INVITATION FOR BIDS

City of Santa Rosa

FOR CONSTRUCTING

FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST

CONTRACT NUMBER

C00780

ISSUED BY

CAPITAL PROJECTS ENGINEERING DIVISION

CITY OF SANTA ROSA, CALIFORNIA

2019

Last Updated: March 1, 2016

A T T E N T I O N
Prebid Conference
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City of Santa Rosa

STATE OF CALIFORNIA

INVITATION FOR BIDS

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CONTRACT

FOR

FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST

Contract No. C00780

FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST

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CITY OF SANTA ROSA
STATE OF CALIFORNIA

NOTICE TO BIDDERS

➢	For technical questions regarding this project, contact Greg Dwyer at (707) 543-3838.
➢	For direct access to plans, specifications and planholders' lists, go to www.srcity.org/bids and click on Bid/Proposal Opportunities or call (707) 543-3800.
➢	For direct access to bid results, go to www.srcity.org/bids. Under Link to Capital Projects, click on Capital Projects Contracts or call (707) 543-3835.

- IMPORTANT -

Bid Acceptance Deadline

Sealed bids will be accepted at the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California 95401 until 2:00 p.m., February 13, 2019, for Fulton Rd Reconstruction - Occidental Rd to W 3rd St, Contract No. C00780. (Engineer's Estimate: $3,969,091.50.)

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

Pre-Bid Meeting

Prospective bidders, subcontractors, and material suppliers are invited to attend a pre-bid meeting scheduled to be held at 10:00 a.m., February 6, 2019, in the Transportation and Public Works Department located at 69 Stony Circle, Santa Rosa, California.

Subcontractor Information; Department of Industrial Relations Registration

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

CITY OF SANTA ROSA
C00780 - FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST
ESTIMATED QUANTITIES

Item No.	Description	Quantity	Units
1	TRAFFIC CONTROL	1	LS
2	WATER POLLUTION CONTROL	1	LS
3	LOWER EXISTING MANHOLE FRAMES AND COVERS	20	EA
4	LOWER EXISTING VALVE BOXES AND MONUMENTS	33	EA
5	SUBGRADE STABILIZATION	1,275	SY
6	SOIL STABILIZATION FABRIC	3,900	SY
7	ROADWAY EXCAVATION (F)	6,484	CY
8	RE-COMPACT 8" OF EXISTING AGGREGATE BASE (F)	22,780	SY
9	ASPHALT CONCRETE SURFACE	311	TON
10	ASPHALT CONCRETE BASE AND LEVELING	2,571	TON
11	TRANSVERSE CONFORM GRIND	780	LF
12	SIDE STREET CONFORM GRIND	246	LF
13	DIAMOND GRIND CONCRETE PAVEMENT (F)	22,780	SY
14	ROLLER COMPACTED CONCRETE (F)	5,057	CY
15	INSTALL STREET SIGN	21	EA
16	RELOCATE STREET SIGN	6	EA
17	SB1 FUNDING SIGN	2	EA
18	STORM DRAIN MANHOLE	1	EA
19	CURB AND GUTTER	560	LF
20	CURB RAMP	4,320	SF
21	6" THERMOPLASTIC BIKE LANE LINE	5,200	LF
22	6" THERMOPLASTIC BIKE LANE LINE DASHED	540	LF
23	8" THERMOPLASTIC LANE LINE	846	LF
24	8" THERMOPLASTIC LANE LINE DASHED	245	LF
25	12" THERMOPLASTIC CROSSWALK AND LIMIT LINES	1,338	SF
26	THERMOPLASTIC PAVEMENT MARKINGS	1,660	SF
27	PAVEMENT MARKERS, REFLECTIVE	544	EA
28	PAVEMENT MARKERS, NON-REFLECTIVE	786	EA
29	OBJECT MARKERS	6	EA
30	LOWER TRAFFIC SIGNAL LINE	690	LF
31	FIBER OPTIC CONDUIT	400	LF
32	FIBER OPTIC CABLE INSTALLATION	5,180	LF
33	TRAFFIC SIGNAL DETECTOR LOOPS	4	EA
34	TYPE A DETECTOR HANDHOLES	2	EA
35	ADJUST MANHOLE FRAME AND COVER	20	EA
36	ADJUST VALVE BOX AND MONUMENT TO GRADE	33	EA
37	SANITARY SEWER MAIN	15	LF
38	SANITARY SEWER MANHOLE	1	EA

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 C00780 Fulton Rd Reconstruction - Occidental Rd to W 3rd St 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.

DAVID MONTAGUE
Supervising Engineer

1/16/2019
Date

SPECIAL PROVISIONS

General Specifications

CITY OF SANTA ROSA, CALIFORNIA

FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST

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 23 sheets entitled Fulton Rd Reconstruction - Occidental Rd to W 3rd St, 2018-0007
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, cashiers or certified check, or bidder's bond is enclosed with the bid. Any bidder's bond shall contain provisions for forfeiture consistent with California Public Contract Code section 20172.

2-1.40 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 23 sheets entitled Fulton Rd Reconstruction - Occidental Rd to W 3rd St, 2018-0007
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.

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

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

5-1.05A Superintendence: In addition to Section 5-1.06 of the State Standard Specifications, the following shall apply:

As part of the bid package and prior to Project award, the prime contractor must have on their payroll, or be under contract with, either a consultant or subcontractor that will provide a Roller Compacted Concrete (RCC) Superintendent for the project and provide documentation of such agreement. The RCC Superintendent shall be present at the job site during all items relating to Roller Compacted Concrete. Additionally, the contractor shall submit, as part of the bid package, the RCC Superintendent's resume. At a minimum, the RCC Superintendent's resume shall include the following.

- RCC Superintendent must have experience with the equipment required of the work including pugmills and high density pavers.
- RCC Superintendent must have a minimum of 2 years RCC Pavement experience.
- RCC Superintendent must have completed at least 2 RCC pavement projects with a minimum of 2,000 CY each using the required equipment.
- Two (2) RCC project references, including photographs that are representative of the projects, must be included.
- Prime Contractor or RCC Superintendent must have completed at least 3 public roadway projects that included asphalt, PCC and/or RCC paving. Project references are required including photographs that are representative of the projects.

As part of their duties, the RCC Superintendent will be required to perform the following items.

- RCC Superintendent must submit and conduct a City approved pre-construction RCC training program agenda and trainer for both contractor and City staff involved with the RCC portion of the project.

- RCC Superintendent must oversee the prime contractor or subcontractor perform at least one (1) 1,500 SY RCC paving test section specific to this project prior to paving. This can be inclusive of the test sections required elsewhere in these specifications.

The Engineer has sole discretion to approve or reject the RCC Superintendent. If the proposed RCC superintendent is rejected, the contractor has three (3) business days to submit another RCC Superintendent for consideration by the Engineer.

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.

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:

80 WORKING DAYS

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

Unless otherwise directed by Engineer, Contractor shall not conduct any activities that generate noise earlier than 8:30 a.m. or later than 4:00 p.m. and for night work no earlier than 8:30 p.m. or later than 5:00 a.m.

There will be no additional compensation for night work that is specified in this invitation for bids or requested by you.

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

9 MEASUREMENT AND PAYMENT

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

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

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

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

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

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

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

Securities eligible for investment under this section shall include those listed in Government Code section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit or any other security mutually agreed to by Contractor and the City, provided that the substituted security is equal to or not less than five percent of the Contract amount.

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

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

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

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

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

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

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

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

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

Contractor shall keep full and complete records of the costs and additional time incurred for any work for which a claim for additional compensation is made. The Engineer or any designated Claim

investigator or auditor shall have access to those records and any other records as may be reasonably required by the Engineer to determine the facts or contentions in each Claim. Failure to grant access to such records shall be sufficient cause for denying the Claims.

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

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

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

_____,
(Name)

_____ of
(Title)

_____
(Contractor)

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

Dated _____

/s/_____

Subscribed and sworn before me this _____ day of

_____

_____
Notary Public

My Commission Expires _____

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

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

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

City of Santa Rosa

TECHNICAL SPECIFICATIONS

FOR

FULTON RD RECONSTRUCTION – OCCIDENTAL RD TO W 3RD ST

CONTRACT NO. C00780

2019

SECTION 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 Costs" is amended to read:

> "The cost of furnishing all flaggers, including transporting flaggers, to provide for passage of public traffic through the work under the provisions in Section 7-1.03, "Public Convenience", and Section 7-1.04, "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

12-3.01 General: Prior to commencing construction which will affect existing vehicular and pedestrian traffic, you shall submit for review by the Engineer, Traffic Control Plans on 11" x 17" sheets of paper which contains only information specifically related to work zone vehicular and pedestrian traffic control. If you propose to use the current edition of the CA MUTCD published by Caltrans in lieu of a traffic control plan, in specific work operations, you shall submit in writing for consideration which Typical Application Diagram will be used and how it will be applied for each work operation. Traffic Control Plans or proposals shall be submitted for review at least two weeks prior to implementation.

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

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

1. Show location and limits of the work zone.

2. Give dimensions of lanes affected by traffic control that will be open to traffic.

3. Indicate signing, cone placement, and other methods of delineation and reference to appropriate City or Caltrans Standards.

4. Dimension location of signs and cone tapers.

5. Identify side streets and driveways affected by construction and show how they will be handled.

6. Show how pedestrian traffic will be handled through the construction site. Pedestrian pathways through the work zone shall be in compliance with the requirements of ADA during and after work hours.

7. Identify message board locations. **7 changeable message boards are required.** Locations to be determined by Engineer and shall remain in place 10 days prior to construction until notice of completion. Message boards shall be located, relocated and message changed as directed by the Engineer.

8. Demonstrate how two-way traffic will be maintained.

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

12-4 Maintaining Traffic

12-4.01 Maintaining Traffic:

1. The full width of the traveled way shall be open for use by public traffic on Saturdays, Sundays and designated legal holiday(s), after 4:00 p.m. on Fridays, the day preceding designated legal holidays and when construction operations are not actively in progress; unless work has specifically been authorized by the Engineer. Either Northbound or Southbound sides(not both at same time) of Fulton Road may be closed as needed to perform contract work and for cure time providing that at least one side with 2-way traffic is maintained at all times.

2. The location of traffic control signing, barricades, and other facilities shall be monitored frequently (four to five times per day) by you to verify their proper location. All traffic signal and other traffic control devices shall be maintained at all times.

3. When construction activities will prevent vehicle access to individual driveways you shall notify the affected businesses and residents per Section 12-4.02, “Traffic Control”, of these Special Provisions. Full access shall be provided to all driveways during non-working hours.

4. You shall remove all temporary traffic control signs promptly once they no longer apply.

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

Existing pavement damaged by your 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 7-1.03A, "Maintaining Traffic", to Section 5-1.05, "Order of Work,".
The exact location of Project Identification signs and Advance Notice signs (Section 7-1.03A "Maintaining Traffic") shall be determined in the field by the Engineer.

Lane closures will be permitted between the hours of 8:30 a.m. and 4:00 p.m. only, except for work within the intersections of West 3rd Street and Occidental Road, which shall be between the hours of 8:30 p.m. and 5:00 a.m.. 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. You shall maintain vehicle access to homes and other properties at all times while work is in progress.

You shall not park construction vehicles, employee vehicles, stage materials or stockpiles in front of any business or residential driveway access and you 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.

No streets or intersections shall be closed to through traffic without the approval of the Engineer unless otherwise shown on the approved traffic control plans.

You shall keep the City of Santa Rosa Fire Department informed regarding the closure of any traveled way. At a minimum, you 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.

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

If you have an approved Traffic Control Plan that includes road closures, you 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, you may temporarily suspend curb side parking in the 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. Service of notice shall not bar use of cars within the block, as individual plans change and emergencies arise.

2. Type 1 barricades every 50-100 feet, depending on street, 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 you shall remove barricades and “No Parking” notices.

3. You shall maintain vehicle access to all homes and other properties along the work zone. During paving operations, you 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, you 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. Suspension of access to driveway will be permitted only as approved by the Engineer and only between the hours of 8:30 am and 4:00 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.

Work within the intersections of West 3rd Street and Occidental Road, which shall be night work scheduled between the hours of 8:30 p.m. and 5:00 a.m..

Barricades and flaggers shall be positioned to allow safe turns at intersections and curves.

You shall maintain traffic control as necessary and as directed by the Engineer for "cat-tracking" operations by City Forces. Flaggers, barricades, signing, etc., shall remain in place for protection of City personnel until such time as all temporary lane delineation is complete.

12-7 Temporary Pedestrian Walkways

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

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

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

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

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

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 RCC, barricades, toe-rails, hand rails, complying with CA MUTCD Standards for Pedestrian Safety, complying with and executing all Caltrans encroachment permit requirements, 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.

No additional compensation for night work.

SECTION 13
WATER POLLUTION CONTROL

13-1 General

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

1. The California Water Quality Control Board, North Coast Region Order No. R1-2009-0050, National Pollutant Discharge Elimination System Municipal Storm Water Permit, Part 8 – Development Construction Program, Sections 1 through 5, commonly referred to as the "Storm Water Permit". A copy of the Storm Water Permit is available for review at the City of Santa Rosa Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, CA, and at www.srcity.org/stormwaterpermit.

2. The California Stormwater Quality Association Storm Water BMP Handbook for Construction (CASQA Handbook). BMPs shall be selected, installed and maintained in accordance with the latest edition. A copy of the handbook can be viewed at the City of Santa Rosa Department of Transportation and Public Works office at 69 Stony Circle or downloaded from CASQA, http://www.casqa.org/.

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

13-2 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.

This plan shall be project specific.

13-2.04 Payment: The City pays you 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 / CASQA Spill Prevention and Control (BMP WM-4): If a spill occurs at the construction site and you 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 you hereunder. In the event there are insufficient amounts owed to you hereunder to cover the foregoing costs and charges, the City shall have the right to pursue any other remedy to recover same, including, but not limited to, proceeding against any surety or bond in favor of the City. The City's rights under this section are intended to be in addition to and not in lieu of any imposed by the City against Contractor for violations of City Code Chapter 17-12, "Storm Water".

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

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

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

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

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

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

13-4.03E(1): Water Control and Conservation / CASQA Water Conservation Practices (BMP NS-1 and NS-2)

13-4.03E(3): Vehicle and Equipment Cleaning / CASQA Vehicle and Equipment Cleaning (BMP NS-8)

13-4.03E(4): Vehicle and Equipment Fueling and Maintenance / 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 / 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 / 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. You will pay all maintenance costs.

13-7 Temporary Tracking Control

13-7.01A: Temporary Tracking Control / Stabilized Construction Entrance and Exit (BMP TC-1), Entrance Outlet Tire Wash (BMP TC-3)

13-7.03 Construction / CASQA Stabilized Construction Site Entrance / Exit (BMP TC-1)

13-7.04 Payment: Temporary Tracking Control shall be paid for at the lump sum price for Water Pollution Control. You will pay all maintenance costs.

13-10 Temporary Linear Sediment Barrier

13-10 Temporary / CASQA Silt Fence and Sand Bag Barrier (BMP SE-1 and SE-8)

13-10.04 Payment: Temporary Linear Sediment Barriers shall be paid for at the lump sum price for Water Pollution Control. You will pay all maintenance costs.

SECTION 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.

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

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

At the end of each work week you 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: You shall dispose of all portland cement concrete and asphalt concrete, generated from removal or demolition activities, at a recycler for these materials. You 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 your property and shall be disposed of at your expense.

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

14-10.02D 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

Section 15
Existing Facilities

15-2 Miscellaneous Highway Facilities: Prior to beginning any roadway excavation or pavement grinding operations you shall contact the Underground Service Alert at 1-800-227-2600 and provide USA with all necessary data relative to proposed excavation. Contractor shall pothole as needed.

15-2.02B Pavement Markings: Existing thermoplastic pavement markings shall be removed to the fullest extent possible from the pavement by grinding. Sand or other material deposited on the pavement as a result of removing pavement markings shall be removed as work progresses. Existing pavement markings may be removed not more than three (3) days prior to paving.

You shall provide, install, and maintain temporary reflective pavement marking on the same day as the permanent markings are removed or as directed by the Engineer and maintain these until final markings are in place. All temporary markings shall be removed immediately before paving. Temporary striping on all ground surfaces shall be one coat of paint with reflective glass beads. All ground surfaces shall be cleaned and dust removed prior to applying paint. Attention is directed to Section 84-1.01, "Traffic Stripes and Pavement Markings" of these Special Provisions.

15-2.02C Pavement Markers: Existing pavement markers shall be removed prior to paving. The Contractor shall be responsible for their proper disposal away from the work site. Existing pavement markers may be removed not more than three (3) days prior to paving.

You shall provide, install, and maintain temporary reflective pavement markers on the same day as the permanent markers are removed or as directed by the Engineer and maintain these until final markers are in place. Attention is directed to Section 85-1.01, "Raised Pavement Markers" of these Special Provisions.

15-2.03 Payment: Removal of permanent markings and markers and installation of temporary pavement markings and markers described in Section 15-2 above shall be considered as included in the various items of work under Section 85, "Pavement Markers" and shall include full compensation for furnishing all labor, materials, tools, and equipment, and doing all work involved in furnishing permanent and temporary reflective pavement markings and markers complete in place as specified herein and no additional allowance will be made therefor.

15-2.10B Lower Existing Manhole Frame and Cover, Valve Box and Monument: Existing manhole frames and covers, valve boxes and monuments that are located in roadway excavation or pavement grind areas shall be lowered below subgrade and shall be adjusted after paving to conform to new finish grade.

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

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

After placement of any and all courses of pavement you shall identify all covered manholes, valve boxes and monuments with white paint by the end of that working day.

All new and existing manholes, valve boxes and monuments shall be adjusted to grade within 48 hours after placement of the finish course of asphalt concrete. Final grade adjustments and installation of concrete collars shall be done on the same working day. Final paving around manholes, valve boxes and monuments shall be completed the following working day.

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

If existing water valve riser pipe needs to be extended after paving to conform to City STD-877, you shall use either a slip x slip glued PVC coupling or a transition coupling with sheer bands as directed by the Engineer. Upsizing the existing riser pipe to 8-inch will not be required unless otherwise directed by the Engineer. Any added extension must be a minimum of 12 inches. The lower section of riser pipe shall be adjusted to accommodate this requirement.

In the event that you encounter water valve boxes with round lids or sanitary sewer frame and covers with open pick holes which must be adjusted to grade, the Contractor is to provide a count to the Engineer a minimum of two days prior to paving to obtain replacements that complies with current City Standards. The City will provide replacements, provided that you did not damage them by your operations

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

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

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

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

15-2.13B Payment: Lower Existing Manhole Frames and Covers, and **Lower Existing Valve Boxes and Monuments:** 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 doing all the work involved in adjusting existing manhole frames and covers, valve boxes, mainline cleanouts and monuments to below sub-grade, including but not limited to, required excavation and backfill, coordination for replacement boxes, and removing silt and debris, as specified herein, and no additional allowance will be made therefor.

15-3 Removing Concrete

15-3.02 Removal Methods: Concrete removal shall conform to applicable provisions of Section 15-3 of the Standard Specifications and these Special Provisions.

All concrete to be removed shall be disposed by the Contractor away from the site of the work. Burying of broken concrete within the limits of the project will not be allowed.

All concrete which is to be removed from sidewalk, curb, gutter, and driveway areas shall be removed to the nearest score mark or construction joint as directed by the Engineer.

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.

Concrete bumper blocks on Darla Drive shall be removed and the remaining epoxy removed without damaging existing asphalt concrete pavement to remain.

15-3.04 Payments: Full compensation for removing existing concrete shall be considered as included in the various contract items of work involved and no additional allowance will be made therefor. Full compensation for potholing, saw cutting, jack hammering, removal and disposal of existing concrete improvements, curb, gutter, sidewalk, asphalt patch in sidewalk, valley gutter, driveway approach, and curb ramps shall be included in the contract unit prices paid for under individual items of work and no additional allowance will be made therefor.

Section 19
Earthwork

19-1 General

19-1.03B Unsuitable Material: Stabilization of unsuitable material shall not be allowed.

19-1.03B (1) Subgrade Stabilization: Any area of the subgrade determined by the Engineer to be unstable shall be removed to the limits marked in the field by the engineer to 0.35' below the subgrade plane. Soil stabilization fabric shall be placed and 0.35' of AC Base shall be placed and compacted prior to any other operation.

The excavation shall be filled with asphalt base as defined in Section 39-1.01, “Asphalt Concrete” of these Special Provisions, and as directed by the Engineer to return the excavation to grade after the material is compacted with a minimum 7-ton vibratory roller or approved equal and has obtained a minimum 93% relative compaction. In the situation where a roller is not able to compact the asphalt base as specified, placement and compaction shall be as directed by the Engineer.

Payment for furnishing and placing soil stabilization fabric will be paid per Section 19-1.05 of these Special Provisions and no additional allowance will be made therefor.

Use of a pavement grinder shall be considered an acceptable method of excavation of areas requiring subgrade stabilization.

19-1.03C Grade Tolerance: When HMA is to be placed on the grading plane, the grading plane shall not vary more than 0.05’ above or below the grade established by the Engineer

19-1.03D Soil Stabilization Fabric:

Soil Stabilization Fabric shall be installed per manufacturer's recommendations and shall meet or exceed the following specifications:

Grab Tensile Strength (ASTM D4632)	290 lb.
Mullin Burst Strength (ASTM D3786)	500 psi
Trapezoid Tearing Strength (ASTM D4533)	113 lb.
Modulus (Load at 10% Elongation) (ASTM D4632)	120 lb.
Apparent Opening Size (ASTM D4751)	40-70 sieve
Permittivity (ASTM D4491)	0.05 sec^{-1}

Soil stabilization fabric shall be Mirafi 600-X, GeoTex 315ST, Carthage Mills FX-66, TerraTex HD, or approved equivalent.

Soil stabilization fabric shall be held in place neatly with u-shaped or straight steel anchor pins driven through the fabric into the subgrade at the beginning, the end and all edges and overlaps of the fabric at 20 foot longitudinal intervals. A minimum of three pins shall be placed across the width of the fabric roll at each interval. The pins shall be a minimum length of 8-inches and shall be driven at an angle opposite to the direction of pull exerted on the fabric. Use care not to damage or penetrate existing facilities, ie, conduit or wire below subgrade when placing pins.

Soil stabilization fabric shall be placed under hot mixed asphalt in the intersections of West 3rd Street and Occidental Road, as shown on the plans, and where subgrade stabilization is required.

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19-1.04 Payment: **Subgrade Stabilization** shall be paid for at the contract price per **square yard** as measured in the field. Price shall include full compensation for doing all work involved in stabilizing the subgrade as specified herein and no additional allowance will be made therefor.

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 4-1.05A 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 you do to accommodate equipment width beyond the limits of the areas marked by the Engineer shall be at your expense.

Payment for furnishing, placing and compacting the AC Base will be paid per Section 39-6 of these Special Provisions and no additional allowance will be made therefor.

Payment for furnishing and placing and Soil Stabilization Fabric will be paid per Section 19-1.05 of these Special Provisions and no additional allowance will be made therefor.

19-1.05 Payment: **Soil Stabilization Fabric** shall be paid for at the contract price per **square yard** as measured in the field. Price shall include full compensation for doing all work involved in soil stabilization fabric as specified herein and no additional allowance will be made therefor.

In the event of an increase or a decrease in the amount of the Engineer's estimated quantity of Soil Stabilization Fabric, 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 4-1.05A of the Standard Specifications and no adjustment of the contract price for Soil Stabilization Fabric will be made.

19-2 General

19-2.03A Roadway Excavation: Prior to beginning Roadway Excavation, you shall contact the Underground Service Alert at 1-800-227-2600 and provide USA with all necessary data relative to proposed excavation. See Section 15-2.

The Contractor shall furnish an excavation and paving plan and a qualified grade setter to ensure that the subgrade conforms to the lines and grades established per the plans.

Roadway Excavation shall be performed with a pavement grinder. No other construction equipment including rubber-tired equipment shall be allowed on the subgrade. Contractor shall pothole as needed to avoid damage to existing underground facilities.

Roadway excavation and asphalt concrete base paving, including Stabilization Fabric per section 19-1.03D, paving shall be completed for half the street width before beginning excavation of the remaining street.

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 jack-hammering 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.

19-2.02 Payment Roadway Excavation (F): will be paid for at the contract price per **cubic yard (CY)**, as measured in the field which price shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all work involved in the removal, recycling and disposing of excavated materials, placement of soil stabilization fabric as specified in these Special provisions as directed by the engineer, including potholing, compaction, tack oil, rolling, steel plates and no additional allowance will be made therefor.

Payment for furnishing and placing the asphalt concrete leveling and surface will be paid per Section 39-6 of these Special Provisions and no additional allowance will be made therefor.

Section 26
Aggregate Base

26-1.01 Aggregate Base: Contractor shall prepare the existing subbase section for roller compacted concrete paving by scarifying and recompacting the top 8 inches of existing aggregate base.

Rolling shall commence immediately after scarification and moisture conditioning and before the material has dried sufficiently to allow separation between the fine and coarse particles.

26-1.02B Quality Requirements: Use existing material. Moisture condition as necessary.

26-1.03D 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: Re-compact 8" of Existing Aggregate Base (F) a final pay quantity, shall be paid for at the contract price per **square yard**, which price shall include all compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in recompacting the base material as specified, including furnishing, hauling and applying water as specified and directed by the Engineer.

SECTION 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 Definitions: For these specifications, HMA and asphalt concrete shall be the same.

At the Contractor's option, and at no additional expense to the City, a Warm Mix Asphalt (WMA) technology, approved by the City, may be added to the HMA. However, the asphalt concrete shall be manufactured at HMA temperatures (300F +/- 25F) at a dosage rate approved by the Engineer. All other HMA project specifications shall be adhered to.

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 shown on the Project Plans. This includes the intersections West 3rd Street, Occidental Road and side street conforms.

Roadway excavation and asphalt concrete base paving shall be completed for half the street width before beginning excavation of the remaining street.

All existing asphalt concrete that is adhered to the top of gutters shall be removed prior to placement of new asphalt concrete surface in a manner satisfactory to the Engineer and that does not damage the gutter.

Asphalt concrete base shall be placed on the same day the area is excavated so that all areas will either have existing asphalt surface or new asphalt concrete base by the end of each working day. No subgrade areas shall be exposed or open to traffic during non-working hours.

Asphalt concrete base paving shall be accomplished by use of a paving machine. The asphalt mix shall be transferred from the trucks to the hopper of the paving machine by means of a shoulder machine equipped with a side caster. Any equipment used to transfer asphalt concrete to the paving machine shall not exceed the load capacity of any surface it is driven over and shall not produce rutting or pumping of the existing roadway surface or newly placed asphalt concrete base at any time.

Construction vehicles/equipment shall not be allowed on the newly placed asphalt concrete base until the day after it is placed. Super Dumps or other trucks with liftable trailing load bearing axles shall not be allowed on the newly placed asphalt concrete base at any time. All trucks or other construction equipment to be driven on the newly placed asphalt concrete base shall not exceed the surface load bearing capacity and shall not produce rutting or pumping at any time.

All longitudinal surface paving joints shall fall on a lane line. Longitudinal Subsurface paving joints shall be offset by at least 6 inches.

No longitudinal vertical drop offs will be allowed between the lanes when the roadway is opened to traffic. Where a longitudinal vertical drop off occurs along the roadway crown between the existing street surface and the new asphalt concrete base, the Contractor shall grind a 10:1 taper in the existing surface to make a temporary conform to accommodate traffic. The temporary taper shall be ground after the asphalt concrete base paving has been completed each day.

Where a vertical drop off will occur between the top of the new asphalt concrete base and a valley gutter, driveway, or side street conform, the Contractor shall install a temporary 10:1 asphalt taper.

Where a vertical drop off would occur between the asphalt concrete base and a pedestrian ramp, the Contractor shall install a temporary 12:1 asphalt taper.

All ground edges adjacent to curb ramps and driveways shall have temporary asphalt concrete ramps (tapers) installed if the asphalt concrete surfacing cannot be placed back the same day the existing pavement is removed. Kraft paper or other bond breaker shall be placed under the conform ramps to facilitate removal when paving operations start.

Kraft paper or other bond inhibitor shall be placed under the temporary asphalt taper to facilitate removal when paving operations resume.

Temporary asphalt tapers and associated bond breaker material shall be removed prior to placement of the asphalt concrete surface lift. Where the bond breaker material adheres to the asphalt concrete base course it shall be fully removed with a method, approved by the Engineer that will in no way degrade the quality of the final product.

The Engineer shall provide reference points and cut sheets for the placing of asphalt concrete base and asphalt concrete surface.

The Contractor shall furnish an excavation and paving plan which shall include the following:

1. Requested location for survey staking of reference points
2. Asphalt plant supplying mix including aggregate source
3. Disposal site for spoils
4. Type of trucks and equipment to be used
5. Haul routes through adjacent residential streets
6. Staging locations
7. Sequencing
8. Taper grind locations

The Contractor shall set a string line based on the reference points to control the grade of the paving machine along the crown line. A rotary laser level may be used in lieu of a string line provided the level can be accurately set to the design centerline slope, and the detector is directly mounted to the paving machine screed to control the grade of the paving along the crown line. The Contractor shall also furnish a grade setter to ensure that the asphalt concrete base and asphalt concrete surface paving conforms to the lines and grades established by the Engineer.

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

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

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

Transverse Conform Grind: shall be in accordance with City STD-208, these Special Provisions and as directed by the Engineer. The minimum depth shall be 0.2' at the existing roadway surface and have a 10' width. Transverse conform grinds are to be used in the intersections of Occidental Road and W. 3rd Street / Hall Road.

Side Street Conform Grind: shall be in accordance with City STD-207. The width shall conform 25' into the side streets and be minimum 0.17' deep at the conform.

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 AD-here LOF 65-00 or equivalent, and shall be stored, measured, and blended with the asphalt binder in accordance with the anti-stripping agent manufacture's recommended practice. The LAS can be added at the asphalt plant or at the refinery. When added at the asphalt plant, the equipment shall indicate and record the amount of LAS added. If added at the refinery, the shipping ticket from the refinery shall certify the type and amount of LAS added.

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

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

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 Type A

3/4-inch HMA Type A

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

1/2-inch Coarse HMA Type A

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

1/2-inch Medium HMA Type A

Sieve sizes	TV limits	Allowable tolerance
3/4"	100	--
1/2"	95-100	--
3/8"	80-95	--
No. 4	59-66	TV ± 5
No. 8	43-49	TV ± 5
No. 30	22-27	TV ± 5
No. 200	2.0–8.0	--

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.

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

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

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

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

1. Contractor shall provide City with a mix design per California Test 384 for the proposed RAP HMA.

2. As part of City's evaluation of RAP HMA, Contractor and City shall perform bitumen ratio tests on at least six split samples of Contractor's RAP to establish correlation between respective binder ignition ovens.
3. RAP shall be processed from reclaimed Asphalt Concrete pavement only.
4. RAP pile(s) shall be separate from the stacker pile, not intermingled with other materials, and stored on smooth surfaces free from debris and organic material.
5. The project RAP pile shall be processed and mixed, identified, and of adequate quantity for the proposed project. "Live" piles shall not be permitted.
6. Contractor shall sample the RAP pile and determine the bitumen ratio (using same binder ignition oven used in #2 above) and provide the test results to the City at least one week prior to producing RAP HMA.
7. A minimum of three samples shall be tested for bitumen ratio for RAP pile of 1500 tons, or portion thereof.
8. RAP pile shall be mixed such that individual bitumen ratio test results of RAP pile so not vary more than +/- 0.5%.
9. During RAP HMA production, RAP shall be sampled by the Contractor off of the belt (into the batch plant), per method established by the City, and samples provided to the City.
10. Bitumen ratio of RAP sampled off of the belt shall be 4.0% minimum, as determined by City binder ignition oven. City shall select binder content for RAP HMA mix per Specifications.
11. RAP content shall be no more than 20% by dry aggregate mass in the HMA. If proposing a change in the RAP content, the Contractor shall notify the Engineer. If the content changes more than 5%, the Contractor shall submit a new mix design.
12. Moisture content of RAP pile shall be 4.0% maximum, and shall be tested the day prior to the day of paving and tested/monitored during each day of HMA production.
13. RAP pile(s) shall be protected from exposure to moisture.
14. RAP HMA shall comply with all the specifications for HMA.
15. If batch mixing is used, RAP shall be kept separate from the virgin aggregate until both ingredients enter the weigh hopper or pugmill. After introduction to the pugmill and before asphalt binder is added, the mixing time for the virgin aggregate and RAP shall not be less than five seconds. After asphalt binder is added, the mixing time shall not be less than 30 seconds.
16. If continuous mixing is used, the RAP shall be protected from direct contact with the burner flame with a device such as a shield, separator, or second drum.
17. If any of the above criteria are not satisfied, or if the RAP HMA test result determined by the City are inconsistent, RAP HMA production shall stop for City projects until the issue(s) are corrected.

39-1.03 HOT MIX ASPHALT MIX DESIGN REQUIREMENTS:

39-1.08 Production:

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

39-1.12 Smoothness:

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

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

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

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

39-3.02 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.

The micro-deval abrasion loss of the aggregates should conform to asphalt concrete industry standards.

At any time during the first 12 months from the time of placement of the asphalt concrete, the surface shall be visually inspected by City Materials Engineering. If signs of stripping of binder from aggregate or loss of aggregate is apparent, City Materials Engineering will core the asphalt concrete surface. The core samples will be tested for TSR. Asphalt concrete with a TSR less than 70 shall be remediated as required by the engineer.

39-3.04 Transporting, Spreading, and Compacting:

Numbers of coverages:

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

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

39-5 Measurement: HMA Surface and HMA Base will be measured by weight. The quantity to be paid for shall be the combined weight of the mixture.

All weights shall be supported by State Certificates of Weights and Measures furnished by you.

39-6 Payment: **Asphalt Concrete Surface** shall be paid for at the contract price per **ton**, which price shall include full compensation for furnishing all labor, materials, tools, and equipment and doing all work involved in placing asphalt concrete surface and overlay, including tack coat and overlay conforms, and no additional allowance will be made therefor.

Asphalt Concrete Base and Leveling shall be paid for at the contract price per **ton**, which price shall include full compensation for furnishing all labor, materials, tools, and equipment and doing all work involved in placing asphalt concrete base, including tack coat and temporary tapers, and no additional allowance will be made therefor.

Transverse Conform Grind 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 work involved in transverse conform grinding, including but not limited to drop-offs and tapers, as specified herein, and no additional allowance will be made therefor.

Side Street Conform Grind 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 work involved in side street conform grinding, including but not limited to drop-offs and tapers, as specified herein, and no additional allowance will be made therefor.

Full compensation for installing and removing temporary asphalt tapers shall be included in the contract price for asphalt concrete surface and no additional allowance will be made therefor.

Full compensation for removing existing asphalt concrete from top of gutters shall be included in the contract price for asphalt concrete surface and no additional allowance will be made therefor.

Full compensation for furnishing weigh master's certificates shall be considered as included in the contract price paid per ton for asphalt concrete and asphalt concrete base and leveling and no additional allowance will be made therefore.

[Revised: 03/07/17 Lab STD2010]

SECTION 42
GROOVE AND GRIND PAVEMENT

42-2.01A Grind Concrete Pavement: This work shall consist of diamond grinding portland cement concrete as specified in Section 42-2, "Grinding," of the Standard Specifications and these special provisions, and as directed by the Engineer.

Grinding equipment for grinding concrete pavements shall use diamond blades mounted on a self-propelled machine designed for grinding and texturing concrete pavements. Grinding equipment that causes raveling, aggregate fracturing, or spalling, or that damages the transverse or longitudinal joints shall not be used.

Grinding shall be performed in the longitudinal direction of the traveled way and shall be done full lane width so that the grinding begins and ends at lines perpendicular to the pavement centerline. Bike lanes shall not be receive diamond grinding.

Grinding concrete pavement shall result in a parallel corduroy texture consisting of grooves 0.08-inch to 0.12-inch wide with 55 grooves to 60 grooves per foot width of grinding. Tops of ridges shall be between 0.06-inch and 0.08-inch from the bottom of the blade grooves.

Prior to diamond grinding, the concrete pavement smoothness shall be in conformance with Section 40 of the Standard Specifications. The data created shall highlight areas of localized roughness. All grinding to bring the pavement into compliance with Section 40 shall be completed prior to the finish diamond grinding.

Cross-slope uniformity and positive drainage shall be maintained across the entire traveled way and shoulder. The cross-slope shall be uniform so that when tested with a 12-foot ±2-1/2 inches long straightedge placed perpendicular to the centerline, the ground pavement surface shall not vary more than 1/4 inch from the lower edge of the straightedge.

After grinding has been completed, the pavement surface shall be profiled in conformance with the requirements of Section 40 of the Standard Specifications. Additional grinding shall be performed, where necessary as determined by the Engineer, to bring the ground pavement surface within the requirements specified in Section 40 of the Standard Specifications.

Full compensation for profiling the ground pavement surface with a inertial profilograph or equivalent and any necessary additional grinding to bring the finished surface within the specified tolerances and for furnishing final data to the Engineer shall be considered as included in the contract price paid per square yard for Diamond Grind Concrete Pavement and no additional compensation will be allowed therefor.

42-2.01B Disposal of Portland Cement Roller Compacted Concrete (RCC) Pavement Grooving and Grinding Residues: Disposal of portland cement concrete (RCC) pavement grooving and grinding residues shall be in conformance with the provisions in Section 42, "Groove and Grind Pavement," of the Standard Specifications and these special provisions.

The Contractor shall include water pollution control measures to address the handling of the grinding pavement residue within the Storm Water Pollution Prevention Plan or Water Pollution Control Program, as specified in "Water Pollution Control" of these special provisions. At a minimum, the roadway shall be swept at the end of each day of grinding operations.

Temporary storage of RCC pavement grooving and grinding residues shall not be allowed. The Contractor may transport liquid RCC pavement grooving and grinding residues to an offsite drying location if the Engineer provides written approval (See Section A, Fees and Permits of these special provisions). The offsite drying location shall be identified and protected in conformance with "Water Pollution Control" of these special provisions.

A Materials Information Handout is not available for disposal of RCC pavement grooving or grinding residues. The Contractor shall dispose of RCC pavement grooving and grinding residues in a facility permitted by Regional Water Quality Control Board (RWQCB) or other agencies that may accept RCC pavement grinding and grooving residues. The Contractor shall determine if the facility has a current permit to accept RCC pavement grooving and grinding residues and if the facility can accept the waste at the time of generation, and the following:

A. The facility must be permitted by the RWQCB or other applicable agency, or the Contractor must obtain written approval from the RWQCB or other applicable agency.

The following shall be delivered to the Engineer at least 5 days before disposal of RCC pavement grooving and grinding residues:

A. The name, address, and telephone number of the disposal facility, Copy of the facility's RWQCB or other applicable agency permit, or RWQCB's or other applicable agency's approval.

The Contractor shall deliver landfill receipts and weight ticket of disposal of residues from RCC pavement grooving and grinding to the Engineer within 1 business day of disposal.

The Contractor shall make all arrangements and agreements for disposal at the time of bidding. Costs related to obtaining approval for disposal from the RWQCB or other applicable agency, shall be borne by the Contractor and no additional payment shall be made therefore. Full compensation for all costs involved in disposing of RCC pavement grooving or grinding residues as specified in this section, including all costs of handling, temporary storage, hauling and disposal fees, shall be considered as included in the contract price paid per square yard for Diamond Grind Concrete Pavement and no additional compensation will be allowed therefor.

42-3 Payment: **Diamond Grind Concrete Pavement (F),** a final pay quantity**,** shall be paid for at the contract price per **square yard**, which price shall include full compensation for furnishing all labor, materials, tools, and equipment and doing all work involved in diamond grinding concrete pavement and no additional allowance will be made therefor.

SECTION 43
ROLLER COMPACTED CONCRETE PAVEMENT

43-1 General:

43-1.01 Scope: The scope of work shall consist of furnishing all materials, tools, equipment, and batching, or batching and mixing plant for producing roller compacted concrete (also referred to as RCC); and performing all labor for producing, transporting, forming, placing, compacting, curing, finishing and testing of RCC. The constructed RCC pavement shall conform to lines, grades, thickness, and cross section, as shown on the plans, or otherwise established by these specifications.

43-1-.02 RCC – Description: Roller-compacted concrete shall consist of portland cement, possibly supplementary cementing materials (for example fly ash or ground granulated blast furnace slag), aggregates, water, and chemical admixtures proportioned to produce the required formability (adequate to the method of consolidation by vibratory rollers) and strength.

43-2 Referenced Specifications, Codes, Standards and Geotechnical Reports:

43-2.01 American Society for Testing and Materials (ASTM):

1. ASTM C31, Practice for Making and Curing Concrete Test Specimens in the Field
2. ASTM C33, Specification for Concrete Aggregates
3. ASTM C39, Test Method for Compressive Strength of Cylindrical Concrete Specimens
4. ASTM C40, Test Method for Organic Impurities in Fine Aggregates for Concrete
5. ASTM C42, Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
6. ASTM C78, Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
7. ASTM C88, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate of Magnesium Sulfate
8. ASTM C94, Specification for Ready-Mixed Concrete
9. ASTM C127 Test Method for Specific Gravity Absorption of Coarse Aggregate
10. ASTM C128 Test Method for Specific Gravity Absorption of Fine Aggregate
11. ASTM C131, Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

12. ASTM C138, Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete

13. ASTM C143, Test Method for Slump of Hydraulic Cement Concrete

14. ASTM C150, Standard Specification for Portland Cement

15. ASTM C156, Test Method for Water Retention by Concrete Curing Materials

16. ASTM C172, Practice for Sampling Freshly Mixed Concrete

17. ASTM C173, Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

18. ASTM C174, Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Core

19. ASTM C192, Practice for Making and Curing Concrete Test Specimens in the Laboratory

20. ASTM C231, Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

21. ASTM C260, Specification for Air-Entraining Admixtures for Concrete

22. ASTM C295, Guide for Petrographic Examination of Aggregates for Concrete

23. ASTM C 309 – Specification for Liquid Membrane-Forming Compounds for Curing Concrete

24. ASTM C470, Specification for Molds for Forming Concrete Test Cylinders Vertically

25. ASTM C494, Specification for Chemical Admixtures for Concrete

26. ASTM C535, Test Method for Resistance to Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

27. ASTM C566, Test Method for Evaporable Moisture Content of Aggregate by Drying

28. ASTM C595, Standard Specification for Blended Hydraulic Cements

29. ASTM C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
30. ASTM C 685 Specification for Concrete Made by Volumetric Batching and Continuous Mixing

31. ASTM D698, Standard Test Method for Laboratory Compaction Characteristic of Soil Using Standard Effort

32. ASTM D9771998, Standard Specification for Emulsified Asphalt.

33. ASTM C989, Standard Specification for Slag Cement for Use in Concrete and Mortars

34. ASTM C1040, Test Methods for Density of Unhardened and Hardened Concrete in Place by Nuclear Methods

35. ASTM C1157, Standard Performance Specification for Hydraulic Cement

36. ASTM C1170, Test Methods for Determining Consistency and Density of Roller-Compacted Concrete Using a Vibrating Table

37. ASTMC1176, Standard Practice for making Roller-Compacted Concrete in Cylinder Molds Using a Vibrating Table

38. ASTM C1260, Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar-Method)

39. ASTM C1293, Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction

40. ASTM C 1435, Molding Roller-Compacted Concrete in Cylinder Molds Using a Vibrating Hammer

41. ASTM D1557, Standard Test Method for Laboratory Compaction Characteristic of Soil Using Modified Effort

42. ASTM C1567, Standard Test Method for Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar-Method) ASTM C1602, Standard Specification for Mixing Water Used for the Production of Hydraulic Cement Concrete

43. ASTM D3042, Test Method for Insoluble Residue in Carbonate Aggregates

44. ASTM D4318, Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

43-2.01 American Concrete Institute:

1. ACI 327R-14 Guide for Roller Compacted Concrete Pavements

43-2.01 Submittals: The Contractor shall submit the following to the Engineer at least 45 days before the start of production and construction of RCC pavement:

1. Construction schedule for all RCC related operations.

2. RCC production procedures, description of batching or batching and mixing plant used, and RCC delivery methods. List of all equipment proposed for the use to perform the placement of RCC including paving equipment, and compaction equipment. The paver and mixing equipment must match that listed on the submittal, unless a substitution is made, which meets these specifications and is approved by the Engineer. This shall include

manufacturer's data and specifications for mixing plant, hauling, placing, spreading, and compaction equipment. Layout of plant showing location of each aggregate storage bin, each cementitious material bin, water supply, and mixing plant shall be provided no less than 30 calendar days prior to the beginning of paving operations. Outline of procedures for calibrating the mixing plant and monitoring materials during construction shall also be submitted.

3. Complete paving procedures including, but not limited to, line and grade control, direction of paving operations, paving widths, planned longitudinal and transverse construction joints, and curing method.

4. Quality management plan, addressing, at least:
   a. Quality management organization chart.
   b. Qualifications of the general contractor and subcontractors in producing RCC and constructing RCC pavement.
   c. Control of materials.
   d. Control of RCC.
   e. Design and preconstruction evaluation of the production RCC mix.
   f. Storage of materials for RCC.
   g. Production of RCC.
   h. Delivery of RCC.
   i. Line and grade control.
   j. Control of subbase prior to RCC placement.
   k. Paving operations.
   l. Post-pavement inspection.
   m. Corrective actions.

5. Certification of aggregate source.

6. Certification of portland cement and supplementary cementing materials.

7. Certification of mixing water for RCC.

8. Certification of chemical admixtures for RCC.

9. Certification of curing compound.

10. Contingency plan, including but not limited to backup paving equipment and backup batching facility.

11. Proposed mix design, including data of preconstruction mix design studies, or backup data demonstrating the performance of the mix during the previous pavement projects constructed within 12 months of the date of submittal.

12. Plan for placement of concrete in hot weather if placement conditions and ambient temperature could result in concrete temperatures exceeding 90

degrees Fahrenheit. Outline of procedures and methods for curing and weather protection for cold [less than 40°F (4.5°C)], hot [more than 90°F (32°C)] and rainy conditions.

13. Methods of handling, storing, delivering and mixing of materials.

14. Operating procedures for corrective action(s) necessary to assure a tight, smooth surface on the RCC pavement, free of tears larger than 1/4" width and 1/4" depth and other surface imperfections, including surface pitting.

15. The Contractor shall submit a list of all equipment proposed for use to perform the placement of RCC including mixing plant, paving equipment, and compaction equipment to the Engineer prior to utilization on the job. The make, model, and equipment specification sheet for each piece of equipment shall be included. The paver and mixing equipment must match that listed on the submittal, unless a substitution is made which meets these specifications and is approved by the Engineer. This shall include manufacturer's data and specifications for mixing plant, hauling, placing, spreading, and compaction equipment. Layout of plant showing location of each aggregate storage bin, each cementitious material bin, water supply, and mixing plant shall be provided no less than 30 calendar days prior to beginning paving operations. Outline of procedures for calibrating the mixing plant and monitoring materials during construction. The City will not provide a location for a mixing plant. It's the Contractor's responsibility to make arrangements for a mixing plant. 43-2 Products:

43-3.01 Materials for RCC:

43-3.01A General: All materials to be used for RCC pavement construction shall be approved by the Engineer based on laboratory tests or certifications of representative materials which will be used in the actual construction.

43-3.01B Portland Cement: Portland cement shall conform to the requirements of ASTM C150 for Type II/V, or Type II(MH)/Type V. In addition, portland cement shall meet optional requirements of ASTM C150 for low alkali content.

43-3.01C Blended Hydraulic Cement: Blended hydraulic cements shall comply with standard specifications ASTM C595 and 1157.

43-3.01D Supplementary Cementing Materials: RCC may contain: up to 25% by the total weight of cementing materials of fly ash meeting requirements of ASTM C618 for Class F, or up to 50% of ground granulated blast furnace slag meeting requirements of ASTM C989 for Grade 100 or 120, or up to 50% of a blend of fly ash Class F and ground granulated blast furnace slag.

43-3.01E Minimum Content of Cementing Materials: Content of total cementing material (Portland cement plus supplementary cementing material) shall be established by preconstruction mix design studies, as further provided, but shall not be less than 450 pounds per one cubic yard of RCC.

43-3.01F Aggregates: Unless otherwise approved in writing by the Engineer, the quality of aggregates shall conform to ASTM C33. The aggregate portion passing the No. 40

sieve shall have a liquid limit of not more than 20, and the plasticity index of the aggregate shall not exceed five. Fines shall be non-plastic. Fines shall not be manmade sand. Aggregates may be obtained from a single source or borrow pit, however the coarse and fine aggregate may not be blended prior to entering mixing plant. The combined aggregate shall be well-graded without gaps and conform to the following gradations as per Table 1, unless otherwise approved by the Engineer:

Table 1: Sieve Size Percent passing by weight

Sieve Size	Lower & Upper Specification Limits ½ in Maximum
1”	
3/4”	100
½”	81-100
3/8”	71-91
No. 4	49-70
No. 8	33-54
No. 16	24-40
No. 30	15-30
No. 50	10-25
No. 100	2-16
No. 200	0-8

Aggregates shall be innocuous, not causing deleterious expansion of RCC. Test individual concrete aggregates in accordance with ASTM C1260. Maximum expansion after 14 days of exposure to the solution of NaOH shall not exceed 0.10%.

If any of individual concrete aggregates do not meet the limit specified in the above paragraph, the aggregates can be tested with the production cementing material (portland cement and supplementary cementing material proportioned according to the mix design) per ASTM C1567. The Contractor is allowed to test either individual aggregates or their blended proportioned according to the mix design. In either case the expansion in 14 days of exposure to the solution of NaOH shall not exceed 0.10%

43-3.01G Chemical Admixtures: Chemical admixtures shall conform to ASTM C 494. The following admixture, or approved equal, is required by the City for use as shown on the plans. Please refer to the manufacturer’s recommendations for dosage rates.

- ACEiT Plus Manufactured by ACEiT Industries

The contractor is allowed to use proprietary chemical admixtures improving the formability of RCC, provided the record of the previous experience certifying the beneficial use of admixtures is provided with the submittal.

43-3.01H Water: Water shall conform to the requirements of ASTM C1602. It shall be clean, clear and free of acids, salts, alkalis or organic materials that may be detrimental to the quality of the concrete. Non-potable water may be considered as a source for part or all of the water, providing the mix design indicates proof that the use of such water will not have any deleterious effect on the strength and durability properties of the RCC.

43-3.01I Curing Compound: Concrete curing compounds shall conform to ASTM C 309 or ASTM D 977.

43-3.01J Joint Sealants and Fillers: These materials shall be of the size, shape and type shown on the Plans. Unless otherwise shown on the Plans, the joint sealant materials to be used shall be self-leveling silicone pavement sealant as manufactured by Dow Corning, Crafco, Inc., or an approved equal.

43-4 Execution:

43-4.01 Requirements for RCC and Development of Production RCC Mix:

43-4.01A Requirements for RCC: Proposed mix design(s) shall meet the following minimum strength requirements based on test results of cylinders prepared according to ASTM C1435.

RCC shall have minimum compressive strength of 5,000 psi at 28-days.

Traffic shall not be allowed on the new RCC streets until a minimum compressive strength of 2,500 psi is achieved. Track mounted construction equipment shall not be allowed on the new PCC streets at any time without the prior approval of the Engineer.

Consistency and formability of RCC shall be adequate to the methods of its production, delivery, placement and consolidation. The objective consists of proportioning RCC that contains sufficient volume of paste to coat the aggregates and fill voids between them, is able to produce the required strength and durability, and makes it easy to achieve the maximum density. Contractor submits to the Engineer along with the statement of the proposed mix design data justifying the selected consistency and formability of the mix and method of its control.

43-4.01B Preconstruction Laboratory Mix Design Studies: An independent testing laboratory shall proportion RCC to meet the specified requirements for strength and Contractors requirements for consistency and formability. The laboratory shall demonstrate its compliance with the requirements of ASTM C1077. The mix design backup information shall show the moisture-density curve with associated maximum dry density, wet density and optimum moisture content, details of cementitious materials, 7-day and 28-day, or 42-day compressive strengths, including strength gain curve for the proposed mix. The mix design shall identify the quantity and gradation of aggregates, the optimum moisture content, and the amount of portland cement, other cementitious material(s) and the total cementitious materials required per cubic yard of the concrete. The mix design shall specify the proportions of each material (aggregate, cement, water, and admixtures) in the mix in terms of pounds per cubic yard based on saturated surface dry weights. Any changes to the mix design shall be approved by the Engineer. Should a change in material source be proposed, the Engineer must approve a new mix design.

Proportioning of RCC shall be performed in general compliance and in the sequence

recommended by ACI 327R-16, Chapter 6 “Mixture Proportioning.”

43-4.02 RCC Production and Delivery*:*

43-4.02A Storage of Materials: Portland cement and supplementary cementing materials shall be stored in weather tight bins or silos that protect them from dampness and contamination and provide easy access for inspection and identification of each shipment. RCC supplier shall assure that properties of materials will not change during storage and handling operations.

The supplier is required to have separate stockpiles (bunkers) for different aggregate sizes, which should be arranged in a manner preventing intermixing of different aggregate sizes, and their contamination by foreign materials. If stockpiles are located immediately next to each other, they have to be physically separated. Stockpiles shall be arranged on hardened surfaces.

Procedure for forming stockpiles shall preclude segregation of aggregates (Reference: Recommendations for forming stockpiles, excluding segregation of aggregates, are provided in ACI 304).

For temperature adjustment during hot weather periods of time, stockpiles for coarse aggregates are recommended to be provided with water sprinklers.

Silos for hydraulic cements and supplementary cementitious materials should be completely weather-tight.

Chemical admixtures shall be stored and handled in a manner protecting them from contamination.

43-4.02B Batching, Mixing and Transporting of RCC:

The City will not provide locations for a mixing plant or pugmill plant. It’s the Contractor’s responsibility to make those arrangements.

The Engineer shall approve the mixing plant before the Contractor begins producing RCC. The mixing plant shall follow ACI 327R-14.

The plant shall be capable of producing an RCC mixture in the proportions defined by the final approved mix design and within the specified tolerances. The capacity of the plant shall be sufficient to produce a uniform mixture at a rate compatible with the placement equipment. The minimum homogeneous production rate of any acceptable plant shall be 300 tons per hour. For batch mixers, the volume of RCC material in the mixing chamber shall not be more than the rated capacity for dry concrete mixtures. Multiple plants shall not be used to supply RCC material to the paver. The Engineer can halt operations if the plant is unable to produce the RCC mixture sufficiently in quality or quantity, until a plant meeting all requirements is obtained.

A pugmill plant is required and shall match that listed during the prequalification process unless a substitution is made which meets these specifications and is approved by the Engineer. It shall be a central plant with a twin shaft pugmill mixer, capable of batch or continuous mixing, equipped with synchronized metering devices and feeders to maintain the correct proportions of aggregate, cement, mineral

admixture, and water. Other pugmill plant requirements are as follows:

1. Aggregate Storage. The aggregate and sand must be furnished in 2 or more stockpiles. If previously blended aggregate is furnished, storage may be in a stockpile from which it is fed directly to a conveyor feeding the mixer. If aggregate is furnished in two or more size groups, aggregate separation must be provided at the stockpiles.

2. Aggregate Bin. Aggregate bins shall have a feed rate controlled by a variable speed belt, or an operable gate calibrated to accurately deliver any specified quantity of material. If two or more aggregate size stockpile sources are used, the feed rate from each bin shall be readily adjustable to change aggregate proportions, when required. Feed rate controls must maintain the established proportions of aggregate from each stockpile bin when the combined aggregate delivery is increased or decreased.

3. Plant Scales. Plant scales for any weigh box or hopper shall be either of beam or spring less-dial type, and be sensitive to 0.5 percent of the maximum load required. Beam-type scales shall have a separate beam for each aggregate size, with a single telltale actuated for each beam, and a tare beam for balancing hopper. Belt scales shall be of an approved design. Standard test weights accurate to plus or minus 0.1 percent shall be provided for checking plant scales.

4. Cement and Mineral Admixture Material Storage. Separate and independent storage silos shall be used for portland cement and mineral admixture. Each silo must be clearly identified to avoid confusion during silo loadings. If the Contractor chooses to pre-blend the cementations material he must employ blending equipment acceptable to the Engineer and demonstrate, with a testing plan, the ability to successfully produce a uniform blended material meeting the mix design requirements. Testing of the preblended cementations material shall be done on a daily basis to assure both uniformity and proper quantities.

5. Cement and Mineral Admixture Feed Unit. Satisfactory means of dispensing Portland cement and mineral admixture, volumetrically or by weight, shall be provided to assure a uniform and accurate quantity of cementations material enters the mixer.

6. Water Control Unit. The required amount of water for the approved mix shall be measured by weight or volume. The unit shall be equipped with an accurate metering device. The water flow shall be controlled by a meter, valve or other approved regulating device to maintain uniform moisture content in the mixture.

7. Surge Hopper. For continuous operating pugmills, a surge hopper attached to the end of the final discharge belt shall be provided to temporarily hold the RCC discharge to allow the plant to operate continuously. No other stockpiling shall be permitted. For batch mixers, discharge all material in the mixing chamber before recharging.

Alternative Mixing Equipment. Other types of batching and mixing equipment and

configurations other than twin shaft pugmill mixers may not be used. This includes but is not limited to dry batch plants, central mix tilt drum plants, ready mix truck mixers, volumetric concrete trucks and trailers.

The mixing time shall be pre-established by uniformity studies conducted, as provided in ACI 327R-14, Section 8.2 “Roller-compacted concrete mixing plants.”

Locate the mixing plant within 30 minutes hauling time from the construction site, when non-agitating vehicles are used for delivery. The supplier may request a longer hauling time not exceeding 60 minutes, provided the documentation is submitted evidencing that properties of fresh RCC are suitable and allow for convenient and proper placement and consolidation.

Prior to commencement of RCC production, the Contractor shall carry out a complete and comprehensive calibration of the plant in accordance with the manufacturer's recommended practice. All scales, containers and other items necessary to complete the calibration shall be provided by the Contractor. After completion of the initial calibration, the plant shall be recalibrated as directed by the Engineer.

The transportation of the RCC to the areas to be paved, with the exception of concrete mixed in truck mixers, shall be in dump trucks fitted and equipped, when necessary, with retractable protective covers for protection from rain or excessive evaporation. The trucks shall be dumped clean with no buildup or hanging of RCC material. The dump trucks shall deposit the RCC material directly into the hopper of the paver or into a secondary material distribution system which deposits the material into the paver hopper. Dump truck delivery must be scheduled so that RCC material is spread and compacted within the specified time limits. Access routes shall be clearly marked over the area to be constructed. Haul time should not exceed 20 minutes without addition of admixtures which have proven to successfully maintain moisture content levels in RCC.

43-4.02C General Requirements: Method of production of RCC shall assure that concrete proportions comply with the design quantities of ingredients, as provided by the approved statement of concrete mix design, and that concrete is mixed uniformly. For central batch plants mixing time shall be established by uniformity testing per the procedure provided in ASTM C94.

43-4.02D Accuracy of Batching, Tolerances: Accuracy of batching (namely weights of cementing materials and aggregates, weight or volume of water, and volumes of liquid chemical admixtures) comply with tolerances specified in ASTM C94 or C685, as applicable.

The Contractor shall supply daily plant records of production and quantities of materials used that day to the Engineer.

43-4.02E Change of Material Source: If the type or source of cementing materials, or aggregates, or type of chemical admixtures changes, the production of RCC must be suspended, and a new mix design shall be developed and submitted for approval.

43-4.02F Pavement Test Section:

1) Construct a 150-foot long test section prior to starting construction. Construct the test section using the proposed mixture design, and the materials and

equipment that are listed in the pavement construction plan and approved by the Engineer. If the pavement placement requires more than one pass of the paver, construct the test section a minimum of two paver widths wide. If the pavement placement requires more than one lift, construct the test section to the required number of lifts. Place the test section in a location approved by the Engineer.

The Engineer shall evaluate the following criteria from the test section:

- Adequacy of the production method and equipment to meet productivity requirements and produce uniform RCC.
- Maximum density directly behind the paver prior to roller compaction.
- Suitability of the proposed lift thickness.
- Sequence of primary/secondary roller passes (with and without vibration).
- Maximum density following roller compaction.
- Texture and surface finish acceptability.
- Integrity of both fresh and cold joints (vertical and horizontal).
- Compressive strength of RCC based on molded cylinders and extracted cores tested at 7 days.

2) Construction (Cold) Joint Edges. The Contractor shall establish the maximum angle for edges to be used in joint faces of construction (cold) joints.

3) If the test area complies appears to be acceptable, it may be incorporated into the Work. If the test area does not meet acceptance requirements, the Contractor shall remove and reconstruct a new test section with corrected procedures at no additional cost to the City.

43-4.02G Placement:

(1) Prior to RCC placement, the surface of the subgrade/subbase shall be clean and free of foreign material, ponded water and frost prior to the placement of the RCC pavement mixture. The subgrade/subbase must be uniformly moist at the time of RCC placement. If sprinkling of water is required to remoisten certain areas, the method of sprinkling shall not be such that it forms mud or pools of free-standing water. Prior to placement of RCC, the subgrade/subbase shall be checked for proper density and soft or yielding areas.

(2) Paver Requirements. RCC shall be placed with an approved paver as noted in these specifications and shall meet the following requirements:

(A) The quantity of RCC material in the paver shall not be allowed to approach empty between loads. The material shall be maintained above the auger shaft at all times during paving.

(B) The paver shall operate in a manner that will prevent segregation and produce a smooth continuous surface without tearing, pulling or shoving. The spread of the RCC shall be limited to a length that can be compacted and finished within the appropriate time limit under the prevailing air temperature, wind, and climatic conditions.

(C) The paver shall proceed in a steady, continuous operation with minimal starts and stops. Paver speed during placement operations shall not exceed the speed necessary to ensure that minimum density requirements are met and surface distress is minimized.

(D) The surface of the RCC pavement once it leaves the paver shall be smooth, uniform and continuous without excessive tears, ridges or aggregate segregation.

(E) Lift Thickness. Place RCC in a single 8-inch lift. Multiple lifts are not allowed.

(F) Adjacent Lane Placement. All longitudinal joints must be considered a cold joint and shall be prepared in accordance with these Special Provisions. Fresh joints will only be allowed under special circumstances at the Engineer's discretion. In that case, the adjacent paving lane shall be placed within 30 minutes and additional precautions may be necessary to avoid excessive moisture loss at the joint such as the use of set retarding admixtures, water misting, and blankets.

(G) Hand Spreading. Broadcasting or fanning the RCC material across areas being compacted shall not be permitted. Additions of material may only be done immediately behind the paver and before any compaction has taken place. Any segregated coarse aggregate shall be removed from the surface before rolling.

(H) Segregation. If segregation occurs in the RCC during paving, operations shall cease until the cause is determined and corrected.

(I) RCC placement shall be done in a pattern so that the curing water from the previous placements will not pose a runoff problem on the fresh RCC surface or on the subbase layer.

43-4.02H Compaction:

(1) Compaction shall begin immediately behind the placement process and shall be completed within 60 minutes of the start of mixing cementing materials with water. The time may be increased or decreased at the discretion of the Engineer depending on use of set controlling admixtures, initial concrete temperature, and/or ambient weather conditions (temperature, wind velocity and humidity).

(2) Rolling. Apply the sequence and number of passes by vibratory and non-vibratory rolling to obtain the specified density proposed in the paving construction plan and verified during construction of the test section. Do not operate rollers in the vibratory mode while stopped. Use steel drum rollers in static mode and/or rubber-tire rollers for final compaction.

(3) Rolling Longitudinal and Transverse Joints. If a cold joint is planned, the complete lane shall be rolled and cold joint procedures shall be followed per these specifications. If the Engineer approves fresh joint construction, the roller shall not operate within 24 in. of the edge of a freshly placed lane until the

adjacent lane is placed. Then both edges of the two lanes shall be rolled together within the allowable time.

(4) Longitudinal joints shall be given additional rolling as necessary to produce the specified density for the full depth of the lift in order to achieve a tight smooth transition across the joint. Any uneven marks left by vibrating rolling shall be smoothed out by non-vibrating or rubber tire rolling. The surface shall be rolled until a relatively smooth, flat surface, reasonably free of tearing and cracking is obtained. For freshly placed RCC next to an existing cold joint, roll the complete lane, taking extreme care not to bridge the roller drum between the new unconsolidated fresh material and a previous cold joint edge. Such bridging of roller drum over cold joint edges, especially in vibratory mode, can significantly degrade the cold joint edge.

(5) Speed of the rollers shall be slow enough at all times to avoid displacement of the RCC pavement. Displacement of the surface resulting from reversing or turning action of the roller shall be corrected immediately.

(6) Compact areas inaccessible to large rollers with small drum rollers, walk-behind vibratory rollers or plate tampers. Portland cement concrete meeting the same strength requirements as specified for RCC may be used in these areas as a replacement for RCC. Portland cement concrete shall meet the requirements of Section 40 of the Standard Specifications.

43-4.02I Formation of Joints:

(1) Fresh Vertical Joints. Fresh longitudinal joints will only be allowed under special circumstances under the approval of the Engineer. A vertical joint shall be considered a fresh joint when an adjacent RCC lane is placed within 30 minutes of the batch time of the previous lane. This time may be reduced depending on ambient conditions, as well additional precautions may be necessary to avoid excessive moisture loss at the joint such as the use of evaporation retarders, fogging, and curing mats.

(A) Fresh longitudinal joints shall be constructed prior to placement of an adjacent lane by leaving the outer 24 inches of the freshly placed lane uncompacted during rolling. Then both edges of the two lanes shall be rolled together within the allowable time.

(B) Adjacent lanes shall be placed such that the new lane abuts tightly against the incomplete edge of the prior lane.

(C) The joint formed by both lanes shall be compacted by centering the roller drum over the joint and compacting both edges simultaneously.

(D) Extra passes of the roller may be required at the joint to achieve the required density.

(2) Cold Vertical Joints. Any planned or unplanned construction joints that do not qualify as fresh joints shall be considered cold joints and shall be treated as follows:

(A) Longitudinal and Transverse Cold Joints. Formed joints that do not meet the minimum density requirements and all unformed joints shall be cut vertically for the full depth or produced using an edging shoe. The vertical cut shall be at least 6 inches from the exposed edge. Do not perform this operation any sooner than 2 hours after final compaction. Demonstrate to the Engineer that saw cutting will not cause significant edge raveling and remove all slurry and excess material from the cutting operation.

If the Contractor can demonstrate that he can construct a cold vertical joint that can meet the minimum joint density requirements using an "edge shoe," then the use of the edge shoe in lieu of cutting a cold vertical joint is allowed. The edge shoe should be as close to vertical as possible with the maximum allowable positive edge angle being of 10 degrees from vertical.

Cold joints cut after two hours of placement shall be saw-cut 1/4 to 1/3 depth of the RCC pavement with the rest removed by hand or mechanical equipment. Any modification or substitution of the saw cutting procedure must be demonstrated to and accepted by the Engineer. All excess material from the joint cutting shall be removed.

(B) Prior to placing fresh RCC mixture against a compacted cold vertical joint, the joint shall be thoroughly cleaned of any loose or foreign material. The vertical joint face shall be wetted and in a moist condition immediately prior to placement of the adjacent lane.

(C) Uneven surfaces or slopes greater than as determined for "Cold Joint Edges" shall be cut vertically for the full depth of the RCC.

(D) The rollers shall pass over the end of the freshly placed RCC mixture when a vertical cold joint is to be made. Unless the RCC cold joint has been formed by an edging shoe, the edge of the previously placed RCC pavement shall be cut back to expose an even vertical surface for the full thickness of the course without disturbance of the RCC that is to remain in place. Uneven areas and raveling shall be corrected.

(E) The top layer shall be placed so that longitudinal joints in that layer will coincide with joints in the lower layers of the pavement. Transverse joints in the top layer shall coincide with transverse joints in the lower layers of the pavement.

(3) Fresh Horizontal Joints. For multi-layer construction, a horizontal joint shall be considered a fresh joint when a subsequent RCC lift is placed within 30 minutes of the batch time of the previous lift. This time may be adjusted at the discretion of the Engineer depending on use of retarders or ambient weather conditions. Fresh joints do not require special treatment other than cleaning the surface of all loose material and moistening the surface prior to placement of the subsequent lift.

(4) Horizontal Cold Lift Joints. For horizontal cold joints the surface of the lift shall be kept continuously moist and cleaned of all loose material prior to placement of the subsequent lift. The use of a cement slurry or mortar grout between lifts is required. If supplementary bonding materials are used, they shall be applied

immediately prior to placement of the subsequent lift.

(5) RCC Pavement Joints at Structures. The joints between RCC pavement and concrete structures shall be treated as isolation vertical joints.

(6) Control Joints. Control joints shall be constructed in the RCC pavement to induce cracking at pre-selected locations. Joint locations shall be as shown on the Plans or as directed by the Engineer. Early entry saws shall be utilized as soon as possible behind the rolling operation and set to manufacturer's recommendations. Saw crack control joints to the interval specified on the plans. The depth of the crack control joints shall be equal to 1/3 of the thickness of RCC pavement. The width of the crack control joints shall be 1/8". Extend all crack control joints the entire width of paving. When sawing crack control joints, begin as soon as the RCC cuts without excessive raveling along the saw cut and finish before conditions induce uncontrolled cracking, regardless of the time or weather.

(7) Isolation Joints. Line the perimeter of fixed structures such as manholes and valves, as noted in the plan details prior to paving.

43-4.02J Finishing: Where indicated on the plans and as directed by the Engineer, the RCC pavement shall be troweled and broom finished.

Use self-propelled machine trowels.

Determine the number of machine trowels required to perform the work at a rate equal to the concrete delivery rate. When the time from concrete placement to machine trowels finishing exceeds 30 minutes, stop concrete delivery. When machine trowels are in proper position, you may resume concrete delivery and paving.

Trowels must be equipped with devices that adjust the underside to a true flat surface. Perform texturing with a broom device that produces striations parallel to the centerline.

43-4.03 Curing:

(1) General. Immediately after final rolling and compaction testing use an approved curing method outlined below.

(2) Water Cure. Water cure shall be applied by water trucks equipped with misting spray nozzles, soaking hoses, sprinkler system or other means that will assure a uniform moist condition to the RCC. Application of this moisture shall create fog or mist immediately above concrete surface and must be done in a manner that shall not wash out or damage the surface of the finished RCC pavement. The surface of the RCC pavement shall be kept continuously moist for three (3) days.

(3) Curing Compound. A white pigmented membrane forming curing compound conforming to ASTM C 309 or D 977 shall be applied at a rate of 150 sf / gallon no later than one hour after completion of finishing operations on the surface and edges of RCC. This application must ensure a uniform continuous (free of uncured areas) membrane across the entire RCC pavement. If the application rate is found to be insufficient, the Contractor, with approval of the Engineer,

can increase the application rate to a level which achieves a void-free surface without ponding. In case the minimum rate of application is specified otherwise by manufacturer's recommendations, the highest application rate shall govern.

(4) Sheet Materials. Curing paper, plastic and other sheet materials for curing RCC shall conform to ASTM C 171. The coverings shall be held securely in place and weighted to maintain a close contact with the RCC surface throughout the entire curing period. The edges of adjoining sheets shall be overlapped and held in place with sand bags, planking, pressure adhesive tape, or other City-approved method. Sheet material shall be provided and kept readily available to cover pavement less than 12 hours old if rainfall occurs.

43-4.04 Contractor's Quality Control:

43-4.04A Quality Control: The Contractor shall provide any and all quality control (QC) inspection and testing that the Engineer deems necessary to properly control the quality, consistency, and uniformity of the RCC produced and placed. Frequency of quality control tests is specified in Table 2. The Contractor shall make available to the Engineer any information and data collected by quality control inspection and testing. Before the paving work starts, the Contractor may employ an independent testing laboratory for controlling RCC materials, thickness of pavement, and strength of the RCC. The independent testing laboratory shall demonstrate compliance with ASTM C1077 and be CCRL audited and AMRL accredited for the scope of testing to be performed.

Lots shall be 250 cubic yards.

Should compressive strength of RCC pavement established by testing of formed cylinders be below the minimum specified compressive strength, the Contractor is allowed to obtain condition and test cores according to ASTM C42 and C39. The cores shall be tested in no later than 10 days after the specification age and before the pavement is opened to traffic. A location represented by 3 cores is considered to be adequate to the specified strength, if the average of three cores is not less than 85% of the specified strength with no individual strength being below 75% of the specified strength.

The Contractor shall be responsible for developing the RCC mix required by these specifications.

Contractor shall allow the City to inspect the mixing plant for verification of weights or proportions and character of material in the preparation of RCC mix.

Inspection or testing by the City will not augment or replace Contractor quality control nor relieve him of his contractual responsibility.

Conduct quality control testing during placing operations to ensure the RCC material is placed, compacted, finished and cured in accordance with the requirements in **Table 2**.

Table 2: Quality Control Requirements at Placement Site

Item	Method	Frequency or Lot Size	Acceptance
RCC Moisture Content	ASTM C566	Sample at mixing plant or point of placement from initial truck load and as required	±1.0% of optimum moisture content per ASTM D1557
In-place Wet Mat Density	ASTM C1040 direct transmission mode	At beginning of placement immediately behind the paver and within 30 minutes of final compaction; One Test per lot	At least 98% of the maximum laboratory wet density by ASTM D1557 based on an average of four consecutive tests with no test below 96%
In-place Wet Joint Density	ASTM C1040 direct transmission mode	One Test per lot and within 30 minutes after final compaction	At least 96% of the maximum laboratory wet density by ASTM D1557 based on an average of four consecutive tests with no test below 94%
Cylinders for Compressive Strength	ASTM C1435 for molding cylinders; ASTM C31 for curing and handling cylinders; and ASTM C39 for testing cylinders	One set of three cylinders minimum for every lot of paving, or one day of production, whichever is less.	Average strength equal to 100% of the specified strength per these specifications, no single result below 90%.
Surface Smoothness	See Acceptance Criteria, TBD	One Test per lot	See Acceptance Criteria, TBD
Thickness	ASTM C42, ASTM C174	One core for per lot, or one day of production, whichever is less.	See Acceptance Criteria, TBD

43-4.04B Testing Plan: The Contractor is responsible for determining and submitting quality control testing plan as a part of QC Plan.

43-4.05 Quality Assurance and Acceptance Criteria:

43-4.05A General:

(1) The Contractor shall provide safe and convenient access, acceptable to the Engineer, for inspection and sampling of the RCC and shall cooperate in the inspection and sampling process when requested to do so.

(2) The Contractor shall have major equipment items such as batch plant, rollers, pavers, trucks and similar items, available for inspection by the City. Deficiencies in quality, quantity, or types of equipment shall be corrected prior to starting Work. This inspection and approval shall in no way relieve the Contractor from the obligation to provide the equipment required to perform the Work.

(3) RCC plant inspections will be conducted at random to check the settings, operation, materials, proportions and uniformity of concrete produced. The Engineer will order the plant shut down if deficiencies are found, such as but not limited to deviation from approved job-mix formula, segregation in the mix, or inconsistent plant operation. The Contractor shall generate computer printouts of batching and delivery tickets in compliance with ASTM C94, or C685 and provide them to the Engineer. The Contractor shall provide to the satisfaction of the Engineer his corrective actions prior to re-starting production.

43-4.05B Thickness Requirements: Determine the pavement thickness from cores by average caliper measurements in accordance with ASTM C174. Extract one core for each lot of RCC pavement per **Table 2**.

For pavement placement units consisting of less than one lot of RCC pavement, include the pavement with the previous or next placement unit.

43-4.05C Defective Area Correction for Pavement Thickness: A pay adjustment according to Table 3 will be considered for RCC pavement that does not fully meet the specification for thickness and surface texture. These adjustments will be applied to each area of proposed pavement. Limits of area subject to pay factor to be determined by the Engineer. Contractor shall be responsible for taking additional samples to assist the Engineer in determination of limits of deficient area. If a core is found to be deficient in thickness, two additional cores shall be taken at the Contractor's expense to determine the extent of the deficiency. Limits of deficient areas are to be determined by the City.

Table 3: Pay Adjustment Table for Thickness

Inches	Percent Payment
0.00 to 0.24	100
0.25 to 0.49	90
0.50 or greater	Remove and replace

43-4.05D Density Requirements: In-place Wet Mat Density Determination. Determine the In-place Wet Mat Density on pavement that is at least 24 inches from any joint in accordance with ASTM C1040 Direct Transmission mode at 75% of total RCC pavement depth for each lot of RCC pavement per **Table 2**.

For pavement placement units consisting of less than one lot of RCC pavement, include the pavement with the previous or next placement unit.

In-place Wet Joint Density Determination. Determine the In-place Wet Joint Density on joints at distance 12 inches or greater for free edge and 6 inches or greater for a confined edge accordance with ASTM C1040 Direct Transmission mode for each lot of RCC pavement per **Table 2**.

For pavement placement units consisting of less than one lot of RCC pavement, include the pavement with the previous or next placement unit.

Defective Area Correction for Density. For In-place Wet Mat Density and In-place Wet Joint Density, full payment will be made for pavement based on the acceptance criteria in **Table 2**.

Pavement lots that have density that is less than the required density are subject to further evaluation. Take an additional test within a 5 to 8 foot radius, of the original test (within the same placement unit). If this test is below the acceptance criteria in **Table 2**,

additional roller passes shall be made across the full lane width between the last testing location that produced an acceptable reading and the paver. If the additional roller passes does not correct the problem, or causes the density to decrease, the paving operation shall be discontinued until corrections can be made to assure that the specified density can be achieved.

43-4.05E Strength Requirements: Strength Determination. Determine the Compressive Strength for cylinders prepared in accordance and for each lot of RCC pavement per **Table 2**.

For pavement placement units consisting of less than one lot of RCC pavement, include the pavement with the previous or next placement unit.

Remedial Action for Deficient Strength. Full payment will be made for cylinders meeting the requirements of the mix design, whose average strength equal to 100% of the specified strength, with no single result below 90%.

Pavement lots that have strength that are less than the required strength are subject to further evaluation.

Extract three cores at random locations in the suspect area after the RCC pavement is at least 28 days old. Remove, handle and test the compressive strength of the three cores according to ASTM C42.

Determine the average and standard deviation of the compressive strength of the three cores. If the average of the three cores exceeds 85% of the minimum specified compressive strength, the RCC in the sublot is acceptable and is subject to full payment and acceptance. If the average strength of the three cores is less than 85% of the specified compressive strength, the RCC is not acceptable and requires removal.

Removal and Replacement**.** Areas determined to have strength deficiencies that are not resolved through referee testing, as noted above, require removal and replacement. After the referee period or at least seven days, remove the hardened RCC material by saw cutting the perimeter of the deficient area full depth. Repair the area using an air-entrained cast-in-place concrete meeting the strength requirements per these specifications or as directed by the Engineer. The new concrete shall be doweled into the existing RCC layer using dowel bars. Please refer to Caltrans Standard Plan P10 in Appendix G.

43-4.05F Surface Requirements:

(1) Smoothness for RCC Pavements. The RCC pavement shall conform to the concrete pavement smoothness requirements in Section 40 of the Standard Specifications.

(2) Defective Area Correction for Smoothness. When the surface smoothness is outside the specified surface tolerance, the Contractor shall grind the surface to within the tolerance by use of self-propelled diamond grinders, provided grinding does not create deviation from other tolerances. Milling of the final surface is not acceptable, unless it is for the removal of the pavement. After correction, verify the corrective work by measuring the smoothness as noted in the above section.

(3) Surface Texture. The final surface texture after rolling and curing shall be smooth and uniform over the entire area of pavement and will reasonably match the surface condition of the test strip. The surface area shall be free of rips, bird baths, areas of loose aggregate, surface pitting, voids or indentations, pockmarks, surface tears greater than 1/4" depth and 1/4" width, check cracking, segregation or rock pockets, pumped areas, aggregate drag marks, and areas where fines have been washed away during the curing process.

(4) Defective area correction for surface texture. Correct surface texture deficiencies using an approved grinding device, or removal and replacement.

43-4.05G Restoration After Quality Assurance Testing: The Contractor shall fill the core holes with Portland cement concrete as directed by the Engineer. Concrete shall meet the requirements of Section 40 of the Standard Specifications.

43-5 Measurements and Payments: Roller Compacted Concrete (F), a final pay quantity, shall be paid for at the contract price per **cubic yard**, which price shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, and for doing all work involved in constructing Roller Compacted Concrete, complete in place, including but not limited to pavement test section, mixing, admixture, hauling, temporary batch plant including mobilization, **placement, compaction, finishing, curing, sawing concrete, cleaning and sealing concrete joints, furnishing and placing all sawed joints, construction joints, joint sealants, other type required joints, or load bearing devices, test panels, quality control testing, and repair of any damage or deficiencies,** as shown on the drawings, as specified in these specifications and as directed by the Engineer. All pavement accepted by the Engineer will be paid at the Contract unit price for this Item, except for lots requiring price adjustments for

deficiencies.

The estimated quantities for such specific portion of the work shall be considered as approximate only and no guarantee is made that the quantities shown on the plans will equal the estimated quantities. No allowance shall be made in the event that the quantities based on computations do not equal the estimated quantities.

SECTION 56
SIGNS

56-2.01 Description: This work shall consist of the installation and relocation of street signs as shown on the plans, where directed by the Engineer, and shall conform to the City Specifications. Special attention is directed to Section A, Fees and Permits, regarding Caltrans Encroachment Permits.

Where signs are shown on the plans as relocated or removed from existing sidewalk, the signs pole shall be ground flush with the existing sidewalk surface and the void filled with grout.

56-2.02 SB1 Funding Signs: The Senate Bill 1 (SB1) project funding identification signs (C47C(CA)) must comply with the detail provided and as follows:

Sign must comply with the specifications for Project Funding Identification signs in Section 6F-109(CA) of the California MUTCD and at the MUTCD website. The sign must be a wood-post sign complying with Standard Specification Section 82-3. The sign panels must be framed, single-sheet aluminum panels complying with Standard Specification Section 82-2. The background on the sign must be Type XI retroreflective sheeting. The Type XI retroreflective sheeting must be on the Authorized Material List for signing and delineation materials. The legend must be retroreflective except for the nonreflective black letters and numerals. The blue and fluorescent orange must match the FHWA's color specifications available at the FHWA MUTCD website. Sign dimensions shall be 96-inch by 60-inch.

Sign may include additional information such as City of Santa Rosa logo, project name, year of completion and/or City website address, if requested by the Engineer.

56-2.06 Payment: Install Street Sign shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment including new threaded 2-inch pole and extensions (as needed), mounting hardware, foundation and doing all work involved in providing and installing street signs, complete as specified herein, and no additional allowance will be made therefore.

Relocate Street Sign shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment including mounting hardware, removing and grinding existing sign pole (as needed), grouting sidewalk and doing all work involved in relocating existing signs complete as specified herein, and no additional allowance will be made therefor.

SB1 Funding Sign shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment including mounting hardware and doing all work involved in furnishing and installing SB1 Funding Signs complete as specified herein, and no additional allowance will be made therefor.

SECTION 65
REINFORCED CONCRETE PIPE

65-1.01 Description: Reinforced concrete pipe shall be installed on the alignment and grade as shown on the plans and in accordance with the applicable provisions of Section 65 of the City Specifications and the Standard Specifications. Contractor shall provide final construction drawings for the storm drain manhole (See Plans for conceptual preliminary design). The construction drawings shall be stamped by the Contractor's licensed Civil Engineer.

Fulton Road at Darla Drive has a history of settlement and sink holes. Maintenance crews have been filling these voids with controlled density fill (CDF) and asphalt concrete. 9 yards of CDF was used to fill a void in 2001. Unstable soil conditions and concrete removal should be anticipated. Contractor shall pothole as needed to avoid damage to existing underground facilities

Back water from Irwin Creek impacts the storm drain system. The existing storm drain system shall be dewatered and bypassed to during manhole installation work. Contractor shall submit a dewatering and bypass plan no later than 1 week after the notice to proceed. Equipment such as generators shall have sound attenuation as needed to reduce noise to 45 dB or less. The Contractor shall have a minimum of two working pumps available for immediate use at all times. Work shall be performed so that 2-way travel is provided at all times.

65-1.10 Payment: Storm Drain Manhole shall be paid for at the contract price **each**, which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all the work involved in installing the manhole complete in place as shown on the plans, as specified herein, including design, potholing, trench bracing, shoring, dewater and bypass implementation, concrete and CDF removal and no additional allowance will be made therefor.

65-2 Trench Bracing and Shoring

65-2.01 Description: All bracing and shoring shall conform to Section 7-1.02K(6)(b)(1) of the Standard Specifications and the Division of Industrial Safety Construction Safety Orders which are currently in use.

The Contractor shall take all necessary measures to protect the workmen and adjacent areas and structures from the hazards of the trenching or excavation operations.

65-2.05 Payment: Full compensation for conforming to this section shall be considered as included in the prices paid for Storm Drain Manhole and no additional compensation will be allowed.

SECTION 73
CONCRETE CURBS AND SIDEWALKS

73-1.01A Summary: This work shall consist of minor concrete site work and includes curbs, gutters, sidewalks and curb ramps, and shall be constructed at the location shown on the plans and in conformance to the requirements of Section 73 of the City Specifications, and Standard Specifications.

73-1.01E 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 pound per 94-pound sack of cement (approximately 6 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.

73-2.03 Construction: Curb and gutter shall be constructed in conformance to City STD-241, and Section 73-1.05 of the City Specifications, at locations shown on the plans.

All concrete which is to be removed shall be removed to the nearest construction joint or as directed by the Engineer.

73-3.03 Sidewalk, Curb Ramp: Sidewalk and curb ramps shall be constructed in accordance with the details and at the location shown on the plans and in conformance to the requirements of Section 73 of the City Specifications with the following modifications and additional requirements. There is no separate pay item for sidewalk improvements. All concrete work, including sidewalk replacement related to curb ramp work, shall be considered in the contract price paid for curb ramp.

Curb Ramp shall be constructed at the locations shown in these special provisions per California Building Codes 11B-406.2, 11B-406.3 and 11B-406.5 except the thickness shall be 4" minimum. For purposes of payment, sidewalk shall be considered as curb ramp and detectable warning surface shall be considered as included in the price paid for curb ramp. The curb and gutter component shall be paid separately.

Curb locations are provided in the plans. You are responsible to correctly interpret the CBC Codes and construct each curb ramp per specified type. City shall provide construction staking only for the midpoint of each landing at face of curb.

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

Utility boxes shall be adjusted to grade as needed.

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

Sidewalk and curb ramp shall be cured in accordance with the requirements of Section 90-7 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.

All oil, paint, tire marks, and other discoloring shall be removed from the driveway, island paving, curb ramp, and gutter depression 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.

73-2.04 Payment: Curb and Gutter shall be paid for at the contract price per **linear foot**, which price shall include full compensation for furnishing and applying curing materials, forming and constructing curb openings for driveways, ramps, removing discoloring, furnishing all labor, materials, tools and equipment and doing all the work involved in constructing curb and gutter complete in place as specified, including furnishing and placing expansion joint filler, constructing weakened plane joints, excavating, and backfilling.

73-3.04 Payment: Full compensation for Detectable Warning Surface shall be considered as included in the contract price paid for Curb Ramp and no additional allowance will be made therefor.

73-4.04 Payment: Curb Ramp shall be paid for at the contract price per **square foot**, which price shall include full compensation for furnishing and applying curing materials, removing discoloring, furnishing all labor, materials, tools and equipment and doing all the work involved complete in place as specified, including furnishing and placing expansion joint filler, adjusting utility boxes to grade, constructing weakened plane joints, detectable warning surfaces, excavating, and backfilling.

SECTION 84
TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-1.01 General: Attention is directed to Section 12 "Temporary Traffic Control" and Section 15 "Existing Facilities" of these Special Provisions. Traffic stripes and pavement markings shall conform to the applicable provisions of Section 84 of the Standard Specifications, The City Traffic Standards, and these Special Provisions and shall be placed at the locations shown on the Plans.

You shall provide and install temporary retro-reflective pavement markings on the same day as the existing permanent markings are removed, destroyed or overlaid, or as directed by the Engineer, and maintain them until the new permanent markings are in place.

Temporary striping on all ground surfaces shall be paint (white and/or yellow) with retro-reflective glass beads and shall be installed the same day as the existing permanent striping is removed, or as directed by the Engineer. Temporary striping shall be maintained until new permanent striping is in place.

Existing pavement markings, including crosswalks, disturbed by construction activities shall be replaced in their entirety.

All striping to be replaced shall match existing sections in kind unless approved by the Engineer.

Permanent traffic stripes and pavement markings shall be installed after all iron has been raised for that particular street section, but no more than five days after final paving for that section of roadway.

Existing stripes and pavement markings to remain, which are damaged by the work shall be replaced at the Contractor's expense. This includes areas outside the immediate project limits.

Painted curbs which are damaged or replaced as part of the work shall be repainted to match existing conditions.

All 6" Thermoplastic Lines shall receive an 8" painted black stripe beneath it and all 8" Thermoplastic Lines shall receive a 10" painted black strip beneath it when located on RCC pavement. All pavement markings shall have black paint beneath them including a 1" black border when located on RCC pavement.

All median noses shall be painted with yellow reflective paint per City Standard 721.

84-1.04 Payment: **6" Thermoplastic Bike Lane Line, 6" Thermoplastic Bike Lane Line Dashed, 8" Thermoplastic Lane Line, 8" Thermoplastic Lane Line Dashed** shall be paid for at the contract price per **linear foot**, which price shall include furnishing all thermoplastic and glass beads, thermoplastic pavement marking material and furnishing all equipment, tools, and labor, and doing all the work involved as herein specified, including but not limited to, eradication of existing traffic stripes and pavement

markings, surface preparation, replacement of damaged stripes, temporary traffic stripes and pavement markings, all temporary traffic measures, and any other work required to install traffic stripes and pavement markings not specifically enumerated in the City Standards, these Special Provisions or on the Project Plans, and no additional allowance will be made therefor.

12" Thermoplastic Crosswalk and Limit Lines and Thermoplastic Pavement Markings shall be paid for at the contract **square foot** price, which price shall include furnishing all thermoplastic and glass beads, thermoplastic pavement marking material and furnishing all equipment, tools, and labor, and doing all the work involved as herein specified, including but not limited to, eradication of existing traffic stripes and pavement markings, surface preparation, replacement of damaged stripes, temporary traffic stripes and pavement markings, all temporary traffic measures, and any other work required to install traffic stripes and pavement markings not specifically enumerated in the City Standards, these Special Provisions or on the Project Plans, and no additional allowance will be made therefor.

All 12" Thermoplastic Crosswalk and Limit Lines shall receive an 14" painted black stripe beneath it when located on RCC pavement. All pavement markings shall have black paint beneath them including a 1" black border when located on RCC pavement.

Payment for 8" 10" and 14" painted black stripes when located on RCC pavement shall be considered as included in the various contract prices paid for traffic stripes and pavement markings and no additional compensation shall be made.

Payment for 1" painted black borders around pavement markings when located on RCC pavement shall be considered as included in the contract price paid for Thermoplastic Pavement Marking and no additional compensation shall be made.

Payment for yellow reflective paint on all median noses per City Standard 721 shall be considered as included in the various contract prices paid for traffic stripes and pavement markings and no additional compensation shall be made.

SECTION 85
PAVEMENT MARKERS

85-1.01A Summary: Raised pavement markers shall be replaced where required to be removed to accommodate the proposed improvements at the locations shown on the Plans and in accordance with the applicable provisions of Section 85 of the Standard Specifications, these Special Provisions and the City of Santa Rosa Traffic Standards.

The exact location and limits of raised pavement markers will be determined in the field by the Engineer.

Existing raised pavement markers conflicting with the proposed striping shall be removed immediately prior to placement of new markers.

Existing raised pavement markers to remain, which are damaged by the Contractor, shall be replaced.

Raised pavement markers, non-reflective shall be ceramic.

Raised pavement markers shall be installed the day following paving.

Pavement Markers Reflective and Non-Reflective shall receive a 6" painted black stripe, at gaps of 8'-6" when located on RCC pavement.

There are approximately 278 yellow reflective pavement markers to be installed on the median islands per Caltrans Standard Plan A20B. There are 4 blue reflective pavement markers to be installed per the project plans. The remaining reflective pavement markers are for traffic lane delineation.

Object markers are to be installed on median islands as shown on the plans per CAMUTCD Type Q.

85-1.04 Payment: Pavement Markers Reflective and Pavement Markers Non-Reflective, 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 doing all work involved in placing raised pavement markers, complete in place, including adhesives, removing existing pavement markers, and no additional allowance will be made therefor.

Payment for 6" painted black strip when located on RCC pavement shall be considered as included in the contract prices paid for Pavement Markers Reflective and Non-Reflective and no additional compensation shall be made.

Object Markers, 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 doing all work involved in placing object markers, complete in place, including adhesives, removing existing pavement markers, and no additional allowance will be made therefor.

SECTION 86
ELECTRICAL SYSTEMS

86-1 General

86-1.01 Description: The Contractor shall furnish and install or modify traffic signal system(s) and street lighting system(s) at the location(s) shown on the plans in conformance with the applicable provisions of Section 86, "Electrical Systems", of the Standard Specifications, Standard Plans, the City Traffic Standards, these special provisions, and as directed by the Engineer.

Not all existing wires or interconnect may be shown on the plans and can be shallow. Depths must be verified by Contractor by means of potholing, as needed, prior to any work.

86-1.07 Scheduling of Work: Scheduling of work shall conform to Section 86-1.07 of the Standard Specifications except that no traffic signal system turn-on shall be scheduled for Monday, Friday, or the day before or after a legal State holiday.

86-2 Materials and Installation

86-2.01 Excavating and Backfill: All trench spoils shall be removed from the work area as they are generated.

Native material shall not be used as trench backfill.

Where conduit containing conductors of 100 volts or less is installed parallel and adjacent to the existing gutter lip, the trench shall be approximately two inches wider than the outside diameter of the conduit and shall not exceed six inches in width. Trench depth shall not exceed conduit trade-diameter plus ten inches, except that at pull boxes the trench may be hand dug to required depth. The conduit shall be placed in the bottom of the trench with a minimum of 24 inches of cover.

Where existing facilities prevent installing conduit with 24 inches of cover, the Contractor shall depress the new conduit under the existing facilities without exception.

Trench backfill and surfacing for trenches shall conform to City STD.-215 or as shown on the plans.

86-2.05 Conduit: Conduit shall conform to Standard Specifications and Part IV-F of the City Traffic Standards.

Conduit shall be installed prior to HMA or RCC paving operations.

Any new conduit runs from pull box to pull box shall be a single 3-inch PVC Schedule 40. Elbows shall have a minimum 36-inch radius.

All new conduit ends containing 48 backbone fiber optic cable shall be sealed using MaxCell, or approved equal, self-inflating bags.

Any existing conduit that needs to be reconfigured to enter a pull box may use standard sweeps for the elbows.

All new conduit installations shall have a minimum of 24 inches of cover.

Trenching depth shall be per Section 86-2.01 of these Special Provisions.

86-2.06 Pull Boxes: Pull boxes shall conform to STD 730 of the City Traffic Standards, these Special Provisions and Section 86-2.06 of the Caltrans Standard Specifications.

All existing pull boxes to receive new conductors and/or conduits shall be cleaned out, all existing grout removed, and the bottoms re-grouted with a drain hole or the boxes replaced to meet current City Standards.

All pull boxes containing new fiber optic cable shall receive a new pull box cover labeled with legend FIBER OPTIC.

86-2.07 Fabric Innerduct: Fabric Innerduct shall be MaxCell Fabric Innerduct or approved equal.

After all conduits have been cleaned and cleared of debris, the contractor shall install a fabric innerduct. The innerduct shall be a continuous installation throughout the scope of the project and shall only be placed where the fiber optic backbone is planned for installation. Contractor shall arrange to have a manufacturer's representative on site to oversee the entire installation. If the manufacturer's representative must leave the project site, other than for normal breaks, then fabric innerduct work shall cease until replaced by another representative. No additional compensation and/or working days shall be provided for related delays.

The innerduct shall be a three-cell configuration designed for 2-inch conduit or 3-inch conduit where applicable and be detectable. Each cell shall have individual pull tapes pre-installed and color coded.

Upon completion of all pulls, innerduct or F/O cable, all pull tapes in unused innerduct must be visible, accessible and tied off within the pull box. So that no pull tapes retract or pull into the conduit.

86-2.08 Cables

86-2.08A General: All conductors for traffic signal or street lighting systems shall conform to Section 86 of the Standard Specifications, Part IV-G of the City Traffic Standards, as shown on the plans, or as specified herein.

Communications Mainline or Backbone cable shall be Corning 048ZU4-T4722D20 or approved equal, fiber optic cable comprised of 48 fibers, outdoor rated and suitable for duct installations. The cable shall be single mode (OS2), loose tube, gel-free with dry water blocking material. There shall be six tube positions consisting of four buffer tubes containing twelve fibers per tube and two filling elements. The center core shall contain a dielectric strength member. The outer jacket shall be polyethylene and black in color. A minimum of two foot increments shall be permanently labeled on the cable for distance measurement.

Drop cable will be furnished and installed, including splicing, by the City of Santa Rosa Electrical Department.

Fiber Optic Specifications:

Single Mode (OS2)
Wavelength/Max. Attenuation

1. 1310nm/0.34dB/km
2. 1383nm/0.34dB/km
3. 1550nm/0.22dB/km

Fiber Optic Mechanical:

Max. Tensile Strength, Short Term – 2700N (600lbf)
Max. Tensile Strength, Long Term – 890N (200lbf)
Outside Diameter (Nominal) - 10.2 mm (0.40 in)
Min. Bend Radius Installation – 153 mm (6.02 in)
Min. Bend Radius Operation – 102 mm (4.01 in)

Acceptable fiber optic cable-
Mainline/Backbone – CORNING P/N – 048ZU4-T4F22D20
Distribution/Drop - CORNING P/N – 012EU4-T4700D20
(or equivalent)

Cables shall be pulled by hand and the use of winches or other power actuated pulling equipment will not be permitted. 15 feet of slack shall be left in each size 5 pull box and 20 feet of slack in each size 6 pull box.

86-2.08B Fiber Optic Cable Installation: The Contractor shall at his own expense, arrange to have a certified technician, qualified to work on the fiber optic cable.

Upon receiving reel(s) of fiber optic cable, the Contractor must arrange to deliver the fiber optic cable to the City of Santa Rosa, TPW, Electrical Shop at 55 Stony Point Road for testing. Passing tests will be recorded and a subsequent test will follow installation of the cable. Contractor will be notified of completed testing for Contractor pick up.

Fiber optic cables shall be installed in continuous lengths without intermediate splices or terminations throughout the project.

When ordering fiber optic cable, the Contractor shall exercise extreme caution so as to ensure that no additional splicing or terminations, shall be required. Should the Contractor believe additional splices are required; this matter shall be immediately brought to the attention of the Engineer for resolution.

The Contractor shall install the fiber optic cable in strict adherence to the manufacturer's recommended procedures. Care shall be taken to avoid cable damage during handling and placing. Fiber optic cable is sensitive to excessive pulling, bending and crush forces.

The minimum bending and maximum tension requirements for installing the fiber optic cables shall be according to the manufacturer's specifications. The Contractor shall

submit the manufacturer's recommended procedures to Engineer for blowing or pushing central core fiber optic cable to the Engineer for review and approval at least twenty (20) working days prior to installing cables.

Cable installation personnel shall be familiar with the cable manufacturer's recommended procedures including, but not limited to the following:

- Proper attachment to the cable for blowing or pushing during installation
- Cable tensile limitations and tension monitoring procedures.
- Cable bending radius limitations.

To accommodate long continuous installation lengths, bi-directional installation of the optical fiber cable is permissible and shall generally be implemented as follows:

1. From the midpoint of a pull station, blow/push of central core fiber, the optical fiber cable into the microduct / conduit from the shipping reel in accordance with the manufacturer's specifications.

2, When this portion of the blow/push of central core fiber, the remainder of the cable should be removed from the reel to make the inside end available for blowing/pulling in the opposite direction.

3. This is accomplished by hand pulling the cable from the reel and laying it into large "figure eight" loops on the ground. The purpose of the figure eight pattern is to avoid cable tangling and kinking.

4. The figure eight loops shall be laid carefully one upon the other (to prevent subsequent tangling) and shall be in a protected area.

5. The inside reel end of the cable should be available for testing

6. The figure eight is then turned over to gain access to the free cable end. This can then be reinserted into the conduit system for installation into the next section.

Air blown mechanical aids may be used to assist cable installation. Air blown mechanical aids shall be OFS approved for installation of fiber optic cable.

Contractor's personnel shall be stationed at each vault and pull box through which the cable is to be installed to prevent kinking or other damage to the cable.

The Contractor shall submit detailed installation procedures (pull plan) for review ten (10) working days prior to pulling in each optical fiber segment. The pull plan shall state the exact operational procedures to be utilized and identifies the physical locations for equipment placement, proposed equipment setup at each location, location of the manpower, the installation methodology and the estimated pulling tensions for each pull section.

Where the fiber optic cable is installed in existing conduit or utility ducts, at locations shown on plans, the Contractor shall remove all existing cables and install all cables in same pull to minimize risk of damage to cables, unless otherwise approved by Engineer.

The Contractor shall be responsible for replacing any cables damaged during removal and reinstallation at the cost of the Contractor and not the City.

Cable slack shall be provided for each cable at each pull box, splice vault, or fiber optic splice location, as shown on the plans and as specified in these Special Provisions.

Cable slack shall be divided equally on each side of a fiber splice closure. Sufficient slack shall also be provided at all pull boxes to facilitate placing the optical fiber cable against the side of the pull box.

At all pull boxes and cable vaults, cable slack, as shown on the plans, shall be left by the Contractor for all unspliced cable. Cable slack shall be installed in microduct couplers and shall be coiled and secured with tie wraps, coiled in pull boxes, and secured to the racking hardware in splice vaults. The Contractor shall ensure that the minimum bending radius of the optical fiber cable is not compromised when preparing this stored cable slack.

Unless otherwise specified on plans, a minimum of 30 feet of slack shall be coiled for each FIO

cable inside each pull box and 60 feet inside each splice vault, controller or communication cabinet. Slacks within the cabinets shall be neatly arranged individually, coiled and tied by self-clinching nylon cable ties or other method approved by the Engineer.

Following the installation of the microduct and cables in conduit, all duct entrances in cabinets, pull boxes and vaults shall be sealed with mechanical plugs; or at the discretion of the Engineer, duct sealing compound, to prevent the ingress of moisture, foreign materials, insects and rodents.

86-2.14C Functional Testing: The functional test for each traffic signal system shall consist of not less than 48 hours of continuous, satisfactory operation. If unsatisfactory performance of the system develops, the conditions shall be corrected and the test shall be repeated until the 48 hours of continuous, satisfactory operation is obtained.

86-5 Detectors

86-5.01A Inductive Loop Detectors: Inductive loop detectors shall conform to Part IV-H of the City Traffic Standards.

Detector handholes shall be Type A installed per State STD.-ES-5D.

Any existing traffic signal detectors shown on the plans to remain that are damaged shall be replaced at the Contractor's expense within five working days or as directed by the Engineer.

86-8.10 Payment: Lower Traffic Signal Line 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 to lower traffic signal lines and install new 3-inch conduit as shown on the plans, as specified, including all potholing, excavation, backfill, paving, disposal of spoils, conduits, rope, removal and replacement of curb and gutter and sidewalk, replacement of existing landscaping and irrigation facilities damaged by the contractor, and no additional allowance will be made therefor.

Fiber Optic Conduit 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 to install 3-inch fiber optic conduit as shown on the plans, as specified, including all potholing, excavation, backfill, paving, disposal of spoils, conduits, rope, removal and replacement of curb and gutter and sidewalk, replacement of existing landscaping and irrigation facilities damaged by the contractor, and no additional allowance will be made therefor.

Fiber Optic Cable Installation shall be paid for at the contract price per **linear foot**, which shall include full compensation for furnishing all labor, materials, tools, equipment, and doing all work involved in cable installation, including potholing, furnishing and installing cable, fabric innerduct and no additional allowance will be made therefor. Cable will be measured from terminal point to terminal point.

Traffic Signal Detector Loops to be installed as shown on the plans, shall be paid for at the contract unit price **each**, which price shall include full compensation for furnishing all labor, material, tools, equipment, and doing all work involved, including sawcutting the pavement, furnishing and installing cable and epoxy sealant, connecting to the traffic signal controller and testing, and no additional allowance will be made therefor.

Type A Detector Handholes shall be paid for at the contract unit price **each**, which price shall include full compensation for furnishing all labor, material, tools, equipment, and doing all work involved including excavation and backfilling and connecting to the detector lead-in cable, and no additional allowance will be made therefor.

[Version: 9/18/14CDA STD2010]

SECTION 100-1
ADJUST MANHOLES TO GRADE

100-1 General: Existing storm drain and sanitary sewer manhole frame and covers located within the project limit shall be adjusted to in accordance with the applicable City Standard and these Special Provisions. All non-standard manhole frames and covers that are required to be adjusted to grade shall be removed and delivered to the City Corporation Yard. At this point you will be furnished new frames and covers to be installed in the project. The City will furnish new frames and covers to you at no cost.

You shall field verify and record the type and location of all manhole frame and covers to be raised to grade and shall furnish the Engineer a copy of said record prior to starting construction. Bolt down sanitary sewer manhole frames and covers will be required on all trunk sewer mains. You shall install bolts for bolt-down SSMH covers after final inspection.

You shall be responsible to have the correct nomenclature on the respective storm drain and sanitary sewer manhole covers. Any non- standard storm drain and or sanitary sewer manhole frames and covers shall be removed and delivered to the City of Santa Rosa Corporation Yard. At this point you will be furnished new frames and covers to be installed on the project.

Existing manhole frames and covers which are damaged by your operations shall be replaced at the Contractor's sole expense.

Prior to removal of an existing manhole frame, a plywood platform shall be constructed in the manhole above the top of the sewer pipe or storm drain pipe to prevent any dirt or debris from falling into the sewer and storm drain lines. The platform shall remain in place until all work on the manhole has been completed and the asphalt concrete has been placed around the manhole. Prior to the required removal of the platforms from the manholes, contractor shall remove all dirt and debris from inside.

Trimming of taper sections will not be permitted.

You shall adjust to grade all sanitary sewer and storm drain manhole frame and covers within three (3) working days after placement of the finish surface course of pavement over that facility. The top of the completed manhole shall contain at least one 3-inch grade adjustment ring.

All sections of the manhole grade rings shall be set in cement mortar the same day that the grade rings are placed. If paving is asphalt concrete then permanent asphalt concrete paving (0.17') over cement mortar shall be installed by the end of the following work day. If paving is roller compacted concrete, then roller compacted concrete is to be used in lieu of asphalt. All new and existing grade adjustment joints extending down to and including the tapered cone to grade ring joint shall be smoothly plastered inside and out and sealed with an approved water seal.

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

The manhole cover frame shall be reinstalled to align with the opening in the grade adjustment rings. Any frames that are misaligned by more than ¼ inch shall be removed and reinstalled at the contractor's expense.

You shall accurately locate and record the location of all manholes to be raised to grade and shall furnish the Engineer a copy of said record prior to starting construction.

100-1.01 Measurement and Payment: **Adjust Manhole Frame and Cover** shall be paid for at the contract unit price **each**, which price will include full compensation for furnishing all labor, materials, tools and equipment and doing all the work involved in adjusting manhole frames and covers, to grade as herein specified, including required excavation and backfill, additional grade rings if required, delivering nonstandard frames and covers and picking up standard manhole frame and covers at The City of Santa Rosa Corporation Yard, installment of bolt down manhole frame and covers, no additional allowance will be made therefor.

SECTION 100-2
ADJUST EXISTING VALVE BOX, MAIN LINE CLEANOUT, AND MONUMENT TO GRADE

100-2.01 Description: New and existing valve boxes, mainline cleanouts and monuments shall be adjusted after paving to conform to finished grades in accordance with the applicable City Standard and these Special Provisions.

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

All water valves and mainline cleanouts on active systems shall be accessible at all times to City Personnel unless otherwise stated in these Special Provisions or approved of by the Engineer.

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

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

Final grade adjustments and installation of concrete as shown per the applicable City Standard shall be done on the same working day. Final paving around valve boxes, mainline cleanouts and monuments shall be completed the following working day.

All valve covers, mainline cleanouts, pull boxes, and monuments shall be set in cement mortar the same day that the units are placed. Asphalt concrete paving over cement mortar shall be installed by the end of the following work day. If paving is roller compacted concrete, then roller compacted concrete is to be used in lieu of asphalt. All joints shall be smoothly plastered inside and out.

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

If the existing riser pipe needs to be extended after paving to conform to City STD-877, the Contractor shall use either a slip x slip glued PVC coupling or a transition coupling with sheer bands as directed by the Engineer. Upsizing the existing riser pipe to 8 inch will not be required unless otherwise directed by the Engineer.

In the event that you encounter water valve boxes with round lids which must be adjusted to grade after paving, you are to provide a count of said boxes to the inspector a minimum of two days prior to paving to obtain replacement triangular valve boxes and lids. The City will provide replacements (Type G4) boxes, provided you are not required to replace them as part of the contract or due to the Contractor damaging them.

The Contractor shall adjust to grade all water valve boxes and cleanout frames and covers within three (3) working days of being covered with the final surface pavement.

100-2.02 Payment: Adjust Valve Box and Monument to Grade 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 doing all the work involved under section 100-2.01 including required excavation and backfill, coordination for replacement boxes, removing silt and debris, and no additional allowance will be made therefor.

Section 124
MATERIAL RECYCLING

124-1.01 Description: You 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. You 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 your property and shall be disposed of you, at your 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.

SECTION 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 Standards Specifications Section 130, the Project Plans, and modifications herein. Contractor shall provide final construction drawings for the sanitary sewer manhole (See Plans for conceptual preliminary design). The construction drawings shall be stamped by the Contractor's licensed Civil Engineer.

Contractor shall pothole as needed to avoid damage to existing underground facilities

130-1.06 Sewer Laterals: If the proposed sewer main invert(s) are at a higher elevation than the existing invert(s), the Contractor shall submit a temporary connection plan to the Engineer for approval a minimum of 5 working days prior to start of work. The temporary connection plan shall include a schedule of work. The Contractor shall continuously monitor the upstream manhole of any temporary connection.

130-1.12 Payment: Sanitary Sewer Main shall be paid for at the contract price per **linear foot** for the specified sizes, which price shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and doing all the work involved for sewer main installation, including but not limited to: design, potholing other than as specified in Section 15 to facilitate the progress of work; excavation and disposal of excavated materials including asbestos cement pipe; hand digging *if needed*; root pruning; dewatering and disposal of trench groundwater; bypass pumping *if needed*; contamination awareness; fittings/couplings; felt expansion joint material *if required*; temporary connections; modifications to existing manholes to accept new mains; connections to new or existing manholes or mains, including sealing of penetrations water tight; supporting or removal and disposal of existing utilities in the same trench *if required*; placing and compacting all required bedding and backfill including control density fill *if required*; trench plates *as needed*; temporary trench paving; removal and replacement of valley gutter, median curb and island *as needed*; cleaning and flushing; testing; video inspection; as specified herein, and no additional allowance will be made therefor.

The actual quantity of sewer main to be paid for will be the length measured from center of manhole to center of the new coupling along the finished grade to the nearest foot. Pipe purchased by the Contractor in excess of the measured amount will not be paid for by the City.

Sanitary Sewer Manhole shall be paid for at the contract unit price **each** for the various sizes, which price shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and doing all the work involved for the installation of sewer manholes, including but not limited to: potholing other than as specified in Section 15 to facilitate the progress of work; excavation and disposal of excavated materials; hand digging *if needed*; dewatering and disposal of trench groundwater; bypass pumping *if needed*; contamination awareness; couplings and pipe if connecting to existing mains; water tight sealing of penetrations; 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 including control density fill *if required*; 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.

Trench Bracing and Shoring - Sewer Full compensation for conforming to this section shall be considered as included in the price paid for Sanitary Sewer Main and Sanitary Sewer Manhole**,** which price shall include full compensation for furnishing all labor, materials, tools and equipment, and doing all work involved for trench bracing and shoring and no additional allowance will be made therefor.

Full compensation for television inspection shall be considered as included in the prices paid for the **various contract items** of work involved and no additional allowance will be made therefor.

Full compensation for bypass pumping shall be considered as included in the prices paid for the **various contract items** of work involved and no additional allowance will be made therefor**.**

SECTION A
FEES AND PERMITS

The Contractor shall obtain all necessary and required permits for the project. All required permits, including Caltrans encroachment permits, shall be obtained by the Contractor at their expense.

A Caltrans encroachment permit will be required to place changeable message boards, SB1 Funding Signs and City Project Identification signs in State right-of-way and for traffic control operations due to the projects proximity to State Highway 12. Special attention should be made to Section 12-9.01 regarding payment for compliance and execution of the Caltrans encroachment permit.

Special attention should be made to Section 5-1.20B(4)(a) regarding temporary use permits.

City of Santa Rosa WATER

ONE-TIME DISCHARGE PERMIT
SR-1X09030

Issued To:

Gregory Dwyer
69 Stony Circle
Santa Rosa, CA 95401

Located At:

Fulton between Occidental and W.3rd Road
Santa Rosa, CA 95401

EFFECTIVE DATE: 02/12/2018

EXPIRATION DATE: Notice of Completion Date

CIP Project Name: Fulton Rd Reconstruction

The contractor to be awarded the City of Santa Rosa Capital Improvement Project (CIP) project referenced above is authorized to discharge any generated non-contaminated groundwater and/or trench water to the City of Santa Rosa's sewer collection system. This discharge will be in accordance with the City of Santa Rosa's Most Current Sewer Code and/or Ordinance, any applicable provisions of federal or state law or regulation, and in accordance with discharge point(s), effluent limitations, monitoring requirements, and other conditions set forth herein.

PERMITTEE SHALL COMPLY WITH ALL ITEMS BELOW :

1. Sediment must be removed prior to any discharge to the sanitary sewer, and the discharge shall not exceed 25,000 gallons per day.
2. Due to the potential for groundwater contamination wastewater generated from this project shall be collected, stored, and tested for EPA 8260 and THP-gas & THP-diesel including oxygenates prior to any discharge to the sanitary sewer. Upon review of the test results by this office the stored wastewater may be discharged direct to the sanitary if it meets the local limits and the sediment is removed.
3. The required analysis shall be performed by a California State Certified Laboratory and all test procedures must comply with EPA Solid Waste 846 and Title 40 Code of Federal Regulations, Part 136 testing protocol.

4. Any wastewater not meeting local limits shall either be disposed through a licensed hazardous waste treatment, storage, and disposal or recycling facility or alternatively be treated on-site to meet the local limits prior to being discharged to the sanitary sewer.

5. Discharge Limitation Parameters and daily maximum milligrams/Liter: EPA 8260 - 2.13mg/L, TPH Gas and Diesel - 100mg/L.

6. The permittee shall be responsible for all liability imposed by law for personal injury or property damage caused by work done by permittee under this permit, including work beyond the scope of this permit. If any claim of such liability is made against the City, its officers or employees, permittee shall defend, indemnify and hold them, and each of them, harmless from such claim and liability insofar as permitted by law.

7. It is required that this office be notified 48 hours in advance of the commencement of the discharge so that an Environmental Compliance Inspector may be on site at the beginning of the operations to verify the discharge point to the sanitary sewer.

8. The discharge rate to the sanitary sewer shall be at a discharge rate that will not result in any spillage or surcharging of the sewer system.

9. Perchloroethylene/tetrachloroethylene is prohibited from being discharged to the sanitary sewer.

Deputy Director Environmental Services: _____

Date: 2/16/2018

SUBREGIONAL WATER RECLAMATION SYSTEM
Environmental Compliance Section, 4300 Llano Road, Santa Rosa, CA 95407
PH (707) 543-3369 FX (707) 543-3398 email: envcompliance@srcity.org

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

STATE OF CALIFORNIA

FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST

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:

CITY OF SANTA ROSA
C00780 - FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST
UNIT PRICE SCHEDULE

No.	Item	Quantity	Units	Unit Price	Total Price
1	TRAFFIC CONTROL	1	LS	$_____	$_____
2	WATER POLLUTION CONTROL	1	LS	$_____	$_____
3	LOWER EXISTING MANHOLE FRAMES AND COVERS	20	EA	$_____	$_____
4	LOWER EXISTING VALVE BOXES AND MONUMENTS	33	EA	$_____	$_____
5	SUBGRADE STABILIZATION	1275	SY	$_____	$_____
6	SOIL STABILIZATION FABRIC	3900	SY	$_____	$_____
7	ROADWAY EXCAVATION (F)	6484	CY	$_____	$_____
8	RE-COMPACT 8" OF EXISTING AGGREGATE BASE (F)	22780	SY	$_____	$_____
9	ASPHALT CONCRETE SURFACE	311	TON	$_____	$_____
10	ASPHALT CONCRETE BASE AND LEVELING	2571	TON	$_____	$_____
11	TRANSVERSE CONFORM GRIND	780	LF	$_____	$_____
12	SIDE STREET CONFORM GRIND	246	LF	$_____	$_____
13	DIAMOND GRIND CONCRETE PAVEMENT (F)	22780	SY	$_____	$_____
14	ROLLER COMPACTED CONCRETE (F)	5057	CY	$_____	$_____
15	INSTALL STREET SIGN	21	EA	$_____	$_____
16	RELOCATE STREET SIGN	6	EA	$_____	$_____
17	SB1 FUNDING SIGN	2	EA	$_____	$_____
18	STORM DRAIN MANHOLE	1	EA	$_____	$_____
19	CURB AND GUTTER	560	LF	$_____	$_____
20	CURB RAMP	4320	SF	$_____	$_____
21	6" THERMOPLASTIC BIKE LANE LINE	5200	LF	$_____	$_____
22	6" THERMOPLASTIC BIKE LANE LINE DASHED	540	LF	$_____	$_____
23	8" THERMOPLASTIC LANE LINE	846	LF	$_____	$_____
24	8" THERMOPLASTIC LANE LINE DASHED	245	LF	$_____	$_____
25	12" THERMOPLASTIC CROSSWALK AND LIMIT LINES	1338	SF	$_____	$_____
26	THERMOPLASTIC PAVEMENT MARKINGS	1660	SF	$_____	$_____

CITY OF SANTA ROSA
C00780 - FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST
UNIT PRICE SCHEDULE

No.	Item	Quantity	Units	Unit Price	Total Price
27	PAVEMENT MARKERS, REFLECTIVE	544	EA	$_____	$_____
28	PAVEMENT MARKERS, NON-REFLECTIVE	786	EA	$_____	$_____
29	OBJECT MARKERS	6	EA	$_____	$_____
30	LOWER TRAFFIC SIGNAL LINE	690	LF	$_____	$_____
31	FIBER OPTIC CONDUIT	400	LF	$_____	$_____
32	FIBER OPTIC CABLE INSTALLATION	5180	LF	$_____	$_____
33	TRAFFIC SIGNAL DETECTOR LOOPS	4	EA	$_____	$_____
34	TYPE A DETECTOR HANDHOLES	2	EA	$_____	$_____
35	ADJUST MANHOLE FRAME AND COVER	20	EA	$_____	$_____
36	ADJUST VALVE BOX AND MONUMENT TO GRADE	33	EA	$_____	$_____
37	SANITARY SEWER MAIN	15	LF	$_____	$_____
38	SANITARY SEWER MANHOLE	1	EA	$_____	$_____
	GRAND TOTAL BID				**$_____**

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" price column for the Base Bid. The Total Bid for Alternate 1 shall be the sum of the “Total” price column for Alternate 1. The Total Bid for Alternate 2 shall be the sum of the “Total” price column for Alternate 2.

The bid comparison will be based on the sum of the Total Base Bid plus Alternate 1 or the Total Base Bid plus Alternate 2 column for each bidder.

The low bid will be the sum of the base bid plus the lowest bid alternate.

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: _____

NONCOLLUSION DECLARATION
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

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

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

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

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

BID BOND AFFIDAVIT AND BIDDER'S SIGNATURE PAGE

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

_____

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

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

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

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

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

Secretary of State Business Entity Number: _____.

_____

_____

_____

_____

Business Address

_____

Telephone Number

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

BIDDER'S SIGNATURE: _____

TITLE: _____

DATE: _____

CONTRACT

CITY OF SANTA ROSA

CALIFORNIA

CONTRACT NO. C00780
FULTON RD RECONSTRUCTION - OCCIDENTAL RD TO W 3RD ST

This Contract is made and entered into as of date to be added upon award 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 23 sheets entitled, Fulton Rd Reconstruction - Occidental Rd to W 3rd St, File Number 2018-0007, 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:	**Contractor:**
City of Santa Rosa, a Municipal corporation	Name of Contractor, Type of entity
By: _____	By: _____
Title: _____	Name: _____
ATTEST: By: _____	Title: _____
Title: _____	By: _____
Approved as to form:	Name: _____
By: _____ Office of City Attorney	Title: _____