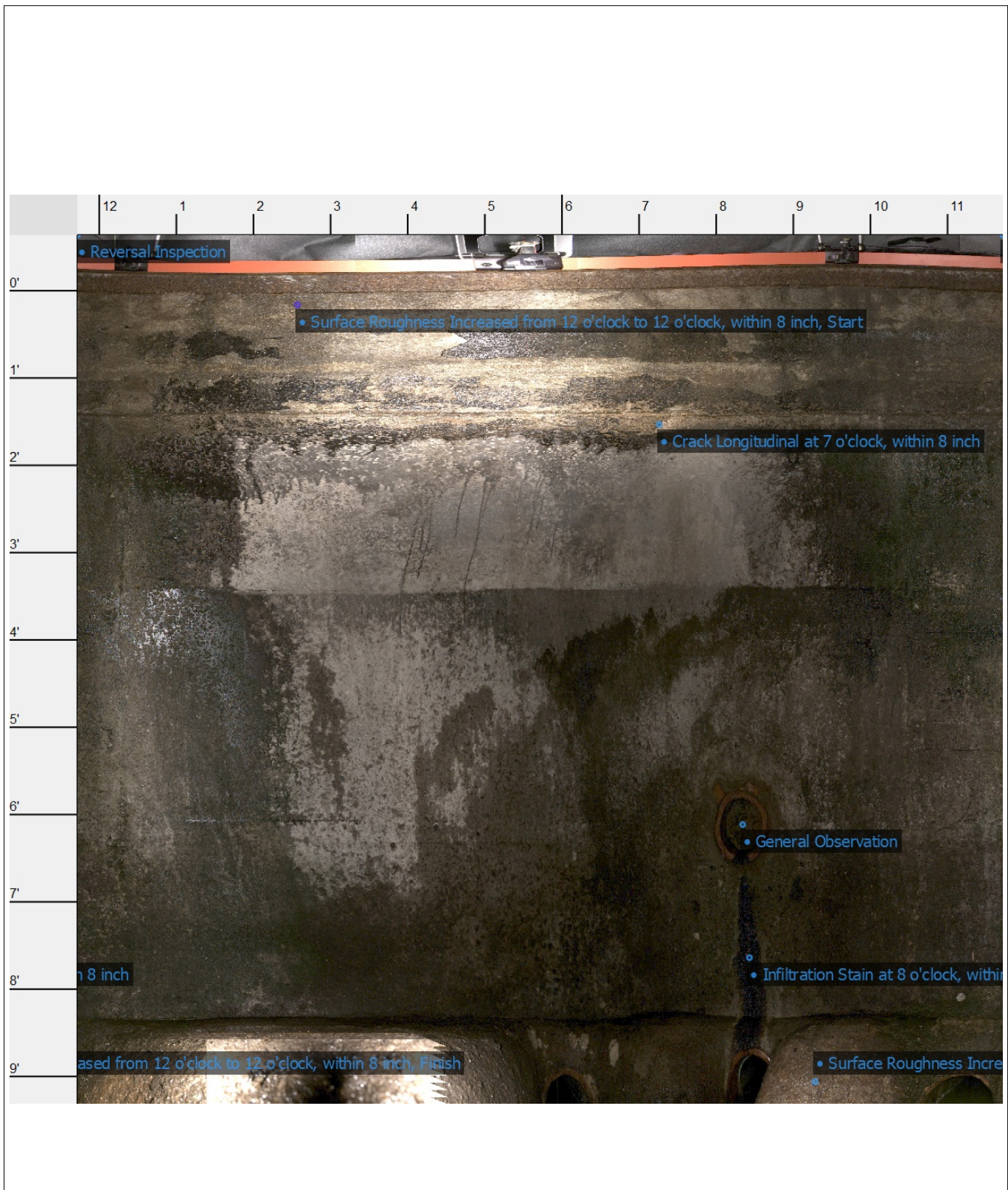


37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_7ffa3598-f871-4d67-9c66-1222b789523f_PI2.jpg,
, 9.06
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-68			





Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-74-A	City Channel Island	Street [No. & Name] Cahuenga Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 6.80	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	21.00

Wall

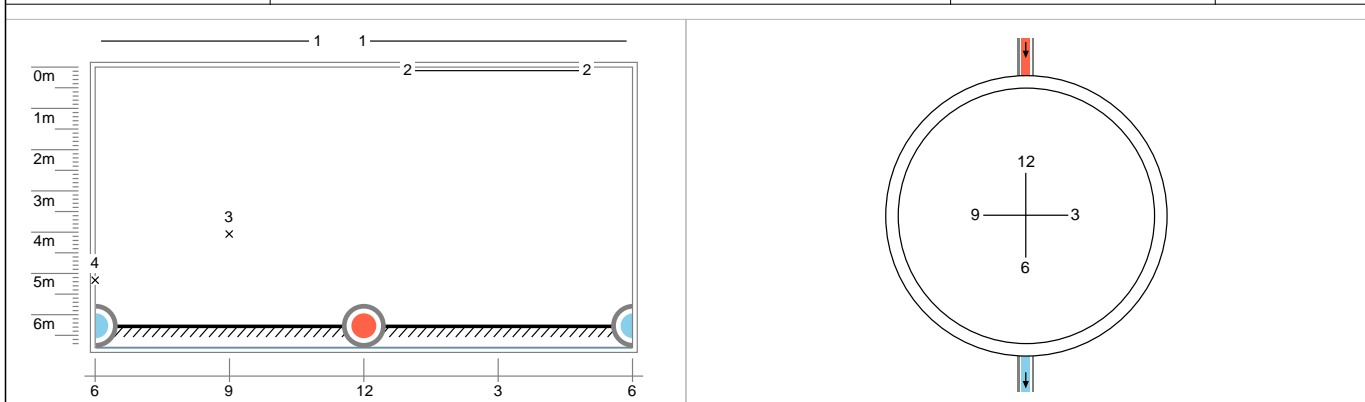
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	24.00

Bench

				Bench Height [inch]*	12.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.65	MGO	Reversal Inspection	CLEVER SCAN
2	0.10	CC	Crack Circumferential from 1 o'clock to 5 o'clock, within 8 inch	
3	4.05	SRC	Surface Reinforcement Corroded at 9 o'clock, within 8 inch	
4	5.17	SRC	Surface Reinforcement Corroded at 6 o'clock, within 8 inch	

Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	6.80	6	Other	Vitrified Clay Pipe	8	8	



Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-74-A		City Channel Island	Street [No. & Name] Cahuenga Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 6.80	

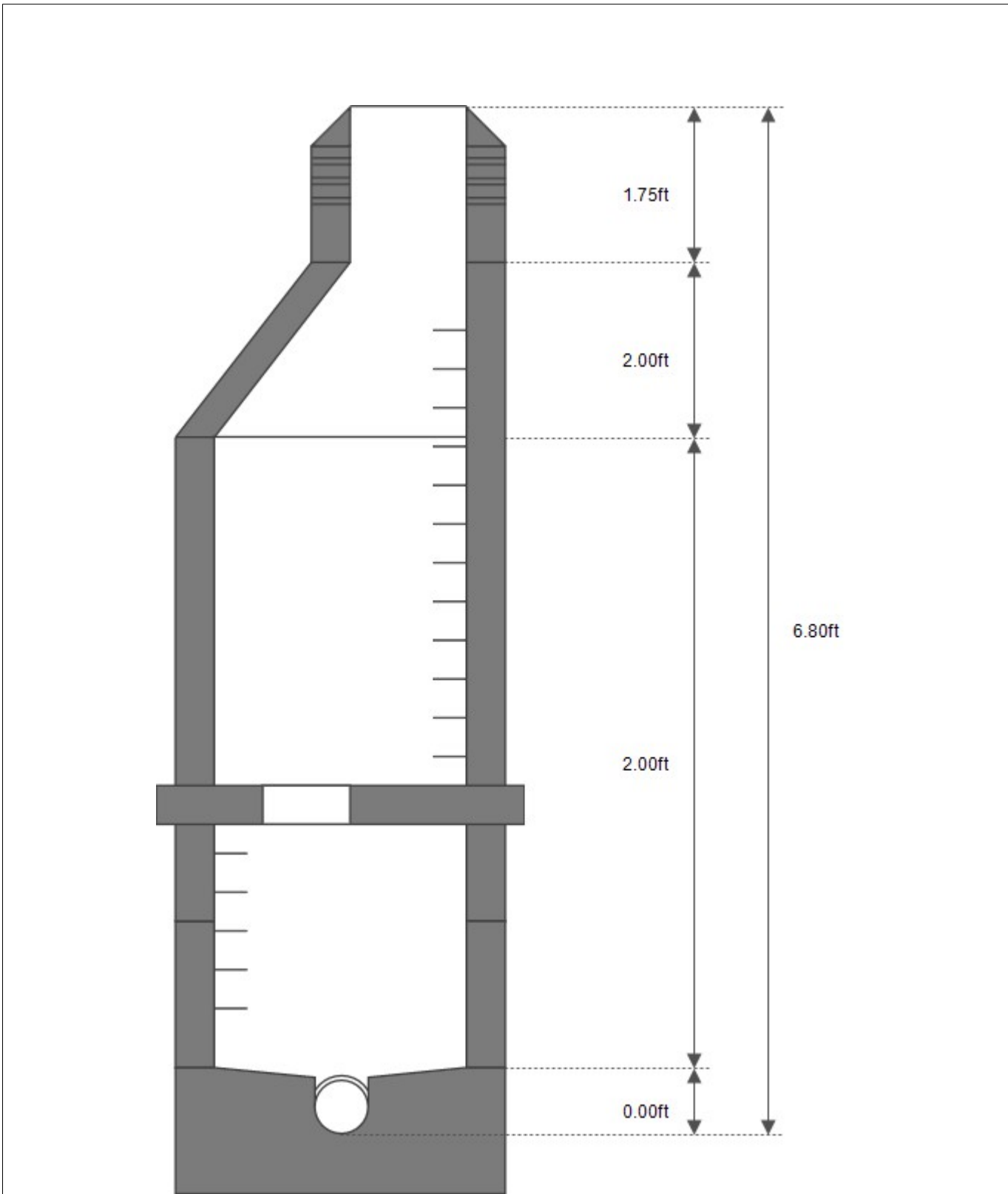
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
2	Inlet	6.80	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-74-A	City Channel Island	Street [No. & Name] Cahuenga Dr	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-74-A	City Channel Island	Street [No. & Name] Cahuenga Dr	Surveyed By Kyle Bahensky
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37-74-A_b7daeb13_42d1_4279_a6a1_58685002b84e_46f47148-d2d9-491e-bba8-4ebf9236c173_PL12.jpg,
, -0.65
Reversal Inspection



37-74-A_b7daeb13_42d1_4279_a6a1_58685002b84e_45779d46-ff56-4f6b-949a-5e76576667d8_PL12.jpg,
, 0.10
Crack Circumferential from 1 o'clock to 5 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-74-A	City Channel Island	Street [No. & Name] Cahuenga Dr	Surveyed By Kyle Bahensky
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37-74-A_b7daeb13_42d1_4279_a6a1_58685002b84e_4a3c4159-085a-48c4-bf71-d41e9af6a294_P12.jpg,
, 4.05
Surface Reinforcement Corroded at 9 o'clock, within 8 inch

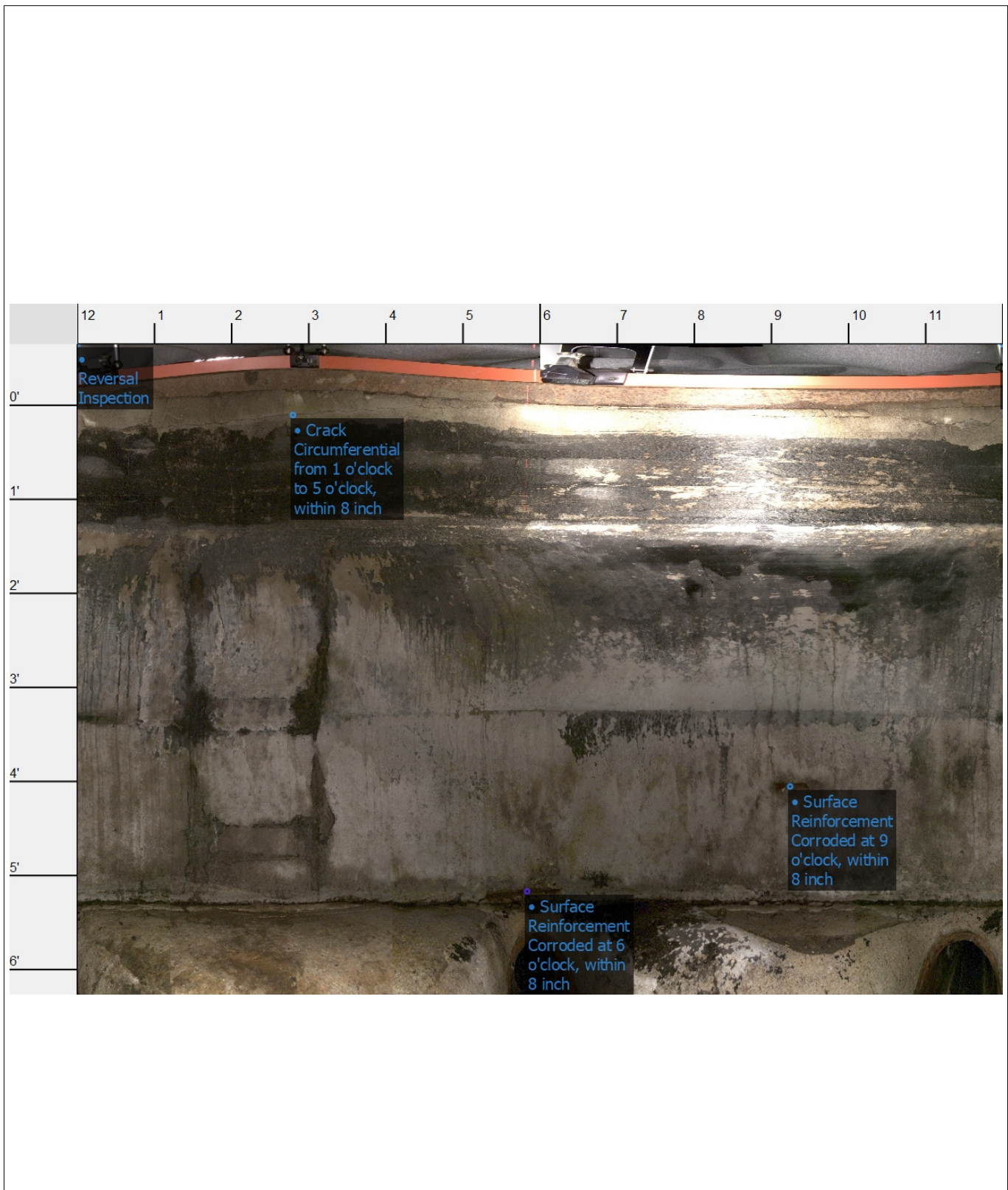


37-74-A_b7daeb13_42d1_4279_a6a1_58685002b84e_827eab20-93ee-45e4-9a82-80eed1922f70_P12.jpg,
, 5.17
Surface Reinforcement Corroded at 6 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-74-A			





Node Inspection

Date [MM/dd/yyyy] 7/4/2019	Manhole Number 37-89		City Silverstrand	Street [No. & Name] Roosevelt Bl	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 10.90	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	37.00	Cover Width [inch]	37.00
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	36.00	Chimney Width [inch]*	36.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	24.00

Wall

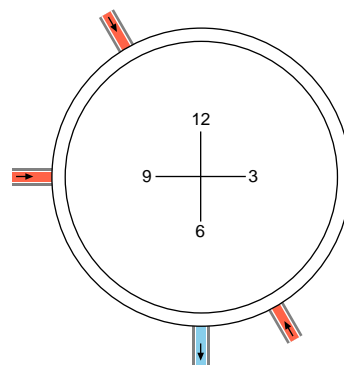
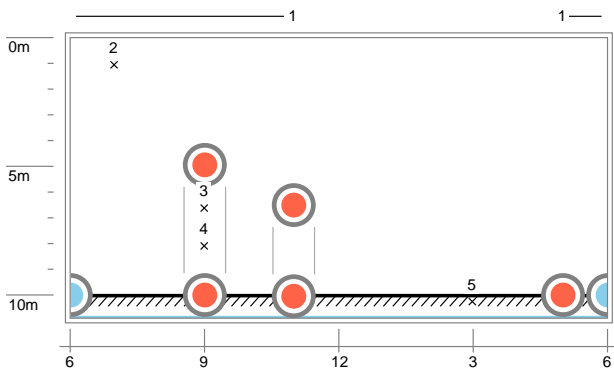
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	95.00

Bench

				Bench Height [inch]*	10.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.87	MGO	Reversal Inspection	CLEVER SCAN
2	1.09	LFDL	Lining Failure Delaminating at 7 o'clock, within 8 inch	
3	6.62	LFB	Lining Failure Blistered at 9 o'clock, within 8 inch	
4	8.11	LFB	Lining Failure Blistered at 9 o'clock, within 8 inch	
5	10.27	LFDL	Lining Failure Delaminating at 3 o'clock, within 8 inch	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments



Node Inspection

Date [MM/dd/yyyy] 7/4/2019	Manhole Number 37-89		City Silverstrand	Street [No. & Name] Roosevelt Bl	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 10.90	

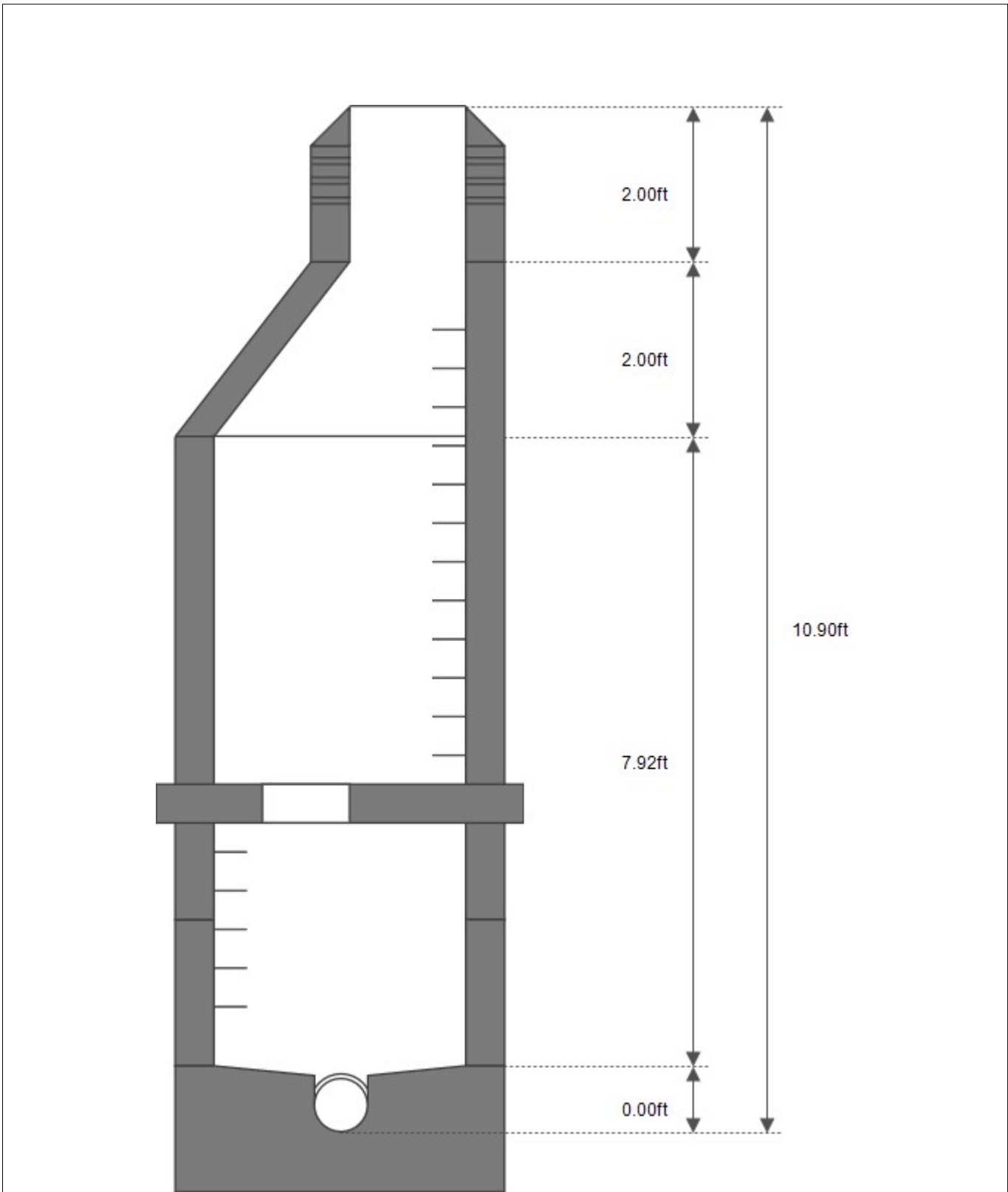
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	10.90	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	5.80	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	7.40	11	Other	Vitrified Clay Pipe	8	8	
4	Inlet	10.90	5	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 7/4/2019	Manhole Number 37-89	City Silverstrand	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 7/4/2019	Manhole Number 37-89	City Silverstrand	Street [No. & Name] Roosevelt Bl	Surveyed By Kyle Bahensky
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37-89_b7b73460_144a_4a36_a05d_2d26ddf59287_c20be16e-f7ee-4566-aa93-bd29f9e8a2c3_P12.jpg,
, -0.87
Reversal Inspection



37-89_b7b73460_144a_4a36_a05d_2d26ddf59287_4b2498f2-a6f4-40ea-a2fd-8922a026abcd_P12.jpg,
, 1.09
Lining Failure Delaminating at 7 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 7/4/2019	Manhole Number 37-89	City Silverstrand	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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37-89_b7b73460_144a_4a36_a05d_2d26ddf59287_9894b9ec-1349-4f86-a48a-e26b06d462bb_P12.jpg,
, 6.62
Lining Failure Blistered at 9 o'clock, within 8 inch



37-89_b7b73460_144a_4a36_a05d_2d26ddf59287_b1ce53f6-c38b-4399-a014-cac116379f5e_P12.jpg,
, 8.11
Lining Failure Blistered at 9 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 7/4/2019	Manhole Number 37-89	City Silverstrand	Street [No. & Name] Roosevelt BI	Surveyed By Kyle Bahensky
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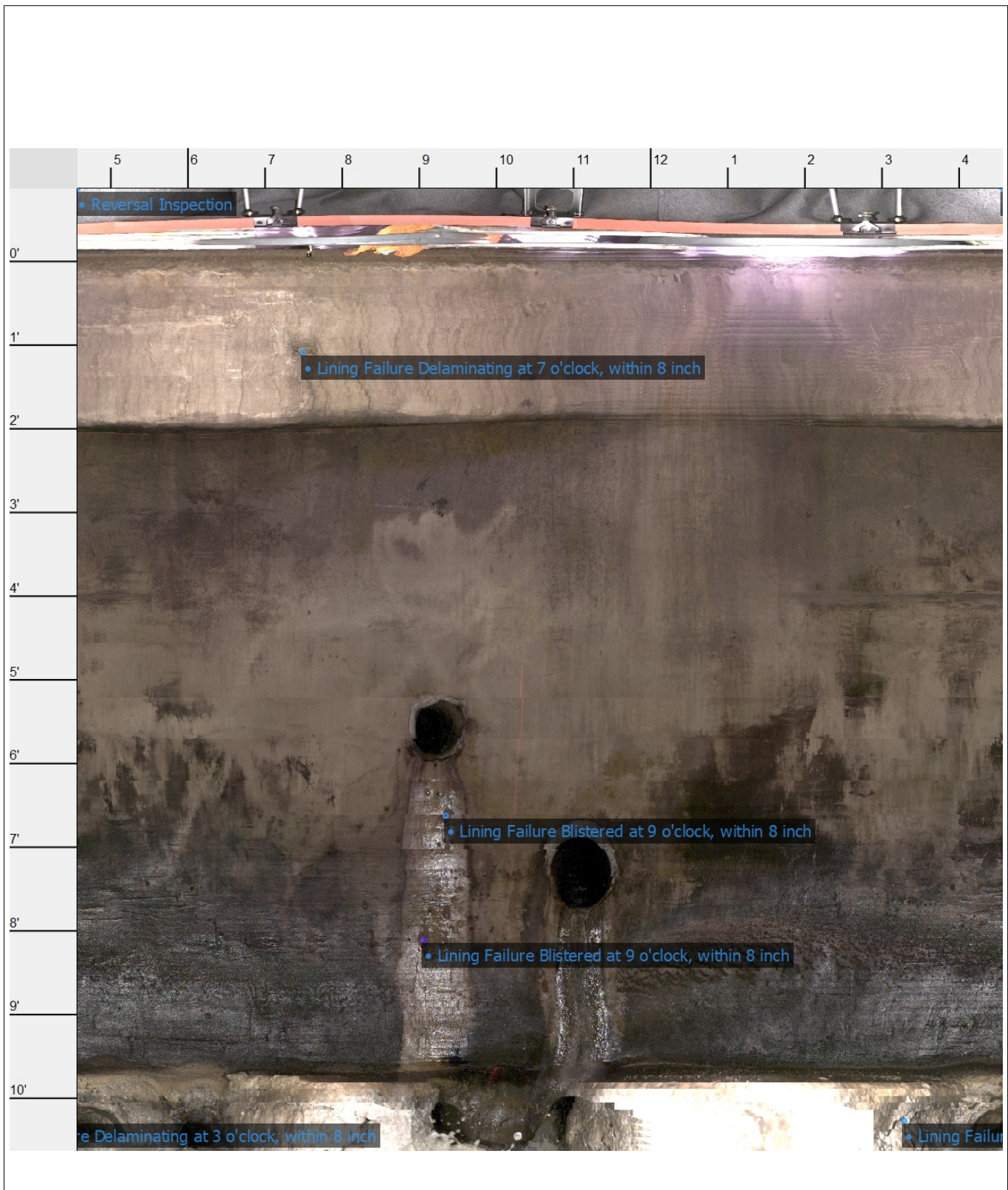


37-89_b7b73460_144a_4a36_a05d_2d26ddf59287_84ddab16-6324-489c-9c4c-349cbfa86c2d_P12.jpg,
, 10.27
Lining Failure Delaminating at 3 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-89			





Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A	City Channel Island	Street [No. & Name] Highland Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 10.50	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	15.00

Wall

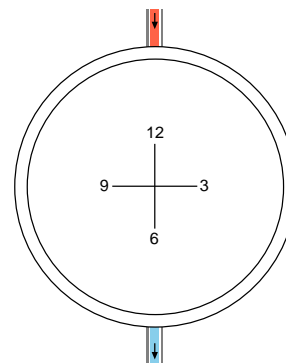
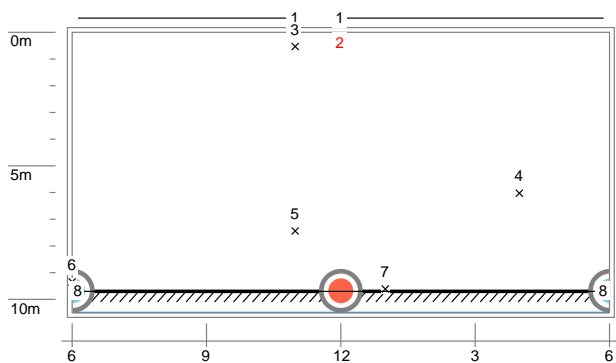
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	74.00

Bench

				Bench Height [inch]*	10.00
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Channel

Channel Material	Concrete (reinforced)				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.55	MGO	Reversal Inspection	CLEVER SCAN
2	0.41	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.55	RFJ	Roots Fine Joint at 11 o'clock, within 8 inch	
4	6.04	SRC	Surface Reinforcement Corroded at 4 o'clock, within 8 inch	
5	7.45	SRC	Surface Reinforcement Corroded at 11 o'clock, within 8 inch	
6	9.36	SAV	Surface Aggregate Visible at 6 o'clock, within 8 inch	
7	9.65	DSC	Deposits Settled Compacted, 5% of cross sectional area at 1 o'clock, within 8 inch	



Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A		City Channel Island	Street [No. & Name] Highland Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 10.50	

Observations

No.	Depth	MACP Code	Observation	Remark
8	9.72	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	

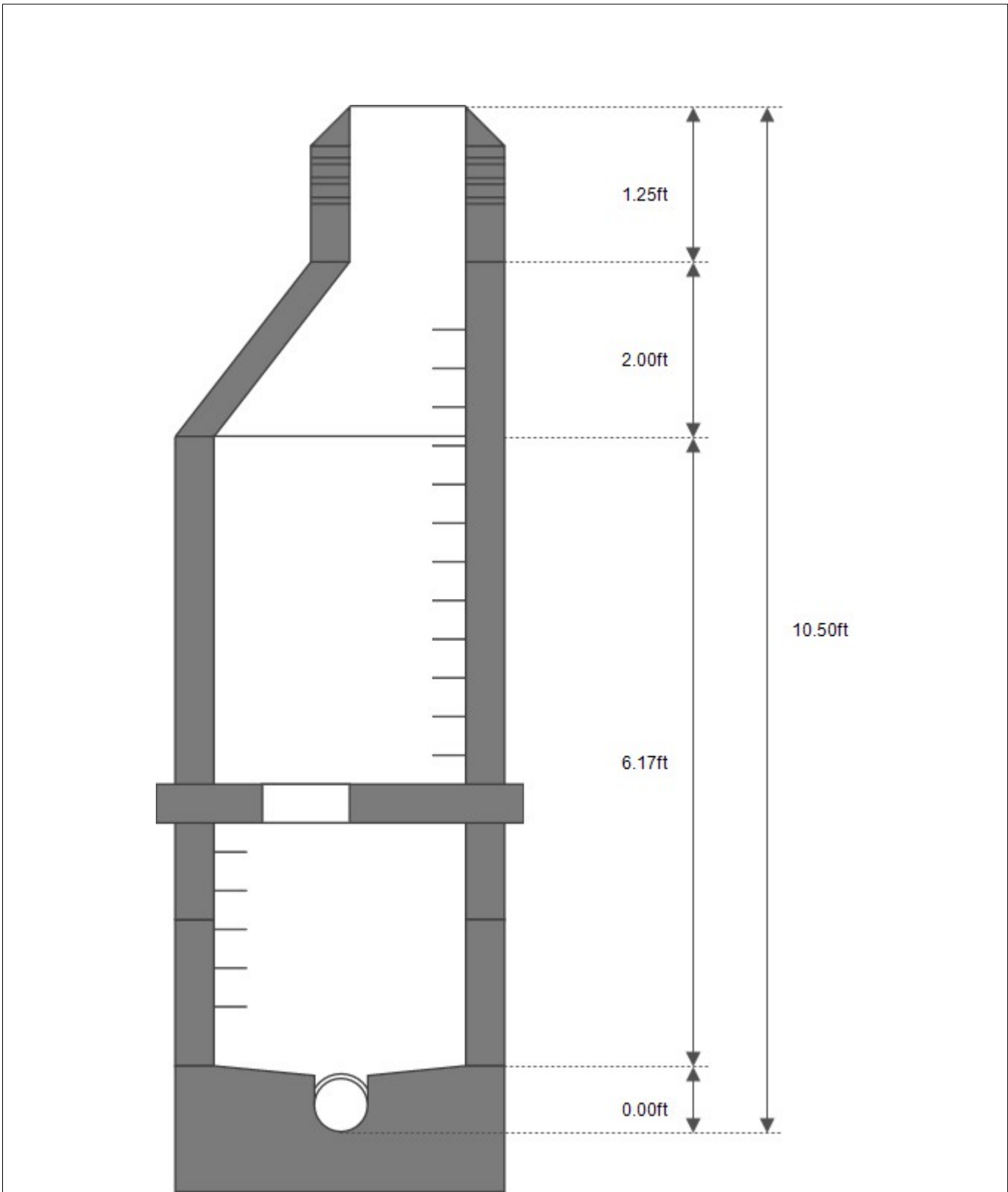
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	10.50	6	U-Shaped with Flat Top	Vitrified Clay Pipe	8	8	
2	Inlet	10.50	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A	City Channel Island	Street [No. & Name] Highland Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A	City Channel Island	Street [No. & Name] Highland Dr.	Surveyed By Kyle Bahensky
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37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_0e4cc9a1-0352-4e48-956a-4911daeeadb_P12.jpg,
, -0.55
Reversal Inspection



37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_7b46ce55-72ba-4220-988e-558e8da0b1e2_P12.jpg,
, 0.41
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start

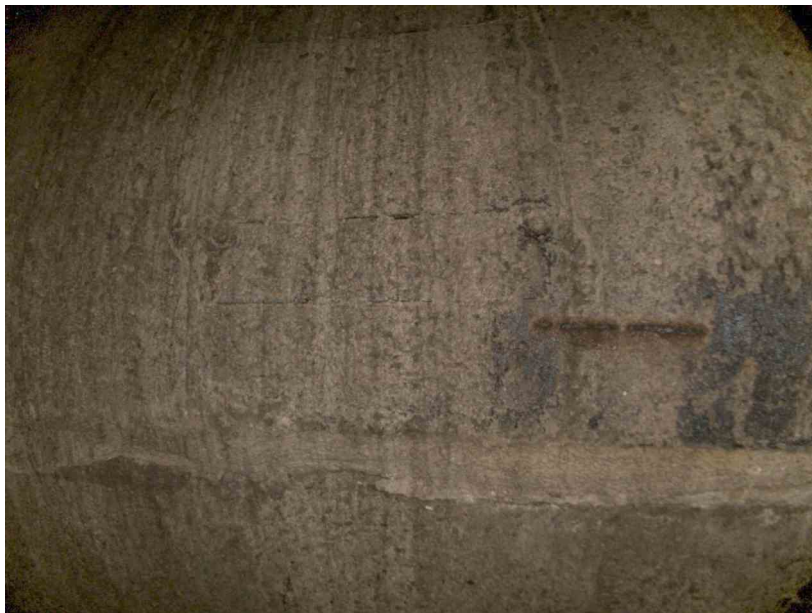


Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A	City Channel Island	Street [No. & Name] Highland Dr.	Surveyed By Kyle Bahensky
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37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_8a0b00ee-7a80-43b3-819d-5ee4896b024f_P12.jpg,
, 0.55
Roots Fine Joint at 11 o'clock, within 8 inch



37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_9872ef22-10e6-4e16-b00a-1ae64e3d987c_P12.jpg,
, 6.04
Surface Reinforcement Corroded at 4 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A	City Channel Island	Street [No. & Name] Highland Dr.	Surveyed By Kyle Bahensky
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37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_899e83b9-6c9a-4762-8ffe-2ac3267b634f_P12.jpg,
, 7.45
Surface Reinforcement Corroded at 11 o'clock, within 8 inch



37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_e4783387-ff88-4695-9728-0f5a51522fba_P12.jpg,
, 9.36
Surface Aggregate Visible at 6 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-89-A	City Channel Island	Street [No. & Name] Highland Dr.	Surveyed By Kyle Bahensky
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37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_ecc5a2b4-0e5d-4a59-bd74-3ad261f44915_P12.jpg,
, 9.65
Deposits Settled Compacted, 5% of cross sectional area at 1 o'clock, within 8 inch

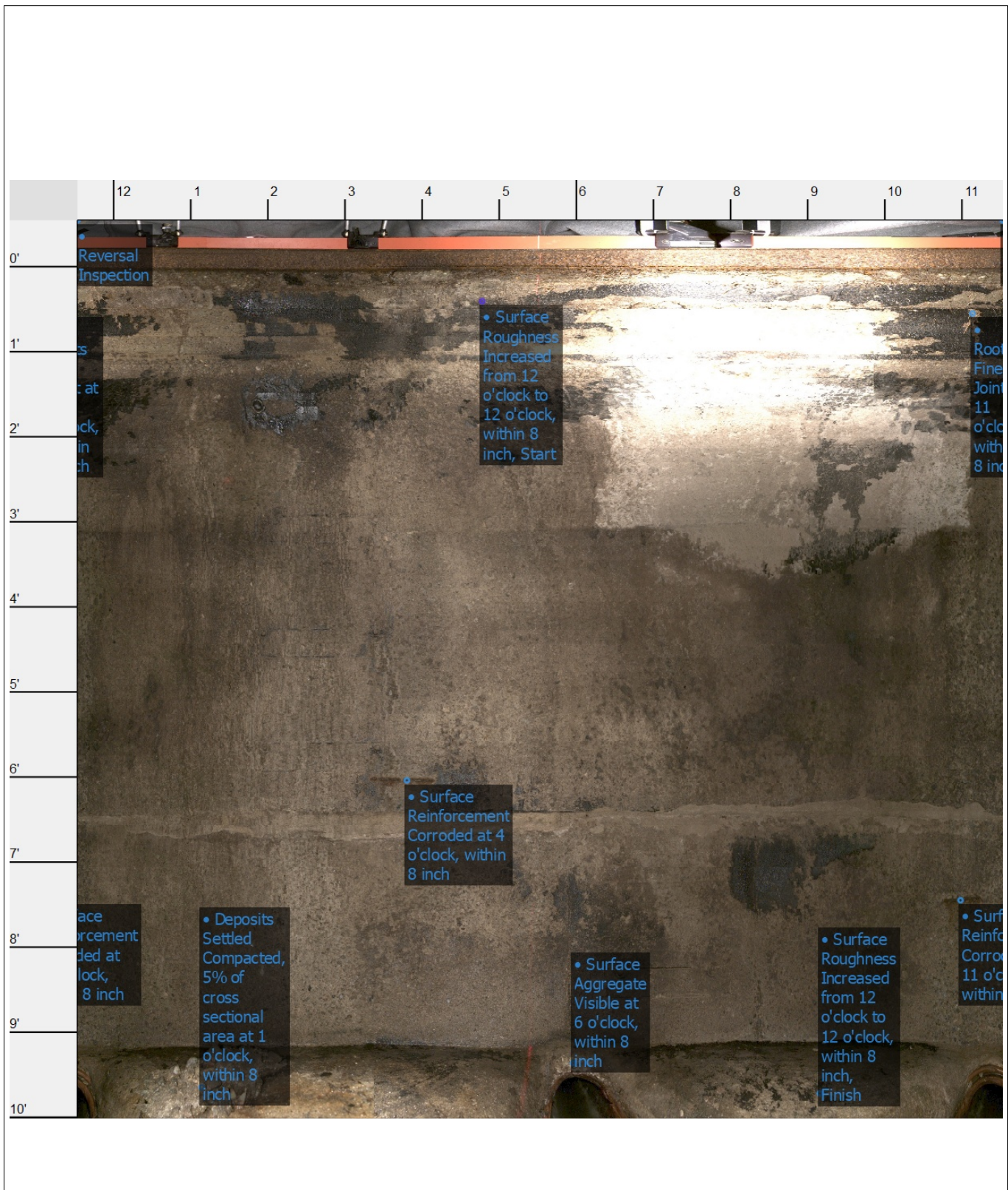


37-89-A_b79949af_46fc_4028_94b0_26ae49ec5641_a945008b-5325-4d7e-8664-792337a22581_P12.jpg,
, 9.72
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-89-A			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.80	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	17.00

Wall

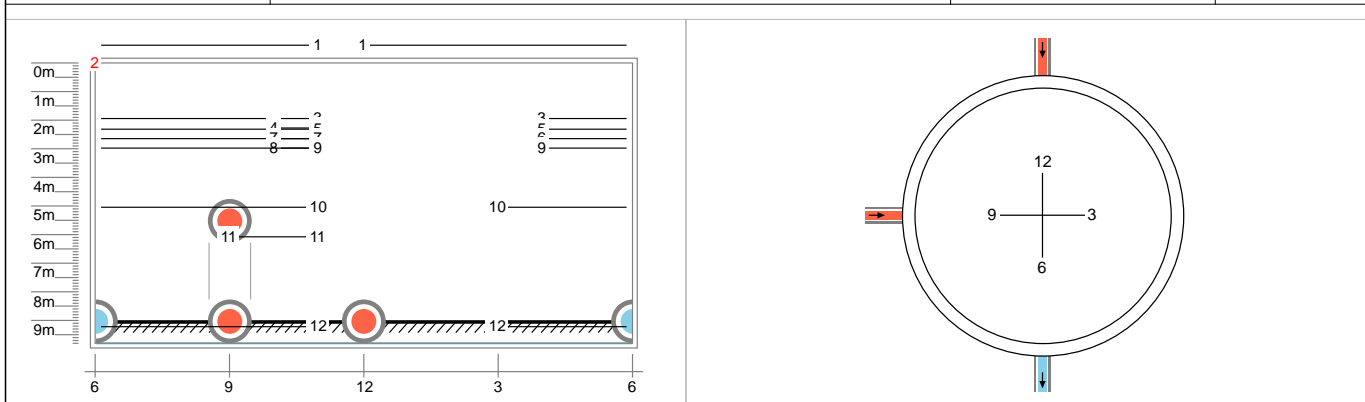
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	61.00

Bench

				Bench Height [inch]*	10.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.65	MGO	Reversal Inspection	Clever Scan
2	0.03	SRI	Surface Roughness Increased, from 06 to -01 o'clock, within 8 inch, S01	
3	1.96	SRC	Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch	
4	2.31	SRC	Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch	
5	2.34	SRC	Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch	



Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.80	

Observations

No.	Depth	MACP Code	Observation	Remark
6	2.65	SRC	Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch	
7	2.66	SRC	Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch	
8	2.98	SRC	Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch	
9	3.01	SRC	Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch	
10	5.09	IS	Infiltration Stain, from 03 to -01 o'clock, within 8 inch	
11	6.11	MGO	Reversal Inspection	8" Drop Lateral
12	9.25	SRI	Surface Roughness Increased, from 03 to -01 o'clock, within 8 inch, F01	

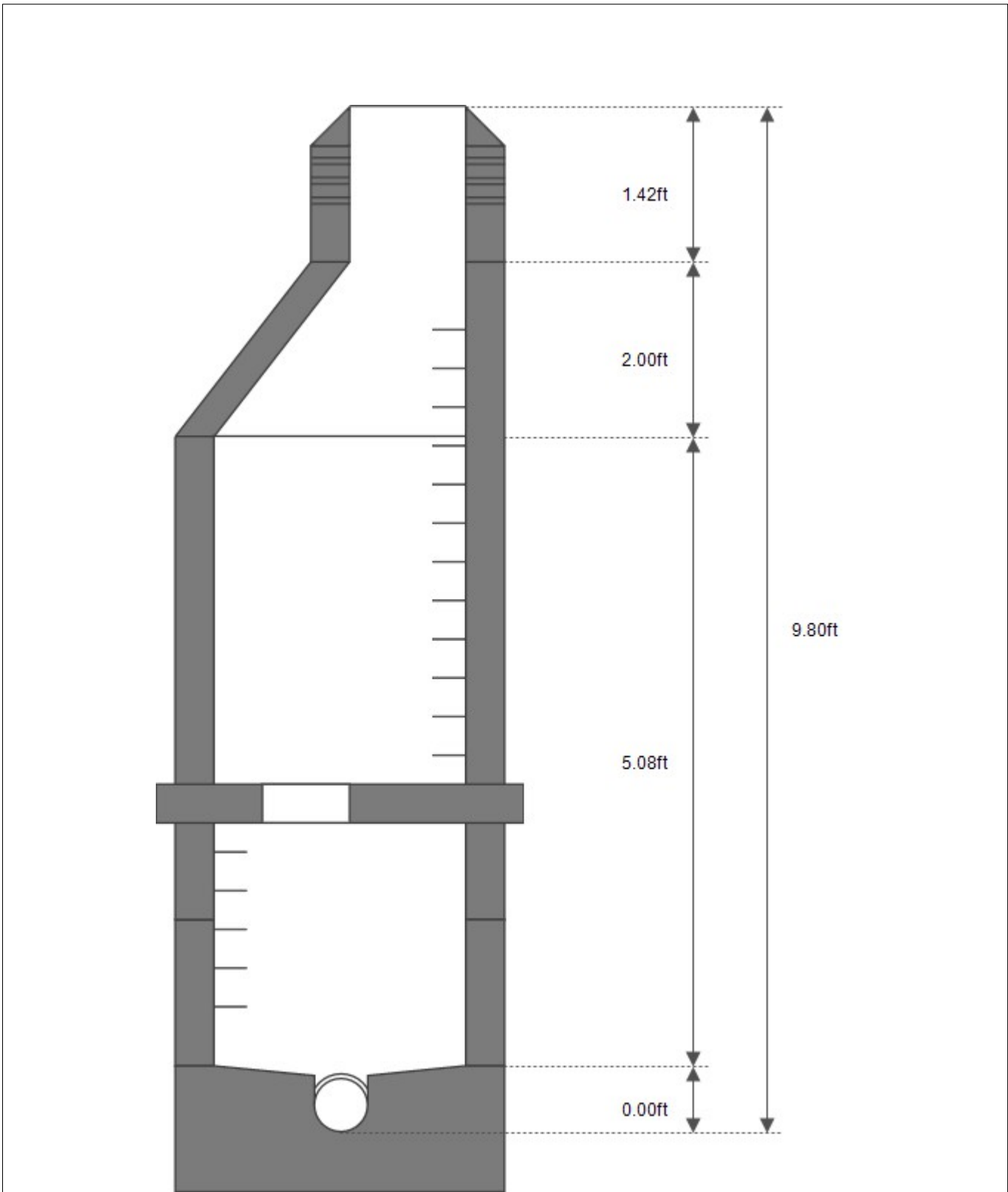
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.80	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	6.30	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	9.80	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_afd4acce-0ddf-4415-8043-494730b2a710_P12.jpg,
, -0.65
Reversal Inspection



28-09_649da561_021a_4b6c_b8b5_5695380ff438_47b6dd48-897f-4927-b742-b77f48d8bb36_P11.jpg,
, 0.03
Surface Roughness Increased, from 06 to -01 o'clock, within 8 inch, S01



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_47b6dd48-897f-4927-b742-b77f48d8bb36_P12.jpg,
, 0.03
Surface Roughness Increased, from 06 to -01 o'clock, within 8 inch, S01



28-09_649da561_021a_4b6c_b8b5_5695380ff438_b885c202-bd32-45ca-881d-169679afd8a0_P11.jpg,
, 1.96
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_b885c202-bd32-45ca-881d-169679afd8a0_P12.jpg,
, 1.96
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_986d42a2-93a6-4e4d-99ca-49bd4ffbe2ba_P11.jpg,
, 2.31
Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_986d42a2-93a6-4e4d-99ca-49bd4ffbe2ba_P12.jpg,
, 2.31
Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_32a59c61-a6ba-4cd0-bd9a-85c83e97f5d5_P11.jpg,
, 2.34
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_32a59c61-a6ba-4cd0-bd9a-85c83e97f5d5_P12.jpg,
, 2.34
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_4699b76d-f272-4f57-a29f-4c5b9f8f7dc2_P11.jpg,
, 2.65
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_4699b76d-f272-4f57-a29f-4c5b9f8f7dc2_P12.jpg,
, 2.65
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_60335b05-d594-4c98-89f4-79bf729726fe_P11.jpg,
, 2.66
Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_60335b05-d594-4c98-89f4-79bf729726fe_P12.jpg,
, 2.66
Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_45944e11-9aa9-4c5e-8023-ea428999f8aa_P11.jpg,
, 2.98
Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_45944e11-9aa9-4c5e-8023-ea428999f8aa_P12.jpg,
, 2.98
Surface Reinforcement Corroded, from 10 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_bbc57b83-8037-4a5b-8b09-f94d6c96ff7a_P11.jpg,
, 3.01
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_bbc57b83-8037-4a5b-8b09-f94d6c96ff7a_P12.jpg,
, 3.01
Surface Reinforcement Corroded, from 04 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_12f4e905-5732-41ca-8680-3f1580b7b9a8_P11.jpg,
, 5.09
Infiltration Stain, from 03 to -01 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_12f4e905-5732-41ca-8680-3f1580b7b9a8_P12.jpg,
, 5.09
Infiltration Stain, from 03 to -01 o'clock, within 8 inch



28-09_649da561_021a_4b6c_b8b5_5695380ff438_0d99eae3-f120-4cc3-8fc9-1f7a441bdf55_P11.jpg,
, 6.11
Reversal Inspection

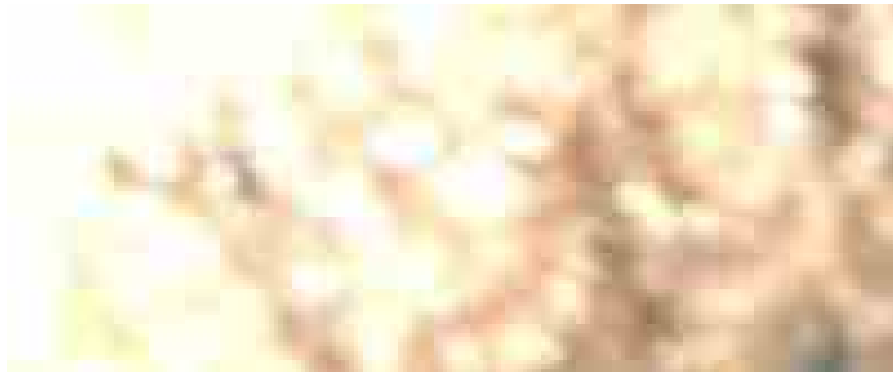


Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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28-09_649da561_021a_4b6c_b8b5_5695380ff438_0d99eae3-f120-4cc3-8fc9-1f7a441bdf55_P12.jpg,
, 6.11
Reversal Inspection



28-09_649da561_021a_4b6c_b8b5_5695380ff438_46b2a042-f0c1-4b8d-81b9-c02dd1b32027_P11.jpg,
, 9.25
Surface Roughness Increased, from 03 to -01 o'clock, within 8 inch, F01



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-09	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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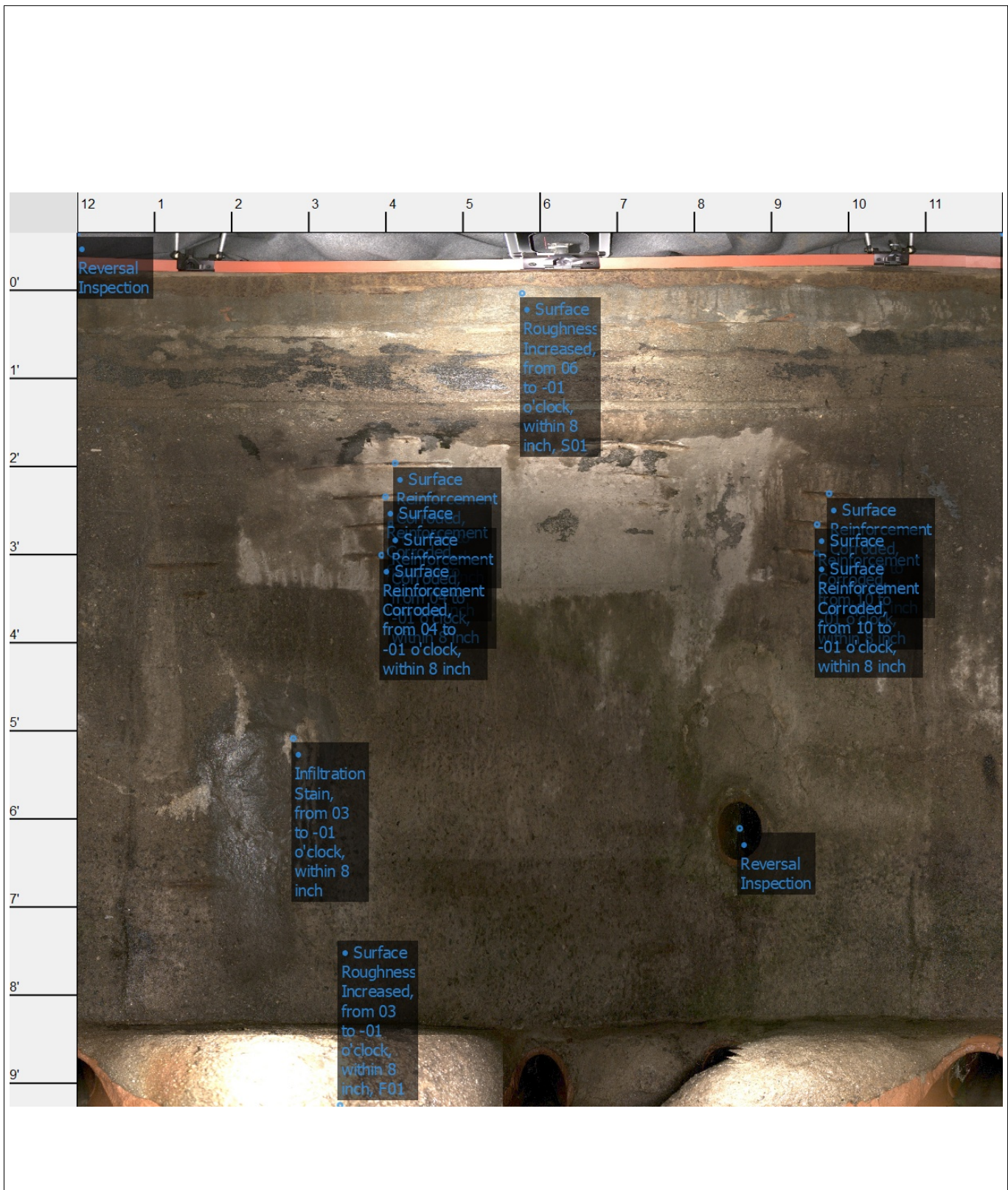


28-09_649da561_021a_4b6c_b8b5_5695380ff438_46b2a042-f0c1-4b8d-81b9-c02dd1b32027_P12.jpg,
, 9.25
Surface Roughness Increased, from 03 to -01 o'clock, within 8 inch, F01



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	38-09			





Node Inspection

Date [MM/dd/yyyy] 7/2/2019	Manhole Number 38-21	City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 8.30	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	18.00

Wall

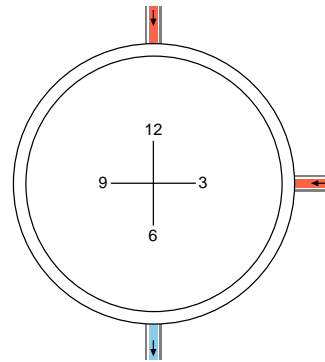
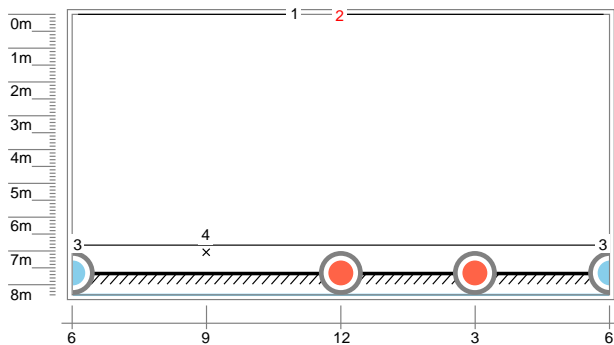
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	44.00

Bench

				Bench Height [inch]*	8.00
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Channel

Channel Material	Vitrified Clay				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	0.00	MGO	Reversal Inspection	CLEVER SCAN
2	0.09	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	6.86	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	
4	7.04	SRI	Surface Roughness Increased at 9 o'clock, within 8 inch	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
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Node Inspection

Date [MM/dd/yyyy] 7/2/2019	Manhole Number 38-21		City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 8.30	

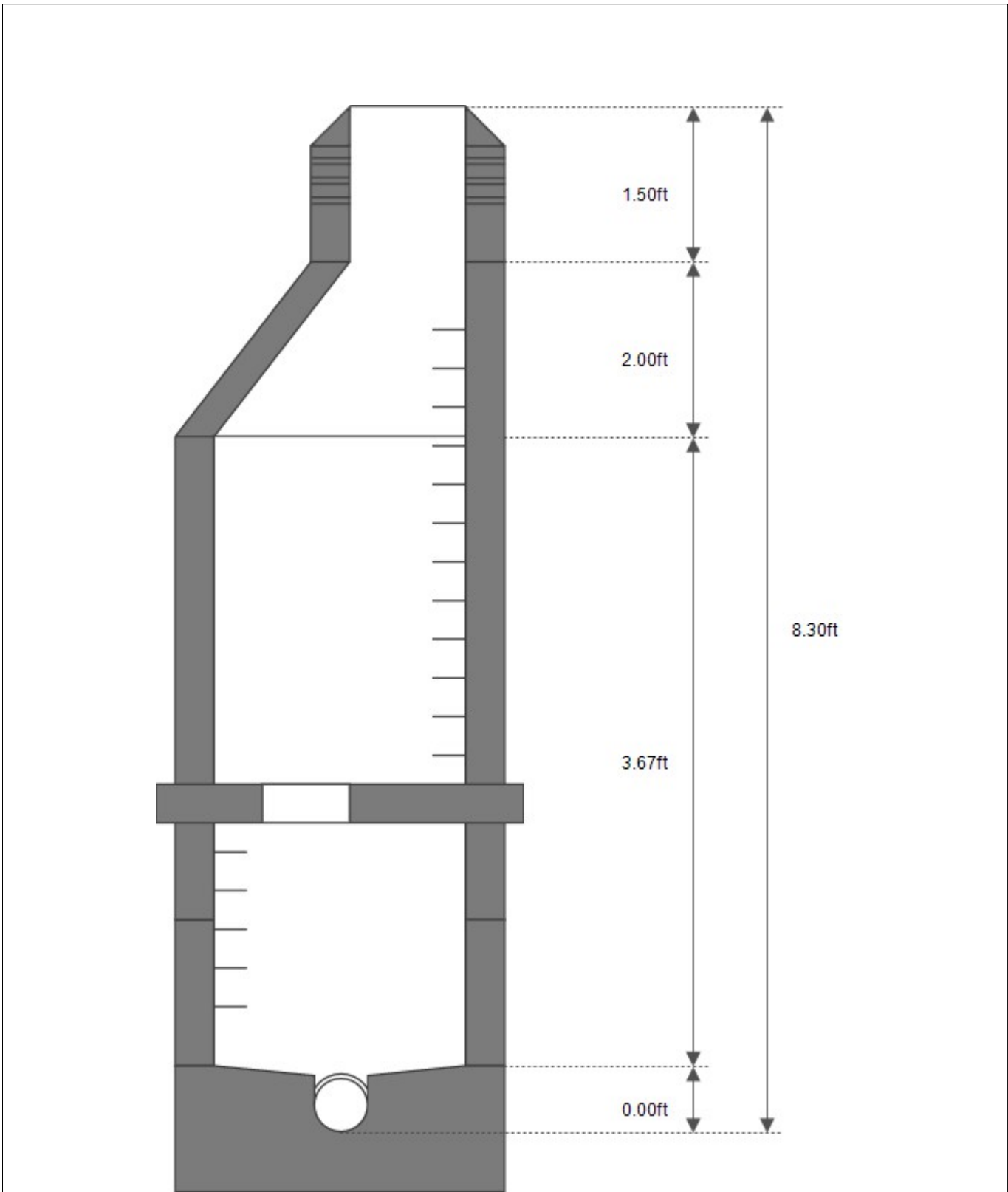
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	8.30	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	8.30	12	Other	Vitrified Clay Pipe	8	8	
3	Inlet	8.30	3	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 7/2/2019	Manhole Number 38-21	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 7/2/2019	Manhole Number 38-21	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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38-21_d8133f19_15ad_4f3f_8ad3_1a1fbd3e9bcc_efdde548-fbf8-48ea-8cdc-64e03aa07514_P12.jpg,
, 0.00
Reversal Inspection



38-21_d8133f19_15ad_4f3f_8ad3_1a1fbd3e9bcc_dbb02aab-ad39-4ede-a058-eb7f5cf2afe2_P12.jpg,
, 0.09
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 7/2/2019	Manhole Number 38-21	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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38-21_d8133f19_15ad_4f3f_8ad3_1a1fbd3e9bcc_7d94c4b9-1f0e-4e30-b78c-a42c2e01df47_P12.jpg,
, 6.86
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish

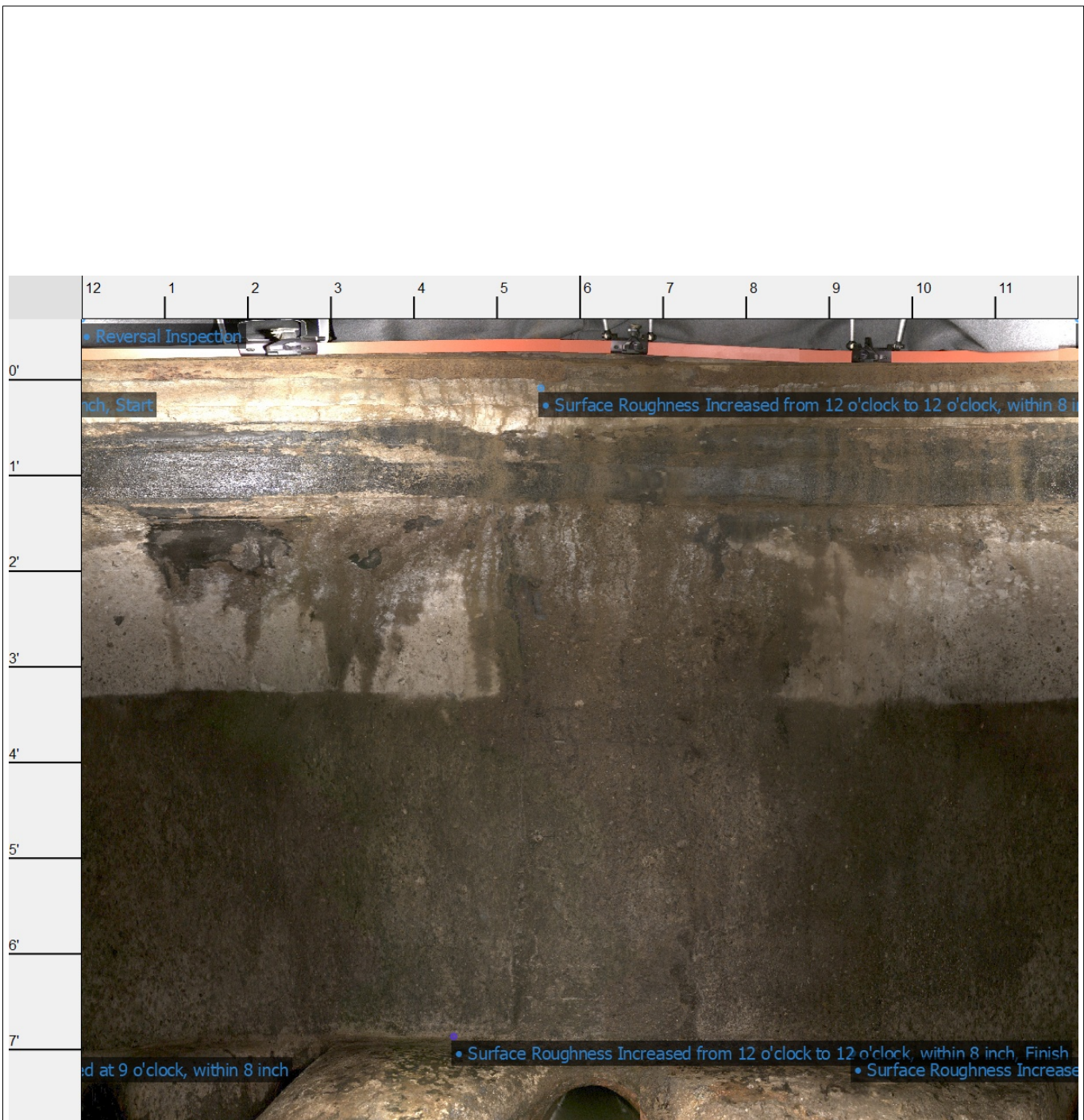


38-21_d8133f19_15ad_4f3f_8ad3_1a1fbd3e9bcc_3473cc27-aada-4e57-85ec-a1ffa681dc35_P12.jpg,
, 7.04
Surface Roughness Increased at 9 o'clock, within 8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	38-21			





Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-23		City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.20	

Steps

				Step Material	
--	--	--	--	---------------	--

Cover

Cover Shape	Other	Cover Size [inch]	26.00	Cover Width [inch]	26.00
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)			Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	8.00

Wall

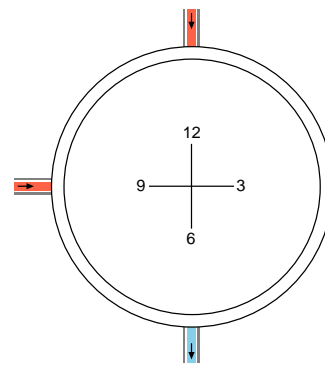
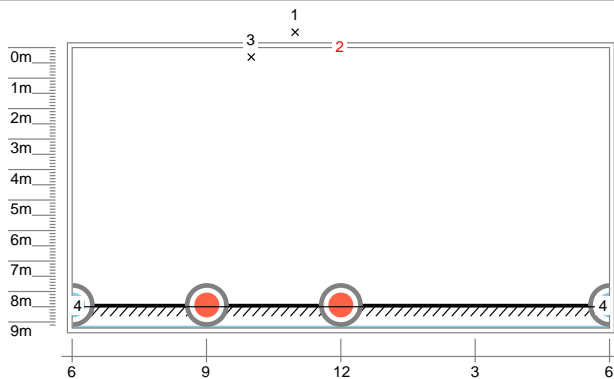
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	60.00

Bench

				Bench Height [inch]*	12.00
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Channel

Channel Material	Concrete (reinforced)				
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.52	MGO	Reversal Inspection	CLEVER SCAN
2	0.02	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.33	CL	Crack Longitudinal at 10 o'clock, within 8 inch	
4	8.50	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
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Node Inspection

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-23		City Channel Island	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.20	

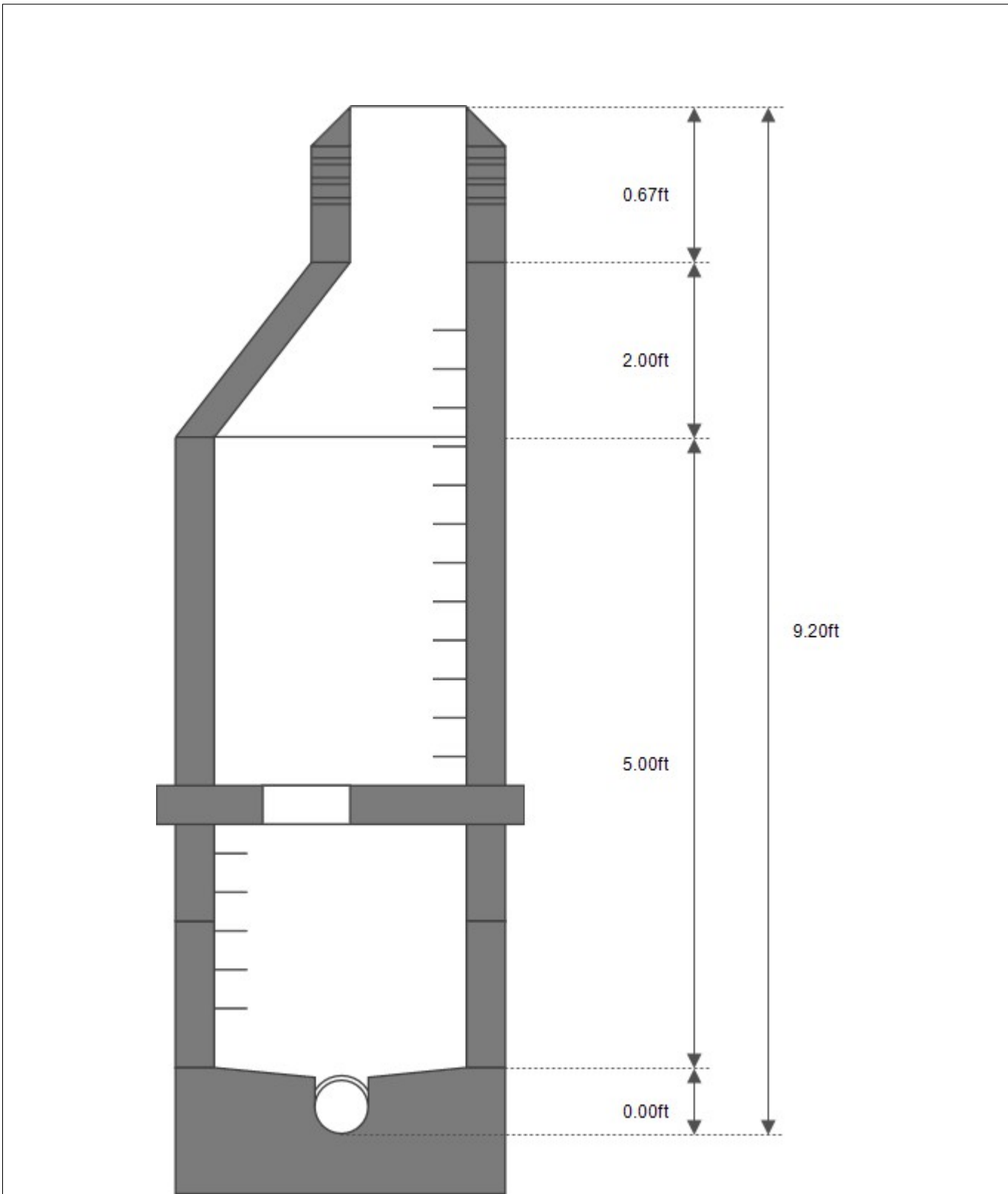
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.20	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	9.20	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	9.20	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-23	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-23	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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38-23_526f34cb_e675_4ea0_9cf9_0970110d8ccb_068f3d0c-c8b3-46fc-a014-4b0d57deb424_P12.jpg,
, -0.52
Reversal Inspection



38-23_526f34cb_e675_4ea0_9cf9_0970110d8ccb_85058784-e68f-4e8a-b7b5-7a0fe87d2468_P12.jpg,
, 0.02
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-23	City Channel Island	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
--------------------------------	-------------------------	------------------------	----------------------------------	------------------------------



38-23_526f34cb_e675_4ea0_9cf9_0970110d8ccb_0e69838e-69cb-42bf-84b4-e508add5a327_P12.jpg,
, 0.33
Crack Longitudinal at 10 o'clock, within 8 inch



38-23_526f34cb_e675_4ea0_9cf9_0970110d8ccb_731a3224-862f-4427-a1c2-ba49ed2c6bef_P12.jpg,
, 8.50
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	38-23			





Inspection report

Date: 5/31/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 554.5'	Length Surveyed: 554.5'

City: City Of Silverstran	Drainage Area:	Upstream MH: 37-51
Street: Anacapa Ave.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-68
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1958	Distance	Code	Observation	Counter	Photo	Grade
37-51	0.00	AMH	Manhole / 37-51	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:10		
	61.83	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:02:41		
	104.68	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:04:29		
	104.68	RFL	Roots Fine Lateral at 9 o'clock	00:04:31		M1
	107.14	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:05:00		
	134.86	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:06:25		
	146.97	CC	Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch / In WYE	00:07:24		S1
	147.55	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:07:13		
	175.05	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:08:58		
	177.59	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:09:28		
	194.29	FS	Fracture Spiral from 4 o'clock to 6 o'clock, within 8 inch	00:10:38		S3
	205.35	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:11:36		
	207.77	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:12:08		



Inspection report

Date: 5/31/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 554.5'	Length Surveyed: 554.5'

1:1958	Distance	Code	Observation	Counter	Photo	Grade
	240.57	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:13:49		
	243.05	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:14:17		
	280.66	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:16:19		
	283.26	RML	Roots Medium Lateral at 2 o'clock, 10% lost	00:17:10		M3
	283.30	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:16:44		
	316.02	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:18:47		
	316.02	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area	00:18:50		M2
	318.51	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:19:15		
	318.51	RTL	Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch	00:19:17		M2
	346.00	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:20:38		
	346.00	RML	Roots Medium Lateral at 11 o'clock, 45% lost	00:20:41		M3
	348.70	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:21:43		
	348.71	RBL	Roots Ball Lateral at 2 o'clock, 75% lost, within 8 inch	00:21:45		M4
	381.41	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:23:24		
	383.75	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:23:53		
	416.59	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:25:23		
	419.05	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:25:47		
	446.82	TFC	Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch	00:27:05		
	479.63	TF	Tap Factory Made at 2 o'clock, 8inch dim, within 8 inch	00:28:37		



Inspection report

Date: 5/31/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 554.5'	Length Surveyed: 554.5'

	Distance	Code	Observation	Counter	Photo	Grade	
	487.11	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:29:46			
	554.02	MMC	Material Change, Polyvinyl chloride / 8"	00:32:47			
	554.43	TF	Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch	00:33:12			
	554.47	ATC	Tee Connection at 6 o'clock, 8"inch vertical, 8"inch horizontal	00:33:35			
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3111	4132	4.0	15.0	19.0	2.0	2.5	2.4



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



361fdffe-3bc6-4410-b54c-b61023619f64_20190531_111401_409.jpg, 00:00:01, 0.00ft
Manhole / 37-51



d2560a56-2bf6-4331-b681-fc3dfdfc2251_20190531_111422-629.jpg, 00:00:10, 0.00ft
Water Level, 5% of the vertical dimension



2590892c-8856-46e8-8c77-85f0256fac14_20190531_111659_497.jpg, 00:02:41, 61.83ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



5b5602b9-a745-4152-b46e-18344f101362_20190531_111853_466.jpg, 00:04:29, 104.68ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



Section Pictures

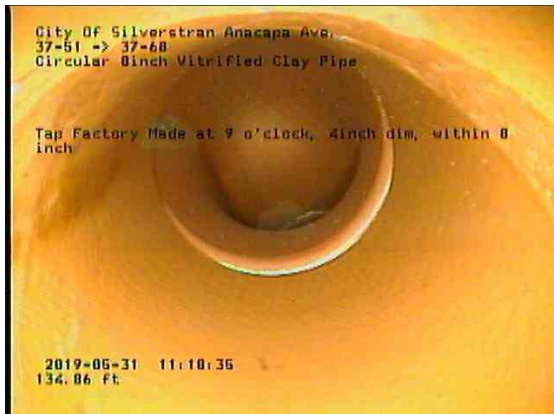
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



2ca49ca8-0720-43cd-beb5-b13d3a79189a_20190531_111905_450.jpg, 00:04:31, 104.68ft
 Roots Fine Lateral at 9 o'clock



debdce89-2e68-45f8-b371-1e600aa8b477_20190531_111941_465.jpg, 00:05:00, 107.14ft
 Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



ac1ed455-dda6-4ac6-93cf-34ce448a9802_20190531_112112_581.jpg, 00:06:25, 134.86ft
 Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



2c22ff67-d59f-4902-9dbd-11ca826950e4_20190531_112244_173.jpg, 00:07:24, 146.97ft
 Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch / In WYE



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



4c7017c8-6192-40b2-9179-d39396bacc99_20190531_112250_641.jpg, 00:07:24, 146.97ft
Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch / In WYE



45a319b9-c594-4cc0-b51f-14f2ce87cf96_20190531_112207_072.jpg, 00:07:13, 147.55ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



2fe60ae8-e01e-40f6-974f-0f6aa2a65d86_20190531_112607_372.jpg, 00:08:58, 175.05ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



4049ba8a-0ce5-445c-accd-3ecb7dd88335_20190531_112644_672.jpg, 00:09:28, 177.59ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



7c04d3fa-33c2-476b-9d1a-d8b42afa7b41_20190531_112809_921.jpg, 00:10:38, 194.29ft
Fracture Spiral from 4 o'clock to 6 o'clock, within 8 inch



87f06df7-80ba-4055-a3b2-6477e1e44bb7_20190531_112814_292.jpg, 00:10:38, 194.29ft
Fracture Spiral from 4 o'clock to 6 o'clock, within 8 inch



405c5b4c-e50d-44de-aa8a-60af7b1df44c_20190531_112915_506.jpg, 00:11:36, 205.35ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



387cbcae-f37e-4eac-8d32-d4b4d9aa829d_20190531_112954_767.jpg, 00:12:08, 207.77ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

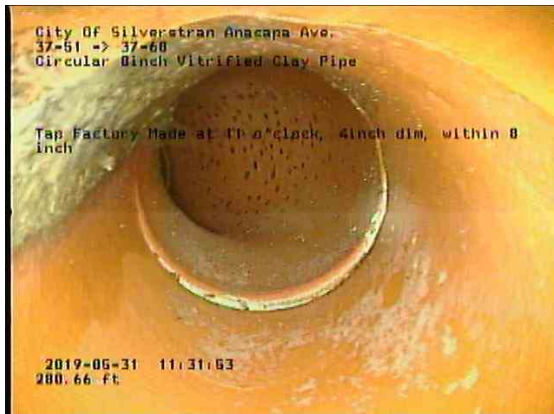
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



4d67c098-f890-4ec1-abd1-bb7cd8dbf5aa_20190531_113144_477.jpg, 00:13:49, 240.57ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



4b11f49b-30a6-4227-b989-64cec85a1339_20190531_113222_266.jpg, 00:14:17, 243.05ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



b4ffe4ab-bcd5-4a99-b877-c2d354905cfc_20190531_113430_168.jpg, 00:16:19, 280.66ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



7b4c0d57-5792-4b98-8b35-ce304d3eaa26_20190531_113639_707.jpg, 00:17:10, 283.26ft
Roots Medium Lateral at 2 o'clock, 10% lost



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



4588dfb1-cff6-433b-8e96-cae2402cf3ee_20190531_113621_880.jpg, 00:16:44, 283.30ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



93b2db1f-00a0-49d8-870b-6cc61bf12bf2_20190531_113833_606.jpg, 00:18:47, 316.02ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



2340189d-11fe-40d4-81e9-ed38f640c8e4_20190531_113852_557.jpg, 00:18:50, 316.02ft
Roots Tap Lateral at 10 o'clock, 5% of cross sectional area



ce85b232-ebb2-4f2d-a674-859966ea95f6_20190531_113927_103.jpg, 00:19:15, 318.51ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



208dd375-5b84-4251-a399-c23cf3a01879_20190531_113939_506.jpg, 00:19:17, 318.51ft
 Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



72dcc718-3b23-45b3-8b24-7321bd989157_20190531_114107_353.jpg, 00:20:38, 346.00ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



63aec12c-723f-490b-8d1c-566042ae6ff6_20190531_114126_890.jpg, 00:20:41, 346.00ft
 Roots Medium Lateral at 11 o'clock, 45% lost



68e3838c-b496-4fec-b6a1-7136f665705c_20190531_114140_110.jpg, 00:20:41, 346.00ft
 Roots Medium Lateral at 11 o'clock, 45% lost



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



c01dee6a-7208-434c-8680-61706411ea50_20190531_114421_279.jpg, 00:21:43, 348.70ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



1bdb64c-4119-40c2-ad1c-6a0cc9f2d531_20190531_114438_398.jpg, 00:21:45, 348.71ft
Roots Ball Lateral at 2 o'clock, 75% lost, within 8 inch



299bc29e-c79a-402e-8ba2-e16d5b0eb10a_20190531_114451_555.jpg, 00:21:45, 348.71ft
Roots Ball Lateral at 2 o'clock, 75% lost, within 8 inch



f88a06e0-040c-4880-94de-217867e1c938_20190531_114624_231.jpg, 00:23:24, 381.41ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

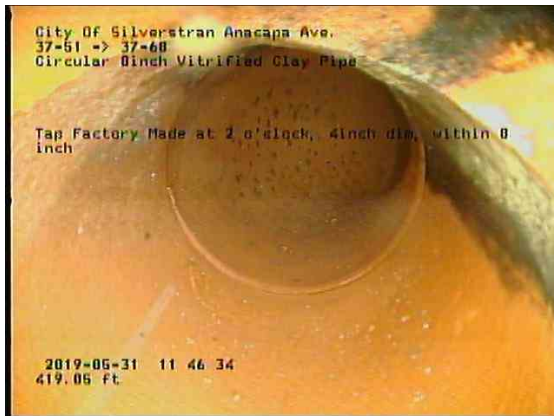
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



9690bd7d-358e-4d52-8c2c-168410059ebc_20190531_114701_010.jpg, 00:23:53, 383.75ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



add5b87d-43cb-4576-84c7-78eb8cce85de_20190531_114837_535.jpg, 00:25:23, 416.59ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



6ac86668-0668-4c44-8520-a19f47122e6c_20190531_114911_137.jpg, 00:25:47, 419.05ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



21ccb82c-7e48-4219-bcc9-5561d53def3d_20190531_115037_122.jpg, 00:27:05, 446.82ft
Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



314ca382-5f43-48f3-b57f-1c2692ed61ce_20190531_115252_668.jpg, 00:28:37, 479.63ft
Tap Factory Made at 2 o'clock, 8inch dim, within 8 inch



9cbe547f-de9c-43a4-b0d9-7363ad9cd042_20190531_115334_119.jpg, 00:29:46, 487.11ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



d272b511-7f50-417a-8d1b-1b3ea1bf7a0d_20190531_115649_715.jpg, 00:32:47, 554.02ft
Material Change, Polyvinyl chloride / 8"



28fc8e88-4286-4667-ae9b-d86c2eeff883_20190531_115727_300.jpg, 00:33:12, 554.43ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Anacapa Ave.	5/31/2019		1



43191c15-e3ae-4259-bbdc-8fbef0137700_20190531_115744_211.jpg, 00:33:12, 554.43ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



faaac870-5ef5-464f-ba7a-f2ee1add9107_20190531_115833_033.jpg, 00:33:35, 554.47ft
Tee Connection at 6 o'clock, 8"inch vertical, 8"inch horizontal



883dfe1e-52ef-4e5b-8f8a-82dda1d66682_20190531_115820_366.jpg, 00:33:35, 554.47ft
Tee Connection at 6 o'clock, 8"inch vertical, 8"inch horizontal



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 283.7'	Length Surveyed: 283.7'

City: City Of Silverstrand	Drainage Area:	Upstream MH: CO 37-38
Street: Bardsdale Ave.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-39-A
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:993	Distance	Code	Observation	Counter	Photo	Grade
37-39-A						
	0.00	AMH	Manhole / 37-39-A	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:08		
	6.39	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:00:36		
	6.39	RBL	Roots Ball Lateral at 3 o'clock, 60% lost, within 8 inch	00:00:38		M4
	9.04	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:01:02		
	41.91	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:02:44		
	41.91	RTL	Roots Tap Lateral at 11 o'clock, 20% of cross sectional area, within 8 inch	00:02:46		M2
	44.34	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:03:22		
	44.34	RFL	Roots Fine Lateral at 2 o'clock	00:03:24		M1
	77.25	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:05:07		
	79.67	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:05:30		
	79.67	RTL	Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch	00:05:33		M2
	112.40	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:07:16		
	112.40	RTL	Roots Tap Lateral at 11 o'clock, 5% of cross sectional area, within 8 inch	00:07:19		M2



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 283.7'	Length Surveyed: 283.7'

Distance	Code	Observation	Counter	Photo	Grade
1:993					
114.95	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:07:39		
114.96	RFL	Roots Fine Lateral at 2 o'clock	00:07:42		M1
147.31	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:09:20		
147.31	RML	Roots Medium Lateral at 11 o'clock, 20% lost	00:09:23		M3
150.12	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:10:16		
150.14	RFL	Roots Fine Lateral at 1 o'clock	00:10:18		M1
167.58	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:11:27		
167.58	RFL	Roots Fine Lateral at 11 o'clock	00:11:29		M1
182.74	FH3	Fracture Longitudinal Hinge, 3 from 3 o'clock to 7 o'clock, within 8 inch	00:12:50		S5
183.37	RFJ	Roots Fine Joint from 7 o'clock to 11 o'clock, within 8 inch	00:13:29		M1
194.88	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:14:22		
194.88	RTL	Roots Tap Lateral at 1 o'clock, 55% of cross sectional area, within 8 inch	00:14:25		M2
201.36	RTJ	Roots Tap Joint from 12 o'clock to 12 o'clock, 5% of cross sectional area, within 8 inch	00:15:36		M2
218.04	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:16:31		
218.04	RTL	Roots Tap Lateral at 11 o'clock, 10% of cross sectional area, within 8 inch	00:16:36		M2
235.47	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:17:25		
235.47	RTL	Roots Tap Lateral at 1 o'clock, 50% of cross sectional area, within 8 inch	00:17:27		M2
253.03	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:18:28		
253.05	RML	Roots Medium Lateral at 11 o'clock, 20% lost, within 8 inch	00:18:30		M3



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 283.7'	Length Surveyed: 283.7'

1:993	Distance	Code	Observation	Counter	Photo	Grade
	270.79	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:19:30		
	270.80	RTL	Roots Tap Lateral at 1 o'clock, 5% of cross sectional area, within 8 inch	00:19:33		M2
	273.17	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:20:01		
	273.18	RFL	Roots Fine Lateral at 11 o'clock	00:20:04		M1
	278.92	MMC	Material Change, Polyvinyl chloride / 8"	00:20:25		
	283.70	ACOM	Cleanout Mainline / CO 37-38	00:21:10		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5100	4132	5.0	32.0	37.0	5.0	1.9	2.1



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



b1b9b4c0-36f7-40b9-b6ee-6683a0ce1af8_20190528_113730_446.jpg, 00:00:01, 0.00ft
Manhole / 37-39-A



5f3e816f-fed6-4fc3-a2c5-4d0e87c0a297_20190528_113746_745.jpg, 00:00:08, 0.00ft
Water Level, 5% of the vertical dimension



0c5f5e40-6f3d-40d1-a3f4-e6770482b3fa_20190528_113823_213.jpg, 00:00:36, 6.39ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



cf6d5b63-573e-47d1-bac6-ad94d0217abe_20190528_113840_076.jpg, 00:00:38, 6.39ft
Roots Ball Lateral at 3 o'clock, 60% lost, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



105ff841-2ca6-42e9-b051-2cfb52e459c8_20190528_113911_286.jpg, 00:01:02, 9.04ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



bab6791c-4651-4d3f-9592-7b2a82338ef3_20190528_114101_183.jpg, 00:02:44, 41.91ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



6c7bf4ef-8359-42ec-9a63-d3c4f7994cb1_20190528_114122_348.jpg, 00:02:46, 41.91ft
Roots Tap Lateral at 11 o'clock, 20% of cross sectional area, within 8 inch



9b47a59e-54b9-439f-a96d-ca8f7e419be3_20190528_114204_519.jpg, 00:03:22, 44.34ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



5e5e62d9-934a-48c9-b399-f7e453d832fe_20190528_114214_523.jpg, 00:03:24, 44.34ft
 Roots Fine Lateral at 2 o'clock



94c6c42f-a8c3-4a7f-aed6-3bb05be224e8_20190528_114404_153.jpg, 00:05:07, 77.25ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



cdbf6c8c-b038-4e9a-93bc-ab95774a831d_20190528_114434_383.jpg, 00:05:30, 79.67ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



9623719a-cea0-406b-8256-a52497ef9549_20190528_114450_771.jpg, 00:05:33, 79.67ft
 Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



108089f2-3944-4d2a-afc3-3a38a37ca4f9_20190528_114641_122.jpg, 00:07:16, 112.40ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



70ee7421-d518-4631-855f-44b290d85c19_20190528_114659_147.jpg, 00:07:19, 112.40ft
Roots Tap Lateral at 11 o'clock, 5% of cross sectional area, within 8 inch



fa26ab0f-5f2b-410b-9a3f-a614bba6f010_20190528_114728_314.jpg, 00:07:39, 114.95ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



7e17f81f-5db2-47df-abd2-c40691c101d5_20190528_114745_181.jpg, 00:07:42, 114.96ft
Roots Fine Lateral at 2 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



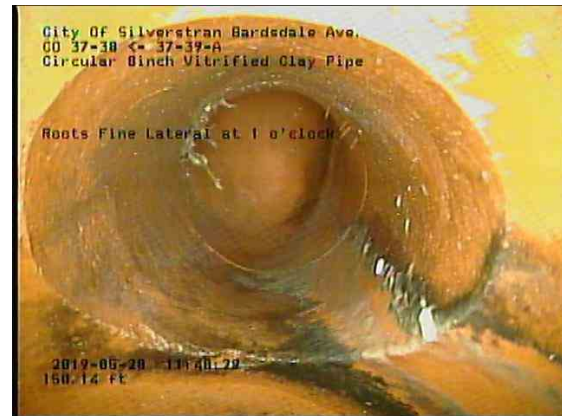
f72bbe40-4144-4c66-9d21-8703b4adf7ad_20190528_114930_950.jpg, 00:09:20, 147.31ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



399cf8a7-3aab-4839-8713-60f2b48d8d94_20190528_114949_807.jpg, 00:09:23, 147.31ft
Roots Medium Lateral at 11 o'clock, 20% lost



e2453816-9d51-4960-99af-d59e9e7ac166_20190528_115048_993.jpg, 00:10:16, 150.12ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



5fb36f54-55be-4ae8-8320-456db4965560_20190528_115103_740.jpg, 00:10:18, 150.14ft
Roots Fine Lateral at 1 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



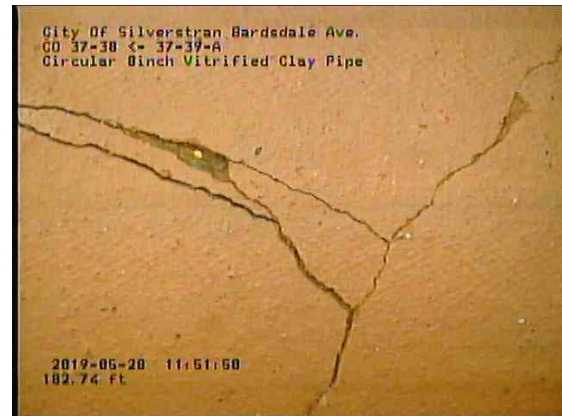
2bb2ed61-0b9d-4bc1-95c5-9c3d1fa144f2_20190528_115222_224.jpg, 00:11:27, 167.58ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



af2547a7-0f1c-4199-b9ee-8ae10e942bed_20190528_115232_503.jpg, 00:11:29, 167.58ft
Roots Fine Lateral at 11 o'clock



5fbb2c2d-f566-4395-b540-ec897655229e_20190528_115413_154.jpg, 00:12:50, 182.74ft
Fracture Longitudinal Hinge, 3 from 3 o'clock to 7 o'clock, within 8 inch



a0e80e4c-24ee-4365-b575-0640720fceb_20190528_115423_707.jpg, 00:12:50, 182.74ft
Fracture Longitudinal Hinge, 3 from 3 o'clock to 7 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



a3a9fb14-3f67-4fcf-b37c-be30c2bc9298_20190528_115534_124.jpg, 00:13:29, 183.37ft
 Roots Fine Joint from 7 o'clock to 11 o'clock, within 8 inch



4f2a16a0-15a5-40ea-be0c-5221551049f3_20190528_115634_960.jpg, 00:14:22, 194.88ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



24d36d81-4ea5-4bc7-8580-171333341682_20190528_115657_519.jpg, 00:14:25, 194.88ft
 Roots Tap Lateral at 1 o'clock, 55% of cross sectional area, within 8 inch



34c69783-c5b5-449a-bb18-560b71335c67_20190528_115705_339.jpg, 00:14:25, 194.88ft
 Roots Tap Lateral at 1 o'clock, 55% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



ea5472f0-b47e-4d87-9ee0-44bc60ee6adf_20190528_115826_161.jpg, 00:15:36, 201.36ft
 Roots Tap Joint from 12 o'clock to 12 o'clock, 5% of cross sectional area, within 8 inch



0d2b5184-3e23-4944-9899-27549ebf6259_20190528_115930_389.jpg, 00:16:31, 218.04ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



439a2d4f-5019-4ecc-b279-998ea7e268bc_20190528_115947_283.jpg, 00:16:36, 218.04ft
 Roots Tap Lateral at 11 o'clock, 10% of cross sectional area, within 8 inch



04242705-f072-4501-bc6c-3fd5184d2bb9_20190528_120046_741.jpg, 00:17:25, 235.47ft
 Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch

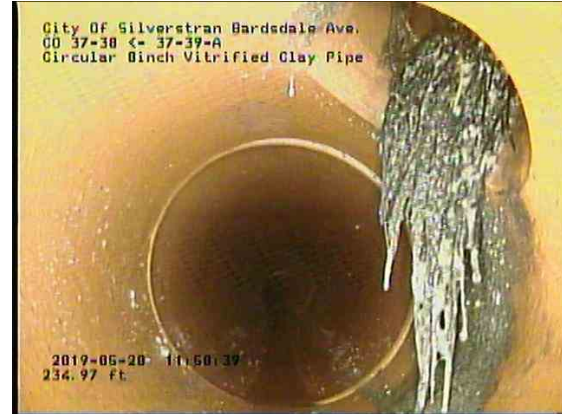


Section Pictures

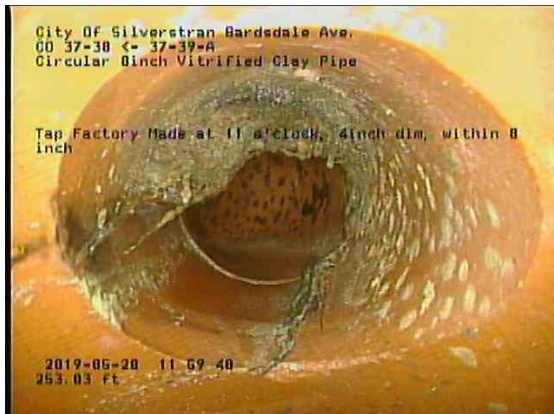
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



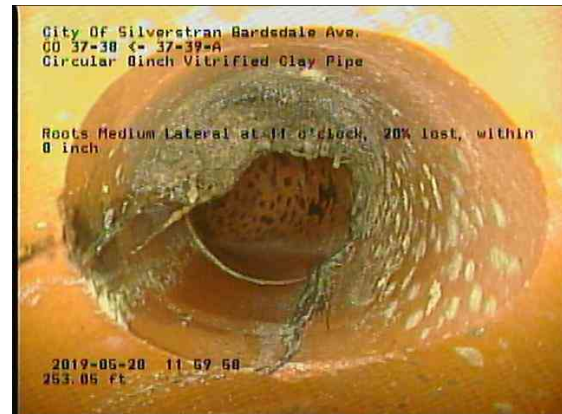
3fbe4892-5f24-4b27-a57b-3c3ca77a4214_20190528_120106_688.jpg, 00:17:27, 235.47ft
Roots Tap Lateral at 1 o'clock, 50% of cross sectional area, within 8 inch



adf4fe7e-ff3d-4b27-8471-cc08745857b3_20190528_120113_295.jpg, 00:17:27, 235.47ft
Roots Tap Lateral at 1 o'clock, 50% of cross sectional area, within 8 inch



4af5226d-eef3-4513-9628-94e47d10a3f5_20190528_120214_391.jpg, 00:18:28, 253.03ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch

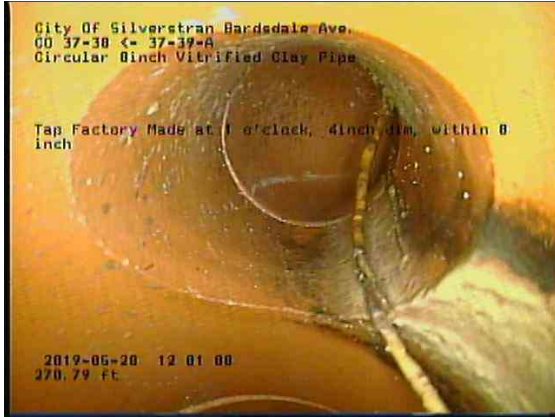


436ba5e9-6ae6-42f4-9012-277ab321b3aa_20190528_120231_919.jpg, 00:18:30, 253.05ft
Roots Medium Lateral at 11 o'clock, 20% lost, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



23f08693-35d2-4520-98f9-71e80238d8f1_20190528_120341_941.jpg, 00:19:30, 270.79ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



9a631e9d-057f-41ef-8ab5-2c0524cb7614_20190528_120358_288.jpg, 00:19:33, 270.80ft
Roots Tap Lateral at 1 o'clock, 5% of cross sectional area, within 8 inch



6e03a123-7879-454a-b88d-cffba252d0e8_20190528_120432_889.jpg, 00:20:01, 273.17ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



62ef9976-078e-4510-83cf-70e596401994_20190528_120445_660.jpg, 00:20:04, 273.18ft
Roots Fine Lateral at 11 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Bardsdale Ave.	5/28/2019		1



32feaf8-47df-4948-a2bf-19e7e478a03b_20190528_120534_290.jpg, 00:20:25, 278.92ft
Material Change, Polyvinyl chloride / 8"



56e118c9-e897-4a89-918e-c6663c33e011_20190528_120636_057.jpg, 00:21:10, 283.70ft
Cleanout Mainline / CO 37-38



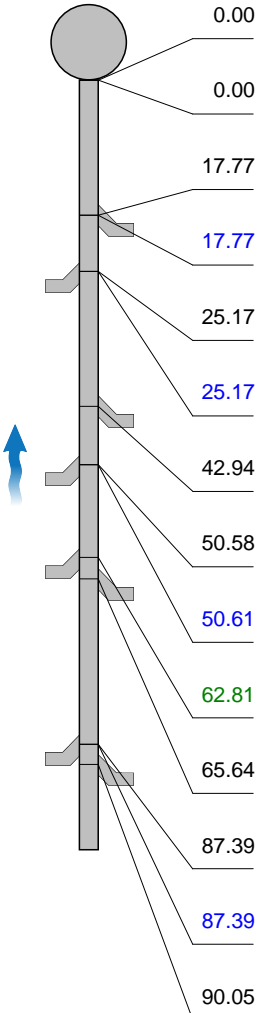
Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 338.3'	Length Surveyed: 338.3'

City: City Of Silverstran	Drainage Area:	Upstream MH: CO 37-76
Street: Cahuenga Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-74-A
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:993	Distance	Code	Observation	Counter	Photo	Grade
37-74-A	0.00	AMH	Manhole / 37-74-A	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:10		
	17.77	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:01:12		
	17.77	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch	00:01:14		M2
	25.17	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:01:46		
	25.17	RML	Roots Medium Lateral at 2 o'clock, 10% lost, within 8 inch	00:01:49		M3
	42.94	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:02:37		
	50.58	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:03:15		
	50.61	RTL	Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch	00:03:18		M2
	62.81	TFI	Tap Factory Made Intruding at 2 o'clock, 4inch dim, 1inch intrusion, within 8 inch	00:04:14		M3
	65.64	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:04:49		
	87.39	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:05:49		
	87.39	RTL	Roots Tap Lateral at 2 o'clock, 35% of cross sectional area, within 8 inch	00:05:53		M2
	90.05	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:06:23		





Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 338.3'	Length Surveyed: 338.3'

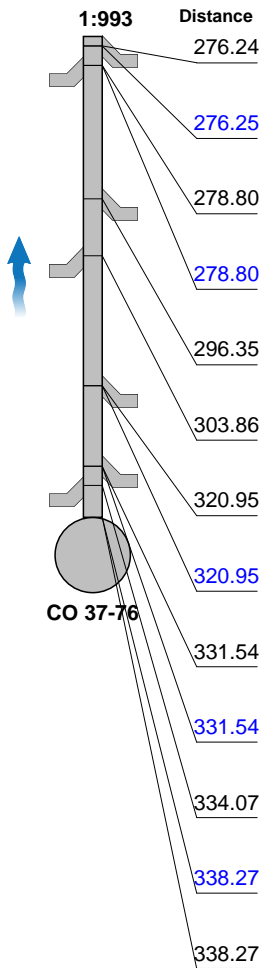
1:993	Distance	Code	Observation	Counter	Photo	Grade
	112.47	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:07:27		
	119.97	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:08:05		
	132.78	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:08:44		
	137.88	CS	Crack Spiral from 6 o'clock to 11 o'clock, within 8 inch	00:09:33		S2
	138.52	FL	Fracture Longitudinal at 11 o'clock, within 8 inch	00:09:13		S3
	145.29	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:10:23		
	162.81	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:11:24		
	170.45	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:11:53		
	178.08	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:12:25		
	196.35	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:13:19		
	196.35	RFL	Roots Fine Lateral at 10 o'clock	00:13:21		M1
	196.35	DAE	Deposits Attached Encrustation, 5% of cross sectional area at 2 o'clock, within 8 inch / IN WYE	00:13:28		M2
	208.17	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:14:07		
	220.78	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:14:49		
	238.44	TFC	Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch	00:15:34		
	238.48	RTL	Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch	00:15:36		M2
	245.98	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:16:06		
	245.98	RML	Roots Medium Lateral at 11 o'clock, 10% lost, within 8 inch	00:16:08		M3
	273.76	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:17:22		



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 338.3'	Length Surveyed: 338.3'

Distance	Code	Observation	Counter	Photo	Grade
1:993	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:17:48		
276.24					
276.25	RBL	Roots Ball Lateral at 10 o'clock, 90% lost, within 8 inch	00:17:53		M4
278.80	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:18:24		
278.80	RFL	Roots Fine Lateral at 2 o'clock	00:18:27		M1
296.35	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:19:19		
303.86	TFC	Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch	00:19:58		
320.95	TB	Tap Break-In at 10 o'clock, 4inch dim, within 8 inch	00:20:55		
320.95	RTL	Roots Tap Lateral at 10 o'clock, 10% of cross sectional area, within 8 inch	00:21:14		M2
331.54	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:22:05		
331.54	RML	Roots Medium Lateral at 10 o'clock, 10% lost, within 8 inch	00:22:07		M3
334.07	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:22:27		
338.27	RTL	Roots Tap Lateral at 12 o'clock, 35% of cross sectional area, within 8 inch	00:23:05		M2
338.27	ACOM	Cleanout Mainline / CO 37-76	00:23:08		



QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3121	4134	5.0	32.0	37.0	2.5	2.3	2.3



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



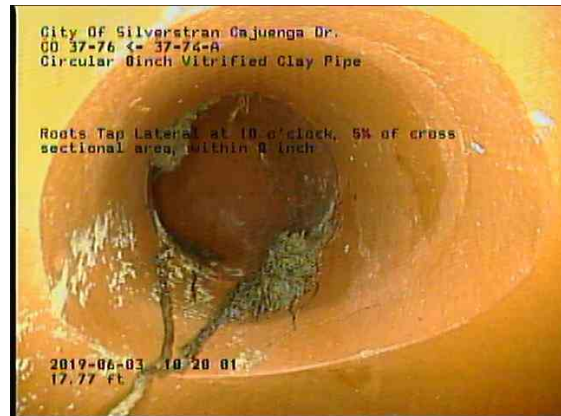
97b1fb0a-850e-4e89-a149-73ce966b87c1_20190603_102855_296.jpg, 00:00:01, 0.00ft
Manhole / 37-74-A



45a4b2bf-35e9-4fc0-b662-0cb050390ee0_20190603_102913_174.jpg, 00:00:10, 0.00ft
Water Level, 5% of the vertical dimension



04981713-4c5d-4146-aafe-a17eabe72176_20190603_103021_217.jpg, 00:01:12, 17.77ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



a7b07bef-05f3-4f7e-881d-da40fb39ce41_20190603_103037_442.jpg, 00:01:14, 17.77ft
Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



b358ac15-bcca-46ec-82bc-3ca9fcd9d9f5_20190603_103114_710.jpg, 00:01:46, 25.17ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



e4eb9c59-b554-450a-82f5-5b1f0e31288a_20190603_103127_685.jpg, 00:01:49, 25.17ft
Roots Medium Lateral at 2 o'clock, 10% lost, within 8 inch



0f790c4e-7bbc-4f6b-9759-078f3831ce16_20190603_103222_277.jpg, 00:02:37, 42.94ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



9c0e9dd0-1021-4d9d-90a5-b33e33b5cdfc_20190603_103308_227.jpg, 00:03:15, 50.58ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

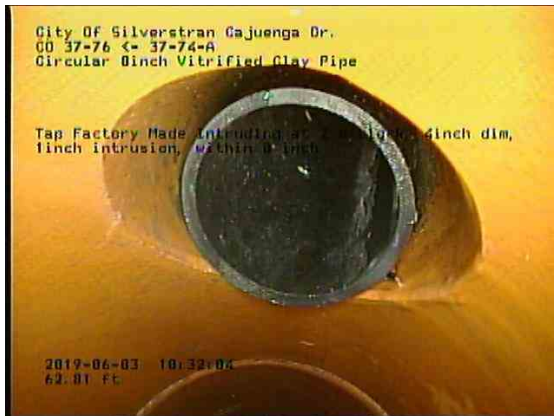
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



ef0dc867-8349-4191-90e4-c194659badfa_20190603_103324_807.jpg, 00:03:18, 50.61ft
 Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



8bb730ee-7fac-4dcc-91c2-427a8a707be6_20190603_103332_317.jpg, 00:03:18, 50.61ft
 Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



80c8786e-9709-472f-9d67-fc0cd3ce6310_20190603_103440_796.jpg, 00:04:14, 62.81ft
 Tap Factory Made Intruding at 2 o'clock, 4inch dim, 1inch intrusion, within 8 inch



d8943bd3-6856-4fa7-92e9-15689a50ff1c_20190603_103449_852.jpg, 00:04:14, 62.81ft
 Tap Factory Made Intruding at 2 o'clock, 4inch dim, 1inch intrusion, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



bf6ae7dc-816b-45fb-b69f-dda4aad3970c_20190603_103521_199.jpg, 00:04:49, 65.64ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



cd48e351-2f27-452f-9d63-9e3bd322b019_20190603_103629_456.jpg, 00:05:49, 87.39ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



897cb046-dc93-4982-8d83-46616aa62916_20190603_103656_465.jpg, 00:05:53, 87.39ft
Roots Tap Lateral at 2 o'clock, 35% of cross sectional area, within 8 inch



1783ae07-84d0-4f0c-9322-5e546dffbd47_20190603_103736_351.jpg, 00:06:23, 90.05ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch

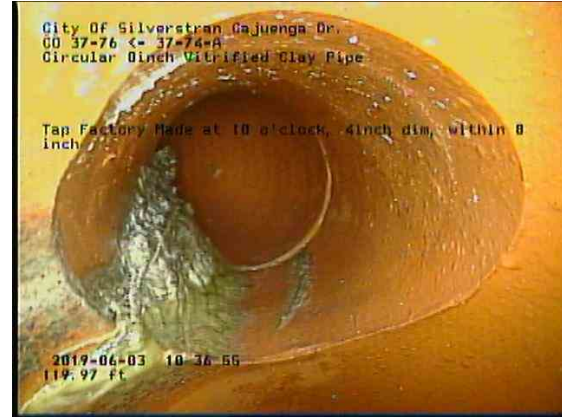


Section Pictures

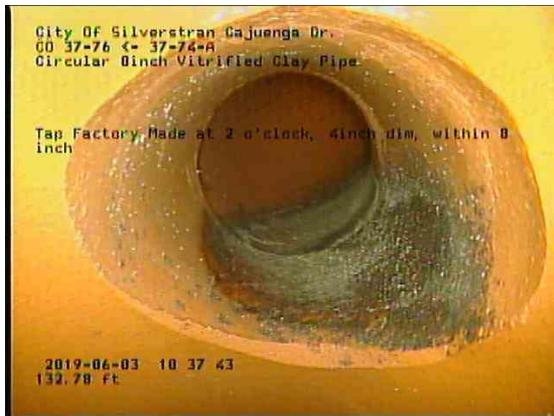
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



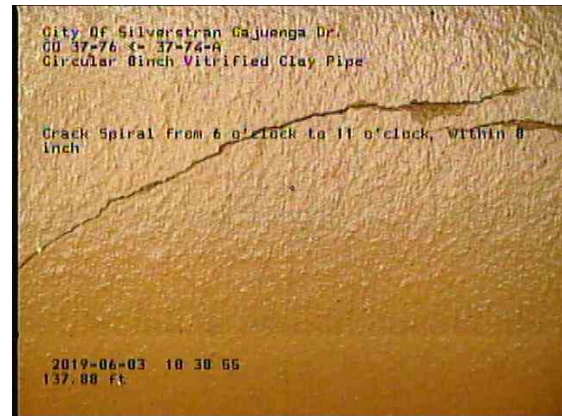
af9cf710-93dc-4259-b13b-99c0356a902b_20190603_103848_560.jpg, 00:07:27, 112.47ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



f98a8eeb-f2bb-4193-b9ff-9d413c3fd3ec_20190603_103931_516.jpg, 00:08:05, 119.97ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



cd75fb91-7171-4a25-8943-4eaf61ae0913_20190603_104019_055.jpg, 00:08:44, 132.78ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



7e14a24c-b782-4dd1-9791-5bd4fbd84303_20190603_104131_919.jpg, 00:09:33, 137.88ft
 Crack Spiral from 6 o'clock to 11 o'clock, within 8 inch

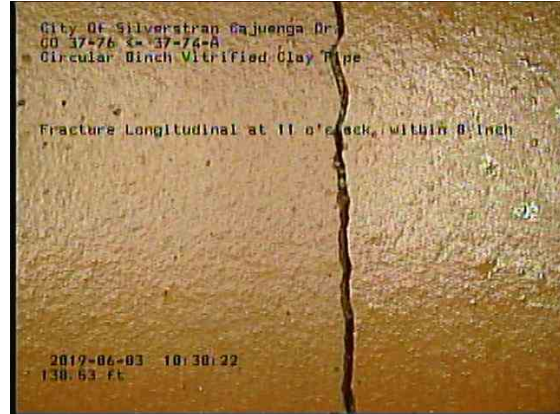


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



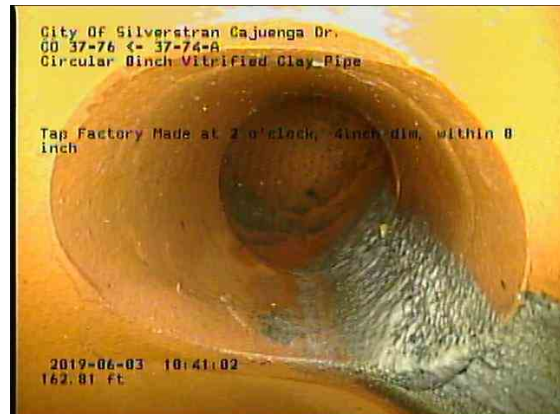
073784f6-6699-421a-a784-460ed8973ac9_20190603_104142_069.jpg, 00:09:33, 137.88ft
Crack Spiral from 6 o'clock to 11 o'clock, within 8 inch



836fdaa0-c96f-4f34-9efd-5dfa8b10fe93_20190603_104058_881.jpg, 00:09:13, 138.52ft
Fracture Longitudinal at 11 o'clock, within 8 inch



866d1549-f58e-4a8d-bebd-f0c8a4a96987_20190603_104231_177.jpg, 00:10:23, 145.29ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



d16d65ac-fdae-4e8a-899f-ea0b422865eb_20190603_104338_797.jpg, 00:11:24, 162.81ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

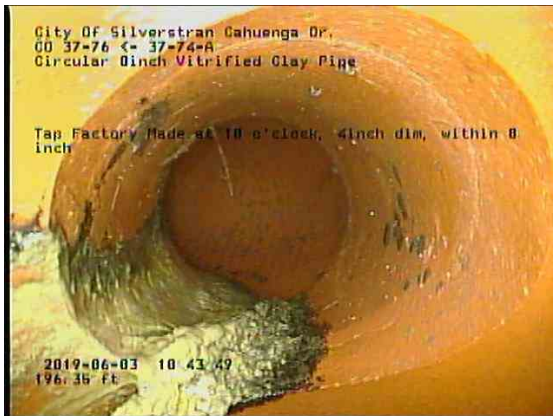
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



ffe1913b-81f3-481c-901a-68ae10cfc06f_20190603_104414_889.jpg, 00:11:53, 170.45ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



ee68511e-1e23-40e2-b6ef-44bf940c8785_20190603_104522_865.jpg, 00:12:25, 178.08ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



b9644c29-a1e7-414a-925a-52ec3005209b_20190603_104625_523.jpg, 00:13:19, 196.35ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



55a03279-92f1-4f4b-bdfc-fbff174b5ee3_20190603_104648_149.jpg, 00:13:21, 196.35ft
Roots Fine Lateral at 10 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



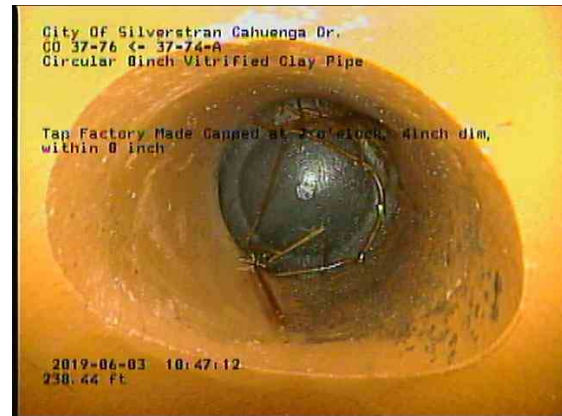
3229ddbc-891d-46c7-a420-7b6a2e498a32_20190603_104717_593.jpg, 00:13:28, 196.35ft
Deposits Attached Encrustation, 5% of cross sectional area at 2 o'clock, within 8 inch / IN WYE



b6ee990d-490f-4579-b56e-d3a5621cdf01_20190603_104805_186.jpg, 00:14:07, 208.17ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



a57c0766-4221-490e-9789-87899798aef3_20190603_104858_452.jpg, 00:14:49, 220.78ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



7f19a8cb-5b1d-496f-a342-84842aba1337_20190603_104948_797.jpg, 00:15:34, 238.44ft
Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



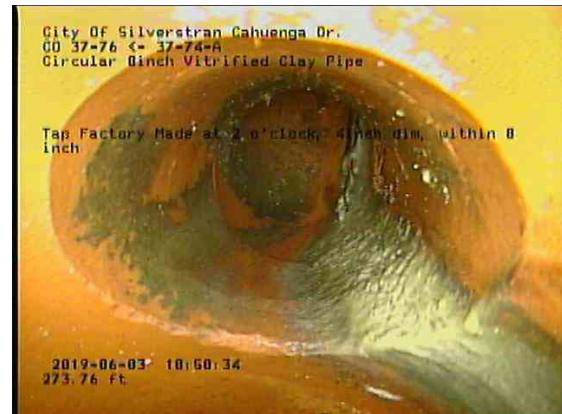
cb366758-9a99-4112-aba2-a3040b02d116_20190603_105002_862.jpg, 00:15:36, 238.48ft
Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



281efe10-516b-4b40-910d-555a0e418a6b_20190603_105041_781.jpg, 00:16:06, 245.98ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



b4ba2aa7-1b5f-4464-ac34-2c2a0c009692_20190603_105100_625.jpg, 00:16:08, 245.98ft
Roots Medium Lateral at 11 o'clock, 10% lost, within 8 inch



4735bb64-f2e9-4bfb-8434-901367b12191_20190603_105310_312.jpg, 00:17:22, 273.76ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



9bcdd12f-cf9b-457a-8f16-5183a2424d03_20190603_105345_308.jpg, 00:17:48, 276.24ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



5a55c837-4dce-469d-884a-cca8959da58a_20190603_105406_262.jpg, 00:17:53, 276.25ft
Roots Ball Lateral at 10 o'clock, 90% lost, within 8 inch



81fc2289-2339-4ae8-a6fa-879cdf9a27f5_20190603_105416_491.jpg, 00:17:53, 276.25ft
Roots Ball Lateral at 10 o'clock, 90% lost, within 8 inch



ee8c7d1a-0565-4658-9fbc-795e9b6d5469_20190603_105447_997.jpg, 00:18:24, 278.80ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



b38d1636-328f-4305-998d-e90c3b03cadf_20190603_105500_556.jpg, 00:18:27, 278.80ft
Roots Fine Lateral at 2 o'clock



e0385131-657b-4c08-aefc-7dc0d1865d11_20190603_105633_929.jpg, 00:19:19, 296.35ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



d12a8c9c-22eb-4714-8f15-870383954355_20190603_105721_722.jpg, 00:19:58, 303.86ft
Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch



1f118b91-e65a-4fb1-adcb-e5cf3b761c61_20190603_105835_264.jpg, 00:20:55, 320.95ft
Tap Break-In at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



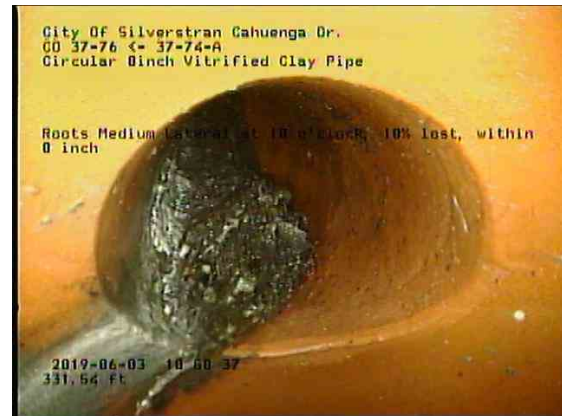
4c6fcb6c-6921-4a2e-9b71-8dbd8a42b66d_20190603_105926_335.jpg, 00:21:14, 320.95ft
 Roots Tap Lateral at 10 o'clock, 10% of cross sectional area, within 8 inch



9b0aabdb-3716-4215-b85a-31473ba5324c_20190603_105937_479.jpg, 00:21:14, 320.95ft
 Roots Tap Lateral at 10 o'clock, 10% of cross sectional area, within 8 inch



0de055f5-2654-4959-b198-457ee7377040_20190603_110035_876.jpg, 00:22:05, 331.54ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



f45ee651-20f1-456c-ad85-ffdda3ef3a68_20190603_110113_809.jpg, 00:22:07, 331.54ft
 Roots Medium Lateral at 10 o'clock, 10% lost, within 8 inch

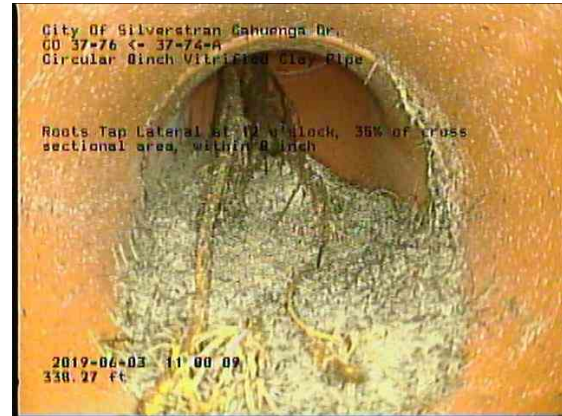


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Cahuenga Dr.	6/3/2019		1



8b12378f-4054-407a-a16b-fdf505aa86da_20190603_110142_667.jpg, 00:22:27, 334.07ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



97e25f6f-1f10-4b85-b0ea-22ff5d91e018_20190603_110245_460.jpg, 00:23:05, 338.27ft
Roots Tap Lateral at 12 o'clock, 35% of cross sectional area, within 8 inch



e053d589-aa6e-4a65-b538-23ca1252f971_20190603_110304_401.jpg, 00:23:08, 338.27ft
Cleanout Mainline / CO 37-76



e2f09161-3a81-41c2-a90f-ae41d375e78e_20190603_110318_308.jpg, 00:23:08, 338.27ft
Cleanout Mainline / CO 37-76



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 404.1'	Length Surveyed: 404.1'

City: City Of Silverstran	Drainage Area:	Upstream MH: 37-89-A
Street: Highland Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-89
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:996	Distance	Code	Observation	Counter	Photo	Grade
37-89-A	0.00	AMH	Manhole / 37-89-A	00:00:01		
	0.00	MWL	Water Level, 10% of the vertical dimension	00:00:16		
	1.15	FL	Fracture Longitudinal at 9 o'clock, within 8 inch	00:00:57		S3
	1.15	FL	Fracture Longitudinal at 4 o'clock, within 8 inch	00:01:20		S3
	1.15	CC	Crack Circumferential from 10 o'clock to 4 o'clock, within 8 inch	00:01:43		S1
	3.15	FC	Fracture Circumferential from 4 o'clock to 10 o'clock	00:02:41		S2
	12.27	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:03:40		
	14.70	TFC	Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch	00:04:03		
	27.33	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:04:51		
	27.35	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE	00:04:53		S2
	39.83	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:05:55		
	39.85	RFL	Roots Fine Lateral at 10 o'clock	00:05:57		M1
	39.90	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE	00:06:10		S2
	57.72	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:07:31		



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 404.1'	Length Surveyed: 404.1'

Distance	Code	Observation	Counter	Photo	Grade
1:996					
59.94	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:07:55		
59.96	RTL	Roots Tap Lateral at 10 o'clock, 50% of cross sectional area, within 8 inch	00:07:58		M2
82.85	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:09:23		
83.01	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE	00:09:44		S2
84.41	ISZ	Intruding Sealing Other, 5% of cross sectional area from 1 o'clock to 3 o'clock	00:10:07		M2
85.58	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:10:54		
85.58	FM	Fracture Multiple from 12 o'clock to 12 o'clock, within 8 inch / IN WYE	00:10:56		S4
96.33	TB	Tap Break-In at 1 o'clock, 4inch dim, within 8 inch	00:12:06		
108.03	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:13:19		
115.45	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:13:53		
133.21	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:14:52		
140.77	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:15:36		
163.47	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:16:50		
170.93	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:17:28		
170.93	RFL	Roots Fine Lateral at 2 o'clock	00:17:30		M1
183.54	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:18:18		
196.20	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:19:07		
196.20	RFL	Roots Fine Lateral at 2 o'clock	00:19:10		M1
198.85	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:19:39		



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 404.1'	Length Surveyed: 404.1'

1:996	Distance	Code	Observation	Counter	Photo	Grade
	226.17	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:21:00		
	226.17	RFL	Roots Fine Lateral at 10 o'clock	00:21:02		M1
	226.17	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE	00:21:17		S2
	238.85	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:22:16		
	238.85	RML	Roots Medium Lateral at 2 o'clock, 10% lost, within 8 inch	00:22:18		M3
	256.49	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:23:20		
	257.72	ISZ	Intruding Sealing Other, 5% of cross sectional area from 11 o'clock to 1 o'clock	00:23:43		M2
	279.62	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:25:00		
	307.42	TFC	Tap Factory Made Capped at 10 o'clock, 4inch dim, within 8 inch	00:26:32		
	350.01	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:28:26		
	362.75	IW	Infiltration Weeper from 3 o'clock to 4 o'clock	00:29:25		M2
	362.75 S01	FM	Fracture Multiple from 3 o'clock to 6 o'clock, Start	00:29:48		
	363.96	FM	Fracture Multiple from 12 o'clock to 12 o'clock	00:31:08		S4
	365.59	IR	Infiltration Runner from 8 o'clock to 9 o'clock	00:31:41		M4
	366.88	IW	Infiltration Weeper from 3 o'clock to 4 o'clock	00:32:12		M2
	366.88 F01	FM	Fracture Multiple from 3 o'clock to 6 o'clock, Finish	00:32:14		S4
	371.50	FL	Fracture Longitudinal at 1 o'clock, within 8 inch	00:33:04		S3
	372.19	BSV	Broken Soil Visible from 1 o'clock to 2 o'clock	00:33:29		S5
	372.19	IW	Infiltration Weeper at 2 o'clock	00:33:36		M2



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 404.1'	Length Surveyed: 404.1'

1:996	Distance	Code	Observation	Counter	Photo	Grade	
	401.35	CL	Crack Longitudinal at 2 o'clock	00:35:39		S2	
	401.53	FS	Fracture Spiral from 4 o'clock to 6 o'clock, within 8 inch	00:36:02		S3	
	404.11	CC	Crack Circumferential from 8 o'clock to 4 o'clock, within 8 inch	00:36:38		S1	
	404.11	ATC	Tee Connection at 6 o'clock, 8"inch vertical, 8"inch horizontal / DROP	00:36:47			
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5143	4131	43.0	23.0	66.0	2.7	1.9	2.4

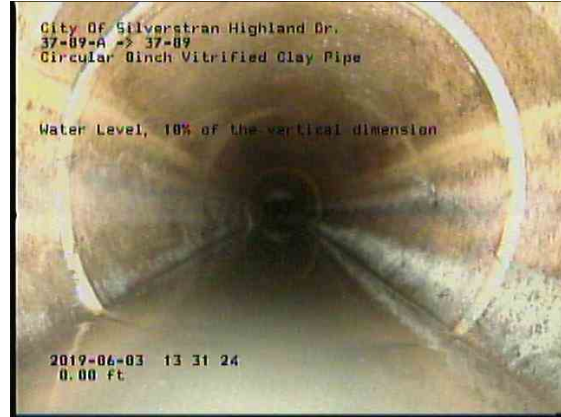


Section Pictures

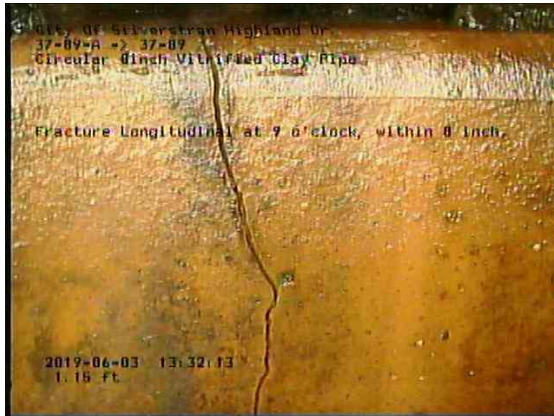
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



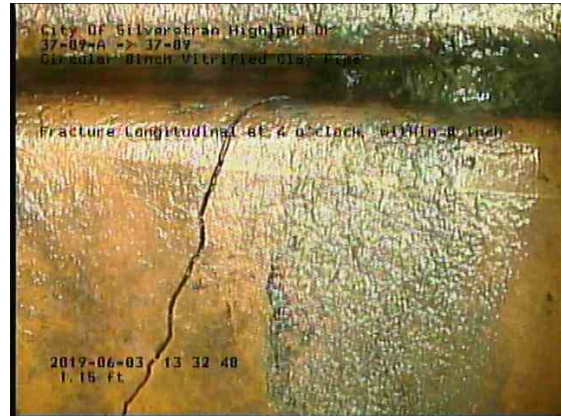
eb683f45-4487-45ec-9d1a-7fa523751da6_20190603_133336_371.jpg, 00:00:01, 0.00ft
Manhole / 37-89-A



13064a60-a643-4001-8b99-391190e98555_20190603_133400_819.jpg, 00:00:16, 0.00ft
Water Level, 10% of the vertical dimension



417aad9c-2ecf-448d-9b04-0d5724b8d275_20190603_133450_278.jpg, 00:00:57, 1.15ft
Fracture Longitudinal at 9 o'clock, within 8 inch



7d19c375-0354-427e-89c7-6c215dfd8897_20190603_133524_972.jpg, 00:01:20, 1.15ft
Fracture Longitudinal at 4 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



edf0fb5b-769a-41a7-aaff-f2b3f27946ea_20190603_133612_197.jpg, 00:01:43, 1.15ft
Crack Circumferential from 10 o'clock to 4 o'clock, within 8 inch



a85e7591-a2c5-4ec8-a54f-c4f37cb39169_20190603_133619_671.jpg, 00:01:43, 1.15ft
Crack Circumferential from 10 o'clock to 4 o'clock, within 8 inch



2a62dad1-8fea-44a4-b66d-9250c9a860cc_20190603_133737_478.jpg, 00:02:41, 3.15ft
Fracture Circumferential from 4 o'clock to 10 o'clock



59456fa1-f0a4-4032-a008-d881fd339b08_20190603_133750_581.jpg, 00:02:41, 3.15ft
Fracture Circumferential from 4 o'clock to 10 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



16179495-5d79-4303-bcb4-8b994807db26_20190603_133841_147.jpg, 00:03:40, 12.27ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



8a04a563-4c17-4786-a53f-123dc068898b_20190603_133910_847.jpg, 00:04:03, 14.70ft
Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch



79ff7883-703d-45e1-9113-e7ac4e12b0d1_20190603_134004_562.jpg, 00:04:51, 27.33ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



dd52113a-f0c0-4e3a-8142-b334e872fb46_20190603_134033_304.jpg, 00:04:53, 27.35ft
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



e58685e2-4258-4bdb-a720-a1d155ec0659_20190603_134257_017.jpg, 00:05:55, 39.83ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



c56dec65-e9b1-40e8-9b5d-e918f06d136c_20190603_134308_754.jpg, 00:05:57, 39.85ft
Roots Fine Lateral at 10 o'clock



b9d023d2-ed2e-4098-8b53-f45bd66af059_20190603_134316_211.jpg, 00:05:57, 39.85ft
Roots Fine Lateral at 10 o'clock



559418bf-d967-4221-9fe8-b4c242aebbf2_20190603_134337_212.jpg, 00:06:10, 39.90ft
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



ba191ae9-f96c-454f-bc9f-53e6344cba19_20190603_134504_261.jpg, 00:07:31, 57.72ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



86774942-8d52-4e27-b462-b048e4fb3d4b_20190603_134534_730.jpg, 00:07:55, 59.94ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



f6985a73-41b7-41fd-8bd9-a38cbefd3a78_20190603_134551_928.jpg, 00:07:58, 59.96ft
Roots Tap Lateral at 10 o'clock, 50% of cross sectional area, within 8 inch



50d63618-ce2b-45f1-9ef5-9663706931e2_20190603_134603_002.jpg, 00:07:58, 59.96ft
Roots Tap Lateral at 10 o'clock, 50% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



ce9d8a80-85bd-45ac-95cc-5843347ade44_20190603_134723_913.jpg, 00:09:23, 82.85ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



cdce7c1a-d787-4c02-9196-6b9f0130ed73_20190603_134756_575.jpg, 00:09:44, 83.01ft
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE



3e24f40d-b9e4-4b2a-874a-ecce73c469e1_20190603_134841_463.jpg, 00:10:07, 84.41ft
Intruding Sealing Other, 5% of cross sectional area from 1 o'clock to 3 o'clock



d8b9d150-4b31-4110-89c9-dfcc9fb613f4_20190603_134903_305.jpg, 00:10:07, 84.41ft
Intruding Sealing Other, 5% of cross sectional area from 1 o'clock to 3 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



0b5cfe83-87f8-4c54-a294-e0fa3ba0a0eb_20190603_134936_587.jpg, 00:10:54, 85.58ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



93ef1b56-c4ba-4a02-9ab2-22508033f8b0_20190603_134954_286.jpg, 00:10:56, 85.58ft
Fracture Multiple from 12 o'clock to 12 o'clock, within 8 inch / IN WYE



7eb37d75-d6f1-41fd-8885-8507d4219ef3_20190603_135006_683.jpg, 00:10:56, 85.58ft
Fracture Multiple from 12 o'clock to 12 o'clock, within 8 inch / IN WYE



751ab6fd-f1d1-48d8-9fe2-7646fb9dc2db_20190603_135110_513.jpg, 00:12:06, 96.33ft
Tap Break-In at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



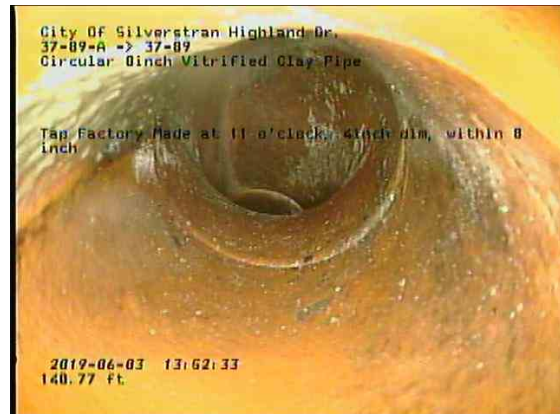
4b9310d7-16ae-48ef-b7d4-c1d7d6d12700_20190603_135230_283.jpg, 00:13:19, 108.03ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



3b3ff667-4391-4bc7-bde8-f242a26f6cea_20190603_135311_586.jpg, 00:13:53, 115.45ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



c3e2bea2f-e5ad-4cb2-bb58-8e5b6bb07edf_20190603_135418_155.jpg, 00:14:52, 133.21ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



8ed674ff-1568-4740-a360-5b11177ed753_20190603_135510_509.jpg, 00:15:36, 140.77ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



7aa086af-c9bf-4f04-99db-a5d7095799ec_20190603_135631_184.jpg, 00:16:50, 163.47ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



5fe319e3-0c9c-40d7-b638-3111ec100497_20190603_135716_038.jpg, 00:17:28, 170.93ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



3e79ccac-b4e7-4f25-8204-92605086ebbe_20190603_135726_397.jpg, 00:17:30, 170.93ft
Roots Fine Lateral at 2 o'clock



c901f3cd-c378-4290-aff3-fa2ab3ce0c37_20190603_135821_702.jpg, 00:18:18, 183.54ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



09e0ba0a-b8da-427c-9cdf-9fb34391e2b6_20190603_135917_901.jpg, 00:19:07, 196.20ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



d92a4354-8497-4757-84e2-7a4b652669ef_20190603_135930_171.jpg, 00:19:10, 196.20ft
Roots Fine Lateral at 2 o'clock



929d05b9-c0b5-4392-b702-fa8a64e5348f_20190603_140007_892.jpg, 00:19:39, 198.85ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



44532a31-f7ae-4aec-80c0-04df3f792ed0_20190603_140133_489.jpg, 00:21:00, 226.17ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch

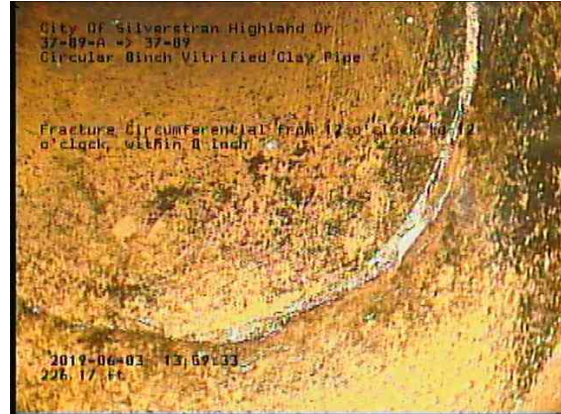


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



dac9128a-1ea4-4697-93ec-026bac764715_20190603_140142_324.jpg, 00:21:02, 226.17ft
Roots Fine Lateral at 10 o'clock



4d5c67fe-0b10-4c84-82f8-4f209ba8d619_20190603_140210_003.jpg, 00:21:17, 226.17ft
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch / IN WYE



1ed8c1c9-5400-4ac6-8f94-8ac3d586aca4_20190603_140315_332.jpg, 00:22:16, 238.85ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



6259d6f3-37e6-467d-9819-cfeaff7831e9_20190603_140331_476.jpg, 00:22:18, 238.85ft
Roots Medium Lateral at 2 o'clock, 10% lost, within 8 inch



Section Pictures

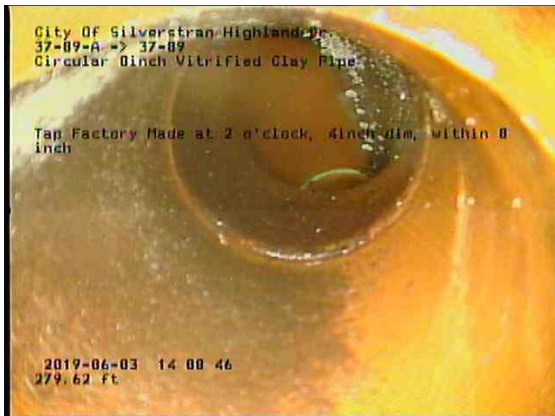
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



11865b35-195b-4b69-b9bf-9ba092ea9eb4_20190603_140440_127.jpg, 00:23:20, 256.49ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



bfcddb54-d33b-415d-b7c6-55f892169652_20190603_140958_854.jpg, 00:23:43, 257.72ft
Intruding Sealing Other, 5% of cross sectional area from 11 o'clock to 1 o'clock



9e9e2457-7f09-4b83-afab-20591ef8761c_20190603_141122_941.jpg, 00:25:00, 279.62ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



555f5110-bdf7-48fe-8f85-b3e077d1cf60_20190603_141303_681.jpg, 00:26:32, 307.42ft
Tap Factory Made Capped at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



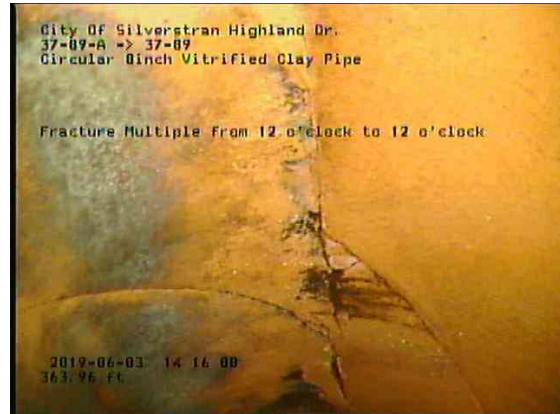
a0c05996-22ea-4d0f-b02c-46acb63a54b1_20190603_141505_240.jpg, 00:28:26, 350.01ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



896d2223-6a1b-448b-ae70-0b7c4b920d3c_20190603_141613_953.jpg, 00:29:25, 362.75ft
Infiltration Weeper from 3 o'clock to 4 o'clock



88e62e8e-b940-4b43-8a7c-406a9da3a5e8_20190603_141653_712.jpg, 00:29:48, 362.75ft
Fracture Multiple from 3 o'clock to 6 o'clock, Start



6df57164-7944-41f1-9c9a-846178ca7ec4_20190603_141837_543.jpg, 00:31:08, 363.96ft
Fracture Multiple from 12 o'clock to 12 o'clock

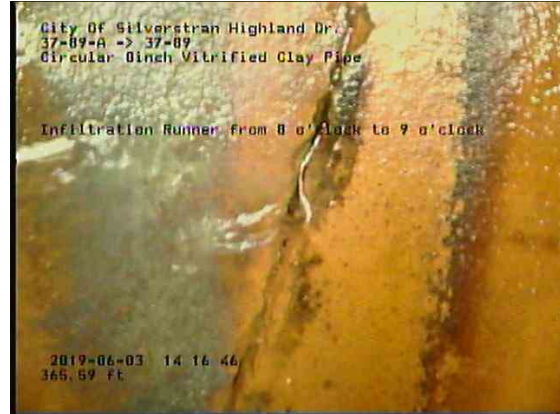


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



6317c7a3-f0a3-4379-9cdb-94632dc38248_20190603_141848_208.jpg, 00:31:08, 363.96ft
Fracture Multiple from 12 o'clock to 12 o'clock



2752c188-4dc1-4ce7-bcf2-8fb7e92c376a_20190603_141923_526.jpg, 00:31:41, 365.59ft
Infiltration Runner from 8 o'clock to 9 o'clock



6f9dbcf8-2629-4335-9bc7-64cca41c0594_20190603_142003_529.jpg, 00:32:12, 366.88ft
Infiltration Weeper from 3 o'clock to 4 o'clock



c5686161-2276-4e31-b9d2-d79af85fa2a5_20190603_142008_958.jpg, 00:32:14, 366.88ft
Fracture Multiple from 3 o'clock to 6 o'clock, Finish



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



d667f1b9-e8c6-46b0-b434-f6e9173c03cf_20190603_142014_166.jpg, 00:32:14, 366.88ft
Fracture Multiple from 3 o'clock to 6 o'clock, Finish



9b4ab3db-0486-4b93-a97b-39dd439dc8b3_20190603_142107_662.jpg, 00:33:04, 371.50ft
Fracture Longitudinal at 1 o'clock, within 8 inch



55064868-05dc-4540-819f-005cd62811fa_20190603_142114_902.jpg, 00:33:04, 371.50ft
Fracture Longitudinal at 1 o'clock, within 8 inch



f5a9def0-c931-4199-b7a3-dfbfd53d71ca_20190603_142144_663.jpg, 00:33:29, 372.19ft
Broken Soil Visible from 1 o'clock to 2 o'clock



Section Pictures

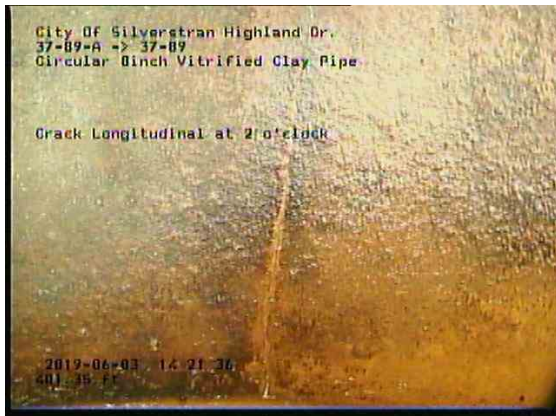
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



a7ef19e3-a34b-419d-84ad-87eba618bfd2_20190603_142200_896.jpg, 00:33:36, 372.19ft
Infiltration Weeper at 2 o'clock



f7135f73-7691-4e17-b6bb-926a75e917fc_20190603_142228_519.jpg, 00:33:36, 372.19ft
Infiltration Weeper at 2 o'clock



fbd1e4d8-4904-4948-81cb-58ca8f055f53_20190603_142413_244.jpg, 00:35:39, 401.35ft
Crack Longitudinal at 2 o'clock



c345688a-29e1-4312-875c-0e4e2965ebea_20190603_142454_200.jpg, 00:36:02, 401.53ft
Fracture Spiral from 4 o'clock to 6 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



2901239f-e3cb-4134-9d86-e33ce9c7a19a_20190603_142459_687.jpg, 00:36:02, 401.53ft
Fracture Spiral from 4 o'clock to 6 o'clock, within 8 inch



40a85798-0eb6-4633-8848-2e8488d9b2bb_20190603_142619_699.jpg, 00:36:38, 404.11ft
Crack Circumferential from 8 o'clock to 4 o'clock, within 8 inch



7e12b2ae-0fa3-40ed-af84-c8a30ed615b9_20190603_142625_037.jpg, 00:36:38, 404.11ft
Crack Circumferential from 8 o'clock to 4 o'clock, within 8 inch



e4f6c3fb-f390-42ca-bd59-7411a5a89d15_20190603_142643_276.jpg, 00:36:47, 404.11ft
Tee Connection at 6 o'clock, 8"inch vertical, 8"inch horizontal / DROP



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Highland Dr.	6/3/2019		1



896d838c-f4f8-4abe-843e-670fcf431432_20190603_142649_878.jpg, 00:36:47, 404.11ft
Tee Connection at 6 o'clock, 8"inch vertical, 8"inch horizontal / DROP



Inspection report

Date: 5/30/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 210.6'	Length Surveyed: 210.6'

City: City Of Silverstran	Drainage Area:	Upstream MH: CO 36-62
Street: Hollywood Ave	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 36-63
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1038	Distance	Code	Observation	Counter	Photo	Grade
36-63	0.00	AMH	Manhole / 36-63	00:00:00		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:05		
	0.00	B	Broken from 7 o'clock to 4 o'clock	00:00:35		S5
	0.07	CC	Crack Circumferential from 7 o'clock to 10 o'clock, within 8 inch	00:00:57		S1
	0.21	TF	Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch	00:01:47		
	18.89	MMC	Material Change, Polyvinyl chloride / 8"	00:03:05		
	23.33	MMC	Material Change, Vitrified clay pipe / 8"	00:04:04		
	39.48	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:05:26		
	47.13	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:05:57		
	74.78	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch / IN WYE	00:07:13		M2
	74.78	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:07:11		
	107.62	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:08:51		
	109.98	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:09:15		
	109.98	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 9 o'clock, within 8 inch / IN WYE	00:09:17		M2



Inspection report

Date: 5/30/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 210.6'	Length Surveyed: 210.6'

1:1038	Distance	Code	Observation	Counter	Photo	Grade
	127.69	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:10:23		
	145.42	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:11:15		
	157.85	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:11:57		
	180.57	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:13:02		
	180.57	RFL	Roots Fine Lateral at 9 o'clock	00:13:05		M1
	193.00	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:13:54		
	205.71	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:14:37		
	205.72	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 9 o'clock, within 8 inch / IN WYE	00:14:40		M2
	208.18	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:15:01		
	210.59	DSF	Deposits Settled Fine, 15% of cross sectional area from 4 o'clock to 8 o'clock, within 8 inch / AT END OF PIPE	00:15:20		M3
	210.59	ACOM	Cleanout Mainline / CO 36-62	00:15:27		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5111	3123	6.0	10.0	16.0	3.0	2.0	2.3



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



64e280de-ad57-4b70-bda5-a0b0dca5b774_20190530_140857_838.jpg, 00:00:00, 0.00ft
Manhole / 36-63



049f7848-bfcf-4778-9f44-0f4429b35483_20190530_140959_798.jpg, 00:00:35, 0.00ft
Broken from 7 o'clock to 4 o'clock



73a03eff-2e63-4612-adce-2efb35b314b4_20190530_141044_502.jpg, 00:00:57, 0.07ft
Crack Circumferential from 7 o'clock to 10 o'clock, within 8 inch



c84ad29a-0377-4601-b028-57865229f460_20190530_141329_205.jpg, 00:01:47, 0.21ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch

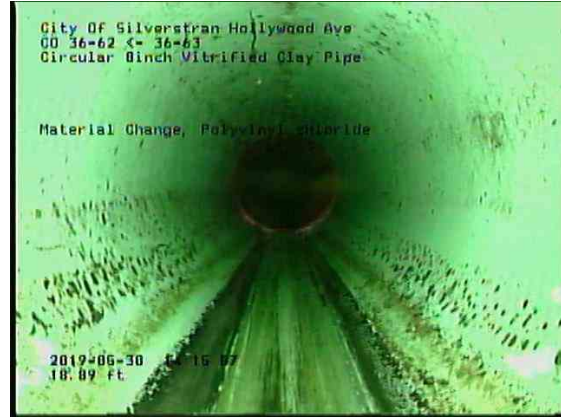


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



237c298d-27cc-4d5d-982f-701468cccc89_20190530_141507_842.jpg, 00:01:47, 0.21ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



d2dbc901-0e54-411c-8e1d-3454631d3b00_20190530_14183_2_625.jpg, 00:03:05, 18.89ft
Material Change, Polyvinyl chloride / 8"



432b50fd-56a3-497e-b78c-96bd23b2d784_20190530_141839_102.jpg, 00:03:05, 18.89ft
Material Change, Polyvinyl chloride / 8"

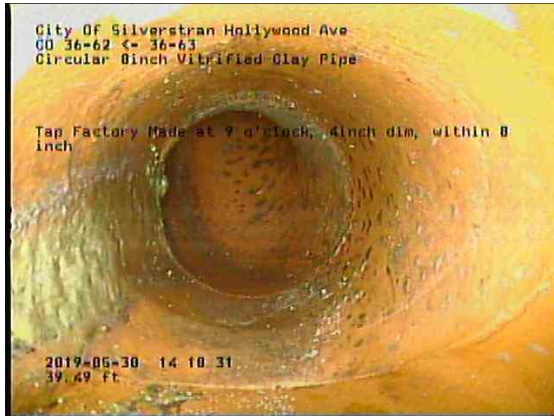


a994bc4a-7620-4bee-94f3-c3f8c21220f0_20190530_141942_075.jpg, 00:04:04, 23.33ft
Material Change, Vitrified clay pipe / 8"



Section Pictures

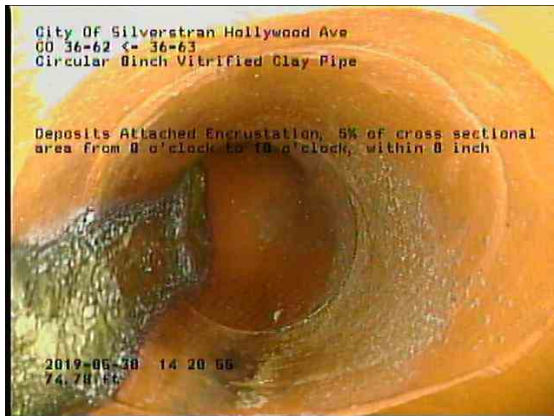
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



a97a1621-cb7d-4a7e-8620-a4a5c8dd867e_20190530_142106_265.jpg, 00:05:26, 39.48ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



10726aeb-e1f7-4e67-93ac-0be0c7318d91_20190530_142145_683.jpg, 00:05:57, 47.13ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



e67834f8-e01f-4d08-a5a0-72132a4fbe79_20190530_142331_011.jpg, 00:07:13, 74.78ft
Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch / IN WYE



cc98de8e-d84c-4018-b2e1-8fa95cc768f5_20190530_142307_305.jpg, 00:07:11, 74.78ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch

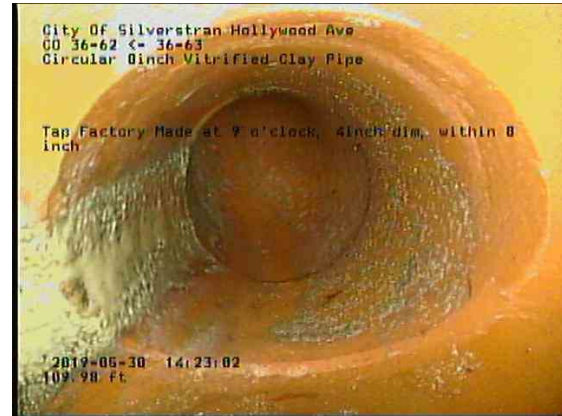


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



8126748b-e581-4d30-bfa6-e451d8d9b827_20190530_142507_952.jpg, 00:08:51, 107.62ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



44416460-b702-41e9-93b0-a69b21dd38b7_20190530_142537_211.jpg, 00:09:15, 109.98ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



19e50abb-b200-4727-b079-6c31b828a930_20190530_142550_366.jpg, 00:09:17, 109.98ft
Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 9 o'clock, within 8 inch / IN WYE



02a6d168-550f-47d4-91c3-c4b332b70f2d_20190530_142702_126.jpg, 00:10:23, 127.69ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



1ee4c2ae-9760-4b61-8060-10117052a714_20190530_142759_449.jpg, 00:11:15, 145.42ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



2aa00e97-f7ba-4cd2-8a7f-e41df4f4a765_20190530_142848_004.jpg, 00:11:57, 157.85ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



2b435157-b36b-4535-b15c-98131e4b6308_20190530_143001_201.jpg, 00:13:02, 180.57ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



436a8188-fc01-4fe4-b1fc-84d71b7ad2f6_20190530_143013_246.jpg, 00:13:05, 180.57ft
Roots Fine Lateral at 9 o'clock



Section Pictures

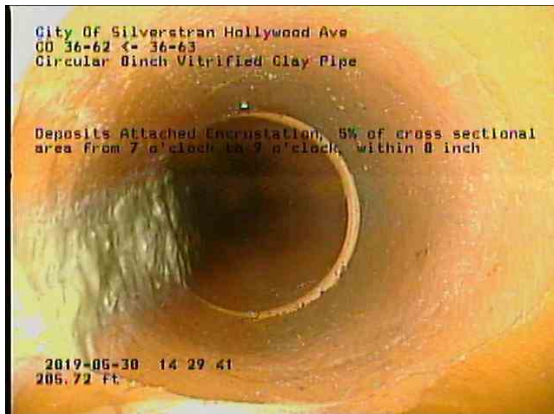
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



02c626d6-1a4c-4120-a74c-d833bc2756a3_20190530_143108_689.jpg, 00:13:54, 193.00ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



ffb0794-8991-4d2f-a3bb-3c7e26c49c29_20190530_143157_848.jpg, 00:14:37, 205.71ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



d79eacf1-0b8b-4351-a5dd-c807827bc547_20190530_143216_906.jpg, 00:14:40, 205.72ft
Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 9 o'clock, within 8 inch / IN WYE



f90d2f57-9363-4119-bb9b-00e5a9b6aeb0_20190530_143246_421.jpg, 00:15:01, 208.18ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch

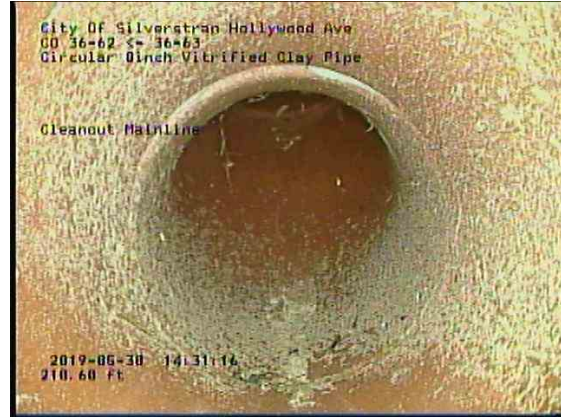


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Hollywood Ave	5/30/2019		1



08e3bdb3-c547-440d-9ce2-4f488b39d18b_20190530_143330_797.jpg, 00:15:20, 210.59ft
 Deposits Settled Fine, 15% of cross sectional area from 4 o'clock to 8 o'clock, within 8 inch / AT END OF PIPE



513dd939-da64-4832-b279-ede1fd947de8_20190530_143351_308.jpg, 00:15:27, 210.59ft
 Cleanout Mainline / CO 36-62



7b6a12f0-1c62-44f8-8f06-2aa9fbd34e26_20190530_143401_430.jpg, 00:15:27, 210.59ft
 Cleanout Mainline / CO 36-62



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 521.3'	Length Surveyed: 521.3'

City: City Of Silverstrand	Drainage Area:	Upstream MH: CO 36-76
Street: Hollywood Bl.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 36-77
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:2126	Distance	Code	Observation	Counter	Photo	Grade
36-77	0.00	AMH	Manhole / 36-77	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:16		
	27.82	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:02:10		
	60.64	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:03:35		
	98.56	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:05:10		
	126.21	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:06:25		
	126.21	RFL	Roots Fine Lateral at 2 o'clock	00:06:36		M1
	128.67	TB	Tap Break-In at 10 o'clock, 4inch dim, within 8 inch	00:07:03		
	166.47	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:08:56		
	178.98	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:09:55		
	201.77	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:11:02		
	214.30	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:11:44		
	214.30	RML	Roots Medium Lateral at 2 o'clock, 25% lost, within 8 inch	00:11:48		M3
	237.11	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:12:56		



Inspection report

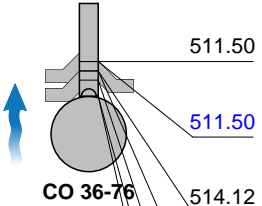
Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 521.3'	Length Surveyed: 521.3'

1:2126	Distance	Code	Observation	Counter	Photo	Grade
	249.67	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:13:38		
	272.25	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:14:47		
	278.46	JSM	Joint Separated Medium	00:15:33		S1
	284.87	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:16:05		
	284.87	RTL	Roots Tap Lateral from 1 o'clock to 2 o'clock, 5% of cross sectional area, within 8 inch	00:16:09		M2
	307.63	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:17:31		
	320.23	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:18:24		
	342.82	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:19:56		
	355.45	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:21:08		
	373.15	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:22:14		
	390.89	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:23:07		
	413.48	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:24:22		
	426.02	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:25:02		
	426.02	DAGS	Deposits Attached Grease, 10% of cross sectional area from 1 o'clock to 2 o'clock, within 8 inch / In WYE	00:25:06		M2
	443.58	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:26:18		
	443.58	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch	00:26:20		M2
	461.15	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:27:17		
	478.74	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:28:20		
	478.74	RFL	Roots Fine Lateral at 11 o'clock	00:28:23		M1



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 521.3'	Length Surveyed: 521.3'

1:2126	Distance	Code	Observation	Counter	Photo	Grade
	511.50	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:30:21		
	511.50	RML	Roots Medium Lateral at 2 o'clock, 45% lost, within 8 inch	00:30:23		M3
	514.12	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:30:43		
	514.12	RFL	Roots Fine Lateral at 10 o'clock	00:30:45		M1
	516.69	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:31:08		
	521.27	TF	Tap Factory Made at 12 o'clock, 8inch dim, within 8 inch	00:31:38		
	521.27	ACOM	Cleanout Mainline / CO 36-76	00:31:41		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
1100	3223	1.0	15.0	16.0	1.0	1.9	1.8



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



44769f0c-ed92-4ab3-9565-11518e66cfb4_20190528_152801_461.jpg, 00:00:01, 0.00ft
Manhole / 36-77



7e3d7280-e8e0-429c-b15d-552f88a09e9c_20190528_152824_776.jpg, 00:00:16, 0.00ft
Water Level, 5% of the vertical dimension



d87cf45c-85cd-4785-b0cc-1ed4334b09bd_20190528_153025_511.jpg, 00:02:10, 27.82ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



f391f559-5e3e-4aa4-9126-b2cbfaba2d73_20190528_153158_756.jpg, 00:03:35, 60.64ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



e09e6243-dbc-44b4-a4ac-246994f2f717_20190528_153342_217.jpg, 00:05:10, 98.56ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



befaaea7-10aa-45a1-ab58-d68d4a3d355d_20190528_153505_347.jpg, 00:06:25, 126.21ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



26f58a61-35e5-4ed6-8018-14b1d66e5b3f_20190528_153526_108.jpg, 00:06:36, 126.21ft
Roots Fine Lateral at 2 o'clock



ff2d22fc-bded-4ae6-8ace-156620135091_20190528_153601_986.jpg, 00:07:03, 128.67ft
Tap Break-In at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



c0e57f1b-6419-48a2-92b9-ad419f0fa96b_20190528_153801_747.jpg, 00:08:56, 166.47ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



8eeb1b72-5530-446d-8d9b-ff52c1033e47_20190528_153909_515.jpg, 00:09:55, 178.98ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



e01ae605-7b1c-4f82-a557-841566f7a1df_20190528_154023_715.jpg, 00:11:02, 201.77ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



19541ddd-3206-46c6-ac2b-8f8ea1eb302b_20190528_154112_823.jpg, 00:11:44, 214.30ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

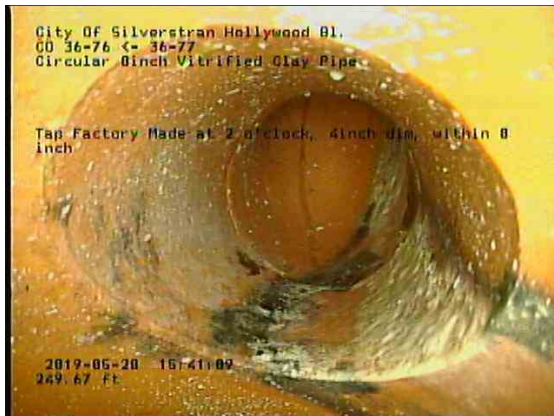
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



185000c2-3afd-4323-9445-ae5c1f83d867_20190528_154138_071.jpg, 00:11:48, 214.30ft
 Roots Medium Lateral at 2 o'clock, 25% lost, within 8 inch



b2a9b32e-3da9-4684-bd3c-4cb0697634ee_20190528_154254_535.jpg, 00:12:56, 237.11ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



af35a0ba-567d-43d0-893a-6ae5a3f7c4b9_20190528_154344_124.jpg, 00:13:38, 249.67ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



e670947b-55a6-466f-b6a6-8093e1cccdfb_20190528_154501_508.jpg, 00:14:47, 272.25ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



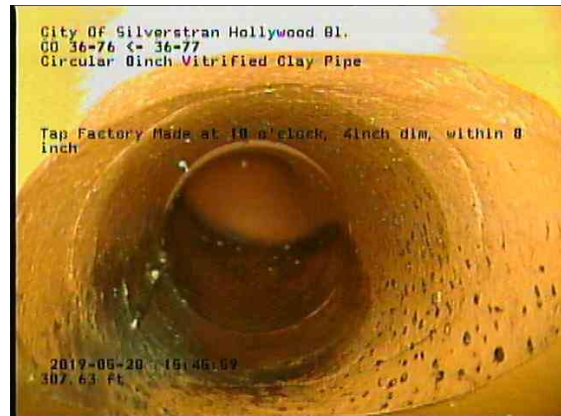
682d1afb-75bf-4c75-ab50-bdb0ab2dd5f4_20190528_154603_502.jpg, 00:15:33, 278.46ft
Joint Separated Medium



5856e717-f881-4ff5-bc50-d1c6fbe9e8f0_20190528_154643_71.jpg, 00:16:05, 284.87ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



e32fa8f4-aa79-4207-9726-fa3ea743c5e8_20190528_154702_879.jpg, 00:16:09, 284.87ft
Roots Tap Lateral from 1 o'clock to 2 o'clock, 5% of cross sectional area, within 8 inch



9011d86a-4de0-4287-8820-90469977fb91_20190528_154833_795.jpg, 00:17:31, 307.63ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



3662e0d4-600e-494d-8e43-72e0c1ddc8cb_20190528_154935_258.jpg, 00:18:24, 320.23ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



9cd28e29-8235-46a9-9396-8535b1fb634a_20190528_155114_380.jpg, 00:19:56, 342.82ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



e35fb37f-9b8c-44f4-b2f5-107e5cef1bc7_20190528_155236_336.jpg, 00:21:08, 355.45ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

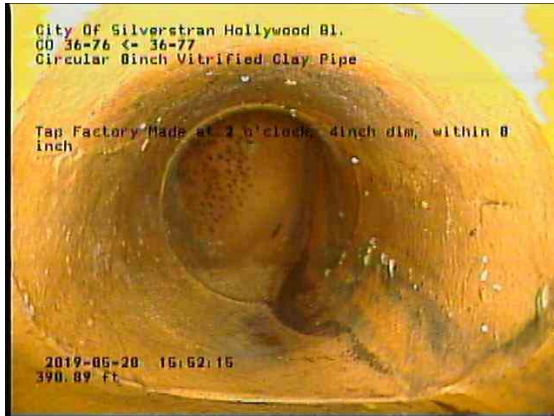


374ba6d9-05c8-4896-9ebe-ea843a6f9bf5_20190528_155350_557.jpg, 00:22:14, 373.15ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch

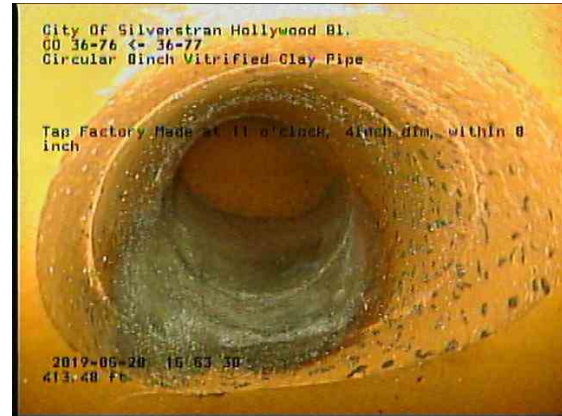


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



69406565-379e-4df2-b537-8823b9aae28d_20190528_155450_149.jpg, 00:23:07, 390.89ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



13984637-5695-4d24-ad4b-8b0f78140f52_20190528_155613_087.jpg, 00:24:22, 413.48ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



a7c3c2fb-e00d-4219-a847-f17be3de891f_20190528_155701_020.jpg, 00:25:02, 426.02ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



7b518f61-f80f-4c11-8bac-601964c6675e_20190528_155729_472.jpg, 00:25:06, 426.02ft
Deposits Attached Grease, 10% of cross sectional area from 1 o'clock to 2 o'clock, within 8 inch / In WYE



Section Pictures

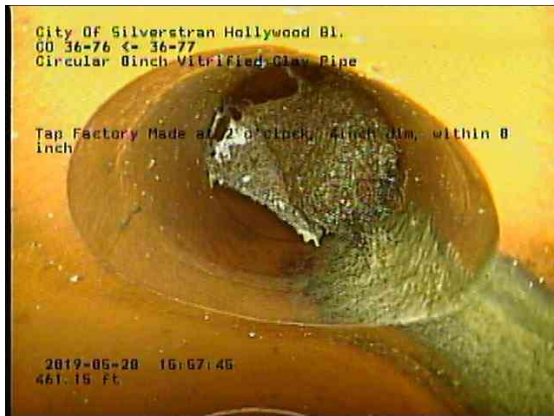
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



c31a10dd-315d-4f44-ac37-6b8434e1ebbc_20190528_155849_112.jpg, 00:26:18, 443.58ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



c1b62526-2c3e-4a8e-9163-c5b22d037d9f_20190528_155901_725.jpg, 00:26:20, 443.58ft
Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch



ef54281d-f04f-4964-8589-a64c3c490938_20190528_160019_437.jpg, 00:27:17, 461.15ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



13befac9-b0a1-47d3-9231-2544b122da11_20190528_160132_363.jpg, 00:28:20, 478.74ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



6786af43-bce4-412f-a4cd-55417416a8a7_20190528_160203_025.jpg, 00:28:23, 478.74ft
 Roots Fine Lateral at 11 o'clock



63e71fc8-0110-4741-909d-13f943fd31b2_20190528_160408_944.jpg, 00:30:21, 511.50ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



6c9f030c-b63b-405f-a203-f27e1cb90c0f_20190528_160437_460.jpg, 00:30:23, 511.50ft
 Roots Medium Lateral at 2 o'clock, 45% lost, within 8 inch



5fe63f10-7af3-4595-a221-a45245c92fca_20190528_160507_596.jpg, 00:30:43, 514.12ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



fa9d8b08-818f-4138-8a76-31c5955e51e4_20190528_160517_022.jpg, 00:30:45, 514.12ft
 Roots Fine Lateral at 10 o'clock



205f4e36-3f87-4da0-a2cd-d8f7be74d2a3_20190528_160548_927.jpg, 00:31:08, 516.69ft
 Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



e963faff-8528-4596-950c-4c671c94368b_20190528_160630_275.jpg, 00:31:38, 521.27ft
 Tap Factory Made at 12 o'clock, 8inch dim, within 8 inch



81dac533-9d54-40c0-a114-faeadc2cbd4_20190528_160706_667.jpg, 00:31:38, 521.27ft
 Tap Factory Made at 12 o'clock, 8inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hollywood Bl.	5/28/2019		1



4a09cf2d-b8ac-4a08-ae42-07648ef3d65c_20190528_160654_013.jpg, 00:31:41, 521.27ft
Cleanout Mainline / CO 36-76

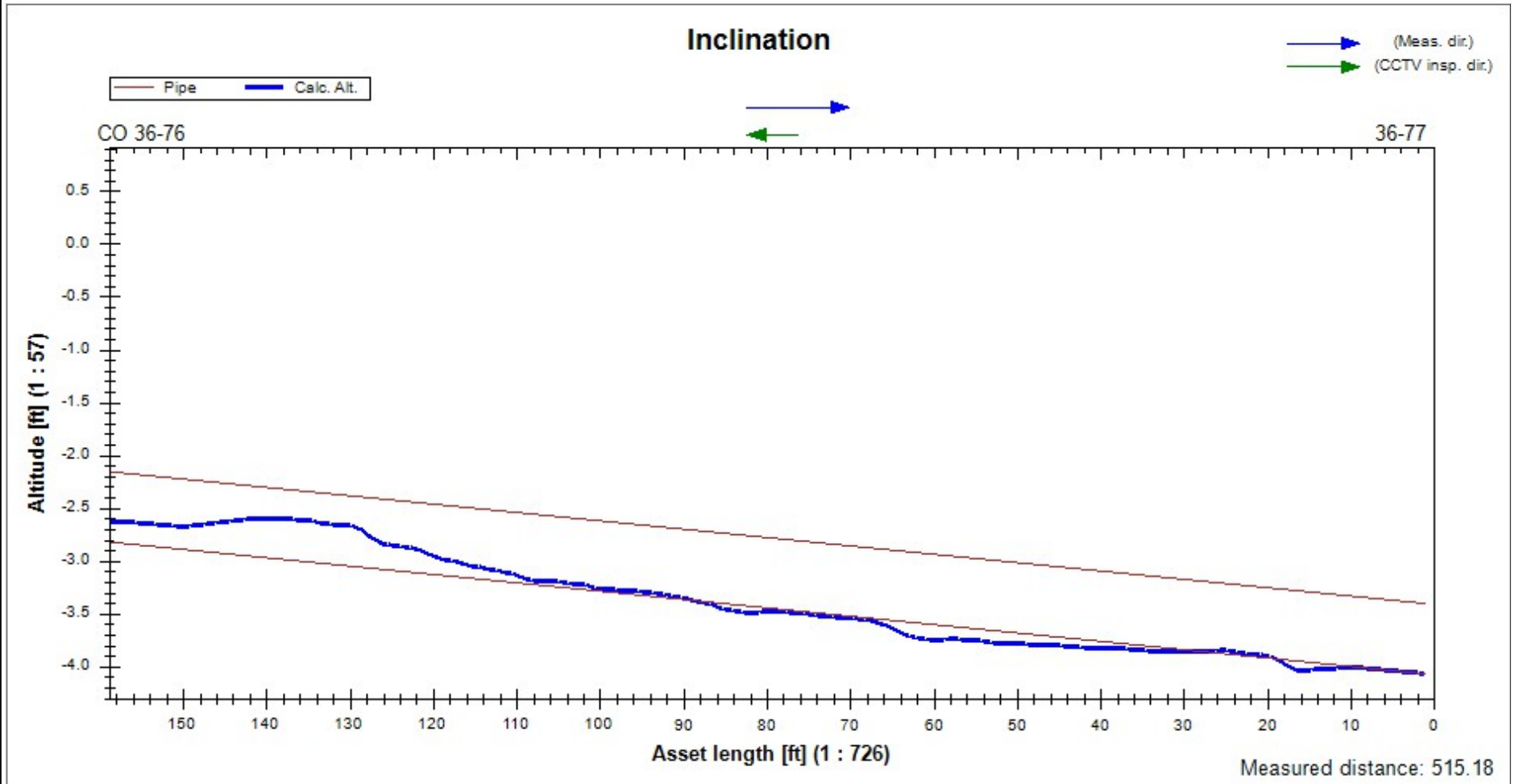


0dd623af-c7e7-4d8f-9e6f-198fb7e8fcad_20190528_160707_458.jpg, 00:31:41, 521.27ft
Cleanout Mainline / CO 36-76



Section Inclination

Pipe Segment Reference	Date	Time	Surveyed By	City	Street	Direction	Length Surveyed
	5/28/2019	12:00 AM	Kyle Bahensky	City Of Silverstrand	Hollywood Bl.	Upstream	515.18 m
Shape	Height	Width	Upstream MH	Downstream MH	Start altitude	End altitude	Measured Inc
Circular	8 mm	8 mm	CO 36-76	36-77	-4.066 m	-0.789 m	-0.789 m





Inspection report

Date: 5/23/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 437.5'	Length Surveyed: 437.5'

City: City Of Silverstrand	Drainage Area:	Upstream MH: CO 37-34
Street: Hueneme Ave.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-35
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1682	Distance	Code	Observation	Counter	Photo	Grade
37-35	0.00	AMH	Manhole / 37-35	00:00:02		
	0.00	MWL	Water Level, 10% of the vertical dimension	00:00:11		
	0.52	TF	Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch	00:00:56		
	10.35	CL	Crack Longitudinal at 5 o'clock, within 8 inch	00:02:37		S2
	10.67	IG	Infiltration Gusher at 3 o'clock, within 8 inch	00:02:58		M5
	11.56	BSV	Broken Soil Visible from 12 o'clock to 12 o'clock, within 8 inch	00:03:41		S5
	11.67	IG	Infiltration Gusher at 9 o'clock, within 8 inch	00:04:05		M5
	83.12	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:07:17		
	115.71	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:08:37		
	118.34	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:08:58		
	135.76	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:10:12		
	166.62	CL	Crack Longitudinal at 10 o'clock, within 8 inch	00:11:43		S2
	173.33	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:12:15		
	186.02	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:12:58		



Inspection report

Date: 5/23/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 437.5'	Length Surveyed: 437.5'

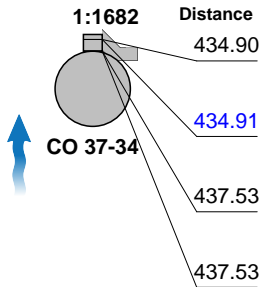
Distance	Code	Observation	Counter	Photo	Grade
1:1682					
198.93	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:13:42		
201.17	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:14:04		
243.84	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:15:50		
246.38	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:16:12		
246.38	OBZ	Obstacles Other, 10% of cross sectional area from 1 o'clock to 2 o'clock / IN WYE	00:16:32		M2
268.99	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:17:47		
271.48	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:18:06		
309.33	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:19:42		
316.88	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:20:10		
344.62	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:21:23		
347.13	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:21:44		
364.95	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:23:01		
382.40	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:24:03		
428.65	RFJ	Roots Fine Joint from 7 o'clock to 5 o'clock, within 8 inch	00:26:16		M1
430.22	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:26:52		
430.22	RBL	Roots Ball Lateral at 1 o'clock, 65% lost, within 8 inch	00:26:55		M4
431.29	RFJ	Roots Fine Joint at 2 o'clock, within 8 inch	00:27:28		M1
432.71	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:27:53		
432.71	RBL	Roots Ball Lateral from 1 o'clock to 2 o'clock, 90% lost, within 8 inch	00:27:58		M4



Inspection report

Date: 5/23/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 437.5'	Length Surveyed: 437.5'

Distance	Code	Observation	Counter	Photo	Grade
434.90	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:28:42		
434.91	RBL	Roots Ball Lateral at 11 o'clock, 95% lost, within 8 inch	00:28:46		M4
437.53	TFC	Tap Factory Made Capped at 6 o'clock, 8inch dim	00:29:26		
437.53	ACOM	Cleanout Mainline / CO 37-34	00:30:03		



QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5122	5243	9.0	26.0	35.0	3.0	3.2	3.2



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



5c356c9b-47d4-4c73-a498-e345785b4da0_20190523_112644_760.jpg, 00:00:02, 0.00ft
Manhole / 37-35



7ddd48a8-5701-4c9d-96c2-70f9c9a3927c_20190523_112958_052.jpg, 00:00:11, 0.00ft
Water Level, 10% of the vertical dimension



0d303b1c-7bb0-468b-ba69-2cd41a30b866_20190523_112853_785.jpg, 00:00:56, 0.52ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



d0c59d53-4f3f-4166-a27a-8aaef57d6b7_20190523_112945_730.jpg, 00:00:56, 0.52ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



1184433c-b93c-4820-880a-402e2e7017fb_20190523_113236_564.jpg, 00:02:37, 10.35ft
Crack Longitudinal at 5 o'clock, within 8 inch



a75875b2-0b7e-4147-b681-2ae0c220a959_20190523_113310_504.jpg, 00:02:58, 10.67ft
Infiltration Gusher at 3 o'clock, within 8 inch



0d01e920-d0ea-44b2-8c45-753be36cb31f_20190523_113437_115.jpg, 00:03:41, 11.56ft
Broken Soil Visible from 12 o'clock to 12 o'clock, within 8 inch



12664bd6-d339-4883-90b7-2acfe341bcfc_20190523_113510_867.jpg, 00:04:05, 11.67ft
Infiltration Gusher at 9 o'clock, within 8 inch

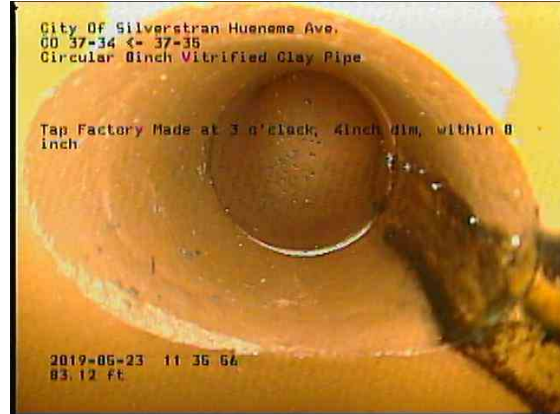


Section Pictures

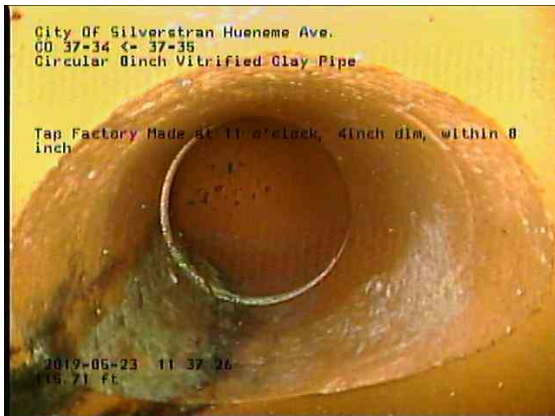
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



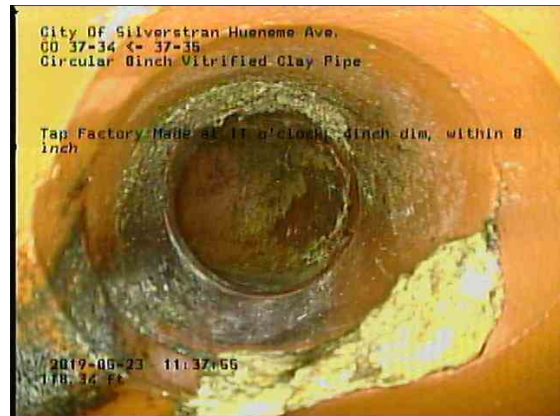
cde2528d-3ef4-4d14-99fa-e57159509e8f_20190523_113534_804.jpg, 00:04:05, 11.67ft
Infiltration Gusher at 9 o'clock, within 8 inch



def1f153-aca8-4197-8365-150582aebc8e_20190523_113829_730.jpg, 00:07:17, 83.12ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



f859473d-80c2-41f8-86ff-9ff449552141_20190523_113959_050.jpg, 00:08:37, 115.71ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



f7c424e6-a68f-46b3-91c2-be76dead2b2a_20190523_114028_529.jpg, 00:08:58, 118.34ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch

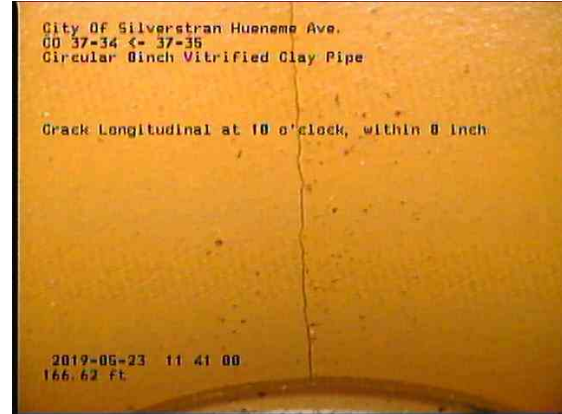


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



1e30851d-f53d-44e0-b837-0063eb7732fc_20190523_114150_178.jpg, 00:10:12, 135.76ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



d6e49a27-003d-4084-89dc-7e7c43e58900_20190523_11433_3_595.jpg, 00:11:43, 166.62ft
Crack Longitudinal at 10 o'clock, within 8 inch



e8406855-7943-4eb3-aa26-efda9d85219e_20190523_11441_4_965.jpg, 00:12:15, 173.33ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



c3f306f6-f0da-4442-b38f-034eaebd1be1_20190523_114507_828.jpg, 00:12:58, 186.02ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch

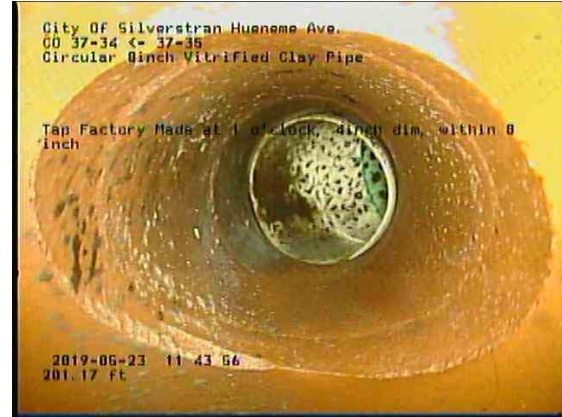


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



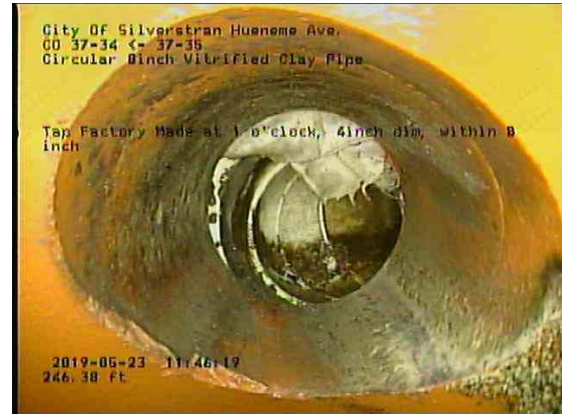
7d9b9ca0-4d13-4272-ac35-6016287206c2_20190523_114523_8_850.jpg, 00:13:42, 198.93ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



ba0f598b-4cd7-4e50-a836-28988ae9e125_20190523_114629_967.jpg, 00:14:04, 201.17ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



7571523a-2ee1-4807-bb71-074030b8e4c4_20190523_114823_342.jpg, 00:15:50, 243.84ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



0a9aa415-6fab-40b3-8975-217a5bced51f_20190523_114852_759.jpg, 00:16:12, 246.38ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

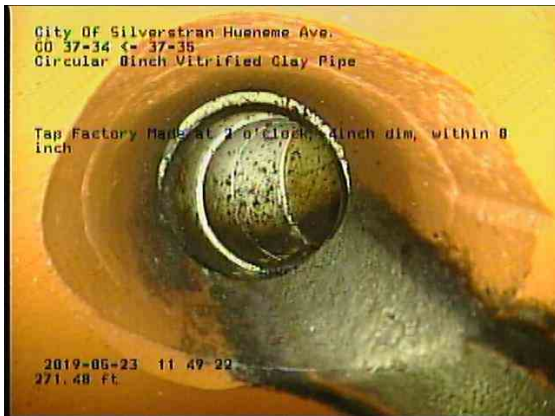
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



e69da673-911c-4985-a325-4850f98c7e8a_20190523_115006_721.jpg, 00:16:32, 246.38ft
Obstacles Other, 10% of cross sectional area from 1 o'clock to 2 o'clock / IN WYE



e41b79a6-f05b-43db-a787-3409d276be7c_20190523_115128_978.jpg, 00:17:47, 268.99ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



3a9e65f1-c228-44df-a80c-35efa880ca3c_20190523_115155_109.jpg, 00:18:06, 271.48ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



a27ed541-81a0-48a3-8bd2-5a04ab1163b2_20190523_11534_2_276.jpg, 00:19:42, 309.33ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



f3946b85-3c01-4649-97bb-4ab276e7f49f_20190523_115418_180.jpg, 00:20:10, 316.88ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



bb8ab630-a199-46e3-9507-3a4655e55d58_20190523_115540_178.jpg, 00:21:23, 344.62ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



edd47f34-6887-49b1-8ece-c525b15464cb_20190523_115612_059.jpg, 00:21:44, 347.13ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



8db6c3e2-2e72-41e7-95d3-08128a8714f8_20190523_115736_463.jpg, 00:23:01, 364.95ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch

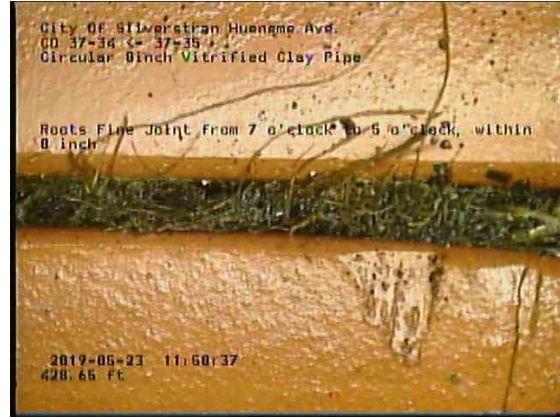


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



ae695281-3a20-4217-95be-8fb32e416a29_20190523_115849_014.jpg, 00:24:03, 382.40ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



19845019-6d2b-441c-b4d5-6aaa32bab616_20190523_120110_413.jpg, 00:26:16, 428.65ft
 Roots Fine Joint from 7 o'clock to 5 o'clock, within 8 inch



f827b99f-57c6-4ea9-ad3a-2477adec4a65_20190523_120126_680.jpg, 00:26:16, 428.65ft
 Roots Fine Joint from 7 o'clock to 5 o'clock, within 8 inch



7349739b-7d4a-4465-b77e-64a56cdd28fc_20190523_120156_221.jpg, 00:26:52, 430.22ft
 Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



a1d3bb1c-70e1-4a05-afee-932a611d2749_20190523_120212_680.jpg, 00:26:55, 430.22ft
 Roots Ball Lateral at 1 o'clock, 65% lost, within 8 inch



7cd76eec-8235-401e-868b-6775c5736d59_20190523_12022_2_946.jpg, 00:26:55, 430.22ft
 Roots Ball Lateral at 1 o'clock, 65% lost, within 8 inch



b0fa45fe-046c-413d-bba5-de3570ca966c_20190523_120254_872.jpg, 00:27:28, 431.29ft
 Roots Fine Joint at 2 o'clock, within 8 inch



2e32f160-6892-4198-95e9-d29d8ac7168d_20190523_120332_096.jpg, 00:27:53, 432.71ft
 Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



7829ffb5-79e0-46f0-8175-9fd23d2df5a7_20190523_120352_933.jpg, 00:27:58, 432.71ft
Roots Ball Lateral from 1 o'clock to 2 o'clock, 90% lost, within 8 inch



9337195d-4944-4e3e-a0c4-26838f119cc5_20190523_120406_237.jpg, 00:27:58, 432.71ft
Roots Ball Lateral from 1 o'clock to 2 o'clock, 90% lost, within 8 inch



bd27cc9d-834f-48f4-b88e-910919b13de9_20190523_120445_436.jpg, 00:28:42, 434.90ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



a36b0e93-865d-420a-8612-17099a6fc5b7_20190523_120459_774.jpg, 00:28:46, 434.91ft
Roots Ball Lateral at 11 o'clock, 95% lost, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Hueneme Ave.	5/23/2019		1



5ba93072-8966-47e2-baf5-9b7d7a0818b8_20190523_120523_5_635.jpg, 00:28:46, 434.91ft
 Roots Ball Lateral at 11 o'clock, 95% lost, within 8 inch



cbf28fd8-eb39-414d-a87d-bb2eb2df8c88_20190523_120622_846.jpg, 00:29:26, 437.53ft
 Tap Factory Made Capped at 6 o'clock, 8inch dim



179c383c-749f-4e3d-9f00-d0941f013106_20190523_120650_460.jpg, 00:30:03, 437.53ft
 Cleanout Mainline / CO 37-34



c6502d43-c4bd-4fc3-99d1-78f64c31d2fd_20190523_120657_271.jpg, 00:30:03, 437.53ft
 Cleanout Mainline / CO 37-34



Inspection report

Date: 5/20/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-091707009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length: 4.0	Total Length: 177.2'	Length Surveyed: 177.2'

City: City Of Silverstran	Drainage Area:	Upstream MH: 23-03
Street: Ocean Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 23-05
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8 "	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1548	Distance	Code	Observation	Counter	Photo	Grade	
23-03							
	0.00	AMH	Manhole / 23-03	00:00:01			
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:10			
	37.79	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:01:53			
	50.38	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:02:44			
	62.14	CH2	Crack Longitudinal Hinge, 2 from 2 o'clock to 4 o'clock, within 8 inch	00:04:07		S4	
	77.95	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:05:20			
	80.55	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:05:44			
	98.13	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:06:52			
	105.71	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:07:30			
	112.72	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:08:07			
	125.70	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:09:08			
	143.27	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:10:10			
	177.16	AMH	Manhole / 23-05	00:11:41			
23-05							
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	0000	4.0	0.0	4.0	4.0	0.0	4.0



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Ocean Dr.	5/20/2019		1



bd29e82a-fd79-48ab-b537-993bf6e9d478_20190520_105552_672.jpg, 00:00:01, 0.00ft
Manhole / 23-03



4ff604b4-b722-4f9c-bc78-e03e543898d4_20190520_105613_401.jpg, 00:00:10, 0.00ft
Water Level, 5% of the vertical dimension



deddc54d-eaf7-4d9a-a688-f67c60210bd7_20190520_105804_932.jpg, 00:01:53, 37.79ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



b872f605-3344-40be-8d4d-f736cdfef25b_20190520_105902_319.jpg, 00:02:44, 50.38ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch

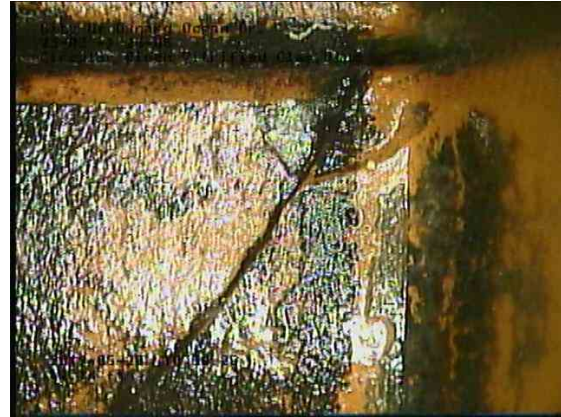


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Ocean Dr.	5/20/2019		1



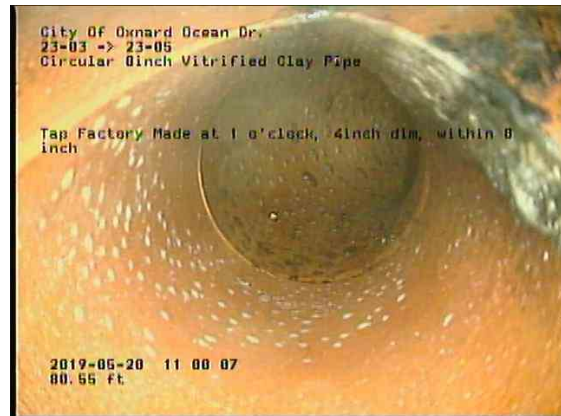
fcc5c6b5-d1ab-4535-8d5c-531b5251c740_20190520_110104_565.jpg, 00:04:07, 62.14ft
Crack Longitudinal Hinge, 2 from 2 o'clock to 4 o'clock, within 8 inch



c61dd02b-b45a-43bc-acc3-303b8b8c755b_20190520_110055_159.jpg, 00:04:07, 62.14ft
Crack Longitudinal Hinge, 2 from 2 o'clock to 4 o'clock, within 8 inch



108c9e77-2afd-425b-8aa0-d59a217eebcc_20190520_110207_395.jpg, 00:05:20, 77.95ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



06ed34d8-66d3-43b4-a3eb-4f0992561a02_20190520_110237_670.jpg, 00:05:44, 80.55ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Ocean Dr.	5/20/2019		1



64628eda-a1b0-4364-a563-fc39eaf90479_20190520_110354_636.jpg, 00:06:52, 98.13ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



16b7fbe1-3ee7-4411-9623-ebda1aa7ffd8_20190520_110442_803.jpg, 00:07:30, 105.71ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



5d06406f-76d6-4ed6-8115-b2c406ad78b1_20190520_110531_124.jpg, 00:08:07, 112.72ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



e8a3a889-e43f-4ebc-821f-f6c25e151619_20190520_110639_174.jpg, 00:09:08, 125.70ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Ocean Dr.	5/20/2019		1



882ee781-8d25-467f-affa-6b82868e8d6f_20190520_110749_449.jpg, 00:10:10, 143.27ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



b175dbbf-c158-4ebe-aaf6-bd43f2032594_20190520_110926_087.jpg, 00:11:41, 177.16ft
Manhole / 23-05



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 181.4'	Length Surveyed: 181.4'

City: City Of Silverstrand	Drainage Area:	Upstream MH: 37-39
Street: Ocean Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-41
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 10"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:941	Distance	Code	Observation	Counter	Photo	Grade
37-39	0.00	AMH	Manhole / 37-39	00:00:01		
	0.00	MWL	Water Level, 10% of the vertical dimension	00:00:08		
	7.39	S02 MWLS	Water Level, Sag in pipe, 80% of the vertical dimension, Start	00:03:30		
	7.39	JOL	Joint Offset Large, 2Inch	00:00:40		S2
	7.39	MMC	Material Change, Polyvinyl chloride / 10"	00:00:47		
	7.39	S01 DAGS	Deposits Attached Grease, 5% of cross sectional area from 11 o'clock to 1 o'clock, within 8 inch, Start	00:01:06		
	31.29	F02 MWLS	Water Level, Sag in pipe, 80% of the vertical dimension, Finish	00:03:34		S4
	32.72	F01 DAGS	Deposits Attached Grease, 5% of cross sectional area from 11 o'clock to 1 o'clock, within 8 inch, Finish	00:03:25		M2
	38.72	S03 DAGS	Deposits Attached Grease, 5% of cross sectional area from 3 o'clock to 9 o'clock, within 8 inch, Start	00:03:57		
	48.25	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:04:28		
	66.09	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:05:14		
	93.54	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:06:20		
	93.54	RTL	Roots Tap Lateral at 11 o'clock, 5% of cross sectional area, within 8 inch	00:06:23		M2
	96.36	TFC	Tap Factory Made Capped at 1 o'clock, 4inch dim, within 8 inch	00:06:48		



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 181.4'	Length Surveyed: 181.4'

Distance	Code	Observation	Counter	Photo	Grade
1:941					
119.11	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:07:46		
151.96	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:09:07		
178.44	IW	Infiltration Weeper at 10 o'clock, within 8 inch	00:10:16		M2
178.56	FC	Fracture Circumferential from 7 o'clock to 2 o'clock, within 8 inch	00:10:54		S2
179.03	F03 DAGS	Deposits Attached Grease, 5% of cross sectional area from 3 o'clock to 9 o'clock, within 8 inch, Finish	00:11:19		M2
181.42	AMH	Manhole / 37-41	00:11:34		
37-41					

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4522	2F00	24.0	70.0	94.0	3.4	2.0	2.2



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/28/2019		1



897d14b4-dd8d-44f9-a575-712ac9c12477_20190528_094047_582.jpg, 00:00:01, 0.00ft
Manhole / 37-39



e7d00bad-ac16-446d-929e-8deb37c1cc05_20190528_094106_611.jpg, 00:00:08, 0.00ft
Water Level, 10% of the vertical dimension



7cb4f904-99a8-4977-be9a-fd16cefdee22_20190528_101606_700.jpg, 00:03:30, 7.39ft
Water Level, Sag in pipe, 80% of the vertical dimension, Start



fb02755f-15c1-4357-83d7-11e3401a5e55_20190528_101632_520.jpg, 00:03:30, 7.39ft
Water Level, Sag in pipe, 80% of the vertical dimension, Start



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/28/2019		1



49952ff6-45e7-4139-b021-b5bdf2a08ee5_20190528_094148_817.jpg, 00:00:40, 7.39ft
Joint Offset Large, 2Inch



3c5be3a6-f13b-4589-9722-f87bba56286f_20190528_094310_398.jpg, 00:00:40, 7.39ft
Joint Offset Large, 2Inch



1bbe94cf-b143-43a1-8c70-e954676c53d7_20190528_094308_776.jpg, 00:00:47, 7.39ft
Material Change, Polyvinyl chloride / 10"



3fd36d85-65e8-4741-8fc4-daebe1d8b4f6_20190528_094254_517.jpg, 00:01:06, 7.39ft
Deposits Attached Grease, 5% of cross sectional area from 11 o'clock to 1 o'clock, within 8 inch, Start



Section Pictures

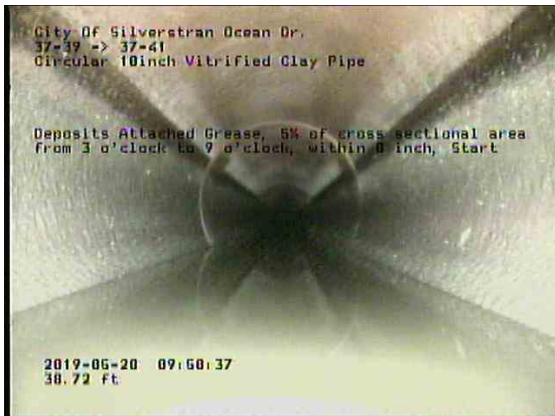
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/28/2019		1



8d707d5b-fa0d-4b56-9fce-30d215b21bfe_20190528_095219_509.jpg, 00:03:34, 31.29ft
Water Level, Sag in pipe, 80% of the vertical dimension, Finish



2ee2d9d3-a998-4754-80fe-9f4de364d08a_20190528_094520_855.jpg, 00:03:25, 32.72ft
Deposits Attached Grease, 5% of cross sectional area from 11 o'clock to 1 o'clock, within 8 inch, Finish



ee703c68-7f17-434c-afa8-0e99baf4256e_20190528_095310_704.jpg, 00:03:57, 38.72ft
Deposits Attached Grease, 5% of cross sectional area from 3 o'clock to 9 o'clock, within 8 inch, Start



2264be18-31f8-472d-b8a1-86ef3c3d7800_20190528_095348_277.jpg, 00:04:28, 48.25ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/28/2019		1



e363a8fb-1508-429d-9370-07233e3a1b85_20190528_09544
2_749.jpg, 00:05:14, 66.09ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



c5a5f608-9644-46f5-948f-71be30178114_20190528_100202
_607.jpg, 00:06:20, 93.54ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



3450ade4-7d82-4ef7-a00c-298becd997ae_20190528_100218
_172.jpg, 00:06:23, 93.54ft
Roots Tap Lateral at 11 o'clock, 5% of cross sectional area,
within 8 inch



b0b65753-f8c2-4a11-810b-4ddb1f0372c_20190528_100250
_457.jpg, 00:06:48, 96.36ft
Tap Factory Made Capped at 1 o'clock, 4inch dim, within 8
inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/28/2019		1



84981bbd-fc2c-4114-b72d-b5def5291514_20190528_100357_663.jpg, 00:07:46, 119.11ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



515b3794-7303-4ca6-9eda-0d73f80655a5_20190528_100525_438.jpg, 00:09:07, 151.96ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



4b374689-ef56-482a-bf3f-000ceb249ea0_20190528_100646_722.jpg, 00:10:16, 178.44ft
Infiltration Weeper at 10 o'clock, within 8 inch



0558077d-a71c-4ded-8ecf-4fe194e68169_20190528_100736_645.jpg, 00:10:54, 178.56ft
Fracture Circumferential from 7 o'clock to 2 o'clock, within 8 inch

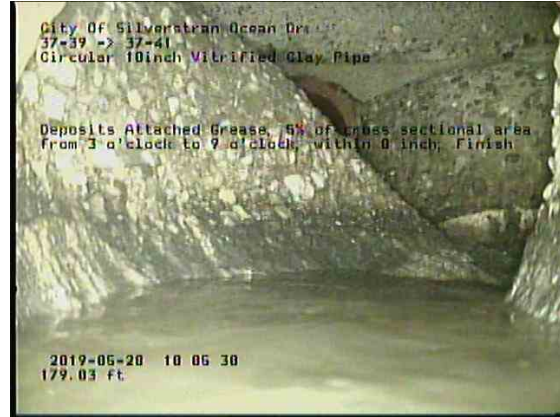


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/28/2019		1



104e0d02-31bd-45f2-b78d-2558f8294249_20190528_100743_811.jpg, 00:10:54, 178.56ft
Fracture Circumferential from 7 o'clock to 2 o'clock, within 8 inch



198acab7-018f-4238-a7eb-af728f04031f_20190528_100803_618.jpg, 00:11:19, 179.03ft
Deposits Attached Grease, 5% of cross sectional area from 3 o'clock to 9 o'clock, within 8 inch, Finish



9a8e3833-d055-41a0-a30c-75904a116607_20190528_100824_843.jpg, 00:11:34, 181.42ft
Manhole / 37-41



Inspection report

Date: 5/20/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 177.3'	Length Surveyed: 177.3'

City: City Of Silverstrand	Drainage Area:	Upstream MH: 38-07
Street: Ocean Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 38-09
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:658	Distance	Code	Observation	Counter	Photo	Grade
38-07	0.00	AMH	Manhole / 38-07	00:00:02		
	0.00	MWL	Water Level, 10% of the vertical dimension	00:00:10		
	0.98	FC	Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch	00:00:50		S2
	0.98	IR	Infiltration Runner at 3 o'clock, within 8 inch	00:01:06		M4
	11.16	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:02:01		
	43.70	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:03:44		
	46.44	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:04:17		
	50.61	S01 MWLS	Water Level, Sag in pipe, 30% of the vertical dimension, Start	00:04:42		
	52.86	B	Broken from 11 o'clock to 3 o'clock, within 8 inch	00:05:13		S5
	53.06	IR	Infiltration Runner from 10 o'clock to 11 o'clock, within 8 inch	00:05:46		M4
	53.42	FL	Fracture Longitudinal at 12 o'clock	00:05:58		S3
	59.85	F01 MWLS	Water Level, Sag in pipe, 30% of the vertical dimension, Finish	00:06:31		S2
	61.56	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:06:35		
	74.09	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:07:27		



Inspection report

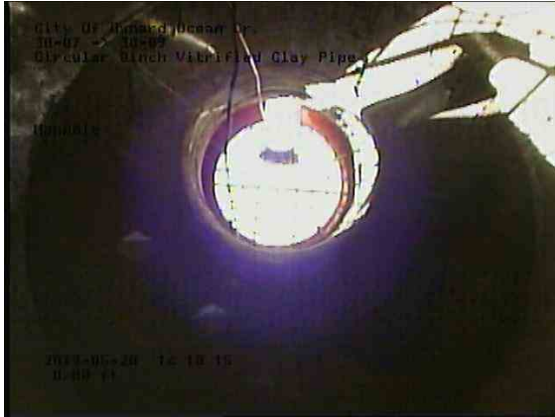
Date: 5/20/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 177.3'	Length Surveyed: 177.3'

Distance	Code	Observation	Counter	Photo	Grade
1:658 76.55	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:07:55		
99.15	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:09:08		
101.70	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:09:37		
119.42	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:10:44		
126.90	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:11:26		
145.51	S02	MWLS Water Level, Sag in pipe, 30% of the vertical dimension, Start	00:12:21		
153.22	F02	MWLS Water Level, Sag in pipe, 30% of the vertical dimension, Finish	00:13:02		S2
154.47	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:13:23		
171.85	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:14:19		
177.31	AMH	Manhole / 38-09	00:14:54		



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



cbb7f0c6-bb4c-40ee-b49c-dc1bab146c7b_20190520_142045_145.jpg, 00:00:02, 0.00ft
Manhole / 38-07



63071976-97b0-4a3a-8a6a-2794165f44ad_20190520_142110_3_512.jpg, 00:00:10, 0.00ft
Water Level, 10% of the vertical dimension



7b424d15-16e0-4dad-a7d2-83f66133d5b9_20190520_142153_017.jpg, 00:00:50, 0.98ft
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch



19ecd0b4-8c6e-4d0b-8cfc-cecbbac1ec7c_20190520_142201_684.jpg, 00:00:50, 0.98ft
Fracture Circumferential from 12 o'clock to 12 o'clock, within 8 inch



Section Pictures

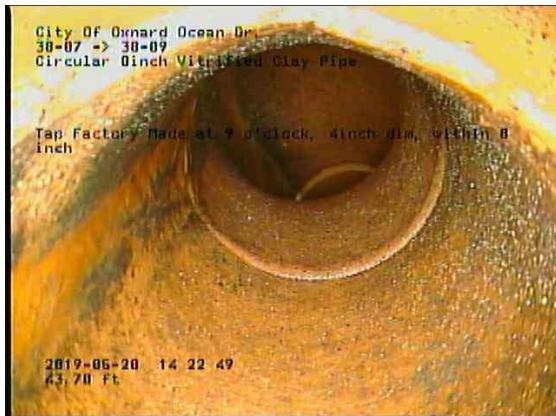
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



07ae68d6-e9d1-47e5-9685-bbdbfb5c49f6_20190520_142221_510.jpg, 00:01:06, 0.98ft
Infiltration Runner at 3 o'clock, within 8 inch



f8067e49-9b07-4874-9f19-87d52baa43a1_20190520_142326_197.jpg, 00:02:01, 11.16ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



a622bce9-6550-4b39-b5fa-926e792405c5_20190520_142519_461.jpg, 00:03:44, 43.70ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



c77ec91d-1de4-43ef-8a3a-fef08d21938e_20190520_142601_386.jpg, 00:04:17, 46.44ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



22f3dc8c-0bf7-4c0a-8485-e0b1e5a0f22e_20190520_142641_786.jpg, 00:04:42, 50.61ft
Water Level, Sag in pipe, 30% of the vertical dimension, Start



4955873e-29b7-464d-96b0-8ad03ae0977d_20190520_142750_063.jpg, 00:05:13, 52.86ft
Broken from 11 o'clock to 3 o'clock, within 8 inch



ba022e4c-6802-416f-ae30-1d9b4fa2b8d7_20190520_142803_380.jpg, 00:05:13, 52.86ft
Broken from 11 o'clock to 3 o'clock, within 8 inch

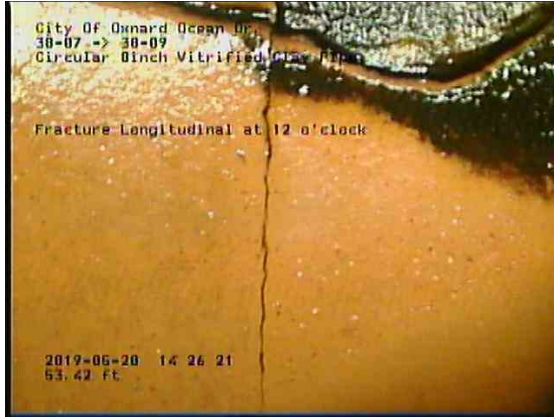


9813adaf-1aad-4115-922e-f835f64123a5_20190520_142827_620.jpg, 00:05:46, 53.06ft
Infiltration Runner from 10 o'clock to 11 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



e70586a0-57c3-4e47-9d76-eea576aa6b63_20190520_142851_109.jpg, 00:05:58, 53.42ft
Fracture Longitudinal at 12 o'clock



ead8fe43-14b5-4ad4-be9a-3e13f8f0a907_20190520_142929_500.jpg, 00:06:31, 59.85ft
Water Level, Sag in pipe, 30% of the vertical dimension, Finish



e87c69de-64c6-45a5-a396-160b85ead0c8_20190520_143035_412.jpg, 00:06:35, 61.56ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



2c05cf76-8692-4207-beb3-526bd19c44b8_20190520_143136_339.jpg, 00:07:27, 74.09ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

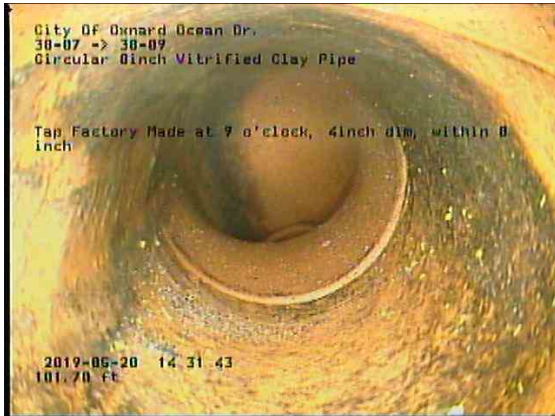
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



ab90cfa2-1149-4fbf-9923-de41c21aacb8_20190520_143211_690.jpg, 00:07:55, 76.55ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



57ad780e-79de-4f49-9f73-cc6044024dd3_20190520_143334_516.jpg, 00:09:08, 99.15ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



dc6981d1-1f92-48c0-8d56-0bc6eeb70329_20190520_143413_463.jpg, 00:09:37, 101.70ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch

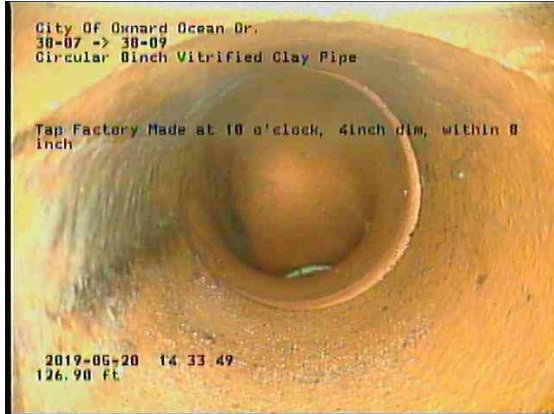


24b8cea6-aa09-4e2e-b0a5-d54fda156682_20190520_143529_593.jpg, 00:10:44, 119.42ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



e51738bb-fbd7-47c9-975c-7d4637348963_20190520_143619_964.jpg, 00:11:26, 126.90ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



1165d41a-0333-4249-b410-8fcd84b312f5_20190520_143727_118.jpg, 00:12:21, 145.51ft
Water Level, Sag in pipe, 30% of the vertical dimension, Start



291413a8-d7a7-4de6-bcbd-18e7d9b92a96_20190520_143812_042.jpg, 00:13:02, 153.22ft
Water Level, Sag in pipe, 30% of the vertical dimension, Finish



691a3ce2-aa85-41ec-836e-ee402ad76596_20190520_143845_032.jpg, 00:13:23, 154.47ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch

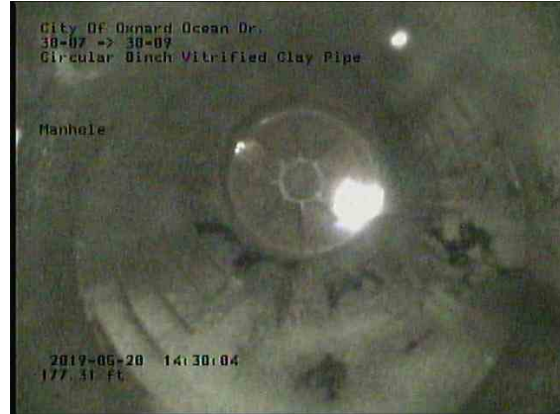


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/20/2019		1



1cba3397-a263-43f3-b198-b5fae6a086ca_20190520_143953_702.jpg, 00:14:19, 171.85ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



1b6ab8f3-c378-454b-86cd-96bef66fb4fc_20190520_144034_590.jpg, 00:14:54, 177.31ft
Manhole / 38-09



Inspection report

Date: 5/22/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 179.8'	Length Surveyed: 179.8'

City: City Of Silverstrand	Drainage Area:	Upstream MH: 38-21
Street: Ocean Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 38-23
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1570	Distance	Code	Observation	Counter	Photo	Grade
38-21	0.00	AMH	Manhole / 38-21	00:00:03		
	0.00	MWL	Water Level, 20% of the vertical dimension	00:00:11		
	13.25	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:01:15		
	13.25	MWL	Water Level, 10% of the vertical dimension	00:01:25		
	46.18	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:02:52		
	48.40	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:03:20		
	86.38	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:05:04		
	98.72	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:05:51		
	131.50	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:07:20		
	164.44	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:08:53		
	176.23	IR	Infiltration Runner at 2 o'clock, within 8 inch	00:10:02		M4
	176.26	IR	Infiltration Runner at 11 o'clock, within 8 inch	00:10:43		M4
	176.27	FM	Fracture Multiple from 7 o'clock to 2 o'clock, within 8 inch	00:11:15		S4
	179.76	AMH	Manhole / 38-23	00:11:58		
38-23						
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI
4100	4200	4.0	8.0	12.0	4.0	4.0



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/22/2019		1



79228577-f8b4-4968-81d1-13dd78ca4f5d_20190522_091606_444.jpg, 00:00:03, 0.00ft
Manhole / 38-21



802ed06c-7377-4231-b918-7ca7edcb3199_20190522_091624_649.jpg, 00:00:11, 0.00ft
Water Level, 20% of the vertical dimension



fec67a81-09ad-4c0f-9db7-f73325789723_20190522_091737_128.jpg, 00:01:15, 13.25ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



bbb72bd4-24c2-42d9-8913-370b39257f66_20190522_091753_458.jpg, 00:01:25, 13.25ft
Water Level, 10% of the vertical dimension



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/22/2019		1



3e924574-cf32-4c76-ae7d-934d7194c926_20190522_091928_507.jpg, 00:02:52, 46.18ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



517f4d73-9525-42e9-87d3-69c238d120e3_20190522_092004_691.jpg, 00:03:20, 48.40ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



4524ba70-9092-41d6-857d-9f6810dde421_20190522_092157_129.jpg, 00:05:04, 86.38ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



0a52ee6f-cac8-47b0-8da8-dd7701475317_20190522_092253_321.jpg, 00:05:51, 98.72ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

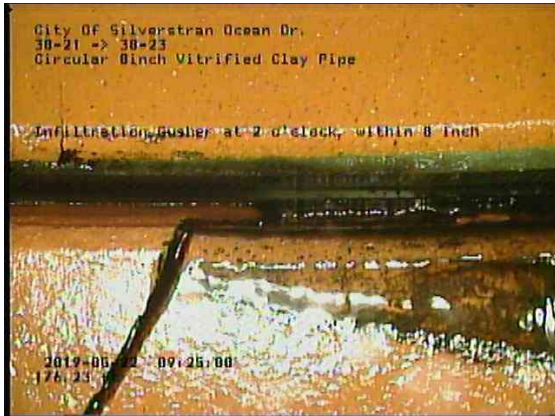
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/22/2019		1



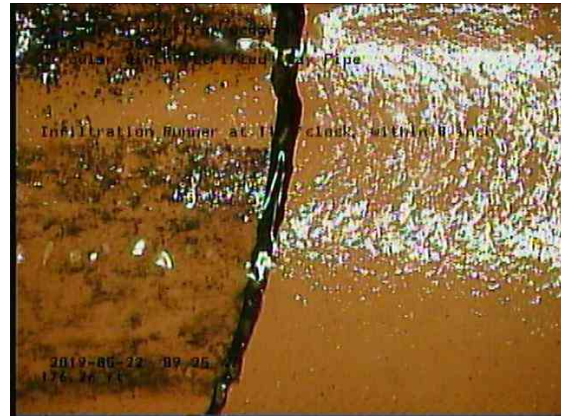
6c071ad5-744a-40a6-926b-61008a8c72a9_20190522_092431_090.jpg, 00:07:20, 131.50ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



c6c706a9-f0d9-4123-81b4-fd9e4083e829_20190522_092611_759.jpg, 00:08:53, 164.44ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



ebf9144e-e772-49b5-8869-35fb89a8d902_20190522_092731_122.jpg, 00:10:02, 176.23ft
Infiltration Runner at 2 o'clock, within 8 inch



d24904b7-fa82-4c59-8b08-dc250c62c9dc_20190522_092820_291.jpg, 00:10:43, 176.26ft
Infiltration Runner at 11 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ocean Dr.	5/22/2019		1



d7c08aa0-b28f-4676-a923-41e2a1677904_20190522_092915_187.jpg, 00:11:15, 176.27ft
Fracture Multiple from 7 o'clock to 2 o'clock, within 8 inch



2d6522c3-87ec-45d4-89ea-bc6ff8015d59_20190522_092931_478.jpg, 00:11:15, 176.27ft
Fracture Multiple from 7 o'clock to 2 o'clock, within 8 inch



58252dd5-db5c-48a3-add8-078865523a19_20190522_093003_364.jpg, 00:11:58, 179.76ft
Manhole / 38-23



Inspection report

Date: 5/23/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 434.3'	Length Surveyed: 434.3'

City: City Of Silverstrand	Drainage Area:	Upstream MH: CO 37-30
Street: Ojai Ave.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-31
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1954	Distance	Code	Observation	Counter	Photo	Grade
37-31	0.00	AMH	Manhole / 37-31	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:09		
	0.11	B	Broken from 11 o'clock to 4 o'clock	00:00:47		S5
	0.25	FC	Fracture Circumferential from 8 o'clock to 4 o'clock	00:01:43		S2
	0.46	TF	Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch	00:02:11		
	100.52	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:06:18		
	103.00	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:06:38		
	125.55	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:07:38		
	128.21	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:07:56		
	160.86	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:09:21		
	168.42	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:09:55		
	196.23	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:11:21		
	198.79	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:11:47		
	210.59	S01 DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 3 o'clock, within 8 inch, Start	00:12:26		



Inspection report

Date: 5/23/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 434.3'	Length Surveyed: 434.3'

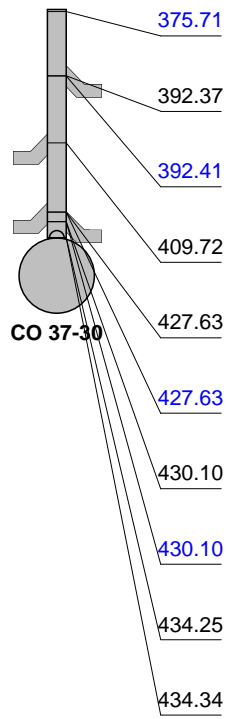
1:1954	Distance	Code	Observation	Counter	Photo	Grade
	236.65	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:13:37		
	236.65	RFL	Roots Fine Lateral at 11 o'clock	00:13:44		M1
	238.76	F01 DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 3 o'clock, within 8 inch, Finish	00:13:59		M2
	239.13	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:14:12		
	259.89	S02 DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 2 o'clock, within 8 inch, Start	00:15:03		
	264.98	F02 DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 2 o'clock, within 8 inch, Finish	00:15:25		M2
	271.64	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:15:57		
	284.24	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:16:39		
	291.78	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:17:09		
	302.36	FH3	Fracture Longitudinal Hinge, 3 from 3 o'clock to 7 o'clock, within 8 inch	00:18:06		S5
	302.67	IS	Infiltration Stain from 4 o'clock to 5 o'clock, within 8 inch	00:18:35		
	309.33	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:19:12		
	315.31	DAE	Deposits Attached Encrustation, 10% of cross sectional area from 7 o'clock to 10 o'clock, within 8 inch	00:19:57		M2
	341.79	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:21:28		
	341.79	RML	Roots Medium Lateral at 11 o'clock, 25% lost, within 8 inch	00:21:31		M3
	344.21	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:22:03		
	361.99	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:22:55		
	361.99	RTL	Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch	00:22:58		M2
	374.66	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:23:39		



Inspection report

Date: 5/23/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 434.3'	Length Surveyed: 434.3'

Distance	Code	Observation	Counter	Photo	Grade
1:1954 375.71	RFJ	Roots Fine Joint from 12 o'clock to 2 o'clock, within 8 inch	00:23:56		M1
392.37	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:24:54		
392.41	IW	Infiltration Weeper at 11 o'clock, within 8 inch / IN WYE	00:25:11		M2
409.72	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:26:04		
CO 37-30 427.63	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:27:00		
427.63	RFL	Roots Fine Lateral at 2 o'clock	00:27:03		M1
430.10	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:27:24		
430.10	RML	Roots Medium Lateral at 11 o'clock, 25% lost, within 8 inch	00:27:26		M3
434.25	ACOM	Cleanout Mainline / CO 37-30	00:28:17		
434.34	TF	Tap Factory Made at 12 o'clock, 8inch dim, within 8 inch	00:27:55		



QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5221	322A	12.0	29.0	41.0	4.0	1.9	2.3



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



b683247e-4f74-46ca-aac8-afcf11130179_20190523_072412_414.jpg, 00:00:01, 0.00ft
Manhole / 37-31



d8924387-8f6f-4f6f-a4aa-a664dd90c1d1_20190523_073934_581.jpg, 00:00:09, 0.00ft
Water Level, 5% of the vertical dimension



b8b02119-77e8-4eb8-ae8b-b9bf0fc53d41_20190523_072520_430.jpg, 00:00:47, 0.11ft
Broken from 11 o'clock to 4 o'clock

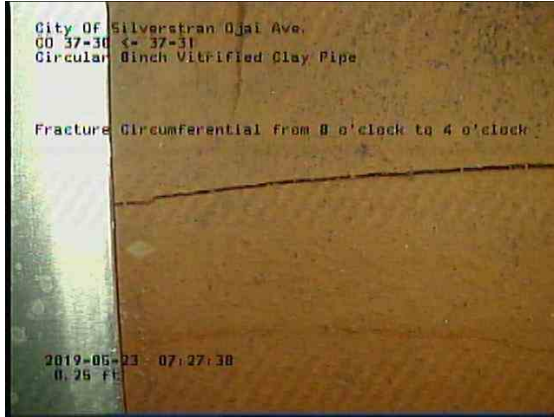


e3b4ddcc-d214-4d56-b4bc-23e1db9e1ae9_20190523_072529_604.jpg, 00:00:47, 0.11ft
Broken from 11 o'clock to 4 o'clock

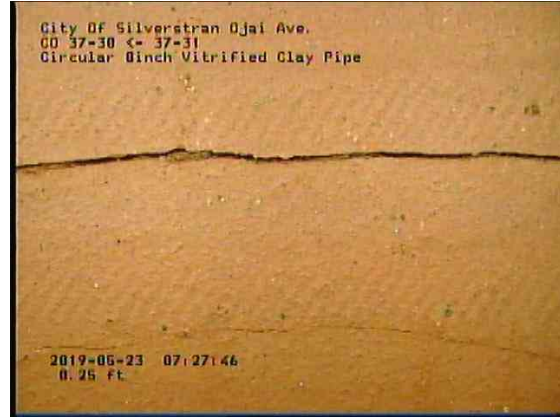


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



18ca4258-53f2-4091-aea3-f4918240cf69_20190523_073010_864.jpg, 00:01:43, 0.25ft
Fracture Circumferential from 8 o'clock to 4 o'clock



b0309d46-b3c0-40f7-a8a7-068fe012f814_20190523_073019_015.jpg, 00:01:43, 0.25ft
Fracture Circumferential from 8 o'clock to 4 o'clock



86ebb2ad-0484-470c-92b2-7f2d3cecff6f_20190523_073050_177.jpg, 00:02:11, 0.46ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



73a19e65-5d4e-44b2-9f48-91d79a1d8d99_20190523_073930_278.jpg, 00:02:11, 0.46ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



4fa61006-f49e-425e-b70c-5cd349120f48_20190523_074517_094.jpg, 00:06:18, 100.52ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



20226ff-e0f0-4721-9320-f510f0cd05d7_20190523_074545_664.jpg, 00:06:38, 103.00ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



9b72aa8f-d123-40a2-9a05-904d3c504334_20190523_074654_672.jpg, 00:07:38, 125.55ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



0c3ada3c-9a80-462d-b9e8-c7d782caf675_20190523_074721_067.jpg, 00:07:56, 128.21ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



fb0b797a-1335-4275-8407-ea137d25030d_20190523_07485_5_409.jpg, 00:09:21, 160.86ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



54f29eee-e5a4-4d24-b27f-79483e034471_20190523_074935_805.jpg, 00:09:55, 168.42ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



ac64df33-4339-47cd-b811-df8248b30ef7_20190523_075108_264.jpg, 00:11:21, 196.23ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch

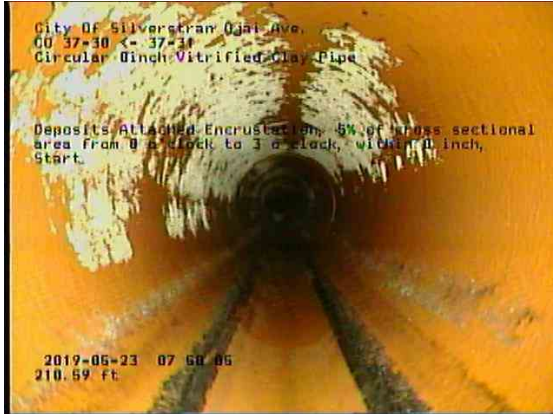


0eb29288-6d88-46c1-82d9-06f83c6f92f5_20190523_075142_546.jpg, 00:11:47, 198.79ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



84ed974d-2f06-4672-812e-98507a714446_20190523_075237_908.jpg, 00:12:26, 210.59ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 3 o'clock, within 8 inch, Start



43213f2f-3379-4d99-9097-f65c676efc98_20190523_075400_132.jpg, 00:13:37, 236.65ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



e7913879-e7c3-4ae0-b7bf-e382a7868220_20190523_075415_149.jpg, 00:13:44, 236.65ft
 Roots Fine Lateral at 11 o'clock



188c21a6-41ca-4a10-b13a-1cdaab6a515b_20190523_075434_363.jpg, 00:13:59, 238.76ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 3 o'clock, within 8 inch, Finish



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



92fb7d03-03bd-4922-978f-05b955276836_20190523_075454_741.jpg, 00:14:12, 239.13ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



c99fbe0d-9dbf-49b7-bb57-5bda61d5c3b3_20190523_075600_907.jpg, 00:15:03, 259.89ft
Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 2 o'clock, within 8 inch, Start



0137e18f-bed0-43af-b6ff-637721f8e659_20190523_075746_976.jpg, 00:15:25, 264.98ft
Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 2 o'clock, within 8 inch, Finish



36101567-fcdd-4980-b567-776aea8743f7_20190523_075830_986.jpg, 00:15:57, 271.64ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



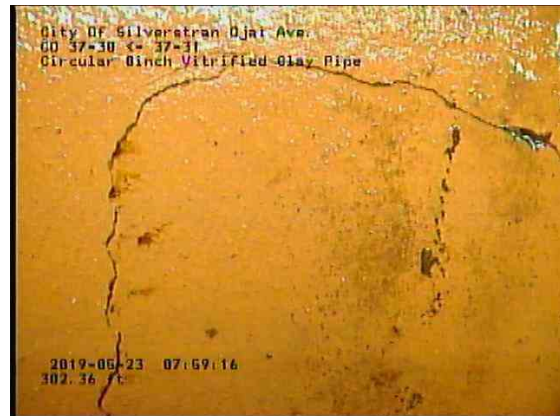
4056b91d-5903-40ea-adbb-670097fd0b3b_20190523_075920_781.jpg, 00:16:39, 284.24ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



dd6a96c3-53b4-4f22-892a-349a17fdf799_20190523_075958_581.jpg, 00:17:09, 291.78ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



357cfa61-c518-44d1-87ca-3fa53e60bb97_20190523_080137_803.jpg, 00:18:06, 302.36ft
Fracture Longitudinal Hinge, 3 from 3 o'clock to 7 o'clock, within 8 inch



422b8230-5c25-47e5-bd2c-4abdc924e35e_20190523_080149_251.jpg, 00:18:06, 302.36ft
Fracture Longitudinal Hinge, 3 from 3 o'clock to 7 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



b0ca37ea-b18a-432c-bef0-22dd48451740_20190523_080219_896.jpg, 00:18:35, 302.67ft
Infiltration Stain from 4 o'clock to 5 o'clock, within 8 inch



7ba14894-fed3-43ac-b0b1-0c6ee8bbbb7c_20190523_080304_590.jpg, 00:19:12, 309.33ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



1bb14969-162a-4d38-a89d-1918eb3f2573_20190523_080403_778.jpg, 00:19:57, 315.31ft
Deposits Attached Encrustation, 10% of cross sectional area from 7 o'clock to 10 o'clock, within 8 inch



aade38a9-1d8b-429e-abf2-fac66017f932_20190523_080421_710.jpg, 00:19:57, 315.31ft
Deposits Attached Encrustation, 10% of cross sectional area from 7 o'clock to 10 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



a7971dfb-5684-4199-85f1-42a51bcb7418_20190523_080541_620.jpg, 00:21:28, 341.79ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



88cb7be9-42b9-4781-b6bc-6d93b3e150a4_20190523_080609_297.jpg, 00:21:31, 341.79ft
Roots Medium Lateral at 11 o'clock, 25% lost, within 8 inch



c1c2534d-9fdb-46ed-96d0-d61e8187925f_20190523_080618_319.jpg, 00:21:31, 341.79ft
Roots Medium Lateral at 11 o'clock, 25% lost, within 8 inch



ccc697e8-08ef-4de2-b37a-4d9b32168a80_20190523_080648_199.jpg, 00:22:03, 344.21ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

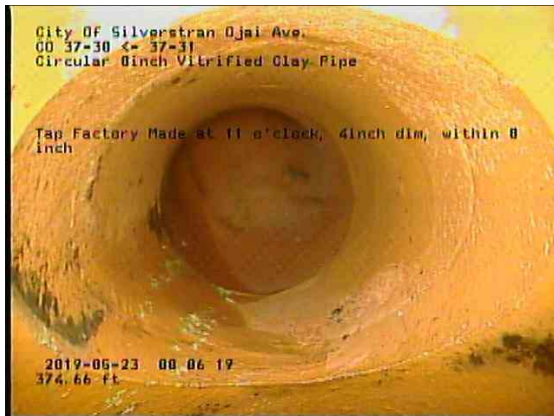
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



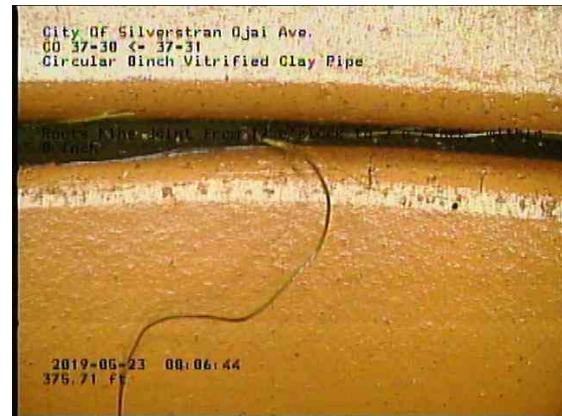
9460e475-4755-4e7d-ad16-f0a70e2f0e30_20190523_080746_617.jpg, 00:22:55, 361.99ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



327eca71-38e1-4f42-a666-5c15df3f6b2b_20190523_080804_959.jpg, 00:22:58, 361.99ft
Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



7043fb14-aeb2-4d68-8964-5f2bb0b507e6_20190523_080852_512.jpg, 00:23:39, 374.66ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



b01d094d-52e7-4efb-96fb-4c5424af850a_20190523_080917_367.jpg, 00:23:56, 375.71ft
Roots Fine Joint from 12 o'clock to 2 o'clock, within 8 inch



Section Pictures

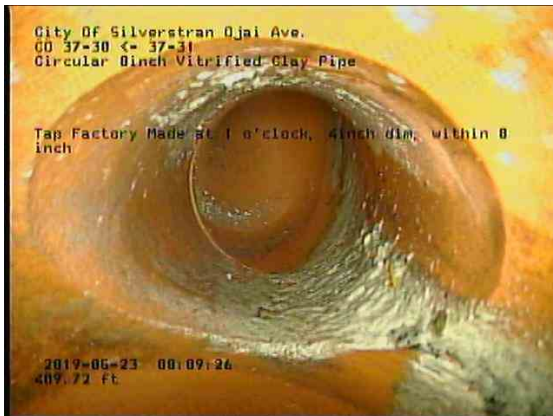
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



41e36f61-f4bc-43ec-8b81-40c9261d6e0d_20190523_081021_829.jpg, 00:24:54, 392.37ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



23cbcb3a-979d-45fa-bf95-59a814dfe25c_20190523_081055_538.jpg, 00:25:11, 392.41ft
Infiltration Weeper at 11 o'clock, within 8 inch / IN WYE



b8414b99-2071-403f-a012-328e7ddb27c_20190523_081158_983.jpg, 00:26:04, 409.72ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



d160defc-e41b-4a27-ae26-ca5adcab7415_20190523_081301_469.jpg, 00:27:00, 427.63ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



07c41698-b953-47ca-8087-e655fa303e63_20190523_081316_555.jpg, 00:27:03, 427.63ft
 Roots Fine Lateral at 2 o'clock



221ccd57-69fc-485b-8100-e8fa6ed67b9a_20190523_081344_119.jpg, 00:27:24, 430.10ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



d2df6b6d-c6f6-4efd-a15e-08a3131319ab_20190523_081400_224.jpg, 00:27:26, 430.10ft
 Roots Medium Lateral at 11 o'clock, 25% lost, within 8 inch



a5f464c5-e6f5-47fe-b88e-de8e7ff24372_20190523_082021_949.jpg, 00:28:17, 434.25ft
 Cleanout Mainline / CO 37-30



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Ojai Ave.	5/23/2019		1



7aad6f1d-95e7-4ec0-a1a8-414c14f8c020_20190523_082038_809.jpg, 00:28:17, 434.25ft
Cleanout Mainline / CO 37-30



ebc1e46c-c373-44ab-9752-41f00f660847_20190523_081457_625.jpg, 00:27:55, 434.34ft
Tap Factory Made at 12 o'clock, 8inch dim, within 8 inch



dc7344d8-8494-43d1-a906-9809744e9820_20190523_081507_663.jpg, 00:27:55, 434.34ft
Tap Factory Made at 12 o'clock, 8inch dim, within 8 inch



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 259.2'	Length Surveyed: 259.2'

City: City Of Silverstrand	Drainage Area:	Upstream MH: 36-77
Street: Panama Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 36-78
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1020	Distance	Code	Observation	Counter	Photo	Grade
	0.00	AMH	Manhole / 36-77	00:00:00		
	0.00	MWL	Water Level, 10% of the vertical dimension	00:00:14		
	74.09	CL	Crack Longitudinal at 3 o'clock, within 8 inch	00:04:33		S2
	74.91	DAE	Deposits Attached Encrustation, 5% of cross sectional area at 2 o'clock, within 8 inch	00:04:52		M2
	75.56	IW	Infiltration Weeper from 7 o'clock to 5 o'clock, within 8 inch	00:05:33		M2
	75.64	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch	00:05:51		M2
	76.90	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 3 o'clock to 5 o'clock, within 8 inch	00:06:50		M2
	78.47	CL	Crack Longitudinal at 3 o'clock, within 8 inch	00:06:39		S2
	79.63	CL	Crack Longitudinal at 3 o'clock, within 8 inch	00:08:34		S2
	79.63	IS	Infiltration Stain from 2 o'clock to 3 o'clock, within 8 inch	00:08:37		
	79.85	IW	Infiltration Weeper from 7 o'clock to 5 o'clock, within 8 inch	00:07:57		M2
	79.85	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch	00:08:00		M2



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 259.2'	Length Surveyed: 259.2'

1:1020	Distance	Code	Observation	Counter	Photo	Grade	
	81.80	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 10 o'clock, within 8 inch	00:09:22		M2	
	81.80	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 3 o'clock to 4 o'clock, within 8 inch	00:09:35		M2	
	81.80	FM	Fracture Multiple from 2 o'clock to 7 o'clock, within 8 inch	00:10:03		S4	
	82.80	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:10:42			
	94.49	FM	Fracture Multiple from 2 o'clock to 10 o'clock, within 8 inch	00:11:37		S4	
	94.49	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch	00:11:50		M2	
	94.49	IW	Infiltration Weeper at 8 o'clock, within 8 inch	00:11:53		M2	
	117.39	IW	Infiltration Weeper at 11 o'clock, within 8 inch	00:13:39		M2	
	117.39	CC	Crack Circumferential from 10 o'clock to 1 o'clock, within 8 inch	00:13:23		S1	
	117.39	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch	00:13:44		M2	
	130.49	TFC	Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch	00:14:41			
	158.42	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:16:19			
	160.11	S01 DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch, Start	00:16:46			
	220.76	F01 DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch, Finish	00:19:19		M2	
	251.86	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch	00:20:31		M2	
	259.23	AMH	Manhole / 36-78	00:21:25			
						36-78	
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4223	2D00	15.0	50.0	65.0	2.5	2.0	2.1



Section Pictures

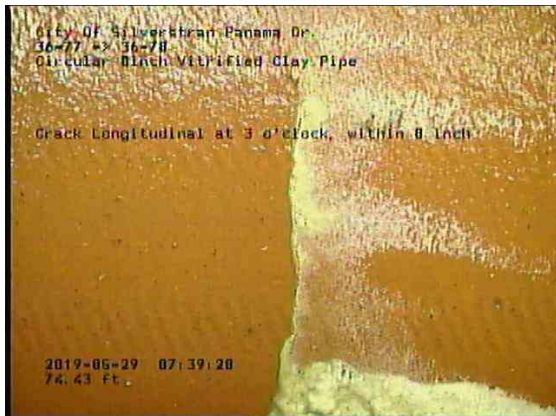
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



319936ff-3168-4ee2-94d6-238c697c1a84_20190529_073654_453.jpg, 00:00:00, 0.00ft
Manhole / 36-77



f64b4762-65c3-4fb3-ab87-5f775660f519_20190529_073718_287.jpg, 00:00:14, 0.00ft
Water Level, 10% of the vertical dimension



11537110-65d4-4516-8073-c90abf11170a_20190529_074202_815.jpg, 00:04:33, 74.09ft
Crack Longitudinal at 3 o'clock, within 8 inch



f96f1580-3a8b-4101-8529-6b99a6d25b43_20190529_074235_897.jpg, 00:04:52, 74.91ft
Deposits Attached Encrustation, 5% of cross sectional area at 2 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



4665dd3d-e685-448a-9a31-03c746b90b6a_20190529_074441_311.jpg, 00:04:52, 74.91ft
Deposits Attached Encrustation, 5% of cross sectional area at 2 o'clock, within 8 inch



61a23f2c-324e-49f6-bdc4-736ec66fe6b6_20190529_074356_323.jpg, 00:05:33, 75.56ft
Infiltration Weeper from 7 o'clock to 5 o'clock, within 8 inch



4cdf7aa3-03cc-466b-9f3e-5b9a2bbc8c2c_20190529_074405_960.jpg, 00:05:33, 75.56ft
Infiltration Weeper from 7 o'clock to 5 o'clock, within 8 inch



f505f14c-6b5b-4d7b-aaf1-176fb2f33a31_20190529_074428_164.jpg, 00:05:51, 75.64ft
Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



b66e019d-041d-4d27-80cf-c7e8563aedba_20190529_074448_656.jpg, 00:05:51, 75.64ft
 Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch



d7fd641b-8bce-4f9c-a67b-de69d430b831_20190529_081948_335.jpg, 00:06:50, 76.90ft
 Deposits Attached Encrustation, 5% of cross sectional area from 3 o'clock to 5 o'clock, within 8 inch



05338be0-a8cd-4747-b27d-8fe4261dde16_20190529_074606_945.jpg, 00:06:50, 76.90ft
 Deposits Attached Encrustation, 5% of cross sectional area from 3 o'clock to 5 o'clock, within 8 inch



10583926-98e8-4007-b70f-60beb77da837_20190529_082214_837.jpg, 00:06:39, 78.47ft
 Crack Longitudinal at 3 o'clock, within 8 inch



Section Pictures

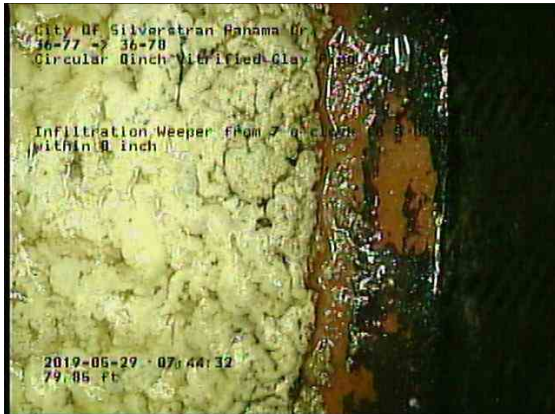
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



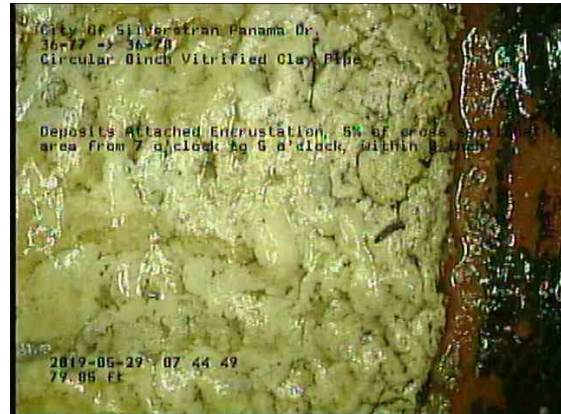
8289c662-ee4e-4ef1-a8ea-da3ad1b51559_20190529_082259_737.jpg, 00:08:34, 79.63ft
Crack Longitudinal at 3 o'clock, within 8 inch



4320f3cb-dbb7-4d81-9841-23bfd7bc4caf_20190529_082308_825.jpg, 00:08:37, 79.63ft
Infiltration Stain from 2 o'clock to 3 o'clock, within 8 inch



656df4ed-958b-4c09-a4f9-7e0da2cff9d4_20190529_074706_477.jpg, 00:07:57, 79.85ft
Infiltration Weeper from 7 o'clock to 5 o'clock, within 8 inch



4dd159ac-52a6-4fad-a983-43e756d640f0_20190529_074723_041.jpg, 00:08:00, 79.85ft
Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



4cad1372-cc26-43ed-aea4-784793960e52_20190529_074736_851.jpg, 00:08:00, 79.85ft
 Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch



55ca7758-bb11-4754-8199-1bfd5d77443b_20190529_082400_682.jpg, 00:09:22, 81.80ft
 Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 10 o'clock, within 8 inch



5d48d87d-0f31-4f37-909b-cbd75ccc1489_20190529_082423_444.jpg, 00:09:35, 81.80ft
 Deposits Attached Encrustation, 5% of cross sectional area from 3 o'clock to 4 o'clock, within 8 inch



33b5cdbd-81c0-4b21-8e21-8f3dc9129e9e_20190529_082445_336.jpg, 00:10:03, 81.80ft
 Fracture Multiple from 2 o'clock to 7 o'clock, within 8 inch



Section Pictures

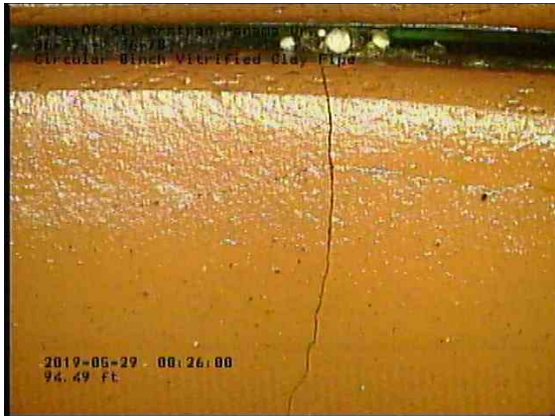
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



84d5df85-9db7-47d4-ae2c-c53e447ef2d8_20190529_082514_019.jpg, 00:10:42, 82.80ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



5ed87e68-3de8-41a8-92f4-9dd68939ecd5_20190529_082812_620.jpg, 00:11:37, 94.49ft
Fracture Multiple from 2 o'clock to 10 o'clock, within 8 inch



86bf1fd4-2bb6-4cd1-b5b4-630c72aa8b8c_20190529_082834_743.jpg, 00:11:37, 94.49ft
Fracture Multiple from 2 o'clock to 10 o'clock, within 8 inch



0b97f9bc-ffe8-40b8-b7e2-995c0a838d11_20190529_082902_907.jpg, 00:11:50, 94.49ft
Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch

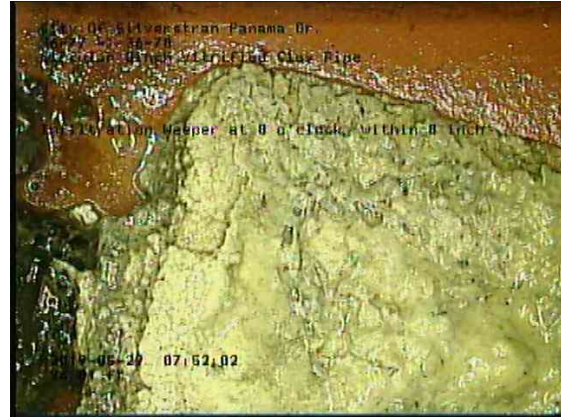


Section Pictures

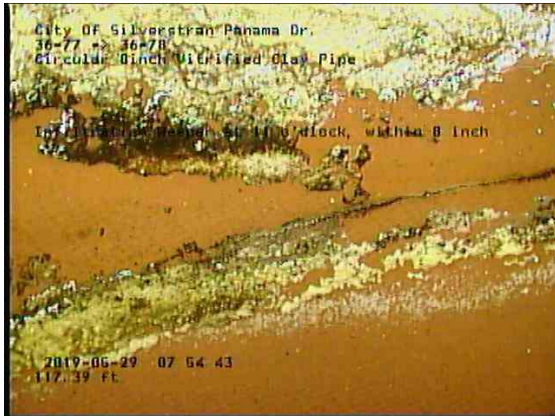
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



c7a79210-d0b3-4556-96ba-effe57e92479_20190529_082911_959.jpg, 00:11:50, 94.49ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch



7c9fbe3d-c67f-4509-b879-4564ed717698_20190529_075436_644.jpg, 00:11:53, 94.49ft
 Infiltration Weeper at 8 o'clock, within 8 inch



738bfc34-6c0e-41a7-83a8-2d84472ddb27_20190529_075717_582.jpg, 00:13:39, 117.39ft
 Infiltration Weeper at 11 o'clock, within 8 inch

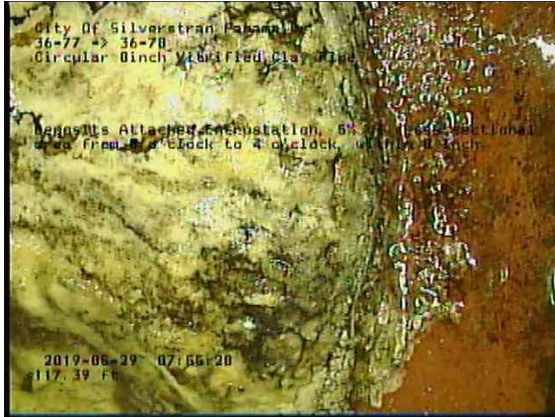


10b32819-2ad5-4c11-bc3d-bf25e90cbf2e_20190529_075654_604.jpg, 00:13:23, 117.39ft
 Crack Circumferential from 10 o'clock to 1 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



5e3bbd9c-43dd-4f99-a749-6b28128dd5ef_20190529_075802_179.jpg, 00:13:44, 117.39ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch



270999aa-7fa8-452d-a0dc-ac5f1411e198_20190529_075814_273.jpg, 00:13:44, 117.39ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch



beaa3cb3-139a-4b27-9d55-1d935203b617_20190529_083156_322.jpg, 00:14:41, 130.49ft
 Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch



f9722d82-7e21-41c9-a407-e7e08477ee24_20190529_080122_395.jpg, 00:16:19, 158.42ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

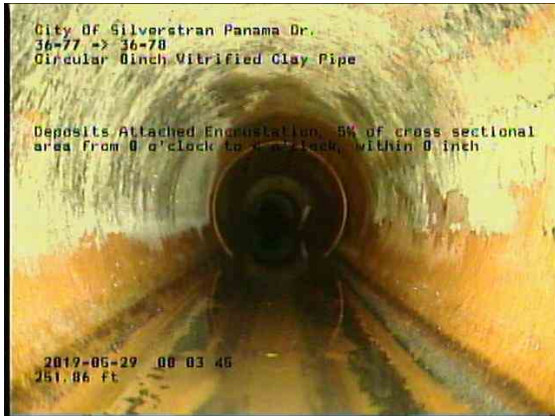
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Panama Dr.	5/28/2019		1



202bbf92-b75d-4a55-aa06-c4bfadd4dd36_20190529_080220_842.jpg, 00:16:46, 160.11ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch, Start



1997cd9d-df1b-455f-9dac-a87474e03574_20190529_080457_607.jpg, 00:19:19, 220.76ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch, Finish



65ffe0d0-9622-46b4-a0cd-32f2b3fa037d_20190529_080619_453.jpg, 00:20:31, 251.86ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 4 o'clock, within 8 inch



3e0b4d0f-7e60-418f-8ab6-82a98780abb1_20190529_083723_618.jpg, 00:21:25, 259.23ft
 Manhole / 36-78



Inspection report

Date: 5/31/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Downstream	Pipe Joint Length:	Total Length: 112.1'	Length Surveyed: 112.1'

City: City Of Silverstran	Drainage Area:	Upstream MH: 36-82
Street: Roosevelt Bl	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 36-83
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:980	Distance	Code	Observation	Counter	Photo	Grade	
36-82	0.00	AMH	Manhole / 36-82	00:00:00			
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:49			
	0.00	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch	00:00:50		M2	
	0.29	CL	Crack Longitudinal at 3 o'clock	00:01:42		S2	
	0.34	CL	Crack Longitudinal at 8 o'clock	00:02:10		S2	
	80.68	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:05:59			
	83.15	MWL	Water Level, 20% of the vertical dimension	00:06:16			
	100.16	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:07:22			
	109.35	B	Broken from 7 o'clock to 5 o'clock	00:08:56		S5	
	112.14	AMH	Manhole / 36-83	00:09:44			
36-83							
QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
5122	2100	9.0	2.0	11.0	3.0	2.0	2.8



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Roosevelt Bl	5/31/2019		1



d63fcec2-bfd9-4b71-8466-26bd27e2e76d_20190531_095916_157.jpg, 00:00:00, 0.00ft
Manhole / 36-82



2a215481-f01c-4439-b27f-46d289905997_20190531_100133_992.jpg, 00:00:49, 0.00ft
Water Level, 5% of the vertical dimension



bd87fbb8-09cd-4665-a4cb-acc04b508233_20190531_100058_766.jpg, 00:00:50, 0.00ft
Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch



906f0a8e-8a63-4e61-af79-b1d5b69d21f0_20190531_100118_533.jpg, 00:00:50, 0.00ft
Deposits Attached Encrustation, 5% of cross sectional area from 7 o'clock to 5 o'clock, within 8 inch



Section Pictures

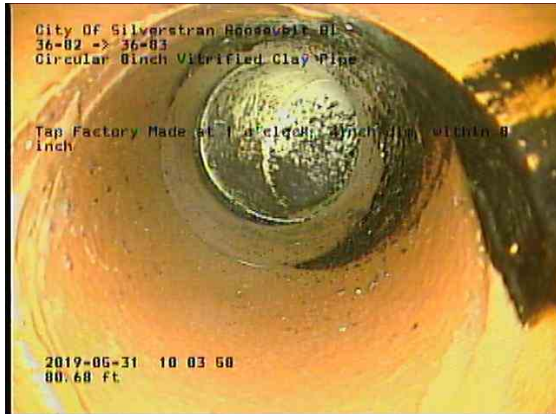
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Roosevelt Bl	5/31/2019		1



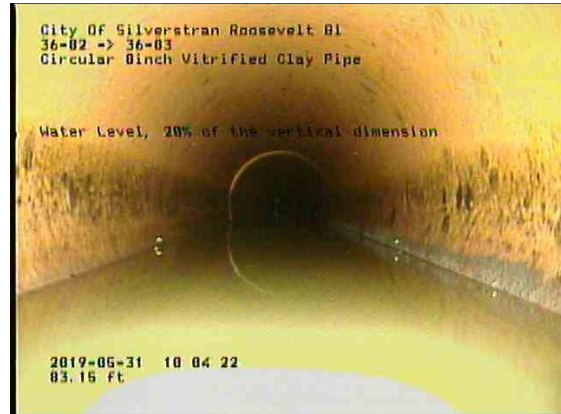
d1aec621-6e2d-4199-ba37-05269a0cd597_20190531_100200_309.jpg, 00:01:42, 0.29ft
Crack Longitudinal at 3 o'clock



67a54bcb-ae28-4a81-a1ad-10f58d7818a4_20190531_100237_030.jpg, 00:02:10, 0.34ft
Crack Longitudinal at 8 o'clock



2c546e3d-e497-4a4c-b1cd-e23e793fd908_20190531_100635_374.jpg, 00:05:59, 80.68ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



2fc3c7e2-e31e-440f-b436-a1a45b5763dc_20190531_100659_235.jpg, 00:06:16, 83.15ft
Water Level, 20% of the vertical dimension



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Roosevelt Bl	5/31/2019		1



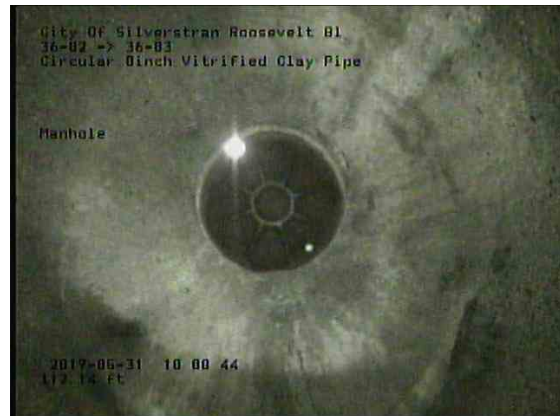
3cb780ba-5bee-4804-bcda-863503fe2368_20190531_100812_903.jpg, 00:07:22, 100.16ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



3b223a3f-84a2-4741-9c4f-2ab95f58b030_20190531_101025_650.jpg, 00:08:56, 109.35ft
Broken from 7 o'clock to 5 o'clock



fa97e13a-8073-485d-b725-8e49419da088_20190531_101046_431.jpg, 00:08:56, 109.35ft
Broken from 7 o'clock to 5 o'clock



1d87b663-f267-413b-86ae-37ab8b76c784_20190531_101120_770.jpg, 00:09:44, 112.14ft
Manhole / 36-83



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 522.2'	Length Surveyed: 522.2'

City: City Of Silverstran	Drainage Area:	Upstream MH: CO 37-75
Street: Rossmore Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-73
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1094	Distance	Code	Observation	Counter	Photo	Grade
37-73	0.00	AMH	Manhole / 37-73	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:10		
	2.24	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:00:34		
	4.53	TFC	Tap Factory Made Capped at 10 o'clock, 4inch dim, within 8 inch	00:01:02		
	27.13	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:02:02		
	29.67	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:02:22		
	52.16	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:03:19		
	54.63	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:03:37		
	77.34	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:04:35		
	79.84	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:04:53		
	85.68	FH2	Fracture Longitudinal Hinge, 2 from 3 o'clock to 6 o'clock, within 8 inch	00:05:41		S4
	85.68	RFB	Roots Fine Barrell at 3 o'clock, within 8 inch	00:05:52		M2
	102.33	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:06:52		
	104.82	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:07:12		



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 522.2'	Length Surveyed: 522.2'

1:1094	Distance	Code	Observation	Counter	Photo	Grade
	132.36	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:08:18		
	140.04	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:08:46		
	152.57	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:09:22		
	154.99	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:09:40		
	155.00	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch	00:09:43		M2
	177.64	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:10:44		
	178.68	CL	Crack Longitudinal at 4 o'clock, within 8 inch	00:11:16		S2
	190.50	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:12:13		
	190.51	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch	00:12:16		M2
	202.99	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:12:59		
	202.99	RML	Roots Medium Lateral at 2 o'clock, 10% lost, within 8 inch	00:13:03		M3
	205.58	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:13:23		
	205.58	RFL	Roots Fine Lateral at 10 o'clock	00:13:25		M1
	222.93	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:14:33		
	222.93	RML	Roots Medium Lateral at 2 o'clock, 40% lost, within 8 inch	00:14:36		M3
	235.65	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:15:16		
	235.65	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch	00:15:21		M2
	253.30	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:16:08		
	255.85	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:16:29		



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 522.2'	Length Surveyed: 522.2'

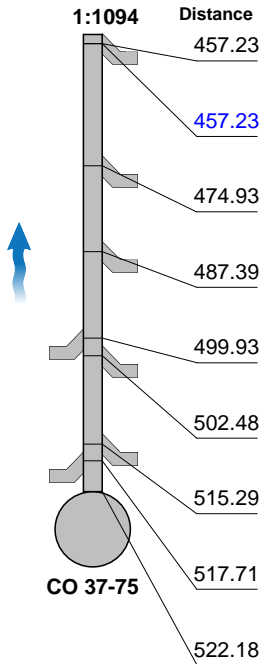
1:1094	Distance	Code	Observation	Counter	Photo	Grade
	273.37	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:17:18		
	275.94	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:17:37		
	303.74	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:18:47		
	303.74	RFL	Roots Fine Lateral at 3 o'clock	00:18:50		M1
	306.41	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:19:11		
	334.13	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:20:25		
	336.60	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:20:49		
	354.22	TFC	Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch	00:22:10		
	356.62	RTL	Roots Tap Lateral from 9 o'clock to 10 o'clock, 85% of cross sectional area	00:22:32		M2
	379.19	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:23:52		
	386.68	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:24:30		
	386.68	FC	Fracture Circumferential from 3 o'clock to 4 o'clock, within 8 inch / IN WYE	00:24:35		S2
	409.28	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:25:57		
	416.70	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:26:24		
	416.71	RFL	Roots Fine Lateral at 2 o'clock	00:26:27		M1
	429.46	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:27:06		
	431.96	TFC	Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch	00:27:23		
	454.59	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:28:25		
	454.59	RFL	Roots Fine Lateral at 2 o'clock	00:28:27		M1



Inspection report

Date: 6/3/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 522.2'	Length Surveyed: 522.2'

Distance	Code	Observation	Counter	Photo	Grade
1:1094					
457.23	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:28:49		
457.23	RTL	Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch	00:28:52		M2
474.93	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:29:41		
487.39	TFC	Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch	00:30:17		
499.93	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:30:54		
502.48	TFC	Tap Factory Made Capped at 10 o'clock, 4inch dim, within 8 inch	00:31:10		
515.29	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:31:50		
517.71	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:32:13		
522.18	ACOM	Cleanout Mainline / CO 37-75	00:32:43		



QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4122	3226	8.0	22.0	30.0	2.7	1.8	2.0



Section Pictures

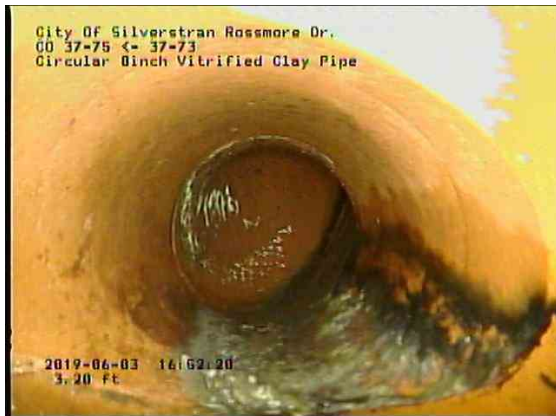
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



9f5ac0c5-bfdb-445a-85d8-56da139d9544_20190603_160744_204.jpg, 00:00:01, 0.00ft
Manhole / 37-73



b8993029-9e58-478e-987e-a2902f9634dd_20190603_160802_931.jpg, 00:00:10, 0.00ft
Water Level, 5% of the vertical dimension



c5b10003-6842-424a-b1a9-b35c43864837_20190603_165457_488.jpg, 00:00:34, 2.24ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



cf6793f8-67f5-4ca6-986e-92215fee4a8d_20190603_160908_534.jpg, 00:01:02, 4.53ft
Tap Factory Made Capped at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



d7ee741f-2527-44a1-8e6e-b5823df3a63a_20190603_161016_254.jpg, 00:02:02, 27.13ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



19bf312f-ebad-4236-9b11-4c13e384472c_20190603_161043_458.jpg, 00:02:22, 29.67ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



5c99c4cf-1168-4b0f-a84b-57452bfa0b4a_20190603_161146_700.jpg, 00:03:19, 52.16ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



4622fffd-1a8c-4be4-89f9-92030f8038b6_20190603_161213_581.jpg, 00:03:37, 54.63ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



92355246-d714-485a-8609-b0846717d90e_20190603_161318_771.jpg, 00:04:35, 77.34ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



6b798b55-bc68-4acb-8005-21b54d84eafd_20190603_161342_919.jpg, 00:04:53, 79.84ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



12ee4e9a-8af2-4ce9-b917-794cda158ff8_20190603_161445_835.jpg, 00:05:41, 85.68ft
Fracture Longitudinal Hinge, 2 from 3 o'clock to 6 o'clock, within 8 inch



89620bc1-8bb7-4aa5-bcf8-23be6de01501_20190603_161507_533.jpg, 00:05:52, 85.68ft
Roots Fine Barrell at 3 o'clock, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



330f17cb-87f0-40ea-8235-c9a4900485c0_20190603_161511_200.jpg, 00:05:52, 85.68ft
 Roots Fine Barrell at 3 o'clock, within 8 inch



bdf539d2-c24b-4abc-abc6-66844ede13c5_20190603_161617_142.jpg, 00:06:52, 102.33ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



9ca10b98-cd41-4ef9-a4d2-854d5cc6ec9c_20190603_161645_045.jpg, 00:07:12, 104.82ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch

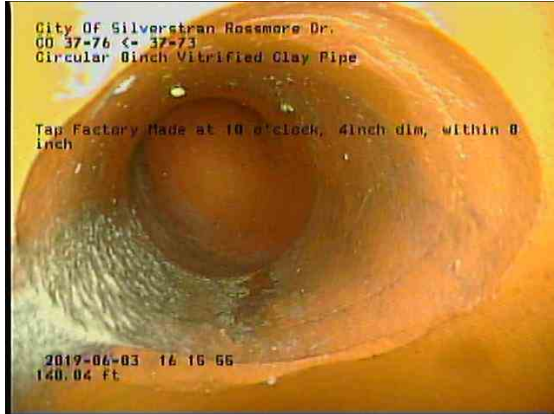


9ed405cd-745c-4d54-9658-2195eeb78141_20190603_161758_421.jpg, 00:08:18, 132.36ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

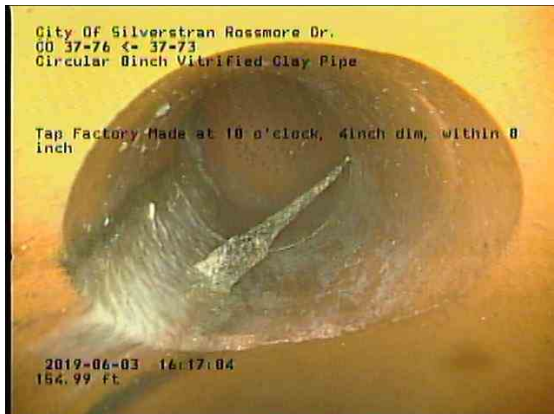
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



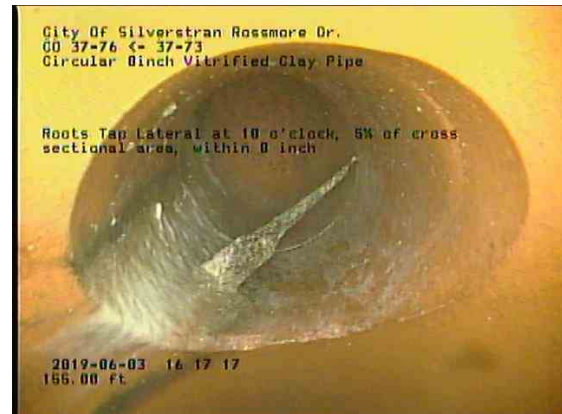
dcdf3961-ff41-4efc-805c-e0191cabe819_20190603_161832_130.jpg, 00:08:46, 140.04ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



9b1fa5ce-2717-4d2b-9fd0-4c08928d8049_20190603_161915_292.jpg, 00:09:22, 152.57ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



0aef7710-a0cc-4857-b442-2d58ab14e114_20190603_161941_075.jpg, 00:09:40, 154.99ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch

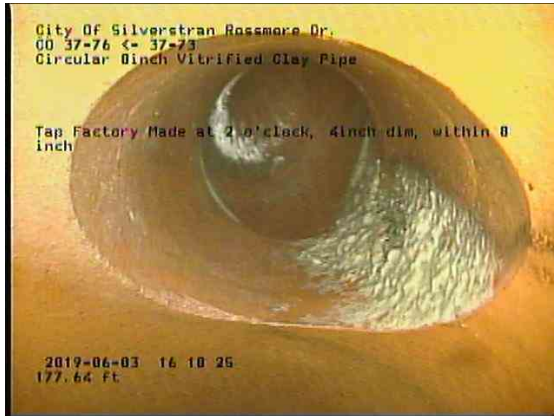


cc130f6c-8036-40a5-822c-10baaa874981_20190603_161954_315.jpg, 00:09:43, 155.00ft
Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch

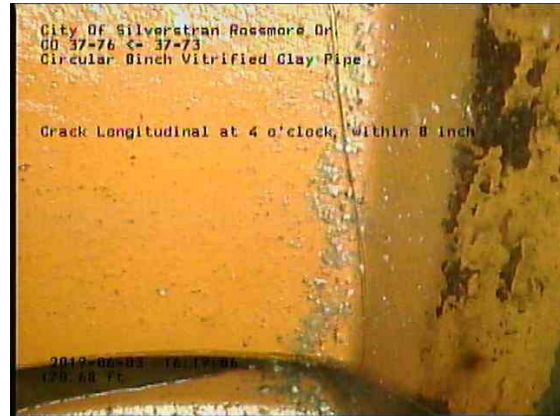


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



7309b7bb-84eb-42eb-aa32-a3ae66575992_20190603_162102_371.jpg, 00:10:44, 177.64ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



84b32ac1-6a61-43e4-9587-4d9f47ac59e7_20190603_162143_178.jpg, 00:11:16, 178.68ft
Crack Longitudinal at 4 o'clock, within 8 inch



9731e98d-8d47-4f49-ba71-24adf3386b3d_20190603_162248_571.jpg, 00:12:13, 190.50ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



0b5e973d-6883-4861-aa0a-505685837ec7_20190603_162301_063.jpg, 00:12:16, 190.51ft
Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



553975f3-0d33-4c8e-ab3b-8053f5930c58_20190603_162352_981.jpg, 00:12:59, 202.99ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



4279d3b2-3530-4101-a3ec-08d218e677a5_20190603_162410_926.jpg, 00:13:03, 202.99ft
Roots Medium Lateral at 2 o'clock, 10% lost, within 8 inch



e07fb510-c49c-4313-9d80-4729120041a4_20190603_162439_995.jpg, 00:13:23, 205.58ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



69f70465-a8ea-465d-8c1f-9d0bea1e34c9_20190603_162450_262.jpg, 00:13:25, 205.58ft
Roots Fine Lateral at 10 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



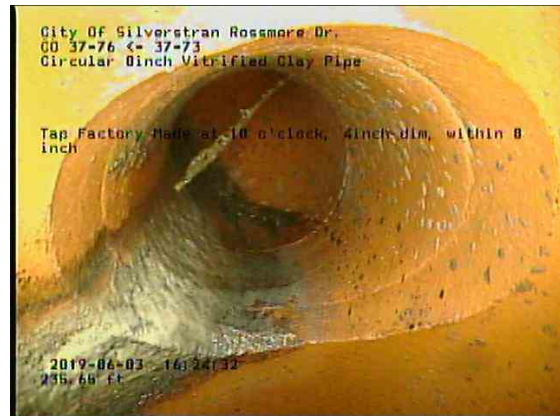
25d32a26-f39d-45fb-8b0a-5339a0e9564d_20190603_162505_447.jpg, 00:13:25, 205.58ft
Roots Fine Lateral at 10 o'clock



f966e9e2-ebba-47c4-9ef5-61336b9747dd_20190603_162604_559.jpg, 00:14:33, 222.93ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



c0a48f71-c261-49dc-8106-a376ccf85ff5_20190603_162621_363.jpg, 00:14:36, 222.93ft
Roots Medium Lateral at 2 o'clock, 40% lost, within 8 inch

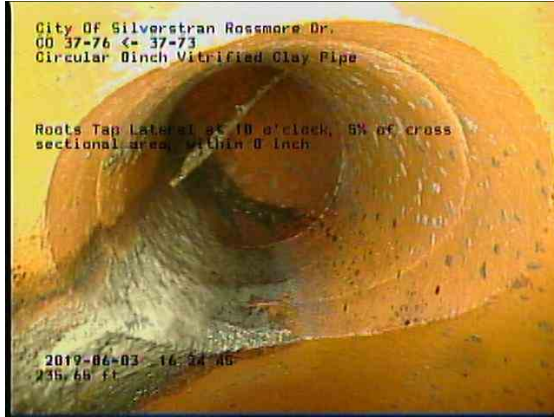


e52f19fd-7c76-4979-bc28-47c1a22ac775_20190603_162709_980.jpg, 00:15:16, 235.65ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



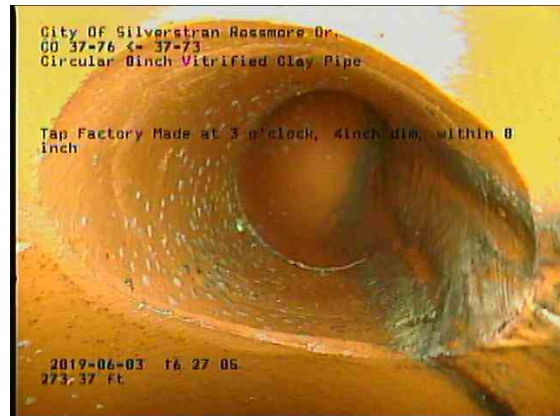
b85e50d2-14d6-4714-954d-3842cc056982_20190603_162722_359.jpg, 00:15:21, 235.65ft
 Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch



52a55016-0b53-4851-9004-23d958f55695_20190603_162817_744.jpg, 00:16:08, 253.30ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



ec90d1c3-c99d-46d4-a973-bb67a6088908_20190603_162846_472.jpg, 00:16:29, 255.85ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



0affb3f2-29ff-47db-953e-18820b8bc30c_20190603_162942_161.jpg, 00:17:18, 273.37ft
 Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

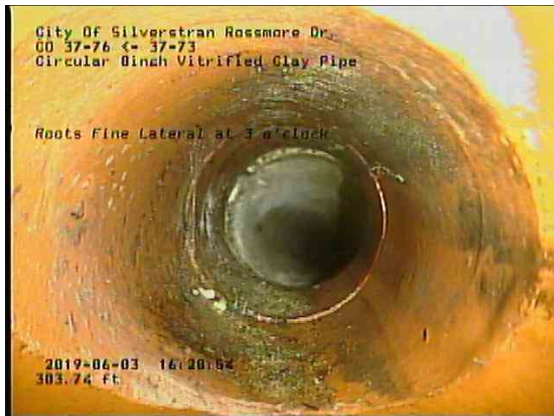
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



a4aa1a60-f417-4b17-88e5-2477a8ef73e8_20190603_163005_808.jpg, 00:17:37, 275.94ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



92003d04-6211-41c2-968a-1deb72576397_20190603_16312_3_828.jpg, 00:18:47, 303.74ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



1ff90164-8e54-4acd-bd83-9d14312c57e6_20190603_163132_053.jpg, 00:18:50, 303.74ft
Roots Fine Lateral at 3 o'clock



8077d3c7-39e6-44e2-b5e8-98c967a49ede_20190603_16320_0_460.jpg, 00:19:11, 306.41ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



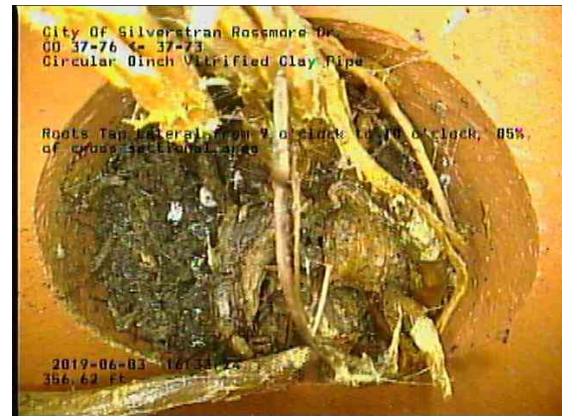
5e7b6973-5e5f-41d0-b9c7-2c34502f86bb_20190603_163321_503.jpg, 00:20:25, 334.13ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



969bb0b6-8d0f-4216-a0b2-1500664cd222_20190603_163352_129.jpg, 00:20:49, 336.60ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



e6c070ec-29ff-4e2a-ae56-c3339a679b76_20190603_163519_172.jpg, 00:22:10, 354.22ft
Tap Factory Made Capped at 2 o'clock, 4inch dim, within 8 inch



d177dfa4-87a6-49a3-bf9d-b744fb552534_20190603_163601_736.jpg, 00:22:32, 356.62ft
Roots Tap Lateral from 9 o'clock to 10 o'clock, 85% of cross sectional area



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



b3d41275-34d8-4d68-a4fd-6e2b020bf2fd_20190603_163614_743.jpg, 00:22:32, 356.62ft
 Roots Tap Lateral from 9 o'clock to 10 o'clock, 85% of cross sectional area



b2b8ec43-b45c-41d7-a5f8-4bfff6ad618_20190603_163727_599.jpg, 00:23:52, 379.19ft
 Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



b7a76303-4fab-4f66-9d24-75a1ac8a1929_20190603_163813_754.jpg, 00:24:30, 386.68ft
 Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



c6886c92-6e49-43dd-8be3-d7e56b1682c7_20190603_163833_325.jpg, 00:24:35, 386.68ft
 Fracture Circumferential from 3 o'clock to 4 o'clock, within 8 inch / IN WYE



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



36a6c289-10c6-4e9f-afa8-91c082bb9e29_20190603_163840_613.jpg, 00:24:35, 386.68ft
Fracture Circumferential from 3 o'clock to 4 o'clock, within 8 inch / IN WYE



d780113e-9ee1-477e-9ac7-5b6ba3cd91a5_20190603_16400_0_370.jpg, 00:25:57, 409.28ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



52d464fc-3dc6-4c15-a523-10a15f9b6661_20190603_164034_129.jpg, 00:26:24, 416.70ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

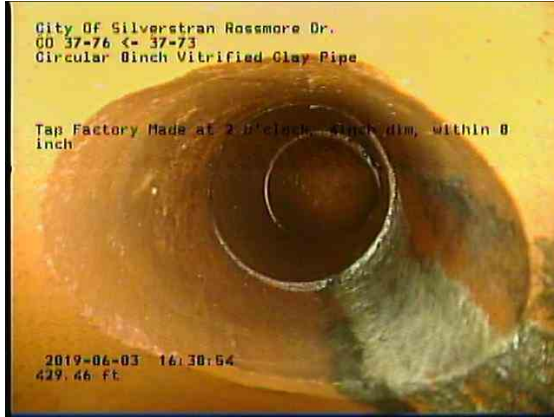


c481ad72-c24e-4470-8e91-c7cec95ec617_20190603_16404_4_129.jpg, 00:26:27, 416.71ft
Roots Fine Lateral at 2 o'clock



Section Pictures

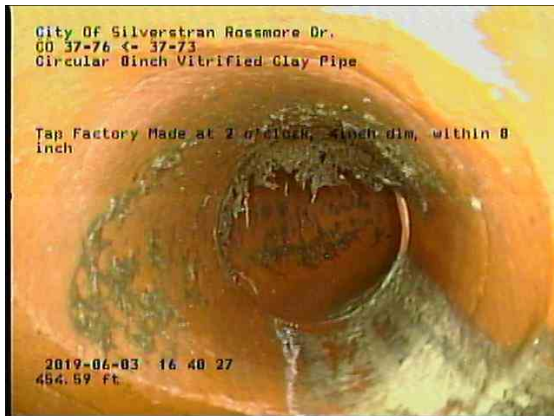
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



a08d6706-9814-4cbb-aac4-7046ca93dc9a_20190603_164131_248.jpg, 00:27:06, 429.46ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



fada6ef2-fa12-4bdf-b211-521083121cc2_20190603_164156_148.jpg, 00:27:23, 431.96ft
Tap Factory Made Gapped at 11 o'clock, 4inch dim, within 8 inch



c354caaa-4850-4e44-b57f-fe33c4f2eb90_20190603_164304_228.jpg, 00:28:25, 454.59ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



c412fb7a-02bc-4c85-b192-9c22b41fb58e_20190603_164314_588.jpg, 00:28:27, 454.59ft
Roots Fine Lateral at 2 o'clock



Section Pictures

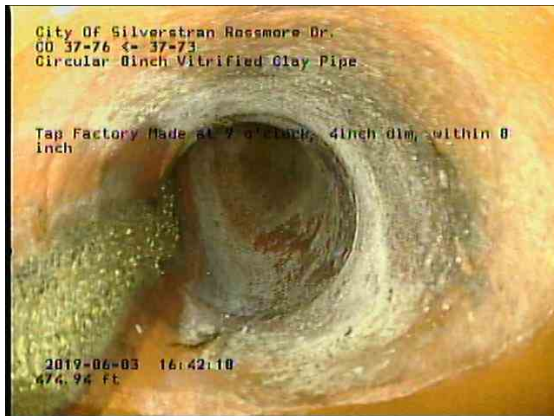
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



113c0a90-14ef-4729-8e90-fcbf6806e4a1_20190603_164346_150.jpg, 00:28:49, 457.23ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



a827ff68-0464-49df-b5ad-0c2ef7003cc0_20190603_164400_767.jpg, 00:28:52, 457.23ft
Roots Tap Lateral at 10 o'clock, 5% of cross sectional area, within 8 inch



204dcf31-b4a1-4bc8-a4c4-1e88a21d9a81_20190603_164455_164.jpg, 00:29:41, 474.93ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



f353751a-6612-4e35-aaed-0af51fb0fe4a_20190603_164537_347.jpg, 00:30:17, 487.39ft
Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



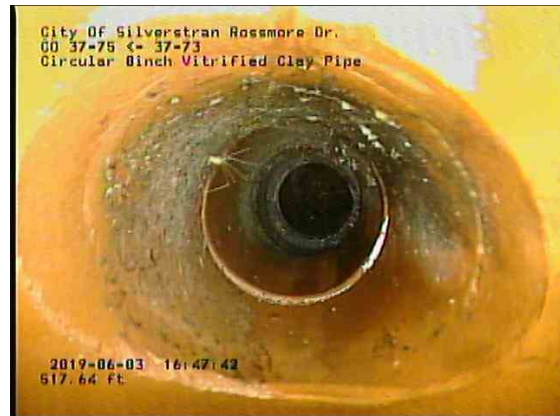
18997a62-5f79-4caa-963a-81643edfc0cb_20190603_164620_488.jpg, 00:30:54, 499.93ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



eba2059f-e377-4424-ab73-8dedb3bf34b3_20190603_164644_046.jpg, 00:31:10, 502.48ft
Tap Factory Made Capped at 10 o'clock, 4inch dim, within 8 inch



0cd1cbcc-0c14-475d-9153-6230ba0c3168_20190603_164731_709.jpg, 00:31:50, 515.29ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



6b97d07e-8155-4402-aa0c-34b1b780a05e_20190603_165019_576.jpg, 00:32:13, 517.71ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

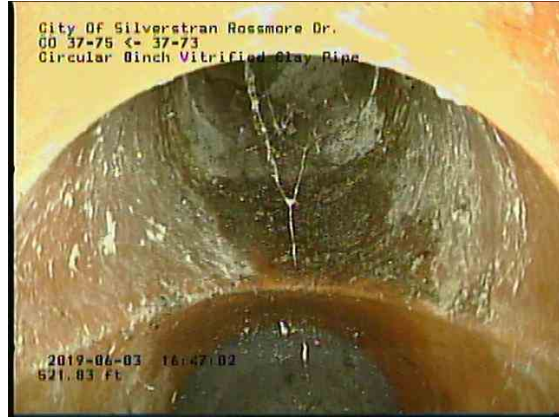


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Rossmore Dr.	6/3/2019		1



8087cb28-8337-4831-8af3-b49e2e288916_20190603_164921_847.jpg, 00:32:43, 522.18ft
Cleanout Mainline / CO 37-75

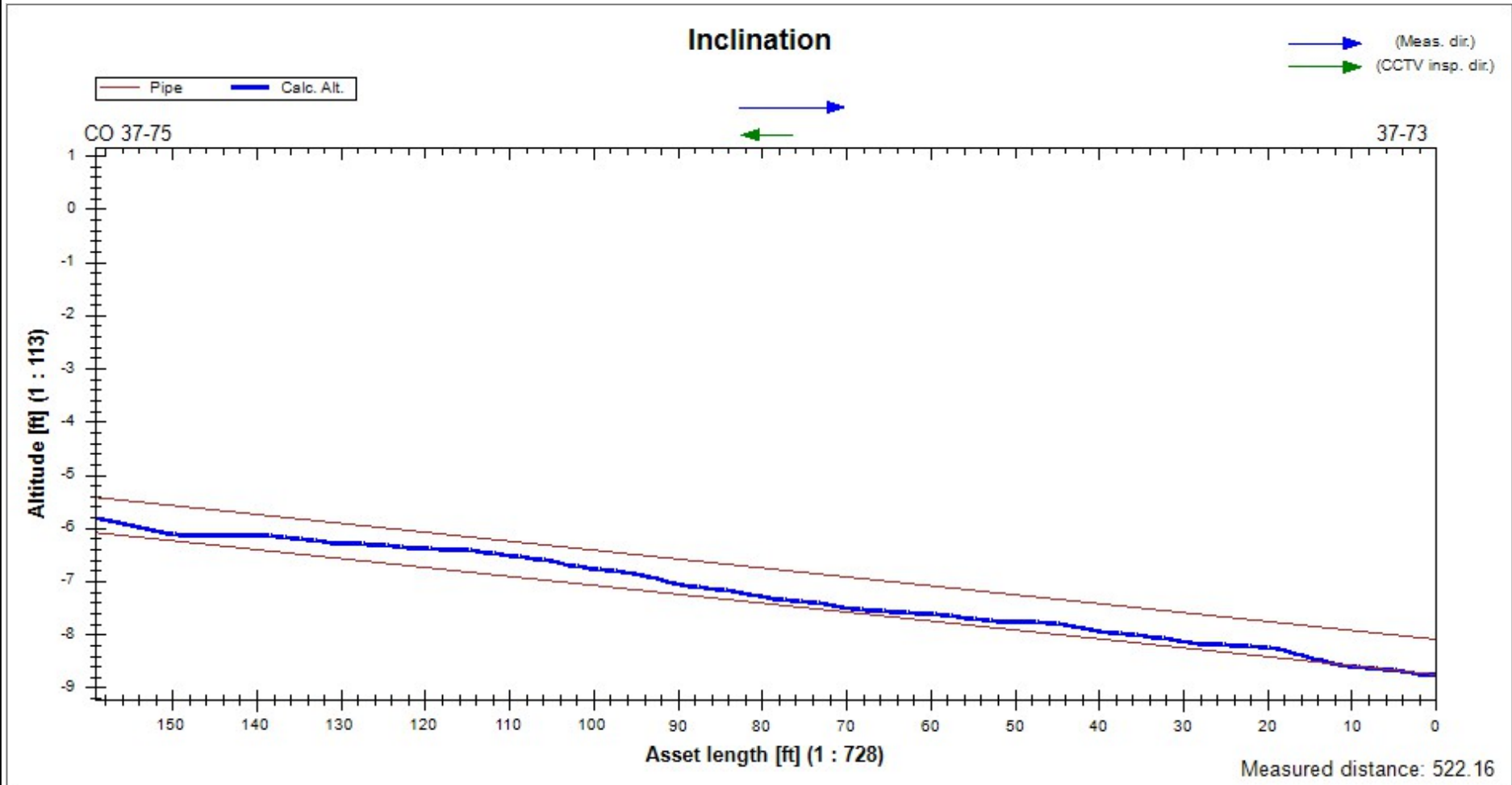


a7394bd1-fd0b-493b-8f2b-5ad72a851131_20190603_164940_112.jpg, 00:32:43, 522.18ft
Cleanout Mainline / CO 37-75



Section Inclination

Pipe Segment Reference	Date	Time	Surveyed By	City	Street	Direction	Length Surveyed
	6/3/2019	12:00 AM	Kyle Bahensky	City Of Silverstran	Rossmore Dr.	Upstream	522.16 m
Shape	Height	Width	Upstream MH	Downstream MH	Start altitude	End altitude	Measured Inc
Circular	8 mm	8 mm	CO 37-75	37-73	-8.757 m	-1.677 m	





Inspection report

Date: 5/21/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 577.7'	Length Surveyed: 577.7'

City: City Of Silverstrand	Drainage Area:	Upstream MH: CO 23-00
Street: Sawtelle Ave.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 23-01
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use:	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:2286	Distance	Code	Observation	Counter	Photo	Grade
23-01	0.00	AMH	Manhole / 23-01	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:14		
	117.33	TF	Tap Factory Made at 11 o'clock, 6inch dim, within 8 inch	00:04:40		
	135.17	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:05:29		
	156.35	ISZ	Intruding Sealing Other, 5% of cross sectional area from 1 o'clock to 3 o'clock	00:06:29		M2
	157.76	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:07:05		
	163.92	FC	Fracture Circumferential from 11 o'clock to 5 o'clock	00:07:48		S2
	163.92	ID	Infiltration Dripper from 1 o'clock to 2 o'clock	00:08:13		M3
	174.08	CL	Crack Longitudinal at 1 o'clock, within 8 inch	00:08:53		S2
	174.08	IW	Infiltration Weeper at 1 o'clock, within 8 inch	00:09:00		M2
	179.06	B	Broken from 9 o'clock to 3 o'clock, within 8 inch	00:10:08		S5
	179.06	IR	Infiltration Runner from 9 o'clock to 3 o'clock, within 8 inch	00:10:28		M4
	205.47	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:11:40		
	232.97	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:13:06		



Inspection report

Date: 5/21/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 577.7'	Length Surveyed: 577.7'

1:2286	Distance	Code	Observation	Counter	Photo	Grade
	290.50	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:15:35		
	307.94	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:16:22		
	334.98	TB	Tap Break-In at 11 o'clock, 4inch dim	00:17:48		
	<u>334.98</u>	ID	Infiltration Dripper at 11 o'clock	00:18:13		M3
	345.63	TFC	Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch	00:19:15		
	378.29	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:20:28		
	430.75	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:22:39		
	463.28	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:24:07		
	485.67	TF	Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch	00:25:18		
	503.22	TF	Tap Factory Made at 10 o'clock, 6inch dim, within 8 inch	00:26:17		
	555.41	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:29:17		
	573.13	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:30:18		
	577.68	ACOM	Cleanout Mainline / CO 8"	00:30:58		



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



09cca0d2-3a47-41a0-8809-d4d0559fe28f_20190521_091544_486.jpg, 00:00:01, 0.00ft
Manhole / 23-01



34c15e4b-e7aa-4d11-8832-67f2a37abad3_20190521_091604_747.jpg, 00:00:14, 0.00ft
Water Level, 5% of the vertical dimension



e4040fec-df2c-49a4-bc7a-1ec55dd3b199_20190521_092042_930.jpg, 00:04:40, 117.33ft
Tap Factory Made at 11 o'clock, 8inch dim, within 8 inch



90d2d25d-8219-4fe0-9624-e08bf7695c9c_20190521_092138_008.jpg, 00:05:29, 135.17ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



c2b5bf38-c8d5-4e14-98b7-31a41093fde7_20190521_092251_614.jpg, 00:06:29, 156.35ft
Intruding Sealing Other, 5% of cross sectional area from 1 o'clock to 3 o'clock



d980ef56-b9f3-4dc6-b2a2-8241ed6a36c0_20190521_092302_089.jpg, 00:06:29, 156.35ft
Intruding Sealing Other, 5% of cross sectional area from 1 o'clock to 3 o'clock



8400e27f-701f-4f90-a2a5-9c0c797ac391_20190521_092333_335.jpg, 00:07:05, 157.76ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



8ce988b6-bc94-4e45-a756-bad07eabe668_20190521_092434_086.jpg, 00:07:48, 163.92ft
Fracture Circumferential from 11 o'clock to 5 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



634d749e-f4a1-4147-9a3d-ceb9b47de711_20190521_092444_049.jpg, 00:07:48, 163.92ft
Fracture Circumferential from 11 o'clock to 5 o'clock



959fd213-f6cf-4cdb-a641-d7b32facfca_20190521_092513_286.jpg, 00:08:13, 163.92ft
Infiltration Dripper from 1 o'clock to 2 o'clock



63680215-e72c-441a-857e-45dddba39d1_20190521_092602_832.jpg, 00:08:53, 174.08ft
Crack Longitudinal at 1 o'clock, within 8 inch



4b3dfa1c-ddf3-4434-a720-5a650ddf39ba_20190521_092636_578.jpg, 00:08:53, 174.08ft
Crack Longitudinal at 1 o'clock, within 8 inch



Section Pictures

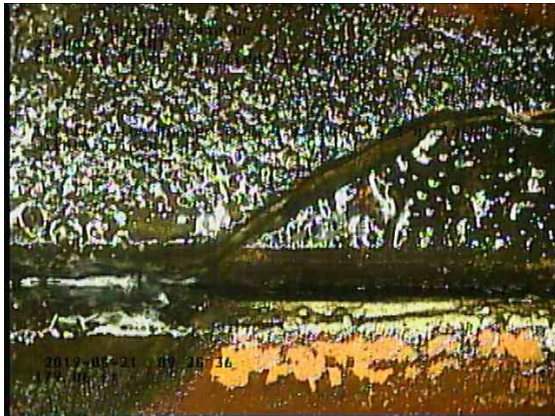
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



1089121c-01e9-437b-a436-8abcba45f94_20190521_092619_423.jpg, 00:09:00, 174.08ft
Infiltration Weeper at 1 o'clock, within 8 inch



2bb4ce1d-f8e8-4d86-ae69-70fd15f010bb_20190521_092736_594.jpg, 00:10:08, 179.06ft
Broken from 9 o'clock to 3 o'clock, within 8 inch



2c6171c6-321d-4c98-9b76-d1ecab1f94d2_20190521_092806_185.jpg, 00:10:28, 179.06ft
Infiltration Runner from 9 o'clock to 3 o'clock, within 8 inch



2b7cf24c-6bb7-43b9-b084-bce5a7592178_20190521_092926_031.jpg, 00:11:40, 205.47ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch

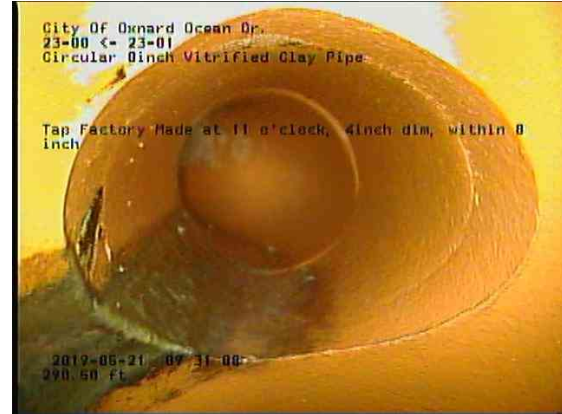


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



e791b170-c8d1-46fa-b199-d18a7556fdc0_20190521_093100_846.jpg, 00:13:06, 232.97ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



653f3208-24cb-4a3c-8197-bf232f10e273_20190521_093338_693.jpg, 00:15:35, 290.50ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



3c6a560f-d8b6-4d7a-840b-b735e9b56196_20190521_093434_276.jpg, 00:16:22, 307.94ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



b4bca342-6ee4-4e3e-9dbd-a1af64d6952f_20190521_093628_878.jpg, 00:17:48, 334.98ft
Tap Break-In at 11 o'clock, 4inch dim

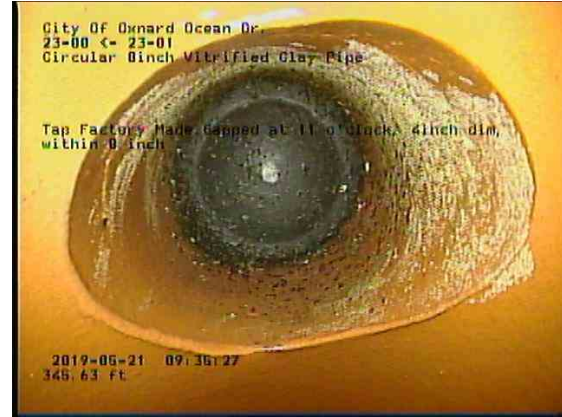


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



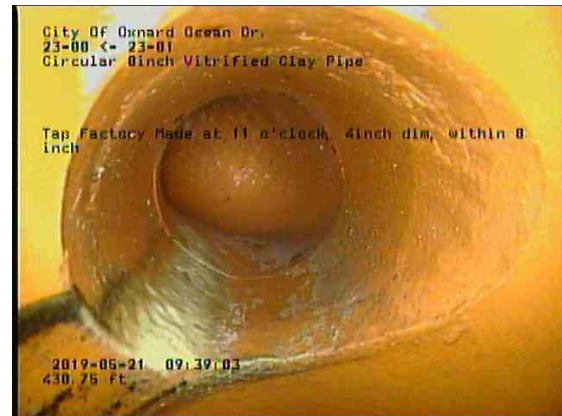
0c9758fa-0261-48fe-9281-c03aff41f3ab_20190521_093648_692.jpg, 00:18:13, 334.98ft
Infiltration Dripper at 11 o'clock



c6edebc9-a201-4358-99e9-60287212806e_20190521_093757_402.jpg, 00:19:15, 345.63ft
Tap Factory Made Capped at 11 o'clock, 4inch dim, within 8 inch



27dca17a-b142-4ee4-a522-cda820e102e0_20190521_093915_962.jpg, 00:20:28, 378.29ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



1f6af9fe-751b-45a5-ad19-e95fdd161da6_20190521_094133_416.jpg, 00:22:39, 430.75ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



22c4c2a9-7ad4-4584-a246-7ece61f1421d_20190521_094307_860.jpg, 00:24:07, 463.28ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



c23c4a5b-7ff8-413a-a149-3db9875a38eb_20190521_094426_134.jpg, 00:25:18, 485.67ft
Tap Factory Made at 9 o'clock, 4inch dim, within 8 inch



bf54d906-c6c6-4c5d-8458-f91bb54c5576_20190521_094551_959.jpg, 00:26:17, 503.22ft
Tap Factory Made at 10 o'clock, 6inch dim, within 8 inch



77c2eb96-0959-4b44-9300-169a166df241_20190521_094910_742.jpg, 00:29:17, 555.41ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Sawtelle Ave.	5/21/2019		1



ee540337-e5d0-404c-8ac1-881e018721b3_20190521_095020_266.jpg, 00:30:18, 573.13ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



17c3c5be-0d45-4d38-b486-097a7ec0c484_20190521_095117_149.jpg, 00:30:58, 577.68ft
Cleanout Mainline / CO 8"



760c0f61-6c36-47fa-ba4d-1e2d8f7532b9_20190521_095128_698.jpg, 00:30:58, 577.68ft
Cleanout Mainline / CO 8"



Inspection report

Date: 5/30/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 518.1'	Length Surveyed: 518.1'

City: City Of Silverstran	Drainage Area:	Upstream MH: CO 36-60
Street: Sunset Dr.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 36-61
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:1554	Distance	Code	Observation	Counter	Photo	Grade
36-61	0.00	AMH	Manhole / 36-61	00:00:03		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:12		
	0.00	B	Broken from 10 o'clock to 4 o'clock	00:00:35		S5
	0.00	CS	Crack Spiral from 3 o'clock to 5 o'clock	00:01:05		S2
	0.08	TF	Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch	00:01:32		
	38.75	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:03:30		
	66.33	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 11 o'clock, within 8 inch / IN WYE	00:04:54		M2
	66.33	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:04:51		
	68.85	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:05:32		
	106.31	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:07:10		
	144.21	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:08:43		
	144.31	RBL	Roots Ball Lateral at 2 o'clock, 70% lost, within 8 inch	00:08:45		M4
	176.63	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:10:10		
	176.63	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch / IN WYE	00:10:12		M2



Inspection report

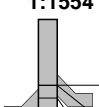










Date: 5/30/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 518.1'	Length Surveyed: 518.1'

Distance	Code	Observation	Counter	Photo	Grade
1:1554					
179.09	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:10:38		
191.57	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:11:16		
214.07	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:12:16		
226.78	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:13:00		
249.40	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:14:06		
249.41	RTL	Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch	00:14:09		M2
261.89	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:14:52		
261.89	RML	Roots Medium Lateral at 10 o'clock, 20% lost, within 8 inch	00:14:55		M3
284.47	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:15:55		
297.13	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:16:36		
304.92	TB	Tap Break-In at 2 o'clock, 6inch dim, within 8 inch	00:17:10		
337.62	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:18:58		
364.30	MWL	Water Level, 20% of the vertical dimension	00:20:03		
370.22	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:20:29		
372.95	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:20:52		
372.98	DAE	Deposits Attached Encrustation, 5% of cross sectional area from 9 o'clock to 11 o'clock, within 8 inch	00:20:54		M2
390.41	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:21:48		
402.97	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:22:29		
408.54	MWL	Water Level, 10% of the vertical dimension	00:22:51		



Inspection report

Date: 5/30/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 518.1'	Length Surveyed: 518.1'

1:1554	Distance	Code	Observation	Counter	Photo	Grade
	435.61	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:23:59		
	435.65	RML	Roots Medium Lateral at 11 o'clock, 40% lost, within 8 inch	00:24:01		M3
	438.26	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:24:23		
	460.96	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:25:24		
	460.99	RTL	Roots Tap Lateral at 2 o'clock, 35% of cross sectional area, within 8 inch	00:25:26		M2
	488.62	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:26:52		
	488.63	RML	Roots Medium Lateral at 10 o'clock, 10% lost, within 8 inch	00:26:54		M3
	491.18	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:27:14		
	513.64	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:29:17		
	513.68	RML	Roots Medium Lateral at 2 o'clock, 5% lost	00:29:20		M3
	518.07	ACOM	Cleanout Mainline / CO 36-60	00:29:57		



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



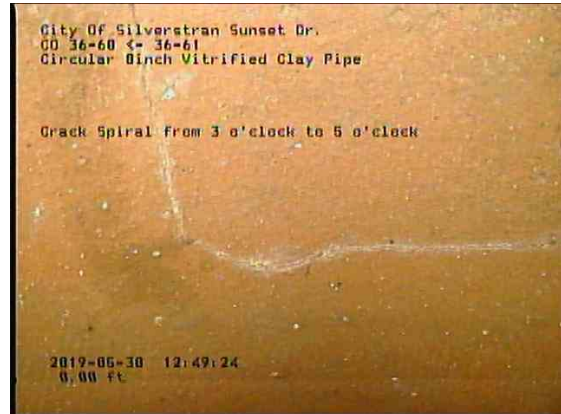
ac2367a2-1574-4609-9c6e-c54a27acdb5e_20190530_125017_336.jpg, 00:00:03, 0.00ft
Manhole / 36-61



9afce06e-3576-4258-8442-d6d4f40f457a_20190530_125119_987.jpg, 00:00:35, 0.00ft
Broken from 10 o'clock to 4 o'clock



2208eff4-8889-4c5a-bf8e-90ffd584196d_20190530_125124_883.jpg, 00:00:35, 0.00ft
Broken from 10 o'clock to 4 o'clock



2d0402e2-f05b-4359-b46d-7849147ab639_20190530_125159_844.jpg, 00:01:05, 0.00ft
Crack Spiral from 3 o'clock to 5 o'clock



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



45f613dc-235e-4a94-9817-a5fd99b287d3_20190530_125244_977.jpg, 00:01:32, 0.08ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



38027916-80dc-4828-ab27-92b8676eab07_20190530_125712_299.jpg, 00:01:32, 0.08ft
Tap Factory Made at 6 o'clock, 8inch dim, within 8 inch



608a5b8a-ae07-43d8-82a4-b4dd4863963e_20190530_125858_024.jpg, 00:03:30, 38.75ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

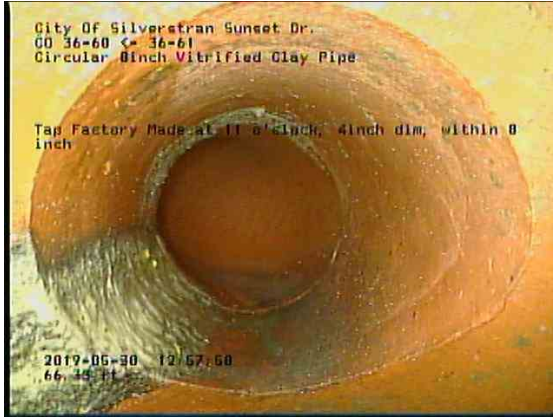


1ba4d1aa-a92a-4d47-bb71-2510bf3b0234_20190530_130043_945.jpg, 00:04:54, 66.33ft
Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 11 o'clock, within 8 inch / IN WYE



Section Pictures

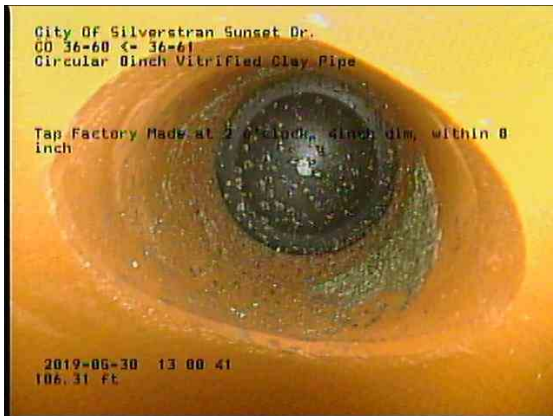
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



75d3cd23-44bf-4a60-b365-9d320bb0517e_20190530_130025_963.jpg, 00:04:51, 66.33ft
 Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



cca830bf-5c03-4015-b2e6-b78b8586f403_20190530_130130_011.jpg, 00:05:32, 68.85ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



dae520cd-dbbb-4e19-9630-8dbb712f40d7_20190530_130316_650.jpg, 00:07:10, 106.31ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

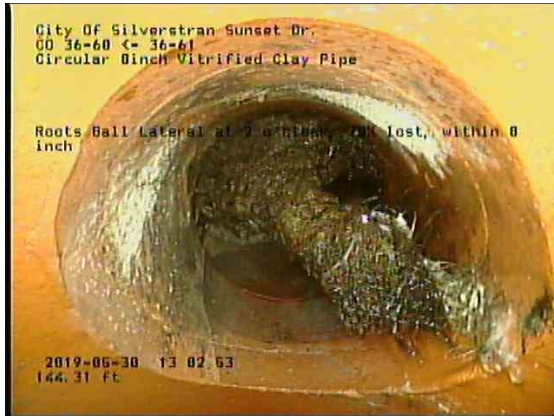


3cecd5b-8123-4ed6-9fc7-0328c5f97a70_20190530_130457_566.jpg, 00:08:43, 144.21ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



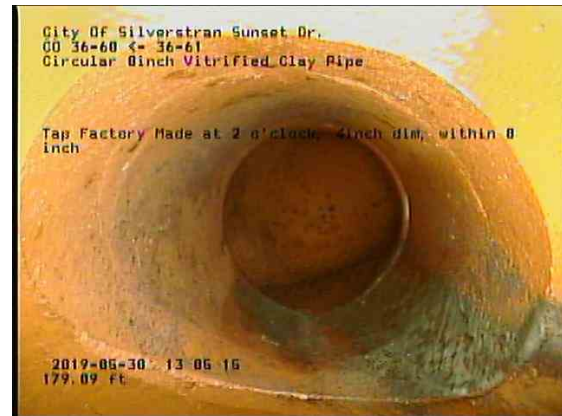
5a39bca2-1cf6-46e4-9990-abb819af5c9d_20190530_130528_787.jpg, 00:08:45, 144.31ft
 Roots Ball Lateral at 2 o'clock, 70% lost, within 8 inch



9de485de-7b64-44a6-bf9f-c5f4ded6db73_20190530_130700_481.jpg, 00:10:10, 176.63ft
 Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



e57b2e32-95ac-4296-a464-931c75b63427_20190530_130717_807.jpg, 00:10:12, 176.63ft
 Deposits Attached Encrustation, 5% of cross sectional area from 8 o'clock to 10 o'clock, within 8 inch / IN WYE



c6b3a1eb-92e8-43ea-a1f9-310ec89bf9d5_20190530_130750_784.jpg, 00:10:38, 179.09ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

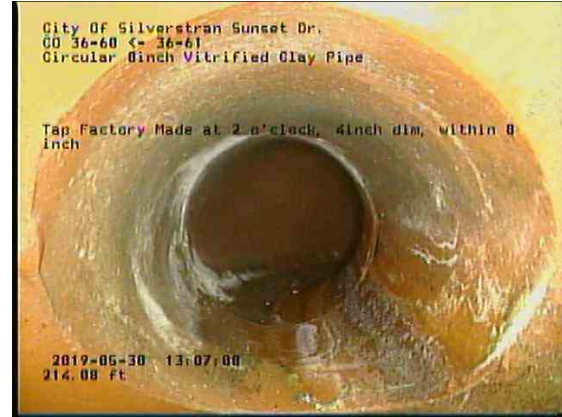


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



424c83ad-6daf-4e0a-a9a1-ebdc58e4a159_20190530_130836_773.jpg, 00:11:16, 191.57ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



f01f0690-4b5c-495e-b02d-674fd1210305_20190530_130943_750.jpg, 00:12:16, 214.07ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



dff59292-d493-496e-aa78-4e3a117aef4d_20190530_131035_593.jpg, 00:13:00, 226.78ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



10e828e2-82b3-401b-a738-8aece52faee8_20190530_131148_995.jpg, 00:14:06, 249.40ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch

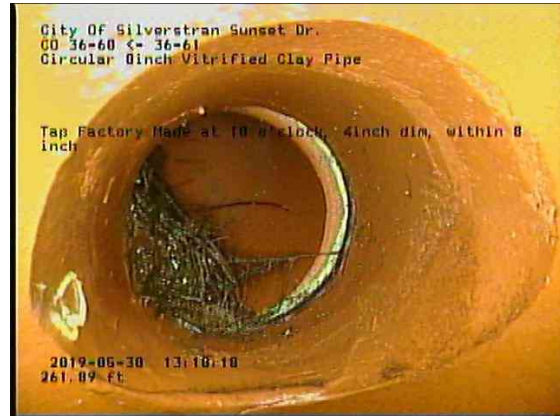


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



bf925c9a-aa15-4d41-9f43-3e415566cfa4_20190530_131200_923.jpg, 00:14:09, 249.41ft
Roots Tap Lateral at 2 o'clock, 5% of cross sectional area, within 8 inch



010dc9af-9916-453f-86a0-190635143f18_20190530_131253_140.jpg, 00:14:52, 261.89ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



e58061f2-cec8-4652-ac6c-efc3bcdeccef_20190530_131309_970.jpg, 00:14:55, 261.89ft
Roots Medium Lateral at 10 o'clock, 20% lost, within 8 inch



f5ede0d9-6ff0-4b72-89c9-bb24c209bdaa_20190530_131417_994.jpg, 00:15:55, 284.47ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

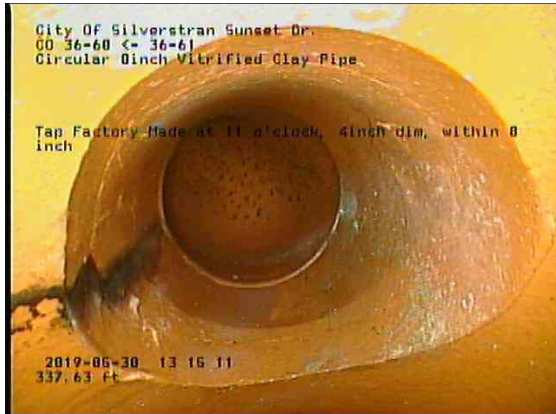
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



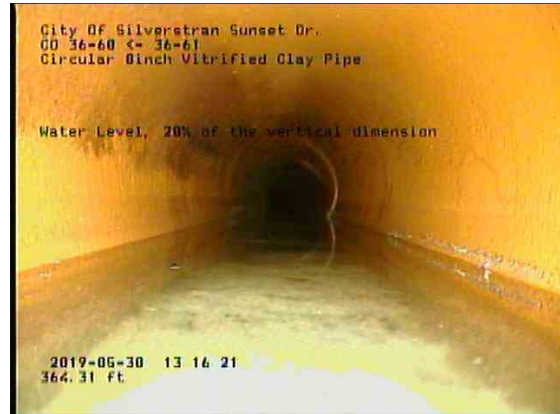
68e1f18c-450b-4c7a-b61e-9c211de127dd_20190530_131505_899.jpg, 00:16:36, 297.13ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



89a43f2e-f5be-4acd-a56b-c9d7a56ffa18_20190530_131616_176.jpg, 00:17:10, 304.92ft
Tap Break-In at 2 o'clock, 6inch dim, within 8 inch



5aeabfe9-9ff7-44de-b031-92e0f6cdc284_20190530_131746_558.jpg, 00:18:58, 337.62ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



40612795-6535-468a-80e0-7605fd9a5f84_20190530_131856_861.jpg, 00:20:03, 364.30ft
Water Level, 20% of the vertical dimension

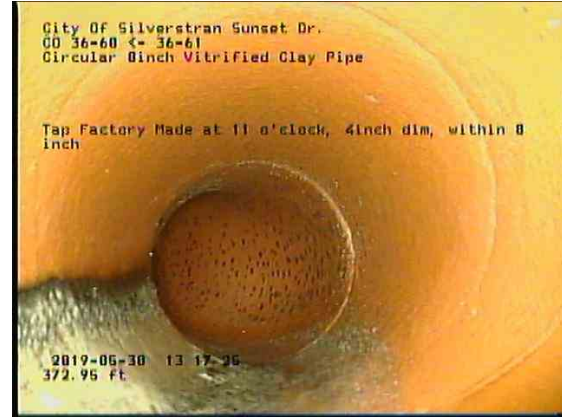


Section Pictures

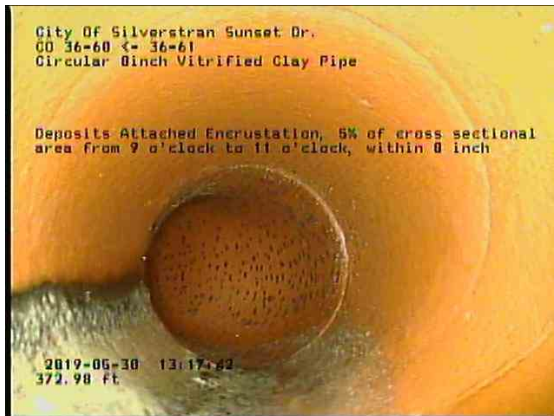
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



ef7bf8e6-520d-41a5-9dc7-8ce33b9fd540_20190530_131931_632.jpg, 00:20:29, 370.22ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



ab0ce03f-4435-4340-81e6-90b75af54d36_20190530_132000_549.jpg, 00:20:52, 372.95ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



51770553-3b7c-40d5-a766-a7d6a4ea41f2_20190530_132017_635.jpg, 00:20:54, 372.98ft
Deposits Attached Encrustation, 5% of cross sectional area from 9 o'clock to 11 o'clock, within 8 inch



352f10b8-f068-4de8-a2c1-b90e60954155_20190530_132120_328.jpg, 00:21:48, 390.41ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



c432aa54-44c9-4112-9ca5-3a0c750a414d_20190530_132209_592.jpg, 00:22:29, 402.97ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



77c3219a-716f-4d37-9ef8-747b3ea9c0ad_20190530_132239_428.jpg, 00:22:51, 408.54ft
Water Level, 10% of the vertical dimension



8944d6e5-3e9c-40c9-9c46-ae3f80b41f48_20190530_132355_821.jpg, 00:23:59, 435.61ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



1a224b4e-8ed6-4e1b-9108-c6f99e4c0383_20190530_132421_711.jpg, 00:24:01, 435.65ft
Roots Medium Lateral at 11 o'clock, 40% lost, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



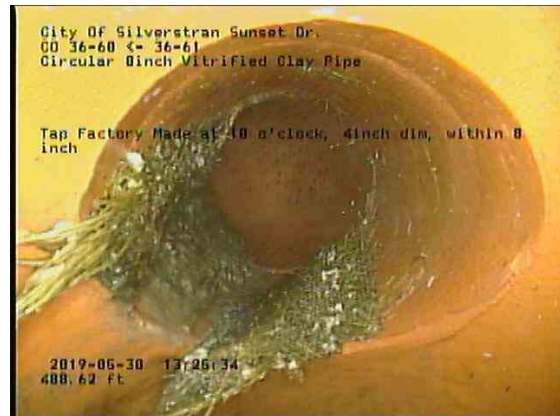
697172dd-3538-448d-a8f7-a92a844c28ff_20190530_132425_014.jpg, 00:24:23, 438.26ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



55d46e42-0cbe-4326-9fa2-0c4cb29b31c5_20190530_132605_536.jpg, 00:25:24, 460.96ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



d65b8640-213e-42e9-b830-ac8a71c9d507_20190530_132635_755.jpg, 00:25:26, 460.99ft
Roots Tap Lateral at 2 o'clock, 35% of cross sectional area, within 8 inch

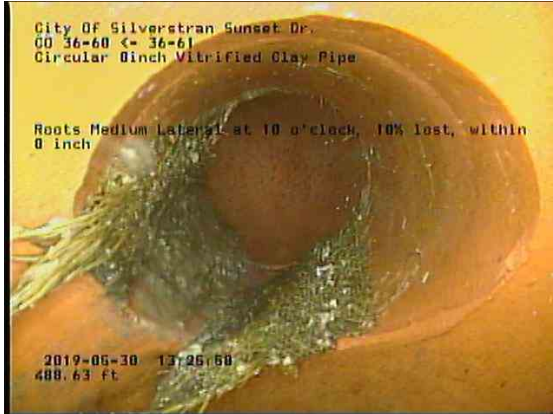


7388aebd-4300-4be8-8fc3-a5ea9f018958_20190530_132810_046.jpg, 00:26:52, 488.62ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



Section Pictures

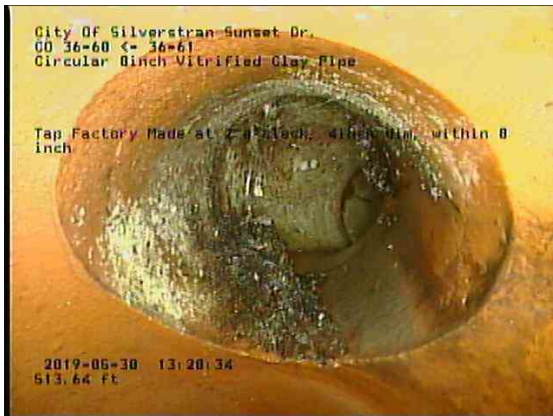
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



e70d7bbd-c3dc-4995-bce7-82a583a2a843_20190530_132833_502.jpg, 00:26:54, 488.63ft
 Roots Medium Lateral at 10 o'clock, 10% lost, within 8 inch



d2426945-55c6-4208-8de4-900754de15f3_20190530_132859_775.jpg, 00:27:14, 491.18ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



8466919e-f88c-42a8-94d0-9eca43d3d583_20190530_133109_215.jpg, 00:29:17, 513.64ft
 Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



61f107ae-63dc-44c0-a5c3-9b284ca2fa3f_20190530_133125_135.jpg, 00:29:20, 513.68ft
 Roots Medium Lateral at 2 o'clock, 5% lost



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstran	Sunset Dr.	5/30/2019		1



f689bf3c-7808-423e-aa57-2ddca0096b46_20190530_133228_231.jpg, 00:29:57, 518.07ft
Cleanout Mainline / CO 36-60



7b36abf1-b42a-42ef-8f17-2785bbd904c4_20190530_133239_801.jpg, 00:29:57, 518.07ft
Cleanout Mainline / CO 36-60



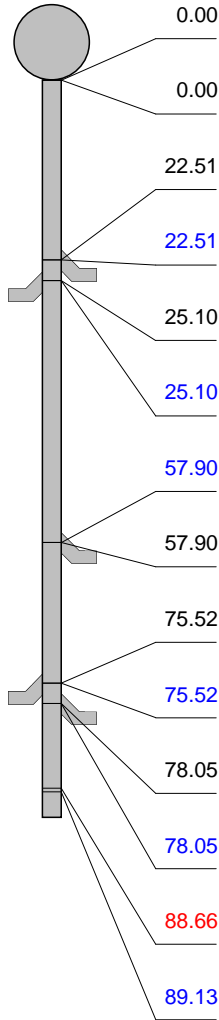
Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 286.4'	Length Surveyed: 286.4'

City: City Of Silverstrand	Drainage Area:	Upstream MH: CO 37-36
Street: Tujunga Ave.	Media Label:	Up Rim to Invert: 0.0
Location Code:	Flow Control:	Downstream MH: 37-37-A
Location Details:	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Sanitary	Total gallons used: 0.0
Pipe size: 8"	Sewer Category: SEC	Joints passed: 0
Pipe material: Vitrified Clay Pipe	Purpose: Routine Assessment	Joints failed: 0
Lining Method:	Owner:	

Additional Info:

1:945	Distance	Code	Observation	Counter	Photo	Grade
37-37-A	0.00	AMH	Manhole / 37-37-A	00:00:01		
	0.00	MWL	Water Level, 5% of the vertical dimension	00:00:09		
	22.51	TF	Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch	00:01:09		
	22.51	RML	Roots Medium Lateral at 10 o'clock, 35% lost, within 8 inch	00:01:12		M3
	25.10	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:01:33		
	25.10	RTL	Roots Tap Lateral at 2 o'clock, 20% of cross sectional area, within 8 inch	00:01:35		M2
	57.90	RBL	Roots Ball Lateral at 11 o'clock, 65% lost, within 8 inch	00:02:57		M4
	57.90	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:03:01		
	75.52	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:03:57		
	75.52	RBL	Roots Ball Lateral at 2 o'clock, 70% lost, within 8 inch	00:04:00		M4
	78.05	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:04:24		
	78.05	RBL	Roots Ball Lateral at 11 o'clock, 60% lost, within 8 inch	00:04:26		M4
	88.66	FH2	Fracture Longitudinal Hinge, 2 from 3 o'clock to 5 o'clock, within 8 inch	00:05:14		S4
	89.13	RTJ	Roots Tap Joint from 3 o'clock to 5 o'clock, 5% of cross sectional area, within 8 inch	00:05:50		M2





Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 286.4'	Length Surveyed: 286.4'

Distance	Code	Observation	Counter	Photo	Grade
1:945					
95.51	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:06:25		
95.51	RBL	Roots Ball Lateral at 1 o'clock, 75% lost, within 8 inch	00:06:28		M4
113.05	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:07:19		
113.05	RBL	Roots Ball Lateral at 1 o'clock, 75% lost, within 8 inch	00:07:27		M4
145.76	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:08:54		
145.76	RTL	Roots Tap Lateral at 11 o'clock, 40% of cross sectional area, within 8 inch	00:08:57		M2
163.38	TF	Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch	00:09:47		
163.38	RTL	Roots Tap Lateral at 1 o'clock, 5% of cross sectional area, within 8 inch	00:09:50		M2
165.83	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:10:10		
165.83	RTL	Roots Tap Lateral at 11 o'clock, 25% of cross sectional area, within 8 inch	00:10:19		M2
193.55	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:11:31		
196.22	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:11:54		
196.22	RFL	Roots Fine Lateral at 2 o'clock	00:11:57		M1
238.61	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:13:52		
246.22	TF	Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch	00:14:30		
253.87	TF	Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch	00:15:07		
253.87	RBL	Roots Ball Lateral at 11 o'clock, 60% lost, within 8 inch	00:15:09		M4
256.60	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:15:33		
256.60	RML	Roots Medium Lateral at 3 o'clock, 20% lost, within 8 inch	00:15:36		M3



Inspection report

Date: 5/28/2019	Work Order:	Weather: Dry	Surveyed By: Kyle Bahensky	Certificate Number: U-0917-07009336	Pipe Segment Ref.:
Year laid:	Pre-cleaning:	Direction: Upstream	Pipe Joint Length:	Total Length: 286.4 '	Length Surveyed: 286.4 '

	Distance	Code	Observation	Counter	Photo	Grade
	258.65	MMC	Material Change, Polyvinyl chloride / 8"	00:15:53		
	283.02	TF	Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch	00:16:54		
	286.42	ACOM	Cleanout Mainline / CO 37-36	00:17:24		

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4100	4632	4.0	41.0	45.0	4.0	2.9	3.0

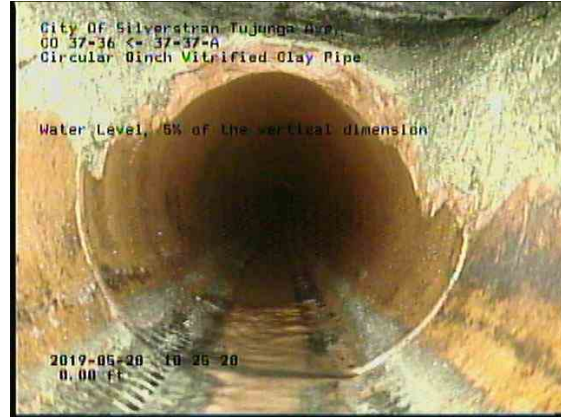


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



3187303d-c90b-43d4-9562-afe4a07ce747_20190528_102733_536.jpg, 00:00:01, 0.00ft
Manhole / 37-37-A



6c2f3615-e8f9-4817-830d-f0f2a213cfe8_20190528_102753_219.jpg, 00:00:09, 0.00ft
Water Level, 5% of the vertical dimension



66fb8795-1478-42b5-906e-71ef41a3488f_20190528_102900_167.jpg, 00:01:09, 22.51ft
Tap Factory Made at 10 o'clock, 4inch dim, within 8 inch



150e1c3d-fa8f-439e-8929-ab8b5f708665_20190528_102918_345.jpg, 00:01:12, 22.51ft
Roots Medium Lateral at 10 o'clock, 35% lost, within 8 inch

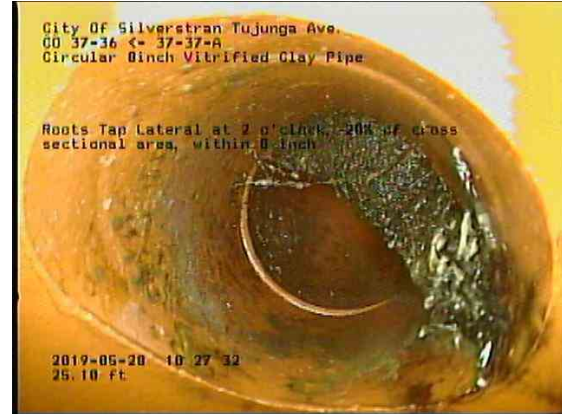


Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



6434f00a-7985-47f4-8500-04e00e7bc849_20190528_102948_595.jpg, 00:01:33, 25.10ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



e6bd23e7-357a-416e-88e3-1f5d4fc50f39_20190528_103005_610.jpg, 00:01:35, 25.10ft
Roots Tap Lateral at 2 o'clock, 20% of cross sectional area, within 8 inch



de9e618e-7430-4cba-8592-b36071f867ae_20190528_103146_829.jpg, 00:02:57, 57.90ft
Roots Ball Lateral at 11 o'clock, 65% lost, within 8 inch



9c552e60-e346-4ca1-98ca-4fd3c9478eb6_20190528_103156_089.jpg, 00:03:01, 57.90ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujungka Ave.	5/28/2019		1



c2f82421-43da-46f3-983f-ec4d492fd609_20190528_103300_469.jpg, 00:03:57, 75.52ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



1eabff86-f80b-478c-bac3-c868169d560c_20190528_103315_110.jpg, 00:04:00, 75.52ft
Roots Ball Lateral at 2 o'clock, 70% lost, within 8 inch



1c4fd1a7-fe72-48bc-a7d4-268d43c293fe_20190528_103347_331.jpg, 00:04:24, 78.05ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



dd394de8-2880-4815-a93b-d8e57e5e5eb6_20190528_10340_614.jpg, 00:04:26, 78.05ft
Roots Ball Lateral at 11 o'clock, 60% lost, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



9be2a238-b5d2-4105-9618-2470546d9554_20190528_103521_938.jpg, 00:05:14, 88.66ft
Fracture Longitudinal Hinge, 2 from 3 o'clock to 5 o'clock, within 8 inch



d55b6651-9f25-4b2e-8ba0-c2e6b7e156d2_20190528_103626_303.jpg, 00:05:50, 89.13ft
Roots Tap Joint from 3 o'clock to 5 o'clock, 5% of cross sectional area, within 8 inch



5a61fbd4-d1a6-4a1b-a303-a33b234e3653_20190528_103704_871.jpg, 00:06:25, 95.51ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



82456bb5-57ff-4ff7-9ae0-a721d61252cd_20190528_103719_326.jpg, 00:06:28, 95.51ft
Roots Ball Lateral at 1 o'clock, 75% lost, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



00c22381-a3cc-4dd3-be0f-041aa5dc904d_20190528_103819_503.jpg, 00:07:19, 113.05ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



4fc087e9-805f-48db-9057-0989b8d64584_20190528_103858_389.jpg, 00:07:27, 113.05ft
Roots Ball Lateral at 1 o'clock, 75% lost, within 8 inch



227c3710-37ad-4fc8-b2ee-7f81a107b7f9_20190528_104034_816.jpg, 00:08:54, 145.76ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



46cd208d-ca34-45ee-beaf-de15ecf82fa8_20190528_104101_398.jpg, 00:08:57, 145.76ft
Roots Tap Lateral at 11 o'clock, 40% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



f911bcff-7f1b-4407-9cb1-e9533e1afd5e_20190528_104200_177.jpg, 00:09:47, 163.38ft
Tap Factory Made at 1 o'clock, 4inch dim, within 8 inch



ec86239c-e105-4f02-a1b6-7bfc38d10381_20190528_104221_152.jpg, 00:09:50, 163.38ft
Roots Tap Lateral at 1 o'clock, 5% of cross sectional area, within 8 inch



259f230c-15c6-4d42-a3d0-dec16efbad22_20190528_104248_954.jpg, 00:10:10, 165.83ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



84292b92-7f95-4627-aeef-7b6b02bc3339_20190528_104324_330.jpg, 00:10:19, 165.83ft
Roots Tap Lateral at 11 o'clock, 25% of cross sectional area, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



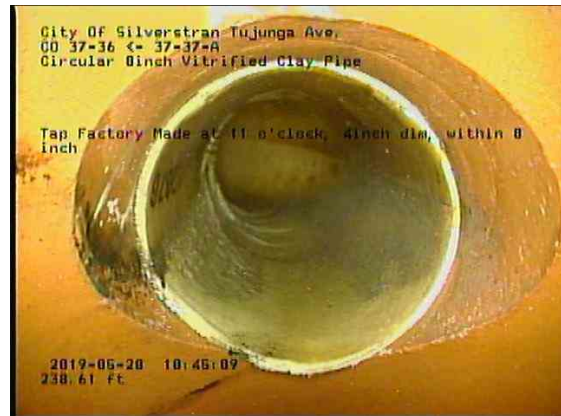
35227d7a-57ef-4e02-bf0c-b969ee44b11_20190528_104442_183.jpg, 00:11:31, 193.55ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



4a034020-cc42-4425-8850-ce657038de72_20190528_104513_143.jpg, 00:11:54, 196.22ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



dd03a388-54a3-4bf5-9bd7-d31b7c3586e0_20190528_104531_161.jpg, 00:11:57, 196.22ft
Roots Fine Lateral at 2 o'clock



2f85d1e0-2020-4dae-aea9-8d8c815d2bb9_20190528_104742_779.jpg, 00:13:52, 238.61ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



Section Pictures

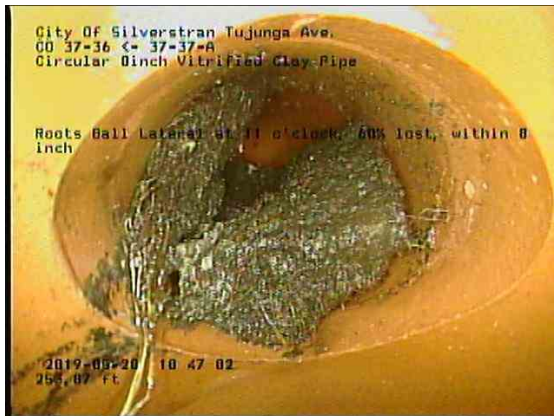
City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



a39a7575-2463-43d1-b3db-ef39731ab5f0_20190528_104830_496.jpg, 00:14:30, 246.22ft
Tap Factory Made at 2 o'clock, 4inch dim, within 8 inch



70465f0e-27f2-428d-a63b-6fd5a3f6aef6_20190528_104920_351.jpg, 00:15:07, 253.87ft
Tap Factory Made at 11 o'clock, 4inch dim, within 8 inch



8e419127-2d50-4e21-8ca2-1a11aca58282_20190528_104935_279.jpg, 00:15:09, 253.87ft
Roots Ball Lateral at 11 o'clock, 60% lost, within 8 inch



54ad9c28-6df1-4a30-a280-b1c99d190a32_20190528_105005_076.jpg, 00:15:33, 256.60ft
Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



Section Pictures

City	Street	Date	Pipe Segment Reference	Nr.
City Of Silverstrand	Tujunga Ave.	5/28/2019		1



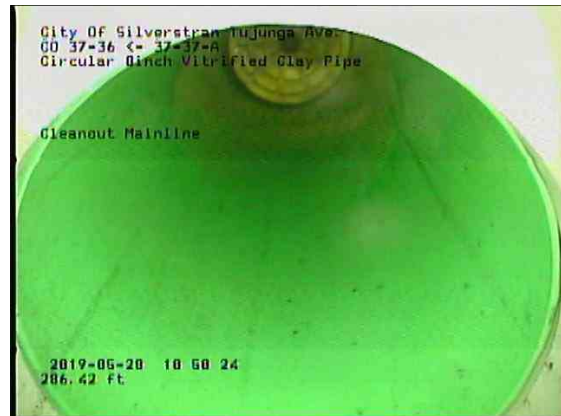
1a1ed1ac-dfe5-4eb1-8727-39ddb803df83_20190528_105024_772.jpg, 00:15:36, 256.60ft
 Roots Medium Lateral at 3 o'clock, 20% lost, within 8 inch



8f57d2ac-fd55-4ccb-b94a-9f62597bfbb3_20190528_105101_705.jpg, 00:15:53, 258.65ft
 Material Change, Polyvinyl chloride / 8"



5ff92bfa-34ba-4b65-ae1-07c6a9332596_20190528_105203_774.jpg, 00:16:54, 283.02ft
 Tap Factory Made at 3 o'clock, 4inch dim, within 8 inch



3f9203a3-ea8d-4555-8fc7-ee20d61f5a75_20190528_105257_791.jpg, 00:17:24, 286.42ft
 Cleanout Mainline / CO 37-36



Node Inspection - 5/14/2019 - 36-83

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-83	City Channel Island	Street [No. & Name] Roosevelt Bl	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 9.90	

Steps

Step Material

Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

Adjustment Ring Material	Adjustment Ring Dia/Length [inch]*	Adjustment Ring Width [inch]*	
		Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)	Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	18.00

Wall

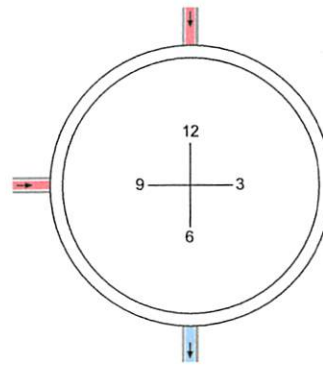
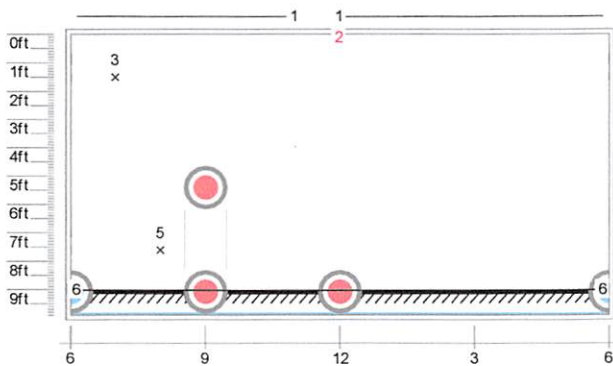
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	60.00

Bench

Bench Height [inch]* 10.00

Channel

Channel Material Vitrified Clay



Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.64	MGO	Reversal Inspection	CLEVER SCAN
2	0.16	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	1.53	CL	Crack Longitudinal at 7 o'clock, within 8 inch	
4	6.12	MGO	General Observation	DROP LATERAL
5	7.64	IS	Infiltration Stain at 8 o'clock, within 8 inch	
6	9.06	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection - 5/14/2019 - 36-83

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-83		City Channel Island	Street [No. & Name] Roosevelt Bl	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.90	

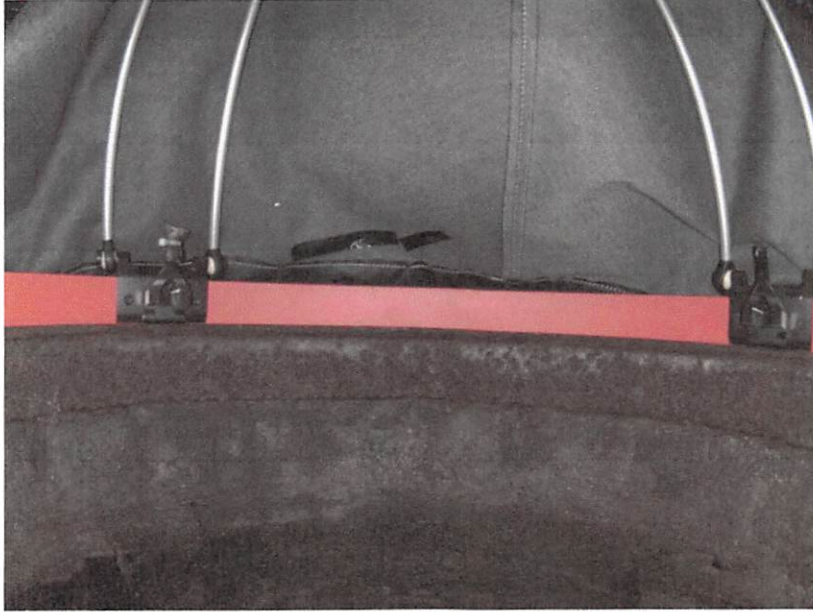
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.90	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	6.20	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	9.90	12	Other	Vitrified Clay Pipe	8	8	



Node Pictures - 5/14/2019 - 36-83

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-83	City Channel Island	Street [No. & Name] Roosevelt Bl	Surveyed By Kyle Bahensky
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37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_eebec65c-2914-41bc-acf7-edcf99a71d67_P12.jpg,
, -0.64
Reversal Inspection



37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_262a9dd1-a25a-4fe9-a0ff-bd526de4f044_P12.jpg,
, 0.16
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures - 5/14/2019 - 36-83

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-83	City Channel Island	Street [No. & Name] Roosevelt Bl	Surveyed By Kyle Bahensky
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37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_ae7c9cc5-c9a6-4e8a-b4a1-aff349d573cc_PI2.jpg,
, 1.53
Crack Longitudinal at 7 o'clock, within 8 inch



37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_3a45adca-c88b-42f1-98a7-9db734b8db86_PI2.jpg,
, 6.12
General Observation



Node Pictures - 5/14/2019 - 36-83

Date [MM/dd/yyyy] 5/14/2019	Manhole Number 36-83	City Channel Island	Street [No. & Name] Roosevelt Bl	Surveyed By Kyle Bahensky
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37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_cceabf30-0668-4f75-8b7e-afd5d7217628_P12.jpg,
, 7.64
Infiltration Stain at 8 o'clock, within 8 inch

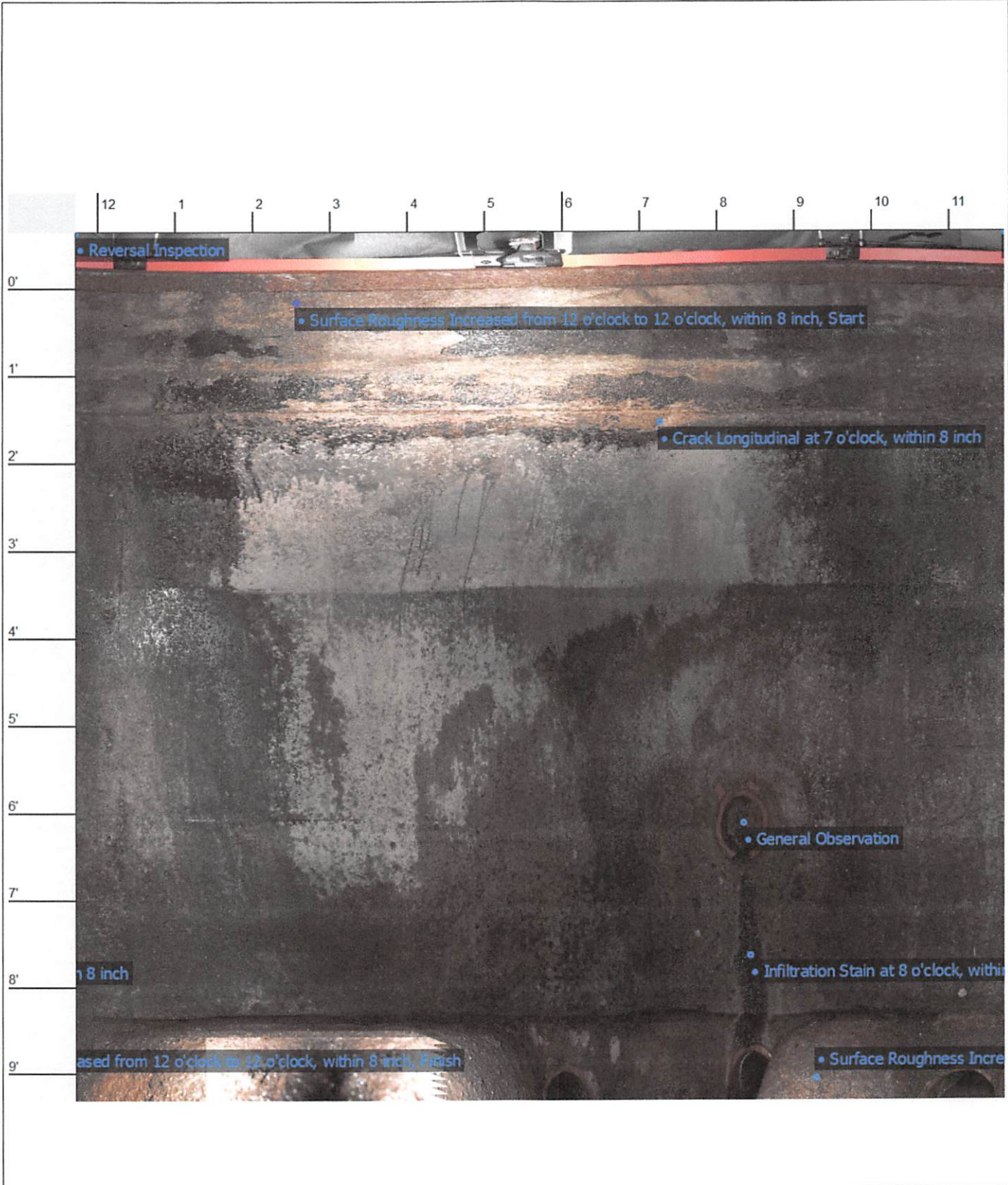


37-68_bc075bf7_3f28_485d_aaf8_7573fec9cbd6_7ffa3598-f871-4d67-9c66-1222b789523f_P12.jpg,
, 9.06
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View - 5/14/2019 - 36-83

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	36-83			



Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-73	City Channel Island	Street [No. & Name] Rossmore Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 8.70	

Steps

				Step Material	
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Cover

Cover Shape	Other	Cover Size [inch]	25.50	Cover Width [inch]	25.50
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)	Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	21.00

Wall

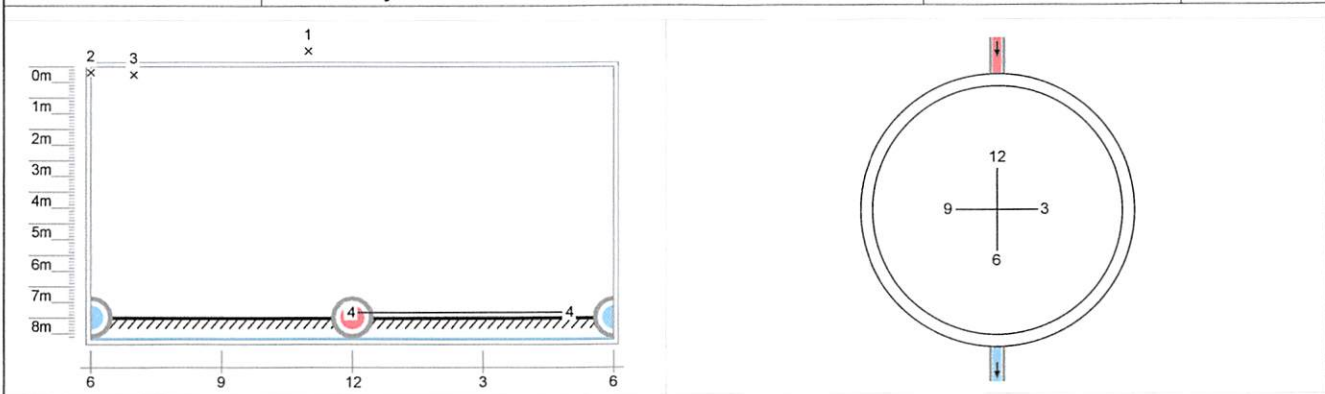
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	48.00
Wall Material	Concrete (reinforced)			Height [inch]*	45.00

Bench

		Bench Height [inch]*	10.00
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Channel

Channel Material	Vitrified Clay
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.53	MGO	Reversal Inspection	CLEVER SCAN
2	0.20	CL	Crack Longitudinal at 6 o'clock, within 8 inch	
3	0.28	CL	Crack Longitudinal at 7 o'clock, within 8 inch	
4	7.82	DSC	Deposits Settled Compacted, 10% of cross sectional area from 12 o'clock to 5 o'clock, within 8 inch	

Entries (In-Outlets)

Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments



Node Inspection

Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-73		City Channel Island	Street [No. & Name] Rossmore Dr	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 8.70	

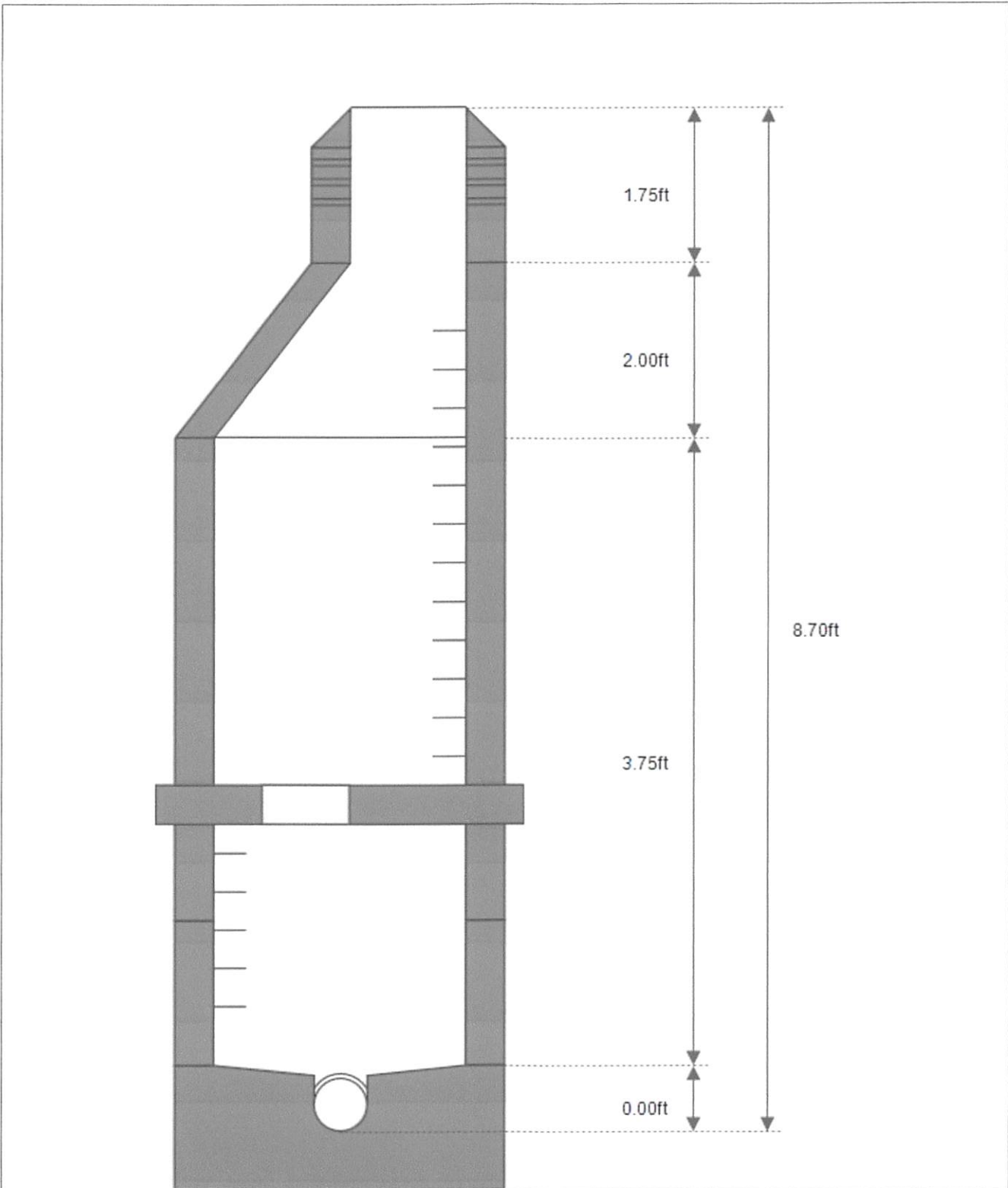
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	8.70	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	8.70	12	Other	Vitrified Clay Pipe	8	8	



Node 2D Sketch

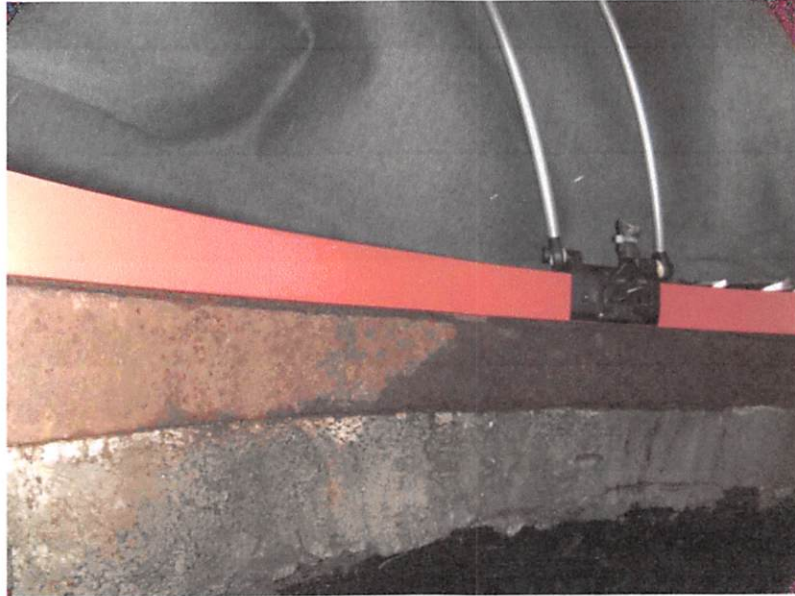
Date [MM/dd/yyyy] 5/15/2019	Manhole Number 37-73	City Channel Island	Street [No. & Name] Rossmore Dr	Surveyed By Kyle Bahensky
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Node Pictures

Date [MM/dd/yyyy]	Manhole Number	City	Street [No. & Name]	Surveyed By
5/15/2019	37-73	Channel Island	Rossmore Dr	Kyle Bahensky



37-71_81c5c894_a2fd_4ca1_827e_284ab3133a40_d3d9fed2-c608-432b-8ea6-c9a0f02ca3a6_P12.jpg,
, -0.53
Reversal Inspection



37-71_81c5c894_a2fd_4ca1_827e_284ab3133a40_07e7144f-d97b-4e5e-9e78-3df7b1b64efd_P12.jpg,
, 0.20
Crack Longitudinal at 6 o'clock, within 8 inch



Node Pictures

Date [MM/dd/yyyy]	Manhole Number	City	Street [No. & Name]	Surveyed By
5/15/2019	37-73	Channel Island	Rossmore Dr	Kyle Bahensky



37-71_81c5c894_a2fd_4ca1_827e_284ab3133a40_6dfab672-5437-488e-b413-6ace9a40e13c_P12.jpg,
, 0.28
Crack Longitudinal at 7 o'clock, within 8 inch

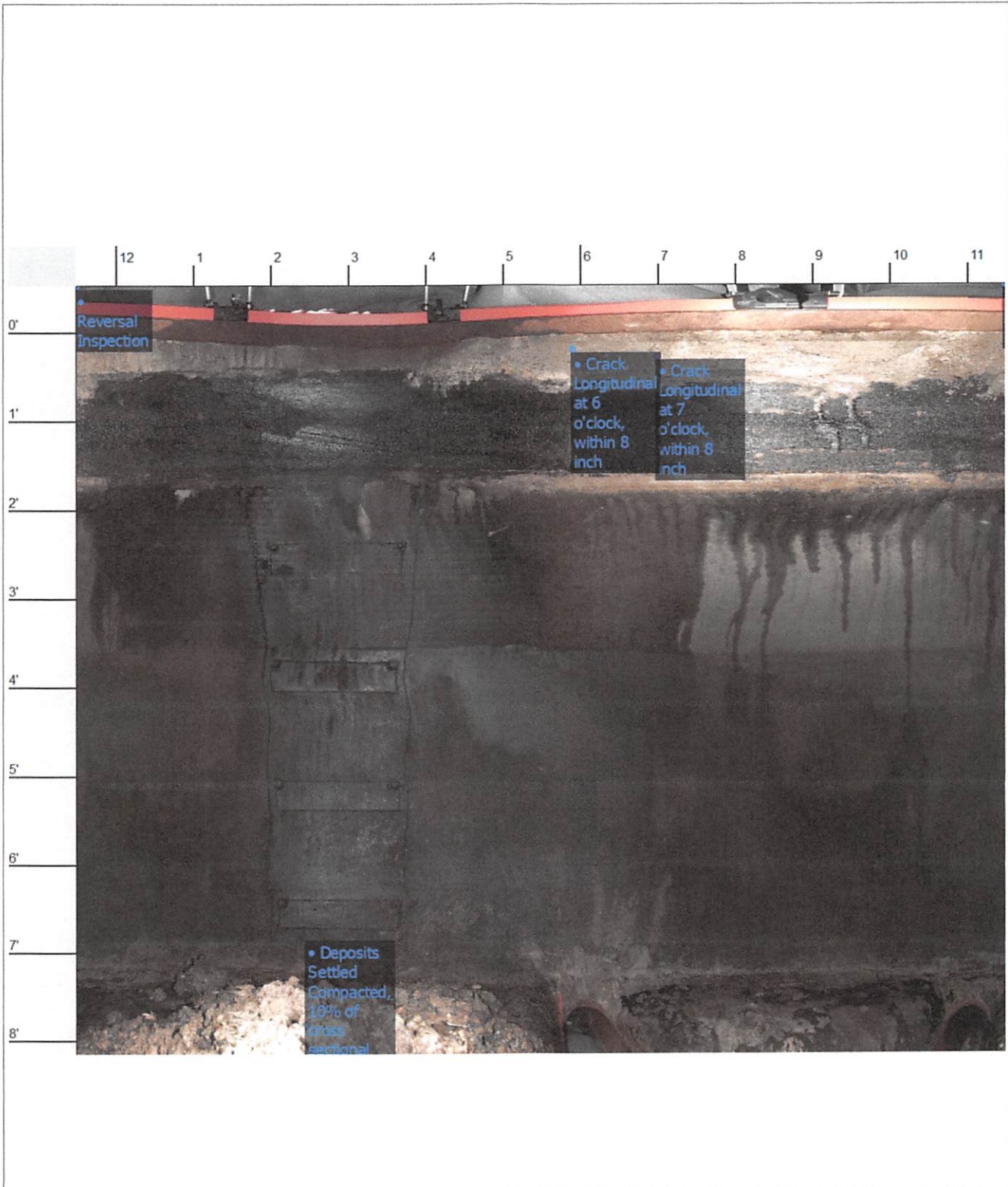


37-71_81c5c894_a2fd_4ca1_827e_284ab3133a40_43f0aef-34a1-4221-94f8-d52b50a16773_P12.jpg,
, 7.82
Deposits Settled Compacted, 10% of cross sectional area from 12 o'clock to 5 o'clock, within
8 inch



Unfolded View

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	37-73			



Node Inspection - 5/13/2019 - 38-07

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-07	City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry		Rim to Invert [ft] 9.00	

Steps

Step Material

Cover

Cover Shape	Other	Cover Size [inch]	26.00	Cover Width [inch]	26.00
Cover Material	Cast Iron				

Adjustment Layer

		Adjustment Ring Dia/Length [inch]*		Adjustment Ring Width [inch]*	
Adjustment Ring Material				Adjustment Ring Height [inch]*	

Cone

Cone Material	Concrete (reinforced)	Height [inch]*	24.00
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Chimney

Chimney Shape*	Circular	Chimney Clear Opening Dia/Length [inch]	24.00	Chimney Width [inch]*	24.00
Chimney Material	Concrete (reinforced)			Chimney Height [inch]*	18.00

Wall

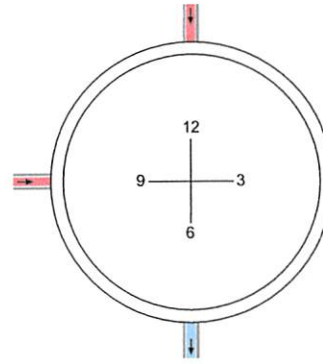
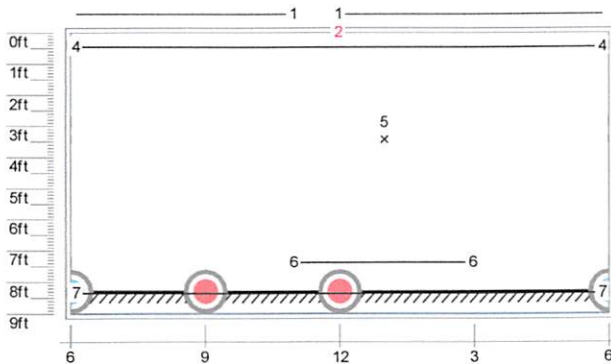
Shape*	Circular	Wall Dia/Length [inch]	48.00	Wall Width [inch]	
Wall Material	Concrete (reinforced)			Height [inch]*	48.00

Bench

Bench Height [inch]* 12.00

Channel

Channel Material	Vitrified Clay
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Observations

No.	Depth	MACP Code	Observation	Remark
1	-0.61	MGO	Reversal Inspection	Clever Scan
2	0.02	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start	
3	0.24	MGO	General Observation	Exposed Brick
4	0.49	CC	Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch	
5	3.43	SRC	Surface Reinforcement Corroded at 1 o'clock, within 8 inch	
6	7.39	OBN	Obstacles Construction Debris, 5% of cross sectional area from 11 o'clock to 3 o'clock	
7	8.39	SRI	Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish	



Node Inspection - 5/13/2019 - 38-07

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-07		City Silverstran	Street [No. & Name] Ocean Dr.	Node No.* 1
Surveyed By Kyle Bahensky	Weather Dry			Rim to Invert [ft] 9.00	

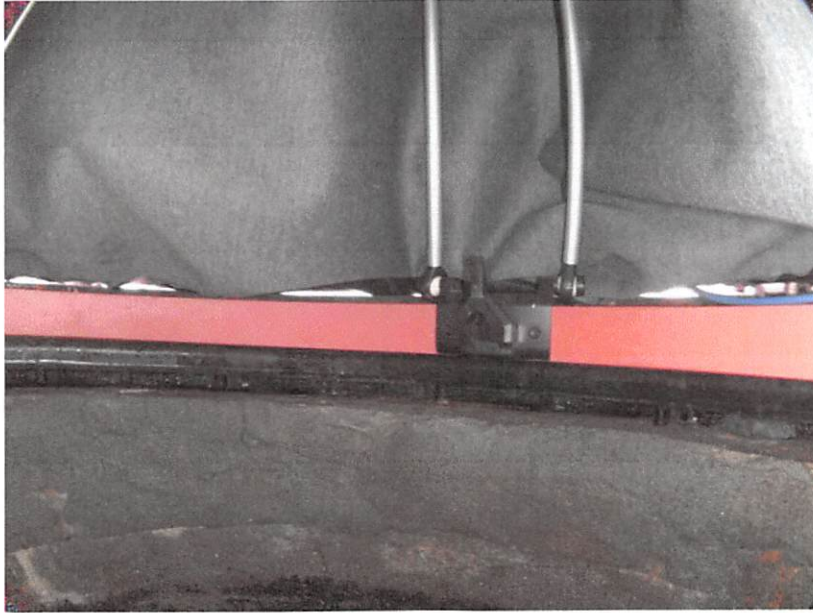
Entries (In-Outlets)

	Type	Depth [ft]	Clock Position	Shape	Material	Dia/Height [inch]	Width [inch]	Comments
1	Outlet	9.00	6	Other	Vitrified Clay Pipe	8	8	
2	Inlet	9.00	9	Other	Vitrified Clay Pipe	8	8	
3	Inlet	9.00	12	Other	Vitrified Clay Pipe	8	8	



Node Pictures - 5/13/2019 - 38-07

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-07	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-07_873817e9_0d4f_495f_ab7e_d928befa0923_e9f0f119-7c69-4926-8e8a-9cac27d6c42b_PI2.jpg,
, -0.61
Reversal Inspection



23-07_873817e9_0d4f_495f_ab7e_d928befa0923_bf0556a2-8c72-4be9-a15a-884ae322adc3_PI2.jpg,
, 0.02
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Start



Node Pictures - 5/13/2019 - 38-07

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-07	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-07_873817e9_0d4f_495f_ab7e_d928befa0923_cbf5d5c-2092-4405-bff8-f7e5d2a5ca91_PI2.jpg,
, 0.24
General Observation



23-07_873817e9_0d4f_495f_ab7e_d928befa0923_6258d4fc-67de-42ed-a17c-88fb8a8373f8_PI2.jpg,
, 0.49
Crack Circumferential from 12 o'clock to 12 o'clock, within 8 inch



Node Pictures - 5/13/2019 - 38-07

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-07	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-07_873817e9_0d4f_495f_ab7e_d928befa0923_7a8a0fdb-be91-4c87-8784-7edc0fca4c73_PI2.jpg,
, 3.43
Surface Reinforcement Corroded at 1 o'clock, within 8 inch



23-07_873817e9_0d4f_495f_ab7e_d928befa0923_c8057a84-4ed7-4e5c-ae3-336a8131aaed_PI2.jpg,
, 7.39
Obstacles Construction Debris, 5% of cross sectional area from 11 o'clock to 3 o'clock



Node Pictures - 5/13/2019 - 38-07

Date [MM/dd/yyyy] 5/13/2019	Manhole Number 38-07	City Silverstran	Street [No. & Name] Ocean Dr.	Surveyed By Kyle Bahensky
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23-07_873817e9_0d4f_495f_ab7e_d928befa0923_11c85630-f555-492c-996a-d47226764506_PL12.jpg,
, 8.39
Surface Roughness Increased from 12 o'clock to 12 o'clock, within 8 inch, Finish



Unfolded View - 5/13/2019 - 38-07

Node No.	Manhole Number	Alternative ID	Work Order	PO Number
1	38-07			

