

INVITATION FOR BIDS



FOR CONSTRUCTING

CROSSTOWN TRUNK LINING - 3 SEGMENTS

CONTRACT NUMBER
C02311

ISSUED BY
CAPITAL PROJECTS ENGINEERING DIVISION
CITY OF SANTA ROSA, CALIFORNIA

2022

ATTENTION
Prebid Conference
See Page 1



STATE OF CALIFORNIA

INVITATION FOR BIDS

CONTAINING:

NOTICE TO BIDDERS

SPECIAL PROVISIONS

BID FORMS

CONTRACT

FOR

CROSSTOWN TRUNK LINING - 3 SEGMENTS

Contract No. C02311

CROSSTOWN TRUNK LINING - 3 SEGMENTS

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CITY OF SANTA ROSA
STATE OF CALIFORNIA

NOTICE TO BIDDERS

➤	For technical questions regarding this project, contact Jason Roberts at (707) 543-3857.
➤	For direct access to plans, specifications and planholders' lists, go to www.srcity.org/bids and click on <u>Bid/Proposal Opportunities</u> or call (707) 543-3800.
➤	For direct access to bid results, go to www.srcity.org/bids . Under Link to Capital Projects, click on <u>Capital Projects Contracts</u> .

**- IMPORTANT -
REVISED BIDDING PROCEDURES**

All bids shall be submitted and opened according to the following procedure:

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., April 28, 2022, for Crosstown Trunk Lining - 3 Segments, Contract No. C02311. (Engineer's Estimate: \$1,465,900.)

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.

Bid Opening Teleconference Call

Prospective bidders, subcontractors, and materials suppliers are invited to attend the Bid opening teleconference call scheduled to be held at 2:00 p.m. on April 28, 2022. The teleconference can be accessed by dialing 1 (707) 543-4700, participant code 594-3763#.

Project Description/Scope of Work

This project aims to extend the useful life of a portion of the cross-town trunk sewer. CCTV observations have identified corrosion at the crown of the pipe. The project will examine various options for structural rehabilitation and then engage a contractor to perform the rehab work. Rehabilitation work will be performed at three locations along the trunk.

Pre-Bid Meeting Teleconference Call

Prospective bidders, subcontractors, and material suppliers are invited to attend a pre-bid meeting teleconference call scheduled to be held at 11:00 a.m., April 14, 2022. The teleconference can be accessed by dialing 1 (707) 543-4700, participant code 465-1744#.

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 #: C02311

Project Title: CROSSTOWN TRUNK LINING - 3 SEGMENTS

Line #	Description	Units	Quantity
1	MOBILIZATION AND DEMOBILIZATION	LS	1
2	TRAFFIC CONTROL	LS	1
3	WATER POLLUTION CONTROL	LS	1
4	PERMANENT TRENCH PAVING	TON	35
5	SIDEWALK	SF	120
6	BRACING AND SHORING	LS	1
7	MANHOLE CONE, FRAME AND COVER	EA	6
8	REPLACEMENT OF MANHOLE I12816MH019 (HAZEL STREET)	LS	1
9	INSIDE DROP AT MANHOLE I12816MH23 (HAZEL STREET)	LS	1
10	39" PRE-CIPP REHABILITATION CCTV INSPECTIONS (SONOMA AVE)	LS	1
11	33" PRE-CIPP REHABILITATION CCTV INSPECTIONS (HAZEL STREET)	LS	1
12	30" PRE-CIPP REHABILITATION CCTV INSPECTIONS (CHESTNUT-ROBERTS)	LS	1
13	39" POST-CIPP REHABILITATION CCTV INSPECTION (SONOMA AVE)	LS	1
14	33" POST-CIPP REHABILITATION CCTV INSPECTION (HAZEL STREET)	LS	1
15	30" POST-CIPP REHABILITATION CCTV INSPECTION (CHESTNUT-ROBERTS)	LS	1
16	39" PRE-CIPP SEWER CLEANING (SONOMA AVE)	LS	1
17	33" PRE-CIPP SEWER CLEANING (HAZEL STREET)	LS	1
18	30" PRE-CIPP SEWER CLEANING (CHESTNUT-ROBERTS)	LS	1
19	39" CIPP LINER REHABILITATION (SONOMA AVE)	LS	1
20	33" CIPP LINER REHABILITATION (HAZEL STREET)	LS	1
21	30" CIPP LINER REHABILITATION (CHESTNUT-ROBERTS)	LS	1
22	CIPP PRE-LINER	LF	970
23	BYPASS PUMPING MOBILIZATION AND DEMOBILIZATION	LS	1
24	BYPASS PUMPING	LS	1

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.

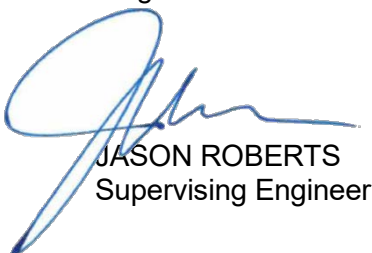
Project plans, bid and contract forms for C02311 Crosstown Trunk Lining - 3 Segments may be obtained through PlanetBids at www.srcity.org/bids. These documents can no longer be obtained at the Transportation and Public Works Department.

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.



JASON ROBERTS
Supervising Engineer

3/24/2022

Date

SPECIAL PROVISIONS

General Specifications

CITY OF SANTA ROSA, CALIFORNIA

CROSSTOWN TRUNK LINING - 3 SEGMENTS

1 GENERAL

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

1. Special Provisions
2. Project Plans, consisting of 9 sheets entitled Crosstown Trunk Lining - 3 Segments, 2022-0010
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 Transportation and Public Works 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 Plans, 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. A copy of such addendum will be mailed or faxed to each Planholder. 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, cashier's 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.

2-1.40 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.

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. |
| 5. | Course of construction/builders' risk | Amount of completed value of project without co-insurance provisions | Required for construction projects over \$3 million. The City shall be named as loss payee. |

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

4-1.05 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.

4-1.05C 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 Plans, consisting of 9 sheets entitled Crosstown Trunk Lining - 3 Segments, 2022-0010
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 Plans and as specified in the Invitation for Bids shall be constructed in a sequence that is satisfactory to and approved by the Engineer.

Contractor shall prepare a work schedule per Section 8-1.02 of the Standard Specifications.

All lining work adjacent to Luther Burbank Elementary School including but not limited to collector sewer bypass pumping, CIPP lining, and CIPP curing shall be completed during consecutive days during school break so that there is no disruption of school-related to pedestrians, vehicular traffic or reduced air quality. The school break calendar is as follows:

Summer Break 2022:	June 3, 2022, through August 10, 2022
Labor Day 2022:	September 5, 2022
Weekends:	All Saturdays and Sundays

All bypass piping work adjacent to the Prince Memorial Greenway Creek Trail including but not limited to piping set-up, pedestrian barrier set-up, and any work restricting access to the creek trail beyond what is shown on the Project Plans shall be completed prior to August 20, 2022 or after August 28, 2022. The Contractor shall not operate the bypass pumping system from August 26, 2022, through August 28, 2022.

Contractor shall schedule the order of work such that the schedule restrictions described in Section 5-1.05 and 8-1.05 are observed.

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 Plans. 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 Plans 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. When requested, these prevailing wage reports must be redacted by the Contractor prior to providing them to 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 of:

100 WORKING DAYS

Wet weather flows are defined to occur from October 15th through April 15th as indicated in Section 130-3-1.01 of the technical specifications.

8-1.05 Timer: All Trunk Sewer Bypass Pumping operations shall be completed by **October 15, 2022.**

Unless otherwise directed by the Engineer, Contractor shall not conduct any activities that generate noise earlier than 7 AM or later than 9 PM.

Contractor may work weekends upon approval 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.



**90% SUBMITTAL
TECHNICAL SPECIFICATIONS**

FOR

**CROSSTOWN TRUNK LINING – 3 SEGMENTS
CONTRACT NO. C02311**



MARCH 2022

10 GENERAL CONSTRUCTION

10-3 Mobilization: Mobilization shall conform to the provisions in Section 9-1.16D(2) 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. Moving onto the site(s) of all Contractor's equipment required for operations.
5. Installing temporary construction water supply, power, wiring and lighting facilities, as required.
6. Providing field office trailers if needed by the Contractor.
7. Providing all on-site communication facilities, including telephones and radio pagers.
8. Compliance with submittal process.
9. Having all OSHA required notices and establishment of safety programs.
10. Attendance at Pre-Construction and weekly progress meetings of Contractor's principal construction personnel.
11. Beginning work on the project or at the subject site as applicable.

Demobilization shall include, but not limited to, removal of all equipment, unused materials, all temporary utilities, job trailers and all temporary utilities.

Only one mobilization charge shall be allowed for this project. No charges will be allowed for movement of equipment between project sites or locations.

10-3.02 Payment: Mobilization/Demobilization shall be paid for at the contract **lump sum** price, which price shall not exceed 5% of the total contract price for the work, and shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved in conforming to the provisions this section as specified herein, and no additional allowance will be made therefore.

The first payment for mobilization/demobilization shall be no more than 90% of the bid item amount. The first payment request for mobilization/demobilization may be made after all requirements for mobilization, as indicated herein, have been completed. The second payment request for mobilization/demobilization shall be made after completion of all contract items of work and completion of the final punch list has been completed.

12 TEMPORARY TRAFFIC CONTROL

12-1 General

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 Cost" 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 Traffic-Handling Equipment and Devices

12-3.01A (3) Submittals: 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 each work zone's vehicular and pedestrian traffic control. Traffic control plans shall be stamped by a registered engineer in California, licensed to perform such work. If the Contractor proposes to use the current edition of CA MUTCD in specific work operations, they shall submit in writing for consideration which Typical Application Diagram will be used and how it will be applied for eachwork operation. Traffic Control Plans shall be submitted to the City of Santa Rosa for review at least two weeks prior to desired 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.

Traffic Control Plans 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 CA MUTCD typical application, City Standard or Caltrans Standard as applicable.
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. Demonstrate how two-way traffic will be maintained.
7. Location of major equipment such as bypass pumping equipment and liner transportation trailers as required.
8. 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. A bicycle and pedestrian bypass plan for the portion of the Prince Memorial Greenway Creek Trail that will be temporarily closed for set-up of trunk sewer bypass piping during normal working hours will be required for review and approval by the Engineer. The plan shall include adequate signage directing bicycle and pedestrian traffic around the detour route. Maps of the bypass route shall be posted at all Creek Trail access locations impacted by construction.

9. Signs indicating that the width of the Prince Memorial Greenway Creek Trail has been reduced shall be provided at all access points within the project area and at either end of the trail width restriction. A minimum of 8 signs shall be provided indicating that construction work is ahead on the trail and contain information regarding the duration of the impact, reduced speed limits for bicycle traffic, and contact information. Contractor shall submit proposed sign to the Engineer for review and approval.
10. Location of changeable message boards. 6 changeable message boards will be required. Locations to be as indicated on the Project Plans or as determined by Engineer.
11. All Traffic Control Plans shall be prepared, sealed, and signed by a Professional Engineer registered in the State of California.

No work except for installation of project identification signs and changeable message boards, as required, will be allowed to commence prior to approval of the Work Zone Traffic Control Plan.

12-4 Maintaining Traffic

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 or is within one of the following areas:
 - a. Reduced width of traveled ways will be allowed for extended periods of time along Sonoma Avenue, South A Street, West Third Street, and Roberts Avenue due to trunk sewer bypass pumping equipment or piping.
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 and receive permission from the affected businesses and residents. Attention is directed to Section 7-1.03, "Public Convenience". Full access shall be provided to all driveways during non-working 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.

6. Water filled barriers are required to protect trunk sewer bypass pumping equipment and piping from vehicular traffic in locations where the bypass pumping equipment or piping is located beyond the face of curb.

12-4.01A Construction Traffic: 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 7-1.03, "Public Convenience", and to Section 5-1.05, "Order of Work," of these Special Provisions.

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

Portable changeable message boards will be required for this project and shall not impede into any travel lanes. Message boards shall state "ROAD WORK FROM START DATE TO END DATE". Message boards shall be installed at the locations directed by the Engineer two weeks prior to any construction activity and removed immediately after construction activity.

Lane closures will be permitted between the hours of 8:30 a.m. and 4:00 p.m. **Lane closures on Sonoma Avenue and South A Street during Luther Burbank Elementary School days will be permitted between the hours of 9:00 a.m. and 1:00 p.m. on Monday and 9:00 a.m. and 2:00 p.m. on Tuesday thru Friday.** See Section 5-1.05 for school break calendar.

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 or indicated on the project plans for bypass pumping operations. The Contractor shall maintain vehicle access to homes and other properties at all times while work is in progress.

An Arrow Board is required for any lane shift or merge and shall not impede into any travel lanes. 48" delineators arranged side by side are required where vehicular traffic lanes are shifted and vehicles are detoured to the opposing direction of the street.

Type III barricades are required anywhere there is a lane closure.

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 543-3535 **and** the Communications Center at 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 Luther Burbank Elementary School (707) 890-3902, 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 Traffic Control Plan submitted by the Contractor and approved by the Engineer includes road closures, the Contractor 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:

1. A notice placed on the front door of each home or business where curb side parking will be suspended and attempt made to notify each business or resident verbally that work will be underway within the block and that curb side parking will be suspended during stated working hours and request that vehicles be parked out of the roadway by 8:00 a.m. Service of notice shall not bar use of cars within the block, as individual plans change and emergencies arise.
2. Type 1 barricades every 50 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 bypass pumping and 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 any project related operations that require the presence of 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 Temporary Pedestrian Walkways

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, trail, 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 workday except in areas specifically indicated on the Project Plans for set-up and operation of trunk sewer bypass pumping operations or unless an alternate ADA compliant route has been approved by the Engineer.

The Santa Rosa Marathon is scheduled to occur on August 27 to 28, 2022 and will be utilizing the Prince Memorial Greenway Creek Trail. The creek trail must be clean and clear of any tools, equipment, and personnel from August 20 through August 28, 2022. Bypass piping installed prior to August 20, 2022 can remain on the creek trail as long as the minimum 7-foot clear pathway width is maintained and pedestrian traffic control is provided per Section 12-7.01 of these Special Provisions. Operation of the bypass pumping system shall not occur from August 26 through August 28, 2022.

ADA compliant plastic interlocking pedestrian barricades shall be provided to separate pedestrian and bicycle traffic and trunk sewer bypass piping along trails and sidewalks that are open to pedestrian and/or bicycle traffic while bypass piping is in place. Water filled barriers shall be provided at taper locations where the normal width of a trail or sidewalk is reduced due to bypass piping.

Pedestrian barricades shall be Strongwall CSP-SW38, Plasticade ADA Pathcade or approved equivalent.

12-9 Measurement and Payment

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

13-1.01A Summary: 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.

13-1.01B Definitions: Construction phase: The construction phase starts at the start of job site activities and ends at Contract acceptance.

13-1.01C(4)(c) Water Quality Monitoring Reports: The Contractor shall complete and sign the Storm Water Correction Notices (below) with the City as part of the Storm Water Permit.

STORM WATER CORRECTION NOTICE

FAILURE TO CORRECT BY DUE DATE MAY RESULT IN STOP WORK NOTICE!

PROJECT NAME: _____

JOB ADDRESS: _____

PROJECT / PERMIT #: _____ DATE: _____

☐ No storm water deficiencies identified.

I HAVE INSPECTED THIS PROJECT SITE. THE FOLLOWING ISSUES AND DEFICIENCIES HAVE BEEN IDENTIFIED AND REQUIRE CORRECTIVE ACTION:

STORMWATER BMPs:

- | | | | |
|---------------------------------------------------------|----------------------------------------------|---------------------------|-------------------------|
| <input type="checkbox"/> Storm Drain Protection: | Install | Maintain | Replace |
| <input type="checkbox"/> Perimeter Controls: | Install | Maintain | Replace |
| <input type="checkbox"/> Housekeeping: | Sweep | Clean | Remove Garbage & Debris |
| <input type="checkbox"/> Stockpiles: | Cover | Perimeter Controls | Remove |
| <input type="checkbox"/> Debris Bins: | Cover | Perimeter Controls | |
| <input type="checkbox"/> Tracking: | Clean-Up | Install Tracking Controls | |
| <input type="checkbox"/> Portable Toilet: | Secondary Containment Required | | |
| <input type="checkbox"/> Concrete: | Install BMPs for Pumper or Concrete Truck | | |
| | Cover / Maintain Concrete Washout Containers | | |
| <input type="checkbox"/> Sediment & Erosion: | Install Appropriate Controls | Dust Controls | |
| <input type="checkbox"/> Other: | | | |

***ALL DEFICIENCIES MUST BE CORRECTED PRIOR TO NEXT RAIN EVENT OR NO LATER THAN DUE DATE, WHICHEVER IS SOONER.**

DATE REQUIRED (SEE NOTE*): _____

INSPECTOR: _____ PH #: () _____

CONTRACTOR SIGNATURE: _____ DATE: _____

Inspection Type: ☐ **Monthly** (Oct 1st-April 30th)

☐ **Pre-Rain** (Sept 1st-Oct 1st)

☐ **Deficiency Re-Inspection**

☐ **Following First 0.25" Rain**
(within 2 business days)

13-2 Water Pollution Control Program

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.

13-2.04 Payment: The City Pays the Contractor to prepare **Water Pollution Control** Program as the **lump sum** price for **Water Pollution Control** and as follows:

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 Job Site Management

13-4.03B: Spill Prevention and Control: The Contractor shall also comply with CASQA Spill Prevention and Control (BMP WM-4). If a spill occurs at the construction site and the Contractor do 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 the Contractor hereunder.

In the event there are insufficient amounts owed to the 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(3): Stockpile Management: The Contractor shall also comply with CASQA Stockpile Management (BMP WM-3). Do not block storm water flows.

13-4.03D(1): General: The Contractor shall also comply with 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: The Contractor shall also comply with 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: The Contractor shall also comply with 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(1): Water Control and Conservation: The Contractor shall also comply with CASQA Water Conservation Practices (BMP NS-1 and NS-2).

13-4.03E(3): Vehicle and Equipment Cleaning: The Contractor shall also comply with CASQA Vehicle and Equipment Cleaning (BMP NS-8).

13-4.03E(4): Vehicle and Equipment Fueling and Maintenance: The Contractor shall also comply with CASQA Vehicle and Equipment Fueling (BMP NS-9), and CASQA Vehicle and Equipment Maintenance (BMP NS-10).

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 gravel bags and filter fabric or other appropriate inlet protection at all susceptible storm drain inlets and manholes to prevent paving products and tack coat from entering the storm drain;
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** and;
11. 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)**,

13-4.03F: Sweeping: The Contractor shall also comply with CASQA Street Sweeping and Vacuuming (BMP SE-7).

13-4.04 Payment: Job Site Management shall be paid for at the contract **lump sum** price for **Water Pollution Control**.

13-6 Temporary Sediment Control

13-6.03C Temporary Drainage Inlet Protection: The Contractor shall also comply with CASQA Storm Drain Inlet Protection (BMP SE-10).

13-6.04: Payment: Temporary Sediment Control shall be paid for at the contract lump sum price for **Water Pollution Control** which shall include all maintenance costs.

14 ENVIRONMENTAL STEWARDSHIP

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 workday 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.

All other excess materials from the project shall become the property of the Contractor and shall be disposed of at no additional cost to the City.

14-10.02 Solid Waste Disposal and Recycling Report: 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.

The Contractor shall provide receipts verifying delivery and approximate quantity (in tons) of the material delivered to a material recycler.

14-10.03 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.

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 utility trenches and/or structures that are in close proximity to proposed excavations 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.

15-3.03 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 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.

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 saw cutting, removal and disposal of concrete sidewalks shall be included in the contract 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 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/or determine the exact locations, sizes, and depths of existing utilities (including both invert and crown elevations), and verify clearances and/or known potential conflicts. The Contractor shall determine both invert and crown elevations and alignments of existing utilities to be lined.

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: 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.

15-9.01 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.

19 EARTHWORK

19-1 General

19-1.01 General: Non-contaminated site: See section 19-2.03B, Surplus Material, of these Technical Specifications.

19-1.01A Summary: Earthwork shall also include excavation for utility replacement and trenching.

19-1.03B Unsuitable Material: Stabilization of unsuitable material shall comply with the following provisions:

- A. Unsuitable material may be processed in place, may be excavated and placed on the grade or other locations suitable for further processing, or may be partially excavated and partially processed in place.
- B. Processing may consist of drying to provide a stable replacement material or mixing with lime per Section 24.
- C. Stabilized material shall be placed and compacted in layers as hereinafter specified for constructing embankments.

19-1.03B(1) Subgrade stabilization: Any area of the subgrade determined by the Engineer to be unsuitable shall be stabilized per 19-1.03B.

19-1.03C Grade Tolerance: When aggregate subbase or aggregate base are to be placed on the grading plane, the grading plane shall not vary more than 0.05' above or 0.1' below the grade established by the Engineer.

19-1.04 Payment: In the event of an increase or a decrease in the amount of the engineer's estimated quantity of Subgrade Stabilization, such increase or decrease shall not be considered an alteration in excess of the 25 percent of the contract amount of such items under provisions of Section 4-1.05 of the Standard Specifications and no adjustment of the contract price for Subgrade Stabilization will be made.

No additional compensation will be made for excavation and stabilization beyond the limits of the areas marked by the Engineer or for excavation and stabilization of locations other than those marked by the Engineer. Any excavation for subgrade stabilization done by the Contractor to accommodate equipment width beyond the limits of the areas marked by the Engineer shall be at the Contractor's expense.

Quantities of Stabilization Fabric to be paid for shall be computed on the basis of the exact amount of area covered in the field.

The cost for the asphalt concrete base shall be included with the contract unit price for subgrade stabilization.

19-2 Roadway Excavation

19-2.03A General: The Contractor shall note that there are street trees near areas intended for roadway excavation. The Contractor's operation, including the size of the grinding equipment,

shall be such, so as to ensure that existing street trees are not damaged. Where limited clearance under the street trees prevents the use of a grinder, excavation shall be performed by an alternate method as approved by the Engineer. Alternate methods may include jackhammering and removal of existing pavement and base materials by hand, or by use of smaller grinding equipment.

Where tree roots are encountered during roadway excavation, the Contractor shall cut the roots off six inches below the planned subgrade. Each cut shall be clean with no torn bark or splintered wood remaining on the root and shall be accomplished by use of a saw appropriate for the size of the root to be cut.

19-2.03B Surplus Material: All material excavated from the project area shall be the property of the Contractor. None of the material excavated from the work site shall be disposed on the work site. Prior to disposal of any excess material from the work site, the Contractor shall submit to the Engineer written authorization for such disposal and entry permission signed by the approved disposal site. The Contractor shall comply with all disposal regulations such as City, County, and/or State permits and licenses, as may be required.

19-2.04 Payment: Roadway Excavation shall be considered as included in the prices paid for various contract items of work and no additional allowance will be made therefor.

19-5 Compaction

19-5.03B Relative Compaction: Relative compaction of not less than 95 percent shall be obtained for a minimum depth of 1-foot below the subgrade of the HMA surface for the full width of the planned pavement structural section, whether in excavation or embankment.

26 AGGREGATE BASE

26-1.01 General

26-1.01A Summary: Aggregate base shall be Class 2 conforming to and placed in accordance with the requirements of Section 26 of the City Specifications.

Compacting shall commence immediately after spreading of the damp material and before the material has dried sufficiently to allow separation between the fine and coarse particles.

26-1.02 Materials

26-1.02B Class 2 Aggregate Base: The minimum sand equivalent shall be 31 for any individual test.

26-1.03 Construction

26-1.03E Compacting: The surface of the finished aggregate base shall be firm and unyielding. Any visible movement vertically or horizontally of the aggregate base under the action of construction equipment or other maximum legal axle loads shall be considered as evidence that the aggregate base does not meet this requirement.

26-1.04 Payment: Full compensation for aggregate base shall be considered as included in the prices paid for the **various contract items** of work and shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in furnishing and placing the base material as specified, including furnishing, hauling and applying water as specified and directed by the Engineer, and no additional allowance will be made therefor.

39 HOT MIX ASPHALT

39-1.01 General

39-1.01A Summary: Section 39 includes specific specifications for producing and placing Hot Mix Asphalt (HMA) by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture.

39-1.01B Definition: For these project plans and specifications, HMA and asphalt concrete shall be the same.

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

39-1.01C Description: Asphalt concrete shall be placed in separate lifts as indicated in City STD-215 and Section 39A of these technical specifications.

No vertical drop offs will be allowed between new or existing asphalt concrete surfaces when the roadway is opened to traffic.

A tack coat of SS-1h or SS-1 emulsified asphalt shall be applied to all asphalt concrete and concrete surfaces and allowed to break and set immediately in advance of placing all lifts of asphalt concrete. Unless otherwise shown on the Plans, tack coat shall also be applied to all vertical mating surfaces and conforms to existing pavement, curbs, gutters, and construction joints, and allowed to break immediately in advance of placing all lifts of asphalt concrete. The tack coat shall be reapplied 1) where it becomes contaminated, and 2) where it is significantly tracked (removed) from the surface.

The asphalt concrete 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 workday 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.

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 to 1.0% by weight of asphalt binder. The LAS shall be undiluted 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.

39-2.02EAggregates: 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..... ½-inch Coarse HMA Type A

Base Course.....¾-inch HMA Type A

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.

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**

¾-inch HMA Type A

Sieve Sizes	TV Limits	Allowable Tolerance
1"	100	--
¾"	95–100	TV ± 5
⅜"	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	--

½-inch Coarse HMA Type A

Sieve Sizes	TV Limits	Allowable Tolerance
¾"	100	—
½"	94–100	--
⅜"	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	--

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 not be used.

39-1.03 Hot Mix Asphalt Design Requirements

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

39-1.08 Production

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

39-1.12 Smoothness: 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.

39-3.02 Acceptance Criteria

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: 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: Asphalt Concrete Surface and Asphalt Concrete Base shall be considered as included in the prices paid for the contract items in Section 39A of these Special Provisions, and no additional allowance will be made therefor.

Full compensation for installing and removing temporary asphalt tapers shall be considered as included in the prices paid for the contract items in Section 39A of these Special Provisions, and no additional allowance will be made therefor.

Full compensation for furnishing weight master's certificates shall be considered as included in the prices paid for the contract items in Section 39A of these Special Provisions, and no additional allowance will be made therefor.

[Version: 09/25/2019 CDA STD2018]

39A HOT MIX ASPHALT CONCRETE TRENCH PAVING

39A-1.01 Description: Hot mix 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 Technical Specifications.

39A-2.01A 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. Temporary Paving is included in the prices paid for various contract items and no additional allowance will be made therefor.

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. Asphalt concrete trench paving shall be per Section 39-1.02E for surface and base requirements.

Cutback shall not be used or stockpiled 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: Areas outside of reconstruction or overlay limits shall receive permanent trench paving per City STD-215, the modified detail on the Plans or as specified herein.

Areas requiring permanent trench paving per City STD-215 shall have a minimum surface A.C. thickness of 0.35 feet, and will use the 6" thick A.C. alternative in Note 1 of City STD-215.

The Contractor shall provide compaction of backfill and base material as the job progresses. All trench backfill required per STD-215 on all trenches within the project shall use aggregate base class 2 material as required in Section 26. Temporary paving, as specified in Section 39A-2.01, shall be placed over 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.

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 Section 124 "Material Recycling" of these Technical Specifications.

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. You are 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, except as modified below.

The basis for approval shall be the attainment of 93% relative compaction and satisfactory surface condition following final rolling. The number of coverages required shall be the minimum number required to obtain 93% relative compaction, in accordance with Section 39-3.04 of these Technical Specifications.

39A-8.02 Payment: Asphalt Concrete Base used per Note 1 of City Standard 215 shall be considered as included in the prices paid for various contract items of work and no additional allowance will be made therefor.

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

Permanent Trench Paving shall be paid for at the contract price per **ton** of asphalt concrete surface paving only, which price shall include full compensation for furnishing all labor, materials, tools, equipment and doing all work involved in placing permanent trench paving, including but not limited to: saw cutting, tack coat, compaction and any other work required for permanent trench paving not specifically enumerated in the City Standards, these Technical Specifications or on the Project Plans and no additional allowance will be made therefor.

Asphalt concrete base used in the Permanent Trench Paving structural section is considered as included in the prices paid for various contract items of work and no additional allowance will be made therefore.

The estimated quantity of Permanent Trench Paving is for bidding purposes only. This quantity may be increased, decreased or eliminated in its entirety based on field condition evaluation by the Engineer and no adjustment in the contract bid price or other contract items shall be made therefor. The provisions in Section 9-1.06(B)(C) of the Standard Specifications shall not apply.

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73 CONCRETE CURBS AND SIDEWALKS

73-1.01 General

73-1.01A Summary: The work described by this section consists of sidewalks.

Soft or spongy base or subgrade material shall be removed and replaced with suitable material as required by the Engineer.

All new concrete construction joints shall be of the same type as those removed with the existing concrete unless otherwise stated herein or on the Project Plans.

All oil, paint, tire marks, and other discoloring due to the Contractor's operations shall be removed from concrete by sandblasting prior to acceptance by the Engineer. Cement mortar will not be an acceptable substitute for sandblasting. Vandalism to uncured concrete surface shall be removed. If it cannot be removed from the surface, then the vandalized concrete shall be removed and replaced to the nearest score-mark.

73-1.02D Color: A colored pigment designed for the integral coloring of concrete shall be added to the concrete mix. The pigment shall contain pure concentrated mineral pigments specifically processed for mixing into concrete and complying with ASTM C979.

The colored pigment shall be Davis Colors color #860, applied in a dosage of 1/3 pound per 94 pound sack of cement (approximately 2 pounds per cubic yard of concrete for a 6 sack mix), or L. M. Scofield color #SG860 applied in a dosage to produce an equivalent color, or an approved equal.

73-3.03 Sidewalk Construction: Sidewalk shall be constructed at the locations show on the Project Plans and in conformance with the requirements of Section 73-1.07 of the City Specifications with the following modifications and additions.

All concrete which is to be removed from sidewalk areas shall be removed to the nearest transverse score mark across the full width of sidewalk or construction joint or as directed by the Engineer.

Sidewalks shall be cured in accordance with the requirements of Section 90-1.03B of the Standard Specifications except that the Contractor may substitute other than pigmented sealer upon approval in writing of such substituted sealer by the Engineer.

73-3.04 Payment: **Sidewalk** shall be paid for at the contract price per **square foot**, which price shall include full compensation for removing and disposing of existing sidewalk and excavated materials, furnishing and applying curing materials, removing discoloring, furnishing all labor materials, tools and equipment and doing all work involved in constructing sidewalk completed in place as specified, including furnishing and placing expansion joint filler, constructing weakened plane joints, excavating, and backfilling.

90 CONCRETE

90-1.01C(6) Mix Design: The proportions of the water, sand and aggregate shall be regulated so as to produce a plastic, workable and cohesive mixture.

90-1.01D(2) Cementitious Material Content: Concrete shall contain a minimum of 564 pounds of cementitious material per cubic yard. The amount of cement by weight of the specified cementitious material shall be 75 to 85 percent.

90-1.01D(5) Compressive Strength: The 28 day compressive strength of concrete shall be 4000 pounds per square inch (psi) or greater.

90-1.01D(6) Curing Compound: Concrete shall be cured per Section 90-1.03B of the Standard Specifications. Pigmented curing compound or any other material that will leave a noticeable residue shall not be allowed.

90-1.02E(2) Chemical Admixtures: An admixture shall not be used to reduce the amount of cementitious material content.

90-1.04 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 allowed therefor.

121 NOTIFICATION

121-1.01 General: The Contractor shall notify the Engineer of any work to be performed on any given work day either on the afternoon of the prior working day or before 8:30 a.m. on the given working day. Any work completed for which the Engineer has not received prior 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 fourteen calendar days prior to the start of work. The notice shall inform the resident or business of the type of work, the scheduled date(s) and time of the work and the potential impacts to the resident or business, including time frame during which vehicle access will be interrupted.

The Contractor shall keep the City of Santa Rosa Fire Department, Postal Service, Santa Rosa Recycling and Collection (Recology), Luther Burbank Elementary School, and other related City and nearby business informed of any roadway or lane closure in accordance with Section 12-4.02 of these Special Provisions.

All written notices to residences, businesses, or the nearby school shall be submitted to the Engineer for approval prior to distribution. The Engineer may take up to three calendar days to review notices

121-3.01 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 allowed 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.

130 SANITARY SEWER SYSTEM

130-1 General: Sanitary sewer system components and related appurtenances shall conform to the requirements as specified in the City of Santa Rosa Sanitary Sewer System Construction Standards Specifications Section 130, the Project Plans, and modifications herein.

130-1.03 Excavation, Backfill and Backfill: Contractor shall remove and dispose of manhole cone sections, grade rings, and manhole frames and covers as necessary for the installation of the new sewer main lining system and as indicated on the Project Plans.

Removal and disposal of manhole cones and grade rings for installation of the new sewer main lining system shall be considered included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor. 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.

130-1.07 Sewer Structures: The entire interior surface of all new manhole sections and existing manholes being connected to with the new sewer main lining system shall be coated including the base section after the lining work has occurred and all manhole joints, cracks, and/or chips have been re-grouted or patched. Coating, grouting, and patching materials shall be per the Engineer's List of Approved Items and shall be applied in accordance with the manufacturer's recommendations.

Re-grouting of existing manhole joints and re-coating of interior manhole surfaces shall be considered included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

130-1.09 Television Inspection: CCTV television inspection shall be performed in accordance with these Special Provisions and Section 130-1.09 of the City Standards and NASSCO PACP version 7.0. All pre- and post-inspection CIPP CCTV videos and associated data files shall be transmitted to the City at the completion of the project.

CCTV Inspection shall occur for all sewer mains to be lined at the following stages:

1. Prior to liner procurement (and before the bypass pumping system has been installed). CCTV shall be performed during times of low flows between the hours of 3 AM to 7 AM.
2. After the bypass system has been set up, is operating and the sewer main segment to be lined has been cleaned, but prior to the start of any lining operations.
3. After a new sewer main lining segment has been completed, including all cutting and sealing of the new liner and any manhole base work has been completed.

130-1.10 Payment: Bracing and Shoring shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment; testing and measuring; and doing all the work involved in installation, maintenance, and removal of sheeting, shoring, and bracing for required excavations per City standards, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor.

Manhole Cone, Frame and Cover shall be paid for at the contract unit price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment and incidentals, and doing all work involved for installation of a new pre-cast concrete manhole cone

section, grade rings, frame, and bolt-down cover, including but not limited to: excavation and disposal of excavated materials; hand digging *if required*; dewatering and disposal of trench groundwater *if required*; disposal of soil in conformance with City requirements as well as State and Federal regulations; confined space entry, contamination awareness; removing and disposal of the existing manhole cone, grade rings, frame, and cover; surface preparation and repair of the existing manhole; watertight sealing of penetrations and joints; grouting new and re-grouting existing manhole joints; coating and patching; supporting or removal and disposal of existing utilities in the same trench *if required*; placing and compacting all required bedding and backfill; trench plates *as needed*; temporary trench paving; concrete collar; installing and adjusting the cast iron frame and cover to grade after final paving is complete; testing; as specified herein, and no additional allowance will be made therefor.

Replacement of Manhole I2816MH019 (Hazel Street) 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 incidentals, and doing all work involved for installation of new pre-cast concrete manhole barrel(s) and cone sections, grade rings, frame, and bolt-down cover, including but not limited to: excavation and disposal of excavated materials; hand digging *if required*; dewatering and disposal of trench groundwater *if required*; disposal of soil in conformance with City requirements as well as State and Federal regulations; confined space entry, contamination awareness; removing and disposal of the existing manhole barrels and cone, grade rings, frame, and cover; protection of existing manhole base; surface preparation and repair of the existing manhole base; watertight sealing of penetrations and joints; grouting manhole joints; coating and patching; supporting or removal and disposal of existing utilities in the same trench *if required*; placing and compacting all required bedding and backfill; trench plates *as needed*; temporary trench paving; concrete collar; installing and adjusting the cast iron frame and cover to grade after final paving is complete; testing; as specified herein, and no additional allowance will be made therefor.

Inside Drop at Manhole I2816MH23 (Hazel Street) 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 incidentals, and doing all work involved for removal and disposal of the existing drop connection and installation of a new manhole inside drop connection, including but not limited to: excavation and disposal of excavated materials; hand digging *if required*; dewatering and disposal of trench groundwater *if required*; disposal of soil in conformance with City requirements as well as State and Federal regulations; confined space entry, contamination awareness; removing and disposal of the existing inside drop as necessary to perform the sewer lining work, connection to the existing sanitary sewer; watertight sealing of penetrations; patching; supporting or removal and disposal of existing utilities in the same trench *if required*; placing and compacting all required bedding and backfill; trench plates *as needed*; temporary trench paving; testing; as specified herein, and no additional allowance will be made therefor.

39" Pre-CIPP Rehabilitation CCTV Inspections (Sonoma Ave) shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, testing and measuring, and doing all the work involved in CCTV inspection of the 39" sewer segment both in live flow and then again after bypass has been set-up, is operating, and sewer segment has been cleaned, but prior to CIPP lining per City Standards and these specifications, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor. This bid item includes as many passes as necessary to get a complete CCTV inspection as per written acceptance by the Engineer for the entire sewer segment from manhole to manhole both in live flow and then again after bypass has been set-up and is operating, sewer segment has been cleaned, but prior to CIPP lining.

33" Pre-CIPP Rehabilitation CCTV Inspections (Hazel Street) shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, testing and measuring, and doing all the work involved in CCTV inspection of the 33" sewer segment both in live flow and then again after bypass has been set-up, is operating, and sewer segment has been cleaned, but prior to CIPP lining per City Standards and these specifications, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor. This bid item includes as many passes as necessary to get a complete CCTV inspection as per written acceptance by the Engineer for the entire sewer segment from manhole to manhole both in live flow and then again after bypass has been set-up and is operating, sewer segment has been cleaned, but prior to CIPP lining.

30" Pre-CIPP Rehabilitation CCTV Inspections (Chestnut-Roberts) shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, testing and measuring, and doing all the work involved in CCTV inspection of the 30" sewer segment both in live flow and then again after bypass has been set-up, is operating, and sewer segment has been cleaned, but prior to CIPP lining per City Standards and these specifications, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor. This bid item includes as many passes as necessary to get a complete CCTV inspection as per written acceptance by the Engineer for the entire sewer segment from manhole to manhole both in live flow and then again after bypass has been set-up and is operating, sewer segment has been cleaned, but prior to CIPP lining.

39" Post-CIPP Rehabilitation CCTV Inspection (Sonoma Ave) shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, testing and measuring, and doing all the work involved in CCTV inspection of the 39" sewer segment after CIPP lining and while trunk and collector sewer bypass is still operating per City Standards and these specifications, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor. This bid item includes as many passes as necessary to get a complete CCTV inspection as per written acceptance by the Engineer for the entire sewer segment from manhole to manhole following CIPP lining.

33" Post-CIPP Rehabilitation CCTV Inspection (Hazel Street) shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, testing and measuring, and doing all the work involved in CCTV inspection of the 33" sewer segment after CIPP lining and while trunk and collector sewer bypass is still operating per City Standards and these specifications, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor. This bid item includes as many passes as necessary to get a complete CCTV inspection as per written acceptance by the Engineer for the entire sewer segment from manhole to manhole following CIPP lining.

30" Post-CIPP Rehabilitation CCTV Inspection (Chestnut-Roberts) shall be paid for at the contract **lump sum** price, which price shall include full compensation for furnishing all labor, materials, tools and equipment, testing and measuring, and doing all the work involved in CCTV inspection of the 30" sewer segment after CIPP lining and while trunk and collector sewer bypass is still operating per City Standards and these specifications, and any other items necessary not specifically enumerated in the Standard Specifications and Special Provisions, and no additional allowance will be made therefor. This bid item includes as many passes as necessary to get a complete CCTV inspection as per written acceptance by the Engineer for the entire sewer segment from manhole to manhole following CIPP lining.

130-2 CURED-IN-PLACE PIPE LINING

130-2.01 Description: It is the intent of this Specification Section to provide for the rehabilitation of sanitary sewer mains by the installation of a CIPP liner into the existing gravity sewer main. When formed, the liner shall extend over the length of the pipe indicated in the Project Plans from manhole to manhole 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 necessary except for that potentially required to gain access at diameter constrained insertion and manholes. **The thickness of the CIPP liner shall be designed assuming a fully deteriorated pipe.**

The Contractor shall furnish all labor, equipment and materials necessary to complete the cured-in-place pipe (CIPP) lining of sanitary sewers as specified herein and as shown on the Project Plans. This Contract shall include the preparation of the construction site, including delivery of all materials to the site, all equipment and materials required for either remote or on-site impregnation of lining, cleaning, flushing and pre-television inspection of sewer to be lined; protection of existing conditions during installation work, infiltration repairs and other point repairs as needed prior to lining, pre-liner and/or liner installation, pipe sealing at manholes, final television inspection and testing of the lined pipe sewer system, and other accessories as required for the proper installation; protection of the site during the life of the Contract, including protection of inspection personnel, warning lights, barricades, traffic control, dust control, and maintenance of detours, as required; the cleanup of the work site, including maintenance and replacement of features such as paving, sidewalk, curb and gutter, and landscaping as required by the Project Plans or if damaged, including seeding, sodding and graveling, if damaged. The Contractor is advised that this lining project is required due to deterioration of the reinforced concrete pipe and shall be prepared to respond to complications due to pipe deterioration and issues associated with infiltration.

Wet-out of the liner shall be done off-site with the fully impregnated liner trucked to the site. On-site wet out will not be allowed.

Hot water curing of the CIPP liners will be the only curing method allowed for this project.

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 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 segment 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.

Contractor CIPP operations shall comply with noise ordinance requirements per Special Provisions Section 130-3.02A.

Any lining activities occurring on Sonoma Avenue, including any activity that could produce styrene gas, shall occur outside of Luther Burbank Elementary School hours. See Section 5-1.05 for school break calendar.

130-2.02 Quality Assurance:

1. Work performed under this Section shall conform to the Project Plans and Specifications and shall comply with all standards, rules and regulations, laws and ordinances of the City and all other authorities having jurisdiction, 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. Contractor Qualifications:
 - a. The Contractor shall have the following minimum qualifications for each method of installation and curing used on this project:
 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 42" 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 min 42" 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 those projects being 36" 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, and Boiler Technician must be employed to perform the work, unless changes are specifically authorized by the City.
3. Correction of failed liner or liner pipe 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 must be approved by the City with prior field demonstration, if requested by the Engineer. If deemed necessary by the Engineer, corrective actions may include full liner removal and replacement at no additional cost to the City. Once corrections/repairs are completed a new video inspection will be required at the Contractor's expense.
4. The finished liner shall be continuous over the entire segment (from manhole to manhole or structure to structure as shown on the Project Plans) and shall be free from visual defects. The finished liner shall meet or exceed the requirements of this specification.
5. The Contractor shall perform Closed-Circuit Television (CCTV) work for each pipe segment per Special Provisions Section 130 and City Standards Section 130. The final Post-CIPP CCTV Inspection video work will not be accepted until all manhole work has been completed. CCTV videos shall be provided to the Engineer on

compatible electronic media. Specialized software required to review the videos will not be allowed. The Contractor shall repair all damage found during the reviewing of the final CCTV video at no additional cost to the City. Damage shall be defined as any leaks, cracks, loose joints, visual defects, and other defects which in the opinion of the Engineer are not acceptable and would impair the serviceability of the new piping system.

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.

130-2.03 Submittals: The Contractor shall submit to the Engineer a complete list of all materials proposed to be furnished and installed before materials are delivered to the job site. The Contractor shall not permit any sewer lining component to be brought onto the job site until the following has been reviewed and approved by the Engineer.

1. Contractor qualifications per Special Provisions Section 130-2.02. Field Supervisor's and technician's resume/experience list to demonstrate that experience requirements listed in Item 130-2.02 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.
2. Television inspection reports and video tapes made in live flow prior to ordering CIPP lining per Special Provisions Section 130 and City Standards Section 130.
3. Data, measurements, assumptions and calculations for sizing liners and pre-liners. Data shall include CCTV 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. 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 in live flow conditions. Diameter measurements shall be taken from at least two different locations along an existing pipe segment. **This information shall be provided prior to the Engineer for review prior to completing any design calculations, ordering any lining materials, or fabricating any liner materials.**
4. Television inspection reports and video tapes made after the bypass system has been set up and is running and the pipes have been cleaned but prior to pipe liner insertion per Special Provisions Section 130 and City Standards Section 130.
5. Contractor's plan for ensuring compliance with State of California Air Quality requirements. Plan shall include Contractor's means for air quality testing to ensure compliance.
6. Contractor's plan for ensuring compliance with City of Santa Rosa Noise Ordinance during lining and activities.
7. Contractor's plan for procuring water for water cure.
8. Method of styrene reduction in cure and cool down water prior to discharge.
9. Information on all CIPP materials and resins, including CIPP pre-liner as required.
10. Pre-liner description, pre-liner splicing recommendations, and identification of supplier as required.
11. 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. Certification shall be signed by an authorized agent of the manufacturer.

12. 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 and flexural strength.
13. Certified copies of quality control resin batch test reports. Report to include measured values for viscosity and gel time.
14. Manufacturer's installation instructions and product data.
15. For factory wet-out, Contractor shall provide proof that the quality management system for the wet-out facility is registered in accordance with and conforms to the current ISO 9001 standard. The management system must ensure that proper materials and amounts are used in the resin saturation process and in liner shipping and storage. At a minimum, the quality control documentation shall include resin lot numbers, volumes of resin, catalyst, enhancers, date of wet-out, storage/transportation controls, and quality assurance procedures.
16. 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, and trimming and finishing at manhole walls.
17. 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.
18. Verification of product conformance by third party testing for the chemical resistance and physical testing requirements along with the report of test results.
19. Heat Cure 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.
20. 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.
21. 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.
22. Methods, materials, equipment, and procedures to stop existing infiltration into the host pipe prior to lining.
23. Methods, materials, equipment, and procedures to seal annular space between the CIPP and the existing pipe at the manholes or structures (also referred to as the "end seal"). End seals are required at every manhole or structure.
24. Sampling procedures and locations for obtaining representative samples of the finished liner.

25. Literature and background information on the independent third-party testing laboratory proposed for testing the physical properties of the installed pipe.
26. 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.
27. 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.
28. Method for CIPP liner repair (i.e. vacuum holes, etc.).
29. Cure records including the temperatures measured at each thermocouple/sensor. Temperature measurements shall be recorded continuously during the curing process.
30. Proposed hydrostatic head required for insertion of the liner with associated calculations (for water inversion method).
31. Traffic control information per Special Provisions Section 12.
32. Door hanger and other public notification information per Special Provisions Section 12 and 121.
33. Schedule. Overall project schedule submitted within three days of Notice to Proceed. Updated overall project schedule submitted two days before lining crew arrival on the jobsite.
34. 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.
35. Color CCTV video of the pipeline after complete cure of the liner (electronic format) and completion of rehabilitation of each adjacent manhole as required and prior to taking the bypass system offline per Special Provisions (or City Standards) Section 130.

130-2.04 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.

130-2.05 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: 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. The Contractor shall furnish, prior to use of the materials, satisfactory written certification of their compliance with the manufacturer's standards for all materials and conformance with the methods of the manufacturer and ASTM requirements.
4. Best Management Practices for work at all sites shall conform to the following:
 - a. The Contractor shall prepare a Spill Contingency Plan, as part of their Emergency Response plan.
 - b. 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.
 - c. The plan shall be on site along with the CIPP Work Plan and working drawings. The following minimum BMPs shall be in place:
 1. BMP measures (such as sandbags) shall be implemented around all manholes where active liner or bypass pumping work is taking place.
 2. Manholes or structures adjacent to a creek that are surcharged by the bypass pumping operations shall be monitored at all times with radio communication between crew members.
 3. A trunk sewer manhole shall be made available for disposing of all water used in the curing process.
 4. The Contractor shall have a safety representative on site for security purposes and monitoring operations.
 5. Contractor shall have the equipment necessary on site for building emergency berms or containment basins, as needed.
 6. A vac-truck with hoses shall be available on Standby with a minimum response time of 30 minutes if required.
 7. A pump truck with hoses shall be available on Standby with a minimum response time of 30 minutes if required.

130-2.06 Cured-In-Place Pipe Lining:

1. The liner pipe material shall be designed for use in gravity sanitary sewers and shall be in strict conformance with all applicable sections of ASTM F1216 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. The pipe liner shall have at a minimum the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.
2. Pre-liner Tube: Contractor shall use a pre-liner tube sized to fit host pipe in areas where active infiltration is present and cannot otherwise be arrested by other means (see Specification Section 130-2.11, H.) Pre-liner tube must be composed of 3-ply laminate sheet combining two layers of polyethylene film and high strength nylon cord grid formed into a tube sized to fit host pipe and must be continuous for the entire length of host pipe.
3. CIPP 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. Tubes reinforced with glass or carbon fibers shall be allowed by written permission by the Engineer.

- 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 manholes, unless otherwise specified. Contractor shall field verify the lengths of existing sewer to be lined 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 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.

OR

i. **Fiberglass Mat System:**

1. The tube shall be composed of a high strength, fiberglass mat system capable of retaining resin, contained within a system of polyethylene film on both the interior and exterior. The tube shall have sufficient needling and cross lapping to yield a minimum burst strength of 800 pounds per square inch in transverse directions (hoop stress), and strength to withstand the installation pressures and curing temperatures. The tube shall be free from tears, holes cuts, foreign materials and other defects, and will be subject to inspection by the City.
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 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 their 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 proposed for use, 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.
 5. 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

- a. 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.
 - b. The initiation temperature 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- no intermediate manholes shall be allowed) 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.
 - c. 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.
 - d. 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.
6. CIPP Liner Design Criteria
- a. The liner material and thickness shall be calculated and designed for use in gravity sanitary sewers and must be in strict conformance with all applicable sections of ASTM F1216 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 applicable 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 (N) of 2.0 shall be used for calculations.
 5. Hydraulic Capacity: The hydraulic profile of each pipe segment shall be maintained as large as possible. The pipe liner shall have at a minimum the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.
 6. Inside diameter of the existing pipe used in calculating liner thickness shall be as measured in the field, by the Contractor, prior to producing pipe calculations and ordering lining materials so that the liner can be lined in a tight fitted condition. See Section 130-2.08.A.
 7. A Modulus of Soil Reaction (E) of 1,000 psi shall be used.
 8. Assume that groundwater level is at ground surface.
 9. Designed for H20 highway live loads.
 10. External Buckling Design – Acceptable third-party testing and verification of the design analysis techniques (ASTM F1216, Section X1.2.2)
 11. The pipe liner shall be designed to bear full pipe loading. Host pipe shall be assumed not to provide any structural support.
 12. Designed for a minimum service life of 50 years.
- 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 and liner will have to be removed and replaced at no additional cost to the City.
 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	400,000 psi (polyester) 450,000 psi (vinyl ester)	200,000 psi (polyester) 225,000 psi (vinyl ester)

Liner shall be homogenous throughout and free of:

- i. Serious abrasion, cutting, or gouging of the outside surface extending to more than 10 percent of the wall thickness in depth.
 - ii. Cracks
 - iii. Kinking (generally due to excessive or abrupt bending)
 - iv. Flattening
 - v. Holes
 - vi. Blisters
 - vii. Other injurious defects
5. 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.
 6. Liner Color: The finished and cured interior of the liner shall be light in color. Light blue is acceptable. Proposed color(s) shall be submitted for review and approval prior to the Contractor ordering the liner.

13-2.07 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 Project Plans and to the requirements of these specifications.

130-2.08 Existing Conditions:

1. Site Review
 - a. 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:
 1. Perform a site review and CCTV video inspection of all pipe segments in live flow per Special Provisions Section 130.
 2. Measure the internal diameter of the pipe at two locations along each pipe segment and at locations of active connections and/or any irregularities of the existing pipeline in live flow to verify existing internal pipe diameter.

- b. The liner shall be fabricated to a size which, when installed, will neatly fit the internal circumference of the conduit shown on the Project Plans. Allowance for circumference expansion during installation shall be made.
 - c. 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.
 - d. The sections of pipelines to be rehabilitated have been previously inspected by CCTV. An electronic copy of the video may be obtained from the City by request. This information is **not** considered part of the contract documents.
2. Discrepancies
- a. In the event of discrepancy, the Contractor shall immediately notify the Engineer.
 - b. 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.

130-2.09 Field Measurements: The Contractor shall make all necessary measurements in the field to ensure precise fit of items in accordance with the drawings. See Section 130-2.08 of these Special Provisions.

130-2.10 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.

130-2.11 Preparation: The following installation procedures shall be adhered to unless otherwise approved by the Engineer.

1. **Safety:** The Contractor shall carry out their 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.
2. **Air Quality:** The Contractor shall carry out their operations in strict accordance with all Local, State and Federal Air Quality requirements.
3. **Noise:** The Contractor shall comply with the City of Santa Rosa noise ordinance during installation of the CIPP liner. See Special Provisions Section 130-3.01.
4. **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 silt, debris, grease, roots and other materials that would prevent the proper installation of the liner as defined and accepted by the Engineer. Several passes, if necessary and at no additional cost to the City, with high-pressure jet cleaning equipment shall be performed until all debris is removed from the pipe to the written satisfaction of the Engineer. 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 shall be removed from the pipe and shall be properly disposed of at the Contractor's expense. The Contractor shall decant all spoils into the High Flow Storage Basin at the City's Laguna Wastewater Treatment Plant (4300 Llano Road) and shall dispose of remaining solids at a solid waste disposal site. Contractor shall coordinate with treatment plant staff prior to disposal of liquid waste. Contractor shall provide a debris box and equipment, as necessary, to remove solids.
5. **Inspection of Pipelines:** After bypass pumping has been set up and is in operation

and the sewers have been cleaned to the written satisfaction of the Engineer, the Contractor shall provide experienced personnel trained in locating infiltration, breaks, obstacles and service connections to inspect the pipes via 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. Contractor shall report findings to the Engineer in writing so that these conditions can be monitored while being corrected by the Contractor. A DVD or flash drive, and a suitable legible log shall be kept for later reference by the City. See Section 130 of these Special Provisions.

6. Bypassing Flow: See Section 130-03 of these Special Provisions.
7. 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 by either man-entry methods or excavation to uncover and remove or repair the obstruction via Change Order. Before any point repair via man-entry or excavation is pursued, the Contractor shall give the Engineer three (3) working days-notice. Point repair via man-entry or 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, via Change Order. 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 added to the work of this Section by Change Order.
8. 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 Special Provisions 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.
9. 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 structures or utilities caused by the Contractor's operations.
10. Service Connections: The Contractor shall be responsible for confirming the locations of all branch service connections prior to installing the pipe liner. Only active connections shall be reinstated. The determination of whether or not a lateral is active will be as determined by the Engineer.
11. Delivery, Storage, and Handling: Resin impregnated tube liner shall be transported, installed, and cured before expiration of the shelf life. Impregnated tube shall be stored and transported under refrigerated, ultraviolet light-free conditions. No cuts, tears, or abrasions shall occur during handling. The Engineer may inspect the tube at any point before or while it is being placed into the host pipe.

130-2.12 Installation:

1. General
 - a. The Contractor shall be an approved manufacturer's licensed installer of the

proposed pipe liner system.

- b. 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 free 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. Any annular space between the CIPP liner and the rehabilitated pipe shall be filled with the same material as was used to seal the ends of the liner. The sealing material shall be compatible with the pipe liner, host pipe and field conditions (water, humidity etc.), and shall provide a watertight seal.
- c. CIPP installation shall be in accordance with ASTM F1216, Section 7, or ASTM F1743, Section 6, with modifications as outlined in this specification.

2. Pre-Liner Installation (as required)

- a. The Engineer will determine whether a pre-liner is needed based on conditions observed during the pre-lining CCTV inspection.
- b. The Engineer must witness the installation of each pre-liner tube. A pre-liner tube complying with these special provisions must be used to protect against uncontrolled infiltration and may be used to control resin loss and prevent blocked laterals. For long segments, several sections of pre-liner tube may be spliced together under pre-liner manufacturer's recommendations to form a tube of adequate length.

3. Preparation and Protection of Existing Facilities

- a. 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.
- b. On site wet out will not be allowed.
- c. The Contractor shall provide insulation protection from boiler hoses as necessary. 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.

4. Wet Out

- a. 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.
- b. 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.
- c. The impregnated liner bag shall be transported to and/or 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.

5. Installation of Temperature Measuring Sensors

- a. 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.
- b. Temperature monitoring sensors shall also be installed at least every three (3) inches between the outside of the liner and the host pipe.
 - 1. The temperature gradient across the CIPP liner material and the temperature of the exotherm shall be monitored by remote temperature sensors placed at the interface of the host pipe and the CIPP.

6. Liner Insertion

- a. 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 shall fully extend the tube to the next designated manhole or termination point and inflate and firmly adhere the liner to the pipe wall until the pipe has been fully cured.
- b. 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 manhole structures.
- c. The liner shall be installed at a rate less than 10 feet per minute at all times.
- d. Where water is used for the liner installation method, the Contractor is responsible for obtaining and paying for the water used. Potable or recycled water may be used for water cure.

7. Curing

- a. After liner 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 take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).
- b. Water during the cure period shall meet the requirements of the resin manufacturer as measured at the heat source inflow and outflow return lines. At the direction of the Engineer, the Contractor shall provide standby equipment to maintain the heat source supply. The temperature during the cure shall be in accordance with the manufacturer's recommendation.
- c. 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.
- d. Temperature shall be maintained during the curing period as recommended by the resin manufacturer and shall follow the heating schedule supplied by the manufacturer and reviewed by the Engineer. During the cure process, the

Contractor shall keep logs, charts, and/or graphs of the liner temperatures at the specified locations along the liner 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.

8. Cool Down

- a. The hardened CIPP shall be cooled to a temperature below 100 degrees F before relieving the static head 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.
- b. 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 liner.
- c. Contractor shall install vertical standpipe to direct cure off-gas discharge to the highest elevation possible to dissipate odors.
- d. All cure and cool down water shall be filtered using carbon to reduce styrene levels to 2 mg/L prior to discharge to the downstream sewer.

9. Finished Pipe

- a. 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 no additional cost to the City.
- b. If the finished product has defects that are deemed repairable by the Engineer, the Contractor may repair these defects at their own expense. See Special Provisions Section 130-2.16.
- c. At the manhole walls, a seal shall be applied per Special Provisions Section 130-2.13 and in accordance with manufacturer specifications and approved by the Engineer.

130-2.13 Sealing Liner at Manholes:

1. The manhole 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 all manhole connections. 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.
2. The beginning and end of the CIPP shall be cut flush at the inlet and outlet points in the manhole or at least 3-inches inside the elbow of the rodding inlet, and the ends shall be permanently sealed to the rehabilitated pipeline to prevent any infiltration between the CIPP and the host pipe. Pipe terminations into each manhole or rodding inlet shall be sealed with a resin mixture that is recommended by the liner manufacturer that is compatible with the liner/resin system, host pipe, field conditions and 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. 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.

3. Restore manhole bottom and invert.
4. If, due to a broken or offset pipe at the manhole 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 watertight 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.

130-2.14 Field Testing:

1. Unless an alternative test method is approved by the Engineer prior to lining, the Contractor shall test the new liner via the following methods:
 - a. 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. Flat plate samples per ASTM F1216 are acceptable for this project.
2. The Contractor shall also remove a sample from each pipe segment 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.
3. 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.
4. 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.

130-2.15 Post-Televising of Completed Work:

1. Submit to the Engineer a color CCTV video showing completed work (electronic format) per Special Provisions Section 130.
2. 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 as approved by the Engineer.
3. 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.
4. 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.

130-2.16 Repair Procedures: Prior to any required repairs taking place, proposed means and methods for the repair shall be submitted by the Contractor to the Engineer for review and approval. The repair plan must include information adequate to describe repair methods in the same way as described in pre-installation information submittal. The Contractor may submit to use one or more of the following repair methods or submit their own repair method for review and approval by the Engineer:

1. If concentrated wrinkles/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 or epoxy compatible with the liner material. At the end of each work day dispose of any residue generated from grinding.
2. If the Engineer approves, the 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:
 - b. Quick-set epoxy mortar
 - c. High viscosity epoxy
 - d. Hydrophilic vulcanized expansive rubber strip

Material(s) used shall be compatible with CIPP, host pipe and field conditions. Any CIPP that, in the opinion of the Engineer, may affect the flow at or near the invert shall be corrected to the satisfaction of the Engineer.

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

Defect	Repair Method
Wrinkles or ridges exceeding 5% and up to 8% of pipe diameter outside of 120- degree invert arc.	Grind to required tolerance. Repair grinded area with resin/epoxy compatible with the CIPP lining material.
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 within the lower 120 degrees of pipe. Repair grinded area with resin/epoxy compatible with the CIPP lining material. Apply point repairs where needed to maintain minimum liner thickness, or else use procedure in accepted repair plan. If wrinkles or ridges exceed 8% of pipe diameter, the Contractor must remove CIPP.
Holes, tears, soft spots, and lifts up to 6 inches in major dimension.	Make point repair under manufacturer's recommendations.
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.	If defect covers a larger area than specified, the Contractor must remove CIPP.
CIPP thickness less than calculated minimum thickness.	The Contractor must remove CIPP. If groundwater conditions allow, the Contractor 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.

130-2.17 Final Clean-up:

1. The Contractor shall restore or replace all removed or damaged SSMHs cones, paving, curbing, sidewalks, gutters, street median, landscaping, fences, sod and any 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 incidentals as necessary.
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.

130-2.18 Payment: **39" Pre-CIPP Sewer Cleaning (Sonoma Ave)** 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, sewer cleaning of the 39" sewer segment to remove all debris, grease, roots, and other materials that would prevent the proper installation of the liner (as defined and accepted by the Engineer); several passes, if necessary, with high-pressure jet cleaning equipment; use of root cutters or mechanical brushes attached to the jet nozzle and sent through the line to remove all root intrusions (as necessary); all spoils removal from the pipe; and all spoils disposal.

33" Pre-CIPP Sewer Cleaning (Hazel Street) 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, sewer cleaning of the 33" sewer segment to remove all debris, grease, roots, and other materials that would prevent the proper installation of the liner (as defined and accepted by the Engineer); several passes, if necessary, with high-pressure jet cleaning equipment; use of root cutters or mechanical brushes attached to the jet nozzle and sent through the line to remove all root intrusions (as necessary); all spoils removal from the pipe; and all spoils disposal.

30" Pre-CIPP Sewer Cleaning (Chestnut-Roberts) 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, sewer cleaning of the 30" sewer segment to remove all debris, grease, roots, and other materials that would prevent the proper installation of the liner (as defined and accepted by the Engineer); several passes, if necessary, with high-pressure jet cleaning equipment; use of root cutters or mechanical brushes attached to the jet nozzle and sent through the line to remove all root intrusions (as necessary); all spoils removal from the pipe; and all spoils disposal.

39" CIPP Liner Rehabilitation (Sonoma Ave) 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; temporary 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.

33" CIPP Liner Rehabilitation (Hazel Street) 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; temporary 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.

30" CIPP Liner Rehabilitation (Chestnut-Roberts) 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; temporary 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.

CIPP Pre-Liner shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved as described herein, including all work necessary to install a pre-liner prior to cured-in-place pipe lining not specifically enumerated in these specifications, and no additional allowance will be made therefor. The need for a Pre-Liner is currently unknown. If the Engineer determines that a pre-liner is needed based on conditions observed during the pre-lining CCTV inspection, the Contractor will be paid by the price established per linear foot.

130-3 BYPASS PUMPING

130-3-1.01 Description: The Contractor shall provide bypass pumping and/or diversion as required to maintain flows for sewer manhole 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 standby units) required to maintain existing flows and services without interruption.

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

Anticipated average dry weather flows (ADWF) and peak dry weather flows (PDWF) are as follows for each lining area:

Pump Suction Manhole	ADWF (MGD)	PDWF (MGD)
Crosstown Trunk Sewer Flow entering MH014 (II-28-17)*	2.8	5.4
Collector sewer flow entering MH118 (II-28-17) from gravity collector sewers and from MH098 bypassed collector sewers	0.036	0.125
Collector sewer flow entering MH098 (II-28-16)	0.036	0.125
Collector sewer flow entering MH017 (II-28-17) from upstream collector sewers entering trunk sewer at MH 103 (II-28-17)	0.036	0.125
Collector sewer flow entering MH017 (II-28-17) from upstream collector sewers entering trunk sewer at MH 103 (II-28-17) and downstream collector sewers entering trunk sewer at MH 136 (II-28-16)	0.042	0.146

*Crosstown Trunk Sewer Flows are based on measured flow data from May 1 to October 15, 2020. Bypass pumping is anticipated to occur only during dry weather periods.

The Contractor shall size the Crosstown Trunk Sewer and collector sewer bypass pumping systems to handle PDWF.

Wet weather flows are defined as those occurring between October 15th and April 15th. The Contractor shall use due diligence to complete the work on time and within schedule (outside of the wet weather period). If the Contractor's work goes beyond the October 15th deadline, then the Contractor shall be liable for any additional costs associated with handling wet weather peak flows which are anticipated to be many times greater than PDWF. If unanticipated rain results in increased flows during the bypass pumping operation within dry weather period between April 15 and October 15, the Contractor shall be responsible for modifying the bypass system to accommodate all increased flows. Bypass pumping operations should be modified such that bypass pumping does not occur during unanticipated rain during dry weather periods by actively monitoring weather forecasts and adjusting bypass pumping operations well in advance of inclement weather.

Unavoidable augmentations to the bypass pumping operation to accommodate flows in excess of those specified above due to unanticipated rain during dry weather periods will be paid for as extra work.

Suggested trunk and collector sewer bypass routes and bypass pumping routes shown on Project Plans are for bidding purposes only. The Contractor shall provide and operate all temporary

facilities to intercept the sewage flows, bypass flows around the work area, and maintain traffic control in the work areas.

The Contractor shall be liable for all cleanup, damages and resultant fines in the event of a spill.

130-3-1.02 Bypass Pumping Plan Submittals: The Contractor shall submit a Bypass Pumping Plan for each planned trunk sewer and collector sewer bypass pumping operation for review by the Engineer at least 10 working days prior to commencement. The Engineer shall approve the bypass pumping plan before commencing any bypass pumping work. The Contractor shall notify the Engineer 2 working days prior to commencing with the bypass pumping operation.

Bypass Pumping Plans shall be designed by a California registered professional engineer. Bypass pumping system provided by the Contractor shall be a depiction of the proposed bypass system to be constructed in the field including all suction elevations, grade changes, fitting locations, air release valve locations, etc.

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

The Contractor shall provide a sewer spill prevention plan for disassembling, handling and removal of bypass pumping system which shall include flushing prior to disassembling.

The following requirements shall be incorporated into each Bypass Pumping Plan:

1. Staging areas for pumps;
2. Number, size, location, manufacturer, type, and method of installation and removal of sewer plugs;
3. Number, size, material, location and method of installation of suction pipes;
4. Number, size, material, method of installation and location of installation of discharge pipes;
5. Assumed design flows;
6. Bypass pump sizes, manufacturer, age, capacity, power requirements, and number of each size to be on site;
7. Calculations of static lift, NPSH, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted);
8. Standby power generator size, location;
9. Downstream discharge plan;
10. Method of protecting discharge manholes or structures from erosion and damage;
11. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill;
12. Method of noise control for each pump and/or generator;
13. Any temporary pipe supports, thrust bocks, and/or anchoring required, including calculations for thrust pressure and restraint;
14. Design plans and computation for access to bypass pumping locations indicated on the project plans;

15. Location of existing lateral cleanouts and collector sewers, and how they will be monitored or bypassed;
16. Address of all parcels along with name and operating hours of all businesses located upstream of blockage to the next upstream manhole.
17. Air release valves and their locations.
18. Detail for removal of temporary plugs.
19. All devices and material proposed for spill containment use.

The Contractor shall also provide name and cell phone number of the employee(s) that will have the sole duty of monitoring all active blockages. If multiple lines are simultaneously blocked, the Contractor's submittal must show how each blockage is to be continuously monitored. For multiple blockages, the Engineer may also require devices for each blockage to give audible and/or visual alarm of a pending overflow at the Contractor's expense.

The City will contract with a third-party California registered professional engineer to review the bypass pumping plan.

130-3-1.03 Bypass Pumping System Description: Bypass pumping shall consist of furnishing, installing, and maintaining all power, plugs, primary and standby pumps, appurtenances and bypass piping required to maintain maximum anticipated flows and services.

The allowable velocity in bypass pumping discharge piping shall not exceed 5 ft / sec without prior approval of the Engineer.

Bypass pumping shall be done in such a manner as not to damage private or public property or create a nuisance or public menace. The pumped sewage shall be in an enclosed hose or pipe system that is adequately protected from traffic and shall be redirected into the sewer system.

Bypass piping shall be laid above ground unless otherwise approved by the Engineer.

Provide onsite portable lights to be used in emergency situations only.

Contractor is responsible for verifying that all lateral and collector sewer flow into the existing trunk sewer system between the trunk sewer bypass piping operations and the lining work has been intercepted and handled by the bypass systems.

At least one (1) standby pump and one (1) standby 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.

100% redundancy is required for all temporary pneumatic plug applications. Plugs shall be provided with a retrieval tag line. Redundant plugs shall be tethered together 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 shall be installed in accordance with the manufacturer's recommendations. Plugs shall be installed in the downstream (outgoing) pipe unless otherwise noted on the Project Plans.

The Contractor shall be responsible for determining the required quantity, location and types of temporary pneumatic plugs to fulfill the requirements of the Specifications.

When plugging or blocking is no longer needed for performance and acceptance of work, plugs shall be removed in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.

Surcharge of existing sewer manholes shall not exceed two feet above the highest incoming sewer pipe crown of the plugged manhole. The Contractor shall provide a mark on the inside of the manhole visible from the surface for monitoring the surcharge.

The Contractor shall supply traffic control in accordance with Section 12 of these Special Provisions. A minimum of one-way traffic or appropriate detours shall be maintained along all roadways during bypass pumping operations unless specifically indicated otherwise on the Project Plans. At no point along the bypass pumping operation shall sidewalks along both sides of the road be closed at the same time. Maintain driveway access for each property in the vicinity of the bypass areas unless otherwise specified on the Project Plans.

All pumps shall be set into or surrounded by spill containment devices. Existing drain inlets adjacent to the proposed bypass pumping route shall be protected by sandbags to prevent flow into the storm drain system.

Air release valves shall be surrounded by a double spill containment system.

All components of the bypass pumping system including standby pumps and generators, shall be sound-attenuated and shall produce noise emissions less than 60 decibels as measured 50-feet away. Additional noise attenuation systems may consist of an exterior sound blanket containment system or exterior sound fence system. All other provisions of the City's noise ordinance shall apply.

The Contractor shall take all necessary precautions including 24 hour manned constant monitoring of the bypass pumping to ensure that no private residences or properties are subjected to sewage backup or spills. The Contractor shall be responsible for providing the appropriate and required amount of personnel for monitoring of the 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.

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.

The Contractor shall flush bypass pumping system prior to disassembling bypass pumping system.

The Contractor shall provide a containment plan for HDPE pipe clippings/shaving for both installation and removal operations of bypass piping.

Subsequent to removal of bypass pumping system, the Contractor shall verify existing gravity sewer flows are restored to pre-existing condition.

The Contractor shall remove manhole sections only as may be required to provide adequate suction conduits or otherwise indicated on the Project Plans.

131-2.02 Materials: Bypass pumping materials shall generally conform to the following requirements:

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. Trunk Sewer Bypass pipe and fittings 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 and fittings 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. Collector Sewer Bypass pipe shall be accomplished with flexible hoses. Flexible hoses, couplings and connectors, shall be abrasion resistant and rated for external and internal loads anticipated, including pressure tests.
5. Plugs shall be selected and installed according to size of line to be plugged, pipe and manhole configurations. Plugs 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 shall be as manufactured by Plug-It Products, Lansas Products or approved equal.
6. Pumps shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in priming system.
7. 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.

130-3-3.01 Payment: **Bypass Pumping Mobilization and Demobilization** 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 design, mobilize, install, test, remove, and demobilize the bypass pumping systems, including but not limited to; installation of security measures; notification; coordination of emergency procedures and equipment; installation and removal of bypass suction, distribution, and discharge piping; obtainment, usage and disposal of construction water; installation and removal of plugs and diverters; installation of exterior sound fencing system; installation of protective vehicular and pedestrian barriers; manhole removal, modification and reconstruction as a result of bypass operations per City Standards (*if required to gain access*); excavation, backfill, compaction, and temporary and permanent surfacing (*if required*); steel plating (*if required*); ramps or other means with which to protect bypass pipe at contractor or pedestrian crossing location (*if required*); replacement of disturbed traffic markings; returning existing improvements and surface conditions to pre-project conditions; and any other items necessary for bypass pumping mobilization and demobilization of bypass pumping station not specifically enumerated in these specifications, and no additional allowance will be made therefor.

Bypass Pumping 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 in operating the bypass pumping systems, including but not limited to; operating bypass pumping and standby equipment and appurtenances; constant continual manned monitoring during bypass pumping operations; and any other items or efforts necessary for operating and maintaining the bypass pumping systems not specifically enumerated in these specifications, and no additional allowance will be made therefor.

A - FEES AND PERMITS

The Contractor shall obtain all necessary and required permits for the project.

The City has obtained a one-time Discharge Permit, which is included as part of these Special Provisions.

The Contractor shall obtain a permit from the State of California Division of Industrial Safety. Attention is directed to Section 5-1.02A, "Trench Excavation Safety Plans" of these Special Provisions.

City has contacted Sonoma Water (formally known as Sonoma County Water Agency (SCWA)) and has begun the process to receive a revocable license. The Contractor shall obtain a revocable license from Sonoma Water and a copy of the Application for Revocable License is attached.

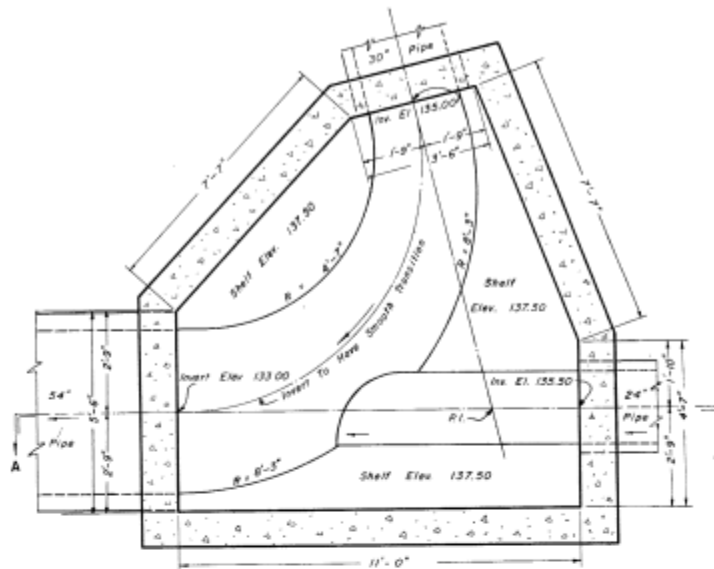
City has applied for an encroachment permit from Caltrans. The Contractor shall obtain an encroachment permit (double permit) from Caltrans prior to beginning any work. A copy of the City's encroachment permit with Caltrans will be provided to the Contractor when available.

Full compensation for securing and complying with 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.

[Version: 2/2/15CDA STD2010]

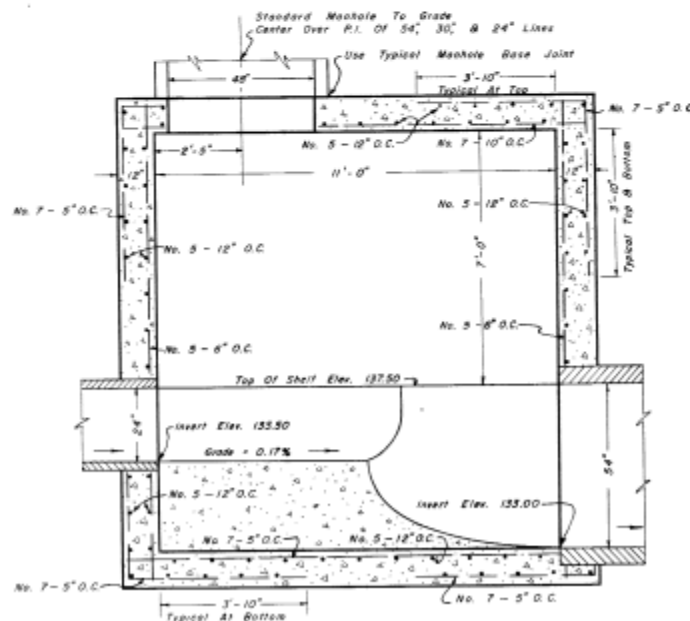
B - AS-BUILT INFORMATION

As-built information is provided below for SMH32 (II-28-16) from the *Cross-Town Trunk Sewer Project* dated February, 1956. It should be noted that SMH32 (II-28-16) was referred to as "Manhole No. 20" in this project. A full set of these plans are available upon request but are not considered part of the contract documents and should be used for reference only.



PLAN

ELEV. 143.00



SECTION A-A

MANHOLE NO. 20

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.

BID FORMS

CITY OF SANTA ROSA

STATE OF CALIFORNIA

CROSSTOWN TRUNK LINING - 3 SEGMENTS

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 Plan(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 Plans, 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 Plan(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 #: **C02311**

Project Title: **CROSSTOWN TRUNK LINING - 3 SEGMENTS**

Line #	Description	Units	Quantity	Unit Price	Total Price
1	MOBILIZATION AND DEMOBILIZATION	LS	1	\$ _____	\$ _____
2	TRAFFIC CONTROL	LS	1	\$ _____	\$ _____
3	WATER POLLUTION CONTROL	LS	1	\$ _____	\$ _____
4	PERMANENT TRENCH PAVING	TON	35	\$ _____	\$ _____
5	SIDEWALK	SF	120	\$ _____	\$ _____
6	BRACING AND SHORING	LS	1	\$ _____	\$ _____
7	MANHOLE CONE, FRAME AND COVER	EA	6	\$ _____	\$ _____
8	REPLACEMENT OF MANHOLE I12816MH019 (HAZEL STREET)	LS	1	\$ _____	\$ _____
9	INSIDE DROP AT MANHOLE I12816MH23 (HAZEL STREET)	LS	1	\$ _____	\$ _____
10	39" PRE-CIPP REHABILITATION CCTV INSPECTIONS (SONOMA AVE)	LS	1	\$ _____	\$ _____
11	33" PRE-CIPP REHABILITATION CCTV INSPECTIONS (HAZEL STREET)	LS	1	\$ _____	\$ _____
12	30" PRE-CIPP REHABILITATION CCTV INSPECTIONS (CHESTNUT-ROBERTS)	LS	1	\$ _____	\$ _____
13	39" POST-CIPP REHABILITATION CCTV INSPECTION (SONOMA AVE)	LS	1	\$ _____	\$ _____
14	33" POST-CIPP REHABILITATION CCTV INSPECTION (HAZEL STREET)	LS	1	\$ _____	\$ _____
15	30" POST-CIPP REHABILITATION CCTV INSPECTION (CHESTNUT-ROBERTS)	LS	1	\$ _____	\$ _____
16	39" PRE-CIPP SEWER CLEANING (SONOMA AVE)	LS	1	\$ _____	\$ _____
17	33" PRE-CIPP SEWER CLEANING (HAZEL STREET)	LS	1	\$ _____	\$ _____
18	30" PRE-CIPP SEWER CLEANING (CHESTNUT-ROBERTS)	LS	1	\$ _____	\$ _____
19	39" CIPP LINER REHABILITATION (SONOMA AVE)	LS	1	\$ _____	\$ _____
20	33" CIPP LINER REHABILITATION (HAZEL STREET)	LS	1	\$ _____	\$ _____
21	30" CIPP LINER REHABILITATION (CHESTNUT-ROBERTS)	LS	1	\$ _____	\$ _____
22	CIPP PRE-LINER	LF	970	\$ _____	\$ _____
23	BYPASS PUMPING MOBILIZATION AND DEMOBILIZATION	LS	1	\$ _____	\$ _____
24	BYPASS PUMPING	LS	1	\$ _____	\$ _____

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.)

LIST OF PREVIOUS SIMILAR JOBS

NAME OF BIDDER:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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 is 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. C02311 CROSSTOWN TRUNK LINING - 3 SEGMENTS

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 a plan consisting of 9 sheets entitled, Crosstown Trunk Lining - 3 Segments, File Number 2022-0010, approved by the Deputy Director of Transportation and Public Works, hereinafter referred to as the Project Plan(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 Plans 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 Plans
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:

City of Santa Rosa,
a Municipal corporation

By: _____

Title: _____

ATTEST:

By: _____

Title: _____

Approved as to form:

By: _____

Office of City Attorney

Contractor:

Name of Contractor,
Type of entity

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____