INVITATION FOR BIDS

FOR CONSTRUCTING

REHABILITATE MATANZAS SIPHONS

CONTRACT NUMBER
C02190

ISSUED BY

CAPITAL PROJECTS ENGINEERING DIVISION

CITY OF SANTA ROSA, CALIFORNIA

2019

Last Updated: March 1, 2016

A T T E N T I O N
Prebid Conference
See Page 1

STATE OF CALIFORNIA

INVITATION FOR BIDS

CONTAINING:

NOTICE TO BIDDERS

SPECIAL PROVISIONS

BID FORMS

CONTRACT

FOR

REHABILITATE MATANZAS SIPHONS

Contract No. C02190

REHABILITATE MATANZAS SIPHONS

TABLE OF CONTENTS

CITY OF SANTA ROSA
STATE OF CALIFORNIA

NOTICE TO BIDDERS

➢	For technical questions regarding this project, contact Tracy Duenas at (707) 543-3952.
➢	For direct access to specifications and planholders' lists, go to **www.srcity.org/bids** and click on Bid/Proposal Opportunities or call (707) 543-3800.
➢	For direct access to bid results, go to **www.srcity.org/bids**. Under Link to Capital Projects, click on Capital Projects Contracts or call (707) 543-3835.

- IMPORTANT -

Bid Acceptance Deadline

Sealed bids will be accepted at the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California 95401 until 2:00 p.m., July 10, 2019, for Rehabilitate Matanzas Siphons, Contract No. C02190. (Engineer's Estimate: $2,001,897.00).

Bids tendered after this deadline will not be accepted. The official time clock for accepting bids will be an electric date and time stamping clock, located in the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California. In order to be accepted, bids must be received prior to 2:00 p.m. Therefore, a bid stamped in at 1:59 p.m. will be accepted, but one delivered at or after 2:00 p.m. is late and will not be accepted.

Pre-Bid Meeting

Prospective bidders, subcontractors, and material suppliers are invited to attend a pre-bid meeting scheduled to be held at 10:00 a.m., July 2, 2019, in the Transportation and Public Works Department located at 69 Stony Circle, Santa Rosa, California.

Subcontractor Information; Department of Industrial Relations Registration

Bidders shall provide the names, business addresses and license numbers of all subcontractors listed on bidder's List of Subcontractors. No contractor or subcontractor may be listed on a bid for this public works project unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for this public works project unless registered with the DIR pursuant to Labor Code section 1725.5. This public works project is subject to compliance monitoring and enforcement by the DIR.

Contract #: **C02190**

Project Title: **REHABILITATE MATANZAS SIPHONS**

Line #	Description	Units	Quantity
1	TRUNK SIPHON STRUCTURE REHABILITATION ALLOWANCE (F)	FA	1
2	MOBILIZATION/DEMOBILIZATION	LS	1
3	TRAFFIC CONTROL	LS	1
4	12" CIPP LINER REHABILITATION - MATANZAS SIPHON	LS	1
5	18" CIPP LINER REHABILITATION - MATANZAS SIPHON	LS	1
6	24" CIPP LINER REHABILITATION - MATANZAS SIPHON	LS	1
7	BYPASS PIPING SYSTEM MATANZAS SIPHON	LS	1
8	BYPASS PUMPING MOBILIZATION AND DEMOBILIZATION - PUMP STA. #1 - MATANZAS SIPHON	LS	1
9	BYPASS PUMPING MOBILIZATION AND DEMOBILIZATION - PUMP STA. #2 AND #3 - MATANZAS SIPHON	LS	1
10	BYPASS PUMPING - PUMP STA. #1 - MATANZAS SIPHON WET WEATHER FLOW OPERATIONAL	MONTH	2
11	BYPASS PUMPING - PUMP STA. #1 - MATANZAS SIPHON WET WEATHER FLOW STAND BY	MONTH	2
12	BYPASS PUMPING - PUMP STA. #1 - MATANZAS SIPHON	MONTH	3
13	BYPASS PUMPING - PUMP STA. #2 AND #3 - MATANZAS SIPHON	MONTH	2

The foregoing quantities are approximate only, being given as a basis for the comparison of bids, and the City of Santa Rosa does not expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, as may be deemed necessary or expedient by the Engineer.

Bids shall be made in accordance with the prevailing hourly rate of per diem wages for this locality and project as determined by the Director of the DIR pursuant to Labor Code sections 1770 *et seq.*

Contractor shall be responsible for compliance with the Immigration Reform Control Act of 1986.

If the project requires the employment of workers in any apprenticeable craft or trade, once awarded, Contractor and subcontractors must apply to the Joint Apprenticeship Council unless already covered by local apprentice standards (see Labor Code section 1777.5).

All bids are to be compared on the basis of the Engineer's estimate of the quantities of work to be performed. No bid will be awarded to a contractor who is not licensed in accordance with the provisions of Chapter 9 of Division 3 of the Business and Professions Code. Contractor must hold a Class A license for this project.

Project special provisions, bid and contract forms for C02190 Rehabilitate Matanzas Siphons may be obtained through PlanetBids at **www.srcity.org/bids**. These documents can no longer be obtained at the Transportation and Public Works Department.

No bid will be accepted unless it is made on the contract bid forms furnished by the Transportation and Public Works Department through PlanetBids. The original of the completed bid forms bearing original signatures must be submitted. A bid will not be accepted unless the bidder registers as a vendor through PlanetBids at **www.srcity.org/bids**, downloads documents/attachments, and is added to the prospective bidders list for this project. If there is an addendum, bidders must log into PlanetBids and acknowledge the addendum to be eligible for bidding.

The successful bidder will be required to hold a current City of Santa Rosa business tax certificate issued pursuant to Chapter 6.04 of the Santa Rosa City Code before commencing work on this project. For information regarding the business tax, contact Revenue and Collections at (707) 543-3170.

For any moneys earned by Contractor and withheld by the City of Santa Rosa to ensure the performance of the Contract, Contractor may, at its request and expense, substitute securities equivalent to the amount withheld in the form and manner and subject to the conditions provided in Section 22300 of the California Public Contract Code.

The City of Santa Rosa reserves the right to reject any or all bids and the right to waive minor irregularities or informalities in any bid or bonds.

LORI URBANEK
Deputy Director, Capital Projects Engineering

6/24/19
Date

SPECIAL PROVISIONS

General Specifications

CITY OF SANTA ROSA, CALIFORNIA

REHABILITATE MATANZAS SIPHONS

1 GENERAL

The work described herein shall be done in accordance with the "Contract Documents," which are the:

1. Special Provisions
2. Project Exhibits, consisting of three (3) sheets entitled Rehabilitate Matanzas Siphons, City file #2019-0027
3. City of Santa Rosa Design and Construction Standards (City Standards)
4. City of Santa Rosa Construction Specifications for Public improvements (City Specifications)
5. State of California Department of Transportation Standard Specifications 2010 (Standard Specifications), and
6. State of California Department of Transportation Standard Plans 2010 (Standard Plans).

In the event of a conflict in any of these documents, the order of precedence shall be determined by Section 5-1.02 of these Special Provisions.

Whenever the Standard Specifications use the terms State of California, Department of Transportation, Director, Engineer, or Laboratory, the following terms shall be substituted therefor, and any reference to any of the foregoing terms shall be understood and interpreted to mean and refer to such substituted terms as follows:

For State of California - the City of Santa Rosa;

For Department - the City of Santa Rosa Department of Transportation and Public Works or the City of Santa Rosa Water Department;

For Director - the City Engineer of the City of Santa Rosa;

For Engineer - the City Engineer of the City of Santa Rosa or the City Engineer's authorized agents;

For Laboratory – Materials Engineering of the City of Santa Rosa Water Department, or such other laboratory as may be authorized by the City.

Unless otherwise provided, whenever in these Special Provisions attention is directed to specific provisions in the Standard Specifications, such direction shall not be interpreted as excluding other applicable provisions of the Standard Specifications.

Unless otherwise provided, when sections and subsections of the Standard Specifications are used in these Special Provisions, such use is not exclusive and shall not be interpreted as excluding other applicable provisions of said sections and subsections but is only intended to add to or modify such sections or subsections.

Unless otherwise provided, full compensation for compliance with these Special Provisions is included in the contract price and no additional allowance will be made to Contractor therefor.
The Standard Specifications are hereby modified to delete any reference or incorporation of provisions providing for or requiring arbitration of any and all claims and disputes arising under this contract.

2 BIDDING

2-1.06 Bid Documents: Prospective bidders will be furnished with an Invitation for Bids which will state the location and description of the contemplated public works project and will show the approximate estimate of the various quantities and kinds of work to be performed and materials to be furnished with a schedule of items for which unit prices are requested.

2-1.07 Approximate Estimate: The quantities given in the Contract Documents are approximate only, being given as a basis for the comparison of bids, and the City does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or part of the work or to omit parts of the work, as may be deemed necessary or advisable by the Engineer.

2-1.31 Examination of Project Plans, Specifications, City Standards, Invitation for Bids and Work Site: Prior to submitting a bid, the bidder shall carefully examine the Project Exhibits, Invitation for Bids, City Standards and the proposed work site. If any person contemplating submitting a bid for this public works project is in doubt as to the meaning of any part of the Contract Documents or finds discrepancies in or omissions from the Contract Documents, he or she may submit a written request for interpretation or correction to the Engineer. The written request must be received by the Engineer a minimum of **96** hours prior to bid opening. Any interpretation or correction of the Contract Documents prior to bid opening will be made only by written addendum issued by the City. Notification of addenda will be handled through PlanetBids: the listed primary contact will receive an e-mail generated by PlanetBids informing them of a recently uploaded addendum. The City will not be bound by any other explanations or interpretations of the Contract Documents.

2-1.33 Bid Document Completion: Any references to Opt Out of Payment Adjustments for Price Index Fluctuations in the Standard Specifications are deleted in their entirety.

2-1.33A Bid Forms: All bids shall be made on bid forms obtained from PlanetBids at **www.srcity.org/bids**. The bidder shall submit its bid on the original bid forms furnished by the City. Bids submitted on forms other than the forms furnished to the bidder by the City will not be considered.

The bid forms to be submitted at the time of and with the bid are:

1. Unit Price Schedule
2. List of Subcontractors
3. List of Previous Similar Jobs
4. Noncollusion Declaration
5. Bid Guaranty Information and Bidder's Information and Signature
6. Bid Guaranty (Bid Bond or alternate security)

All bids shall give the proposed prices and must bear the original signature of the bidder. Bidders shall fill in all blanks on the bid forms where required. A bid will not be accepted unless the bidder registers as a vendor through PlanetBids at **www.srcity.org/bids**, downloads documents/attachments, and is added to the prospective bidders list for this project. If there is an addendum, bidders must log into PlanetBids and acknowledge the addendum to be eligible for bidding.

2-1.33B Registration with DIR: No contractor or subcontractor may be listed on a bid for this public works project unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for this public works project unless registered with the DIR pursuant to Labor Code section 1725.5. This public works project is subject to compliance monitoring and enforcement by the DIR.

2-1.33C Subcontractors: The Subletting and Subcontracting Fair Practices Act, Public Contract Code sections 4100-4113, inclusive (the "Act") shall apply to all subcontracts in excess of one-half of one percent of the total amount of a bid. The Act requires subcontractors, if used for such work, to be listed in the contractor's bid and prohibits the substitution of subcontractors, except as authorized by the Act. Each bidder shall, with respect to the work of any subcontractor in excess of one-half of one percent of the total amount of the bid, include as part of the bid on the bid form provided:

1. The name, business address and DIR registration number of each subcontractor who will perform work or labor or render services to the Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Project Plans or other Contract Documents in an amount in excess of one-half of one percent of the Contractor's total bid; and
2. The portion of the work that will be done by each subcontractor. Only one subcontractor shall be listed for each portion.

The purchase of sand, gravel, crushed rock, batched concrete, aggregate, ready-mixed concrete, and/or any other materials produced and furnished by established and recognized commercial plants, together with the delivery of such materials to the work site by the source of the materials or by recognized commercial hauling companies, is not considered as subcontracting under this section.

2-1.33E Rejection of Bids Containing Alterations, Erasures or Irregularities: Bids may be rejected if they show any alterations of forms, additions not called for, conditional bids, incomplete bids, erasures or irregularities of any kind.

2-1.34 Bid Guaranty: All bids shall be presented under sealed cover and shall be accompanied by cash, cashier's or certified check, or by a bidder's bond made payable to the City of Santa Rosa and executed as surety by a corporate surety authorized and admitted to transact a surety business in the State of California in an amount equal to ten percent of the amount of the bid. No bid shall be considered unless such cash, cashiers or certified check, or bidder's bond is enclosed with the bid. Any bidder's bond shall contain provisions for forfeiture consistent with California Public Contract Code section 20172.

2-1.36 Contractor Safety Program Qualification Requirements: In accordance with Sections 20162, 20783 and 20803 of the California Public Contract Code, the following safety qualification guidelines shall be used to determine the responsible Bidder. For a Bidder to be considered responsible with regard to their safety record and for the Bidder's bid to be considered valid, the Bidder shall meet at least two of the three minimum safety standards as specified in paragraphs 2-1.36A through 2-1.36C hereinafter. Bidder shall submit the appropriate forms included herein as part of the bid to demonstrate the Bidder's safety qualifications.

2-1.36A Experience Modification Rate (EMR): Experience modification rates are calculated by the insurance industry as a way to determine equitable workers' compensation insurance premiums. It is calculated as a three-year moving average. Due to the particular safety hazards inherent in working in a wastewater collection, handling, treatment and/or disposal environment, the Engineer has deemed it necessary that a Bidder shall have a current three-year average (as described in forms herein) EMR of **1.0** or lower to satisfy this safety standard.

2-1.36B Recordable Incident Rate (RIR): The RIR is a measure of the frequency of injuries and is a measure of all occupational injuries and illnesses that occur within an organization. It is calculated from the OSHA Log 300 form. Due to the particular safety hazards inherent in working in a wastewater collection, handling, treatment and/or disposal environment, the Engineer has deemed it necessary that a Bidder shall have a current three-year average (as described in forms herein) RIR of **3.0** or lower to satisfy this safety standard.

2-1.36C Lost Time Incident Rate: The LTIR is an indicator of the severity of a company's occupational injuries. The LTIR deals only with incidents that result in lost work time. Like the RIR, the information needed to calculate the LTIR is derived OSHA Log 300 form. Due to the particular safety hazards inherent in working in a wastewater collection, handling, treatment and/or disposal environment, the Engineer has deemed it necessary that a Bidder shall have a current three-year average (as described in forms herein) LTIR of **1.1** or lower to satisfy this safety standard.

2-1.40 Withdrawal of Bid: A bid may be withdrawn prior to, but not after, the hour fixed in the public notice for the opening of bids, provided that a written request to withdraw the bid, executed by the bidder or the bidder's authorized representative, is filed with the Engineer before this deadline. The withdrawal of a bid shall not prejudice the right of a bidder to submit a new bid.

2-1.43 Public Opening of Bids: Bids will be opened and read publicly at the time and place indicated in the Notice to Bidders. Bidders or their authorized agents are invited to be present.

2-1.46 Disqualification of Bidders: Serial bids from the same bidder will not be accepted. This section shall not be interpreted to mean that the same contractor may not be the contractor in one bid and listed as a subcontractor in another bid, provided that no collusion exists.

2-1.48 Competency of Bidders: No bid will be accepted from or contract awarded to a contractor that is not licensed in accordance with the law, that does not hold a license qualifying it to perform work under this contract, to whom a bid form has not been issued by the Engineer, or that has not successfully completed projects of similar character, scope and cost to the proposed project. Bidders will be required to provide a list of previous similar jobs with their bids.

3 CONTRACT AWARD AND EXECUTION

3-1.04 Contract Award: The City reserves the right to reject any or all bids. Bids are required for the entire work described herein. All bids will be compared with the Engineer's estimate of the quantities of work to be completed. Contract award, if any, will be made to the lowest responsible bidder within sixty days from the date bids are opened.

This project is anticipated to be awarded July 18, 2019.

3-1.05 Contract Bonds: Within ten days after receipt of the Notice of Award, the successful bidder shall provide the following bonds to the City:

a. Performance Bond: A performance bond to guarantee the faithful performance of the terms and conditions of the Contract by Contractor, which shall be executed in a sum of not less than one-half of the Contract price;
b. Labor and Materials Bond: A labor and materials bond (payment bond) in accordance with Part 6 of Division 4, sections 8000 *et seq*. of the California Civil Code, to guarantee against any and all claims of subcontractors or other third parties furnishing labor, materials, or supplies for the Contract, which shall be executed in a sum of 100% of the Contract price; and
c. Material Guaranty Bond: A material guaranty bond (warranty bond) to serve as surety for the guarantee requirements outlined in Section 6-3.01B, which shall be executed in a sum of not less than one-half of the Contract price.

The bond(s) shall be provided in a form acceptable to the City and issued by a corporate surety in good financial standing and authorized and admitted to transact a surety business in the state of California for the purposes and in the amount(s) stated above.

Whenever the financial or legal status of any surety on any such bond(s) is/are unacceptable to the City, it may make a demand to Contractor for further bond(s) or additional surety, not exceeding the sums originally required. Thereafter, no payment shall be made upon the Contract to Contractor or any assignees of Contractor until such bond(s) or additional surety has/have been provided to the City.

3-1.07 Indemnification and Insurance: Indemnification: Contractor shall defend, hold harmless and indemnify City, its officers, agents and employees, and each and every one of them, from and against any and all actions, damages, costs, liabilities, claims, demands, losses, judgments, penalties, costs and expenses of every type and description, including, but not limited to, any fees and/or costs reasonably incurred by City's staff attorneys or outside attorneys and any fees and expenses incurred in enforcing this provision (hereafter collectively referred to as "Liabilities"), including but not limited to Liabilities arising from personal injury or death; damage to personal, real or intellectual property or the environment; contractual or other economic damages, or regulatory penalties, arising out of or in any way connected with the performance of or the failure to perform the Contract by Contractor, any subcontractor or agent, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, whether or not such Liabilities are caused in part by a party indemnified hereunder, or such Liabilities are litigated, settled or reduced to judgment; provided, that the foregoing indemnity does not apply to liability for any damage or expense for death or bodily injury to persons or damage to property to the extent arising from (i) the sole negligence, or willful misconduct of, or defects in design furnished by City, its agents, servants, or independent contractors who are directly responsible to City (excluding Contractor), or (ii) the active negligence of City.

The existence of any of the insurance policies or coverages described in this Contract shall not affect or limit any of City's rights hereunder, nor shall the limits of such insurance limit Contractor's liability to the City hereunder. The provisions of this section shall survive any expiration or termination of the Contract.

Insurance: Contractor shall maintain in full force and effect all of the insurance coverage described in and in accordance with the insurance requirements set forth below. Maintenance of such insurance coverage during the entire performance of the Contract is a material element of the Contract. Failure by Contractor to (i) maintain or renew coverage, (ii) provide notice of any changes, modifications, or reductions in coverage, or (iii) provide evidence of renewal, if necessary, may be deemed a material breach of the Contract by Contractor, whereas the City shall be entitled to all rights and remedies at law or in equity. Notwithstanding the foregoing, any failure by Contractor to maintain required insurance coverage shall not excuse or alleviate Contractor from any of its other duties or obligations under the Contract. In the event Contractor retains or utilizes any subcontractors or sub-consultants in performance of the work, Contractor shall assure that any such subcontractor has first obtained, and shall maintain, all of the insurance coverage requirements herein set forth below.

Insurance Requirements:

A. Insurance Policies: Contractor shall maintain and keep in full force and effect, the following policies of insurance with minimum coverage as indicated below and issued by insurers with an AM Best rating of no less than A-:VI or a rating otherwise acceptable to the City.

	Insurance	Minimum Coverage Limits	Additional Coverage Requirements
1.	Commercial general liability	$5 million per occurrence $5 million aggregate	Coverage must be at least as broad as ISO CG 00 01 and must include products liability and completed operations coverage which shall continue for a period of three years after acceptance of the work by the City. If insurance applies separately to a project/location, aggregate may be equal to per occurrence amount. Coverage may be met by a combination of primary and umbrella or excess insurance but umbrella and excess shall provide coverage at least as broad as specified for underlying coverage. Completed Operations Coverage can be provided in the form of an endorsement to Contractor's insurance (at least as broad as ISO Form CG 20 37 04 13. See endorsements below for other Additional Insured Requirements. Coverage shall not exclude subsidence.
2.	Business auto coverage	$3 million	Coverage at least as broad as ISO Form Number CA 00 01 covering any auto (Code 1). Insurance shall cover owned, non-owned and hired autos.
3.	Workers' compensation and Employer's Liability	$1 million	As required by the State of California, with Statutory Limits and Employer's Liability Insurance with limit of no less than $1 million per accident for bodily injury or disease. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City for all work performed by Contractor, its employees, agents and subcontractors.
4.	Contractor's pollution legal liability and/or asbestos legal liability and/or errors and omission	$1 million per occurrence or claim $2 million aggregate	If the work involves lead-based paint or asbestos identification/remediation, the pollution liability policy must not contain lead-based paint or asbestos exclusions. If the work involves mold identification, the pollution liability policy must not contain a mold exclusion and a definition of "Pollution" in said policy shall include microbial matter including mold.

B. Endorsements:

1. All policies shall provide or be endorsed to provide that coverage shall not be canceled by either party, except after prior written notice has been provided to the City in accordance with the policy provisions.
2. Liability policies shall provide or be endorsed to provide the following:
   a. For any claims related to this Contract, Contractor's insurance coverage shall be primary and any insurance or self-insurance maintained by City shall be in excess of Contractor's insurance and shall not contribute with it. Endorsements at least as broad as 20 01 04 13 or evidence of policy language will be required in non ISO CGL policies.
   b. **The City of Santa Rosa, its officers, agents and employees are to be covered as additional insureds on the CGL policy**. Additional Insured Endorsements at least as broad as 20 10 04 13 or 20 38 04 13 are required.

C. Verification of Coverage and Certificates of Insurance: Contractor shall furnish City with original certificates and endorsements effecting coverage required above. Certificates and endorsements shall make reference to policy numbers. All certificates and endorsements are to be received and approved by the City before work commences and must be in effect for the duration of the Contract. The City reserves the right to require complete copies of all required policies and endorsements during the duration of the Contract and for a period of three years following City's acceptance of the work.

D. Other Insurance Provisions:

1. No policy required by this Contract shall prohibit Contractor from waiving any right of recovery prior to loss. Contractor hereby waives such right with regard to the indemnitees.
2. All insurance coverage amounts provided by Contractor and available or applicable to this Contract are intended to apply to the full extent of the policies. Nothing contained in this Contract limits the application of such insurance coverage. Coverage for an additional insured shall NOT be limited to the insured's vicarious liability. Defense costs must be paid in addition to coverage amounts.
3. Self-insured retentions above $10,000 must be approved by the City. At the City's option, Contractor may be required to provide financial guarantees.
4. City reserves the right to modify these insurance requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

3-1.18 Contract Execution: The fully executed Contract, original bonds and insurance certificates and endorsements required under the Contract shall be delivered to the City within ten calendar days of Contractor's receipt of the Notice of Award.

The Engineer will supply Contractor with up to ten sets of the Invitation for Bids and Project Plans. At least one complete set of the Invitation for Bids and Project Plans shall be kept at the construction site in good condition and made available to the Engineer at all times. Additional copies of the Invitation for Bids and Project Plans will be provided by the Engineer at Contractor's cost.

3-1.20 Failure to Execute Contract: Contractor's failure to deliver to the City the fully executed Contract within ten calendar days of Contractor's receipt of the Notice of Award shall be cause for the cancellation of the award and the forfeiture of the bid guaranty to the City. If the successful bidder refuses or fails to execute the Contract, the City may award the Contract to the second lowest responsible bidder. If the second lowest responsible bidder refuses or fails to execute the Contract, the City may award the Contract to the third lowest responsible bidder. The refusal or failure by the second or third lowest responsible bidder to deliver to the City the fully executed

Contract within ten calendar days of receipt of the Notice of Award to the respective bidder shall likewise be cause for the cancellation of the award and the forfeiture of the bid guaranty of the respective bidder. In its discretion, the City may then re-advertise the project or construct it by day labor.

3-1.21 Return of Bid Guarantees: Within ten days after the opening of bids, the City will return the bid guarantees to all bidders except the three lowest responsible bidders. The bid guarantees of the three lowest responsible bidders will be retained until the Contract has been fully executed. In the event all bids are rejected, all bid guarantees will be returned to the respective bidders.

3-1.22 Subcontractors: The successful bidder shall furnish a list of all subcontractors as required under Sections 2-1.33C. The list shall include the name, business address, DIR registration number and the state contractor's license number of each subcontractor on the list and the names of the responsible managing employees whose names appear on the subcontractors' licenses.

4 SCOPE OF WORK

4-1.03 Work Description: Contractor shall be advised the intent of the Contract is to rehabilitate existing siphons and siphon structures exhibiting varying levels a deterioration. The Contract has the following generally defined scope of work, ranked both in priority and order of work:

1. Installation of a temporary sewer bypass distribution system.
   - The contractor is expected to install a sewer bypass distribution system capable of conveying peak wet weather flows (PWWF). These temporary improvements provide the City a contingency bypass system in the event of failure of the existing siphon system during Winter 2020. In the event of failure, the City will direct the Contractor to both mobilize and operate a functioning bypass pumping system in conjunction with repair efforts. Reference Section 130-02-3.01 for payment.

2. CIPP rehabilitation of Matanzas trunk siphons.
   - Operations will **not** occur during PWWF conditions due to the inherent risks associated with high sewer flows. In the event work is suspended during CIPP operations (assumed upon completion of a particular liner), the City will direct the Contractor to demobilize bypass pumping system. Reference Section 8-1.05 Time 'CIPP Rehabilitation of Trunk Siphon' and Section 130-02-3.01 for payment.

3. Rehabilitation of Matanzas trunk siphon structures.
   - A condition assessment of the trunk siphon structures will be performed by a third party, concurrent with CIPP 'Site Review' operations (referenced Section 130-01-3.02 Existing Conditions). The City will direct the Contractor to both mobilize and operate a functioning bypass pumping system in conjunction with repair efforts. Reference Section 4-1.05.1, Section 8-1.05 Time 'CIPP Rehabilitation of Trunk Siphon' and 'Rehabilitation of Trunk Siphon Structures'.

4-1.05 Changes and Extra Work: All changes to the Contract shall be made by written change order only.

All extra work shall be recorded by Contractor on a daily report signed by both the City and Contractor. The "daily reports" shall thereafter be considered the true record of extra work performed. A copy of the daily reports will be furnished to Contractor. Contractor is directed to Section 9-1.04 of this Invitation for Bids.

4-1.05.1 Trunk Siphon Structure Extra Work: The Engineer will direct the Contractor to perform rehabilitation efforts pursuant to the findings of the condition assessment, as described above. Reference Section 8-1.05 Time 'Rehabilitation of Trunk Siphon Structures', and Section 130-02-3.01 for payment for the required bypass pumping system.

Trunk Siphon Structure Rehabilitation Allowance shall be paid for on a **Force Account (FA)** basis, and no additional allowance will be made therefor. The estimated cost designated by the City on a Force Account basis is noted in the Bid Schedule as Trunk Siphon Structure Rehabilitation Allowance.

4-1.05C Compensation for Altered Quantities: Payment and compensation for altered quantities shall conform to the provisions of Section 9-1.06 of the Standard Specifications, except as modified herein.

5 CONTROL OF WORK

5-1.02 Contractor's Copies of Contract Documents: In the event of a conflict in any of the Contract Documents, the order of precedence from highest to lowest shall be as follows:

1. Special Provisions
2. Project Exhibits, consisting of three (3) sheets entitled Rehabilitate Matanzas Siphons, City file #2019-0027
3. City Standards
4. City Specifications
5. Standard Specifications
6. Standard Plans

5-1.05 Order of Work: The work as shown on the Project Exhibits and as specified in the Invitation for Bids shall be constructed in a sequence that is satisfactory to and approved by the Engineer.

Contractor is directed with the following sequential order of work:

1. Installation of a temporary sewer bypass distribution system.
2. CIPP rehabilitation of Matanzas trunk siphons.
3. Rehabilitation of Matanzas trunk siphon structures.

Contractor shall prepare a work schedule per Section 8-1.02 of the Standard Specifications and in accordance with this Section.

Except for trenching, all existing street, street light base, curb and gutter, storm drain, water line, and sewer line work shall be completed before any existing street paving is removed.

Full compensation for the conformance to the requirements of this section is included in the Contract price and no additional allowance will be made to Contractor for this work.

5-1.17 Character of Workers: Contractor is directed to Section 5-1.17 of the Standard Specifications which states:

> "If any subcontractor or person employed by the Contractor shall appear to the Engineer to be incompetent or to act in a disorderly or improper manner, he shall be discharged immediately on the request of the Engineer, and such person shall not again be employed on the work."

No additional compensation shall be granted to Contractor in the event City exercises any part of its rights under this section and any and all costs related to such exercise shall be borne by Contractor.

5-1.20 Cooperation with Other Entities: Attention is directed to Section 5-1.20 of the Standard Specifications.

Other construction including but not limited to utility, power, and pipe line relocation, may be in progress by other forces within and adjacent to the project area at the same time work is being performed under this Contract by Contractor.

Contractor shall cooperate with the forces performing other work, to the end that such forces may conduct their operations with as little inconvenience and delay as possible. Contractor shall grant such forces access to the project area as is reasonable and necessary to transport materials and equipment to the site of operations by the other forces.

5-1.20B(4)(a) Offsite Staging Areas and Construction Yards: Attention is directed to Santa Rosa City Code section 20-52.040, Temporary Use Permit.

A Temporary Use Permit shall be obtained for any offsite construction yard on private property to be used for any of the following:

a. Stockpiling of equipment and/or materials;
b. Staging of construction;
c. Placement of work trailers or mobile offices;
d. Storage of trench spoils; or
e. Other construction related activities not specifically enumerated above.

5-1.26 Lines and Grades: Contractor shall carefully preserve all bench marks, grade stakes, and all other survey markers. In the case of willful or careless destruction, Contractor shall bear the cost of replacing the markers.

Contractor shall contact the Engineer directly for coordination of survey staking. Written staking requests must be submitted at least two working days in advance of the date and time stakes are needed.

5-1.27B Examination and Audit: Pursuant to California Government Code section 8546.7, any contract with the City involving expenditures in excess of $10,000 shall be subject to the examination and audit of the California State Auditor for a period of three years after final payment is made to Contractor by City under this Contract. Any such examination and audit will be confined to those matters connected with the performance of this Contract.

5-1.30A Inspection: Contractor shall bear all costs associated with the re-inspection of any defective, rejected or unauthorized work as determined by the Engineer in Engineer's sole discretion. Such costs of re-inspection, including any costs incurred by the City for additional staff time or fees for third-party consultant inspectors, will be deducted from one or more progress payments hereunder.

5-1.36A Property and Facility Preservation: Attention is directed to Section 5-1.36 of the Standard Specifications.

At Contractor's sole expense, all fences, gates, landscaping, drainage ditches, sidewalks, irrigation systems, and any other improvements that are damaged, removed or destroyed because of Contractor's operations, shall be replaced in accordance with City Standards at a minimum and restored to the same or better condition. Concrete surface treatment and score marks shall match adjacent existing concrete improvements.

5-1.36E Obstructions: Attention is directed to Section 5-1.36 of the Standard Specifications and to the possible existence of underground gas mains, high voltage lines, telephone ducts, storm drains and water and sewers systems, the locations of which are not shown on the Project Exhibits. The determination of the location of these facilities and the cost of repair or replacement in the event of damage to such facilities are the sole responsibility of Contractor.

Should Contractor alter any public utility or private improvements to facilitate its operations or for its sole benefit, which alteration would not be otherwise required, Contractor shall make whatever arrangements are necessary with the owner or controlling authorities and shall bear all expenses in connection therewith. Any damages to any public utility or private improvement caused by Contractor shall be repaired by Contractor at its sole expense and to the full satisfaction of the Engineer or the controlling authority.

Any subsurface information and data furnished under any part of this Contract are not intended as a representation or warranty but are furnished for information only. It is expressly understood that the City will not be responsible for the accuracy thereof or for any deduction, interpretation or conclusion drawn therefrom by Contractor. The information is made available so that Contractor may have ready access to the same information available to the City and is not part of this Contract.

PRIOR TO STARTING ANY EXCAVATION, CONTRACTOR SHALL (AT LEAST TWO WORKING DAYS IN ADVANCE) CALL UNDERGROUND SERVICE ALERT (USA) toll free at (800) 227-2600

and provide USA with all necessary data relative to the proposed excavation. USA will accept calls and process information to participating agencies who have underground facilities in the area between the hours of 7:30 a.m. and 5:00 p.m. daily, except Saturdays, Sundays, and holidays. Between the hours of 5:00 p.m. and 7:30 a.m., calls will be recorded and then processed after 7:30 a.m. For emergency situations, after hours, and on Saturdays, Sundays and holidays, Contractor shall contact the owner of the affected facility.

Contractor shall coordinate all work with the appropriate City field personnel. When City work forces are required at the job site to perform Contract items of work, Contractor shall give a minimum of two working days advanced notification to the appropriate field office:

Water Division:	(707) 543-4200
Sewer Division:	(707) 543-4200
Street Division:	(707) 543-3880
Survey Division:	(707) 543-3834

5-1.43 Potential Claims and Dispute Resolution: "Claim" means a separate demand by 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 the City under the Contract; (B) Payment by the City of money or damages arising from work done by, or on behalf of, Contractor pursuant to the Contract and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled; or (C) Payment of an amount that is disputed by the City.

Upon receipt of a Claim, the City shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed, provided, the parties may extend the 45 day time period by mutual agreement.

If the City needs approval from the City Council to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the Claim, and the Council does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a Claim, the City shall have up to three days following the next duly publicly noticed meeting of the City Council after the 45-day period, or extension expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the City issues its written statement. If the City fails to issue a written statement, the Claim shall be deemed rejected in its entirety.

If a Contractor disputes the City's written response, or if the City fails to respond to a Claim within the time prescribed, the Contractor 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 City shall conduct a meet and confer conference within 30 days for settlement of the dispute. 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 City shall provide the Contractor 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 City issues its written statement. Any disputed portion of the Claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the City and the Contractor sharing the associated costs equally. The City and Contractor 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.

6 CONTROL OF MATERIALS

6-2.01 Source of Supply and Quality of Materials: All materials required to complete the work under the Contract shall be furnished by Contractor and shall be free of hazardous substances.

6-3.01 General: Statistical means will not be used by the City for determination of Standard Specification compliance. Whenever both operating range test results and Contract compliance requirements are specified in these special provisions, the operating range requirements shall apply to the individual test results.

6-3.01A Material Submittals: Upon award of the Contract by City, Contractor shall submit to the Engineer a list of all materials proposed to be used on this project and any supporting documentation and/or samples required and source of supply.

For material listed on the "Engineer's List of Approved Items" which is located in the Sewer and Water sections only of the City Standards, the Engineer shall be provided with the name of the manufacturer and model/part number for all material proposed for this project, unless that item has been replaced as shown on the Project Exhibits or in the Invitation for Bids.

For all other materials used on this project, regardless of the type of work, Contractor shall provide to the Engineer the name of the manufacturer and model/part number along with supporting documentation and/or samples that will allow the Engineer to determine the material's acceptability.

The Engineer reserves the right to reject any proposed material, whether on the City's "Engineer's List of Approved Items" or not. If the City obtains information indicating that a listed item is not performing satisfactorily or is found to be defective, that item will be rejected and Contractor shall submit a replacement for review at no additional cost to the City.

6-3.01B Material Guarantee: Before any contract is awarded, the bidder may be required to furnish samples of materials and detailed descriptions of equipment to be used in the construction of the project. The materials samples may be subjected to the tests provided for in the Standard Specifications or in this Invitation for Bids to determine their quality and fitness for the project. The successful bidder shall unconditionally guarantee project materials and workmanship for a period of one year from the date of recording of the Notice of Completion. The guarantee shall cover 100% of all costs of repairs within the one-year period, including all costs of labor, materials, equipment, and incidentals. Except as may be otherwise provided in Section 3-1.05, the successful bidder shall provide a surety bond executed by a corporate surety authorized and admitted to transact a surety business in the state of California in the minimum amount of one-half of the Contract price to cover this guarantee.

6-3.05 Quality Assurance: California Test 216 (Relative Compaction) testing will be modified as follows: A mechanical compactor (Ploog Engineering Co. Model M 100 or equivalent) with 10-pound hammer and split compaction molds shall be used in lieu of the specified manual compaction equipment.

California Test 231 (Nuclear Gage Determination of In-Place Density) will be modified as follows: In-place density and relative compaction may be determined on the basis of individual test sites in lieu of the area concept, at the discretion of the Engineer.

6-4 Water Utility

6-4.01A Construction Water: All water required for the performance of the work shall be provided by Contractor. Prior to obtaining water from the City's water system, Contractor shall obtain a Water

Use Permit from the City of Santa Rosa Water Department and rent a hydrant or bridge meter. Contractor is responsible for the cost of all water and the cost of all deposits, permits and fees.

Contractor is prohibited from operating gate valves or fire hydrants on the City system.

The acquisition of water from the City's water system through un-metered hydrants or other facilities is a violation of City ordinance and State law. The use of water from sources other than the City's water system must be approved by the Engineer in advance of the use.

Citations and fines will be levied for violation of these and other utility regulations and deductions will be made from payments consistent with Section 7-1.02A(1) of the Standard Specifications.

6-4.01B Water Utility Notification: Contractors or parties requiring work of any kind by the City of Santa Rosa Water Department forces shall request such services a minimum of 48 hours in advance of the time such services are desired. Work requests which will involve the City of Santa Rosa Water Department forces for more than eight hours or an extensive number of City parts shall be requested a minimum of seven calendar days in advance.

If it is necessary to terminate or disrupt utility service to any customer, Contractor shall make the request for such work by City forces an additional 72 hours (three additional working days for a total of five working days advance notice) in advance of the time such services are desired to allow affected customers a minimum of 72 hours' notice. Contractors who fail to keep field appointments will be billed for scheduled City of Santa Rosa Water Department crew standby time which was used and the Contractor shall bear the costs incurred by the City of Santa Rosa's Water Department for re-notification of customers.

City of Santa Rosa Water Department crews work a 9/80 schedule. This schedule may prohibit shutdowns for tie-ins on alternating Fridays. After hours work or weekend work may be performed if prior authorization from the Engineer is obtained.

Other than the hours specified in this Invitation for Bids, requests by Contractor for after hours or weekend work is to be avoided whenever possible. Any overtime costs incurred by City for such work shall be borne by Contractor.

Interruption of utilities service to commercial customers shall be coordinated with the customer to minimize disruption to the enterprise to the greatest extent practicable. After notification by the Contractor of the need, the City of Santa Rosa Water Department will contact all commercial customers and inform Contractor accordingly.

6-4.01C Water Facility Damage: All damage caused to the City's water system shall be immediately reported to the Engineer.

Damage caused to the City's water system by Contractor's operations shall be repaired by the Contractor at Contractor's sole expense in a manner satisfactory to the City of Santa Rosa Water Department. Such repairs shall not be charged to the City or any City project. All repair work shall be witnessed and approved by the City of Santa Rosa Water Department prior to backfilling the excavation. The City will require re-excavation if backfilling occurs prior to inspection, which costs shall be borne by Contractor.

Contractor is responsible for, at its sole cost and expense, the repair and remediation of damage to property and facilities caused by any of the following circumstances:

a. Contractor fails to make a written request for a markout or begins excavation without providing the City of Santa Rosa Water Department a reasonable opportunity to mark facilities;

b. Contractor destroys markouts;
c. Contractor fails to perform hand digging or probing for utilities near markouts; or
d. Contractor fails to use reasonable caution, regardless of whether markouts are present or clear. Reasonable caution includes any efforts to avoid damaging existing facilities, such as when excavating in the vicinity of water mains.

City may, in its discretion, opt to make the repairs for which Contractor is responsible with its own forces. In such cases, the repairs will be made at Contractor's expense in accordance with the emergency repair rate schedule of the City of Santa Rosa Water Department. The City may make repairs whenever restoration of service requires extraordinary speed or special equipment. Contractor will be billed accordingly and City shall have the right and option to withhold payment hereunder, or a portion thereof, for any such costs billed but not promptly paid by Contractor.

6-4.02 Salvage: All valves, hydrants, and other appurtenances of the water system that are the property of City and removed by Contractor shall be delivered to the City's Municipal Services Center (55 Stony Point Road) unless Contractor has obtained specific written approval from the City of Santa Rosa Water Department to otherwise dispose of the materials.

6-4.03 Trade Names and Alternatives: Unless otherwise specified, material and equipment specifications that identify a particular patent, trade name or manufacturer, may be satisfied through substitute materials and equipment accepted by the City. Contractor may offer substitute materials and equipment of equal or better quality to the City. Any such offer shall be made in writing to the Engineer at least four weeks in advance of the time Contractor wishes to order the materials or equipment. Contractor shall include sufficient data which, together with any other information the Engineer may require, will enable the Engineer to determine the acceptability of the materials and equipment. When the substitute materials or equipment necessitate changes to any part of the work, the information shall include drawings and details showing all such changes and Contractor shall perform these changes as a part of any acceptance of substitute materials or equipment. The use of substituted materials and equipment will be permitted only after written acceptance of the materials and equipment by the Engineer. Such acceptance shall not relieve the Contractor from full responsibility for the sufficiency, quality and performance of the substitute materials and equipment.

The City will not, under any circumstances, acknowledge or consider any offers to accept substitute materials or equipment between the dates of public notice of advertisement and the bid opening.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

7-1.02A(1) Forfeitures for Health and Safety Violations: Contractor shall comply with all applicable provisions of the Santa Rosa City Code and any failure to do so shall constitute a breach of the Contract. In the event of any violation of the Santa Rosa City Code that may impact public health and safety, including, but not limited to Chapter 17-12, "Storm Water" and Chapter 13-04, "Street Encroachments," City shall have the right to impose a charge against Contractor in an amount equal to $500.00 per violation per day. Prior to the imposition of any charge hereunder, City shall first provide a written notice to Contractor of the violation and setting forth a reasonable period of time for Contractor to cure the violation(s). In the event Contractor fails to cure any such violation within the time provided, City shall have the right, in addition to all other rights and remedies available to City, to deduct and withhold as a permanent forfeiture by Contractor the appropriate amounts from any payment otherwise due Contractor under this Contract.

7-1.02K(2) Wages: Pursuant to Labor Code sections 1770 *et seq*., each laborer or mechanic of Contractor or any subcontractor engaged in work on the project under this contract shall be paid not less than the hourly wage rate of per diem wages set forth in the prevailing wage rate schedule published by the Director of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any subcontractor and such laborers and mechanics. A copy of the schedule of prevailing wage rates can be obtained online at www.dir.ca.gov or from the Department of Transportation and Public Works at 69 Stony Circle, Santa Rosa.

Any laborer or mechanic employed to perform work on the public works project under this Contract, which work is not covered by any of the foregoing classifications, shall be paid not less than the prevailing wage rate of per diem wages specified herein for the classification which most nearly corresponds to the work to be performed by the worker.

The foregoing specified prevailing wage rates are minimum rates only, and Contractor may pay any wage rate in excess of the applicable rate.

Pursuant to Labor Code Section 1775, Contractor as a penalty to the owner shall forfeit not more than $200.00 for each calendar day, or a portion thereof, for each worker paid less than the prevailing wage rate established by the Department of Industrial Relations for such work or craft in which such worker is employed. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which the worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

Contractor shall only provide prevailing wage reports upon written request from City.

7-1.02K(4) Apprentices: Contractor agrees to comply with Chapter 1, Part 7, Division 2, sections 1777.5 *et seq*. of the California Labor Code. These sections require contractors and subcontractors to employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice work for each five hours of journeyman work (unless an exception is granted in accordance with Section 1777.5), and the contractors and subcontractors shall not discriminate among otherwise qualified employees as apprentices solely on the ground of sex, race, religion, creed, national origin, ancestry, or color. Only apprentices as defined in Labor Code section 3077, who are in training under apprenticeship standards and who have written apprentice agreements will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions is fixed with the prime contractor for all apprenticeable occupations.

7-1.02K(6)(a)(1) Notice to Vendors: Attention is directed to the current OSHA Standards. All equipment, tools and materials which are furnished and/or installed as part of this Contract shall meet or exceed the aforementioned standards in order to be considered acceptable.

7-1.02K(6)(b) Excavation Safety: When the digging or excavation occurs during project construction, Contractor shall:

a. Promptly notify City in writing of the following conditions before any such conditions are disturbed:

    1. Material that the Contractor believes may be hazardous waste as defined in Health and Safety Code section 25117 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 in the Invitation for Bids; and
    3. Physical conditions at the site of any unusual nature, materially different from those ordinarily encountered and generally recognized as inherent in the type of work under the Contract.

b. The City will investigate the conditions and will issue a change order under the terms of the Contract if it finds that the conditions warrant it.

c. If a dispute arises between City and Contractor as to whether a change order is warranted, Contractor shall not be excused from any scheduled completion date provided for in the Contract but shall proceed with all work to be performed under the Contract.

7-1.02K(6)(b)(1) Trench Excavation Safety Plans: When the estimated cost for the excavation of any trench or trenches five feet or more in depth will exceed $25,000.00, Contractor shall submit to the Engineer in advance of excavation a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the construction safety orders, or if the trench is anticipated to be greater than 20 feet, the plan shall be prepared by a registered civil or structural engineer.

A permit to do the above described work shall be obtained from the State of California, Division of Industrial Safety. Proof of such permit shall be submitted to the Engineer prior to starting the trench work.

Full compensation for complying with the provisions of this section shall be considered as included in the Contract price and no additional allowance will be made for the work.

7-1.02K(6)(d) Confined Space Safety: Any confined space entry for this project, including but not limited to manhole or water storage tank entry, will require a confined space entry permit pursuant to Cal/OSHA regulations as set forth in title 8 California Code of Regulations (CCR) sections 5157 or 5158. Confined space entry shall have the meaning ascribed in title 8 CCR sections 5157 and 5158. For any confined space entry for construction operations regulated by title 8 CCR section 1502, Contractor shall comply with title 8 CCR section 5158, “Other Confined Space Operations.” For any other confined space operations, Contractor shall comply with title 8 CCR section 5157, “Permit-Required Confined Spaces.”

Attention is directed to the technical specifications in the Special Provisions for information regarding entry to any City maintained confined space. Pursuant to title 8 CCR section 5157, Contractor is required to obtain any available information regarding hazards and operations for any City maintained confined spaces. The City maintained Confined Space Entry Manual is available

for viewing at the City of Santa Rosa Water Department or Transportation and Public Works Department office at 69 Stony Circle, Santa Rosa.

Contractor shall immediately inform the Engineer of any previously unidentified hazards confronted or created during confined space entry.

7-1.02L(2)(a) Patents and Royalties: All fees, royalties, or claims for any patented invention, article, process or method that may be used upon or in any manner connected with the work under this Contract shall be paid by Contractor. Contractor and its sureties shall protect and hold harmless City and its officers, agents, and employees from any and all demands made for such fees royalties or claims brought or made by any third party, and before the final payment is made on the account of the Contract, Contractor shall, if requested by City, furnish acceptable proof of a proper release from all such claims and liabilities.

Should Contractor, its officers, agents, or employees, or any one of them be enjoined from furnishing or using any invention, article, material, or plans supplied or required to be supplied or used under the Contract, Contractor shall promptly substitute other articles, materials, or appliances in lieu thereof of equal efficiency, quality, finish, suitability, and market value, and satisfactory in all respects to the Engineer. In the event that the Engineer elects, in lieu of such substitution, to have supplied and to retain and use any such invention, article, materials, or plans as may be required to be supplied by the Contract, Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for City, its officers, agents, and employees, or any one of them to use such invention, article, materials, or appliance without being disturbed or in any way interfered with by any proceeding in law of equity on account thereof. Should Contractor neglect or refuse to make the substitution promptly or to pay such royalties and secure such licenses as may be necessary, then in that event the Engineer shall have the right to make such substitutions or City may pay such royalties and secure such licenses and charge Contractor even though final payment under the Contract may have been made.

7-1.02M(3) Mined Materials: California Public Contract Code section 20676 prohibits surface mining operators which are subject to the Surface Mining and Reclamation Act of 1975 (SMARA) from selling California mined construction material to the City unless the operator is identified in a list referred as the **3098 List**. The List, which is maintained by the Department of Conservation's Office of Mine Reclamation (OMR), changes throughout the year and can be viewed at the OMR website: http://www.consrv.ca.gov/OMR/ab_3098_list/index.htm. To confirm whether or not a specific operator is on the List at any given time, Contractor shall call the OMR at (916)323-9198.

7-1.03A Maintaining Traffic: Attention is directed to Sections 7-1.04 of the Standard Specifications and to the following modifications thereof.

If construction is within City owned right-of-way, provisions shall be made for the safe passage of public traffic through the work site at all times consistent with the requirements of Santa Rosa City Code Chapter 13-04.

Except for projects to be performed under a minor contract, Contractor shall install and maintain project identification signs at each end of the project or as directed by the Engineer two weeks prior to any construction activity. City shall furnish the appropriate sign panels upon request from Contractor. To mount the sign panels, Contractor shall furnish and install 4" X 4" posts or mount by other appropriate methods as approved by the Engineer. These sign panels shall be returned to the City Corporation Yard at 55 Stony Point Road after completion of the project.

Two weeks prior to any construction activity, advance notice signs for road closures shall be furnished and installed by Contractor at each end of the project and shall remain in place throughout the duration of the subject closure. Details of panel construction and lettering shall be approved by the Engineer.

Contractor shall furnish, install, and maintain at its expense all barricades, signs, lights, and other devices necessary to adequately warn of any obstructions to the traveled and pedestrian way and provide flaggers as necessary for the safety of public traffic and pedestrians and to provide access to property adjacent to the work site and Contractor shall comply with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101, *et seq*.) (ADA) and any regulations and guidelines issued pursuant to the ADA.

Contractor shall comply with the current edition of the California Manual of Uniform Traffic Control Devices (CA MUTCD) for all items related to traffic within the work site.

Rain and other occurrences that may cause the suspension or delay of the work shall in no way relieve Contractor of its responsibility to provide traffic control and public access through the work site as specified herein. At all times, Contractor shall keep at the work site such materials, forces and equipment as may be necessary to keep roads, streets, and driveways within the work site open to traffic and in good repair and shall expedite the passage of such traffic, using such forces and equipment as may be necessary.

Should Contractor fail, in the opinion of the Engineer, to provide all the materials, forces and equipment necessary to maintain traffic through the work site as set forth herein, City may take steps necessary to remedy any such failure, including but not limited to causing such work to be performed and/or suspending any further work under the Contract. Any such remedial cost and expense incurred by the City, plus an administrative charge of 15%, shall be immediately due and payable by Contractor and may be deducted from any amounts owed to Contractor hereunder. In the event there are insufficient sums owed to Contractor hereunder to cover the foregoing costs and charges, City shall have the right to pursue any other remedy to recover the same, including but not limited to, proceeding against any surety or bond in favor of City. City's rights under Section 7-1.02 are intended to be in addition to and not in lieu of any charges imposed by City against Contractor under Section 7-1.02A(1) above for violations of the Santa Rosa City Code.

Contractor shall be responsible for informing emergency response agencies operating within the area of the work of obstructions to either public or private roads caused by reason of Contractor's operations hereunder.

Contractor shall make provisions for the safe passage of pedestrians around the project work site at all times.

8 PROSECUTION AND PROGRESS

8-1.01A Assignments: Once awarded, this Contract shall not be transferred, assigned, or sub-contracted, except as herein expressly provided without the prior written consent of the City in the City's sole and absolute discretion. See Section 5-1.12 of the Standard Specifications.

8-1.04B Standard Start: Contractor shall begin work within ten calendar days after the date authorized in the Notice to Proceed and shall diligently prosecute the Contract to completion before the expiration specified under 8-1.05 Time.

8-1.05 Time: Working days will be counted beginning with the day the Contractor begins work or with the tenth day after the date authorized in the Notice to Proceed, whichever occurs first.

Temporary Sewer Bypass Distribution Work: All work shall be complete by **October 15, 2019.**

CIPP Rehabilitation of Trunk Siphon: The Contractor shall submit an updated construction schedule depicting the CIPP rehabilitation efforts (5) working days prior to completion of the temporary sewer bypass distribution system. The City will evaluate the schedule, relative to the specified completion date and forecasted weather, and either i) direct the Contractor to continue and complete work efforts in the 2019 construction season, or ii) suspend work (pursuant to Standard Specifications Section 8-1.06 Suspensions). If work is suspended, Contractor shall commence work activities starting **May 1, 2020** and complete all work by **August 1, 2020.**

Rehabilitation of Trunk Siphon Structures: Contractor shall commence work activities immediately upon completion of CIPP Rehabilitation of Trunk Siphon work operations. Work will be considered extra work and shall be completed in accordance with the schedule described under CIPP Rehabilitation of Trunk Siphon work.

With the exception of work associated with CIPP installation/curing, and bypass operations & maintenance, the Contractor shall not conduct any activities that generate noise earlier than 7:00 a.m. and later than 7:00 p.m. unless otherwise directed by the Engineer

8-1.10 Liquidated Damages: Contractor hereby agrees that Contractor shall pay to the City liquidated damages for each and every calendar day delay over and above the number of working days prescribed above for finishing the work in the amount shown in Section 8-1.10 of the Standard Specifications.

9 MEASUREMENT AND PAYMENT

9-1.04 Force Account Work: All work done on a force account basis shall be recorded daily on report sheets prepared by Contractor and signed by both the Engineer and Contractor. Such reports shall thereafter be considered the true record of force account work performed during the project. Such reports shall be furnished to the Engineer and a copy retained by Contractor.

All extensions of labor, equipment, and material costs shall be completed by Contractor and submitted to the Engineer within 30 days of the completion of the extra work. Completed and extended extra work reports received later than the times herein prescribed may be deemed invalid and rejected without payment at the discretion of the Engineer.

9-1.07 Payment Adjustments for Price Index Fluctuations: Any references to Opt Out of Payment Adjustments for Price Index Fluctuations in the Standard Specifications are deleted in their entirety.

9-1.16 Progress Payments: Once each month for progress pay purposes, the City will prepare a written estimate of the total amount of completed work and accepted materials purchased by Contractor but not installed. The City shall retain five percent of such estimated value of the completed work and the unused materials and pay Contractor the balance after deducting all previous payments and all sums to be retained under the provisions of the Contract. No such estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract or when, in the Engineer's judgment, the total value of the completed work since the last estimate is less than $500.00. No such estimate or payment shall be construed to be an acceptance of any defective work or improper materials.

After Contract acceptance, the Engineer will prepare a written proposed final estimate of the proposed final quantities of work completed under the Contract and the value of such work and will submit such estimate to Contractor. The City shall retain five percent of such estimated value of the work done and shall pay to Contractor the balance after deducting all amounts to be retained under the provisions of the Contract.

The City may, at its option and at any time, retain out of any amounts due Contractor sums sufficient to cover any unpaid claims of City or others, provided that sworn statements of all non-City claims shall have been filed with the Director of Finance.

9-1.16E(6) Substitution of Securities for Withheld Amounts: Pursuant to Public Contract Code section 22300, securities may be substituted for any moneys withheld by City to ensure performance under this Contract, provided that substitution of securities provisions shall not be required in contracts in which there will be financing provided by the Farmer's Home Administration of the United States Department of Agriculture pursuant to the Consolidated Farm and Rural Development Act (7 USC sections 1921 *et seq*.), and where federal regulations or policies or both do not allow the substitution of securities. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with the City, or with a state or federally chartered bank as the escrow agent, which shall then pay such moneys to Contractor. The Director of Finance is authorized to execute substitution of securities agreements on behalf of the City. The City will return the securities to Contractor upon satisfactory completion of the Contract as determined by City in its sole discretion and the resolution of all outstanding claims against the securities. Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

Securities eligible for investment under this section shall include those listed in Government Code section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit or any other security mutually agreed to by Contractor and the

City, provided that the substituted security is equal to or not less than five percent of the Contract amount.

Security substitutions must be submitted by Contractor and approved by City prior to the time of the first progress payment to be made under the Contract. No other method of substituting securities for retention will be accepted. The security substitution shall be done only upon execution of an agreement satisfactory to City which includes the following provisions:

a. The amount of securities to be deposited;
b. The terms and conditions of conversion to cash in case of the default of Contractor; and
c. The procedure for return of securities upon completion of the Contract.

9-1.17D Final Payment and Claims: The processing of payment of the final estimate shall not be commenced less than 35 days after the date of recording of the Notice of Completion with the County Recorder's Office. Contractor is advised that it takes approximately ten days for a check to be issued following a request for payment.

Contractor shall submit its written statement of all claims for additional compensation under the Contract to the Engineer within 15 days after submission to Contractor of the proposed final estimate.

If Contractor does not file a claim within the 15 day period, or upon Contractor's approval, the Engineer will issue a final written estimate and the City shall pay to Contractor the entire sum due after deducting all previous payments, if any, and all amounts to be retained under the provisions of the Contract.

If Contractor files a claim within the 15-day period, the Engineer will furnish a semi-final estimate and pay the amount due under the semi-final estimate within 30 days. The semi-final estimate is conclusive as to the amount payable except as may be affected by claims and any amount retained. The Engineer shall then consider and investigate such claim and shall make such revision in the final quantities as the Engineer may find to be due, and shall then make and issue a final written estimate. The City will pay the amount due, after deducting all previous payments, if any, and amounts to be retained under the provisions of the Contract.

Any and all prior partial estimates and payments shall be subject to correction in the final estimate and payment.

The final estimate shall be conclusive and binding against both parties to the Contract on all questions relating to the performance of the Contract and the amount of work done thereunder and compensation therefor, except in the case of gross error.

9-1.17D(3) Final Determination of Claims: Claims filed by Contractor shall be in sufficient detail to enable the Engineer to determine the basis and amount of the Claims. Contractor shall also furnish reasonable documentation to the City to support Claims. If additional information is required by the Engineer, Contractor shall provide such information to the Engineer no later than the 15th day after receipt of the written request from the Engineer. If the 15th day falls on a weekend, holiday, or day City offices are closed, then the information shall be provided to the Engineer no later than close of the next business day. Failure to submit the requested information to the Engineer within the time specified will be sufficient cause for denying the Claim.

Contractor shall keep full and complete records of the costs and additional time incurred for any work for which a claim for additional compensation is made. The Engineer or any designated Claim investigator or auditor shall have access to those records and any other records as may be reasonably required by the Engineer to determine the facts or contentions in each Claim. Failure to grant access to such records shall be sufficient cause for denying the Claims.

9-1.22 Arbitration: Any references to Arbitration in the Standard Specifications are deleted in their entirety.

Claims submitted by Contractor shall be accompanied by a notarized certificate containing the following language:

Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code sections 12650 *et seq*., the undersigned,

_____,
(Name)

_____ of
(Title)

_____
(Contractor)

hereby certifies that the claim for additional compensation made herein is supported by a true statement of the actual costs incurred and time expended on this project, and is fully documented by records maintained by Contractor.

Dated _____

/s/_____

Subscribed and sworn before me this _____ day of

_____

_____
Notary Public

My Commission Expires _____

Failure to submit the notarized certificate will be sufficient cause for denying the claim.

Any claim for overhead expenses, in addition to being certified as stated above, shall be supported by an audit report of an independent Certified Public Accountant. Any such overhead claim shall also be subject to audit by the City at its discretion.

Any costs or expenses incurred by the City in reviewing or auditing any claims that are not supported by Contractor's cost accounting or other records shall be deemed to be damages incurred by the City within the meaning of the California False Claims Act.

CITY OF
SANTA ROSA

Technical Specifications

For

Rehabilitate Matanzas Siphons

June, 2019

James C. Bowland

James C. Bowland, RCE 66400
Exp. 06/30/20

6/20/2019

Date:

Kennedy Jenks

Kennedy/Jenks Consultants, Inc.
10850 Gold Center Drive, Suite 350
Rancho Cordova, California 95670
916-858-2700

10 GENERAL CONSTRUCTION

10-3 Mobilization: Mobilization shall conform to Section 9-1.16D of the Standard Specifications, and any modifications herein.

Mobilization shall include the obtaining of all permits; moving onto the site of all equipment and materials; and other construction facilities as required for the proper performance and completion of the work. Mobilization shall include demobilization as defined herein.

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

1. Preparation of Contract by the Contractor.
2. Completion of all tasks and submittal of all documents (bonds, insurance, schedule, etc.) required as conditions of issuing the Notice to Proceed.
3. Obtaining all required permits.
4. Installation of project identification signs per Section 7-1.03A of these Special Provisions. The Contractor shall consult with the Engineer for placement.
5. Installing temporary construction water supply, power, wiring, and lighting facilities, as required at individual sites.
6. Providing field office trailers if needed by the Contractor.
7. Moving onto the site(s) of all Contractor's equipment required for operations.
8. Having all OSHA required notices and establishment of safety programs.
9. Attendance at Pre-Construction Conference of Contractor's principal construction personnel.

Demobilization shall include, but not limited to, removal of all equipment, unused materials,

10-8 Payment: **Mobilization/Demobilization** shall be paid for at the contract **lump sum** price and no additional compensation will be made therefor.

12 TEMPORARY TRAFFIC CONTROL

12-1.01 General: Construction area traffic control devices shall be installed and maintained in accordance with the applicable sections of these Special Provisions, the Standard Specifications, the current Edition of the California Manual on Uniform Traffic Control Devices (CA MUTCD), the Americans with Disabilities Act (ADA) and as directed by the Engineer.

12-1.03 Flagging Costs: The first paragraph of Section 12-1.03, "Flagging Costs" is amended to read:

> The cost of furnishing all flaggers, including transporting flaggers, to provide for passage of public traffic through the work under the provisions in Section 7-1.08, "Public Convenience", and Section 7-1.09, "Public Safety", shall be considered as included in the contract lump sum price paid for traffic control and no additional allowance will be made therefor.

12-3.01 General: Prior to commencing construction which will affect existing vehicular and pedestrian traffic, the Contractor shall submit for review by the Engineer, Traffic Control Plans on 11" x 17" sheets of paper which contains only information specifically related to work zone vehicular and pedestrian traffic control. Traffic Control Plans or proposals shall be submitted for review at least two weeks prior to implementation.

Traffic Control Plans shall contain a title block which contains the Contractor's name, address, phone number, project superintendent's name, contract name, dates and hours traffic control will be in effect, and a space for review acknowledgment.

The content of the Traffic Control Plan shall include, but is not limited to, the following:

1. Show location and limits of the work zone.
2. Give dimensions of lanes affected by traffic control that will be open to traffic.
3. Indicate signing, cone placement, and other methods of delineation and reference to appropriate City or Caltrans Standards.
4. Dimension location of signs and cone tapers.
5. Identify side streets and driveways affected by construction and show how they will be handled.
6. Show how pedestrian traffic will be handled through the construction site. Pedestrian pathways through the work zone shall be in compliance with the requirements of ADA during and after work hours.
7. Identify message board locations. A minimum of 3 changeable message boards shall be required. Locations to be determined by the Engineer at time of placement.
8. Demonstrate how two-way traffic will be maintained.
9. Proposed location for staging of materials.

No work except for installation of project identification signs will be allowed to commence prior to approval of the Work Zone Traffic Control Plans.

12-3.01A Staging Area: The staging of equipment and/or materials shall not take place on Hoen Avenue or Melbrook Way or on unpaved surfaces. Proposed locations for staging must be approved as part of the Traffic Control Plan as specified in Section 12-3.01 of these Special Provisions.

12-4.01 Maintaining Traffic:

1. The full width of the traveled way shall be open for use by public traffic on Saturday, Sundays and designated legal holiday(s), after 4:00 p.m. on Fridays and the day preceding designated legal holidays, and when construction operations are not actively in progress; unless work has specifically been authorized by the Engineer.
2. The location of traffic control signing, barricades, and other facilities shall be monitored frequently (four to five times per day) by the Contractor to verify their proper location. All traffic signal and other traffic control devices shall be maintained at all times.
3. The Contractor shall conduct his operations so as to cause the minimum obstruction and inconvenience to traffic and to places of business, multiple dwelling units and residences adjacent to the work. The Contractor shall notify the Engineer of his planned work and utility service interruption at least five working days in advance to allow time to notify residents and businesses.
4. When construction activities will prevent vehicle access to individual driveways the Contractor shall notify the affected businesses and residents per Section 12-1.03, “Traffic Control”, of these Special Provisions. **12-foot minimum access shall be provided to all driveways during all hours.**
5. At locations where traffic is routed perpendicular to trench excavation, the excavation shall be conducted in a manner to provide a surface reasonably satisfactory for traffic at all times. Substructure installation or construction shall be conducted on only one-half the width of the roadway at a time, and that portion of the roadway being used by traffic shall be kept open and unobstructed until the opposite side of the roadway is ready for use. Upon completion of the rough grading, the surface of the roadbed shall be brought to a smooth, even condition free from humps and depressions and made satisfactory for traffic.

12-4.01A Construction Traffic: The Contractor shall submit a trucking route along with the traffic controls plans for approval by the Engineer. The route must minimize traffic on residential streets that are not part of the project.

Existing pavement damaged by the Contractor's operations and not shown to be replaced shall be replaced at the Contractor’s expense, per City Standards and to the satisfaction of the Engineer.

12-4.02 Closure Requirements: Attention is directed to Section 7-1.08, "Maintaining Traffic", to Section 5-1.05, "Order of Work," of these Special Provisions.

Exact locations of Project Identification signs and Advance Notice signs (Section 7-1.08 "Maintaining Traffic") shall be determined in the field by the Engineer.

Lane closures will be permitted between the hours of 8:30 a.m. and 4:00 p.m. only. Only one lane at a time may be closed and no lanes shall be closed at any other hours unless specifically approved by the Engineer. The Contractor shall maintain vehicle access to homes and other properties at all times while work is in progress.

Full time lane closure may be permitted if it can be demonstrated to not be detrimental to the flow of traffic to the satisfaction of the Engineer.

The Contractor shall not park construction vehicles contractor employee vehicles, stage materials or stockpiles in front of any business or residential driveway access and the Contractor shall maintain access to private parking lots within the block where work is in progress. Construction vehicles shall not be left running for any length of time if parked in front of a business or residential unit.

On identified local/residential streets the Contractor will normally be allowed use of each block (between nearest intersections) for their sole use, without the need to provide 2-way traffic through that block. The Contractor will be required to maintain vehicle access to homes and other properties within the block where work is in progress.

The Contractor shall keep the City of Santa Rosa Fire Department informed regarding the closure of any traveled way. At a minimum, the Contractor shall call the Fire Department at (707) 543-3535 **and** the Communications Center at (707) 543-3666 **daily** to report any traveled way closure. This means immediately upon closure for that day and again immediately after removal of the closure. For closures over multiple days, the daily notification still applies. This requirement does not apply for single lane closures on multiple lane streets.

The Contractor shall notify Sonoma County Transit at (707) 585-7516, Superintendent of Golden Gate Transit at (415) 257-4442, Santa Rosa City Bus at (707) 543-3922, Sonoma County Airport Express at (707) 837-8700, the local Postal Service at (707) 526-0113 and Santa Rosa Recycling and Collection at (707) 586-8234 5 calendar days prior to any lane closures or restrictions in turning movements.

If the Contractor has been given an approved Traffic Control Plan that includes road closures, they shall maintain vehicular access to homes and other properties where work is in progress within the closure area.

Where necessary, and only after receiving written approval from the Engineer, the Contractor may temporarily suspend curb side parking in their immediate work zone. Notification to businesses and residents shall be hand delivered at least 72 hours prior to construction in the affected areas.

Notification shall be as follows:

> Type 1 barricades every 50(-100 feet depending on street) feet adjacent to the curb where parking will be suspended with a notice posted on the barricade stating specific dates and times that curb side parking will be temporarily suspended. If work will not take place in the posted area, then Contractor shall remove “No Parking” notices.

The Contractor shall maintain vehicle access to all homes and other properties along the work zone. During paving operations, the Contractor will be allowed to temporarily suspend vehicle access to a limited number of driveways when approved by the Engineer. When approved by the Engineer and at least 72 hours prior to suspending access to any driveway, the Contractor shall give both written and verbal notice to the affected businesses and residents and place barricades adjacent to the driveways with posted notices stating the specific dates and times of the suspension for that area. The notice shall also indicate an alternate parking location. Suspension of access to driveway will be permitted only as approved by the Engineer and only between the hours of 8:00 am and 4:30 pm.

Cross streets will require maintenance of at least one-half (1/2) width of each street for traffic purposes, unless a parallel route is approved by the Engineer. Flagging will only be allowed between the hours of 8:30 am and 4:00 pm.

Barricades and flaggers shall be positioned to allow safe turns at intersections and curves.
The Contractor shall maintain traffic control as necessary and as directed by the Engineer for "cat-tracking" operations by City Forces. Flaggers, barricades, signing, etc., shall remain in place for protection of City personnel until such time as all temporary lane delineation is complete.

12-7.01 Pedestrian Traffic Control: The Contractor is directed to Chapter 6D, Pedestrian and Worker Safety, in the CA MUTCD, the improvement plans and these Special Provisions.

Pedestrians shall be provided with a safe convenient and accessible path that, at a minimum, replicates the most desirable characteristics of the existing sidewalk, path or footpath. At no point along the road shall the sidewalks on both sides of the road be closed at the same time.

The Contractor shall construct and maintain temporary pedestrian pathways through the work zone, where required, that shall be in compliance with the requirements of the Americans with Disabilities Act (ADA), and the CA MUTCD.

Pedestrian routes shall not be impacted for the purposes of any non-construction activities such as parking of vehicles or equipment, or stock piling of materials. Pedestrians shall not be led into conflicts with work site vehicles, equipment or operations.

Pedestrian routes shall be open and accessible at the end of the work day unless an alternate ADA compliant route has been approved by the Engineer. The construction of curb ramps and/or long sections of sidewalk do not alleviate the Contractor from this requirement.

12-9.01 Payment: **Traffic Control** shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved in vehicular and pedestrian traffic control, including but not limited to, providing, placing, maintaining, and removal of temporary paths and/or ramps, temporary relocation of regulatory signs, changeable message boards, project and public notification signs, flagging, excavation, compaction, furnishing, and placement of asphalt concrete and/or PCC, barricades, toe-rails, hand rails, complying with CA MUTCD Standards for Pedestrian Safety, coordination efforts and any other items necessary for vehicle and pedestrian traffic control not specifically enumerated in the plans or these specifications, and no additional allowance will be made therefor.

13 WATER POLLUTION CONTROL

13-1 General

13-1.01A: Water Pollution Control shall be performed in accordance with Section 13, Water Pollution Control, of the Standard Specifications and these technical specifications. In addition, construction activities shall comply with:

1. The current California Water Quality Control Board, North Coast Region Order No. National Pollutant Discharge Elimination System Municipal Storm Water Permit, commonly referred to as the "Storm Water Permit". A copy of the Storm Water Permit is available for review at the City of Santa Rosa Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, CA, and at www.srcity.org/stormwaterpermit.
2. The California Stormwater Quality Association Storm Water BMP Handbook for Construction (CASQA Handbook). BMPs shall be selected, installed and maintained in accordance with the latest edition. A copy of the handbook can be viewed at the City of Santa Rosa Department of Transportation and Public Works office at 69 Stony Circle or downloaded from CASQA, http://www.casqa.org/.

In this technical specification the CASQA Handbook BMP numbers are appended to the associated Standard Specification sections. If a conflict occurs the CASQA Handbook BMP's shall govern.

13-2.01B Submittals: The program to control water pollution required to be submitted under this section of the Standard Specifications shall include a spill contingency plan that establishes clean-up procedures that will be followed in the event of a spill of potentially hazardous, toxic, or polluting materials.

13-3 Storm Water Pollution Prevention Plan

13-3.01A Summary: This project is exempt from the State Water Resources Control Board General NPDES Permit for the Discharge of Storm Water related to Construction Activities (Construction General Permit), and not required to have a Storm Water Pollution Prevention Plan (SWPPP), therefore Section 13-3, Storm Water Pollution Prevention Plan, of the Standard Specifications does not apply to this project.

13-4.03B: Spill Prevention and Control/CASQA Spill Prevention and Control (BMP WM-4):
If a spill occurs at the construction site and the Contractor does not take immediate and adequate steps to contain and clean up the spill, especially if rain is threatening or if a discharge to a storm drain or creek could occur, the City shall have the right, in its sole and absolute discretion, to clean up the spill using City forces or an independent contractor. The cost of any such cleanup, in addition to recovery of any penalty or fine imposed upon the City, plus an administrative charge of fifteen percent (15%) of the costs incurred by the City, shall be deducted from any amounts owed to Contractor hereunder.

In the event there are insufficient amounts owed to Contractor hereunder to cover the foregoing costs and charges, the City shall have the right to pursue any other remedy to recover same, including, but not limited to, proceeding against any surety or bond in favor of the City. The City's rights under this section are intended to be in addition to and not in lieu of any imposed by the City against Contractor for violations of City Code Chapter 17-12, "Storm Water".

13-4.03C (2): Material Storage/CASQA Material Delivery and Storage (BMP WM-1)

13-4.03C (3): Stockpile Management/CASQA Stockpile Management (BMP WM-3): Do not block storm water flows.

13-4.03D(1): Waste Management/CASQA Solid Waste Management (BMP WM-5): The Contractor shall dispose of all trash, rubbish, and waste materials of any kind generated by the Contractor, subcontractor, or any company hired by the Contractor on a daily basis.

13-4.03D(3): Concrete Waste/CASQA Concrete Waste Management (BMP WM-8): Ensure the containment of concrete washout areas and other washout areas that may contain pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

13-4.03D(4): Sanitary and Septic Waste/CASQA Sanitary and Septic Waste Management (BMP WM-9): Sanitation facilities must be maintained periodically by a licensed service to keep them in good working order and prevent overflows. Portable toilets are required to have secondary containment.

13-4.03D(5): Liquid Waste: Liquid waste includes water generated from excavation dewatering. Minimize transfer piping by locating containers near the excavation to be dewatered while protecting the containers from moving vehicles and equipment.

13-4.03E(7): Paving, Sealing, Sawcutting, Grooving, and Grinding Activities: As listed in Part 9, sections 4 and 5 of the Storm Water Permit, the following additional BMPs shall be implemented for street paving, repaving, reconstruction, patching, digouts or resurfacing.

1. Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions;
2. Install BMPs at all susceptible storm drain inlets and manholes to prevent paving products and tack coat from entering;
3. Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or watercourses;
4. Minimize non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt;
5. Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly
6. Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled, or disposed of properly **13-4.03D(5)**;
7. Collect solid waste by shoveling and vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled, or disposed of properly **13-4.03D(5)**;
8. Cover “cold-mix” asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm **13-4.03C(3)**;
9. Cover loads with tarp before haul-off to a storage site, ensuring that trucks are not overloaded;
10. Minimize airborne dust by using water spray during grinding **14-9.03;**
11. Protect stockpiles with a cover or sediment barriers during a rain event and;
12. Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or watercourses **13-4.03C(1)**,

13-10.04 Payment: Full compensation for conforming to the provisions of Section 13 Water Pollution Control shall be considered as included in the prices paid for under the various contract items of work and no additional allowance will be made therefor.

14 ENVIRONMENTAL STEWARDSHIP

14-6.03 Bird Protection: The Contractor shall avoid or minimize potential impacts to nesting passerines and raptors near the Project:

1. Removal of vegetation or trees should be conducted outside the nesting season, which generally occurs between approximately February 1 and August 31, if feasible. Because some bird species nest in grassy and/or shrubby areas, it would be advantageous to remove any trees or vegetation during the non-nesting season.

2. If vegetation removal outside of February 1 and August 31 is not feasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grasslands and adjacent trees shall be performed by the City biologist, from the City, within seven days prior to ground breaking. If no nesting birds are observed, no further action is required, and construction shall begin within one week of the survey.

3. If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest until the young have fledged, as determined by the City biologist.

4. The radius of the required buffer zone can vary depending on the species, (e.g., 75 to 100 feet for passerines and 200 to 300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFW.

5. To delineate the buffer zone around a nesting tree, if required, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude, during the installation of the temporary bridge and removed once installation is complete. Installation of fencing will be considered extra work.

14-9.03 Dust Control

14-9.03A General: Sweeping per section 14-9.03C shall also be performed to prevent and alleviate dust.
Sweeping, covering stockpiles, applying water, and/or dust palliative, to control dust caused by public traffic is not change order work.

14-9.03C Construction: All dust-producing work and unpaved construction sites shall require a minimum watering in the middle and ending of each workday. The frequency of watering shall increase if dust is airborne. Watering shall not produce runoff.

Contractor shall maintain dust control to the satisfaction of the Engineer, 7 days a week, 24 hours per day.

At the end of each work day the Contractor shall thoroughly sweep all streets in the work zone to minimize airborne dust.

At the end of each work week the Contractor shall sweep all streets in the work zone with a commercial street sweeping truck equipped with a rear pick up broom.

At the Engineer's discretion additional sweeping or watering may be required, including the use of a commercial street sweeping truck equipped with a rear pick up broom, at any time or place.

14-9.03D Payment: Full compensation for conforming to this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed.

14-10.01 General: The Contractor shall dispose of all Portland cement concrete and asphalt concrete, generated from removal or demolition activities on the project, at a recycler for these materials. The Contractor shall provide receipts verifying delivery and approximate quantity (in tons) of the material delivered to a material recycler. Contractor shall be responsible for separating asphalt, concrete, base rock, asbestos cement pipe, and other non-contaminated debris from the soil prior to loading the soil for transport to disposal sites. Dispose of asphalt, concrete, and base rock at a recycler of these materials as specified in Section 124 of these Technical Specifications. Dispose of asbestos cement pipe as specified in Section 15-2.02(N) of these Technical Specifications.

All other excess materials from the project shall become the property of the Contractor and shall be disposed of by him, at his expense.

14-10.02A(1) Submittals: Submit a Solid Waste Disposal and Recycling Report prior to final acceptance of work performed under the Contract. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project.

Submit a Solid Waste Disposal and Recycling Report prior to Contract acceptance. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project.

14-10.02D Payment: Full compensation for material recycling as specified herein shall be considered as included in the contract prices paid for various items of work, and no additional compensation will be allowed therefor.

14-11 Hazardous Waste and Contamination: In general, the Contractor shall maintain awareness of potential signs of soil and groundwater contamination throughout the project limits and shall notify the City immediately upon discovery of any potential soil or groundwater contamination.

14-12.05 Payment: Full compensation for conforming to the provisions of Section 14 Environmental Stewardship shall be considered as included in the prices paid for under the various contract items of work and no additional allowance will be made therefor.

15 EXISTING FACILITIES

15-1.03A General: Existing facilities disturbed by construction shall conform to the applicable provisions of Section 5-1.36A. All existing active utilities found to reside in excavated areas shall be supported in place with service maintained during construction. The Contractor shall be responsible for any damage caused by their operations and any needed repairs shall be completed to the Engineer's satisfaction.

Existing storm drains found to reside in excavated areas shall be supported, removed, or replaced at the Contractor's option and at no additional cost to the City. The Contractor shall be responsible for maintaining the existing line and grade of the storm drains. If the Contractor elects to remove and replace, it shall be done per applicable City Standards and Specifications.

Existing utility trenches and/or structures that are in close proximity to proposed trenches shall be safeguarded in an appropriate manner from damage.

15-1.04 Payment: Full compensation for supporting, removal and disposal of existing utilities and their appurtenances is considered as included in the contract prices paid for various contract items of work and no additional allowance will be made therefor.

15-2.02C Traffic Stripes and Pavement Markings: All traffic stripes, pavement markings or any other traffic markings shall be removed by the Contractor to the satisfaction of the Engineer and in accordance with Sections 84 of the Standards, and the Plans.

15-2.02D Pavement Markers: All raised pavement markers shall be removed by the Contractor to the satisfaction of the Engineer and in accordance with Sections 85 of the Standard Specifications, City Standards, and the Plans.

15-2.02N Asbestos Cement Pipe: The Contractor is advised that asbestos cement pipe (ACP) will likely be encountered on the project and must be cut, handled, and disposed of according to the Contractor's State Licensing Law and all other applicable laws and regulations.

15-2.02O Payment: Full compensation for the cutting, removal and disposal of asbestos cement pipe shall be considered as included in the prices paid for various contract items of work and no additional allowance will be made therefor.

15-2.10B Adjust Frames, Covers, Grates, and Manholes: Existing manhole frames and covers, valve boxes, mainline cleanouts and monuments that must be lowered below finish grade as part of this Project shall be adjusted after paving to conform to new finish grade.

The Contractor shall accurately locate and record the location of existing and new manholes, valve boxes, mainline cleanouts, and monuments to be adjusted to grade and shall furnish the Engineer a copy of said record prior to starting construction.

All facilities on active systems shall be accessible at all times to City personnel unless otherwise stated in these Special Provisions or approved by the Engineer.

After placement of the finish course of asphalt concrete the Contractor shall mark all overlaid manholes, valve boxes, mainline cleanouts and monuments, whether new or existing, with white paint by the end of that working day.

All new and existing manholes, valve boxes, mainline cleanouts and monuments shall be adjusted to grade within 48 hours after placement of the finish course of asphalt concrete.

Final grade adjustments and installation of concrete collars shall be done on the same working day. Final paving around manholes, valve boxes, mainline cleanouts and monuments shall be completed the following working day.

All silt and debris shall be removed from finished structures. This shall include all existing silt and debris plus material caused by the Contractor's operation.

In the event that the Contractor encounters water valve boxes with round lids or sanitary sewer frame and covers with open pick holes which must be adjusted to grade, the Contractor is to provide a count to the Engineer a minimum of two days prior to paving to obtain replacements that comply with current City Standards. The City will provide replacements provided the Contractor is not required to replace them as part of the contract or due to damage by the Contractor's operations. Valve boxes and frames and covers on facilities to be abandoned shall not be included in the count provided to the Engineer.

Prior to removal of an existing manhole frame, a platform shall be constructed in the manhole above the top of the sewer to prevent any dirt or debris from falling into the sewer. The platform shall remain in place until all work on the manhole has been completed and the asphalt concrete has been placed around the manhole. Prior to the removal of the platform from the manhole, all dirt and debris shall be removed.

All grade rings shall be set in cement mortar the same day they are placed. All joints shall be smoothly plastered inside and out.

Existing grade rings removed in the adjustment of manhole frames shall become the property of the Contractor and if undamaged and thoroughly cleaned of mortar may be reused in the work. If not so used, they shall be disposed of away from the site of work at the expense of the Contractor.

Manhole frames shall be reinstalled to align directly over the grade rings. Any frames misaligned by more than ½ inch shall be removed and reinstalled.

15-2.13 Payment: Full compensation for adjusting manholes and cleanouts to grade is considered as included in the contract prices paid for various contract items of work and no additional allowance will be made therefor.

15-3.03 Construction: All removed concrete shall become the property of the Contractor and shall be immediately off-hauled. None of the removed concrete shall be dumped or stockpiled on the work site. The Contractor shall dispose of all removed concrete at a recycler for this material. Burying of broken concrete within the limits of the project will not be allowed.

All concrete which is to be removed from sidewalk, curb, gutter and driveway areas shall be removed to the nearest score mark or construction joint as directed by the Engineer unless otherwise noted on Project Plans. The edge of existing concrete to remain shall be neat and free of defects. Saw cutting may be required to achieve this.

Reinforcing steel may be encountered in portions of concrete to be removed and no additional allowance will be made for the removal of such steel.

Irrigation facilities may be encountered during concrete removal and replacement. The Contractor shall exercise care in this area and repair any damage done by their operations at no additional cost to the City.

Landscaping and other surfaces or structures shall be restored to original condition at no additional cost to the City.

15-3.04 Payment: Payment for complying with the requirements of this section shall be included in the contract prices paid for various contract items of work and no additional allowance will be made therefor.

Full compensation for repair of existing irrigation facilities damaged during any phase of the work shall be included in the prices paid for various contract items of work and no additional allowance will be made therefor.

15-7 Utility Clearances: All items noted in this Sub-Section shall take place prior to any other construction activities**.**

Potholing was not performed during design. No pothole information is provided on the Project Plans. Schematic line work for existing utilities shall be for reference use only and shall not be considered as accurate information for any other areas within the project limits.

Contractor shall investigate, confirm and determine the exact elevation and alignment of existing utilities.

The Contractor shall provide all relevant information in writing to the Engineer immediately upon discovery of any conflict. Any delay in notification to the Engineer may delay direction and/or corrective action and a delay claim due to this reason shall not be considered by the City. The Contractor shall not proceed with any work that is in conflict until direction is provided by the Engineer and shall redirect crews to other contract work. All the information required to be obtained per this Section and any other information not noted but relative to the project shall be provided to the Engineer on a set of Plans when the investigative effort is complete.

15-7.01 Payment: Full compensation for verifying utility clearances is considered as included in the contract prices paid for various contract items of work and no additional allowance will be made therefor.

15-8 Tree Root Pruning: All tree roots two inches and greater which are encountered during excavation must be pruned by hand. The root shall be cut cleanly with a saw to avoid splits. When digging within the drip line of trees, Contractor shall exercise extreme caution to avoid pulling on roots with excavation equipment. Hand dig around all roots greater than one inch in diameter. The Contractor shall notify the Engineer when encountering roots within the drip line of trees which are greater than one inch. If the Engineer elects to get direction from an arborist the Contractor shall redirect crews to other contract work after safeguarding the area at no additional cost to the City.

15-8.01 Payment: Full compensation for removing and pruning tree roots, hand digging to avoid root damaging roots, and excavating cautiously with respect to tree roots is considered as included in the prices paid for various contract items of work and no additional allowance will be made therefor.

39 HOT MIX ASPHALT

39-1.01A Summary: Section 39-1 includes general specifications for producing and placing HMA by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture.

For these specifications, Hot Mix Asphalt (HMA) and asphalt concrete shall be the same. A minimum of two weeks prior to the placement of any asphalt concrete, the Contractor shall notify the Materials Laboratory of which asphalt plant will be used to supply the mix. For any job, asphalt concrete shall be supplied from a single plant.

Use Section 39-3 Method construction process of these specifications for HMA production and construction.

39-1.01C Description: Asphalt concrete shall be placed per Project Plans or as specified herein.

Permanent paving shall not take place until all underground work is finished, except as otherwise noted in these Special Provisions, and the City has given written notice of acceptance to the Contractor.

Unless otherwise specified, Asphalt concrete shall be placed on the same day the area is excavated so that all areas will either have existing, temporary or permanent asphalt surface by the end of each working day. No subgrade areas shall be exposed or open to traffic.

The basis for compaction approval shall be the attainment of 97% relative compaction and satisfactory surface condition following final rolling. The number of coverage's required shall be the minimum number required to obtain 97% relative compaction.

The asphalt concrete base and asphalt concrete surface courses shall be allowed to cool to 160° F at mid depth before the roadway is opened to traffic each day.

At the end of each working day the Contractor shall place retro reflectorized signs and delineators, as required for night time use in accordance with the Standard Specifications and Section 12 of these Special Provisions to warn the public of the existing conditions.

At the end of each work day during paving operations the location of all valves, manholes, monuments and any other facility overlaid with asphalt concrete and required to be raised to grade shall be marked in white paint.

39-1.02 Materials:

39-1.02B Tack Coat: Tack coat must comply with the specifications for asphaltic emulsion or asphalts. Tack coat shall be diluted SS1 or SS1h.

Notify the Engineer if you dilute asphaltic emulsion with water. The weight ratio of added water to asphaltic emulsion must not exceed 1 to 1.

39-1.02C Asphalt Binder: Asphalt binder in HMA must comply with the specifications for asphalts.
Asphalt binder to be mixed with aggregate for asphalt concrete surface, leveling and base shall be PG64-16 grade paving asphalt.

The amount of asphalt binder to be mixed with the aggregate shall be specified by the Engineer at the time of paving. Different asphalt binder content may be specified for each lift and each location.
Liquid anti-stripping agent (LAS) shall be added to the asphalt binder at a rate of 0.5% by weight of asphalt binder. The LAS shall be AD-here LOF 65-00 or equivalent, and shall be stored, measured, and blended with the asphalt binder in accordance with the anti-stripping agent manufacture's recommended practice. The LAS can be added at the asphalt plant or at the refinery. When added at the asphalt plant, the equipment shall indicate and record the amount of LAS added. If added at the refinery, the shipping ticket from the refinery shall certify the type and amount of LAS added.

39-1.02E Aggregate: The aggregate grading of the various types of asphalt concrete shall conform to one of the following as directed by the Engineer:

Surface or Leveling Course……3/4-inch HMA Type A, or ½-inch Coarse HMA Type A, or ½-inch Medium HMA Type A
Base Course…… ¾-inch HMA Type A

Aggregate must be clean and free from deleterious substances. Aggregates should be of high abrasion resistance and durability. Excessively soft and friable aggregates are not allowed.
The specified aggregate gradation must be determined before the addition of asphalt binder and includes supplemental fine aggregate.

Choose sieve size TV within each TV limit presented in the aggregate gradation tables.
The proposed aggregate gradation must be within the TV limits for the specified sieve sizes shown in the following tables:

Aggregate Gradation
(Percentage Passing)
HMA Types A

3/4-inch HMA Type A

Sieve sizes	TV limits	Allowable tolerance
1"	100	--
3/4"	95–100	TV ± 5
3/8"	65–80	TV ± 5
No. 4	49–54	TV ± 5
No. 8	36–40	TV ± 5
No. 30	18–21	TV ±5
No. 200	2.0–8.0	--

1/2-inch Coarse HMA Type A

Sieve sizes	TV limits	Allowable tolerance
3/4"	100	—
1/2"	94–100	--
3/8"	70–90	--
No. 4	55–61	TV ± 5
No. 8	40–45	TV ± 5
No. 30	20–25	TV ± 5
No. 200	2.0–8.0	--

1/2-inch Medium HMA Type A

Sieve sizes	TV limits	Allowable tolerance
3/4"	100	--
1/2"	95-100	--
3/8"	80-95	--

No. 4	59-66	TV ± 5
No. 8	43-49	TV ± 5
No. 30	22-27	TV ± 5
No. 200	2.0–8.0	--

Before the addition of asphalt binder and lime treatment, aggregate must have the values for the quality characteristics shown in the following table:

Quality characteristic	Test method	HMA Type A
Percent of crushed particles Coarse aggregate (% min.) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.) One fractured face	California Test 205	 90 75 70
Los Angeles Rattler (% max.) Loss at 100 rev. Loss at 500 rev.	California Test 211	 10 45
Sand Equivalent (min.) [a]	California Test 217	50[b]
Fine aggregate angularity (% min.)	California Test 234	45
Flat and elongated particles (% max. by weight @ 5:1)	California Test 235	10

[a] Reported value must be the average of 3 tests from a single sample.
[b] Minimum Sand Equivalent of 45 for asphalt concrete base.

39-1.02F Reclaimed Asphalt Pavement: Reclaimed Asphalt Pavement (RAP) may be used at the Contractor's option. If RAP is used, the Contractor shall provide the proposed mix design and the quality control for all HMA that includes RAP, in accordance with the following requirements:

1. Contractor shall provide City with a mix design per California Test 384 for the proposed RAP HMA.
2. As part of City's evaluation of RAP HMA, Contractor and City shall perform bitumen ratio tests on at least six split samples of Contractor's RAP to establish correlation between respective binder ignition ovens.
3. RAP shall be processed from reclaimed Asphalt Concrete pavement only.
4. RAP pile(s) shall be separate from the stacker pile, not intermingled with other materials, and stored on smooth surfaces free from debris and organic material.
5. The project RAP pile shall be processed and mixed, identified, and of adequate quantity for the proposed project. "Live" piles shall not be permitted.
6. Contractor shall sample the RAP pile and determine the bitumen ratio (using same binder ignition oven used in #2 above) and provide the test results to the City at least one week prior to producing RAP HMA.
7. A minimum of three samples shall be tested for bitumen ratio for RAP pile of 1500 tons, or portion thereof.
8. RAP pile shall be mixed such that individual bitumen ratio test results of RAP pile so not vary more than +/- 0.5%.
9. During RAP HMA production, RAP shall be sampled by the Contractor off of the belt (into the batch plant), per method established by the City, and samples provided to the City.
10. Bitumen ratio of RAP sampled off of the belt shall be 4.0% minimum, as determined by City binder ignition oven. City shall select binder content for RAP HMA mix per Specifications.

11. RAP content shall be no more than 20% by dry aggregate mass in the HMA. If proposing a change in the RAP content, the Contractor shall notify the Engineer. If the content changes more than 5%, the Contractor shall submit a new mix design.
12. Moisture content of RAP pile shall be 4.0% maximum and shall be tested the day prior to the day of paving and tested/monitored during each day of HMA production.
13. RAP pile(s) shall be protected from exposure to moisture.
14. RAP HMA shall comply with all the specifications for HMA.
15. If batch mixing is used, RAP shall be kept separate from the virgin aggregate until both ingredients enter the weigh hopper or pugmill. After introduction to the pugmill and before asphalt binder is added, the mixing time for the virgin aggregate and RAP shall not be less than five seconds. After asphalt binder is added, the mixing time shall not be less than 30 seconds.
16. If continuous mixing is used, the RAP shall be protected from direct contact with the burner flame with a device such as a shield, separator, or second drum.
17. If any of the above criteria are not satisfied, or if the RAP HMA test result determined by the City are inconsistent, RAP HMA production shall stop for City projects until the issue(s) are corrected.

39-1.03 HOT MIX ASPHALT MIX DESIGN REQUIREMENTS:

39-1.03E Job Mix Formula Verification: (Not Applicable)

39-1.08A General: During production, with approval of the Engineer, you may adjust hot or cold feed proportion controls for virgin aggregate and RAP.

39-1.12A General: Determine HMA smoothness with a straightedge. The completed surfacing shall be thoroughly compacted, smooth and free from ruts, humps, depressions or irregularities. Any ridges, indentations or other objectionable marks left in the surface of the asphalt concrete by blading or other equipment shall be eliminated by rolling or other means. The use of any equipment that leaves ridges, indentations or other objectionable marks in the asphalt concrete shall be discontinued, and acceptable equipment shall be furnished by the Contractor.

39-1.13 Hot Mix Asphalt On Bridge Decks: The aggregate grading of the asphalt concrete shall be as directed by the Engineer.

39-1.14 Miscellaneous Areas and Dikes: The aggregate grading for asphalt concrete placed on miscellaneous areas shall conform to that specified for the asphalt concrete placed on the traveled way, unless otherwise directed by the Engineer.

Dikes shall be shaped and compacted with an extrusion machine or other equipment capable of shaping and compacting the material to the required cross section.

39-1.15 Minor Hot Mix Asphalt: (Not Applicable)

39-3.02A Testing: The acceptance testing requirement for Sand Equivalent shall be 50 (minimum) for asphalt concrete surface and 45 (minimum) for asphalt concrete base. HMA shall meet the following requirements.

Aggregate Micro-Deval (ASTM D6928-10)[1]	Tensile Strength Ratio, TSR (ASTM D7870)[2]
≤16.0%	Not Required
16.1-18.0%	70 (minimum)
18.1-21.0%	80 (minimum)

[1] Asphalt concrete with an aggregate Micro-Deval loss greater than 21.0% shall be removed and replaced at the Contractor's expense. In addition, no single source of asphalt concrete aggregate shall have a Micro-Deval loss greater than 21.0%.

[2] TSR testing shall be performed on re-compacted asphalt concrete (per ASTM D7870), obtained from field cores, and tested within 30 days of asphalt concrete placement. Specimens tested shall include 1 unconditioned sample, and 2 conditioned samples as follows:

a) 20.0-hour Adhesion cycle @ 60˚C
b) 3500 cycles @ 40 psi and 60˚C

A single TSR test shall not represent more than 750 tons of asphalt concrete.
Asphalt concrete not meeting the above requirements shall be removed and replaced at the Contractor's expense.

39-3.04 Transporting, Spreading, and Compacting: Numbers of coverages. Test sections shall be approved on the basis of the attainment of 93% relative compaction and a satisfactory surface condition following final rolling. The number of coverages required shall be the minimum number required to obtain 93% relative compaction. Relative density shall be the ratio of in-place density (ASTM Test Method D2950) to test maximum density (California Test 309, Method of Test for Determining Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt) determined during production paving.

The HMA may be cored during paving of the test sections, and the in-place density for each test section shall be the average of three core densities determined per California Test 308.

39-6 Payment: Full compensation for furnishing and installing asphalt concrete paving shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefor.

39A ASPHALT CONCRETE TRENCH PAVING

39A-1.01 Description: Asphalt concrete surfacing and asphalt concrete base and the placing thereof shall conform to the requirements of the Standard Specifications, Section 39 of the City Specifications and these Special Provisions.

39A-2.01 Asphalts: Temporary paving on all utility trenches and any other excavated areas shall be ½-inch maximum, medium grade aggregate hot mix asphalt concrete installed a minimum of two inches thick **placed each day** over the work.

Temporary paving around edges of steel plates shall be a hot mix ½-inch maximum, medium graded aggregate and SC 3000 asphalt binder for use the same day or SC 250 asphalt binder for use over a one-week period.

The amount of asphalt binder to be mixed with the aggregate will be specified by the Engineer at the time of paving. Different asphalt binder content may be specified for each lift and each location.

Cutback shall not be stockpiled or used anywhere on the job site.

39A-5.01 Spreading Equipment: When trench width is three feet or less, the asphalt concrete used for trench paving may be deposited directly from the haul vehicle into the trench. The asphalt shall then be raked smooth prior to compaction.

39A-6.01 General Requirements: Permanent trench paving shall conform to City of Santa Rosa STD 215 and shall have the minimum A.C. thickness:

- Hoen Avenue = **0.35'**
- Melbrook Way = **0.25'**

Contractor shall not be allowed to trench across travelled lanes within a roadway perpendicular to traffic flow. All trenching shall be completed so that it is at an angle to traffic flow within the roadway.

The use of 6 inches of asphalt concrete base per Note 1 of City STD-215 is **not** permitted without written approval from the Engineer in a No Cost Change Order.

The Contractor shall provide compaction of backfill and base material as the job progresses. Temporary paving, as specified in Section 39A-2.01, shall be placed over the work each day, leaving not more than 25 feet unpaved. This temporary paving shall be removed for final street reconstruction and/or trench paving. The 25 feet of unpaved trench shall be covered with skid resistant steel plates (with a coefficient of friction of 0.35 or greater per CTM342), capable of sustaining normal (H20) traffic loads without shifting or bouncing and shall be secured per Caltrans requirements. Plates that have areas where the skid resistant material is missing shall not be used and must be removed from the job site. Hot mix asphalt concrete shall be placed and compacted around all edges of steel plates with a sufficient width and gradual slope in order to provide a smooth transition to existing pavement. The Contractor shall only be allowed to plate one lateral trench at a time.

Temporary and permanent asphalt trench paving shall be even and smooth riding.

The Contractor shall monitor and maintain all temporary paving to the satisfaction of the Engineer.

Asphalt concrete used for temporary trench paving shall be removed and disposed of in accordance with the Standard Specifications, City Standard Specifications Section 7-1.13 “Disposal of Materials Outside the Highway Right-of-Way”.

Any existing manholes or valves that are encountered within the trench paving limits must be adjusted to grade per the requirements of Section 15 of these Special Provisions. The Contractor is responsible for all coordination with the various utility company owners and their representatives, as well as the cost to adjust the various utilities to grade.

39A-6.03 Compacting: Compaction shall be in accordance with Section 39-6.03 of the City Specifications, reprinted here for clarity.

The basis for approval shall be the attainment of 97% relative compaction and satisfactory surface condition following final rolling. The number of coverages required shall be the minimum number required to obtain 97% relative compaction.

39A-8.01 Payment: Full compensation for furnishing and installing temporary and permanent trench paving shall be considered as included in the prices paid for the various contract items of work and no additional allowance will be made therefor.

130-01 CURED-IN-PLACE PIPE LINING

130-01-1.01 Description: When formed, the liner shall extend over the length of each pipe run in a continuous, tight fitting, smooth, hard, strong, chemically inert, and watertight pipe-within-a-pipe closely following the contours of the host pipe. The liner shall be installed using "Trenchless Technology", i.e., no excavation is anticipated to be necessary for this item of work except for that potentially required to gain access at diameter constrained manholes.

The Contractor shall furnish all labor, equipment and materials necessary to rehabilitate existing Matanzas Siphons as stated herein by the cured-in-place pipe (CIPP) lining method. This Contract shall include the preparation of the construction site, including cleaning, flushing, dewatering, disposal and pre-television inspection of inverted siphons to be lined; protection of existing conditions during installation work, existing lateral location, identification and marking, infiltration repairs and other point repairs as needed prior to lining, pre-liner and/or liner installation, lateral reinstatement, grouting of lateral reinstatements as required, pipe sealing at manholes, final television inspection and testing as required, and other incidentals as required for the proper installation; protection of the site during the life of the contract, including protection of inspection personnel, warning lights, barricades, and dust control as required; the cleanup of the work site, including maintenance and replacement of features such as paving, curb and gutter, landscaping including hardscapes, if damaged.

The Contractor's attention is directed to the Project Plans for clarification of site locations, limitations and work specifics. Although the plans are based on record information, they may not match existing conditions entirely.

The conditions noted here, including curves in the alignment of the segments, may not be a complete list or match conditions entirely as they are found in the field. It shall be the Contractor's responsibility to perform a complete review and inspection of each site and pipe to verify existing conditions and to locate all features of each segment to be lined, including footage lengths and pipe diameters, prior to ordering, fabrication or lining.

The CIPP liner shall be designed assuming a fully deteriorated pipe at each location.

Only water method is acceptable for this project.

130-01-1.02 Quality Assurance:

1. Work performed under this Section shall conform to the Drawings and Specifications and shall comply with all standards, rules and regulations, laws and ordinances of the City, as amended. That which is necessary to make the work comply with the above requirements shall be provided without additional cost to the City.

2. CIPP Installer and Manufacturer Qualifications:
    a. The Manufacturer specializing in manufacturing Products specified in this section shall have the minimum 5 years of documented experience.
    b. The lining installer shall have the following minimum qualifications:
        1. Field Supervisor Experience: The lining field supervisor (defined as the person who is supervising in the field during all phases of the lining) must have the following experience:

i. **CIPP Lining:** Installed at least 3,000 feet of minimum 36" CIPP lining in sewer mainlines as part of a lining crew (includes both non-supervisory and supervisory work).
ii. **CIPP Lining Supervision:** As lining field supervisor, installed at least 1,500 feet of minimum 36" CIPP lining in sewer mainlines.
iii. **CIPP Lining Project Supervision:** As lining field supervisor, installed CIPP lining in sewer mainlines on at least four different projects, a minimum of two of these projects being 24" or larger.

2. Technician Experience: At least one of the crew members must have the following experience:
   i. **CIPP Lining:** Installed at least 1,500 feet of min 36" CIPP lining in sewer mainlines as part of a lining crew.
   ii. **CIPP Lining Projects:** Installed CIPP lining in sewer mainlines on at least two different projects as part of a lining crew.

b. The final decision to accept or reject the product, manufacturer, and/or installer lies solely with the City. The named Manufacturer, Field Superintendent, CIPP Installer, Lateral Cutter, and Boiler Technician must be employed to perform the work, unless changes are specifically authorized by the City.

3. Correction of failed liner deemed unacceptable, as a result of the post video inspection and/or test reports for structural values, thickness, chemical resistance, etc., shall be the responsibility of the Contractor, at no extra cost to the City. Method of correction/repair shall be approved by the Engineer with prior field demonstration, if required. At the Engineer's discretion, full removal and replacement of failed liner may be required at no additional cost to City. Once corrections/repairs are completed a new video inspection will be required at the Contractor's expense.

4. Each finished liner shall be continuous over the entire length of runs (from manhole to manhole or structure to structure as shown on the Plans) and shall be free from visual defects. Finished liners shall meet or exceed the requirements of this specification.

5. The Contractor shall televise the pipe after the liner has been installed, all sewer reconnections have been made, and manhole and structure work has been completed as necessary. The original television inspection video shall be provided to the Engineer on compatible electronic media. If specialized software is needed to review the videos, it shall be provided to the City at no cost. The Contractor shall repair all damage or defects found during the reviewing of these final TV inspection videos.

6. All materials and work supplied under this section shall be warranted for a period of two years by the manufacturer and the Contractor. Warranty period shall commence upon written notice of completion by the City. The materials shall be warranted to be free from defects in workmanship, design, and materials. If the materials should fail during the warranty period, it shall be replaced or restored to service at no expense to the City.

130-01-1.03 Submittals: Contractor shall submit a complete list of all materials proposed to be furnished and installed to the Engineer for approval. The submittals shall include:

1. Contractor and Manufacturer qualifications.

2. Television inspection reports and video made after the bypass system has been set up, the pipes are out of service, and the pipes have been cleaned but prior to pipe liner insertion per City Specifications Section 130.

3. Information on all CIPP materials and resins, including CIPP pre-liner if used.

4. Pre-liner description, pre-liner splicing recommendations, and identification of supplier as required.

5. Certificate of Compliance from the Manufacturer certifying compliance with the applicable specifications and standards. The manufacturing date of lining materials shall be included in the certification. The batch number of the resin to be used shall also be included in this submittal upon time of delivery. Certification shall be signed by an authorized agent of the manufacturer.

6. Technical data sheets from resin manufacturer. Technical data sheets to include quality control values for viscosity and gel time. Technical data sheets also to include average values for flexural modulus, flexural strength.

7. Certified copies of quality control resin batch test reports. Report to include measured values for viscosity and gel time.

8. Manufacturer's installation instructions and product data.

9. Contractor's procedures including the duration of service shutdown, complete manufacturer's recommendations for storage procedures, resin application, curing process details and cure schedules (including heat up, hold, and cool down cycles and temperature control for each diameter and CIPP thickness), trimming and finishing at manhole walls or structures, and lateral reinstatement methods.

10. Data, measurements, assumptions and calculations for sizing liners and preliners. Data shall include CCTV footage of the existing condition of the pipe as taken in live flow prior to set-up of the bypass system per Special Provisions Section 130-00. Measurements shall include direct measurements of the diameter of the existing pipe as far into the existing pipe as can be accessed from the existing manholes. Diameter measurements shall be taken from at least two different locations along an existing pipe segment. This information shall be provided prior to: completing any design calculations, ordering any lining materials, or fabricating any liner materials.

11. Engineering calculations for the design of the liner thickness. Design calculations shall be checked and approved by a Registered Civil Engineer in the State of California. Liner design calculations shall be supported by field analysis, technical assumptions, requirements of these Special Provisions, and ASTM F1216. Final approval of the design calculations shall be given by the Engineer.

12. Verification of product conformance by third party testing for the chemical resistance and physical testing requirements along with the report of test results.

13. RESIN:
    a. FOR HOT WATER RESIN: The proposed heating equipment and boiler management operational safety systems for use with the cure process of CIPP along with proof of ownership or executed lease agreements that cover the duration of the contract term. A list of certified boiler technicians approved as operators by the manufacturer or an independent testing agency.

14. Thermocouple sensors and cable that will allow for temperature to be measured at least every three (3) inches along liner during the curing process. Also submit information on software that will be used to record temperature continuously during the curing process.

15. Certification from the manufacturer that the resin/catalyst and tube material comply with the required application, meets the intended service condition and the physical requirements set forth in this specification.

16. Methods, materials, equipment, and procedures to stop existing infiltration into the host pipe prior to lining.

17. Methods, materials, equipment, and procedures to seal annular space between the CIPP and the existing pipe at the manholes (also referred to as the “end seal”) and at all internally reinstated services connections. End seals are required at every manhole or structure including the manholes or structures that are lined through. If a different product is used at manholes or structures that are lined through, submit information on this product also.

18. Sampling procedures and locations for obtaining representative samples of the finished liner.

19. Literature and background information on the independent third-party testing laboratory proposed for testing the physical properties of the installed pipe.

20. Volume of resin required per unit length (gal/foot or liters/meter) to fill the volume of air voids in the tube plus the additional allowance for polymerization shrinkage for each diameter and thickness to be installed on the project.

21. After each impregnation of a tube for an installation, a process record that verifies that the resin impregnation yield matches the required quantity for the diameters and thicknesses.

22. Method for CIPP liner repair (i.e., vacuum holes, etc.)

23. Cure records including the temperatures measured at each thermocouple/sensor. Temperature measurements shall be recorded continuously during the curing process.

24. Proposed hydrostatic head required for insertion of the liner with associated calculations.

25. Door hanger and other public notification information.

26. Spill Contingency Plan outlining the steps the Contractor will take and the equipment that will be used in the event of a sewage spill during bypass activities.

27. Field Supervisor’s and technician’s resume/experience list to demonstrate that experience requirements listed in Section 130-01 are met. Information to include project name, project location, date, contact name with organization, size and footage of pipe lined, and the lining product(s) used.

28. Upon approval of the Engineer, the manufacturer’s recommendations shall become the basis for acceptance or rejection of actual methods of installation used in the work.

29. Color CCTV video of the pipeline after complete cure of the liner (electronic format) and completion of rehabilitation of each adjacent manhole or structure as required and prior to taking the bypass system offline per City Specifications Section 130.

130-01-1.04 Product Handling:

1. Liner pipes shall be properly stored and handled to prevent damage in accordance with the manufacturer's recommendations and as approved by the Engineer. Damage includes, but is not limited to, gouging, abrasion, flattening, cutting, puncturing, or ultra-violet (UV) degradation. All damaged materials and pipe rejected by the Engineer shall be promptly removed from the project site at the Contractor's expense and disposed of in accordance with current applicable regulations.

2. Protection: The Contractor shall use all means necessary to protect sewer lining materials before, during and after installation and to protect the installed work and materials of all other trades.

3. Replacement: In the event of damage, the Contractor shall immediately make all repairs and/or replacements necessary to the satisfaction of the Engineer, at no additional cost to the City.

130-01-1.05 Existing Sewer System:

1. Active Sewers: The Contractor shall maintain in operating condition all active sanitary sewers encountered in the sewer lining installation.

2. Connections to Existing Sewers and Manholes or Structures: The Contractor shall make all required connections to existing sewers and manholes and carry out such work in accordance with local standards and requirements and as directed by the Engineer. Extreme care to prevent debris from entering into existing sewers shall be exercised.

3. Best Management Practices for work at all sites:

   - The Contractor shall prepare a Spill Contingency Plan, as part of their Emergency Response plan.

   - The plan shall be submitted to the Engineer for approval prior to start of work, Best Management Practices (BMP) measures for work in the vicinity of a creek. The Contractor and Engineer shall meet prior to the beginning of work to discuss the plan.

   - The plan shall be on site along with the CIPP Work Plan and working drawings. The following minimum BMPs shall be in place or available whenever the bypass pumping is being performed at sites near a waterway:
     a. BMP measures (such as sand bags) shall be implemented around manholes/placement points.
     b. Manholes or structures adjacent to a creek shall be monitored at all times with radio communication between crew members.
     c. Sand bags or straw wattles shall be placed around all areas where the backhoe is operating;
     d. Sewer manhole will be available for pumping all water used in the curing process or trench draining;
     e. The Contractor shall have a safety representative on site for security purposes and monitoring operations;
     f. Contractor shall have the equipment necessary on site for building emergency berms or containment basins, as needed;
     g. A vac-truck with hoses shall be available on Standby with a minimum response time of 30 minutes if required;
     h. A pump truck with hoses shall be available on Standby with a minimum response time 30 minutes hours if required.

130-01-2.01 Cured-In-Place Pipe Lining:

1. The hydraulic capacity of the lined section shall be maintained as large as possible.

2. The liner pipe material shall be designed for use in sanitary sewer siphons and shall be in strict conformance with all applicable sections of ASTM F1216 or ASTM F 1743 specifications. All materials and procedures used in the cured-in-place pipe rehabilitation process shall be equal to or exceed the manufacturer's standards. The CIPP design shall assume no bonding to the original pipe wall.

3. Liner Tube: The tube shall be fabricated to meet the requirements of ASTM F1216 or ASTM F1743, Section 5 and the performance requirements as specified herein. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and be capable of stretching to fit irregular pipe sections. Two different types of systems shall be considered for CIPP: Fiber Felt Tube System or Fiberglass Mat System or approved equivalent. The Engineer shall make any determination of equivalency after being presented with relevant documentation published by the manufacturer of proposed substitution materials.
    a. The tube shall have a uniform thickness that when compressed at installation pressures will meet or exceed the Design thickness.
    b. The tube shall be free of tears, holes, cuts, foreign materials, abrasions or other defects and will be subject to inspection by the City.
    c. Contractor shall determine the minimum tube length necessary to effectively span the designated run between the diversion structure and the outlet structure, unless otherwise specified. Contractor shall field verify the lengths in the field prior to impregnation of the tube with resin, to ensure that the tube will have sufficient length to extend the entire length of run.
    d. The minimum length of the flexible tube shall have allowance for proper stretching or shrinkage due to pressure or expansion.
    e. Due to corrosion, the existing pipes may have an irregular shape. Before ordering the liner materials, the Contractor shall measure the inside diameter of the existing pipelines in the field as far in as possible from entry point so that the liner tube can be custom fabricated to be installed in a tight-fitted condition in the existing pipes. The liner tube shall be sized so as to stretch to fit irregular pipe sections and negotiate bends.
    f. The tube shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated elastomeric layers. No material shall be included in the tube that may cause delamination in the cured CIPP. No dry or unsaturated layers shall be evident. It shall not be possible to separate any layers with a probe or knife blade such that the layers separate cleanly or the probe or knife blade moves freely between the layers.
    g. The outside of the tube shall be marked for distance at regular intervals along its entire length, not to exceed 5 ft. Such markings shall include the Manufacturers name or identifying symbol.
    h. Fiber Felt Tube System
        1. The felt tube shall be a sewn thermoplastic polyester or acrylic tube consisting of one or more layers of flexible needled felt or an equivalent woven and/or non-woven material capable of carrying resin, and with sufficient needling and cross lapping and strength to withstand the installation pressures and curing temperatures. The felt tube to be furnished shall be compatible with the resin and catalyst systems to be utilized.

2. The finished lining shall consist of an inner polyurethane and an outer polyester felt layer (or layers) impregnated with a thermosetting resin and fabricated to fit tight against the existing pipe wall. An allowance shall be made for circumferential stretching during inversion.
3. The tube shall be sewn to a size that when installed will tightly fit the internal circumference and length of the original pipe. Allowance should be made for circumferential stretching during inversion. Overlapped layers of felt in longitudinal seams that cause lumps in the final product shall not be utilized.
4. The outside layer of the tube (before wet out) shall be coated with an impermeable, flexible membrane that will contain the resin and facilitate monitoring of resin saturation during the resin impregnation (wet out) procedure.
5. Seams in the tube shall be stronger than the non-seamed felt.

4. Resin/Catalyst: The resin system shall be a corrosion resistant polyester, vinyl ester, or epoxy and catalyst system that when properly cured within the tube composite meets the requirements of ASTM F1216 and ASTM F1743, the physical properties herein, and those which are to be utilized in the Design of the CIPP for this project. The resin shall produce CIPP which will comply with or exceed the structural and chemical resistance requirements of this specification.
    a. The resin used shall be resistant to abrasion from solids, grit, and sand and be compatible with the rehabilitation process used and designed for a wastewater environment. The resin shall be able to cure in the presence or absence of water, and the initiation temperature for cure shall be as recommended by the resin manufacturer and approved by the Engineer. The resin shall have sufficient properties to obtain non-draining characteristics when impregnated into the fiber fabric.

    b. The Engineer shall also be informed in advance, for verification and inspection of the resin material at the "wet out" of the tube. The inspection shall be at the discretion of the Engineer, which shall not relieve the Contractor of his responsibilities. The wet-out procedure shall utilize the resin and catalyst in sufficient quantities to ensure complete impregnation of the liner and provide the properties specified herein.

    c. If resin enhancers are used, the Contractor shall provide testing data to indicate that the enhanced resins meet the requirements for the project. The Engineer can disallow the use of enhancers at no additional cost to the City.

    d. The catalyst system shall be compatible with the resin and other materials to be utilized in the rehabilitation process. Quantity and type of catalyst shall be selected based on the curing conditions and recommendations of the resin manufacturer.

    e. The chemical resistance of the resin system selected shall have been tested by the resin manufacturer in accordance with ASTM F1216. Exposure to the chemical solution listed below shall result in a loss of not more than twenty percent of the initial physical properties when tested in accordance with ASTM D543 for a period of not less than one month.

CHEMICAL SOLUTION	CONCENTRATION, %
Tap Water (pH 6-9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Gasoline	100
Vegetable Oil	100
Detergent	0.1
Soap	0.1

f. The resin system shall be manufactured by a company selected by the CIPP supplier. Only polyester and vinyl ester resins complying with the following requirements shall be used.
   1. Polyester Resin. A resin created by reaction products between isophthalic/terathalic acid, maleic anhydride, and a glycol characterized by reactive unsaturation located along the molecular chain. This resin is compounded with a reactive styrene monomer and reacted together with initiators/promoters to produce cross-linked copolymer matrices.

   2. Vinyl Ester Resin. A resin created by reaction products of epoxy resins with methacrylic acid and characterized by reactive unsaturation located in terminal positions of the molecular chain. This resin is compounded with a reactive styrene monomer and reacted together with initiators/promoters to produce cross-linked copolymer matrices.

g. The initiation temperature intensity and duration for cure shall be as recommended by the resin manufacturer. Temperature monitoring devices shall be installed at all exposed portions of the pipe (beginning and end of run) for each inversion or run of installed liner pipe between the host pipe and the CIPP liner. The resin shall have sufficient thixotropic properties to obtain non-draining characteristics when impregnated into the fiber fabric.

h. The catalyst system shall be compatible with the resin and other materials to be utilized in the rehabilitation process. Quantity and type of catalyst shall be selected based on the curing conditions and recommendations of the resin manufacturer.

i. The wet-out procedure for the tube shall utilize the resin and catalyst in sufficient quantities to ensure complete impregnation of the liner and provide the properties as specified in this Specification.

5. CIPP Liner Engineering Design Criteria

   a. The liner material and thickness shall be calculated and designed for use in sanitary sewer inverted siphons and must be in strict conformance with all applicable sections of ASTM F1216, F1743 and D5813.

   b. The Cured-In-Place Pipe thickness shall be calculated and designed upon the following physical conditions of the existing pipe to be rehabilitated:

1. **All pipes shall be considered fully deteriorated.**
2. All pipes shall be subjected to a soil load of 120 lbs./cu. Ft., with HS20 live load.
3. Pipes in good condition shall have a minimum of 2% ovality in the circumference. A higher value of ovality shall be used if the pipe is deteriorated.
4. Factor of safety of 2.0 shall be used for calculations.
5. Inside diameter of the existing pipe used in calculating liner thickness shall be as measured in the field prior to producing pipe calcs and ordering lining materials so that the liner can be lined in a tight fitted condition.
6. A Modulus of Soil Reaction (E) of 1000 psi shall be used.
7. Assume that groundwater level is at ground surface.
8. External Buckling Design – Acceptable third-party testing and verification of the design analysis techniques (ASTM F1216, Section X1.2.2)
9. The pipe liner shall be designed to bear full pipe loading. Host pipe shall be assumed not to provide any structural support.

c. Finished and Cured Liner Properties

1. The layers of the cured CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers separate cleanly or the probe or knife blade moves freely between the layers. If separation of the layers occurs during testing of field samples, new samples will be cut from the work. Any reoccurrence may cause rejection of the work.

2. The finished cured-in-place pipe liner shall fit tightly and neatly against the existing pipe walls.

3. The liner shall be fabricated from materials which, when cured, will be suitable for continuous service in sewerage environments containing hydrogen sulfide, carbon monoxide, carbon dioxide, methane, dilute (10%) sulfuric acid at an average wastewater temperature of 80°F, dilute (10%) phosphoric acid, petroleum hydrocarbons, gasoline, vegetable oil, tap water (pH 6.5 - 9), up to 1 hour per day exposure to 5 percent sodium hydroxide up to a pH of 11, moisture saturation, and external exposure to soil bacteria and chemical attack which may be due to materials in the surrounding ground or sewage within.

4. The physical properties of the cured liner shall meet the minimum chemical resistance requirements of ASTM F1216, shall conform to the structural standards as listed in Section 76-2.01 D, and with the minimum standard physical properties as follows:

MINIMUM PHYSICAL PROPERTIES

PROPERTY	REFERENCE	MINIMUM VALUE	
		Short Term	Long Term
Wall Thickness	ASTM D 2122	As calculated	N/A
Flexural Strength	ASTM D 790	4,500 psi (polyester) 5,000 psi (vinyl ester)	N/A
Flexural Modulus of Elasticity	ASTM D 790	250,000 psi (polyester) 300,000 psi (vinyl ester)	125,000 psi (polyester) 150,000 psi (vinyl ester)

5. Liner shall be homogeneous throughout and free of:
    a. Serious abrasion, cutting, or gouging of the outside surface extending to more than 10 percent of the wall thickness in depth.
    b. Cracks
    c. Kinking (generally due to excessive or abrupt bending)
    d. Flattening
    e. Holes
    f. Blisters
    g. Other injurious defects
6. Liner shall be uniform in color, opacity, density, and other physical properties. Any lining not meeting these criteria shall be repaired to the satisfaction of the Engineer or rejected at the Engineer's option.
7. Liner Color: Liner shall conform to the following:
    a. Inside: The interior of the liner shall be light in color. Light blue is acceptable.

130-01-3.01 Execution: This section is intended to provide the Contractor with general guidance on the methods to be used to install the sewer pipe using the CIPP liner method. Nothing contained herein shall relieve the Contractor from completing the pipe rehabilitation in the most feasible, efficient and safe manner, using required materials to the lines and grades shown on the plans and to the requirements of these specifications.

130-01-3.02 Existing Conditions:

A. Site Review

Prior to ordering any lining materials, fabrication of any lining materials, the commencement of bypass pumping operations, or the commencement of lining any pipes, the Contractor shall perform a site review and CCTV video inspection per City Specifications Section 130 and measure the internal diameter of the existing pipeline to verify existing field conditions prior to lining.

1. The liner shall be fabricated to a size which, when installed, will neatly fit the internal circumference of the conduit shown on the Plans. Allowance for circumference expansion during installation shall be made.

2. The Contractor shall verify that the sewer line shall be installed in strict accordance with all pertinent codes and regulations, the original design, the referenced standards and the manufacturer's recommendations.

B. Discrepancies

1. In the event of discrepancy, the Contractor shall immediately notify the Engineer.

2. The Contractor shall not proceed with the installation in areas of discrepancy until all such discrepancies have been fully resolved with the Engineer and noted in that day's log.

130-01-3.03 Field Measurements: The Contractor shall make all necessary measurements in the field to ensure precise fit of items in accordance with the Project Plans.

130-01-3.04 Inspection of Pipe Liner: No pipe shall be lined without proper notification of the Engineer. Each pipe liner shall be subject to inspection by the Engineer immediately prior to installation. Defective liner will be rejected and replaced at the Contractor's expense.

130-01-3.05 Preparation: The following installation procedures shall be adhered to unless otherwise approved by the Engineer.

A. Safety

The Contractor shall carry out his operations in strict accordance with all OSHA and manufacturer's safety requirements. Particular attention is drawn to those safety requirements working with hazardous/combustible materials, scaffolding and entering confined spaces.

B. Cleaning of Sewer Line

Prior to pipe rehabilitation and after the bypass system has been set up, the Contractor shall perform an initial sewer cleaning of all debris, roots and other materials that would prevent the proper installation of the liner. Several passes, if necessary, with a piece of high-pressure jet cleaning equipment shall be performed until all debris is removed from the pipe. If roots are present, root cutters or mechanical brushes shall be attached to the jet nozzle and sent through the line to remove all root intrusions. All spoils removed from the pipe shall be properly disposed of by the Contractor at the City's Wastewater Treatment Plant.

C. Inspection of Pipelines

After bypass pumping has been set up, the Contractor shall provide experienced personnel trained in locating breaks, obstacles and service connections by closed circuit color television. The interior of the pipelines shall be carefully inspected to determine the location of any condition which may prevent the proper installation of the liner into the pipeline. It shall be verified in writing to the City so that these conditions can be corrected. A DVD and suitable legible log shall be kept for later reference by the City. See City Specifications Section 130.

D. Bypassing flow

See Section 130-02 of these Special Provisions.

E. Line Obstruction

It shall be the responsibility of the Contractor to clear the line of obstructions or collapsed pipe that will prevent the insertion of the liner or closed-circuit television camera. If inspection reveals an obstruction that cannot be removed by conventional sewer cleaning equipment or by remotely performed point repair methods acceptable to the Engineer, then the Contractor shall make a point repair excavation to uncover and remove or repair the obstruction. Before any point repair excavation is pursued, the Contractor shall give the Engineer three (3) working days' notice. Point repair excavation shall proceed only with the Engineer's written authorization. Protruding laterals shall be removed either internally with a hydro jet cutter or by external point repair. The City may direct additional point repair and obstruction removal based on the pre-installation television inspection above. Point repairs and obstruction removal directed by the City will be paid for as extra work.

F. Existing Pipeline Infiltration and Inflow

It is the responsibility of the Contractor to plug or otherwise stop existing active inflow and/or infiltration in the existing pipeline prior to lining. The Contractor shall demonstrate that inflow and/or infiltration has been arrested by providing CCTV footage of a clean and dry host pipe prior to beginning any lining, per City Specifications Section 130. All work associated with plugging or otherwise stopping existing active inflow and/or infiltration in the existing pipe prior to lining shall be considered as part of the price for CIPP lining. No extra payment shall be provided to the Contractor for this work.

G. Manhole Protection

The Contractor shall protect the manholes or structures to withstand forces generated by equipment, water or air pressure used while inserting the liner. The Contractor shall be fully responsible for any damages to existing utilities caused by the Contractor's operations.

H. Delivery, Storage, and Handling

1. If the flexible tube is impregnated with resin at the factory, it shall be transported, installed, and cured before expiration of the shelf life.

2. Impregnated tube shall be stored and transported under refrigerated, ultraviolet light-free conditions. Light-cure CIPP shall be transported in a manner that does not allow for premature curing before installation is performed.

3. No cuts, tears, or abrasions shall occur during handling. The Engineer may inspect the tube before it is placed into the host pipe.

130-01-3.06 Installation:

A. General

The Contractor shall be an approved manufacturer's licensed installer of the proposed pipe liner system.

1. The liner shall be installed through the existing manholes or structures, in accordance with the manufacturer's recommendations and procedures. The finished pipe on mainline reaches shall be continuous over the entire length between manholes or structures as shown on the Project Plans and be as free as commercially practical from visual defects such as foreign inclusions and pin holes. The ends of the pipe lining shall be cut flush at the outlet point in the manhole or structure by using a rotary cutter, and the ends shall be sealed to the rehabilitated pipeline. The sealing material shall be compatible with the pipe liner pipe and shall provide a watertight seal.

2. CIPP installation shall be in accordance with ASTM F1216, Section 7, or ASTM F1743, Section 6, with modifications as outlined in this specification.

B. Pre-liner Installation (if required)

1. The Engineer must witness the installation of each preliner tube. A preliner tube complying with these special provisions must be used to protect against uncontrolled infiltration and to control resin loss, liner thickness, and prevent blocked laterals. For long segments, several sections of preliner tube may be spliced together under preliner manufacturer's recommendations to form a tube of adequate length.

2. If the Contractor fails to install the required preliner tube over the entire segment as required by the Engineer (regardless of physical tests and thickness test results), he must remove the CIPP from the host pipe and dispose of it at his own cost.

C. Preparation and Protection of Existing Facilities

1. The outside diameter of the tube being inserted shall be properly sized to allow for expansion so that the CIPP liner can fit tightly against the host pipe. The tube shall be installed through the existing manholes or structures, in accordance with the manufacturer’s recommendations and procedures. The Contractor shall protect the manholes to withstand forces generated by equipment, water, or air pressures used while installing the tube.

2. The Contractor shall protect all existing landscaping, roadways, piping, and any other existing feature of the work area from damage. Any and all required repairs will be made by the Contractor at no additional cost to the City.

3. The Contractor shall provide insulation protection from boiler hoses. In particular, where boiler hoses are in contact with grass or other landscaping the hoses shall be insulated, elevated, or separated in a manner such that the vegetation will not be damaged by the heat.

D. Wet Out

1. Wet out shall be done off-site with the fully impregnated liner trucked to the site. Contractor shall comply with all City and County road ordinances and requirements related to roadway maximum bearing capacity and weight limits.

2. The fiber-felt tube shall be fully impregnated with resin by vacuum. The resin and catalyst systems that are compatible with the requirements of the method shall be used. The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowance for polymerization shrinkage and the loss of resin through cracks and irregularities in the original pipe wall.

3. The impregnated liner bag shall be transported to and stored at the site as needed and stored in such a manner that it will not be damaged, exposed to heat and/or direct sunlight, or result in any public safety hazard. All materials shall be subject to inspection and review prior to installation. The impregnated liner bag must be installed prior to exceeding the resin pot life.

E. Installation of temperature measuring sensors

1. Temperature monitoring devices shall be installed at all exposed portions of the pipe (beginning of run, end of run, and intermediate manholes) for each inversion or run of installed liner pipe between the host pipe and the CIPP liner.

2. Temperature monitoring sensors shall also be installed at least every three (3) inches between the outside of the liner and the host pipe.

    a. The temperature gradient across the CIPP liner material, the temperature of the exotherm shall be monitored by remote temperature sensors placed at the interface of the existing pipe and the CIPP.

F. Liner Insertion

1. The impregnated tube shall be inserted through an existing manhole or other access approved by the Engineer by means of the installation process. The application of hydrostatic head, compressed air, or other means shall fully extend the tube to the next designated manhole or termination point and inflate and firmly adhere the liner to the pipe wall.

2. A liner shall not be installed and terminate at a “blind end” (i.e. in a location other than at an existing manhole or structure). No overlap shall be allowed between two existing manholes or structures.

3. The liner shall be installed at a rate less than 10 feet per minute at all times.

4. Where water is used for the liner installation method, the Contractor is responsible for obtaining and paying for the water used.

G. Curing

1. After placement is completed, a suitable heat source and distribution equipment shall be provided. The equipment shall be capable of circulating hot water throughout the section by means of a pre-strung hose which has been perforated in accordance with the manufacturer's recommendations or other methods acceptable by the Engineer to raise the temperature uniformly above the temperature required to affect a resin cure. This temperature shall be determined by the manufacturer based on the resin/catalyst system employed. The curing of the CIPP must consider the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil). Contractor is responsible for obtaining and paying for the water used.

2. The heat source piping shall be fitted with continuous monitoring thermocouples to gauge the temperature of the incoming and outgoing supply. Water temperature during the cure period shall meet the requirements of the resin manufacturer and shall follow the heating schedule supplied by the manufacture and reviewed by the Engineer. At the direction of the Engineer, the Contractor shall provide standby equipment to maintain the heat source supply. An additional continuous monitoring thermocouple shall be placed per Section 130-01-3.06, E to determine the temperature during the cure. During the cure process, the Contractor shall

keep logs, charts, and/or graphs of the liner temperatures at the specified locations to ensure that proper temperatures and cure times have been achieved. The documents may be required by the City at any time during and after the cure process.

3. The initial cure shall be deemed to be completed when inspection of the exposed portions of the CIPP appear hard and sound and the remote temperature sensors indicate that an exotherm has occurred. The cure period shall be of duration recommended by the resin manufacturer during which time the recirculation of the water and cycling of the heat exchanger continuously maintain the required temperature.

H. Cool Down

1. The hardened CIPP shall be cooled to a temperature below 100 degrees F before relieving the static head or pressure in the lined pipe and returning normal flow back into the system. The cool down may be accomplished by introducing cool water into the CIPP. Cool down shall be at a uniform and steadily declining rate. Care shall be taken in the release of the static head or pressure so that a vacuum will not develop which could damage the newly installed CIPP.

2. At the manhole or structure walls, a seal shall be applied per City Specifications Section 130 and in accordance with manufacturer specifications and approved by the Engineer.

I. Finished Pipe

1. The finished product shall be continuous over the length of the pipe reconstructed and be free from dry spots, delamination, and lifts. If these conditions are present, the Contractor shall remove and replace the CIPP at his own expense.

2. The Contractor shall install the liners to provide a smooth interior surface that is wrinkle free. No circumferential wrinkles, wrinkles greater than one-half inch in height, or wrinkles pointing against flow direction shall be allowed. If wrinkles are detected in the installed liner, the Contractor shall provide photographs and dimensions of the wrinkle including height and direction. The Engineer will determine on a case by case basis if replacement or repair of the CIPP liner is required. If replacement and/or repair are deemed necessary by the Engineer, the Contractor shall complete the repair or replacement at his own cost.

130-01-3.08 Sealing Liner at Manholes or structures:

A. The beginning and end of the CIPP shall be cut flush at the inlet and outlet points in the inlet and outlet structures, and the ends shall be permanently sealed to the rehabilitated pipeline to prevent any infiltration between the CIPP and the host pipe, this shall also include the spring line of the manhole or structure base where the lining is to be cut out when the CIPP lining passes through the manhole or structure. Terminations or coupon cut outs at the entrance to each manhole or structure or structure shall be sealed with a resin mixture that is recommended by the liner manufacturer that is compatible with the liner/resin system, provides a watertight seal, and is approved by the Engineer prior to start of construction. Hydraulic cements and quick-set cement products are not acceptable. Acceptable materials shall be approved epoxy type products that will bond, not crack, dry up, slough off, or shrink in time, and provide a good transition in the manholes or structure. A bladder or other means shall be relied upon to seal the tapered end of the liner to the host pipe. Sealing shall be performed at no additional cost to the City.

B. The manhole or structure connection shall be sealed with a compression hydrophilic end seal gasket compatible with the installed CIPP liner. When the hydrophilic gasket comes in contact with water it must swell to create a 360-degree compression seal between the host pipe and the newly installed CIPP liner at the manhole or structure connection. The swelling that occurs to create the seal between the liner and the host pipe shall not in any way deform the liner in such a manner that, in the opinion of the Engineer, an obstruction in the flow is created. End Seals shall be Insignia End Seal Sleeves or an approved equivalent. End Seals shall be installed in accordance with the Manufacturer's recommendations. Due to potential inconsistencies during the application of chemical grout, hydrophilic caulks or hydrophilic paste, these sealing methods shall not be considered an acceptable alternative.

C. Restore manhole bottom and invert.

D. If, due to a broken or offset pipe at the manhole or structure wall, the liner fails to make a tight seal, the Contractor shall apply a seal at that point. The seal shall be a resin mixture compatible with the liner material. The cost for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in providing a water tight seal between the liner and the manhole shall be considered as included in the contract prices paid for sanitary sewer main pipe liner installation and no additional compensation will be allowed therefore.

130-01-3.09 Field Testing:

A. Unless an alternative test method is approved by the Engineer prior to lining, the Contractor shall test the new liner via the following methods.

B. Test line for exfiltration in accordance with ASTM F1216, Section 8.2. Testing shall exclude maximum pressure limitation (4.3 psi) at lowest end. Leakage testing shall be performed after all dry and non-bendable hoses and tubes are completely removed from the pipe.

C. Obtain samples of the installed cured liner according to ASTM F 1216 for short term flexural strength and short-term flexural modulus of elasticity. Analyze according to ASTM D 790. All materials testing shall be performed at the Contractor's expense and by an independent third-party laboratory recommended by the manufacturer and pre-approved by the City. Test shall be conducted at a minimum of one location per CIPP inversion. Test samples shall be taken from the downstream manhole or structure. For diameters of CIPP less than or equal to 18", the restrained sample shall be cut from a section of cured CIPP that has been inverted through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags. For diameters of CIPP larger than 18", the samples shall be taken directly from the wet-out tube, clamped between flat plates, and cured in the downtube. Submit the report to the Engineer.

D. The Contractor shall also remove a sample from each pipe to be used to check the liner thickness, by core drilling 2-inch diameter test plugs at locations specified by the Engineer. The Contractor shall repair sample holes per manufacturer's recommendations.

E. A sample of cured liner from the testing shall be subject to delamination tests by aggressively prying and separation into layers with a knife or sharp-edged instrument. No separation shall be possible. Results shall be included in the report above.

F. The laboratory results shall identify the test sample location as referenced to the nearest manhole. Final payment for the project shall be withheld pending receipt and approval of the test results. If properties tested do not meet minimum requirements, the CIPP shall be removed and replaced at no additional cost to the City.

130-01-3.10 Post-Televising of Completed Work:

A. Submit to the Engineer a color CCTV video showing completed work (electronic format) per City Specifications Section 130.

B. Correction of failed CIPP or CIPP deemed defective by the Engineer from post-installation television inspection shall be repaired at no extra cost to the City. Method of repair, which may require field or workshop demonstration, shall be approved by the Engineer.

C. If the liner fails to install properly, the Contractor shall remove the failed liner and replace it with a new liner. This work shall be performed at the Contractors expense without additional cost to the City. The new liner shall also meet the testing requirements as specified herein.

D. Any defects which will affect the integrity or strength of the liner shall be repaired at the Contractor's expense. Allowance shall be given for the excess pipe when the cross-sectional area has been reduced due to offset joints, partial collapse, out-of-round sections, etc.

130-01-3.11 Repair Procedures: Submit a repair plan to Engineer for approval prior to making any repairs. Repair plan must include information adequate to describe repair methods in the same way as described in pre-installation information submittal. The Contractor may use the following repair methods or submit his own repair method for review and approval by the Engineer:

1. If concentrated ridges fall outside the 120-degree invert arc and the Contractor demonstrates that grinding does not compromise CIPP structural integrity or reduce CIPP thickness below submitted calculated minimum thickness, the contractor may grind concentrated ridges to required tolerance. After grinding to required tolerance, coat the ground area with manufacturer's approved resin. At the end of each work day dispose of any residue generated from grinding.

2. If the Engineer approves, Contractor may make internal spot repairs to CIPP. Internal spot repairs may be made using the approved fabric and resins compatible with CIPP to restore strength and integrity.

3. If CIPP does not fit tightly against host pipe at termination point, fill space between CIPP and host pipe with any of these:
   a. Quick-set epoxy mortar
   b. High viscosity epoxy
   c. Hydrophilic vulcanized expansive rubber strip

4. If the Engineer orders, the Contractor must use repair methods in Table 2 at his own expense:

Table 2

Defect	Repair Method
Wrinkles or ridges exceeding 5% and up to 8% of pipe diameter outside of 120-degree invert arc. Wrinkles or ridges exceeding 2% and up to 8% of pipe diameter inside of 120-degree invert arc (except corrugations in CMP).	Grind to required tolerance. Grind to required tolerance within the lower 120 degrees of pipe to remove and point repair where needed to maintain minimum thickness, or else use procedure in accepted repair plan. If wrinkles or ridges exceed 8% of pipe diameter, you must remove CIPP.
Holes, tears, soft spots, and lifts up to 6 inches in major dimension. Delaminated areas up to 12 inches in major dimension; blistering or bubbling of the coating on CIPP surface present over a maximum of 5% of surface area.	Make point repair under manufacturer's recommendations. If defect covers a larger area, you must remove CIPP.
CIPP thickness less than calculated minimum thickness.	You must remove CIPP. If groundwater conditions allow, you may install a second CIPP within the first CIPP that produces a similar dimension ratio to the first CIPP, or else use procedure in accepted repair plan.
Annular space at lateral connection or at end of CIPP or infiltration at lateral opening.	Seal with quick-set epoxy mortar, high viscosity epoxy or a hydrophilic vulcanized expansive rubber strip.

130-01-3.12 Final Clean-up:

A. Clean-up

1. The Contractor shall restore or replace all removed or damaged paving, curbing, sidewalks, gutters, shrubbery, fences, sod or other disturbed surfaces or structures to a condition equal to that before the work began, to the satisfaction of the Engineer and appropriate property owner and shall furnish all labor and material incidental thereto.

2. Surplus liner material, tools and temporary structures shall be removed by the Contractor. All dirt, rubbish and excess earth from operation shall be legally disposed of by the Contractor and the construction site shall be left clean to the satisfaction of the Engineer.

130-01-3.13 Payment: 12" CIPP Liner Rehabilitation - Matanzas Siphon shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved as described herein, including but not limited to, manhole removal, modification and reconstruction (if required to gain access to the pipe); temporary and permanent paving; testing; repair; and any other items necessary for cured-in-place lining not specifically enumerated in these specifications, and no additional allowance will be made therefor.

18" CIPP Liner Rehabilitation - Matanzas Siphon shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved as described herein, including but not limited to, manhole removal, modification and reconstruction (if required to gain access to the pipe); temporary and permanent paving; testing; repair; and any other items necessary for cured-in-

place lining not specifically enumerated in these specifications, and no additional allowance will be made therefor.

24" CIPP Liner Rehabilitation - Matanzas Siphon shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved as described herein, including but not limited to, manhole removal, modification and reconstruction (if required to gain access to the pipe); temporary and permanent paving; testing; repair; and any other items necessary for cured-in-place lining not specifically enumerated in these specifications, and no additional allowance will be made therefor.

130-02 BYPASS PUMPING

130-02-1.01 Description: The Contractor shall provide bypass pumping and/or diversion as required to maintain flows for sewer manhole rehabilitation, diversion structure rehabilitation, and CIPP lining works. Bypass pumping shall consist of furnishing, installing, and maintaining all equipment, tools, power, dams, plugs, piping and anything else (both primary and back up units) required to maintain existing flows and services without interruption.

All provisions of City of Santa Rosa noise ordinance shall apply.

Anticipated average daily flows (ADF), peak dry weather flows (PDWF) and wet weather (defined as post October 15th) peak flows (PWWF) are as follows for each Siphon Lining Area:

Lining Area	ADF (MGD)	PDWF (MGD)	PWWF (MGD)
Matanzas Siphon	6.47	7.02	14.0
Matanzas MH 88		0.05	0.1
Matanzas MH 90		0.07	0.14

The Contractor shall size the bypass pumping system for the Matanzas Siphon to handle the PWWF listed above. Wet weather (defined as post October 15th) peak flows are anticipated to be approximately two times the peak dry weather flows. If unanticipated rain results in increased flows during the bypass pumping operation, exceeding that listed above, the Contractor shall be responsible for accommodating all increased flows with the bypass system and scope will be consider extra work.

Suggested bypass routes and bypass piping quantities shown on Project Plans are for bidding purposes only. The City has obtained additional temporary construction easement and a copy of those documents are contained as an appendix to these specifications. The Contractor shall provide and operate all temporary facilities to intercept the sewage flow bypass flow around the work area and maintain traffic control in the work areas.

130-02-1.02 General Requirements: The following requirements shall be incorporated in the submitted bypass plan:

1. Bypass piping shall be installed per Project Plans, unless otherwise specified herein.

2. Bypass Matanzas Siphon: Upstream connection into the 36-inch pipe entering the inlet structure with a flow through plug. The downstream connection shall be made in the outlet structure's 27-inch pipe exiting the structure with a flow through plug. Both structures will require one 24-inch manhole enlarged to 36-inches to accommodate the plug installation.

    a. Bypass Matanzas siphon wet weather set up: If the Matanzas Siphon work is not completed before the wet weather season starts in 2019 the contractor shall install a minimum of two bypass pumps for emergency bypass operation at the Matanzas in the event of a pipe failure during the wet weather season. The pumps shall be plumed and ready to operate within 8 hours of notification from the City. This set up shall include all of the plugs, piping and controls needed to operate the system.

3. Surcharge of existing sewer pipes shall not exceed two feet above the pipe crown.

4. Where required for bypass installation and operation, the Contractor shall remove and replace asphalt concrete pavement. Temporary paving shall be placed over trenches having temporary backfill per Special Provisions Section 39 and 39A. Permanent paving shall be placed after bypass operations are complete per Special Provisions Section 39A.

5. Where required for bypass pumping operations, the Contractor shall remove and replace concrete (PCC) work. New concrete work shall conform to existing AC pavement. All concrete (PCC) work shall be per all applicable City Standards and specifications contained herein.

6. A smooth, ADA compliant, temporary AC trench paving which matches the existing line and grade shall be provided where necessary during construction.

7. Provide minimum 12 feet driveway access for each property in the vicinity of bypass areas.

8. Existing fences affected by bypass piping shall have temporary fences installed.

9. At least one (1) spare pump and one (1) spare generator are required to ensure 100% redundancy for all pumps and power sources. The spare equipment shall be plumbed to bypass, ready to operate if needed.

10. Bypass pumping shall be done in such a manner as will not damage private or public property or create a nuisance or public health menace. Pumps and generators used during bypass operations shall be sound attenuated and shall not exceed noise decibel limits per City noise ordinances. The pumped wastewater shall be in an enclosed hose or pipe that is adequately protected from traffic and shall be redirected into the sanitary sewer system. Dumping or free flow of wastewater on private property, gutters, trenches, streets, sidewalks, or into storm sewers is prohibited. The Contractor shall be liable for all damages associated with this work. After the work is completed, flow shall be restored to original conditions and temporary facilities removed.

11. Keep and maintain spare parts for pumps and piping on site, as required.

12. The Contractor shall perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to the actual operation. The pressure and leakage test shall be conducted at one-and-a-half times the maximum pressure the system will experience based on the approved Bypass Pumping Plan for a period of two hours. No leakage is permitted during this test.

13. <u>Temporary pipe bridge:</u>
    a. Where bypass piping is installed on a pipe bridge, security fencing shall be installed to prevent access onto pipe bridge.
    b. Tree removal for installation is prohibited. Tree pruning will be allowed upon approval of the Engineer.
    c. Restricted use of the Matanzas creek corridor (from top of bank to top of bank) will be allowed for installation purposes. No improvements will be allowed to remain in the corridor upon completion of the bridge installation. No improvements will be allowed in the flowline of the creek. Contractor shall submit construction plan, specifying intended use for review by the Engineer at least ten (10) working days prior start of construction.
    d. The ends of the pipe bridge shall be set upon steel plates to spread out the loads on the soil. Minimum plate dimensions are 12-feet by 6-feet by 1-inch thick. If plate

is located on pavement install per Caltrans document TR-0157. Contractor shall install per Method 2, speeds less than 45 mph. (Reference Appendix)

14. Noise Attenuation: All components of the bypass pumping system including standby pumps, shall be sound-attenuated and shall produce noise emissions less than 60 decibels as measured 60-feet away, if bypass pumping is required between the hours of 6 PM and 7 AM.

    Pump Sta #1 shall have an exterior sound blanket containment system.

    Pump Sta #2 and #3 shall have an exterior sound fencing system.

130-02-1.03 Submittals:

1. Bypass pumping and/or diversion systems provided by the Contractor shall be designed by a CA registered professional engineer.

2. The Contractor shall submit bypass pumping and/or diversion plans, schedule and design flow calculations for review by the Engineer at least ten (10) working days prior to planned commencement of bypass or diversion. The bypass pumping and/or diversion plan shall include documentation of pump and discharge line capacities, manufacturer, and age. Location of air release valves shall be depicted on the bypass plan. Sound attenuation measures shall be included in the plan. Air release valves shall have discharge piping plumbed to a container to contain sewer leaks. Air release valves shall not be installed over the pipe bridge. Plans shall depict the bypass system to be actually constructed in the field including all suction elevations, grade changes, etc.

3. Bypass pumping and/or diversion plans shall include an emergency response plan to be followed in the event of a failure of the bypass pumping and/or diversion system. The Contractor shall notify the Engineer 24 hours prior to commencing the bypass pumping operation. The Contractor's plan for sewage bypass pumping and/or diversion shall be approved by the Engineer before the Contractor shall be allowed to commence sewage bypass pumping and/or diversion.

4. The bypass pumping plan shall include an emergency discharge response plan to be followed in the event of a failure of the bypass pumping system which shall include standby pumps.

5. Bypass plan shall include detail for removal of plugs.

6. The Contractor shall be responsible for determining the required quantity, location and types of temporary pneumatic plugs to fulfill the requirements of the Specifications. The Contractor shall submit a plan, describing said requirements, at least ten working days prior to installation for review by the Engineer.

7. Sewer spill prevention plan for, flushing, cleaning, disassembling, handling and removal of bypass system.

130-02-2.01 Preparation: Where undergrounding bypass pumping is required, bypass pipe must be capable of withstanding compaction and traffic loading.

All pumps shall be set into or surrounded by spill containment devices. Existing drain boxes shall be protected by sandbags to prevent flow entering storm drain.

All devices and material proposed for spill containment use shall be submitted for acceptance.

Provide onsite portable lights for emergency use only.

The Contractor shall take all necessary precautions including constant continual manned monitoring, during bypass pumping operations, to ensure that no private residences or properties are subjected to a sewage backup or spill and to ensure that the bypass system is secure. The Contractor shall be responsible for providing the appropriate and required amount of personnel for monitoring of entire bypass system. Monitoring personnel shall be qualified with a minimum 3 years of experience in the specified bypass pumping operations. The Contractor shall immediately notify the City should a sanitary sewer overflow (SSO) occur. The Contractor shall be liable for all cleanup, damages, and resultant fines in the event of a spill.

After the work is completed, flow shall be restored to normal.

130-02-2.02 Materials:

1. Discharge and suction pipes shall be sized according to flow calculations, system operation, pump size and manhole depths following manufacturer's specifications and recommendations.

2. Bypass pipe material shall be HDPE (ASTM F714), high density solid wall, homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults. DR rating of the pipe shall be sufficient to withstand the external and internal loads anticipated, including pressure tests.

3. HDPE fittings shall be fully pressure rated to match the pipe DR pressure rating.

4. Flexible hoses, couplings and connectors, shall be abrasion resistant and rated for external and internal loads anticipated, including pressure tests.

5. Bypass Pumping: Pumps shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in priming system.

6. Provide necessary start/stop controls for each pump. Pumps shall be able to allow dry running for long periods of time to accommodate cyclical nature of effluent flows.

130-02-2.03 Bypass plugs and flow diverters:

1. Plugs shall be selected and installed according to size of line to be plugged, pipe and manhole configurations, based on specific rehabilitation area. Redundancy is required for all temporary pneumatic plug applications. Backup plugs shall be available to use in the instance of a failed primary plug. Plugs shall be pressure rated to withstand the pressure head in the system. Plugs shall be provided with a retrieval tag line. Upon completion, installed temporary pneumatic plugs shall be removed sequentially at one location per day to facilitate maintenance and overall system functionality.

2. The Contractor shall be responsible for determining the required quantity, location and types of temporary pneumatic plugs and flow through diverters to fulfill the requirements of these Special Provisions. The Contractor shall submit a plan, describing said requirements, at least ten working days prior to installation for review by the Engineer. Plugs and flow-through diverters shall be as manufactured by Plug-It Products, Lansas Products or approved equal. Plugs and diverters shall be pressure rated and installed such that they withstand 30 feet of head or the anticipated pressure head in the system, whichever is greater. Plugs and diverters shall be installed to resist sliding. The minimum

diameter for the flow through diverter flumes shall be twenty-four (24) inches or maximum for the Matanzas siphon inlet structure and 20-inches for the outlet siphon connection. 100% redundancy is required for all temporary pneumatic plugs and flow-through diverters (on upstream side) applications installed in the existing sewers. To achieve redundancy, two plugs shall be used. Flow-through diverters shall have redundant bladders. Plugs and diverters shall be tethered by a chain; the chain must be shorter than the inflation hoses between the two plugs such that it prevents the inflation hoses from being stretched apart during inflation. The chain shall be rated to withstand the thrust pressures in the system. The inflation line for the first plug must pass through the second plug. Inflation hoses shall be long enough to reach the surface and shall be furnished with gauges located such that they are easily visible. Plugs and flow-through diverters shall be installed in accordance with the manufacturer's recommendations. It is anticipated that the pipes will be flowing approximately 1/3 full. Plugs shall either be installed upstream or downstream.

3. Suggested installation and removal technique: The first plug to enter the pipe is called the first plug. The second plug follows the first plug into place. In order to install plugs upstream the Contractor shall float a cable down from an upstream Manhole to where the plugs will be placed, then attach the cable to the back of the first plug and lower the two plugs into the structure and into the pipe. The plugs will be winched into place using cables from the upstream Manhole. The Contractor shall then pull the plugs into place and inflate the first plug, stopping the flow. After the first plug is inflated the Contractor shall inflate the second plug and secure the inflation valves. Once in place, the cables must be left in place to restrain the plugs during deflation, while the water drains from behind the plugs. For removal, deflate the second plug, then the first plug. The Contractor shall use the cable and anchor to keep the plugs in place while the water drains out from behind the plugs. Then allow the deflated plugs to float downstream into the structure where they can be lifted out. In order to install plugs downstream the Contractor shall attach a cable to the front of the second plug, lower the two plugs into the pipe and float into place. The plugs shall be held in position using a cable/winch system. The Contractor shall inflate the second plug to stop the flow, then inflate the first plug and secure the inflation valves.

4. For removal, the Contractor shall deflate the first plug, then the second plug. The Contractor shall use the cable and anchor to keep the plugs in place during deflation. Temporary pneumatic plugs shall be removed sequentially at one location per day to facilitate maintenance and overall system functionality. Bypass plan shall include detail for removal of plugs. The restraint system, including the cables, winch and anchoring for the winch shall be able to withstand the thrust pressure in the system. In order to determine the pounds of thrust on the plug, the Contractor shall use the following formula:
    a. Determine the feet of head pressure in the system.
    b. Multiply the feet of head times 0.43 to get PSI.
    c. Determine the surface area in square inches of the inflated pipe plug.
    d. Multiply the surface area in square inches by the pressure in PSI to get pounds of thrust.
    e. Multiply by 1.5 safety margin.

5. Bypass plan shall include calculations for thrust pressure and shall detail restraint systems, diverters and bracing for diverters capable of withstanding the determined thrust pressure.

130-02-3.01 Payment: Bypass Piping System - Matanzas Siphon shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to install a bypass piping system, including but not limited to; installation of below and above ground discharge system; installation, use, and removal of temporary pipe bridge system; installation of security fencing; installation of below grade connection vaults; notification, security, coordination; temporary and permanent

trench paving associated with bypass piping system, per City Std. 215; ramp or other means with which to protect bypass pipe at contractor crossing location; obtainment, usage and disposal of construction water; excavation, backfill and compaction; manhole removal, modification and reconstruction of existing manhole affected as a result of bypass operations per City Std. 500 *(if required to gain access to the pipe);* replacement of traffic strips and disturbed traffic markings; spoils disposal; steel plating (if needed); removal and reinstallation of existing fencing *(if needed),* and all efforts required to run and maintain the bypass system per these specifications; removal of entire bypass piping system and to return surface conditions to pre-project condition; and any other items necessary for a bypass piping system not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping Mobilization and Demobilization – Pump Sta. #1 - Matanzas Siphon shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to mobilize, install, remove and demobilize bypass pump system, including but not limited to; notification, security, coordination; installation and removal of bypass suction lines and distribution lines *(from pump to connection vault);* installation and removal of plugs and diverters; manhole removal, modification and reconstruction of existing manhole affected as a result of bypass operations per City Std. 500 *(if required to gain access to the pipe);* steel plating (if needed), return surface conditions to pre-project condition; and any other items necessary for bypass pumping mobilization and demobilization of Pump Sta. #1 not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping Mobilization and Demobilization – Pump Sta. #2 and #3 - Matanzas Siphon shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to mobilize, install, remove and demobilize bypass pump system, including but not limited to; notification, security, coordination; installation and removal of bypass suction lines and distribution lines *(from pump to connection vault);* installation and removal of plugs and diverters; manhole removal, modification and reconstruction of existing manhole affected as a result of bypass operations per City Std. 500 *(if required to gain access to the pipe);* ramps or steel plating with which to protect bypass pipe at contractor crossing location (if required); return surface conditions to pre-project condition; and any other items necessary for bypass pumping mobilization and demobilization of Pump Sta. #2 and #3 not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping – Pump Sta. #1 - Matanzas Siphon Wet Weather Flow Operational shall be paid for at the contract unit price per calendar **month**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to operate bypass pumping system at wet weather flow capacities, including but not limited to; operate bypass pumping equipment and appurtenances*;* installation of exterior sound blanket containment system; constant continual manned monitoring during bypass pumping operations; and any other items necessary for an operating bypass Pump Sta. #1 not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping – Pump Sta. #1 - Matanzas Siphon Wet Weather Flow Stand By shall be paid for at the contract unit price per calendar **month**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to operate bypass pumping system at wet weather flow capacities in stand-by mode,

including but not limited to; being prepared to operate bypass pumping equipment within 8 hours including appurtenances*;* installation of exterior sound blanket containment system; and any other items necessary for a stand by bypass Pump Sta. #1 not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping – Pump Sta. #1 - Matanzas Siphon shall be paid for at the contract unit price per calendar **month**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to operate bypass pumping system, including but not limited to; operate bypass pumping and standby equipment and appurtenances*;* installation of exterior sound blanket containment system; constant continual manned monitoring during bypass pumping operations; and any other items necessary for an operating bypass Pump Sta. #1 not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping – Pump Sta. #2 and #3 - Matanzas Siphon shall be paid for at the contract unit price per calendar **month**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved to operate bypass pumping system, including but not limited to; operate bypass pumping and standby equipment and appurtenances*;* installation of exterior sound fencing system; constant continual manned monitoring during bypass pumping operations; and any other items necessary for an operating bypass Pump Sta. #2 and #3 not specifically enumerated in these specifications, and no additional allowance will be made therefor.

The estimated bypass piping quantities shown on the Project Plans are for bidding purposes only. This quantity may be increased or decreased based on field condition evaluation by the Contractor, and no adjustment in the contract bid price or other contract items will be made therefor.

121 NOTIFICATION

121-1.01 Description: The Contractor shall notify the Engineer of any work to be performed on any given work day on the afternoon of the prior working day. Any work completed for which the Project Engineer has not received prior written notification of its scheduling MAY NOT BE ACCEPTED FOR PAYMENT.

The Contractor shall provide a written notice of pending construction to all residents and businesses in the vicinity of all sites fourteen calendar days prior to the start of work. The notice shall inform the resident or business of the type of work, the "estimated" date(s) and time of the work for each site, and the potential impacts, including odor, to the resident and/or businesses, including time frame during which vehicle access may be interrupted. The notices shall also have, at a minimum, the names and field contact numbers of the City's on-site Inspector and the Contractor's field supervisor/foreperson, and information regarding a follow up notice with actual work dates for their area.

The Contractor shall hand deliver an additional notice, and attempt to make personal contact, with residents and/or businesses at individual sites, at least three working days prior to mobilizing to that site and when work dates are known. This notice shall provide "actual" work dates and times, as well as all other informational items mentioned in the first notice.

All written notices shall be submitted to the City for approval prior to distribution. The City may take up to three calendar days to review notices.

Attention is directed to Specification Section A Fees and Permits for details of notifications in separate permit items.

121-1.02 Payment: Full compensation for conforming to the provisions of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be made therefor.

124 MATERIAL RECYCLING

124-1.01 Description: The Contractor shall dispose of all Portland cement concrete and asphalt concrete, generated from removal or demolition activities on the project, at a recycler for these materials. The Contractor shall provide receipts verifying delivery and approximate quantity (in tons) of the material delivered to a material recycler.

All other excess materials from the project shall become the property of the Contractor and shall be disposed of by him, at his expense.

124-1.02 Payment: Full compensation for material recycling as specified herein shall be considered as included in the contract prices paid for various items of work, and no additional compensation will be allowed therefor.

A - FEES AND PERMITS

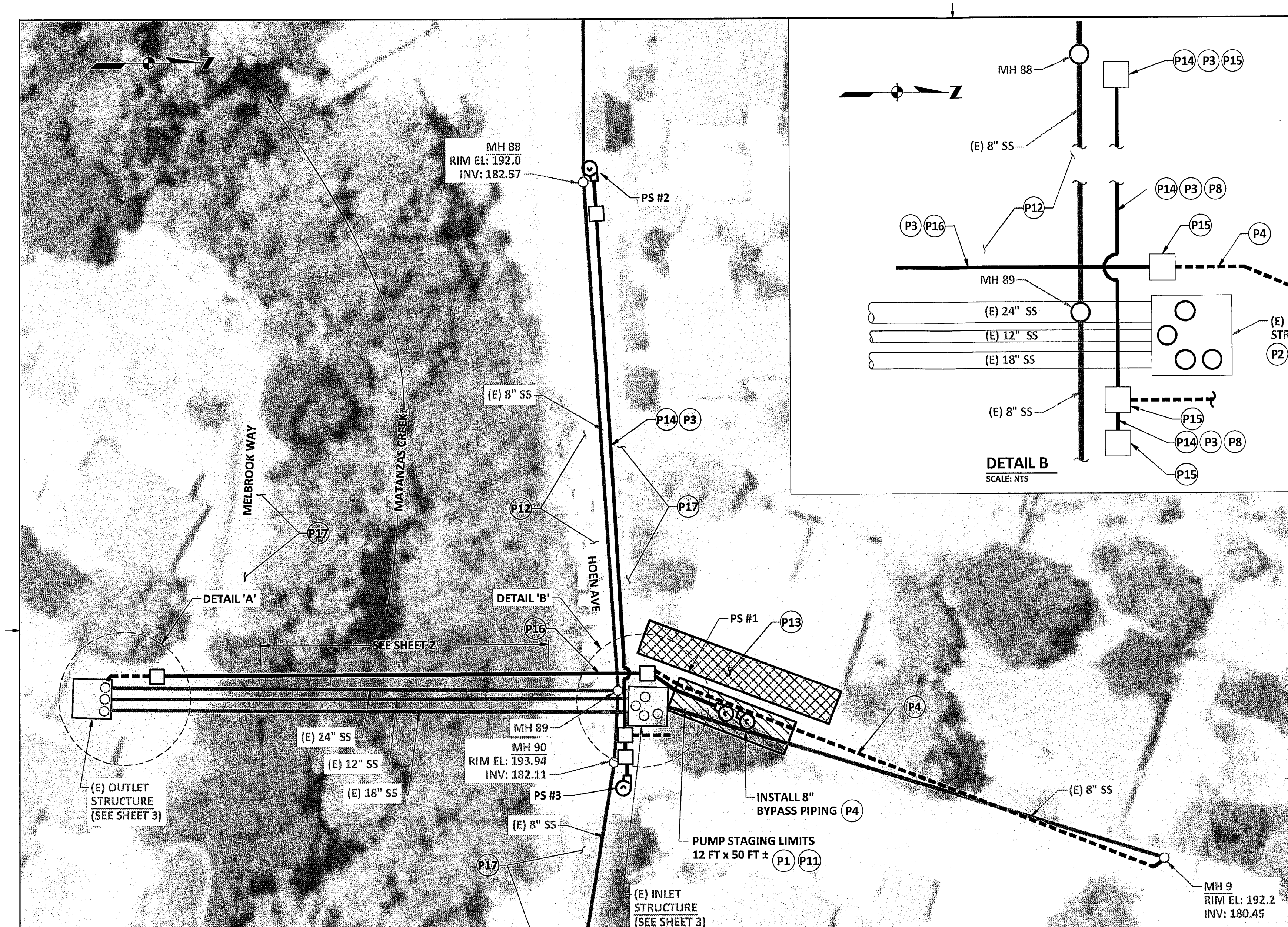
Fees and Permits: The Contractor shall obtain all necessary and required permits for completion of this project. All permits issued by the City will be issued at no cost to the Contractor; these fees will be paid by an appropriate City department. Sonoma County Encroachment Permits are pre-paid by the City.

All other required permits shall be obtained at the Contractor's expense. The Contractor shall obtain the following permits:

1. A permit for excavating and shoring trenches in excess of five feet or more in depth will be required from the State of California Division of Industrial Safety.

2. In the event that hazardous material is encountered, the Contractor shall obtain a hazardous material excavation permit from the Santa Rosa Fire Department prior to removal and disposal of contaminated soils.

Full compensation for securing, complying and the cost of all permits shall be considered as included in the contract prices paid for the various items of work and no additional allowance will be made therefor.

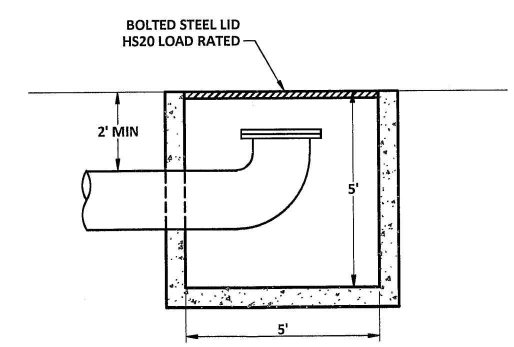


DETAIL B
SCALE: NTS

BYPASS PLAN - MATANZAS SIPHON
SCALE: 1" = 20' (APPROX)
1"

CONSTRUCTIONS NOTES:

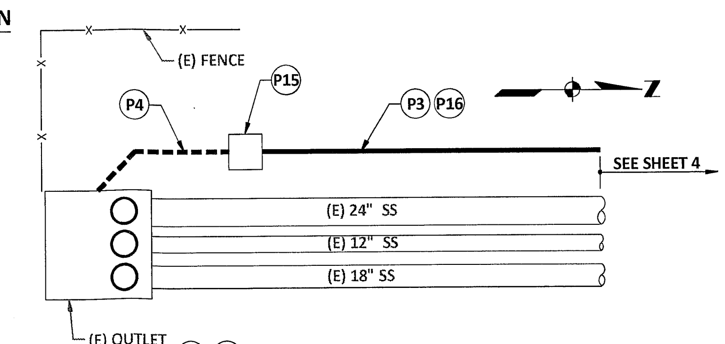
- (P1) CONTRACTOR SHALL NOT STAGE BYPASS PUMPING EQUIPMENT, PIPING, AND NOISE ATTENUATION BARRIER BEYOND LIMITS SHOWN. EXACT LOCATION SHALL BE FIELD ADJUSTED AND AT THE APPROVAL OF THE ENGINEER.
- (P2) INSTALL FLOW-THROUGH PLUG TO A COMMON SUCTION HEADER FROM 36" PIPE ENTERING SIPHON STRUCTURE, SEE SPECIFICATION SECTION 130-02 FOR BYPASS PUMPING REQUIREMENTS.
- (P3) ALL BYPASS PIPING SHALL BE INSTALLED WITH A MINIMUM OF 2' OF COVER. ALL PIPING WITHIN TRAVELED WAY OR FROM FOG LINE TO FOG LINE LIMITS SHALL BE BURIED.
- (P4) ALL BYPASS PIPING ABOVE GRADE SHALL BE PROTECTED WITH APPROPRIATE TRAFFIC CONTROL BARRIERS.
- (P7) CONTRACTOR SHALL SET UP PLUG UPSTREAM OF INLET STRUCTURE ON EXISTING 8" SS AND DURING CIPP / STRUCTURE REHAB OPERATIONS.
- (P8) SERVICE CONNECTIONS MAY BE PRESENT BETWEEN UPSTREAM MANHOLE BYPASS AND SIPHON STRUCTURE. CONTRACTOR SHALL SET UP PLUG AND BYPASS SYSTEM TO ALLOW THESE CONNECTIONS DURING CIPP/STRUCTURE REHAB OPERATIONS TO FUNCTION.
- (P9) SIPHON INLET AND OUTLET STRUCTURES WILL REQUIRE ONE MANWAY TO BE ENLARGED TO INSERT FLOW-THROUGH PLUG.
- (P10) INSTALL NOISE ATTENUATION BARRIER AROUND PUMPS.
- (P11) INSTALL NOISE ATTENUATION CURTAIN WALL SYSTEM.
- (P12) REFERENCE "DOYLE PARK SEWER MAIN REPAIR" AS-BUILTS FOR EXISTING UTILITY CONDITION WITHIN HOEN AVE.
- (P13) MAINTAIN 12' CLEAR ACCESS.
- (P14) INSTALL BYPASS FOR 8" SEWER, 3" MINIMUM DIAMETER.
- (P15) INSTALL BELOW CONNECTION, PER DETAIL THIS SHEET EXACT LOCATION TO BE FIELD ADJUSTED GRADE AND AT THE APPROVAL OF THE ENGINEER, SEE DETAIL 1, THIS SHEET.
- (P16) MAIN BYPASS SHALL BE 24" ID MINIMUM.
- (P17) NO CONTRACTOR PARKING ALONG STREET.



NOTES:

1. USE BELOW GRADE VAULT FOR TRANSITIONS FROM ABOVE GRADE PIPING TO BELOW GRADE PIPING.
2. PLACE VAULTS AT EDGE OF HOEN AVE, MELBROOK WAY AND AT DAYLIGHT POINTS ADJACENT TO SIPHON STRUCTURES. VAULTS FOR 8" SEWER MAY BE SMALLER.

BELOW GRADE CONNECTION DETAIL (1)
SCALE: NTS



DETAIL A
SCALE: NTS

ESTIMATED BYPASS PIPING QUANTITIES	
8"	350 L.F.
8"	200 L.F.
MAIN BYPASS PIPELINE	200 L.F.

LEGEND

- BYPASS PUMPING EQUIPMENT LOCATION
- BYPASS PIPELINE (FOR STAND-BY)
- EXISTING SEWER AND MANHOLE
- BYPASS PIPELINE (FOR CIPP / STRUCTURE REHAB)

REGISTERED PROFESSIONAL ENGINEER JAMES C. BOWLAND No. C66400 Exp. 06/30/20 CIVIL STATE OF CALIFORNIA
6-20-2019

No.	Date	Revision	By	Dept.	Signature	Date

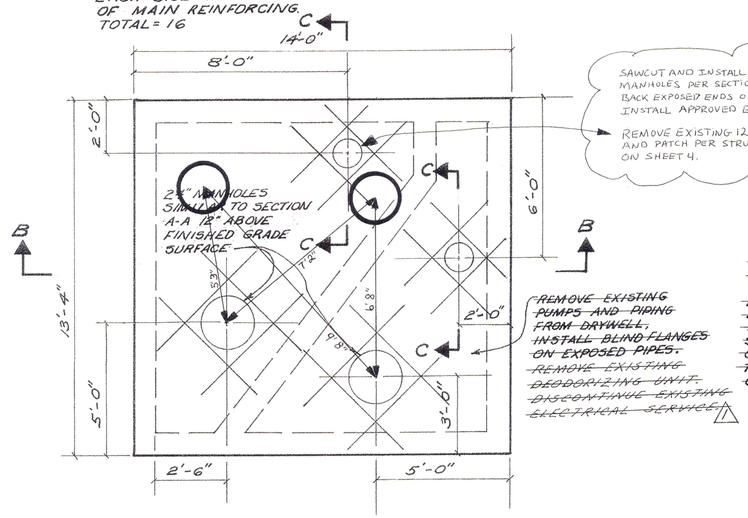
SCALE:
DATE: JUNE 2019
DWN BY:
CHK BY: TW
APPROVED: *Deputy Director – Engineering*
By ______ LORI URBANEK ______ Date ______

City of Santa Rosa
REHABILITATE MATANZAS SIPHON
BYPASS PLAN
MANTANZAS SIPHON

Kennedy Jenks
BID SET

CONTRACT NO. C02190
SHEET 1 OF 3
FILE NO. 2019-0027

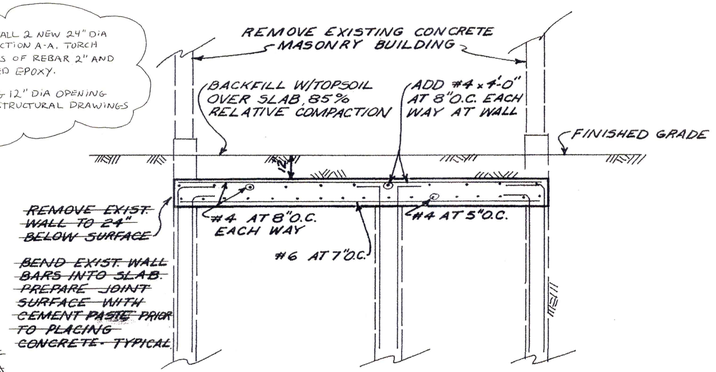
NOTE: ADD 1- #6 CONTINUOUS BOTTOM BAR EACH SIDE OF OPENING IN DIRECTION OF MAIN REINFORCING. TOTAL = 16



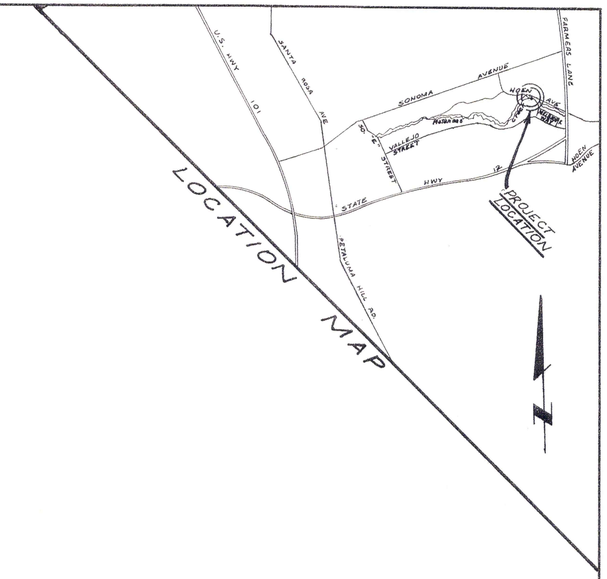
SAWCUT AND INSTALL 2 NEW 24" DIA MANHOLES PER SECTION A-A. TORCH BACK EXPOSED ENDS OF REBAR 2" AND INSTALL APPROVED EPOXY.

REMOVE EXISTING 12" DIA OPENING AND PATCH PER STRUCTURAL DRAWINGS ON SHEET 4.

~~REMOVE EXISTING PUMPS AND PIPING FROM DRYWELL. INSTALL BLIND FLANGES ON EXPOSED PIPES. REMOVE EXISTING DEODORIZING UNIT. DISCONTINUE EXISTING ELECTRICAL SERVICE.~~ /1

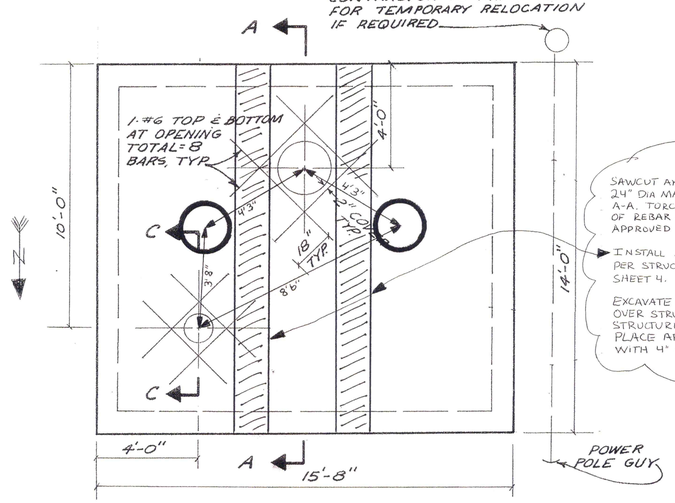


SECTION B-B
3/8" = 1'-0"



PLAN - MATANZAS CREEK OUTLET
2285 Melbrook
3/8" = 1'-0"

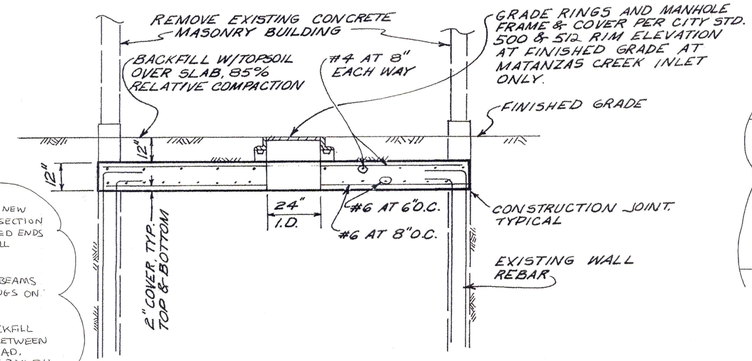
EXISTING POWER POLE UP #3369 CONTRACTOR TO ARRANGE FOR TEMPORARY RELOCATION IF REQUIRED



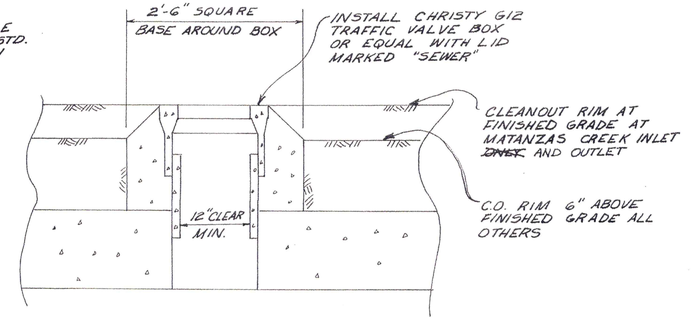
SAWCUT AND INSTALL 2 NEW 24" DIA MANHOLES PER SECTION A-A. TORCH BACK EXPOSED ENDS OF REBAR 2" AND INSTALL APPROVED EPOXY.

INSTALL 2 CONCRETE BEAMS PER STRUCTURAL DRAWINGS ON SHEET 4.

EXCAVATE EXISTING BACKFILL OVER STRUCTURE AND BETWEEN STRUCTURE + PAVED ROAD. PLACE APPROX 8" CDF BACKFILL WITH 4" AC SURFACE.



SECTION A-A
3/8" = 1'-0"



SECTION C-C
1" = 1'-0"

PLAN - MATANZAS CREEK SIPHON INLET
1955 Hoen
3/8" = 1'-0"

NOTE: ADD 1- #6 CONTINUOUS BOTTOM BAR EACH SIDE OF OPENINGS IN DIRECTION OF MAIN REINFORCING. TOTAL = 8

RECORD PLANS

No.	Date	Revision	By

CITY OF SANTA ROSA
CROSS TOWN TRUNK
SIPHON MANHOLE UPGRADES
PLAN & PROFILE

Date: July 2009 | Scale: NONE
APPROVED: Associate Civil Engineer—Public Works Engineering
By Frederick L. Browne Date July 2009
Frederick L. Browne
DWN MKM & Associates
CHK FLB
CAH
Sheet 3 of 4 Sheets
File Number: 2010-0005

CROSS TOWN TRUNK SIPHON MANHOLE UPGRADES

Contract No. 2009-004

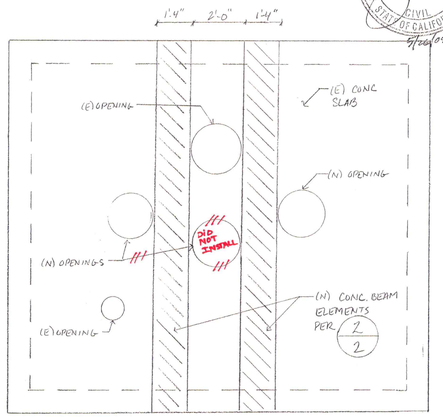
C02190

MKM & Associates
structural engineering

SEWER SIPHON VAULT - CITY OF SANTA ROSA
SLAB STRENGTHENING
1955 HOEN - MATANZAS CREEK SIPHON INLET

Job # 052015
Date 05/26/2005
PE LM | 1 of 2

REGISTERED PROFESSIONAL ENGINEER — No. 26311 Exp. 3-31-06 — CIVIL — STATE OF CALIFORNIA
5/26/05



1/1 PLAN VIEW (3/8"=1'-0")

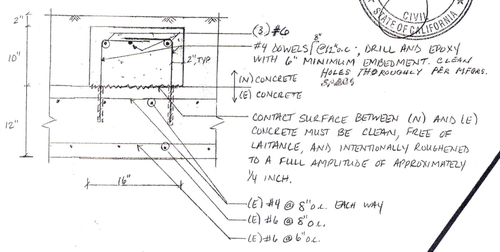
- CONCRETE COMPRESSIVE STRENGTH = 3,000 PSI
- REINF STEEL ASTM A-615 GRADE 60
- EPOXY: SIMPSON SET ADHESIVE (ICBO 5279)

MKM & Associates
structural engineering

SEWER SIPHON VAULT - CITY OF SANTA ROSA
1955 HOEN

Job # 052015
Date 05/26/2005
PE LM | 2 of 2

REGISTERED PROFESSIONAL ENGINEER — No. 26311 Exp. 3-31-06 — CIVIL — STATE OF CALIFORNIA
5/26/05

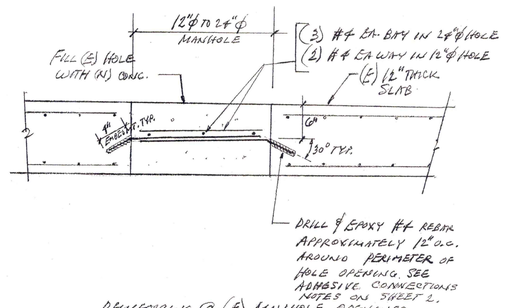


2/2 SECTION (1"=1'-0")

MKM & Associates
structural engineering

SEWER SIPHON VAULT
SANTA ROSA, CA

Job # 052015
Date 11/9/05
PE LM | 1 of 2
SR- 110905



REINFORCING @ (E) MANHOLE OPENINGS TO BE FILLED

REGISTERED PROFESSIONAL ENGINEER — No. 26311 Exp. 3-31-06 — CIVIL — STATE OF CALIFORNIA
11/9/05

441 College Avenue • Santa Rosa, CA 95401 • (707)578-8185 • Fax:(707)578-7153

MKM & Associates
structural engineering

441 Coll_____venue • Santa Rosa, CA 95401 • (707)578-8185 • Fax:(707)_____7153

SEWER SIPHON VAULT
SANTA ROSA, CA

Job # 052015
Date 11/9/05
PE LM | 2 of 2

ADHESIVE CONNECTIONS

1. Installation of adhesive, anchors and dowels shall be in accordance with the manufacturer's specifications and these notes. Where requirements of the manufacturer or these notes conflict the more restrictive provisions govern.
2. The following adhesive anchor systems are acceptable for use in solid base materials (if voids are encountered contact Engineer):
   Hilti-Hit: HY-150 (ICC ER-5193)
   Anchor-it: HS-200 (ICC ER-4398)
   Ramset: Epcon (ICC ER-4285)
   Power Fast: Epoxy Injection Gel (ICC ESR-1531)
   Covert Operations: CIA (ICC ESR-1702)
   Simpson: SET Adhesive (ICC ESR-1772)
   Any other adhesive shall have documentation, including ICC report, submitted to the Engineer for approval prior to drilling holes.
3. Holes for adhesive connections in concrete may be drilled with a roto-hammer. Holes for adhesive connections in masonry shall be drilled with an electric rotary drill only. Hole diameter shall be per manufacturer's specifications.
4. Holes for adhesive connections shall be thoroughly cleaned with the following procedure:
   A. Blow out all dust and loose material with compressed air and extension nozzle.
   B. Clean hole surfaces with a wire bottle brush which is slightly larger than the hole diameter. Then use a dowel wrapped with a slightly moist rag to remove remaining dust.
   C. Blow out hole with compressed air.
   D. Repeat procedure as required until all surfaces are clean.
5. Items embedded in adhesive shall be clean and free of any rust, petroleum based products or deleterious materials per adhesive manufacturer's recommendations.
6. Adhesive shall be installed to the end of the hole with a gun nozzle or other approved procedure prior to installation of anchor.
7. Adhesive connections shall have special inspection per CBC Section 1701. The Special Inspector shall verify:
   A. Holes are correct diameter and depth.
   B. Holes are clean.
   C. Proper adhesive is used.
   D. Adhesive is correctly mixed and installed per manufacturer's recommendations.
   E. Threaded rods or dowels are clean and correct diameter.
   F. Threaded rods or dowels are embedded to specified depths.
   G. Expiration date on adhesive products has not passed.
8. Anchor shall not be moved or loaded before curing time is reached.

REGISTERED PROFESSIONAL ENGINEER — No. 26311 Exp. 3-31-06 — CIVIL — STATE OF CALIFORNIA
11/9/05

RECORD PLANS

No.	Date	Revision	By

CITY OF SANTA ROSA

CROSS TOWN TRUNK
SIPHON MANHOLE UPGRADES

STRUCTURAL DRAWINGS

Date: July 2009 | Scale: NONE

APPROVED: Associate Civil Engineer—Public Works Engineering
By Frederick L. Browne Date July 2009

DWN MKM & Associates
CHK FLB / CAH

Sheet 4 of 4 Sheets

File Number: 2010-0005

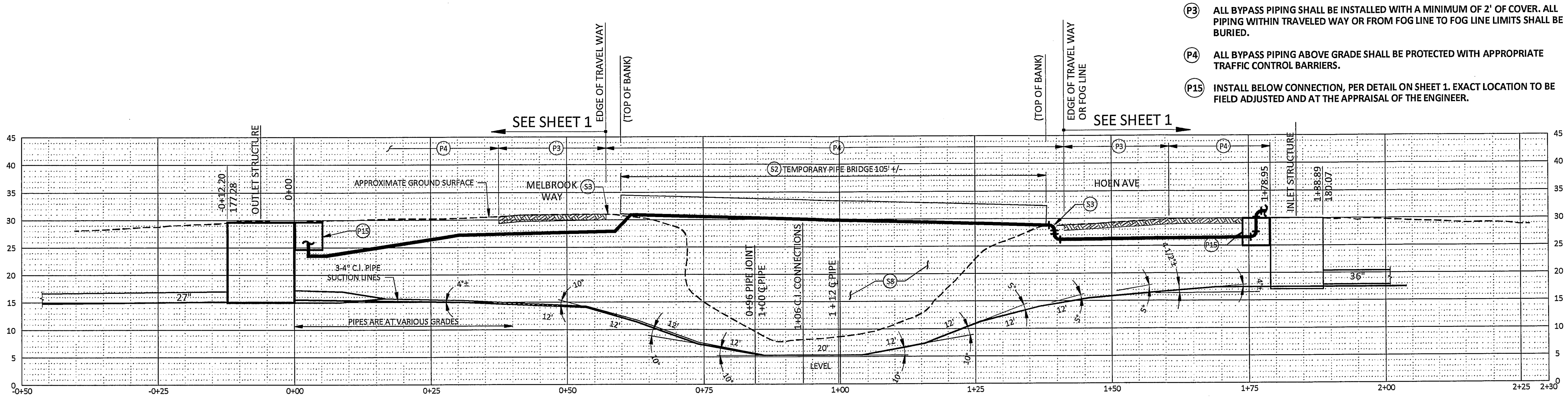
CROSS TOWN TRUNK SIPHON MANHOLE UPGRADES

Contract No. 2009-004

C02190

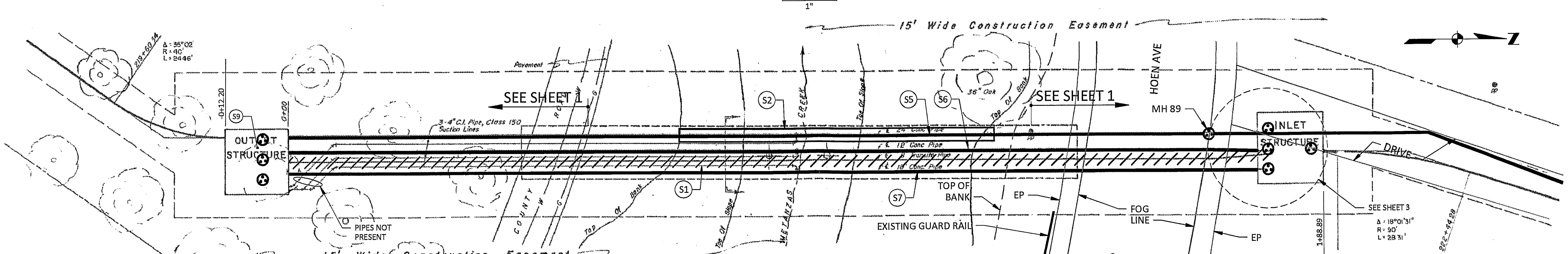
NOTES:

- (S1) ABANDON 8" SEWER SIPHON PER CITY STD 507 AFTER ACCEPTANCE OF CIPP LINE.
- (S2) INSTALL TEMPORARY PIPE BRIDGE. BOTTOM OF BRIDGE INSTALLED TRENCH PLATES. LOCATION OF BRIDGE SHALL BE FIELD ADJUSTED AND AT THE APPRAISAL OF THE ENGINEER.
- (S3) ALL COMPONENTS OF TEMPORARY PIPE BRIDGE SHALL BE INSTALLED OUTSIDE ASSUMED TRAVEL WAY OR FOG LINE LIMITS. INSTALL SECURITY FENCE.
- (S5) INSTALL 180' - 24" CIPP LINER.
- (S6) INSTALL 180' - 12" CIPP LINER.
- (S7) INSTALL 180' - 18" CIPP LINER.
- (S8) REFERENCE SPECIAL PROVISIONS FOR WORKING REQUIREMENTS WITHIN CREEK CORRIDOR.
- (S9) CIPP OPERATIONS INSERTION LOCATION.
- (P3) ALL BYPASS PIPING SHALL BE INSTALLED WITH A MINIMUM OF 2' OF COVER. ALL PIPING WITHIN TRAVELED WAY OR FROM FOG LINE TO FOG LINE LIMITS SHALL BE BURIED.
- (P4) ALL BYPASS PIPING ABOVE GRADE SHALL BE PROTECTED WITH APPROPRIATE TRAFFIC CONTROL BARRIERS.
- (P15) INSTALL BELOW CONNECTION, PER DETAIL ON SHEET 1. EXACT LOCATION TO BE FIELD ADJUSTED AND AT THE APPRAISAL OF THE ENGINEER.



PROFILE

SCALE: 1" = 10' (HORZ & VERT)



PLAN

SCALE: 1" = 10' (APPROX.)

ESTIMATED BYPASS PIPING QUANTITIES	
MAIN BYPASS PIPELINE	200 L.F. ±

Kennedy Jenks

BID SET

City of Santa Rosa

REHABILITATE MATANZAS SIPHON

BYPASS AND IMPROVEMENTS PLAN MATNZAS SIPHON

DATE: JUNE 2019 | CHK BY: TW | DWN BY: | SCALE:

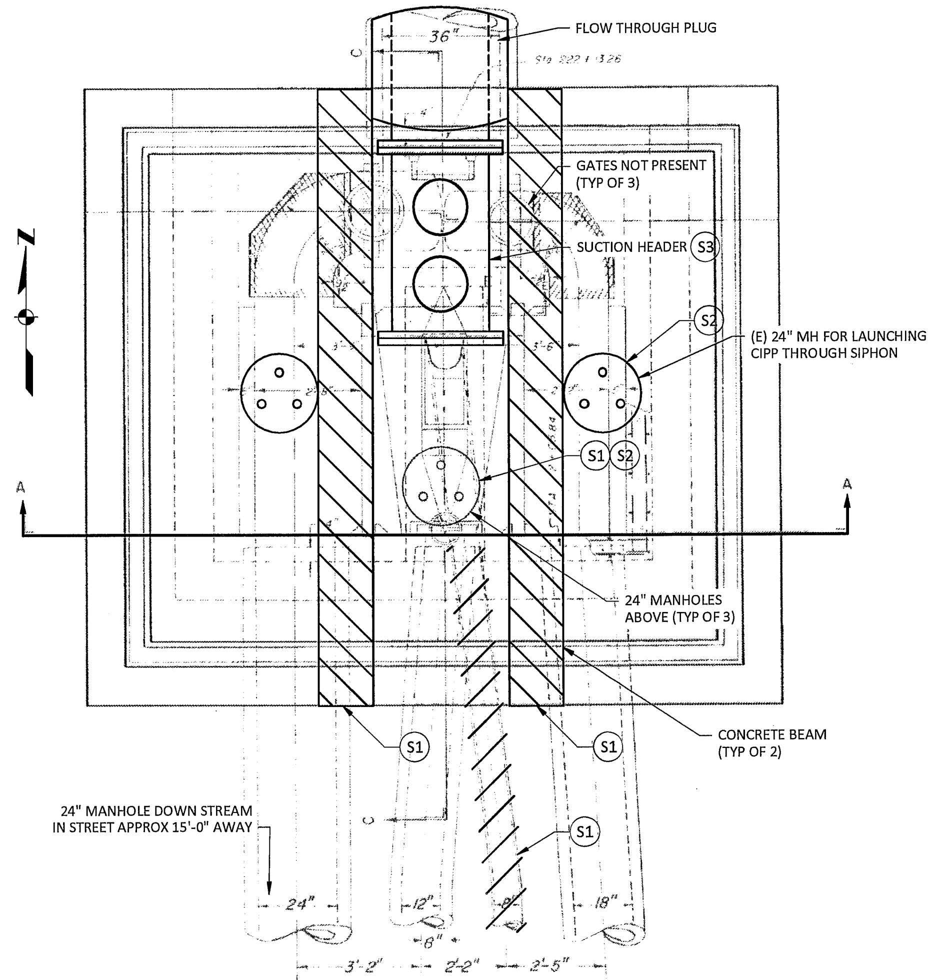
APPROVED: Deputy Director - Engineering — LORI URBANEK

6-20-2019

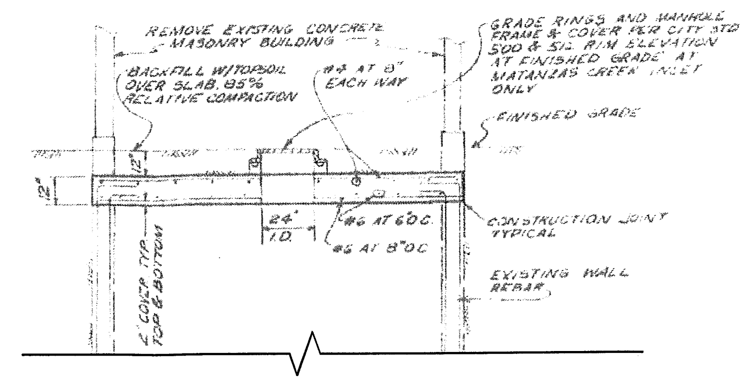
CONTRACT NO. C02190

SHEET 2 OF 3

FILE NO. 2019-0027



MATANZAS SIPHON INLET STRUCTURE PLAN
SCALE: NTS



EXISTING ROOF SECTION
SCALE: NTS

NOTES:

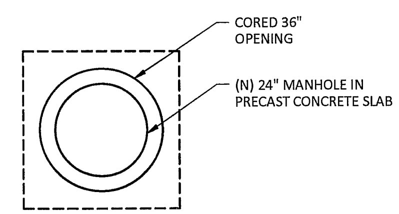
(S1) AFTER ACCEPTANCE OF CIPP LINER, ABANDON 8" SEWER SIPHON PER CITY STANDARD 507.

(S2) ENLARGE ONE MANHOLE FOR BYPASS PLUG INSTALLATION THIS SHEET.

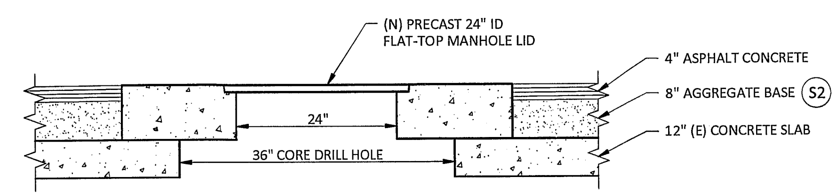
(S3) INSTALL 36" x 24" FLOW THROUGH PLUG WITH SUCTION HEADER DESIGNED TO HANDLE STADED BYPASS FLOWS.

(S4) BACKFILL WITH 3/4" AGGREGATE BASE, COMPACT TO 95% RELATIVE DENSITY.

(S5) REFERENCE "CROSS TOWN TRUNK SIPHON MANHOLE UPGRADES" AS-BUILTS.

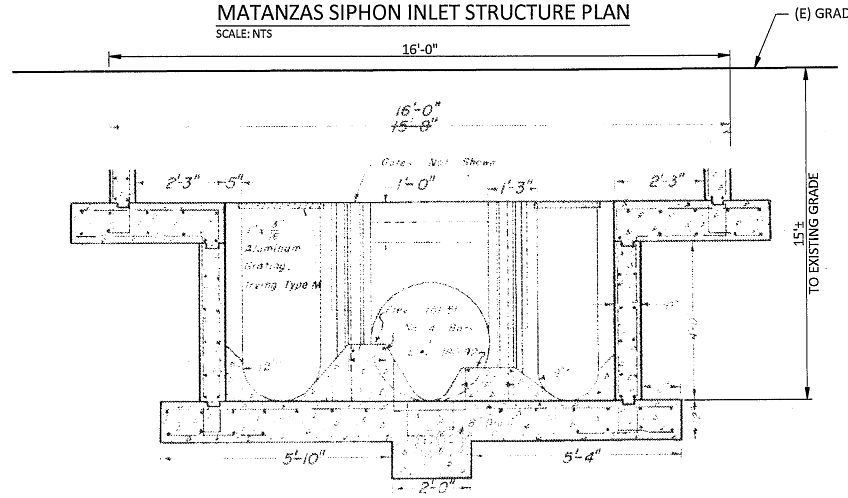


PLAN - ENLARGE ONE MANHOLE
SCALE: NTS

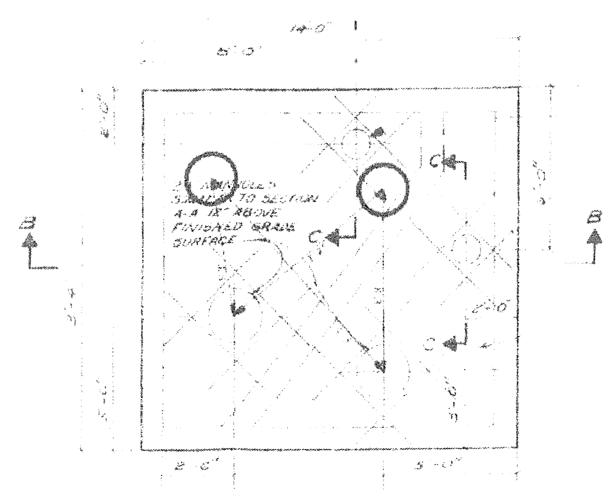


MANHOLE LID RETROFIT (1)
SCALE: NTS

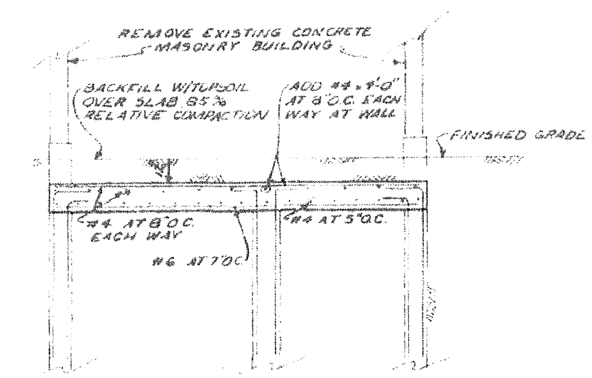
(E) GRADE



SECTION A-A
SCALE: NTS



PLAN - MATANZAS CREEK OUTLET
SCALE: NTS



SECTION B-B
SCALE: NTS

No.	Date	Revision	By	Dept.	Signature	Date

REGISTERED PROFESSIONAL ENGINEER JAMES C. BOWLAND No. C65400 STATE OF CALIFORNIA 6-20-2019

SCALE: | DWN BY: | DATE: JUNE 2019 | CHK BY: TW

APPROVED: Deputy Director - Engineering

By LORI URBANEK Date

City of Santa Rosa

REHABILITATE MATANZAS SIPHON

DETAILS I - MATANZAS SIPHON INLET STRUCTURE

Kennedy Jenks

BID SET

CONTRACT NO. C02190

SHEET 3 OF 3

FILE NO. 2019-0027

Appendix A

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

ENCROACHMENT PERMIT STEEL PLATE BRIDGING UTILITY PROVISIONS

TR -0157 (Rev. 04/2018)

To accommodate excavation work, steel plate bridging may be necessary. All conditions for use of steel plate bridging should be set forth in the special provisions.

Consideration of steel plate bridging should take into account the following factors:

1. Traffic speed.
2. Traffic Volume and Composition.
3. Duration and dimensions (width & daily estimated lengths) of the proposed excavation.
4. Weather conditions.

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

1. Steel plate bridging on freeways is not allowed.
2. Steel plates used for bridging must extend a minimum of 12" beyond the edges of the trench.
3. Steel plate bridging shall be installed to operate with minimum noise.
4. The trench shall be adequately shored, (as mentioned in Section 603.6B.2 of the Encroachment Permits Manual) to support the bridging and traffic loads.
5. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
6. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.

As required by the district, steel plate bridging and shoring shall be installed using either Method (1) or (2):

Method 1 For speeds of 45 MPH or greater:

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

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other.

Method 2 For Speeds less than 45 mph:

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 % with a minimum 12" taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry, epoxy or an equivalent that is satisfactory to the Caltrans' representative.

The permittee is responsible for maintenance of the steel plates, shoring, asphalt concrete ramps, and ensuring that they meet minimum specifications. Unless specifically noted or granted in the special provisions, or approved by the State representative, steel plate bridging shall not exceed 4 consecutive working days in any given week. Backfilling of excavations shall be covered with a minimum 3" temporary layer of cold asphalt concrete.

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

Trench Width	Minimum Plate Thickness
10"	½"
1'-11"	¾"
2'-7"	7/8"
3'-5"	1"
5'-3"	1 ¾"

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

All steel plates within the right of way whether used in or out of the traveled way shall be without deformation. Inspectors can determine the trueness of steel plates by using a straight edge and should reject any plate that is permanently deformed.

Steel plates used in the traveled portion of the highway shall have a surface that was manufactured with a nominal Coefficient Of Friction (COF) of 0.35 as determined by California Test Method 342 (See Appendix H, Encroachment Permits Manual). If a different test method is used, the permittee may utilize standard test plates with known coefficients of friction available from each Caltrans District Materials Engineer to correlate skid resistance results to California Test Method 342. Based on the test data, the permittee shall determine what amount of surface wear is acceptable, and independently ascertain when to remove, test, or resurface an individual plate.

Caltrans Inspectors should not enforce plate removal unless it is permanently deformed or delivered without the required surfacing. However, an inspector should document in a diary all contacts with the contractor.

A "Rough Road" (W8-8) sign and a "Steel Plate Ahead" (W8-24) sign with black lettering on an orange background must be used in advance of steel plate bridging along with the required construction area signs. These signs must be used along with any other construction area signs.

Surfacing requirements are not necessary for steel plates used in parking strips, on shoulders not used for turning movements, or on connecting driveways, etc., not open to the public.

C I T Y O F S A N T A R O S A

STATE OF CALIFORNIA

REHABILITATE MATANZAS SIPHONS

The work to be performed and referred to herein is in the City of Santa Rosa, California and consists of improvements to be constructed in accordance with the provisions of the Invitation for Bids, containing the Notice to Bidders, the Special Provisions, the Project Exhibits(s), the Bid Forms and the Contract, all of which are by reference incorporated herein, and each Addendum, if any is issued, to any of the above which is also incorporated by reference herein.

TO THE AWARD AUTHORITY OF THE CITY OF SANTA ROSA

The undersigned, as bidder, declares that the only person or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any other person, firm, or corporation; that Contractor has carefully examined the Project Exhibits, Invitation for Bids and conditions therefor, and is familiar with all bid requirements, that Contractor has examined this Contract and the provisions incorporated by reference herein, and Contractor hereby proposes, and agrees that if its bid is accepted by the City, Contractor will provide all necessary machinery, tools, apparatuses, and other means of construction, and to do all the work and furnish all the materials and services required to complete the construction in accordance with the Contract, the Special Provisions, the Project Exhibit(s), and Addenda to any of the above as incorporated by reference, in the time stated herein, for the unit prices and/or lump sum prices as follows:

NAME OF BIDDER: _____

Contract #: **C02190**

Project Title: **REHABILITATE MATANZAS AND GLENBROOK SIPHONS**

Line #	Description	Units	Quantity	Unit Price	Total Price
1	TRUNK SIPHON STRUCTURE REHABILITATION ALLOWANCE (F)	FA	1	$ 60,000.00	$ 60,000.00
2	MOBILIZATION/DEMOBILIZATION	LS	1	$	$
3	TRAFFIC CONTROL	LS	1	$	$
4	12" CIPP LINER REHABILITATION - MATANZAS SIPHON	LS	1	$	$
5	18" CIPP LINER REHABILITATION - MATANZAS SIPHON	LS	1	$	$
6	24" CIPP LINER REHABILITATION - MATANZAS SIPHON	LS	1	$	$
7	BYPASS PIPING SYSTEM MATANZAS SIPHON	LS	1	$	$
8	BYPASS PUMPING MOBILIZATION AND DEMOBILIZATION - PUMP STA. #1 - MATANZAS SIPHON	LS	1	$	$
9	BYPASS PUMPING MOBILIZATION AND DEMOBILIZATION - PUMP STA. #2 AND #3 - MATANZAS SIPHON	LS	1	$	$
10	BYPASS PUMPING - PUMP STA. #1 - MATANZAS SIPHON WET WEATHER FLOW OPERATIONAL	MONTH	2	$	$
11	BYPASS PUMPING - PUMP STA. #1 - MATANZAS SIPHON WET WEATHER FLOW STAND BY	MONTH	2	$	$
12	BYPASS PUMPING - PUMP STA. #1 - MATANZAS SIPHON	MONTH	3	$	$
13	BYPASS PUMPING - PUMP STA. #2 AND #3 - MATANZAS SIPHON	MONTH	2	$	$
				Total:	$

In the case of any discrepancy between the unit price and the total set forth for the item, the unit price shall prevail; provided, however, that if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any reason, or is omitted, or in the case of lump sum items, is not the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

1. As to lump sum items, the amount set forth in the "Total" column shall be the unit price;

2. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The Total Base Bid shall be the sum of the "Total" column. In case of discrepancy between the sum of the "Total" column and the amount entered as Total Base Bid, the sum of the "Total" column shall prevail. The bid comparison will be based on the sum of the "Total" column for each bidder.

If this Contract Bid is accepted by the City and the undersigned fails to execute the Contract and to give all the bonds required under the Contract, with a surety satisfactory to the Award Authority of the City of Santa Rosa, within ten calendar days after bidder has received the Notice of Award from the Engineer, then the Award Authority may, at its option, determine that the bidder has abandoned the Contract, and thereupon this bid and the acceptance thereof shall be null and void, and the forfeiture of the security accompanying this bid shall be in accordance with California Public Contract Code section 20172.

The undersigned understands and agrees that the City is not responsible for any error or omissions on the part of the undersigned in making this bid.

The bidder to whom the Contract is awarded agrees to execute the Contract in favor of the City, in the form attached, and to deliver any and all required bond(s) and insurance certificates within ten calendar days from the date of Contractor’s receipt of the Notice of Award. Following the award of the Contract, Contractor shall commence work within ten calendar days from the day authorized in the Notice to Proceed and diligently prosecute the same to completion in accordance with Section 8-1.04.

LIST OF SUBCONTRACTORS

NAME OF BIDDER: _____

The following is a list of each subcontractor who will perform work or labor or render services to the undersigned for the construction of the project in an amount in excess of ½ of 1% of the total amount of this bid.

The undersigned agrees that any portion of the work in excess of ½ of 1% of the total amount of this bid and for which no subcontractor is designated herein will be performed by the undersigned.

SUBCONTRACTOR NAME	SUBCONTRACTOR LICENSE NUMBER	SUBCONTRACTOR DIR REGISTRATION NUMBER	SUBCONTRACTOR BUSINESS ADDRESS	DESCRIPTION OF WORK (ITEM NO.)

SAFETY PROGRAM QUALIFACTION CRITERIA
Experience Modification Rate

The following information will be used to determine if you meet the minimum safety requirements for this project. To qualify, you must not have a three-year average* Workers' Compensation Experience Modification Rate greater than **1.0**. This form shall be submitted by the primary contractor.

Enter your Experience Modification Rate for the last five complete years (available from your insurance carrier):

20_____ EMR = _____

20_____ EMR = _____

20_____ EMR = _____

20_____ EMR = _____

20_____ EMR = _____

Lowest Three-Year Average* = _____

* - Calculated as the average of the lowest three consecutive years within the past five year duration

Company Name _____

Contact Name _____ Telephone _____

To verify the above information, we will contact your workers' compensation insurance carrier. Please authorize your carrier to release this information. Failure to do so will result in automatic disqualification.

Workers' Compensation Insurance Company _____

_____

Contact Person _____ Telephone _____

Do not write in this space

Qualified [ ] **Not qualified [ ]** **EMR information verified [ ]**

SAFETY PROGRAM QUALIFICATION CRITERIA
Recordable Incident Rate

The following information will be used to determine if you meet the minimum safety requirements for this project. To qualify, you must not have a three-year average* Recordable Incident Rate greater than **3.0**. Incident rate information is on your OSHA Log 300. Please calculate the RIR for the last three complete years as follows. This form shall be submitted by the primary contractor.

$$\frac{\text{Total number of recordable incidents x 200,000}}{\text{Total employees hours worked}} = \text{RIR}$$

Recordable incidents		Total Employee Hours Worked	
Year	Number	Year	Number
20_____	_____	20_____	_____
20_____	_____	20_____	_____
20_____	_____	20_____	_____
20_____	_____	20_____	_____
20_____	_____	20_____	_____

Enter your Total Recordable Incident Rate for each of the last five complete years:

20_____ RIR = _____
20_____ RIR = _____
20_____ RIR = _____
20_____ RIR = _____
20_____ RIR = _____

Lowest Three-Year Average* = _____

* - Calculated as the average of the lowest three consecutive years within the past five year duration

Company Name _____

Contact Name _____ Telephone _____

To verify the above information, we will contact your workers' compensation insurance carrier. Please authorize your carrier to release information on recordable incidents for the years indicated in your calculations. Failure to do so will result in automatic disqualification.

Workers' Compensation Insurance Company _____

_____

Contact Person _____ Telephone _____

_____

Do not write in this space

Qualified [ ] **Not qualified [ ]** **RIR information verified [ ]**

SAFETY PROGRAM QUALIFICATION CRITERIA
Lost Time Incident Rate

The following information will be used to determine if you meet the minimum safety requirements for this project. To qualify, you must not have a three-year average* Lost Time Incident Rate greater than **1.1**. Incident rate information is on your OSHA Log 300. Please calculate the LTIR for the last three complete years as follows. This form shall be submitted by the primary contractor.

$$\frac{\text{Total number of lost-time incidents} \times 200{,}000}{\text{Total employees hours worked}} = \text{LTIR}$$

Lost-time Incidents		Total Employee Hours Worked	
Year	Number	Year	Number
20_____	_____	20_____	_____
20_____	_____	20_____	_____
20_____	_____	20_____	_____
20_____	_____	20_____	_____
20_____	_____	20_____	_____

Enter your Lost Time Incident Rate for each of the last five complete years:

20_____ RIR = _____
20_____ RIR = _____
20_____ RIR = _____
20_____ RIR = _____
20_____ RIR = _____

Lowest Three-Year Average* = _____

* - Calculated as the average of the lowest three consecutive years within the past five year duration

Company Name _____

Contact Name _____ Telephone _____

To verify the above information, we will contact your workers' compensation insurance carrier. Please authorize your carrier to release information on lost-time incidents for the years indicated in your calculations. Failure to do so will result in automatic disqualification.

Workers' Compensation Insurance Company _____
_____

Contact Person _____ Telephone _____

Do not write in this space

Qualified [ ] Not qualified [ ] LTIR information verified [ ]

LIST OF PREVIOUS SIMILAR JOBS

NAME OF BIDDER: _____

NONCOLLUSION DECLARATION
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid. The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

NOTE: The above Noncollusion Declaration is part of the Contract Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Noncollusion Declaration.

BID BOND AFFIDAVIT AND BIDDER'S SIGNATURE PAGE

Accompanying this bid is a guaranty in the form of (Notice: Insert the words "cash $," "Cashier's Check," "Certified Check," or "Bidder's Bond" as the case may be):

_____

in an amount equal to at least ten percent of the total of this bid.

The undersigned further agrees that if Contractor does not execute the Contract and deliver the necessary bonds to the City within the period of time specified in this Invitation for Bids, the proceeds of the security accompanying this bid shall become the property of the City of Santa Rosa, California, and this bid and the acceptance thereof may, at the option of the City, be considered null and void.

The undersigned is licensed in accordance with an act providing for the registration of Contractors, License No. _____, Class _____, expiration date _____.

The undersigned in registered with the Department of Industrial Relations, Registration No. _____.

IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager of the corporation; if a partnership, state true name of partnership, also the names of all partners in the partnership; if the bidder is a sole proprietor, state the business name and the proprietor's name in full.

Secretary of State Business Entity Number: _____.

_____

_____

_____

_____

Business Address

_____

Telephone Number

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

BIDDER'S SIGNATURE: _____

TITLE: _____

DATE: _____

CONTRACT

CITY OF SANTA ROSA

CALIFORNIA

CONTRACT NO. C02190
REHABILITATE MATANZAS SIPHONS

This Contract is made and entered into as of _____at Santa Rosa, California, between the City of Santa Rosa (“City") and _____ of _____ ("Contractor").

ARTICLE I - For and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by City, and under the conditions expressed in the required bonds hereunto annexed, Contractor agrees that for the benefit of City, at its own cost and expense, to do all the work and furnish all the materials, except such as are mentioned in the Special Provisions to be furnished by City, necessary to construct and complete the work herein described in a good, workmanlike, and substantial manner. The work embraced herein shall be done in accordance with the Standard Specifications of the State of California Department of Transportation, dated 2010, insofar as the same may apply (Standard Specifications); in accordance with the City of Santa Rosa Construction Specifications for Public Improvements (City Specifications); in accordance with the City of Santa Rosa Design and Construction Standards, (City Standards); in accordance with the State of California Department of Transportation Standard Plans, dated 2010 (Standard Plans), (collectively, “Contract Documents”) and in accordance with the Special Provisions hereinabove set forth, all of which are hereby incorporated into and made part of this Contract.

The work to be performed is further shown upon Exhibits consisting of three (3) sheets entitled, Rehabilitate Matanzas Siphons, File Number 2019-0027, approved by the Deputy Director of Transportation and Public Works, hereinafter referred to as the Project Exhibits(s).

ARTICLE II - Contractor agrees to receive and accept the following prices as full compensation for furnishing all materials and doing all the work contemplated and embraced in this Contract; also for all loss or damages arising out of the nature of the work aforesaid, or from the acts of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by City and for all expenses incurred by or in consequence of the suspension or discontinuance of work, and for well and faithfully completing the work, and the whole thereof in the manner and according to the Project Exhibits and Invitation for Bids therefor, and the requirements of the Engineer under them to wit:

ITEM NUMBER	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
			$ _____	$ _____

TOTAL BASE BID (SUM OF "TOTAL" COLUMN) $ _____

BID ITEMS IN THIS SECTION WILL BE INSERTED UPON AWARD OF THE CONTRACT AND SHALL BE THE SAME AS THOSE BID UPON.

ARTICLE III - City and Contractor hereby promise and agree that Contractor shall provide the materials and do the work according to the terms and conditions herein contained and referred to, for the prices aforesaid, and City hereby agrees to pay for the same at the time, in the manner, and upon the conditions set forth; and the parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to full performance of the covenants herein stated.

ARTICLE IV - By execution of this Contract, Contractor hereby represents and certifies that Contractor is aware of the provisions of Labor Code section 3700 which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor hereby agrees to comply with such provisions before commencing the performance of the work of this Contract.

ARTICLE V - It is further expressly agreed by and between the parties hereto that the Invitation for Bids, containing the Notice to Bidders including any required Bonds, the Contract Documents, and any Addenda are all essential parts of this Contract and are specially referred to and by such reference made a part hereof. In the event of any conflict in the provisions thereof, the terms of said documents shall control each over the other, in the following order:

1. Special Provisions
2. Project Exhibits
3. City Standards
4. City Specifications
5. Standard Specifications
6. Standard Plans

ARTICLE VI - Contractor agrees to commence work pursuant to this Contract within ten calendar days from the date authorized in the Notice to Proceed and to diligently prosecute the same to completion in accordance with Section 8-1.04C of the Special Provisions.

This Contract shall not be transferred or assigned without the prior written consent of City, which may be withheld by City in its sole and absolute discretion.

If Contractor is a corporation, two corporate officers of Contractor, one from each of the following two groups shall execute this Contract: a) the chairman of the board, president or any vice-president; b) the secretary, any assistant secretary, chief financial officer, or any assistant treasurer. The name and title of the corporate officers shall be printed under the signature.

In witness whereof, the parties hereto have executed this Contract as of the date first written above.

City:	**Contractor:**
City of Santa Rosa, a Municipal corporation	Name of Contractor, Type of entity
By: _____	By: _____
Title: _____	Name: _____
ATTEST: By: _____	Title: _____
Title: _____	By: _____
Approved as to form:	Name: _____
By: _____ Office of City Attorney	Title: _____