



# **CONTRACT DOCUMENTS**

## **FOR**

### **CITY OF HUGHSON**

### **SEWER IMPROVEMENTS ON TULLY**

### **ROAD AND SECOND STREET**

Plans and Specifications Approved by the City:

March 14, 2022

CITY OF HUGHSON COMMUNITY  
DEVELOPMENT DEPARTMENT  
7018 PINE STREET  
PO BOX 9  
HUGHSON, CA 95326  
Phone: (209) 883-4054

*COMMUNITY DEVELOPMENT DEPARTMENT*

**PART I: BID**  
**FOR**  
**SEWER IMPROVEMENTS ON TULLY ROAD AND**  
**SECOND STREET**

IN  
*HUGHSON, CALIFORNIA*

*Bids to Be Opened On:*  
*Wednesday, April 20, 2022*  
*11:00a.m.*

CITY MANAGER  
Merry Mayhew

MAYOR  
George Carr

MAYOR PRO-TEM  
Harold Hill

COUNCIL MEMBERS  
Samuel Rush                      Michael Buck                      Ramon Bawanan

Prepared By:  
WILLDAN ENGINEERING

Approved for Construction By:

  
\_\_\_\_\_  
TYRONE PETER, PE  
RCE#81888

\_\_\_\_\_  
RACHEL WYSE  
COMMUNITY DEVELOPMENT DIRECTOR

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(Some colored inks will not reproduce in copy  
machines, please use black ink to complete this bid.)

City of Hughson  
Sewer Improvements on Tully Road and Second Street

**BID**

BID TO THE CITY OF HUGHSON COMMUNITY

DEVELOPMENT DEPARTMENT

SEWER IMPROVEMENTS ON TULLY ROAD AND SECOND STREET

NAME OF BIDDER \_\_\_\_\_  
BUSINESS P.O. BOX \_\_\_\_\_  
CITY, STATE, ZIP \_\_\_\_\_  
BUSINESS STREET ADDRESS \_\_\_\_\_  
(Please include even if P.O. Box used)  
CITY, STATE, ZIP \_\_\_\_\_  
TELEPHONE NO: AREA CODE (    ) \_\_\_\_\_  
FAX NO:            AREA CODE (    ) \_\_\_\_\_  
CONTRACTOR LICENSE NO. \_\_\_\_\_  
EMAILADDRESS: \_\_\_\_\_

The work for which this bid is submitted is for construction in conformance with the special provisions (including less than the State general prevailing wage rates or Federal minimum wage rates), the project plans described below, including any addenda thereto, the contract annexed hereto, and in conformance with the California Department of Transportation Standard Plans, dated 2018, the Standard Specifications, dated 2018, and the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished.

The special provisions for the work to be done are dated March 14, 2022, and are entitled:

CITY OF HUGHSON  
COMMUNITY DEVELOPMENT DEPARTMENT  
NOTICE TO BIDDERS AND SPECIAL PROVISIONS FOR

*SEWER IMPROVEMENTS  
ON TULLY ROAD AND SECOND STREET*

*IN*

*HUGHSON, CALIFORNIA*

The project plans for the work to be done were approved March 14, 2022, and are entitled:

CITY OF HUGHSON  
COMMUNITY DEVELOPMENT DEPARTMENT  
PROJECT PLANS FOR

*SEWER IMPROVEMENTS  
ON TULLY ROAD AND SECOND STREET*

*IN*

*HUGHSON, CALIFORNIA*

## City of Hughson

### Sewer Improvements on Tully Road and Second Street

Bids are to be submitted for the entire work. The amount of the bid for comparison purposes will be the total of all items.

The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item.

This is not a Federal-Aid project and therefore any Federal-Aid provisions do not apply.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage-wise the unit price or item total in the *CITY OF HUGHSON* Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise, if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid been provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the *CITY OF HUGHSON*, and that discretion will be exercised in the manner deemed by the *CITY OF HUGHSON* to best protect the public interest in the prompt and economical completion of the work. The decision of the *CITY OF HUGHSON* respecting the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

If this bid shall be accepted and the undersigned shall fail to enter into the contract and furnish the 2 bonds in the sums required by the Public Contract Code, with surety satisfactory to the *CITY OF HUGHSON*, within 8 days, not including Saturdays, Sundays and legal holidays, after the bidder has received notice from the *CITY OF HUGHSON* that the contract has been awarded, the *CITY OF HUGHSON* 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 operate and the same shall be the property of the *CITY OF HUGHSON*.

The undersigned, as bidder, declares that the only persons 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 he has carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and he proposes, and agrees if this bid is accepted, that he will contract with the *CITY OF HUGHSON*, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that he will take in full payment therefor the following prices, to wit:

## BID SCHEDULE A

1	Mobilization (10%)	1	LS	\$	\$
2	Traffic Control Plan and Implementation System (10%)	1	LS	\$	\$
3	Fill Exist Pipe with Sand and Abandon in Place	3,860	LF	\$	\$
4	Fill Exist Pipe with 2-Sac Slurry and Abandon in Place	290	LF	\$	\$
5	Fill Exist Manhole with Sand and Abandon in Place	17	EA	\$	\$
6	Construct Sewer Spot Repair (Remove Portion and Install 24-Inch PVC-SDR 35 Pipe)	3	EA	\$	\$
7	Construct Precast Concrete Manhole per City of Hughson Std Detail 6-SS.1	1	EA	\$	\$
8	Install 12-Inch PVC-SDR 35 ( <b>Tully Rd</b> )	62	LF	\$	\$
9	Install 10-Inch PVC-SDR 35 (Pipe Bursting) ( <b>2nd Street</b> )	550	LF	\$	\$
10	Modify Manhole Base	7	EA	\$	\$
11	Connect Sewer Laterals	21	EA	\$	\$
12	Perform CCTV Inspection (Pre-construction) and Identify Laterals	550	LF	\$	\$
13	Perform CCTV Inspection (Final)	550	LF	\$	\$
14	Prepare and Implement Sewer Bypass System	1	LS	\$	\$
15	Cold Mill Exist AC Pavement 1.5" Uniform Depth ( <b>2nd St</b> )	33,800	SF	\$	\$
16	Construct 1.5" AC Overlay ( <b>2nd St</b> )	310	TN	\$	\$
17	Adjust Water Valve to Grade ( <b>2nd St</b> )	5	EA	\$	\$
18	Construct New 1" Water Service Lateral From Existing Water Meter To Existing 8" Transite Water Per City Standard Detail 5-W.9.	49	EA	\$	\$

City of Hughson

Sewer Improvements on Tully Road and Second Street

19	Remove Existing Water Service Lateral From Existing Water Meter To Existing 4" DIP Water.	49	EA	\$	\$
20	Remove and Install New Water Meter [Furnished by City]	5	EA	\$	\$
<b>TOTAL BID SCHEDULE A</b>				\$	

**BID SCHEDULE B – ADDITIVE BID ITEMS**

Item	Description	Quantity	Units	Unit Price	Total
21	Cold Mill Exist AC Pavement 1.5" Uniform Depth <b>(Tully Rd)</b>	154,000	SF	\$	\$
22	Construct 1.5" AC Overlay <b>(Tully Rd)</b>	1,400	TN	\$	\$
23	Adjust Manhole to Grade <b>(Tully Rd Ave)</b>	41	EA	\$	\$
24	Adjust Water Valve to Grade <b>(Tully Rd Ave)</b>	34	EA	\$	\$
<b>TOTAL BID SCHEDULE B</b>				\$	

**Bid Schedule A + B Total \$**\_\_\_\_\_

**Bid Schedule A + B Total (in words):**

The Contractor shall be responsible for calculating and providing unit prices for the schedule. The proposal schedule shall include all costs for services, labor, materials, equipment, and installation associated with completing the work in place per the plans, specifications and details.

The City has the option to reject all bids with or without cause. The City also has the option to remove bid items at its discretion. If the City chooses to remove bid items, no bid price adjustment will be allowed.

**For the purposes of determining the lowest responsible bidder, the Bid Schedule A and Bid Schedule B Total shall be considered.**

**LIST OF SUBCONTRACTORS**

The Bidder shall list the name and address of each subcontractor to whom the Bidder proposes to subcontract portions of the work, as required by the provisions in Section 2-1.33C, "General," of the special provisions.

<b>Name and Address</b>	<b><u>Description of Portion of Work Subcontracted</u></b>

*(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS BID SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS BID)*



## PUBLIC CONTRACT CODE

### Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has \_\_\_\_\_, has not \_\_\_\_\_ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

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### Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes                      No

If the answer is yes, explain the circumstances in the following space.

**Public Contract Code 10232 Statement**

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

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City of Hughson

Sewer Improvements on Tully Road and Second Street

**"NONCOLLUSION" AFFIDAVIT TO BE EXECUTED BY BIDDER AND**

**SUBMITTED WITH BID**

**Public Contract Code § 7106**

State of California

County of Stanislaus \_\_\_\_\_

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].

BIDDER:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Name and Title of Signatories)

\_\_\_\_\_  
(Legal Name Bidder)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Phone Number)

City of Hughson  
Sewer Improvements on Tully Road and Second Street

Accompanying this Bid is \_\_\_\_\_

*(NOTICE: INSERT THE WORDS "CASH(\$," "CASHIER'S CHECK," "CERTIFIED CHECK," OR "BIDDER'S BOND," AS THE CASE MAY BE.)*

in amount equal to at least ten percent (10%) of the total of the bid.

The names of all persons interested in the foregoing bid as principals are as follows:

## 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 thereof; if a co-partnership, state true name of firm, also names of all individual copartners composing firm; if bidder or other interested person is an individual, state first and last names in full.

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Licensed in conformance with an act providing for the registration of Contractors,

License No. \_\_\_\_\_ Classification(s) \_\_\_\_\_

## ADDENDA

This Proposal is submitted with respect to the changes to the contract included in addenda number/s

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*(Fill in addenda numbers if addenda have been received and insert, in this Proposal, any Engineer's Estimate sheets that were received as part of the addenda.)*

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this proposal I further certify, under penalty of perjury under the laws of the State of California that the Noncollusion Affidavit, Public Contract Code Section 7106 is true and correct.

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

Sign Here: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature and Title of Bidder

City of Hughson

Sewer Improvements on Tully Road and Second Street

Business Address \_\_\_\_\_

Place of Business \_\_\_\_\_

Place of Residence \_\_\_\_\_

*CITY OF HUGHSON*  
*COMMUNITY*  
*DEVELOPMENT DEPARTMENT*

**BIDDER'S BOND**  
**SEWER IMPROVEMENTS ON**  
**TULLY ROAD AND SECOND**  
**STREET**

-----  
----- as Principal, and

as Surety are bound unto the City of Hughson, State of California, hereafter referred to as "Obligee", in the penal sum of ten percent (10%) of the total amount of the bid of the Principal submitted to the Obligee for the work described below, for the payment of which sum we bind ourselves, jointly and severally,

THE CONDITION OF THIS OBLIGATION IS SUCH THAT

Whereas, the Principal is submitted to the obligee for: demolition, clearing, grubbing, drainage improvements, sidewalk construction, pavement work, signs and striping.

for which bids are to be opened at the office of the City Clerk of the City of Hughson, in City Hall, 7018 Pine Street, Hughson, CA 95326 on Wednesday, April 20, 2022 at 11:00 a.m.

NOW, THEREFORE, if the Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him for signature, enters into a written contract, in the prescribed form, in conformance with the bid, and files two bonds with the Obligee, one to guarantee faithful performance of the contract and the other to guarantee payment for labor and materials as provided by law, then this obligation shall be null and void; otherwise, it shall remain in full force.

In the event suit is brought upon this bond by the Obligee and judgement is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the court.

Dated: \_\_\_\_\_, 20

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

\_\_\_\_\_  
Attorney-in-Fact

City of Hughson  
Sewer Improvements on Tully Road and Second Street

CERTIFICATE OF ACKNOWLEDGEMENT

State of California

City/County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ in the year 20\_\_\_\_ before me

\_\_\_\_\_, personally appeared \_\_\_\_\_  
*Attorney-in-fact*

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument as the attorney-in-fact of \_\_\_\_\_, and acknowledged to me that he (she) subscribed the name of the said company thereto as surety, and his (her) own name as attorney-in-fact.

(SEAL)

\_\_\_\_\_  
*Notary Public*

**SAMPLE CONTRACT**  
**CONSTRUCTION SERVICES AGREEMENT**  
CONTRACT ID# \_\_\_\_\_  
(City of Hughson/[contractor])

DATE: \_\_\_\_\_

PARTIES: CITY: City of Hughson  
Post Office Box 9  
Hughson, CA 95326

CONTRACTOR: [contractor name]  
[contractor address]  
[city, state zip]

THIS CONSTRUCTION SERVICES AGREEMENT ("Agreement") is entered into by and between the City of Hughson, a California municipal corporation ("City") and \_\_\_\_\_ ("Contractor").

**RECITALS**

WHEREAS, the City has determined that it requires certain construction services provided as set forth in this Agreement.

WHEREAS, this Agreement is for the provision of those construction services by Contractor to City.

WHEREAS, the Contractor represents that it is qualified and able to perform the construction services by virtue of its experience and the training, education, and professional ability of its principals and employees.

WHEREAS, the Contractor further represents that it is willing to accept responsibility for performing such construction services in accordance with the terms and conditions set forth in this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions herein contained, City and Contractor agree as follows:

1. Definitions

- 1.1. "Chapter 1": Division 2, Part 7, Chapter 1 (commencing with section 1720) of the California Labor Code.



- 1.2. "Contract Documents": It is mutually agreed and understood that the complete Contract shall consist of this Agreement, and the following component documents, all of which are fully a part hereof as if herein set out in full, or if not attached, as if attached, and which together constitute the Contract Documents:
  - 1.2.1. Notice to Bidders
  - 1.2.2. Bidding Contractor's Proposal
  - 1.2.3. Accepted Bid
  - 1.2.4. Faithful Performance Bond and Labor and Materials Bond (if applicable)
  - 1.2.5. Special provisions
  - 1.2.6. Project Plans
  - 1.2.7. Revised standard specifications
  - 1.2.8. Standard specifications including, but not limited to, City of Turlock Standard Specifications, Caltrans Standard Specifications and Stanislaus County Standards and Specifications
  - 1.2.9. Revised standard plans including Caltrans Revised Standard Plans
  - 1.2.10. Standard Plans including, but not limited to, City of Turlock Standard Plans, Caltrans Standard Plans and Stanislaus County Standards
  - 1.2.11. Supplemental project information
  - 1.2.12. Disadvantaged Business Enterprise Program
- 1.3. "Contract Price": Price at which Contractor agrees to perform Scope of Services and City agrees to pay Contractor to perform Scope of Services.
- 1.4. "DIR": Department of Industrial Relations
- 1.5. "Project": SEWER IMPROVEMENTS ON TULLY ROAD AND SECOND STREET
- 1.6. "Scope of Services": Such construction services as are set forth in the Contract Documents.

## 2. Scope of Construction Agreement

- 2.1. Contractor agrees to provide constructions services at \_\_\_\_\_ as described in Contract Documents.
- 2.2. Failure of the Contractor to include any scope of work identified in the Contract Documents will not excuse Contractor's liability to perform such work, unless Contractor provides written notice that Contractor's bid does not include the scope of work defined in the Contract Documents and City accepts Contractor's bid with the understanding that Contractor will not be providing construction services for the scope of work specifically identified in Contractor's written notice to the City.
- 2.3. Contractor agrees to do all the work and furnish all the labor, material, equipment and appliances to complete the work in accordance with the Contract Documents.
- 2.4. Contractor agrees to do and perform said work diligently as directed by the City until completion is evidenced by written acceptance by the City.
- 2.5. Contractor agrees to do and perform the work contemplated hereby and furnish all labor, material, appliances, equipment, tools and pay all taxes therefore, at the bid price specified in the Bid form submitted by the Contractor.
- 2.6. Contractor agrees to remedy, at his expense, any defects in the work which shall appear within a period of twelve (12) months from the date of the final acceptance of the work.
- 2.7. Contractor shall comply with all Federal, State, and local laws, regulations and requirements necessary for the provision of contracted services.
- 2.8. Contractor shall comply with all laws applicable to wages and hours of employment,

City of Hughson  
Sewer Improvements on Tully Road and Second Street

occupational safety, and to fire safety, health and sanitation.

- 2.9. Contractor shall maintain current throughout the life of this Agreement, all permits, licenses, certificates, and insurances that are necessary for the provision of contracted services.

3. Term of Agreement

- 3.1. This Agreement shall commence on the date of execution by the City, and continue until [date], unless said work is completed on a date prior thereto or unless terminated earlier as provided herein.
- 3.2. Contractor agrees to commence work on its Scope of Services within **10** calendar days after receipt of Notice to Proceed and to complete said work within **30** calendar days from date established by the Notice to Proceed.
- 3.3. Should the Contractor fail to complete the work included in the Scope of Services within the time limit agreed upon or such extensions thereof as may be granted, a deduction of One Thousand dollars (\$1,000.00) per day will be made from amounts otherwise due the Contractor for each and every calendar day, or fraction thereof, that the work, or each stated portion, remains incomplete after the date set for its completion.

4. Hours Worked

- 4.1. Contractor shall comply with and be bound by the provisions of Labor Code section 1810 acknowledging that eight (8) hours labor constitutes a legal day's work.
- 4.2. Contractor shall comply with and be bound by the provisions of Labor Code section 1813 concerning penalties for workers who work excess hours. The Contractor, shall as a penalty to the City, forfeit twenty-five dollars (\$25) for each worker employed in the performance of this Agreement by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of Division 2, Part 7, Chapter 1, Article 3 of the Labor Code.
- 4.3. Pursuant to Labor Code section 1815, work performed by employees of Contractor in excess of eight (8) hours per day, and forty (40) hours during any one (1) week shall be permitted upon public work upon compensation for all hours worked in excess of 8 (eight) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay.

5. Compensation

The compensation shall not exceed the amount of \$ \_\_\_\_\_ for construction services performed pursuant to this Agreement paid in accordance with the following bid schedule:

City of Hughson  
Sewer Improvements on Tully Road and Second Street

[Bid Schedule to be inserted  
after award

Item	F	Description	Quantity	Units	Unit Price	Total
1						
2						

Item	F	Description	Quantity	Units	Unit Price	Total
3						
4						
5						
6						
7						

6. Invoicing

- 6.1. Contractor shall submit one original and one copy of each invoice to the City, Post Office Box 9, Hughson, California 95326 by the end of each month. The invoice must include the value of all work completed as of the 20th day of the current month. All invoices must reference this Contract ID Number and the services performed.
- 6.2. On or about the tenth day of each month after the commencement of work, an amount equal to ninety-five percent (95%) of the value of all work completed as of the 20th day of the preceding month, based on the quantities of work completed, as determined by the Engineer at the unit prices stated, less the aggregate of all previous payments made to the Contractor, will be paid by City to Contractor.
- 6.3. Thirty (30) days after completion of the Contract and its acceptance by the City, the balance of the Contract Price will be paid. Such final payment will not be made until completion of the entire project and acceptance of the whole by the City.
- 6.4 Contractor may substitute securities in lieu of retained funds in accordance with Public Contract Code section 22300.
- 6.5. It is further agreed by the parties that before each payment is made as provided above, receipts and releases of liens of all kinds for all labor and materials and all other indebtedness connected with the work shall be presented to the City by the Contractor upon the request of the City.

7. Contractor's Status

- 7.1. Prior to submitting a bid, the Contractor and subcontractors must be registered with the DIR and qualified to perform public work pursuant to Labor Code section 1725.5, subject to limited legal exceptions under Labor Code section 1771.1.
- 7.2. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the DIR pursuant to Labor Code section 1725.5.

8. Contractor Responsibility for Employees and Subcontractors

- 8.1. California Labor Code Sections 1860 and 3700 provide that every employer will be required to secure the payment of compensation to its employees. In accordance with the provisions of California Labor Code Section 1861, Contractor hereby certifies as follows:

"I am aware of the provisions of Section 3700 of the Labor Code 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 I will comply with such provisions before commencing the performance of the work of this contract."

- 8.2. For every subcontractor who will perform work on the Project, Contractor shall be responsible for such subcontractor's compliance with Chapter 1 and Labor Code Sections 1860 and 3700, and Contractor shall include in the written contract between it and each subcontractor a copy of those statutory provisions and a requirement that each subcontractor shall comply with those statutory provisions. Contractor shall be required to take all actions necessary to enforce such contractual provisions and ensure subcontractor's compliance, including without limitation, conducting a periodic review of the certified payroll records of the subcontractor and upon becoming aware of the failure of the subcontractor to pay his or her workers the specified prevailing rate of wages. Contractor shall diligently take corrective action to halt or rectify any failure.
- 8.3. By executing the Contract, the contractor certifies that every subcontractor who will perform work on the Project is not ineligible pursuant to Labor code Sections 1777.1 or 1777.7. In accordance with Public Contract Code Section 6109, any contractors who are ineligible to perform work on public works project pursuant to Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded, or perform work on this Project. To the full extent permitted by law the Contractor shall hold harmless and indemnify the City from and against any and all damages, costs, and liability arising from or as a consequence of any violation of Public Contract Code Section 6109.
- 8.4. The City has full authority to compromise or otherwise settle any claim relating to the Project at any time. However, the City shall notify Contractor of the receipt of any third-party claim relating to the Project.

9. Bonding Requirements

If this total bid amount as set forth in the Bid is in excess of \$25,000, then Contractor shall provide a Faithful Performance Bond and a Labor and Materials Bond, in the sum of 100% of the contract price; the Faithful Performance Bond will be retained by the City for twelve (12) months following final acceptance by the City of the improvements constructed to guarantee correction of failures attributable to workmanship and materials. Upon the final acceptance by the City, the amount of the Faithful Performance Bond may be reduced to twenty percent (20%) of the actual improvement construction costs.

10. Public Work Acknowledgment

- 10.1. Contractor acknowledges that the project as defined in the Contract Documents between Contractor and City is a "public work" as defined in Division 2, Part 7, Chapter 1 (commencing with section 1720) of the California Labor Code ("Chapter 1"), and that this Agreement is subject to:
  - 10.1.1. Chapter 1, including without limitation Labor Code section 1771; and
  - 10.1.2. The rules and regulations established by the Director of Industrial Relations implementing such statutes. Contractor shall perform all work on the project as public work. Contractor shall comply with and be bound by all the terms, rules and regulations described in 10.1.1 and 10.1.2 as though set forth in full herein.
- 10.2. California law requires inclusion of specific Labor Code provisions in certain contracts. The inclusion of such specific provisions in this Agreement, whether or not required by California law, does not alter the meaning or scope of Section 10 of this Agreement.

11. Labor Compliance Monitoring

- 11.1. Pursuant to Labor Code section 1771.4, Contractor's services are subject to labor compliance monitoring and enforcement by the DIR. Contractor shall post job site notices, as prescribed by DIR regulations.
- 11.2. Contractor shall comply with and be bound by the provisions of Labor Code section 1776, which requires Contractor and each subcontractor to:
  - 11.2.1. Keep accurate payroll records and verify such records in writing under penalty of perjury, as specified in Section 1776; and
  - 11.2.2. Certify and make such payroll records available for inspection as provided by Section 1776; and
  - 11.2.3. Inform the City of the location of the records.
- 11.3. Payment to Contractor shall not be made when payroll records are delinquent or inadequate.

12. Prevailing Wage Requirements

- 12.1. Pursuant to Labor Code section 1773.2, copies of the prevailing rate of per diem wages for each craft, classification, or type of worker needed to perform the Scope of Services are on file at City Hall and will be made available to any interested party on request. Contractor acknowledges receipt of a copy of the DIR determination of such prevailing rate of per diem wages, and Contractor shall post such rates at each job site covered by this Contract.
- 12.2. Contractor shall comply with and be bound by the provisions of Labor Code sections 1774 and 1775 concerning the payment of prevailing rates of wages to workers and the penalties for failure to pay prevailing wages. The Contractor shall, as a penalty to the City, forfeit two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the DIR for the work or craft in which the worker is employed for any public work done pursuant to this Contract by Contractor or by any subcontractor.
- 12.3. Contractor shall comply with and be bound by the provisions of Labor Code sections 1777.5, 1777.6 and 1777.7 and California Administrative Code title 8, section 200 et seq. concerning the employment of apprentices on public works projects. Contractor shall be responsible for compliance with these aforementioned sections for all apprenticeable occupations. Prior to commencing work under this Agreement, Contractor shall provide City with a copy of the information submitted to any applicable apprenticeship program. Within sixty (60) days after concluding work pursuant to this Agreement, Contractor and each of its subcontractors shall submit to the City a verified statement of the journeyman and apprentice hours performed under this Agreement.
- 12.4. The statutory provisions for penalties for failing to comply with the State of California wage and labor laws will be enforced, as well as that for failing to pay prevailing wages.

13. Indemnification

To the maximum extent permitted by law, Contractor shall indemnify, hold harmless and defend (at Contractor's expense with counsel reasonably acceptable to the City) the City, its officials, officers, employees, agents and independent contractors serving in the role of City's

City of Hughson  
Sewer Improvements on Tully Road and Second Street

officials, and volunteers from and against any demand or claim for damages, compensation, fines, penalties or other amounts arising out of or incidental to any acts or omissions listed above by any person or entity (including Contractor, its subcontractors, and each of their officials, officers, employees and agents) in connection with any work undertaken or in connection with the Contract, including without limitation the payment of all consequential damages, attorneys' fees, and other related costs and expenses. This indemnity requirement applies to any claim, liability, compensation, fines, penalties, or other amounts arising from or incidental to any alleged defects in the content or manner of submission of the Contractor's bid for the Contract. All duties of Contractor under this Section shall survive termination of the Contract.

14. Assignment

Neither party may assign any of its rights or delegate any of its obligations hereunder without the prior written consent of the other party, which consent shall not be unreasonably withheld, conditioned or delayed. Any purported assignment or delegation in violation of this Section shall be null and void. No assignment or delegation shall relieve the assigning or delegating party of any of its obligations hereunder.

15. Insurance

- 15.1. Contractor, if required to work on City property during the contract period, shall submit proof of insurance to City showing City, its officers, agents, and employees named as Additional Insured and insurance policy shall contain provisions that such policy may not be cancelled except after thirty (30) days written notice to City, ten (10) day's notice if cancellation is due to nonpayment of premium.
- 15.2. Contractor agrees that Contractor is responsible to ensure that the requirements set forth in this section/paragraph are also met by Contractor's subcontractors/consultants who provide services pursuant to this Agreement. Copies of insurance certificates shall be filed with the City.
- 15.3. General Liability Limits
- |  |                       |
|--|-----------------------|
| 15.3.1. BI & PD combined/per occurrence                | \$1,000,000           |
| /Aggregate   | \$1,000,000           |
| 15.3.2. Personal Injury/Aggregate                      | \$1,000,000           |
| 15.3.3. Workers' Compensation and Employer's Liability | Statutory requirement |



16. Discrimination

Contractor shall not discriminate against any individual based on race, color, religion, nationality, sex, age, or handicap condition.

17. Notices

Any notice required to be given pursuant to the terms and provisions hereof shall be in writing and shall be affected by personal delivery or by first class mail, registered or certified, postage prepaid, return receipt requested. Unless otherwise designated by either party in writing, such notices shall be mailed to Post Office Box 9, Hughson, California 95236.

18. Termination

If the Contractor breaches or habitually neglects the Contractor's duties under this Agreement without curing such breach or neglect upon fifteen (15) working days written notice, the City may, by written notices, immediately terminate this Agreement without prejudice to any other remedy to which the City may be entitled, either at law, in equity, or under this Agreement. In addition, either party may terminate this Agreement upon sixty (60) calendar days written notice to other party.

19. Conflict of Interest Statement

- 19.1. Contractor covenants that Contractor, its officers or employees or their immediate family, presently has no interest, including, but not limited to, other projects or independent contracts, and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement.
- 19.2. Contractor further covenants that in the performance of this Agreement no person having any such interest shall be employed or retained by Contractor under this Agreement
- 19.3. Contractor shall not hire City's employees to perform any portion of the work or services provided for herein, including secretarial, clerical, and similar incidental services except upon the written approval of the City.
- 19.4. Performance of services under this Agreement by associates or employees of Contractor shall not relieve Contractor from any responsibility under this Agreement.

20. Drug Free Workplace

Contractor shall comply with the provisions of Government Code section 8350 et seq., otherwise known as the Drug-Free Workplace Act.

21. Force Majeure

It is agreed that neither party shall be responsible for delays in delivery or acceptance of delivery or failure to perform when such delay or failure is attributable to Acts of God, war, strikes, riots, lockouts, accidents, rules or regulations of any governmental agencies or other matters or conditions beyond the control of either the seller/contractor or the purchaser.

22. Forum Law

The Laws of the State of California shall govern this Agreement. Venue is Stanislaus County. The provision of this paragraph shall survive expiration or other termination of this Agreement regardless of the cause of such termination.

23. Entire Agreement and Modification

This Agreement supersedes all previous Agreements either oral or in writing and constitutes the entire understanding of the parties hereto. No changes, amendments, or alterations shall be effective unless in writing and signed by both parties.

24. Attorneys' Fees

In any litigation, arbitration, or other proceeding by which one party either seeks to enforce its rights under this Agreement (whether in contract, tort, or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing party shall be awarded reasonable attorney fees, together with any costs and expenses, to resolve the dispute and to enforce the final judgment.

IN WITNESS WHEREOF, City and Contractor have executed this Agreement on the day and year first written above.

Contractor

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

[Official name]

[Official title]

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

Approved as to Form:

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

Daniel Schroeder  
City Attorney

City

City of Hughson  
Post Office Box 9  
Hughson, CA 95326

City of Hughson  
Sewer Improvements on Tully Road and Second Street

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

\_\_\_\_\_  
Merry Mayhew  
City Manager

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

CITY OF HUGHSON  
COMMUNITY DEVELOPMENT DEPARTMENT

**SAMPLE PAYMENT BOND**

(Section 3247, Civil Code)

WHEREAS, The City of Hughson, acting by and through the Community Development Department, hereafter referred to as "Obligee", has awarded to Contractor \_\_\_\_\_ hereafter designated as the "Principal", a contract for the work described as follows:

The work generally consists of, but is not limited to, the following: a d j u s t water and sewer services, roadway excavation and grading, asphalt grinding/milling, roadway paving and street striping. The contractor shall include in his bid and provide all labor, tools and materials for a complete project in conformance with the intent shown on the drawings and specified herein.

AND WHEREAS, said Principal is required to furnish a bond in connection with said contract, to secure the payment of claims of laborers, mechanics, materialmen and other persons as provided by law.

NOW, THEREFORE, we the undersigned Principal and Surety are bound unto the Obligee in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), for which payment,

we bind ourselves, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if said Principal or its subcontractors shall fail to pay any of the persons named in Civil Code Section 3181, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by such claimant, or any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board for the wages of employees of the Principal and his subcontractors pursuant to Section 18806 of the Revenue and Taxation Code, with respect to such work and labor, that the surety herein will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the surety will pay a reasonable attorney's fee to fixed by the court.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 3181 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Dated: \_\_\_\_\_, 20

Correspondence or claims relating to this bond should be sent to the surety at the following address:

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Principal  
\_\_\_\_\_  
Surety (SEAL)  
\_\_\_\_\_  
By: Attorney-in-Fact

NOTE: Signatures of those executing for the surety must be properly acknowledged.

City of Hughson

Sewer Improvements on Tully Road and Second Street

CERTIFICATE OF ACKNOWLEDGEMENT

State of California

City / County of \_\_\_\_\_

On this day of \_\_\_\_\_, 20\_\_ before me \_\_\_\_\_ personally appeared  
\_\_\_\_\_ personally known to me (or proved to me on the basis of satisfactory evidence)

*Attorney-in-Fact*

to be the person whose name is subscribed to this instrument as the attorney-in-fact of  
\_\_\_\_\_ and acknowledged to me that he/she subscribed the  
name of the said company thereto as surety, and his/her own name as attorney-in-fact.

\_\_\_\_\_  
(SEAL) Notary Public

CITY OF HUGHSON  
COMMUNITY DEVELOPMENT DEPARTMENT

**SAMPLE PERFORMANCE  
BOND**

(To Accompany Contract)

Bond No. \_\_\_\_\_

WHEREAS, the City of Hughson, acting by and through the Community Development Department, has awarded to Contractor \_\_\_\_\_ hereafter designated as the "Contractor", a contract for the work described as follows:

The work generally consists of, but is not limited to, the following: a d j u s t water and sewer services, roadway excavation and grading, asphalt grinding/milling, roadway paving and street striping. The contractor shall include in his/her bid and provide all labor, tools and materials for a complete project in conformance with the intent shown on the drawings and specified herein.

AND WHEREAS, the Contractor is required to furnish a bond in connection with said contract, guaranteeing the faithful performance thereof:

NOW, THEREFORE, we the undersigned Contractor and Surety are held firmly bound to the City of Hughson in the sum of \$ \_\_\_\_\_ dollars, to be paid to said City or its certain attorney, its successors and assigns: for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if the above bound Contractor, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the foregoing contract and any alteration thereof made as therein provided, on his or their part to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning, and shall indemnify and save harmless the City / County of \_\_\_\_\_, its officers and agents, as therein stipulated, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, We have hereunto set our hands and seals on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Correspondence or claims relating to this bond should be sent to the surety at the following address:

_____	_____
_____	_____
_____	Contractor
_____	_____
_____	Name of Surety (SEAL)
_____	By: Attorney-in-Fact
_____	_____

NOTE: Signatures of those executing for the surety must be properly acknowledged.

CERTIFICATE OF ACKNOWLEDGEMENT

State of California, City / County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_ in the year 20 \_\_\_\_ before me \_\_\_\_\_, a notary public in and for the City / County of \_\_\_\_\_ personally appeared \_\_\_\_\_ known to me to be the person whose name is subscribed to this \_\_\_\_\_  
*Attorney-in-fact*  
instrument and known to me to be the attorney-in-fact of \_\_\_\_\_ and acknowledged to me that he/she subscribed the name of the said company thereto as surety, and his/her own name as attorney-in-fact.





*CITY OF HUGHSON*  
*COMMUNITY DEVELOPMENT DEPARTMENT*

## **PART II: NOTICE TO BIDDERS & SPECIAL PROVISIONS**

### **FOR SEWER IMPROVEMENTS ON TULLY ROAD AND SECOND STREET**

**BID OPENING- APRIL 20, 2022, IMMEDIATELY AFTER 11:00 A.M.**

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For use in Connection with federally funded Local Assistance construction projects administered under the Standard Specifications Dated 2018 and Standard Plans Dated 2018 of the California Department of Transportation; and the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished; and the City of Hughson Improvement Standards dated October 10, 2007, insofar as the same may apply and in accordance with the Special Provisions.

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City of Hughson  
Sewer Improvements on Tully Road and Second Street

These Special Provisions contained herein have been prepared by or under the direction of the following Registered Person.

  
\_\_\_\_\_  
**REGISTERED CIVIL ENGINEER**  
**Tyrone Peter, PE**



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## **DOCUMENT ORGANIZATION**

STANDARD PLANS LIST

NOTICE TO BIDDERS

SPECIAL PROVISIONS

ORGANIZATION

DIVISION I GENERAL PROVISIONS

1. GENERAL
2. BIDDING
3. CONTRACT AWARD AND EXECUTION
4. SCOPE OF WORK
5. CONTROL OF WORK
6. CONTROL OF MATERIALS
7. LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC
8. PROSECUTION AND PROGRESS
9. PAYMENT

## **CALTRANS 2018 STANDARD PLANS LIST**

The standard plan sheets applicable to this Contract include those listed below. The applicable revised standard plans (RSPs) listed below are included in the project plans.

### **ABBREVIATIONS, LINES, SYMBOLS AND LEGEND**

A10A	Abbreviations (Sheet 1 of 2)
RSP A10B	Abbreviations (Sheet 2 of 2)
A10C	Lines and Symbols (Sheet 1 of 3)
A10D	Lines and Symbols (Sheet 2 of 3)
A10E	Lines and Symbols (Sheet 3 of 3)

### **PAVEMENT MARKERS, TRAFFIC LINES, AND PAVEMENT MARKINGS**

A2.0A	Pavement Markers and Traffic Lines, Typical Details
A2.0B	Pavement Markers and Traffic Lines, Typical Details
RSP A20C	Pavement Markers and Traffic Lines, Typical Details
A2.0D	Pavement Markers and Traffic Lines, Typical Details
RSP A2.4A	Pavement Markings - Arrows
A2.4B	Pavement Markings - Arrows and Symbols
RSP A2.4C	Pavement Markings - Symbols and Numerals
A2.4D	Pavement Markings- Words
RSP A2.4E	Pavement Markings- Words, Limit and Yield Lines
RSP A24F	Pavement Markings- Crosswalks

### **CURBS, DRIVEWAYS, DIKES, CURB RAMPS AND ACCESSIBLE PARKING**

RSPA87A	Curbs and Driveways
RSPA87B	Hot Mix Asphalt Dikes
RSPABBA	Curb Ramp Details
RSPABBB	Curb Ramp and Island Passageway Details

### **TEMPORARY WATER POLLUTION CONTROL Temporary Water**

T51	Pollution Control Details (Temporary Silt Fence)
T56	Temporary Water Pollution Control Details (Temporary Fiber Roll)
T61	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T62	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T63	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T64	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)

CITY OF HUGHSON  
COMMUNITY DEVELOPMENT DEPARTMENT

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## NOTICE TO BIDDERS

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Sealed bids will be received at the Office of the City Clerk of the City of Hughson, in City Hall, 7018 Pine Street, Hughson, CA 95326 until 11:00 a.m. on APRIL 20, 2022, for **SEWER IMPROVEMENTS ON TULLY ROAD AND SECOND STREET**, at which time they will be publicly opened and read.

The work generally consists of, but is not limited to the following: demolition, clearing, grubbing, drainage improvements, concrete flatwork, roadway excavation and grading, roadway paving, and striping. The contractor shall include in his bid to provide all labor, tools and materials for a complete project in conformance with the intent shown on the drawings and specified herein.

**Procurement of Plans and Special Provisions:** The contract documents are entitled **SEWER IMPROVEMENTS ON TULLY ROAD AND SECOND STREET**. All contract documents, plans, and specifications must be obtained from the City of Hughson's Consultant, Willdan Engineering, (Contact: Peter Rei) (209) 743-4469. Plans and specifications will be available for electronic download at no cost. Contact Mr. Gary Taylor at [gtaylor@willdan.com](mailto:gtaylor@willdan.com) for access to electronic documents. Upon contacting, Willdan Engineering will add the contractor to the Registered Plan Holders List. Only registered plan holders will be permitted to submit a bid for the project.

Plans and special conditions are based on the use of the 2018 Caltrans Standard Specifications and all supplements.

**Bid Bond:** Bids, accompanied by a cash deposit or a certified check or a bid bond payable to the City of Hughson in the amount of ten percent (10%) of the total amount of the bid, must be in the hands of Community Development Director, City Hall, 7018 Pine Street, Hughson, CA 95326, prior to the hour advertised for the opening of bids. All bids will be opened at the noticed hour.

**Pre-Bid Meeting:** A non-mandatory pre-bid meeting is scheduled for 2:00 p.m. on MARCH 25, 2022, location will be on the project at intersection of Tully Road and Santa Fe Ave in Hughson, CA 95326.

**Required Contractor's License(s):** Under Public Contract Code section 3300 and Business and Professions Code section 7028.15(e), the City of Hughson requires that the contractor possess a valid **Class A** contractor's license at the time that the contract is awarded. Failure to possess the specified license will render the bid non-responsive and will bar the award of the contract to any bidder not possessing such license at the time of the award.

**Required Contractor and Subcontractor DIR Registration:** The City of Hughson will accept bids only from bidders that (along with all subcontractors listed) are currently registered and qualified to perform public work pursuant to Labor Code section 1725.5; provided, however, that if a bidder is a joint venture (Business & Professions Code § 7029.1) then City of Hughson may accept a non-complying bid provided that the bidder and all listed subcontractors are registered at the time the contract is awarded. Please provide a State issued Department of Industrial Relations (DIR) registration number with the bid proposal. Information on registration with the DIR is available at:

<https://efiling.dir.ca.gov/PWCR>. This is a separate requirement from the Contractors State License Board licensing requirement.

**Form of Bid:** Each bid must be submitted on the Bid Proposal and bid forms furnished by the City of Hughson, and each bid must include all the items shown on these forms. Substitute forms may be used if specified in this Notice. All bids must be submitted in conformance with this Notice and with the instructions contained in Caltrans Standard Specifications for Construction, which by this reference is made a part of the Notice Inviting Bids.

**Substitution of Securities:** In accordance with Public Contract Code section 22300, substitution of eligible and equivalent securities for any moneys withheld to ensure performance under the contract for the work to be performed will be permitted at the request and expense of the successful bidder. Such equivalent securities must be deposited with City of Hughson or with a state or federally chartered bank as the escrow agent who will then pay such moneys to the contractor. Upon satisfactory completion of the contract, the securities will be returned to the contractor. Securities eligible for investment 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 the contractor and City of Hughson. The contractor will be the beneficial owner of any securities used to secure its performance. Any escrow agreement will be substantially similar to the form set forth in Public Contract Code section 22300.

**Labor Code Compliance:** Any contract entered into pursuant to this Notice will incorporate the applicable provisions of the California Labor Code.

**Prevailing Wage Laws:** The successful bidder must comply with all prevailing wage laws applicable to the project, and related requirements contained in the contract documents. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the contract, as determined by Director of the State of California Department of Industrial Relations, are on file at the City of Hughson, and may be obtained from the DIR website: <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Upon request, City of Hughson will make available copies to any interested party. Also, the successful bidder must post the applicable prevailing wage rates at the work site.

**Payroll Records and Prevailing Wage Monitoring:** This project is subject to prevailing wage compliance monitoring and enforcement by the Department of Industrial Relations. (Labor Code § 1771.4.). Each contractor and subcontractor must keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the contractor or subcontractor in connection with the public work. These records must be certified and made available for inspection at all reasonable hours at the principal place of the contractor as required by Labor Code section 1776. In the case of state-funded public works projects, certified payroll reports must be provided to City of Hughson on a weekly basis.

**Reservation of Rights:** The City Board reserves the right to reject any or all bids, waive any irregularities in the bids, and to make an award or any rejection in what it alone considers to be in the best interest of the City.

**Bid Protest Procedure:** Any bid protest must be in writing and received by City at 7018 Pine Street, Hughson California, before 5:00 p.m. no later than two working days following bid opening (the "Bid Protest Deadline") and must strictly comply with the requirements set forth in this Bid Protest Procedure.

1. **General.** Only a bidder who has actually submitted a responsive bid proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.
2. **Protest Contents.** The bid protest must contain a complete statement of the basis for the protest and all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion or portions of the Bid Form, Contract Documents, or bidding documents upon which the protest is based. The protest must include the name, address, email address, and telephone number of the person representing the protesting bidder if different from the protesting bidder.
3. **Copy to Protested Bidder.** A copy of the protest and all supporting documents must be concurrently transmitted by fax or by email, by or before the Bid Protest Deadline, to the protested bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.
4. **Response to Protest.** The protested bidder may submit a written response to the protest, provided the response is received by City before 5:00 p.m., within two working days after the Bid Protest Deadline or after actual receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must include all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address, email address, and telephone number of the person representing the protested bidder if different from the protested bidder.
5. **Copy to Protesting Bidder.** A copy of the response and all supporting documents must be concurrently transmitted by fax or by email, by or before the Response Deadline, to the protesting bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.
6. **City's Decision.** The scope of the bid protest considered by the City shall be limited to the issues set forth in the bid protest timely filed pursuant to this Policy. The City may take any action on the bid protest that is authorized by law, including adoption of City staff's recommended determination of the bid protest, adoption of a determination different from that recommended by City staff, or the rejection of all bids without deciding the bid protest. The decision of the City on a bid protest shall be the final administrative action on the protest and shall exhaust the protesting bidder's administrative remedies.

7. **Exclusive Remedy.** The procedure and time limits set forth in this Bid Protest Procedure are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. A bidder's failure to comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.
8. **Right to Award.** The City Council reserves the right to award the Contract to the bidder it has determined to be the responsible bidder submitting the lowest responsive bid, and to issue a notice to proceed with the Work notwithstanding any pending or continuing challenge to its determination.
9. **Rejection of All Bids.** The filing of a bid protest shall not preclude the City from rejecting all bids. Rejecting all bids shall render a protest moot and terminate all protest proceedings.

The Number of Working Days for this project is **80**. Bids are required for the entire work described herein

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Ashton Gose  
City Clerk  
City of Hughson

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Date



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**CITY OF HUGHSON COMMUNITY  
DEVELOPMENT DEPARTMENT**

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# **SPECIAL PROVISIONS**

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## **ORGANIZATION**

Special provisions are under headings that correspond with the main-section headings of the *Standard Specifications*. A main-section heading is a heading shown in the table of contents of the *Standard Specifications*.

Each special provision begins with a revision clause that describes or introduces a revision to the *Standard Specifications* as revised by any revised standard specification.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the *Standard Specifications* for any other reference to a paragraph of the *Standard Specifications*.

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## DIVISION I GENERAL PROVISIONS

\*\*\*\*\*

### 1 GENERAL

- **Add to section 1-1.05:**

Whenever in the Standard Specifications, Special Provisions, Notice to Contractor, Proposal, Contract, or other contract documents the following terms are used, the intent and meaning shall be interpreted as follows:

State	City of Hughson
Department	City of Hughson
Director	City Council, City of Hughson
Engineer	City Engineer, City of Hughson, acting either directly or through properly authorized agent or consultants.
City	The Community Development Department, City of Hughson

- **Add to Section 1-1.01**

The following abbreviations apply to this list:

City denotes City of Hughson Improvement Standards

SP denotes Project Special Provisions



City of Hughson  
Sewer Improvements on Tully Road and Second Street  
Statutory requirement

- AA

#### **5-1.26A (2)**

##### **Definitions**

You must follow all procedures, methods, and typical stake markings under Chapter 12, Construction Surveys, of the Caltrans publication "Surveys Manual." Copies of the "Survey Manual" may be purchased from Caltrans Publications Unit 1900 Royal Oaks Drive, Sacramento, California 95815, (916) 445-3520.

#### **5-1.26A (3)**

##### **Submittals**

You must submit all computations necessary to establish the exact position of the work from the control points on the plans. All computations, survey notes, and other records necessary to accomplish the work must be neat, legible, and accurate. Copies of such computation, notes and other records must be furnished to the Engineer prior to beginning work that requires their use. Upon completion of construction staking and prior to acceptance of the contract, all computations, survey notes, and other data used to accomplish the work must be submitted to the Engineer and will become the property of the City.

Before starting any surveying work, you must submit the name and professional history of the land surveyor designated by you as its project surveyor.

#### **5-1.26B MATERIALS**

Not used.

#### **5-1.26C CONSTRUCTION**

Construction stakes and marks (including paint marks) must be removed from the site of work when no longer needed.

You are responsible for generating the grades for the work as required for the completion of this work.

You are responsible for the preservation of all Survey Monuments within the project limits. Any Survey Monuments that potentially may be disturbed by construction activity must be located and referenced by a Licensed Land Surveyor, and a Corner Record or Record of Survey filed with the County Surveyor. Any Survey Monuments disturbed during the course of construction must be reestablished by a Licensed Land Surveyor, a new monument set, and another Corner Record or Record of Survey filed with the County Surveyor. (Land Surveyors' Act Section 8771).

#### **5-1.26D PAYMENT**

The Department pays you for construction staking as follows:

1. A total of 90 percent of the item total over the life of the contract
2. A total of 100 percent of the item upon submission of final computations, notes and other data.

- **Delete paragraphs 2 through 5 of Section 5-1.27E.**
- **Delete Section 5-1.43E**

## 6 CONTROL OF MATERIALS

- **Delete the provisions of Section 6-2.03 – Department-Furnished Materials**
  
- **Delete the provisions of Section 6-2.05 – Buy America**
  
- **Replace the footnote to the table in the 2nd paragraph of section 6-3.05B with:**  
Distance is air-line miles from Sacramento to the inspection source.

## 7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

- **Replace the fifth paragraph of Section 7-1.02K (3) with:**

Submit payroll forms electronically to the Engineer and to the Department of Industrial Relations Electronic Certified Payroll Reporting System.

- Replace the table (Liability Limits) in Section 7-1.06D (2) with:

1.1. General Liability Limits	
1.1.1. BI & PD combined/per occurrence/Aggregate	\$1,000,000
1.1.2. Personal Injury/Aggregate	\$1,000,000
1.1.3. Workers' Compensation and Employer's Liability	\$1,000,000
	Statutory requirement

## 8 PROSECUTION AND PROGRESS

- **Replace the paragraphs and subsections in section 8-1.02C (3) with:**

Use Microsoft Project for scheduling.



\*\*\*\*\*

## **9 PAYMENT**

- **Delete section 9-1.07.**

- **Add to section 9-1.16C:**

The following items are eligible for progress payment even if they are not incorporated into the work:

None

- **Replace section 9-1.16F:**

The City retains 5% of all progress payments subject to the provisions of Public Contract Code § 9203. The City releases retention not sooner than 30 days after filing of the Notice of Completion with the Stanislaus County Recorder.

- **Add to section 9-1.17D(1):**

The City will pay the final estimate, subject to the other conditions in this section, within 30 days following final acceptance by the City of Hughson City Council. The Notice of Completion is filed after acceptance by the City Council.

- **Replace the paragraphs in section 9-1.22 with:**

Claims are processed following the requirements found in Public Contract Code § 10204 et seq.

## **DIVISION II GENERAL CONSTRUCTION CONSTRUCTION SPECIAL PROVISIONS**

### **STANDARD SPECIFICATIONS AND STANDARD PLANS**

Where the term "Standard Specifications" is used, it refers to the Standard Specifications of the California Department of Transportation, 2018 edition. "Standard Plans" means the Standard Plans of the same Agency, 2018 edition.

### **REVISED STANDARD SPECIFICATIONS**

Revised Standard Specifications set forth in these special provisions shall be considered as part of the Standard Specifications for the purposes set forth in Section 5-1.02, "Contract Components," of the Standard Specifications. Whenever either the term "Standard Specifications is amended" or the term "Standard Specifications are amended" is used in the special provisions, the text or table following the term shall be considered an amendment to the Standard Specifications. In case of conflict between such amendments and the Standard Specifications, the amendments shall take precedence over and be used in lieu of the conflicting portions.

A copy of the current amendments is available at

<http://ppmoe.dot.ca.gov/hq/esc/oe/construction%20contract%20standards/std%20specs/2018%20StdSpecs/2018> Std Specs.pdf. Or by contacting the City of Hughson.

### **SECTION 9. (BLANK)**

### **SECTION 10. CONSTRUCTION DETAILS**

#### **10-1.01 GENERAL**

The Contractor's attention is directed to Section 5-1.36, "Property and Facility Preservation," of the Standard Specifications and these Special Provisions.

The Contractor will be required to work around public utility facilities and other improvements that are to remain in place within the construction area or that are to be relocated and relocation operations have not been completed, and in accordance with the provisions of Sections 5-1.36 and 7-1.02 of the Standard Specifications, he will be liable to owners of such facilities and improvements for any damage or interference with service resulting from his/her operations. The Contractor shall ascertain the exact locations of underground facilities and improvements within the construction area before using equipment that may damage such facilities or interfere with the services. Other forces may be engaged in moving or removing utility facilities or other improvements or maintaining services of utilities and the Contractor shall cooperate with such forces and conduct his/her operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by such other forces.

The Contractor is required to notify all property owners, businesses, residences, etc. in letter form in both English and Spanish of the construction dates and times, at least 5 days prior to the beginning of work. This public notification must be submitted to the City and Engineer for review and approval prior to distribution. A copy of this notification letter must also be sent to the City Engineer. Contractor shall also post "Temporary No Parking" signs, a minimum of 72 hours prior to the commencing removals, cold milling, and paving operations of the street adjacent to their property. The notification shall be by posting visible signs at the edge of the curbs and gutters. The signs which will be posted must be on their own lath or attached to delineator cones, or pylons, and not stapled or nailed to any tree, utility pole or street signs. Trees must be protected from being scarred or broken during construction and must be repaired or replaced at Contractor's expense if damage is done.

In the event that vehicles are on the street at the time construction is to begin, the contractor shall take appropriate action to notify the owner/s of said vehicle to have it moved. If this is not possible, or the vehicle is inoperable and the owner is not capable of moving the vehicle, the contractor shall inform the Project Engineer, who will notify the County Sheriff's Office to have the vehicle towed at the owner's expense. Note: The above action may take place only if the "Temporary No Parking" signs have been in place, and placement has been verified by the Project Engineer, for the required 48 hour time period. Removal of said signs by the property owners or vandals will not constitute Non-compliance with this section.

The Contractor will be held responsible for any damage he may do to existing installations that are to remain in place.

The Contractor shall ensure that all striping and road markings are repainted as specified on the PLANS.

All property to remain shall be properly protected from injury or damage. Should any such property be damaged, it shall be repaired and/or replaced with material, fixtures, or equipment of the same kind, quality and size or better.

Full compensation for performing all of the work required under these Special Provisions shall be considered as included in the prices paid for the various Contract items of work involved and no separate payment will be made therefore

#### **10-1.02 ORDER OF WORK**

Order of work shall conform to the provisions in Section 5, "Control of Work," of the Standard Specifications and these special provisions.

The Contractor shall phase the work according to the following:

- 1) Construct Spot Repairs on Tully Rd
- 2) Construct 12-Inch PVC sewer and manholes connecting the west sewer to east sewer on Tully Rd
- 3) Fill specified pipes and manhole with sand
- 4) Install 10-inch PVC sewer with pipe bursting and reconnect sewer laterals

- 5) Cold mill roadway
- 6) Place Asphalt Concrete Pavement (Entire Roadway)

Overlay operations shall proceed without interruption from start to finish.

Full compensation for conforming to those requirements will be considered as included in the prices paid for the various contract items of work and no separate payment will be made therefore.

### **10-1.03 MOBILIZATION/DE-MOBILIZATION**

The scope of the work for Mobilization shall include moving onto the site of all equipment; and the furnishing and erecting of plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the Work. Mobilization shall include, but not be limited to, the following principal items:

1. Moving on to the site of all Contractor's equipment required for first month's operations.
2. Installing temporary construction power, wiring, and lighting facilities per Section entitled "Temporary Utilities."
3. Establishing fire protection system per Section entitled "Temporary Utilities."
4. Developing and installing construction water supply per Section entitled "Temporary Utilities."
5. Providing on-site sanitary facilities and potable water facilities as specified per Section entitled "Temporary Utilities."
6. Furnishing, installing, and maintaining all storage buildings or sheds required for temporary storage of products, equipment, or materials that have not yet been installed in the Work. All such storage shall meet manufacturer's specified storage requirements, and the specific provisions of the specifications, including temperature and humidity control, if recommended by the manufacturer, and for all security per Section entitled "Materials and Equipment," and Section entitled "Delivery, Storage, and Handling," as applicable.
7. Arranging for and erection of Contractor's work and storage yard per Section entitled "Site Access and Parking."
8. Obtaining and paying for all required permits.
9. Posting all OSHA required notices and establishment of safety programs.
10. Coordination with utility agencies.
11. Have the Contractor's superintendent at the job site full time.
12. Submittal of required Construction Schedule as specified in Section entitled "Contractor Submittals."
13. **Contractor is required to meet all requirements for working near or within BNSF R/W.**

In addition to the requirements specified above, all submittals shall conform to the applicable requirements of Section entitled "Contractor Submittals."

De-mobilization shall consist of the completion of all final construction and administration work required to secure the project for termination and acceptance by the Engineer, including but not limited to the following:

1. Removal of all temporary facilities, construction office, temporary utilities, plant, equipment, and similar from project limits and adjacent property, as required and as

- directed by the Engineer.
2. Completion of record drawings (as-builts), to the satisfaction of the Engineer.
  3. Completion of the requirements of permits issued by other agencies.
  4. Submission of signed 1-year material and workmanship guarantee.
  5. Satisfactory completion of all other contractually and legally required construction and administrative items of work.

De-mobilization shall include the satisfactory completion of all items of work, but shall not be constructed as being a separate payment for work that is paid under separate contract items. The contract item for De-Mobilization is intended for proper close-out activities.

**Mobilization bid cost is not to exceed 10% of the total bid.**

Measurement for payment for Mobilization/De-mobilization will be based upon completion of such work as a lump sum pay item and shall require completion of all the listed items in this Section.

Payment for Mobilization/De-mobilization will be made at the lump sum allowance named in the Bid Sheets, which price shall constitute full compensation for all such work.

Payment for Mobilization will be made in the form of a single, lump sum equal to 50% of the contract lump sum price for Mobilization/De-mobilization, no part of which will be approved for payment under the Contract until all mobilization items listed herein have been completed as specified.

Payment for De-mobilization will be made in the form of a single, lump sum equal to 50% of the contract lump sum price for Mobilization/De-mobilization, no part of which will be approved for payment under the Contract until all de-mobilization items listed herein have been completed as specified. Payment for De-Mobilization will be included in the final pay estimate and payment.

**10-1.04 NOT USED**

**10-1.05 CONTRACTOR SUBMITTALS**

**GENERAL**

Wherever submittals are required hereunder, all such submittals by the Contractor shall be submitted to the Engineer through the Resident Project Representative for recording and forwarding to the Engineer. A Submittal is defined as any drawing, calculation, specification, product data, samples, manuals, requests for substitutes, spare parts, photographs, survey data, traffic control plans, record drawings, bonds, or similar items required to be submitted to the City or the Engineer under the terms of the contract.

Submittals Required Within 7 Days After Notice to Proceed: Within 7 days after the date of commencement as stated in the Notice to Proceed, the Contractor shall submit the following items to the Engineer for review:

1. A Preliminary Construction Schedule indicating the starting and completion dates of the various stages of the Work, and in accordance the Contract Documents.
2. A preliminary schedule of Shop Drawing and Sample submittals.
3. A list of all permits and licenses the Contractor shall be obtained indicating the agency required to grant the permit and the expected date of submittal for the permit and required date for receipt of the permit.

Submittals of Substitutes Required Prior to Award As provided under Section 3400 of the California Public Contracts Code, the Contractor shall, within 10 days prior to award of the contract, submit to the Engineer all proposed Substitutes or "Or Equal" products for the Engineer's review and approval. All such submittals shall be in conformance with the requirements of this Section.

The Contractor hereby agrees that failure to submit alternative product requests within the stipulated time period shall act as a waiver of any future rights to offer such substitutes, and the Contractor hereby agrees to provide one of the specific products called for in the Contract Documents.

## **CONTRACTOR'S SCHEDULE**

Time of Submittals: Within 7 days of the commencement date stated in the Notice to Proceed, the Contractor shall submit for acceptance by the Engineer, a Preliminary Construction Schedule for the Work, showing its general plan for orderly completion of the Work and showing in detail its planned mobilization of equipment, sequence of early operations, and timing of procurement of materials and equipment. The Preliminary Construction Schedule produced and submitted shall indicate a project completion date on or before the contract completion date. The Engineer within 7 days after receipt of the Preliminary Construction Schedule, shall meet with a representative of the Contractor to review the preliminary plan and construction schedule.

Within 7 days after the conclusion of the Engineer's review period, the Contractor shall revise the Preliminary Construction Schedule as required, and resubmit to the Engineer for review. The Preliminary Construction Schedule will be revised and/or approved or rejected by the Engineer within 7 calendar days after receipt. Said schedule, when accepted by the Engineer shall constitute the Initial Construction Schedule until later revised schedules are submitted due to delays beyond the control and without the fault or negligence of the Contractor.

Acceptance: When the Initial Construction Schedule has been accepted, the Contractor shall submit to the Engineer 4 copies of the accepted schedule.

Schedule Updates with Progress Payment Applications: The Contractor shall submit updated construction schedules with each payment application.

Additional Revised Construction Schedules: The Contractor, if requested by the Engineer, shall provide a Revised Construction Schedule if, at any time, the Engineer considers the completion date to be in jeopardy because of any portion of the work falling behind schedule. The Revised Construction Schedule shall show how the Contractor intends to accomplish the Work to meet the completion date. The form and method employed by the Contractor shall be the same as required for the Initial Construction Schedule.

Construction Schedule Revisions: The Contractor shall modify any portions of the construction schedule that becomes unfeasible because of portions of the Work falling behind schedule, or for any other valid reason. Any portion of the work that cannot be completed by its originally-scheduled completion date shall be deemed to be behind schedule.

#### **PROPOSED SUBSTITUTES OR "OR-EQUAL" ITEMS**

For convenience in designation in the Contract Documents, any material, product, or equipment to be incorporated in the Work may be designated under a brand or trade name or the name of a manufacturer and its catalog information. The use of any substitute material, product, or equipment which is equal in quality and utility and possesses the required characteristics for the purpose intended will be permitted, subject to the following requirements:

1. The burden of proof as to the quality and utility of any such substitute material, product, or equipment shall be upon the Contractor.
2. The Engineer will be the sole judge as to the quality and utility of any such substitute material, product, or equipment and its decision shall be final.

Wherever in the Contract Documents the name or the name and address of a manufacturer or supplier is given for a material, product, or equipment, or if any other source of a material, product, or equipment is indicated therefore, such information is given for the convenience of the Contractor only, and no limit, restriction, or direction is indicated or intended thereby, nor is the accuracy or reliability of such information guaranteed. It shall be the responsibility of the Contractor to determine the accurate identity and location of any such manufacturer, supplier, or other source of any material, product, or equipment called for in the Contract Documents.

The Contractor may offer any material, product, or equipment that it considers equal to those specified. Unless otherwise provided by law or authorized in writing by the Engineer, the substantiation of any proposed substitute or "or equal" material, product, or equipment must be submitted prior to award of the contract. The Contractor, at its sole expense, shall furnish data concerning items it has offered as substitute or "or equal" to those specified. The Contractor shall provide the data required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the substitute or "or equal" item will fulfill its intended function.

The Contractor's attention is further directed to the requirement that its failure to submit data substantiating a request for a substitution of an "or equal" item during the time between the opening of bids and the date of award shall be deemed to mean that the Contractor intends to furnish one of the specific brand or trade-named material, product, or equipment specified in the Contract Documents and the Contractor does hereby waive all rights to offer or use substitute materials, products, or equipment in each such case. Wherever a proposed substitute material, product, or equipment has not been submitted within the time specified above, or wherever the submission of a proposed substitute material, product, or equipment fails to meet the requirements of the Specifications and an acceptable resubmittal is not received by the Engineer within said specified time period, the Contractor shall furnish only one of the materials, products, or equipment originally-named in the Contract Documents. Approval by the Engineer of a substitute item proposed by the

Contractor shall not relieve Contractor of the responsibility for full compliance with the Contract Documents and for adequacy of the substituted item. The Contractor shall also be responsible for resultant changes and all additional costs which the substitution requires in its work, the work of its subcontractors and of other contractors and shall effect such changes without cost to City.

## **RECORD DRAWINGS**

General: The Contractor shall keep and maintain, at the job site, one record set of Contract Drawings. On these Contract Drawings, Contractor shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction.

Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Drawings. Said Record Drawings shall be supplemented by any detailed sketches as necessary or directed to fully indicate the Work as actually constructed.

These master Record Drawings of the Contractor's representation of "as-built" conditions, including all revisions made necessary by addenda, change orders, and the like, shall be maintained up-to-date during the progress of the Work.

In the case of those drawings which depict the detail requirement for equipment to be assembled and wired in the factory, the record drawings shall be updated by indicating those portions which are superseded by change order drawings or final shop drawings, and by including appropriate reference information describing the change orders by number and the shop drawings by manufacturer, drawing, and revision numbers.

Record Drawings prepared by the Contractor shall be accessible to the Engineer at all times during the construction period and shall be delivered to the Engineer upon completion of the work.

Effect on Progress Payments: Requests for partial payments will not be approved if the record drawings are not kept current. All such Record Drawings will be inspected by the Engineer each month, showing all variations between the Work as actually constructed and as originally shown on the Contract Drawings or other Contract Documents, and the City will not process monthly payment requests until such drawings are made current each month.

Final Record Drawings: Upon substantial completion of the Work and prior to final acceptance by the City, the Contractor shall complete and deliver the completed set of Record Drawings to the Engineer for transmittal to the City, conforming to the construction records of the Contractor. This set of drawings shall consist of corrected plans showing the reported location of the Work. The information submitted by the Contractor and incorporated by the Engineer into the Record Drawings will be assumed to be reliable, and the Engineer will not be responsible for the accuracy of such information, or for any errors or omissions, which may appear on the Record Drawings as a result.

Effect on Final Payment: Final payment will not be approved until the Contractor-prepared Final Record Drawings have been delivered to the Engineer. Said up-to-date, Record Drawings may be



in the form of a set of prints with carefully plotted information overlaid in pencil.

Full compensation for Contractor Submittals shall be considered as included in the prices paid for the various items of work and no separate payment will be made therefore.

#### **10-1.06 MATERIALS AND EQUIPMENT**

The word "Products," as used herein, is defined to include purchased items for incorporation into the Work, regardless of whether specifically purchased for project or taken from Contractor's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, etc.). Definitions in this paragraph are not intended to negate the meaning of other terms used in Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," "special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.

Source Limitations: To the greatest extent possible for each unit of work, the Contractor shall provide products, materials, or equipment of a singular generic kind from a single source.

Compatibility of Options: Where more than one choice is available as options for Contractor's selection of a product, material, or equipment, the Contractor shall select an option which is compatible with other products, materials, or equipment already selected. Compatibility is a basic general requirement of product/material selections.

All equipment designated to be installed in the Work, whether temporarily stored at the site or installed in place, shall be serviced on a regularly scheduled basis, and a written log of services shall be maintained and submitted as a record document to the Engineer.

Full compensation for Materials and Equipment shall be considered as included in the prices paid for the various items of work and no separate payment will be made therefore.

#### **10-1.07 DELIVERY, STORAGE, AND HANDLING**

The Contractor shall confine all operations (including storage of materials) on City premises to areas authorized or approved by the City. The Contractor shall hold and save the City, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the City and shall be built with labor and materials furnished by the Contractor without expense to the City. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the Work. With the written consent of the Engineer, the buildings and utilities may be abandoned and need not be removed.

The Contractor shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the Work.

The Contractor shall deliver, handle, and store products in accordance with manufacturer's written recommendations and by methods and means that will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, the Contractor shall provide delivery/installation coordination to ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

Products shall be transported by methods to avoid product damage and shall be delivered in undamaged condition in manufacturer's dry, unopened containers or packaging.

The Contractor shall provide equipment and personnel to handle products, materials, and equipment including those provided by City by methods to prevent soiling and damage.

The Contractor shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

Products shall be stored in accordance with manufacturer's written instructions, with seals and labels intact and legible. Sensitive products shall be stored in weather-tight enclosures and temperature and humidity ranges shall be maintained within those required by the manufacturer's written instructions.

Storage shall be arranged to provide access for inspection. The Contractor shall periodically inspect to assure products are undamaged and are maintained under required conditions.

Products subject to discoloration or deterioration from exposure to the elements shall be covered with impervious sheet material. Ventilation shall be provided to avoid condensation.

Loose granular materials shall be stored on clean, solid surfaces such as pavement, or on rigid sheet materials to prevent mixing with foreign matter.

Surface drainage shall be provided to prevent erosion and ponding of water.

Full compensation for Delivery, Storage, and Handling shall be considered as included in the prices paid for the various items of work and no separate payment will be made therefore.

#### **10-1.08 COOPERATION**

It is anticipated that work by another various utility owners will need to be conducted in coordination with the construction of the designation improvement to adjust existing manholes and valve covers to new grades. The contractor shall furnish access and coordinate construction operations to accommodate this work.

It shall be the responsibility of the contractor to work with the local utility companies to locate all underground utility service lines within the project limits prior to any excavation work. The Contractors attention is directed to the Section entitled "Compliance With One Call Underground Service Alert," elsewhere in these Specifications

**Underground Service Alert-Northern California (USA)**  
**Telephone: 1 (800) 422-4133 or 1 (800) 227-2600**

Comply with Section 5-1.20, "Coordination with Other Entities," of the Standard Specifications.

Full compensation for Cooperation shall be considered as included in the prices paid for the various items of work and no separate payment will be made, therefore.

**10-1.09 PROGRESS SCHEDULE (Not Used)**

**10-1.10 TEMPORARY UTILITIES**

It shall be the Contractor's responsibility to provide equipment that is adequate for the performance of the Work under this Contract within the time specified. All equipment shall be kept in satisfactory operating condition, shall be capable of safely and efficiently performing required Work, and shall be subject to inspection and approval by the City's representative at any time within the duration of the Contract. All work hereunder shall conform to the applicable requirements of Cal-OSHA Construction Safety Orders.

All Work conducted at night or under conditions of deficient daylight when authorized by the Engineer, shall be suitably lighted to ensure proper Work and to afford adequate facilities for inspection and safe working conditions

All temporary connections for electricity shall be subject to approval of the Engineer and the power company representative and shall be removed in like manner at the Contractor's expense prior to final acceptance of the Work by the City.

Unless otherwise permitted by the Engineer, circuits separate from lighting circuits shall be used for all power purposes.

All wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place.

Contractor shall be responsible for providing construction water. If the Contractor intends to use water from the Water Provider's fire hydrants, the Contractor will be required to apply for a water construction meter and pay for all charges required by the Water Provider. The Contractor shall provide all facilities necessary to convey the water from the water source to the points of use in accordance with the requirements of the Contract Documents.

The Contractor will be responsible for all water charges from the Water Provider's fire hydrants during construction.

The Contractor shall not make connection to, or draw water from, any fire hydrant or pipeline without first obtaining permission of the Water Provider for the use of said fire hydrant or pipeline. For each such connection made, the Contractor shall first attach to the fire hydrant or pipeline a valve and a meter of a size and type acceptable to the Water Provider. The Contractor shall contact the Water Provider for specific requirements for water usage and charges.

Contractor shall be solely responsible for the adequate functioning of its water supply system and shall be solely liable for any claims arising from the use of same, including discharge or waste of water therefrom.

Before final acceptance of the Work on the project, all temporary connections and piping installed by the Contractor shall be entirely removed, and all affected improvements shall be restored to their original condition, or better, to the satisfaction of Engineer, the City, and/or other agency owning the affected utility.

Fixed or portable chemical toilets shall be provided wherever needed for the use of employees.

The Contractor shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.

Full compensation for providing, maintaining, and removing Temporary Utilities shall be considered as included in the contract price paid for under the lump sum Contract bid item for Mobilization/De-Mobilization, and no separate payment will be made, therefore.

#### **10-1.11 NOT USED**

#### **10-1.12 DUST CONTROL**

Dust control shall conform to the provisions of Section 10-5, "Dust Control", of the Standard Specifications and these special Provisions.

Full compensation for dust control shall be considered as included in the prices paid for the various items of work and no separate payment will be made therefore.

#### **10-1.13 SITE ACCESS AND PARKING**

The Contractor shall take all necessary precautions for the protection of the Work and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The Contractor shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of Article 11 of Cal-OSHA Construction Safety Orders.

The Contractor shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to and from the site of the Work. It shall be the Contractor's responsibility to construct and maintain any access or haul roads required for its construction operations.

Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alley, way, or parking area during the performance of the Work hereunder, and it shall so conduct its operations so as not to interfere unnecessarily with the authorized work of the City, utility companies, or other agencies in such streets, alleys, ways, or parking areas.

No street shall be closed to the public without first obtaining the permission of the Engineer, the City, and other proper governmental authority, where applicable. Where excavation is being performed in primary streets or highways, one lane of traffic shall be kept open in each direction at all times unless otherwise provided in the Contract Documents or under the terms of the permits issued by the City, County, State, or other public agencies, as required.

Toe boards shall be provided to restrict movement of excavated material if required by the Engineer, the City, or other Agency having jurisdiction over the affected street or highway.

Fire hydrants on or adjacent to the Work shall be kept accessible to firefighting equipment at all times.

Temporary provisions shall be made by the Contractor to assure the use of sidewalks and the proper functioning of all gutters, sewer inlets, and other drainage facilities.

Wherever necessary or required for the convenience of the public or individual residents or business places at street or highway crossings, private driveways, or elsewhere, the Contractor shall provide suitable temporary bridges or steel plates over unfilled excavations, except in such cases as the Contractor shall secure the written consent of the individuals or authorities concerned to omit such temporary bridges or steel plates, which written consent shall be delivered to the Engineer prior to beginning the excavation. All such bridges or steel plates shall be maintained in service until access is provided across the backfilled excavation.

For the protection of traffic in public or private streets and ways, the Contractor shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the current edition of California Manual of Uniform Traffic Control Devices as published by State of California, Department of Transportation. Traffic control shall be subject to the requirements of Article 11 of Cal-OSHA Construction Safety Orders and these Contract Documents.

If closure of any street is required during construction, a formal application for a street closure shall be made to the City at least 30 days prior to the required street closure in order for the City to determine the necessary signing and detour requirements to be provided by the Contractor.

Full compensation for site access and parking shall be considered as included in the contract price paid for under the lump sum Contract bid item for Mobilization/De-Mobilization, and no separate payment will be made therefore.

## **10-1.14 WATER POLLUTION CONTROL**

### **GENERAL**

#### **SUMMARY**

Contractor shall be responsible for preparation and implementation of a BMP (Best Management Practices) List, subject to approval by the City Engineer. The list shall include practices to protect areas receiving storm water runoff from the project site or construction support facilities. The plan may utilize the practices recommended in the latest California Storm Water Best Management Practices Construction Handbook available at [www.casqa.com](http://www.casqa.com).

#### **SUBMITTALS**

If you operate construction support facilities, protect storm water systems or receiving waters from the discharge of potential pollutants by using WPC Best Management Practices (BMPs).

Construction support facilities include:

1. Staging areas
2. Storage yards for equipment and materials
3. Mobile operations
4. Batch plants for PCC and HMA
5. Crushing plants for rock and aggregate
6. Other facilities installed for your convenience such as haul roads

### **IMPLEMENTATION REQUIREMENTS**

#### **BMP IMPLEMENTATION**

Monitor the National Weather Service Forecast Office on a daily basis.

Whenever you or the Engineer identifies a deficiency in the implementation of the approved BMP list:

1. Correct the deficiency immediately, unless the Engineer agrees to a later date for making the correction
2. Correct the deficiency before precipitation occurs

If you fail to correct the deficiency by the agreed date or before the onset of precipitation, the Department may correct the deficiency and deduct the cost of correcting the deficiency from payment.

Continue BMP implementation during any temporary suspension of work activities.

Install BMP practices within 15 days or before predicted precipitation, whichever occurs first.

#### **INSPECTION**

The BMP Manager must prepare BMP status reports that include the following:

1. Location and quantity of installed BMP practices
2. Location and quantity of disturbed soil for the active or inactive areas

Within 24 hours of finishing the weekly inspection, the BMP Manager must submit:

1. Copy of the completed site inspection report
2. Copy of the BMP status report

## **PAYMENT**

Full compensation for water pollution control shall be considered as included in the prices paid for the various items of work and no separate payment will be made, therefore.

### **10-1.15 CONSTRUCTION AREA TRAFFIC CONTROL DEVICES**

Flagging, signs, and temporary traffic control devices furnished, installed, maintained, and removed when no longer required shall conform to the provisions of the latest edition of the California Manual of Uniform Traffic Control Devices (CAMUTCD) and these special provisions.

All traffic control devices including cones, barricades, signs, etc. shall be new or unblemished.

Category 1 temporary traffic control devices are defined as small and lightweight (less than 45 kg) devices. These devices shall be certified as crashworthy by crash testing, crash testing of similar devices, or years of demonstrable safe performance. Category 1 temporary traffic control devices include traffic cones, plastic drums, portable delineators, and channelizers.

If requested by the Engineer, the Contractor shall provide written self-certification for crashworthiness of Category 1 temporary traffic control devices at least 5 days before beginning any work using the devices or within 2 days after the request if the devices are already in use. Self-certification shall be provided by the manufacturer or Contractor and shall include the following:

- A. Date,
- B. Federal Aid number (if applicable),
- C. Contract number, City, county, route and kilometer post of project limits,
- D. Company name of certifying vendor, street address, city, state and zip code,
- E. Printed name, signature and title of certifying person; and
- F. Category 1 temporary traffic control devices that will be used on the project.

The Contractor may obtain a standard form for self-certification from the Engineer.

Category 2 temporary traffic control devices are defined as small and lightweight (less than 45 kg) devices that are not expected to produce significant vehicular velocity change, but may cause potential harm to impacting vehicles. Category 2 temporary traffic control devices include barricades and portable sign supports.

Category 2 temporary traffic control devices shall be on the Federal Highway Administration's (FHWA) list of Acceptable Crashworthy Category 2 Hardware for Work Zones.

Category 2 temporary traffic control devices that have not received FHWA acceptance shall not be used. Category 2 temporary traffic control devices in use that have received FHWA acceptance shall be labeled with the FHWA acceptance letter number and the name of the manufacturer. The label shall be readable and permanently affixed by the manufacturer. Category 2 temporary traffic control devices without a label shall not be used.

If requested by the Engineer, the Contractor shall provide a written list of Category 2 temporary traffic control devices to be used on the project at least 5 days before beginning any work using the devices or within 2 days after the request if the devices are already in use.

Full compensation for providing self-certification for crashworthiness of Category 1 temporary traffic control devices and for providing a list of Category 2 temporary traffic control devices used on the project shall be considered as included in the contract price paid for Traffic Control Plan and Implementation System, and no additional compensation will be allowed therefore.

#### **10-1.16 TRAFFIC CONTROL PLAN AND IMPLEMENTATION**

**Please note that all Flagging Costs for Traffic Control will be paid solely by the Contractor and full compensation for performing this work will be paid under the lump sum bid item for TRAFFIC CONTROL PLAN AND IMPLEMENTATION and no additional compensation will be allowed therefore.**

#### **CONSTRUCTION AREA SIGNS**

Construction area signs for temporary traffic control shall be furnished, installed, maintained, and removed when no longer required in conformance with the provisions of California Manual of Uniform Traffic Control Devices (CAMUTCD) and these special provisions.

All construction area signs shall be new or unblemished.

One C18 sign and One C13 sign shall be posted on each approach/departure from the construction work area. Locations of the signs shall be approved by the Engineer.

Signs may be ported on temporary post supported by cross braces, rather than by digging holes for posts. Where such cross braces are used, no braces shall extend into the traveled way or a sidewalk.

Unless otherwise shown on the plans or specified in these special provisions, the color of construction area warning and guide signs shall have black legend and border on orange background, except W10-1 or W47(CA) (Highway-Rail Grade Crossing Advance Warning) sign shall have black legend and border on yellow background.

Orange background on construction area signs shall be fluorescent orange.

Repair to construction area sign panels will not be allowed, except when approved by the Engineer. At nighttime under vehicular headlight illumination, sign panels that exhibit irregular luminance, shadowing or dark blotches shall be immediately replaced at the Contractor's expense.

The Contractor shall notify the appropriate regional notification center for operations of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to commencing any excavation for construction area sign posts. The regional notification centers include but are not



limited to the following:

Underground Service Alert-

Northern California (USA)

Telephone: 1 (800) 227-2600

All excavation required to install construction area signs shall be performed by the hand methods without the use of power equipment; except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.

The Contractor shall maintain accurate information on construction area signs. Signs that are no longer required shall be immediately covered or removed. Signs that convey inaccurate information shall be immediately replaced or the information shall be corrected. Covers shall be replaced when they no longer cover the signs properly. The Contractor shall immediately restore to the original position and location any sign that is displaced or overturned, from any cause, during the progress of work.

Construction area signs shown on the plans, unless otherwise specified in the special provisions, will be paid for on a lump sum basis, which lump sum price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing construction area signs required for the direction of public traffic through or around the work and for erecting or placing, maintaining (including covering and uncovering as needed) and, when no longer required, removing construction area signs at locations shown on the plans.

Full compensation for furnishing, erecting, maintaining and removing any additional construction area signs the Contractor may deem necessary will be considered as included in the **lump sum** price paid for **Traffic Control Plan and Implementation System** and no additional compensation will be allowed therefore.

#### **10-1.17 MAINTAINING TRAFFIC**

Attention is directed to Sections 7-1.03, "Public Convenience," 7-1.04, "Public Safety," and Section 12 "Temporary Traffic Control," of the Standard Specifications and to the Section entitled, "Public Safety," elsewhere in these special provisions, and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from his responsibility as provided in said Section 7-1.04.

The Contractor will not be allowed to close streets. One lane of through traffic shall be maintained at all times with appropriate Signage, Personnel and safety equipment to safely direct traffic through the construction area, unless the contractor submits to the City Engineer a proposed detour plan.

Detour plan shall meet the criteria for detour plans as shown in the latest edition of the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Zones. The City Engineer, and the Director of Public Works; shall approve Detour Plan, copies shall be sent to the Sheriff's Department and Local Fire Agencies and Emergency Organizations, i.e. Hospitals and Ambulance services. Said Detour Plan shall clearly state the dates and times of closure. Closures shall only be allowed during working hours, and the roadway shall be made passable for passenger type vehicles at the close of the work each day.

The Contractor shall be responsible for all barricades, delineators, cones, reflective media, signs and other traffic control measures necessary for the safe control of traffic and protection of the

work. by the construction, 5 days prior to the beginning of construction. The public notice shall be submitted to the City and Engineer for review and approval prior to distribution.

The Contractor shall also place "TEMPORARY NO PARKING" signs, in the areas of construction a minimum of 48 hours prior to beginning work for, AC Paving, and Curb and Gutter Replacement, as necessary for striping and placement of signs.

The Contractor shall notify in writing all residents, commercial establishments and others affected

The Contractor is responsible for the repair of any damage done by emergency or other vehicles, inadvertent or not.

The Contractor shall review with the City Engineer, Project Engineer and the Chief of Police, his/her proposed method of barricading and signing in the field and shall comply with any request they may make. Said review shall be at least 48 hours in advance of construction. Contractor shall also notify in writing the City Engineer, the County Fire Departments, and Sheriffs Department of his/her proposed construction schedule.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including any section closed to public traffic.

The Contractor shall notify local authorities of the Contractor's intent to begin work at least 5 days before work is begun. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make arrangements relative to keeping the working area clear of parked vehicles.

Whenever work vehicles or equipment are parked on the shoulder within 1.8 m (6 ft) of a traffic lane, the shoulder area shall be closed with fluorescent orange traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 7.5-meter (24-ft) intervals to a point not less than 7.5 m (24 ft) past the last vehicle or piece of equipment. A minimum of 9 traffic cones or portable delineators shall be used for the taper. A W20-1 (ROAD WORK AHEAD) or W21-5b (RIGHT/LEFT SHOULDER CLOSED AHEAD) or C24(CA) (SHOULDER WORK AHEAD) sign shall be mounted on a portable sign stand with flags. The sign shall be placed where designated by the Engineer. The sign shall be a minimum of 1200 mm x 1200 mm (48in x 48in) in size. The Contractor shall immediately restore to the original position and location a traffic cone or delineator that is displaced or overturned, during the progress of work.

The Contractor shall use new flashing barricades where work is to be delineated or protected during nights and weekends.

A minimum of one traffic lane, not less than **10 ft wide**, shall be open for use by public traffic in each direction of travel.

**The contractor shall provide a traffic control plan for approval prior to beginning work on the project. Traffic control plans shall be specific to the project area, showing appropriate lane usage, turn pockets and side streets, and shall conform to the provisions of the CAMUTCD.**

Full compensation for performing all of the work required under these Special Provisions shall be paid under the lump sum bid item for **Traffic Control Plan and Implementation System** and no additional compensation will be allowed, therefore.

#### **10-1.18 EXISTING HIGHWAY FACILITIES**

The work performed in connection with various existing facilities shall conform to the provisions in Section 15, "Existing Facilities," of the Standard Specifications and these special provisions.

#### **PROTECTION OF EXISTING UTILITIES**

The Contractor shall be responsible for the protection of existing pipelines, manholes, catch basins, valve boxes and other utility structures that are to remain within the roadway work area. Any such utility facilities that are damaged from roadway excavation work performed by the Contractor shall be either repaired or replaced to the satisfaction of the Engineer at no cost to the City, in accordance with Section 7-1.11, "Preservation of Property." of the State Standard Specifications.

#### **PROTECT MISCELLANEOUS FACILITIES**

All existing facilities that are located outside of the limits of new construction, including adjacent facilities or facilities to be joined to, and all existing facilities called out to "Protect" on the construction drawings, shall be protected in place as indicated. All existing miscellaneous facilities shall be protected in place or relocated to nearby locations appropriate for accommodating pedestrian traffic through the newly constructed facilities. All buildings and store fronts, including miscellaneous facilities that are a part of the store frontages, shall be protected in place unless otherwise noted on the construction drawings. All existing trees shall be protected in place, unless otherwise noted on the plans.

Full compensation for furnishing all labor, materials, tools equipment, and incidentals required to protect miscellaneous facilities shall be considered as included in the contract price paid per the various items of work involved and no additional compensation will be allowed therefore.

#### **REMOVE MISCELLANEOUS FACILITIES**

All existing facilities that are located within the limits of new construction and are called out to "Remove" on the construction drawings, or will require removal in order to install new improvements and is not designated for protection or relocation, shall be removed and disposed of by the contractor.

Full compensation for all work under this section shall be considered as included in the prices paid for the various items of work and no separate payment will be made, therefore.

#### **10-1.19 PRESERVATION OF PROPERTY**

Attention is directed to the provisions in Section 5-1.36, "Property and Facility Preservation," of the Standard Specifications and these special provisions.

#### **PROTECTION**

The Contractor shall protect all private and public property and shall replace, repair, or pay for any damage thereto.

#### **NOTICE TO PROPERTY OWNERS AND TENANTS**

The Contractor shall give a written notice to all property owners adjacent to and affected by his/her work at least five (5) working days in advance of beginning the work, indicating the work to be performed and the approximate length of time that the property owner or tenant will be affected by his/her operations.

## **ACCESS**

Access shall be provided to all businesses and residences at all times. The Contractor shall conduct his/her operations so as to cause the least inconvenience to both vehicular and pedestrian access.

Existing trees, shrubs and other plants, that are not to be removed as shown on the plans or specified elsewhere in these special provisions and are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor. Damaged or injured plants shall be removed and disposed of.

Replacement planting of injured or damaged trees, shrubs and other plants shall be completed not less than 20 working days prior to acceptance of the contract. Replacement plants shall be watered as necessary to maintain the plants in a healthy condition.

Full compensation for all work under this section shall be considered as included in the prices paid for the various items of work and no separate payment will be made, therefore.

### **10-1.20 UTILITIES**

It shall be the obligation of the Contractor to notify the various utility companies at least three (3) days in advance of closing and/or tearing up of the street affecting said utility companies.

It shall be the obligation of the Contractor to immediately notify the affected utility company if relocation of any utilities will be required.

Refer to Section 5-1.36C, "Nonhighway Facilities," of the Standard Specifications and these special provisions (including Utilities) for utility coordination scheduling details.

Full compensation for providing utility notifications, potholing, and coordination shall be considered as included in the prices paid for the various items of work and no separate payment will be made therefore.

### **10-1.21 DEMOLITION, CLEARING AND GRUBBING**

Demolition, Clearing and Grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these special provisions.

Vegetation shall be cleared and grubbed only within the excavation and embankment slope lines.

Existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from the Contractor's operations.

Activities controlled by the Contractor, except cleanup or other required work, shall be confined within the graded areas of the roadway.

Nothing herein shall be construed as relieving the Contractor of the Contractor's responsibility for

final cleanup of the street as provided in Section 4-1.13, "Cleanup," of the Standard Specifications.

Full compensation for demolition, clearing and grubbing, and site demolition of the facilities specified herein shall be considered as included in the prices paid for the various items of work and no separate payment will be made therefore.

#### **10-1.22 ROADWAY EXCAVATION**

The existing roadway is to be removed, milled or pulverized as shown on the plans. The Contractor will perform these operations in order to obtain the finished subgrade elevations shown on the plans before the application of the 0.20' Asphalt Concrete Pavement. Contractor shall conform to the provisions in Section 30, "Reclaimed Pavement" of the Standard Specifications. Contractor will be allowed to mill roadway, pulverize roadway or a combination of both activities.

Disposal of excess said material shall conform with the provisions in Section 17-2.03D, "Disposal of Material," of the Standard Specifications and these special provisions. EXCESS AC CONCRETE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AT A SITE ACCEPTABLE TO THE CITY.

Contractor to provide proof of acceptable disposal location prior to receiving notice to proceed. The lump sum price shall be full compensation for pulverizing, grading, compacting, disposing of obliterated material, furnishing all labor, materials, tools, equipment and for doing all the work involved in constructing the subbase complete in place, as shown on the plans and specified herein, and no additional allowance will be allowed therefore.

#### **10-1.23 SAWCUTTING**

Saw cutting of existing surface facilities and other facilities requiring saw cutting shall be cut in a neat line to a minimum depth of 0.25-foot with a power driven saw as needed or as described in the various sections of these Special Provisions.

Full Compensation for saw cutting (regardless of the number of passes required) of existing asphalt concrete surface, concrete pavement or other facilities will be considered as included in the prices paid for the items requiring the work and no separate payment will be made therefore.

#### **10-1.24 ADJUST UTILITY BOXES, VALVES AND MANHOLES**

All water and sewer services within asphalt concrete areas shall be removed to the new subgrade elevation by the Contractor prior to paving. All such boxes which have been removed to subgrade to facilitate paving shall be temporarily covered with a steel plate by the contractor. Contractor shall coordinate all improvement to adjust valves to grade with City of Hughson.

After paving has been completed, the necessary portions of the subgrade, base and pavement shall be neatly removed, and the structure built up to new finished grade per the applicable City of Hughson Standards. After valve covers are set to finish grade, Contractor shall pave around adjusted valve covers with Type A HMA (3/8") flush to surrounding pavement.

Measurement and Payment for **Adjust Water Valve to Grade** as shown on the plans shall be at the contract price bid per **each (EA)**. Said price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in adjusting

water valve to grade, as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

#### **10-1.25 GRINDING / COLD MILL EXISTING AC SURFACE**

The existing roadway is to be removed and resurfaced/reconstructed as shown on the plans.

Existing asphalt concrete pavement shall be cold milled at the locations and to the dimensions shown on the plans.

Milling asphalt concrete pavement shall be performed by the cold milling method. Milling of the asphalt concrete pavement shall not be done by the heater milling method.

Grinding/Milling machines shall be equipped with a cutter head not less than 30 inches (750 mm) in width and shall be operated so that no fumes or smoke will be produced. The cold milling machine shall mill the pavement without requiring the use of a heating device to soften the pavement during or prior to the milling operation.

The depth, width, and shape of the cut shall be as shown on the typical cross sections or as designated by the Engineer. The final cut shall result in a uniform surface conforming to the typical cross sections. The outside lines of the milled area shall be neat and uniform. Milling asphalt concrete pavement operations shall be performed without damage to the surfacing to remain in place.

milled widths of pavement shall be continuous except for intersections at cross streets where the milling shall be carried around the corners and through the conform lines. Following milling operations, a drop-off of more than 1.75 in (45 mm) will not be allowed between adjacent lanes open to public traffic.

When transverse joints are milled in the pavement at conform lines no drop-off shall remain between the existing pavement and the milled area when the pavement is opened to public traffic. If Hot Mix Asphalt (HMA) has not been placed to the level of existing pavement before the pavement is to be opened to public traffic a temporary HMA taper shall be constructed. HMA for temporary tapers shall be placed to the level of the existing pavement and tapered on a slope of 1:30 (Vertical:Horizontal) or flatter to the level of the milled area.

HMA for temporary tapers shall be the same quality as the HMA used elsewhere on the project or shall conform to the material requirements for minor HMA. HMA for tapers shall be compacted by any method that will produce a smooth riding surface. Temporary HMA tapers shall be completely removed, including the removal of loose material from the underlying surface, before placing the permanent surfacing. The removed material shall be disposed of outside the highway right of way in conformance with the provisions in Section 17-2.03D, "Disposal of Material," of the Standard Specifications and these special provisions.

The removed roadway / material shall be disposed of in conformance with the provisions in Section 17-2.03D, "Disposal of Material," of the Standard Specifications and these special provisions. Where a portion of the existing surfacing is to be removed, the outline of the area to be removed shall be cut on a neat line with a power-driven saw to the full depth of asphalt concrete before removing the surfacing. Attention is directed to "Existing Highway Facilities" of these special provisions concerning residue from saw cutting.

Measurement and Payment for **Cold Mill Existing AC Pavement 1.5" Uniform Depth** as shown on the plans shall be at the contract price bid per **square foot (SF)** for Cold Mill of the type shown on the bid schedule. Said price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing the roadway surface, including all costs of hauling, as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

**NOTE:** EXISTING AC CONCRETE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AT A SITE ACCEPTABLE TO THE CITY. Contractor to provide proof of acceptable disposal location prior to receiving notice to proceed. Full compensation for disposing of obliterated material shall be considered as included in contract price for which the work is appurtenant to, and no separate payment will be made

#### **10-1.26 HOT MIX ASPHALT CONCRETE**

##### **HMA OVERLAY**

Hot mix asphalt concrete for overlay shall be ½" HMA Type A Max Medium and shall conform to the provisions in Section 39-2, "Hot Mix Asphalt," of the Standard Specifications and these special provisions.

The grade of asphalt binder to be mixed with aggregate for Type A asphalt concrete shall be PG Grade 70-10 and shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

The aggregate for Type A asphalt concrete shall conform to the ½ inch gradation specified in Section 39-2.02, "Aggregates," of the Standard Specifications.

A mix design consists of performing California Test 367 and laboratory procedures on combinations of aggregate gradations and asphalt binder contents to determine the optimum binder content (OBC) and HMA mixture qualities.

Paint binder (tack coat) shall be applied to existing surfaces to be surfaced and between layers of asphalt concrete, except when eliminated by the Engineer.

Paint binder (tack coat) shall be paving asphalt conforming to the provisions in Section 39-2.01B (10), "Tack Coat," and Section 92, "Asphalt Binders," of the Standard Specifications. The grade of paving asphalt to be used as paint binder will be determined by the Engineer.

Paint binder (tack coat) shall consist of a Bituminous Surface Pavement Tack Coat composed of a blend of elastic Polymer modified asphalts, thermoplastic resins and digested whole tire rubber. The Material is applied at 325 to 425 degrees F with a distributor truck at typical application rates of 0.08 to 0.15 gal/square yard. The exact application rate will be determined by surface conditions at time of application.

Paving asphalt (also referred to as tack coat) shall be Thermoplastic Polymer Modified No Track Tack, for HMA overlay and where specified for slurry seals, and SS 1h otherwise. The Thermoplastic Polymer Modified No Track Tack shall meet the following criteria:

Test	Method	Typical Properties	Specification
Digested whole tire rubber		2	1-3

City of Hughson  
Sewer Improvements on Tully Road and Second Street

Softening Point Degree F	D36	165	160 Min
Penetration @ 77 Deg. F 100g, 5 sec, Dmm	D-5	16	10 Min
Brookfield Viscosity @ 275 Deg. F cPs*	D4402	975	3000 Max
Brookfield Viscosity @ 350 Deg. F cPs*	D4402	185	300 Max

\*BKF LV II, spdI #21 @ 20 RPM

The tack coat shall be applied to the existing pavement on the areas to receive the HMA or slurry where specified. The Engineer shall approve the exact rate and number of applications. Two heavy coats of SS 1h shall be applied to vertical joints for patching. All contact surfaces with new asphalt shall be painted tack coat immediately before the asphalt concrete is placed.

The tack coat shall be applied according to the provisions in Section 39- 2.01B (10), "Tack Coat," of the Standard Specifications and these Special Provisions. Thermoplastic Polymer Modified No Track Tack shall be applied only when the existing surface is dry, and the atmospheric temperature is 50 deg. F and rising. NO material shall be applied when rain is imminent.

The Thermoplastic Polymer Modified No Track Tack shall be heated slowly to 325-425 degrees F. At no time shall the product be heated above 450 degrees F. The product shall be applied through a distributor truck equipped with a heating unit and shall maintain tack coat at or above 325 degrees F. It shall be equipped with a full circulating spreader bar and pumping system capable of applying the Thermoplastic Polymer Modified No Track Tack material within + 0.01 gallons per square yard tolerance of specified application rate and give uniform covering of the surface to be treated. The distributor shall also include a tachometer, pressure gauge, and volume measuring device and thermometer. The application rates shall be 0.15 gallons per square yard for all HMA overlay or as otherwise directed by the Engineer. If the pavement temperature reaches over 130 degrees F, the application rate will be reduced to minimum 0.08 gallons per square yard on overlay applications.

Paving asphalt shall not be applied until the preparation of the existing surface has been completed and thoroughly cleaned, and then only so far in advance of placing the asphalt concrete overlay as permitted by the Engineer. The Thermoplastic Polymer Modified No Track Tack shall not be left exposed overnight.

Existing concrete curb faces and all concrete not to be overlaid shall be protected against disfigurement from the asphalt tack coat. Residue of the material shall be removed from concrete surfaces to return the concrete to its original condition unless otherwise directed by the Engineer.

Excessive tracking of tack coat onto adjacent pavements will require immediate clean-up. If significant amounts of asphalt tack coat are tracked onto existing adjacent pavements, the contractor shall be required to clean it off to the satisfaction of the City Engineer or provide a slurry seal to restore the pavement at their own expense. This shall apply to the entirety of asphalt haul routes to and from the project sites.



On all vertical joints of AC patching, apply SS-1H tack coat uniformly in two coats of .20 gallons per square yard each with full "break" in between, or .20 gallons per square yard AR-4000 uniformly in one coat. Tack coat shall not be applied when the temperature of the surface to be tacked is below 40o F in the shade. A tack coat shall be applied at the following:

1. Pavement joints;
2. Areas where new pavement meets existing pavements, including planed surfaces;
3. Areas where lift sections from pavement placed on different days meet;
4. Trenches;
5. Areas where existing striping has been sandblasted; and
6. Raised valves and manhole covers.
7. To vertical surfaces of:
  - a.) Curbs
  - b.) Gutters
  - c.) Construction joints

If the finished surface of the asphalt concrete on the traffic lanes does not meet the specified surface tolerances, the surfacing shall be brought within tolerance by either (1) abrasive grinding (with fog seal coat on the areas which have been ground), (2) removal and replacement or (3) placing an overlay of asphalt concrete. The method will be selected by the Engineer. The corrective work shall be at the Contractor's expense.

If abrasive grinding is used to bring the finished surface to the specified surface tolerances, additional grinding shall be performed, as necessary, to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel to, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement centerline, within any ground area. Ground areas shall be neat rectangular areas of uniform surface appearance.

Asphalt concrete Type A will be measured by the ton of completed mixture in accordance with the provisions of Section 9-1.02 "Measurement," of the Standard Specifications.

The Contractor shall vacuum sweep all street surfaces immediately prior to the application of asphaltic materials.

Immediately after completion of final compaction of the finished asphalt concrete, the contractor shall place temporary striping tape to indicate centerline, lane line location, and stop limit lines. One 4" (100 mm) length piece of 3" (75mm) wide, reflectorized white foil tape shall be placed at approximately 20 ft. (6 m) on center for lane delineation, and two 4" (100 mm) length pieces of 3" (75mm) wide yellow reflectorized foil tape shall be placed parallel and 3" (75 mm) apart to delineate no passing line.

## **MEASUREMENT AND PAYMENT**

**Asphalt concrete overlay** shall be paid for at the Contract unit price per **ton** for Type A ½" Hot Mix Asphalt Concrete Overlay. Said price includes full compensation for furnishing all labor, materials, tools, equipment, tack coat, and for doing all the work involved in constructing the asphalt concrete complete in place, as shown on the plans and specified herein, and no additional allowance will be allowed therefore.

Payment for asphalt tack coat shall be included in the contract prices bid for items requiring its use and no additional compensation shall be allowed therefore.

#### **10-1.27 THERMOPLASTIC STRIPING AND PAVEMENT MARKERS**

Thermoplastic Striping and Pavement Markers shall conform to the provisions in Section 84-2, "Thermoplastic Striping and Pavement Markers," of the Standard Specifications and these special provisions.

#### **10-1.28 CONTRACT ITEMS OF WORK**

Contract items of work are described herein, including the method of measurement and payment.

This section specifies the method of measurement and payment for this Contract. Any method of measurement and payment described in the Standard specifications in conflict herewith is declared null and void.

It is intended herein that compensation for the entire work is to be accomplished through the combination of the various Contract pay items of work and compensation outside of these Contract items will not be allowed except for extra work ordered in writing by the City. In preparing this bid, the Contractor is enjoined to be diligent in making sure that all of his/her costs are covered by the Contract items of work.

Attention is directed to the bidding schedule. The Contractor is to indicate unit price bid and total price bid for the estimated quantities as shown.

#### **10-1.29 ABANDON EXISTING SEWER PIPES AND MANHOLES**

Existing sanitary sewers and manholes to be abandoned, and which lie within a trench or other structure excavation, shall be removed from within the limits of required excavation necessary for the work.

Existing sanitary sewer pipes and manholes to be abandoned, but not required to be removed, shall be thoroughly sealed at all open ends, and at the structures in which they terminate as applicable. The open ends shall be sealed with brick and mortar.

In addition to sealing open ends as specified above, and when specifically required, all sewer mains, upon abandonment shall be filled with blown sand. Facilities to be filled shall be sealed at the downstream end, filled with sand, and sealed at the upstream end. Securely close each pipe end by installing a watertight plug of concrete, controlled density fill (CDF), controlled low-strength (CLSM), flowable mortar, plastic soil-cement or soil-cement slurry not less than two feet in length. Pipes to be abandoned that are non-continuous or are broken by construction activity are to be repaired sufficiently to contain the selected abandonment backfill material. If such repairs are impractical or infeasible, the pipe(s) shall be removed and disposed.

The bottom of the abandoned structures shall be perforated or broken to prevent the entrapment of water.

Payment for **Fill Exist Pipe with Sand and Abandon in Place** shall be paid for at the contract unit price per **linear foot (LF)** and shall include full compensation for, but not limited to, furnishing all labor, materials, equipment, tools, and incidentals required to complete all work in place and no additional compensation will be allowed therefor.

Payment for **Fill Exist Pipe with 2-Sack Slurry and Abandon in Place** shall be paid for at the contract unit price per **linear foot (LF)** and shall include full compensation for, but not limited to, furnishing all labor, materials, equipment, tools, and incidentals required to complete all work in place and no additional compensation will be allowed therefor.

Payment for **Fill Exist Manhole with Sand and Abandon in Place** shall be paid for at the contract unit price per **linear foot (LF)** and shall include full compensation for, but not limited to, furnishing all labor, materials, equipment, tools, and incidentals required to complete all work in place and no additional compensation will be allowed therefor.

Payment includes the disposal of all resulting material removed or encountered.

Full Compensation for removing and disposing portions of existing pipe and for sealing ends of open pipe, will be considered to be included with price paid for items requiring removing, disposing and sealing of ends and no separate payment will be made, therefore.

#### **10-1.30 SANITARY SEWER PIPE**

Sanitary sewer pipe shall be PVC SDR-35 and shall conform to the provisions in Section 6, "Sewers," of the City of Hughson Standard Specifications and these special provisions.

#### **10-1.31 SANITARY SEWER TRENCH INSTALLATION**

Trenching and excavation for open trench construction, including pits for pipe bursting, shall be performed in accordance with Section 6 "Sewers" of the City of Hughson Standard Specifications and as specified in the plans.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in trenching and excavation for pits for pipe bursting operations, backfill, and repaving, as specified in the Standard Specification, these special provisions, and in the plans, shall be considered as included in the prices paid for **Construct 10-Inch PVC (Pipe Bursting)** and no additional compensation will be allowed therefore.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in trenching and excavation for pits for reconnecting sewer laterals, backfill, and repaving, as specified in the Standard Specification, these special provisions, and in the plans, shall be considered as included in the prices paid for **Connect Sewer Laterals** and no additional compensation will be allowed therefore.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in trenching and excavation for open trench construction, backfill, and repaving, as specified in the Standard Specification, these special provisions, and in the plans, shall be considered as included in the prices paid for **Install 12" PVC-SDR 35** and for **Construct Sewer Spot Repair (Remove Portion and Install 24-Inch Pipe)** and no additional compensation will be allowed therefore.

The price per **linear foot (LF)** for **Install 12" PVC-SDR 35** shall be considered full compensation for all wyes, tees, bends; furnishing all equipment, materials, and labor for removing existing and installing new pipe; the excavation of the trench; the control for ground and surface waters; the preparation of sub-grade; potholing; placing and joining pipe; bedding, backfilling (including anchor blocks, slope anchors and backfill stabilizers), cement slurry, and compacting the trench; temporary resurfacing; removal and replacement of interfering surface improvements; replacement of any

pavement markers and striping; utility services; cleanup; and all other work necessary to install the pipe or conduit, complete in place.

#### **10-1.31 SANITARY SEWER SPOT REPAIR**

Sanitary sewer spot repairs shall be constructed in accordance with Section 10-1.31 "Sanitary Sewer Trench Installation" of these Special Provisions.

Three locations on the residential (east) sewer line on Tully Road require spot repairs. Contractor shall identify these locations in the field with the Engineer. At each location, Contractor shall remove the full stick of existing VCP pipe and install new PVC sewer. Fernco transition coupling, or approved equal, shall be installed per Detail "A" on the plans.

Measurement for **each (EA)** segment of **Construct Sewer Spot Repair (Remove Portion and Install 24-Inch PVC-SDR 35 Pipe)** shall include up to 10 linear feet of new pipe installed.

Payment for **Construct Sewer Spot Repair (Remove Portion and Install 24-Inch PVC-SDR 35)** shall be paid for at the contract unit price per **Each (EA)** and shall include full compensation for, but not limited to, furnishing all labor, materials, equipment, tools, and incidentals required to identify spot repair locations, remove existing portion of pipe, and install new pipe, complete in place and no additional compensation will be allowed therefor.

#### **10-1.32 SANITARY SEWER MANHOLE**

Contractor shall modify the bases of existing manholes in accordance with the project plans and the Standard Specifications and Drawings.

Measurement and Payment for **Modify Manhole Base** as shown on the plans shall be at the contract price bid per **each (EA)** and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in modifying manhole base as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

Payment for **Construct Precast Concrete Manhole per City of Hughson Std Detail 6-SS.1** shall be paid for at the contract unit price per **Each (EA)** and shall include full compensation for, but not limited to, furnishing all labor, materials, equipment, tools, and incidentals required to complete all work in place and no additional compensation will be allowed therefor.

#### **10-1.33 SANITARY SEWER PIPE BURSTING**

**Definition and Description:** Pipe bursting is a trenchless technology whereby reconstruction of the existing sanitary sewer is done by insertion of liner pipe within the bore of the existing pipe that is enlarged by breaking and expanding the old (existing) pipe into the surrounding soil and/or backfill materials surrounding the pipe. Use of this method for pipe replacement involves the insertion of a static, hydraulic or pneumatic hammer device, suitably sized, to break (crush) the existing pipe by using a modified boring knife with a flared plug that fractures the existing pipe material. Forward progress of the device may be aided by hydraulic or mechanical equipment as the device passes through the existing pipe. Replacement pipe is either pulled or pushed into the expanded bore hole. This method minimizes the amount of open trench and overlying surface disruption in order to replace/enlarge the existing pipeline.

Since sewer products are intended to have a minimum 50-year design life, and in order to minimize the Agency's risk, only proven products with substantial successful long-term track records will be approved. Additionally, the pipeline replacement Contractor/Subcontractor must have actual experience with the pipe bursting and/or open trench methods, equipment, materials and pipe joining (fusion) equipment and materials to be used in the project work. Proof of such work experience and product qualification submittal must be submitted with the Contractor's bid.

### **Reference Specifications, Codes, and Standards.**

The following references are part of this Specification. In case of conflict between the requirements of this Specification and those of the listed documents, the requirements of this Specification shall prevail. The latest edition of the following reference shall be used.

ASTM D1248 Polyethylene Plastics Molding and Extrusion Materials

ASTM D1784 Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

ASTM D2122 Determining Dimensions of Thermoplastic Pipe and Fittings

ASTM D2241 Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)

ASTM D2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings

ASTM D3350 Polyethylene Plastics Pipe and Fittings Materials

ASTM F679 Standard Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings

ASTM F714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter

ASTM F2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

### **Products and Contractors**

Products and Contractors seeking approval must meet all of the following criteria to be deemed Commercially Acceptable for the work to be performed under this specification:

### **Product Qualifications**

For a product to be considered Commercially Proven, a minimum of 250,000 linear feet or 1,000 line sections of successful wastewater collection system installations in the U.S. must be documented to the satisfaction of the Engineer to assure commercial viability. In addition, at least 50,000 linear feet of the product shall have been in successful service within the State having a documentable history of performance. Such product experience qualifications shall be filed at the

time of the bid with the Agency.

The pipe production shall have ISO 9000 Certification or equal for its quality control and assurance programs. Proof of certification shall be required for approval of the Contractor and shall be submitted with the bid.

### **Contractor Qualifications and Performance**

1. The Contractor shall be certified by the manufacturer of the proposed pipe bursting system as a fully trained user of the pipe bursting system. Operation of the pipe bursting system shall be performed by trained and experienced personnel who have participated in training conducted by a qualified representative of the pipe bursting system manufacturer, and in the actual use of the pipe bursting system on similar construction projects. The Contractor must provide certificates of training for any employee directly involved in the supervision and operation of the pipe bursting system.
2. PVC pipe jointing shall be performed by personnel trained in the use of butt-fusion equipment and the manufacturer recommended methods for new pipe connections. Personnel directly involved with installing new pipe shall have received training in the proper methods for handling, fusing of pipe joints and experienced with installing the type of pipe utilized. Such training shall have been conducted by a qualified representative of the fusion equipment manufacturer. Installation of other pipe materials shall be performed by personnel qualified by the specific product manufacturer and experienced in such work of installation.
3. For a Contractor to be considered as project qualified, for pipe bursting and open trench construction, the Contractor must satisfy all insurance, financial, and bonding requirements of the Agency, and present experience as follows: a) for the majority pipe bursting alternative, the contractor must have successfully accomplished a minimum of 50,000 feet of sewer pipe replacement-upsizing by pipe bursting and 8,000 feet of open trench replacement-upsizing, or b) for the majority open trench alternative, the contractor must have successfully accomplished a minimum of 50,000 feet of sewer pipe replacement-upsizing by open trench placement method and 28,000 feet of sewer replacement-upsizing by pipe bursting methods. The sewer pipe replacement experience must involve pipe diameters from 8-inch to 24-inch, including joining of butt-fused PVC pipe of the products bid herein. The required experiences can be that of the prime contractor and the named subcontractor specified for performing the respective type of sewer replacement work in the bid submittal. Acceptable documentation of these minimum installation experiences must be submitted to the City with the bid documents.
4. The Contractor shall have ISO 9000 Certification or equal documentation for quality control and assurance programs for its operations. Proof of certification/documentation shall be required for approval of the Contractor and shall be submitted with the bid.

### **Contractor Submittals**

The Contractor shall submit the following items in compliance with the specifications, codes, and

standards referenced herein for review and approval by the City. Review and approval of items 1 thru 3 below, by the Agency, shall be accomplished prior to the award of contract. Review and approval of the remaining item submittals, by the Agency, shall be obtained prior to ordering pipe materials and/or the start of the pipe replacement process.

1. Certifications from the pipe material manufacturer of training in the proper method for handling and installing new sewer pipe to be installed under this specification.
2. Certifications of training by the pipe bursting systems manufacturer stating that the operators have been fully trained in the use of the pipe bursting equipment by an authorized representative of the equipment manufacturer.
3. Certifications of training by the pipe fusion equipment manufacturers that the operators have been fully trained in the use of the fusion equipment by an authorized representative of the equipment manufacturer.
4. Detailed construction procedures, and layout plans to include sequence of construction.
5. Locations, sizes and construction methods for the service reconnection pits.
6. Methods of construction, reconnection and restoration of existing service laterals.
7. Detailed descriptions of the methods of modifying existing manholes.
8. Detailed procedures for the installation and bedding of the new pipe in the launching and receiving pits.
9. Sewer bypass plans (SBP) and methods and list of equipment to be utilized.
10. Description of the method to remove and dispose of the existing/host pipe, as required.
11. The safety plan in conformance with the Contract Documents and OSHA regulations.
12. Manufacturer's technical data showing complete information on material composition, physical properties and dimensions of the new pipe and fittings. Manufacturer's recommendations for transport, handling, storage, and repair of pipe and fittings shall be included.
13. Traffic control plans.
14. Project schedule.
15. All necessary shop drawings applicable to the work.
16. Contingency plans for the following potential conditions:
  - a. Unforeseen obstruction(s) causing burst stoppage, such as unanticipated change(s) in host pipe material, repair section(s), concrete encasement(s) or cradle(s), buried or abandoned manhole(s) or changes in direction not depicted

on maps provided by the Contracting Authority.

- b. Substantial surface heave occurs due to the depth of the existing pipe vs. the amount of upsizing
- c. Damage to existing service connections and to the replacement pipeline's structural integrity and methods of repair.
- d. Damage to other existing utilities.
- e. Loss of and return to line and grade.
- f. Soil heaving or settlement.

### **Delivery, Storage and Handling of Pipe Materials**

The Contractor shall transport, handle, and store pipe and fittings as recommended by the materials manufacturer.

New pipe and fittings that are damaged before or during installation shall be repaired or replaced, as recommended by the manufacturer or required by the Engineer. The costs of such repair or replacement shall be borne by the Contractor and be accomplished prior to proceeding with the project.

The Contractor shall deliver, store and handle other materials as required to prevent damage. Materials that are damaged or lost shall be repaired or replaced by the Contractor at no additional expense to the Agency.

### **Methods of Pipe Bursting**

The most commonly used methods for pipe bursting are static and impact force. Static systems are hydraulic, while impact systems generally involve a combination of pneumatic and hydraulic technology. The main difference between methods is the manner in which the force is generated and transferred to the host pipe during the bursting operation.

The pipe bursting tool shall be designed and manufactured to force its way through existing pipe materials by fragmenting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall generate sufficient force to burst and compact the existing pipeline. See manufacturer's specifications for what size tool should be used in what diameter of pipe, as well as parameters of what size tool for percentage of upsize allowed.

The pipe bursting tool shall be pulled through the sewer by a winch or rod located at the upstream manhole. The bursting unit shall pull the polyethylene (PE) pipe with it as it moves forward. The bursting head shall incorporate a shield/expander to prevent collapse of the hole ahead of the new pipe insertion. The pipe bursting unit shall be remotely controlled.

The bursting action of the tool shall increase the external dimensions sufficiently, causing breakage of the existing pipe at the same time expanding the surrounding ground sufficiently to pull or push in the new pipe.



### **Locating Utilities**

The Agency shall provide the Contractor with copies all documents relating to the location of utilities adjacent to the pipe to be replaced or upsized. The Contractor shall, prior to starting work, verify the location of all adjacent utilities (potholing as necessary). The minimum clearance from other utilities shall be approximately two feet or as otherwise dictated by the materials involved or the owning entity. The Agency may at its discretion reduce the minimum clearance.

The Contractor shall expose all interfering and crossing utilities by spot excavating at the planar intersection of the pipe and removing the soil from around the utility. The cost of exposing these utilities shall be as incorporated in the contracted items of work.

### **Sub-Surface Conditions**

The Contractor shall verify the Agency's available information in the field. All additional subsurface investigations deemed necessary by the Contractor to complete the work shall be included in the Bid Proposal at no additional cost to the Agency. Copies of all reports and information obtained by the Contractor shall be provided to the Engineer.

A minimum amount of ground heaving may be allowed, as determined by the Engineer, if soil conditions are not favorable to the planned up-sizing of the sewer pipe. Unless otherwise noted in the contract documents, settlement or heaving of the ground surface during or after construction will not be allowed. The Contractor is solely responsible for the costs for repairing any surface heaving or settlement.

### **Locating Service Connections**

The Contractor shall locate and expose all sewer service connections prior to new mainline pipe insertion to expedite reconnection. The Contractor shall exercise due diligence in excavating the existing pipe sufficiently to allow for uniform circumferential expansion of the existing pipe through the service connection pit. Upon commencement of the bursting process, pipe insertion shall be continuous and without interruption from one entry point to another, except as approved by the Engineer. Upon full completion of insertion and relaxation of the new pipe, the Contractor shall expedite the reconnection of services to minimize any inconvenience to the customers.

### **Pipe Joining**

The polyvinyl chloride (PVC) pipe shall be assembled and joined at the site using the butt-fusion method to provide a leak proof joint. Threaded or solvent-cement joints and connections are not permitted. All equipment and procedures shall be used in strict compliance with the manufacturer's recommendations.

Fusion shall be performed by technicians certified by a manufacturer of pipe fusion equipment.

The butt-fused joint shall be true alignment and shall have uniform rollback beads resulting from the use of proper temperature and pressure. The joint shall be allowed adequate cooling time before removal of pressure. The fused joint shall be watertight and shall have tensile strength equal to or greater than that of the pipe. All joints shall be subject to acceptance by the Engineer prior to

insertion.

The Contractor shall cut out and replace defective joints at no additional cost to the Agency. Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness (ASTM 585), shall not be used and must be removed from the site. However, a defective area of the pipe may be cut out and the joint fused in accordance with the procedures stated above. In addition, any section of the pipe having other defects such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness or any other defect of manufacturing or handling as determined by the Agency shall be discarded and not used.

Terminal sections of pipe that are joined within the insertion pit shall be connected with a mechanical coupling (e.g. a full circle stainless repair clamp), Electro Fusion Couplings (e.g. Central Plastics or equivalent) or a non-shear restraint coupling. All connections shall be in conformance with the manufacturer's installation procedures.

### **Bypassing of Flows**

The Contractor shall be responsible for continuity of sanitary sewer service to each facility connected to the section of sewer main during the execution of the work and shall also bypass the main sewer flow around the pipe to be replaced, or into adjacent sanitary sewers, if available. The pumps and the bypass lines shall be of adequate capacity and size to handle all flows without sewage backup to private property. The Contractor shall be solely responsible for clean-up, repair, property damage costs and claims resulting from failure of the flow diversion system.

The Contractor, at the sole discretion of the Engineer, may plug the main line sewer at an existing upstream Manhole or by any other method specified in the contract documents and approved by the Engineer.

The Contractor shall submit to the Agency specifications for all pumping equipment to be used on the job (including all sizing calculations) and a list of all backup pumping equipment to be held in reserve on the job site. The pumps and by-pass lines shall be of adequate capacity and size to handle all flows.

All costs for by-pass pumping, required during installation of the pipe shall be included in the sewer bypass system bid item of work.

### **Lubrication**

Lubrication on the new pipe being installed shall be used if in the opinion of Contractor such lubrication is necessary to ensure the successful completion of the job. The Contractor shall use a lubricant approved by the Engineer.

### **Service Lateral Reconnection**

The installed pipe shall be allowed the manufacturer's recommended amount of time, but not less than four (4) hours, for cooling and relaxation due to tensile stressing prior to any reconnection of service lines. Following the suitable relaxation period, the Contractor shall reconnect all service

connections as approved by the Engineer.

Service connections shall be reconnected to the pipe by using connectors approved by the pipe manufacturer and in conformance with the specified installation procedure. Service connections shall be wrap type around saddle connections (e.g. FERNCO or equivalent), Cast Iron w/ Gasket, T Connection (e. g, Inserta-T or equivalent or Electro Fusion (e.g. Central Plastics, Phillips Driscopipe, Plexco or equivalent)

Connections to the existing service lateral shall be made using flexible couplings. All flexible couplings shall conform to ASTM C425. Joint deflection limits and lateral connections shall meet the maximums indicated in ASTM C12 and C425.

The slope of the existing lateral toward the newly installed sewer main shall be maintained at the existing percent. For reconstructed laterals, a minimum slope of two percent (2%) or as specified by the Agency is required.

Connection of the new service lateral to the mainline shall be accomplished by means of a compression-fit service connection. The service connection shall be specifically designed for connection to the sewer main being installed and shall be Inserta Tee as manufactured by Fowler Manufacturing Co or equivalent and installed using procedures and equipment as referenced in manufacturer's written installation instructions.

#### **Connection Types Available for All Mainlines**

TYPES	GASKETTED BELLSDR 35	GASKETTED BELLIPS/SCH 40
PVC Hub	ASTM D3034 SDR 35	ASTM D3034 SDR 26
Rubber Boot	ASTM C443	ASTM C443
Band	301 SS	301 SS
Screw	305 SS	305 SS
Housing	301 SS	301 SS
Gasket	ASTM F477	ASTM F477

#### **Restoration**

##### **Restoration of Manholes**

The Contractor shall restore all manholes and associated surface areas to their original condition or as required by the Engineer and specified in the description of work.

Prior to restoring manholes, the installed pipe shall be allowed to cure for the manufacturer's recommended amount of time, but not less than four (4) hours, for cooling and relaxation due to tensile stressing prior to the sealing of the annulus or backfilling of the insertion pit. Sufficient excess length of new pipe, but not less than two (2) to four (4) inches, shall be allowed to protrude into the manhole to provide for occurrence. Restraint of pipe ends shall be achieved by means of

Central Plastics Electro Fusion coupling or equivalent. The electro fusion couplings shall be slipped over pipe ends against manhole wall and fused in place. Installation of electro fusion couplings shall be done in accordance with the manufacturers recommended procedures.

Following the relaxation period, the newly installed pipe shall be restrained and sealed at the Manhole in accordance with the manufacturers recommended procedures and with a material approved by the Engineer.

Restoration of the bottom of the Manhole shall be done as follows:

- a. For restorations less than or equal to three inches grout shall be used. The grout design mix shall meet or exceed 500 psi (3,447 kPa) compressive strength at 28 days. The Contractor may, with the approval of the Engineer, incorporate grout additives to improve flow properties, provided that the minimum compressive strength requirements are met.
- b. For restorations greater than three inches concrete shall be used. Concrete shall be as specified in the Contract Documents.

### **Restoration of Pits**

The Contractor shall restore all lateral, launching and receiving pits and associated surface areas to their original condition or as required by the Engineer and specified in the description of work.

Prior to backfilling lateral and launching pits, the Contractor shall ensure that the new pipe is properly supported and on the required grade. Suitable material, approved by the Engineer, shall be used immediately under the new pipe as support in order to avoid sagging after backfill and compaction.

### **Field Testing**

The Contractor shall after the existing sewer is completely replaced perform an internal inspection with a television camera and videotape. The finished tape shall be continuous over the entire length of the sewer between two manholes or as specified by the Engineer.

The newly installed pipe shall be visibly free of defects, which may affect the integrity or strength of the pipe, and of any obstructions to flow capacity. If in the opinion of the Engineer such defects exist, the pipe shall be repaired or replaced at the Contractor's expense.

Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness shall not be used and must be removed from the site.

### **CCTV Inspections**

The Contractor shall perform post construction internal television inspections as required by Section 10-1.35 CCTV Inspection of these special provisions. Each reach of sewer shall have audio description with appropriate stationing of services indicated. The data and stationing are to be on the video. All such inspections shall be performed by personnel trained in locating breaks,

obstacles and service connections by closed circuit color television.

Post construction video tapes (records) are to be submitted to the Agency for review prior to final payment. Should any portion of the inspection tapes be of inadequate quality or coverage, as determined by the Engineer, the Contractor will have that portion video taped at no additional expense to the Agency. All original video tapes remain property of the Agency. The Contractor may, at the discretion of the Agency retain second copy.

### **Warranty**

The Contractor shall provide a warranty to be in force and effect of a period of one year from the date of final acceptance of the work. The warranty shall cause the Contractor to repair or replace the liner pipe should failure result from faulty materials or installation.

### **Payment**

**Install 10-Inch PVC SDR-35 (Pipe Bursting)** shall be paid at the contract unit price per **linear foot (LF)** installed of the pipe specified, and shall include full compensation for furnishing all labor, materials, tools, equipment and back up equipment necessary for pipe bursting, pipe placement; transportation and technical competence, saw cutting, excavation, shoring and backfilling per the manufacturers' instructions and/or per the Contract Documents; cutting and/or removing pipe lining; replacement of any pavement markers and striping; temporary by-passing of other utility services; cleanup, off-site disposal of all refuse and excess material; de-watering as necessary, shoring, temporary and permanent restoration of surfaces and pavement and all appurtenant work.

Pipe shall be measured along the longitudinal axis between the ends as laid, shall include the actual pipe in place and shall exclude the inside dimensions of the Manholes.

Replacement and modification of the Manhole inverts and bottoms shall be considered as part of Modify Manhole Base and no additional compensation will be allowed.

Payment for **Connect Sewer Laterals** shall be paid for at the contract unit price per **Each (EA)** and shall include full compensation for, but not limited to, furnishing all materials, labor, equipment, and supplies necessary for the complete installation, including replacement of up to six (6) feet of existing service lateral for external connections, saw cutting, excavation, shoring and backfilling removing and reconstruction existing finish surface, complete, in place, and accepted, and no additional compensation shall be allowed therefor.

### **10-1.34 SEWER BYPASS**

The Contractor shall implement a Sewer Bypass Plan.

**Mainline Flows.** The Contractor shall be responsible for continuity of sanitary sewer service to each connected facility during execution of the work. Prior to any work on the City's sewer collection system, including but not limited to work on mainlines, force mains, manholes or connections to trunk sewer pipelines, the Contractor shall prepare and submit to the Engineer for approval a comprehensive Sewer Bypass Plan (SBP) detailing the exact methods and procedures to be used for full flow diversion. The SBP shall include, but not be limited to, the following

elements:

- Written procedures for bypass operations, including approximate peak flows.
- Specific location and configuration of pumping equipment for each bypass.
- Approximate pipe alignment for each bypass including vehicle access provisions.
- Whether pumping configuration plans provide for automatic flow regulation or continuous monitoring by the Contractor. The Engineer may require that the pumping system be continuously manned during operation. The SBP shall specify that the operator of the pump is qualified, as determined by the Engineer.
- Shop drawings for the bypass piping system and pump(s) indicating peak bypass capacity.
- The location of nearby storm drain inlets and methods and configurations of covering and sandbagging these drainage facilities to ensure that in the event of a sewer spill, no sewage enters the storm drain system or exits the immediate vicinity and is instead collected by portable pumps.
- Provisions for stopping work and/or providing additional standby pumping capacity if significant abnormal rainfall occurs or is predicted during the Contract period.
- Methods for expediting the construction to minimize pumping time.
- Spill response and notification procedures including 24-hour emergency phone numbers.

The Contractor shall base its full flow bypass system design on expected flow data and shall clearly indicate the rated bypass pumping capacity proposed. The primary bypass system shall be designed to handle 120% of the peak flow. A "backup" bypass pumping system shall also handle 120% of the peak flow. Both systems shall be combined for immediate switch over for emergency or testing. The pumping bypass system shall be manned continuously by an experienced operator while it is in operation as required by the Engineer. A minimum of 8 hours of emergency fuel storage is required on-site. When first in operation, the pumping system shall be tested in the presence of the Engineer.

The approved SBP shall remain on-site during all portions of the work. Specific notification requirements and procedures shall be confirmed at the project pre-construction meeting.

The Contractor is solely responsible for any releases of raw sewage due to failure of any component of the bypass pumping system, including backup containment measures. The Contractor shall reimburse the City for any and all costs such as assistance in cleanup and traffic control in case of sewer spill in conjunction with this work, fines by other government agencies and water quality testing costs.

The cost for preparation and implementation of the SBP shall be included in the bid item for sewer bypass system, and no additional compensation shall be provided therefor.

### **Sewer Lateral Flows.**

The Contractor shall control intermediate sewer lateral flows, to the extent possible, by notifying all residents or businesses connected to intermediate laterals of intended hours of work in the area, and of the need to curtail water usage during those hours. The Contractor shall notify residents and businesses in writing at least forty-eight (48) hours before proceeding with any work that might require restricted water usage and shall inform the local water district of such notification. The water closure and notice must be approved by the Engineer prior to distribution. The Contractor shall arrange for water meter closures, if approved by the Engineer, to control intermediate lateral flows.

In case sewer service to a residence or business cannot be shut down, bypass pumping will be necessary. This may be performed by pumping sewage through individual private property sewer cleanouts. If there is no accessible on-site sewer cleanout, the Contractor shall construct an accessible sewer cleanout along the existing sewer lateral, or pump sewage to the nearest downstream manhole, as approved by the Engineer. The Contractor shall not disrupt sewer flow for any restaurant, hotel, or major business facility having a fairly continuous sewage discharge, as determined by the Engineer. For any laterals with flows exceeding ten (10) gallons per minute, the Contractor shall prepare a SBP.

If a sewage backup occurs and enters buildings, the Contractor shall be responsible for cleanup, repair, property damage and other related costs.

### **Payment**

Payment for **Prepare and Implement Sewer Bypass System** shall be at the contract bid price per **Lump Sum (LS)** and shall be complete per plan including all appurtenances and related materials for installation of sewer bypass system and no other payment shall be made therefore.

### **10-1.35 CCTV INSPECTION**

Prior to rehabilitation, a post-cleaning CCTV inspection shall be performed. Video inspections shall be recorded on a digital storage device. All original digital recordings, log sheets, and reports shall be submitted to the Engineer and will become the property of the Agency.

CCTV inspection shall be performed utilizing one of the following video camera systems:

- a) remote-focus stationary lens camera;
- b) rotating-lens cameras; or
- c) pan-and-tilt cameras.

CCTV inspection for re-instating service connections shall be performed utilizing system b) or c).

The Contractor shall televise the pipeline during optimum low-flow level conditions, as pre-approved by the engineer. The CCTV inspection camera shall be moved through the pipeline in a downstream direction at a uniform rate, stopping when necessary to ensure proper

documentation of the condition, but in no case, shall it be moved through the pipeline at a speed greater than 30 feet per minute. A clear picture shall be provided looking into each service connection. If the CCTV inspection camera will not pass through the entire pipeline section, the Contractor shall reset the equipment at the downstream manhole and attempt to inspect the section of the pipe from the opposite direction. If the camera fails to pass through the entire section, it shall be assumed that an obstruction exists. Efforts to televise that section of pipe shall be temporarily suspended and the Contractor shall notify the Engineer. Upon removal of the obstruction, the Contractor shall complete the CCTV inspection.

If an obstruction is encountered, the Contractor shall remove the obstruction by excavation, repair, or other means approved by the Engineer, in order that CCTV inspection may continue.

Documentation shall consist of a color, digital recording, log sheets, and a written report detailing the post-rehabilitation condition of the pipeline and lateral connections/opening. The report shall note the time and date of CCTB inspection, street name, upstream and downstream manhole, direction of view, direction of flow, surface material, pipeline length, pipe section length, pipe size, pipe material, lateral connections, digital recording number, counter number, and a detailed logging of defects encountered. If the quality of the digital recording is deemed to be unacceptable by the Engineer, the pipeline shall be re-televised.

For the post-installation CCTV inspection, the Contractor shall hire an experienced, independent video inspection service to perform a recorded video inspection of the project sewer mains in accordance with the Standard Specifications. The CCTV inspection must be accomplished by trained operator(s) certified in accordance with National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) and using established PACP coding and observations in assessing the pipeline conditions. The submittal of an initial sample deliverable for confirmation is also requested.

Prior to post- installation video inspection, the following work must be completed:

1. All sewer pipelines are installed and backfilled.
2. All structures are in place, all channeling is complete, pipelines are accessible from structures, and all active and open service lateral connections have been re-installed as required.
3. All other underground facilities, utility piping, and conduits are installed and their trenches compacted.

When the above work has been completed, the Contractor shall notify the Engineer 48 hours in advance of the date for video inspection. During this inspection, the Contractor or his authorized representative shall be present to observe the video pictures as provided by the video camera. The recorded video inspection shall be completed within 10 days of accomplishing the above work.

The following observations shall be entered into the CCTV video inspection log, and are considered defects in construction of the sewer pipelines and will require corrections prior to final acceptance:



1. Off-grade - 0.08 foot, or over, deviation from grade.
2. Separated, misaligned or dropped joints.
3. Cracked or damaged pipe or evidence or presence of an external object bearing upon the pipe (rocks, roots, etc.).
4. Less than a 90% clear opening from the service lateral into the main sewer pipe and no intrusion.
5. Infiltration or exfiltration in excess of maximum permissible as specified in Subsection 94-2.01D of Caltrans Standard Specifications.
6. Debris or other foreign objects in the line.
7. Other obvious structural and/or maintenance deficiencies that impair the serviceability or sustainability of the facility.

The Contractor and Engineer shall be notified, in writing, by the video inspection service of any deficiencies revealed by the inspection that will require repair, following which the Contractor shall excavate and make the necessary repairs in the presence of the Engineer. All repairs shall be made prior to commencing any work in the next area or construction zone.

The personnel making the inspection shall maintain a continuous log of the inspection. Each log shall be marked with the date of the inspection run. Each log entry shall be consecutively numbered for positive identification in subsequent correspondence or references.

Upon completion of inspection of the entire project (manhole to manhole runs), the Contractor or his authorized representative shall sign under the last entry of the log sheet to certify that he was present as an observer during the inspection. After this signature, the Contractor shall be delivered duplicate or reproduced copies of the log. The Engineer shall be given the original log. The Engineer shall also be given a digital copy on a CD of the unedited CCTV inspection.

Those portions of the pipeline system that have been corrected shall be repeated until all deficiencies observed by video inspection have been corrected to the complete satisfaction of the Engineer. The cost of re-inspection of defective work shall be the responsibility of the Contractor.

If upon exposing the pipeline it is found that reported defects do not actually exist, the Agency shall reimburse the Contractor for his cost of excavation, backfill, and re-compaction, but only if the Engineer is present at the time of excavation and verifies the adequacy of the installation.

### **Payment**

Payment for **CCTV Inspection** shall be at the contract unit price per **Linear Foot (LF)** and shall include all labor, materials, equipment, and tools necessary to perform work, including but not limited to pipe cleaning and CCTV inspection, and no additional compensation will be made therefor. Measurement may be made on either the footage counter of the tape, or the footage counter on the cable, and shall be based on the actual length of pipe televised.

**10-1.36 WATER PIPE**

Water pipe, valves, meters, fire hydrants, service laterals, etc. shall conform to the provisions in Section 5, "Water" of the City of Hughson Standard Specifications and these special provisions.

**Payment**

Payment for **Construct New 1" Water Service Lateral From Existing Water Meter To Existing 8" Transite Water Per City Standard Detail 5-W.9.** shall include all labor, materials, equipment, and tools necessary to perform work, including but not limited to saw cutting, excavation, shoring and backfilling, pipe, saddle, and no additional compensation will be made therefor.

**Contractor shall follow all OSHA regulations for construction with and near asbestos pipe, and follow all hazardous waste management guidelines per Section 14-11 of the Caltrans Standard Specifications.**

Payment for **Remove Existing Water Service Lateral From Existing Water Meter To Existing 4" DIP Water** shall include all labor, materials, equipment, and tools necessary to perform work including but not limited to saw cutting, excavation, shoring and backfilling and no additional compensation will be made therefor.

Payment for Removing Existing and Installing New city-provided Water Meter shall be included in the price for **Remove and Install New Water Meter** and shall include all labor, materials, equipment, and tools necessary to perform work and no additional compensation will be more therefor. City will furnish new water meter.

## **APPENDIX A STANDARD PLANS**

## SECTION 5

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### WATER

#### 5.1 GENERAL

Water system improvements proposed for inclusion into the City shall be designed in accordance with the criteria set forth herein, and pursuant to the current Water System Master Plan, unless otherwise approved in writing by the City Engineer. Maps and Plans for developments for which the City Engineer deems there to be insufficient water supply shall not be approved.

The design shall take into consideration physical conditions known to exist at the time and place of each installation and the probable operating requirements. Where such conditions render sections of these Specifications inapplicable, alternative methods of design may be substituted to the City, and upon written approval by the City Engineer thereof, may be incorporated in the plan.

Water mains and services shall be installed by a Developer or City Contractor holding the appropriate license for such work under the provisions of the State of California Business and Professions Code.

#### 5.2 DESIGN

Permanent dead ends over 300 feet in length shall have circulating ties on twenty feet easements through side lot lines, unless modified at the option of the City.

Pipelines 8-inches and smaller shall be installed with a minimum of 36-inches of cover between the top of the pipe and the finished grade. Pipelines 12-inches or greater shall be installed with a minimum of 48-inches from the top to the finished grade.

For single family residential areas, all water mains shall be sized to provide 1000 gallons per minute fire flow from each of 2 adjacent fire hydrants flowing simultaneously with 20 pounds per square inch residual pressure. Size of water mains in high density residential, commercial, and industrial developments shall be designed by the design Engineer and approved by the City.

This fire flow can generally be obtained using the following design standards:

- 1/2 mile looped grid - 10 inch mains or larger

- 1/4 mile looped grid - 8 inch mains

- Dead end mains with a fire hydrant - 8 inch mains

- Distribution system, looped - 8 inch mains



The distribution layout shall be a looped grid insofar as possible. Dead-ends shall have blowoff assemblies installed for flushing mains as shown on Drawing No W.2.

Water mains shall be 5' from centerline, as measured from centerline to the nearest side of the pipe. Water mains shall be on the opposite side of the centerline from the sewer line.

There shall be a minimum of three valves at tees and four valves at crosses. Valves on transmission mains should be spaced a maximum of 800 feet apart in residential areas and 500 feet in commercial areas.

**Main Valves:** Main valves shall be located so that any section of water system can be controlled by operating a maximum of 3 valves. In addition, valves shall be spaced so that a maximum of 1,000 feet of water main is controlled by the valves. When a butterfly valve is used, butterfly operator shall be toward nearest property line.

**SYSTEM PRESSURE** - Water distribution systems shall be designed so that normal operating pressure at service connections to the distribution system are no less than 40 pounds per square inch (psi) and no more than 90 psi under normal demand conditions. During periods of maximum day plus fire flow demand, the pressure shall not be less than 20 psi near the flowing hydrants that supply the fire flow demand.

**RELIEF VALVES** - Appropriately sized air vacuum release valves shall be located at all high points along the pipeline alignment and at all "dead ends" that occur at a high points. Air/Vacuum shall be located at points of excess negative pressure. And combination valves may be applied where appropriate. Refer to AWWA Manual M51 for further design guidelines.

Additionally, for all pipelines of 16-inch diameter and greater, an air vacuum valve shall be located on the downstream side of all mainline valves.

On arterial streets, air vacuum valves are to be placed prior to the curb radius with service in perpendicular with the mainline. All air vacuum valves shall be constructed per City Standards.

**SYSTEM DEMAND CRITERIA** - shall be in accordance with the water demand factors and peaking factors defined in the most recent City of Hughson Water Master Plan.

**PIPE SIZING CRITERIA** - The standard water pipeline sizes allowed in the City for new developments shall be 8-inch, 12-inch, 16-inch, 20-inch, 24-inch, 30-inch, 36-inch, and 42-inch in diameter.

Pipeline velocities shall not exceed 5 feet per second (fps) during peak hourly flow and not exceed 10 fps during maximum day plus fire flow.

In commercial and industrial areas, the standard minimum pipe size shall be 12-inches in diameter.

The City reserves the right to require 12-inch diameter minimum size pipelines in residential

areas, with no incremental diameter upsizing cost to the city, when necessary, as determined by the City.

The City may require pipe sizing in excess of the minimum size as determined by the design criteria herein when the facilities being constructed will serve, or may be extended to serve, additional lands.

**POTABLE PIPELINE LOCATION** - Installation of potable water lines adjacent to existing or proposed sewer lines, recycled water lines, and storm drains shall be in accordance with the Department of Health Services regulations, or City requirements, whichever is greater. The separation of water and sewer mains shall be in conformance with City Standard Drawing No. W-5. Generally, potable water pipelines shall be located above sewer lines and recycled water lines, preferably with a minimum clearance of 3 feet for perpendicular pipes, and parallel with a clearance of at least 10 feet (O.D. to O.D.) away from sewer lines.

When cover cannot be provided, concrete encasements or protective slab construction over the pipeline may be substituted. City staff shall be consulted, as special approval is required.

**BACKFLOW PREVENTION** - A backflow prevention device shall be required on domestic water service connections and irrigation water service conditions on all industrial or commercial buildings.

Backflow prevention devices shall be required on domestic water connections where water from other sources may become cross-connected to other water supplies or sources as determined by the City.

An approved backflow prevention device is required by Title 17, Drinking Water Supplies, of the California Administrative code, and shall be installed in conformance with City Standard Drawing No. W-7.

Water meters shall not be installed until after an approved backflow prevention device is installed.

**WATER SAMPLING STATIONS** - Where water sampling stations are required, as determined by the City, the stations shall be constructed in accordance with City Standard Drawing No. W-6 and No. W-6A.

Sampling stations shall be located at least 100 feet from a fire hydrant

Sampling stations shall not be placed past the last service connection on a dead end main.

For each water source, there shall be one sampling station located where raw (untreated) water from the source can be sampled.

**WATER SYSTEM FACILITY DESIGN** - The City will provide design oversight for new water system facilities design for facilities such as wells, treatment, storage tanks, or pressure reducing stations.

Site selection of all water system facilities shall be approved by the City and meet the requirements of the State Department of Health Services.

The layout of new well sites shall be in accordance with Standard City Drawing No. W-12 and AWWA Standard A100-06.

### 5.3 PIPE

Pipe used in construction of water distribution systems shall be either ductile iron pipe (DIP) or plastic pipe (PVC) and shall meet the standards of the American Water Works Association (AWWA), where applicable.

#### A. Ductile Iron Pipe (D.I.P.)

Ductile Iron Pipe shall have "Tyton Joints", "Ty-Seal Joints", or approved equal and shall conform to the current standard specifications of A.W.W.A Standard C-151/A21.59. Fittings shall conform to A.W.W.A. Standard 0110, joints shall conform to A.W.W.A. C111/A21.11 for rubber gasket joints.

#### A. Poly-Vinyl Chloride Pipe (PVC)

Poly-Vinyl Chloride Pipe shall conform to A.W.W.A. C900 Class 150 for up to 10 inches and C-905 for pipes 12 inches and larger for use in municipal water systems and fire protection lines. Rubber rings shall conform to manufacturers' recommendation.

Poly-Vinyl Chloride Pipe shall be suitable for the purpose intended and shall be installed as per manufacturer's recommendations, and these Standards.

#### B. Water Lines

All mains shall include #12 copper tracer wire. The wire shall be connected to all valves and fittings.

### 5.4 FITTINGS

Bends, tees and other fittings shall be Cast Iron, Class 150 A.W.W.A. C-900 or C-905 for use with Poly-Vinyl Chloride. Cast Iron Pipe and Ductile Iron Pipe fittings shall be manufactured by Olympic Foundry, Phoenix Iron Works, or approved equal.

All fittings for use with PVC C900 pipe shall be cast-iron outside diameter push-on or mechanical joint fittings with exception of fittings with valves which shall be push-on or mechanical joint by flange. Ductile iron fittings shall be classified as "compact ductile iron fittings" and shall be produced in accordance with ANSI/AWWA A21.53/C153. Unless otherwise specified, the interior of ductile iron fittings shall be lined with uniform thickness of cement mortar "double thickness" then sealed with a bituminous coating in accordance with AWWA C104. the outside surfaces of the DIP fittings shall be coated with a bituminous coating in accordance with ANSI A21.6 or A21.51.

All ductile iron fittings shall be polyethylene encased at the time of installation. Polyethylene encasement and installation shall be in accordance with AWWA C105.



Fittings shall be handled and jointed as specified for pipe installation herein. Reaction or thrust blocking shall be constructed at bends, tees, dead ends and where changes in pipe diameter occur. Blocking shall be made of Class B concrete, and shall be placed between undisturbed ground and the fitting to be anchored. The area of bearing on the pipe and on the ground shall be that required by Standard Drawing No. W.4. The blocking shall be placed so that the joints of the pipe fittings will be accessible for repair.

## 5.5 VALVES AND VALVE BOXES

Valves shall be located on the discharge side of pipe connections; minimum 4 at crosses, 3 at tees, and always at the beginning of dead end mains. The City may require additional valves on critical sections or where the proposed valves requires closing more than 3 valves to isolate a section of pipeline.

Valves on transmission mains should be spaced a maximum of 800 feet apart in residential areas and 500 feet in commercial areas.

Isolation valves shall be flanged to the tee or cross within the street intersection. All isolation valves shall be direct buried (no vaults are required).

Valves and valve boxes shall be installed at the locations shown on the plans.

All valves shall be Dresser "450" Gate or Mueller A-2380 gate valve, or approved equal and shall be the rubber-seated, tight-closing type conforming to the current A.W.W.A. Specification C-504. Valves shall open left and be equipped with a 2-inch A.W.W.A. approved operating nut.

Valves boxes shall be Christy G5 with Christy Iron cover or approved equals. The following materials may be used for extensions: 8" Poly-Vinyl Chloride Pipe, (with a minimum 50 foot head); or approved equal. All valve boxes shall be installed to finished grade as per City Standard Drawing No. W-1.

## 5.6 WATER SERVICE MATERIALS

Each individual property shall have a separate water service complete from the water main to the property. The minimum size water service is 1-inch.

For properties other than single family residential, and for non-typical single family residential, the Design Engineer shall determine the water service size. For making such determination the Design Engineer shall take into account the anticipated water use, water pressure requirements, and property size. Concerns for fire water service shall also be considered.

Polyethylene Pipe may be used for all 1-inch through 2-inch water services.

Cast Iron, Ductile Iron or Galvanized Steel Pipe shall be used for all water services larger than 2 inches.

If abnormal or unusual conditions exist, the City may approve alternative pipe materials.

All water services, including meter boxes, shall be installed in accordance with City of Hughson's Standard Drawings No. W.8, W.9, W.10, or W.11.

Service and meters shall be sized in accordance with the provisions of Section 1009 of the uniform Plumbing Code, using minimum pressure expected in the system.

Minimum meter size shall be 5/8" x 3/4".

All water service connections shall be metered with Badger Radio Read Meters with Pit Orion Recordall Transmitter Register or Approved Equals.

In addition, to a domestic water service meter, all commercial/industrial/municipal projects shall be required to provide a separate landscape irrigation meter.

#### 5.7 MATERIALS TO BE FURNISHED AND INSTALLED BY DEVELOPER

The Developer or City Contractor shall furnish all labor, material, equipment and appliances required to complete the water mains and services specified.

#### 5.8 STAKING OF WATER MAINS AND SERVICES

The water lines and services shall be staked by the Developer's Engineer on the project and installed by the Developer. Staking will be provided by the City on projects installed by City.

#### 5.9 EXCAVATION

The Contractor shall perform all excavations necessary or required to construct all pipelines and structures. Excavation shall include the removal and disposal of all materials of whatever nature encountered. Trenches shall be excavated in open cut, following neat parallel lines equidistant from the centerline; such line shall be staked as set-forth in Section 5.8. No tunneling or jacking will be permitted without written permission from the Engineer. Trenches will be sufficient width to provide clearance for bracing, support and working space.

Care shall be taken to preserve all surface and subsurface facilities in the work area.

The trench shall be excavated to a minimum of 2 inches below the grade of the bottom of the pipe and 2 inches below couplings and bells. If any of the trench bottom is in material too hard to permit proper bedding of the pipe, excavation must be carried to a depth at least 4 inches below the grade of the bottom of the pipe, and this over-excavation shall then be brought to grade with approved material compacted in place. Should the trench bottom at any location be of material which will not afford a sufficient sound foundation,

it shall be excavated to a depth not greater than 2 feet below grade as directed by the Engineer and refilled to grade with approved materials compacted in place.

Excess and/or rejected material shall be disposed of by the Developer or City Contractor at their expense.

#### 5.10 SHORING, BRACING AND SHEETING

The Contractor shall furnish, install and maintain such shoring, bracing and sheeting as required.

After the pipeline has been installed and sufficiently backfilled to protect the pipe, all shoring, bracing and sheeting shall be removed. All voids left by the removal of such bracing shall be carefully filled with suitable material compacted in place.

#### 5.11 DISPOSAL OF SEEPAGE, STORM WATER, OR SURFACE WATER

The Contractor shall remove any seepage; storm water, or surface water that may be found or may accumulate in the excavation during the progress of the work. He shall furnish all pumps and other equipment necessary and shall keep all the excavation entirely free from water at all times during the construction of the work. When pipe-laying is in progress, the open ends of the pipe, shall be closed by approved means to prevent entrance of water or dirt into the line. Whenever water is excluded from the pipe, adequate backfill shall be deposited on the pipe to prevent floating. Any pipe which has floated shall be removed from the trench and re-laid as directed by the City.

#### 5.12 PREPARATION OF TRENCH AND LAYING OF PIPE

All pipe for water mains and laterals shall be placed to line and grade as shown on the approved plans and at such depths as to provide 36 inches minimum cover from the top of the pipe to ultimate finish street grade. The Contractor shall be responsible for verifying ultimate finish grade.

When water lines are being installed in new subdivisions, mainline pipe and fire hydrant runs shall be installed prior to the installation of curb, gutter and sidewalk. The services shall be installed after the curb, gutter, and sidewalks. All pipe shall be installed as per manufacturer's recommendations and these Improvement Standards.

#### 5.13 HANDLING OF PIPE ACCESSORIES

Proper implements, tools, and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and efficient execution of the work. All pipe, fittings, valves, hydrants, and accessories shall be lowered into the trench in such a manner as to prevent damage to pipe fittings. Under no circumstance shall pipe or accessories be

dropped or dumped into the trench. All foreign matter or dirt shall be removed from the interior of pipe before lowering into position in the trench. Pipe shall be kept clean by means approved the Engineer during and after laying. All pipe and accessories shall be inspected for defects prior to lowering into trench. Any defective, damaged or unsound pipe or accessory shall be repaired or replaced at the Contractor's expense.

#### 5.14 SERVICE INSTALLATION

The services shall be installed as per Standard Drawing No. W.8 through W.11. Curb to be marked by stamping or chiseling a "W" on the curb face.

The curb stop, stainless steel insert, meter, meter adapter service plug for SP3 unit, meter box with a brick at each corner, and lid to be placed at correct depth and distance from sidewalk.

Plastic service pipe shall not be heat-flared. Because of the variation in the outside diameter of the pipe, a saddle tap in lieu of the Quiktap is required.

Special care shall be exercised to insure proper compaction is made under curb stop so it is vertical and the meter is level. Compaction shall be made under and around the meter box so it remains level and at the finish grade of the sidewalk.

Water services shall not be connected to 20-inch diameter or larger mains, unless specifically permitted by the City.

#### 5.15 FIRE HYDRANTS

Fire hydrants shall be installed at the locations shown on the plans in conformance with City Standard Drawing No. W.3.

Hydrants shall be Clow 900 Series Wet Barrel Hydrant or approved equal, and shall conform to A.W.W.A. Standard C-503 for wet barrel hydrants. Hydrant color shall be safety yellow #1245 Ellis Paint Company Hy-Lux 1200 Waterborne Industrial Enamel.

Fire hydrants shall be installed with a minimum separation of 5 feet from any driveway, street light, power pole, sign, fence, walls, etc. and a minimum of 15 feet from any dry utility pole, vault or transformer.

Fire hydrants shall be installed 12-inches behind the sidewalk when sidewalk is adjacent to curb and 20-inches behind curb face when sidewalk is not adjacent to curb. All fire hydrants piping shall be the same size as the main and installed with a break-off check valve. No obstructions shall be permitted within 36 inches of the center of a hydrant, to ensure adequate access and operation.

All water lines service any hydrant that is located outside of the Right-of-Way, or on private property shall be metered.

Fire hydrant location shall be at ends of curb returns or at lot lines.

Fire hydrant spacing shall be, at minimum, 400 feet in residential, areas and 300 feet in commercial areas, or at intersections whichever is closer; in no case should the average coverage of each hydrant be more than 120,000 square feet. Insofar as possible, fire hydrants shall be located at street intersections rather than in the middle of blocks. Final fire hydrant locations are subject to the approval of the Fire Chief.

A blue reflectorized marker shall be permanently placed on the paving surface along street centerlines offset to the fire hydrant side opposite fire hydrant locations.

The plans shall show the centerline station for each hydrant along with the adjacent top of curb elevation.

#### 5.16 TEMPORARY AND PERMANENT BLOW-OFFS

Appropriately sized blow-offs shall be located at all low points along the pipeline alignment and at all "dead end" locations. Additionally, for all pipelines 16-inch in diameter and greater, a blow-off shall be located on the upstream side of all mainline valves. All blow-offs shall be constructed to City standards.

Blow-offs should be located as near to storm drain catch basins whenever possible. On arterial streets, blow-offs are to be placed prior to the curb radius with the service line perpendicular with the mainline.

The size of blow-offs shall be based on the mainline pipe diameter as follows:

- 8-inch to 16-inch diameter mains: 4-inch diameter blow-offs
- 20-inch to 24-inch diameter mains: 6-inch diameter blow-offs
- Greater than 24-inch diameter mains: 8-inch diameter blow-offs

A 4-inch diameter blow-off shall be installed at the end of each segment of pipeline that is installed for future use. If the section of pipeline installed is creating a high point, an air vacuum valve will also be required.

Temporary and permanent blow-offs shall be installed at the locations on the plans in conformance with City Standard Drawing No. W.2. The final length of pipe, prior to the blow-off, shall be 18 to 39 inches.

All salvaged temporary blow-offs shall become the property of the Contractor and shall be removed from the job site before completion.

## 5.17 CONNECTIONS WITH EXISTING WATERLINES

The Developer or City Contractor shall make all excavation for connection to existing waterlines. Connections shall be made to existing water lines in the presence of the City.

The Developer or City Contractor shall furnish, install and maintain such shoring, bracing and sheeting necessary for connections as set forth in Section 5-10.

Existing valves shall not be operated unless qualified City personnel are present. Arrangements for operating existing valves shall be made with the City Director of Public Works at least 48 hours of consecutive city business days prior to scheduled operations.

Connections shall be made at such times as designated by the Engineer and in such a manner as to insure the least inconvenience to water users. No connection shall be made until the new work has been tested and disinfected as specified hereinafter. The Developer or City Contractor shall be responsible for safeguarding the existing system from all damage and possible contamination and be liable for impacts/cost associated with measures to immediately restore services.

The contractor shall furnish the pipe and materials necessary to make the tie-in to the existing system.

## 5.18 INSPECTION

### A. INSPECTION

All water lines shall be inspected for proper installation by the City, prior to backfilling of trenches.

### B. HYDROSTATIC TEST

After installing pipe and prior to complete backfilling of trenches the entire length of each line shall be subjected to a hydrostatic pressure of not less than 200 psi for a period of not less than 1 hour. The pressure shall not be allowed to drop below 190 PSI. Curb stops, idler fittings and SRI units shall also be included in the hydrostatic test. At the end of the 1 hour pressure test the water pressure shall be bled down to 150 PSI and a 1 hour leakage test performed, the contractor shall have all necessary equipment on hand to pressurize the piping and to measure the losses as the pump is operating. No pipe installation will be accepted if leakage for the section tested exceeds a rate in gallons per hour per 1,000 feet of pipe multiplied by  $\frac{1}{4}$  of the pipe diameter in inches.

The Developer or City Contractor shall perform the test prior to connecting to the existing system. The Developer or City Contractor shall furnish and install temporary caps, plugs for SRI units, thrust blocks, and other necessary materials needed to hold pressures on sections of line being tested.



Water for testing may be taken from the nearest blow-off, fire hydrant or other approved source. All pipe, fittings, valves, couplings and other materials needed to fill the test lines with water shall be supplied and installed by the Developer or City Contractor. Care shall be taken not to contaminate the existing system.

The pump, gage, pipe connection and all necessary apparatus and equipment needed for the test shall be supplied by Contractor.

The Contractor shall permanently stop all leaks. Repair clamps shall not be used, a full length section of pipe shall be installed to repair leaks. All defects occurring shall be tested again to determine final acceptability of the installation.

#### C. DISINFECTING WATER MAINS

Water mains shall be disinfected in conformance with the procedure specified in the current Standard Specifications for A.W.W.A. C651-99.

### 5.19 BACKFILLING OF TRENCHES

After the pipe has been properly laid and inspected, backfill material shall be placed around the pipe at a depth of 12 inches above the top of the pipe and shall be thoroughly compacted to final density of at least 90 percent. This shall be done in such a manner as to not injure or disturb the pipe. All excavation within the existing street roadbed shall be backfilled and compacted until the relative compaction is not less 95 percent. Backfill material shall be placed in layers not to exceed 8 inches in depth and moistened as necessary before compaction. Each layer shall be thoroughly tamped, rolled or otherwise compacted and brought to grade. Backfill in trenches between the back of the curb and property lines shall be thoroughly consolidated to a final density of at least 90 percent of maximum density. Compaction of backfill material by ponding or jetting will not be permitted. Field density may be determined by any method accepted by the City Engineer.

### 5.20 RESTORING SURFACE

The surface off all trenches shall be filled and compacted so that the surface will conform to the condition of the surrounding ground. The repaving requirements of the plans shall be met regardless of type of existing surfacing.

Existing pavement shall be cut in neat parallel lines as shown on City Standard Drawing No. SS.7.

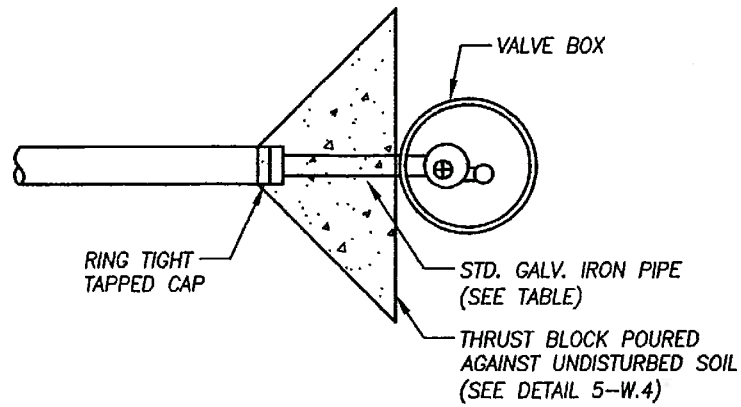
Aggregate base shall be Class II compacted to 95% relative compaction. Aggregate base shall have  $\frac{3}{4}$ -inch maximum combined grading.

Asphalt concrete shall be Type B, AR 4000 with  $\frac{1}{2}$ -inch maximum aggregate, medium grading.

A paint binder of asphaltic emulsion shall be applied to all surfaces in conformance with Section 39-4 of the State Improvement Standards.

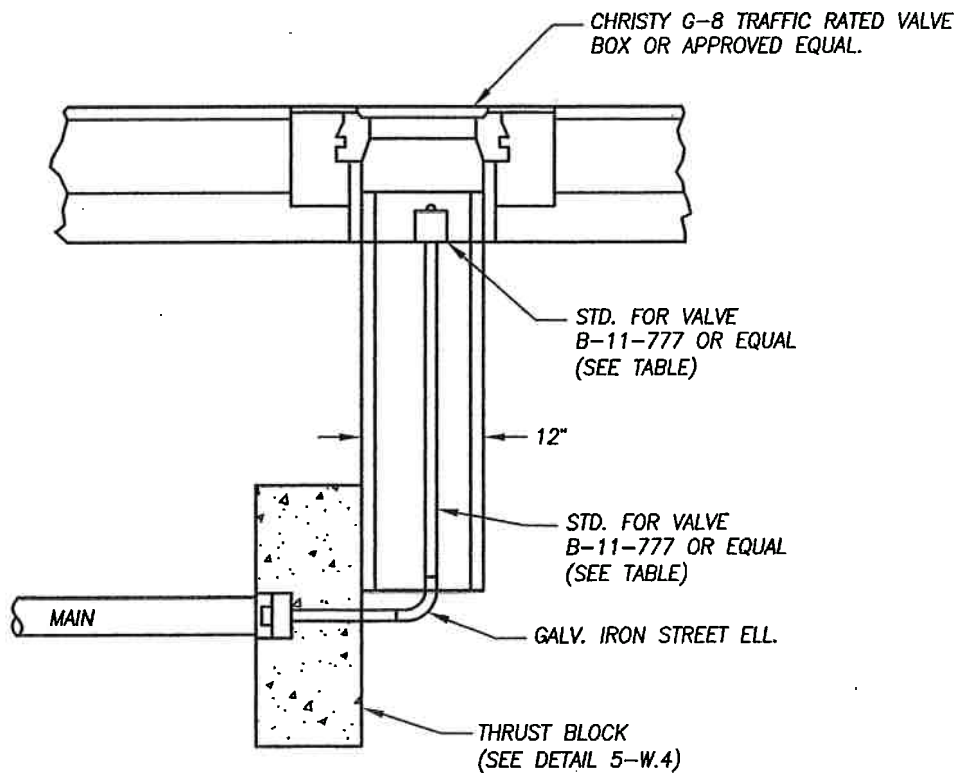






BLOW-OFF SIZE TABLE

PIPE DIAMETER Ø MAIN	BLOW-OFF & VALVE DIAMETER
8-12 INCHES	2 INCHES
12-16 INCHES	4 INCHES
20-24 INCHES	6 INCHES
GREATER THAN 24 INCHES	8 INCHES



# WATERLINE BLOWOFF ASSEMBLY

DRAWN BY: C.V.  
CHECKED BY: P.K.  
SCALE: NONE  
DATE: 7/07

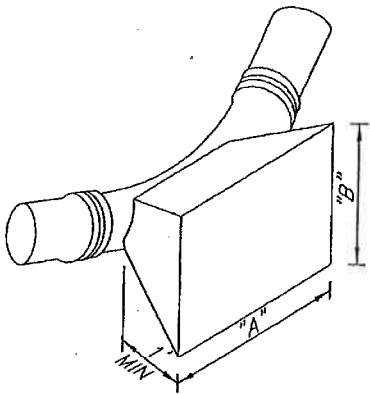
STANDARD DETAIL

APPROVED BY:   
DATE APPROVED: 8/13/07

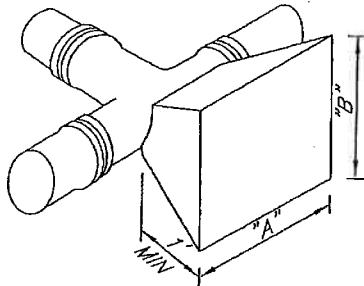
CITY OF HUGHSON

5-W.2

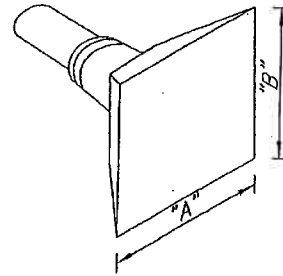




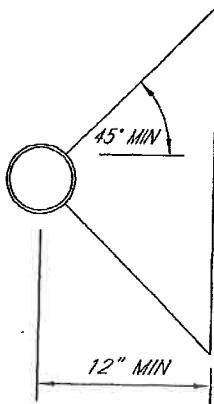
TYPICAL THRUST BLOCK  
(CAST IRON BEND)



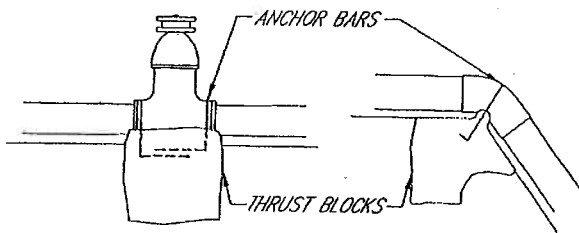
TYPICAL THRUST BLOCK  
(TEE OUTLET)



TYPICAL THRUST BLOCK  
(DEAD END)



TYPICAL SECTION THRU  
THRUST BLOCK



WHEN REQUIRED BY  
THE CITY ENGINEER

NOTE: ALL THRUST BLOCKS  
SHALL BE POURED AGAINST  
UNDISTURBED SOIL.

#### THRUST BLOCK AREA REQUIRED

FITTINGS	ALLOWABLE SOIL BEARING VALUE	
	1,000 LBS. PER SQ. FT.	
6" LINE	"A"	"B"
22 1/2°	1'-6"	1'-6"
45°	2'-0"	2'-0"
90°	3'-0"	2'-6"
TEE OUTLET	3'-0"	2'-0"
DEAD END	3'-0"	2'-0"
8" LINE		
22 1/2°	2'-0"	2'-0"
45°	3'-0"	2'-6"
90°	4'-0"	3'-6"
TEE OUTLET	3'-6"	3'-0"
DEAD END	3'-6"	3'-0"
10" LINE		
22 1/2°	3'-0"	2'-0"
45°	4'-0"	3'-0"
90°	5'-6"	4'-0"
TEE OUTLET	4'-0"	4'-0"
DEAD END	4'-0"	4'-0"
12" LINE		
22 1/2°	3'-0"	3'-0"
45°	4'-6"	4'-0"
90°	8'-0"	4'-0"
TEE OUTLET	5'-6"	4'-0"



#### THRUST BLOCK DETAILS

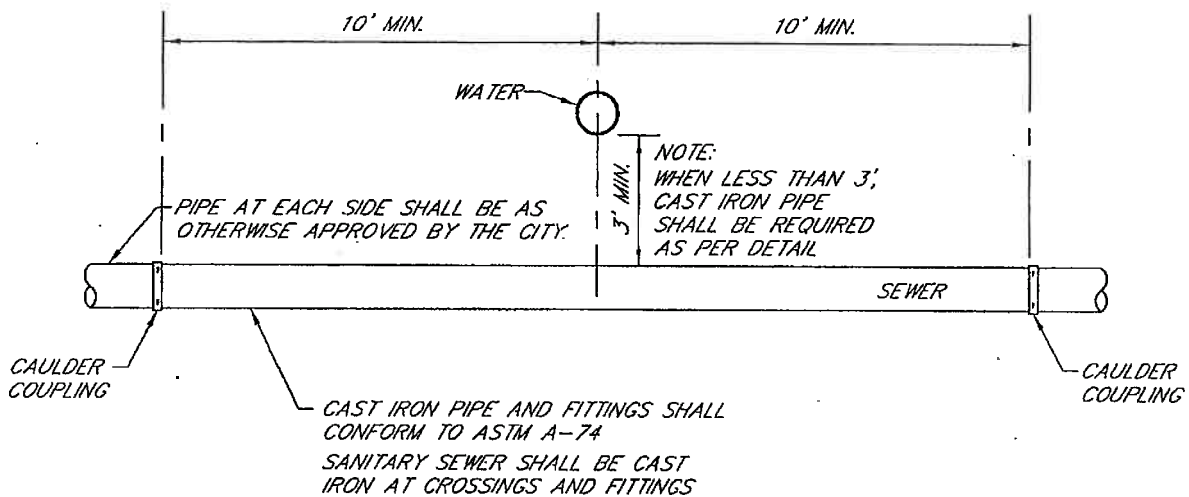
DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY: *[Signature]*  
DATE APPROVED: 8/15/07

CITY OF HUGHSON

STANDARD DETAIL

5-W.4



NOTES:

1. WATER MAINS AND SEWERS SHOULD BE SEPARATED AS FAR AS IS REASONABLE IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS WITH SEWERS ALWAYS LOWER THAN WATER MAINS.
2. THE HORIZONTAL DISTANCE BETWEEN PRESSURE WATER MAINS AND SEWER SHALL BE AT LEAST 10 FEET.
3. ALL CONSTRUCTION SHALL MEET REQUIREMENTS SET FORTH BY THE STATE OF CALIFORNIA, DEPARTMENT OF HEALTH SERVICES.



SEPARATION BETWEEN SEWER  
AND WATER MAINS

DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

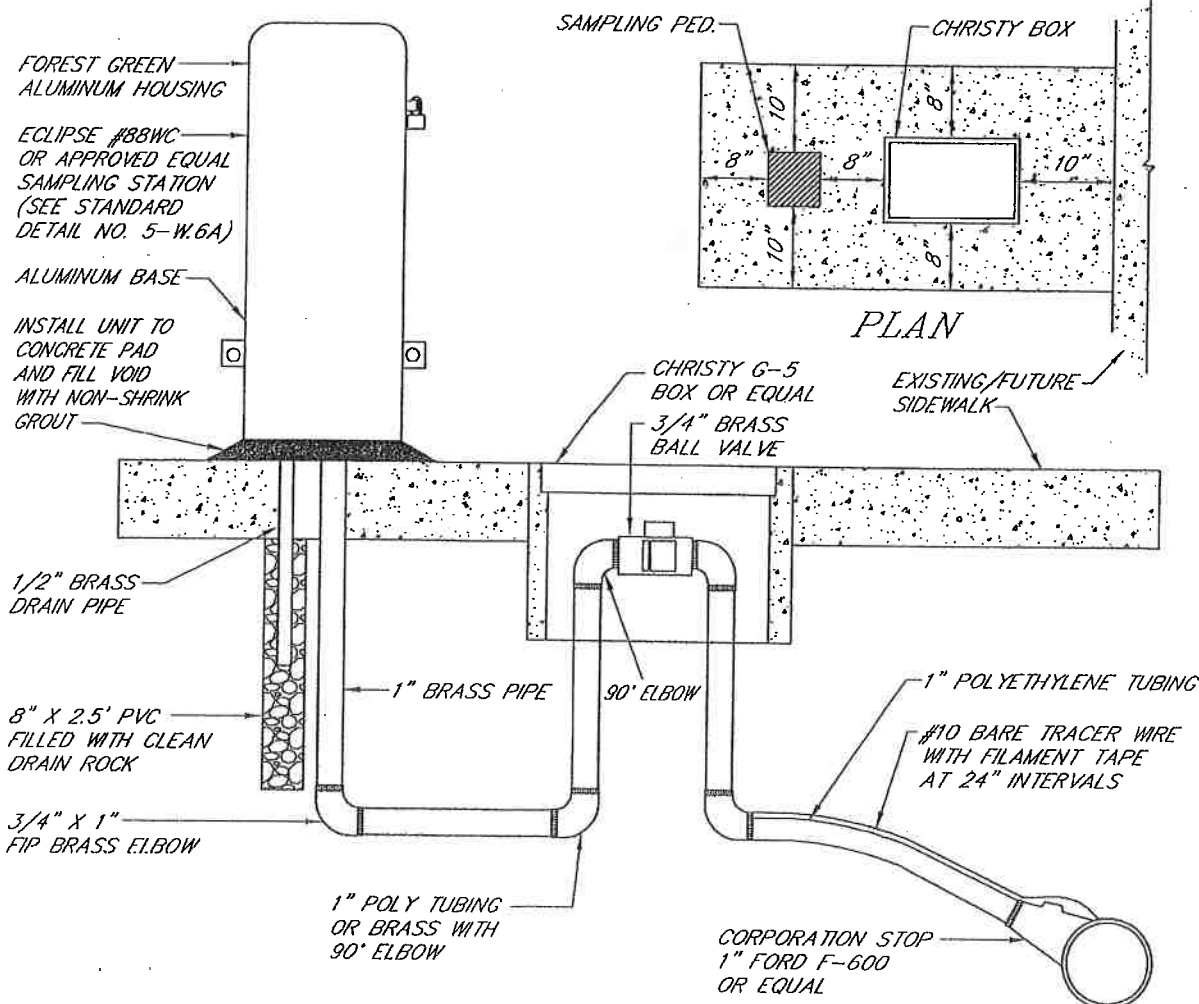
APPROVED BY: \_\_\_\_\_  
DATE APPROVED: 8/13/87

CITY OF HUGHSON

STANDARD DETAIL

5-W.5





NOTES:

1. SAMPLING STATIONS SHALL BE 3' BURY, WITH A 1" MIP INLET, AND A 1" FIP DISCHARGE. A 1/4" BENT-NOSE SAMPLING BIBB SHALL BE LOCATED BEFORE THE DISCHARGE.
2. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NON-REMOVABLE, ALUMINUM-CAST HOUSING.
3. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.
4. ALL WORKING PARTS WILL BE OF BRASS AND SERVICEABLE FROM ABOVE GROUND WITH NO DIGGING. A 1/2" BRASS DRAIN TUBE SHALL BE PROVIDED WITHIN THE LOCKING COVER.
5. A 1" BALL VALVE SHALL CONTROL THE WATER FLOW, AND BE LOCATED AFTER THE SAMPLING BIBB, AS MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO. 63102 OR APPROVED EQUAL. SEE 5-W.6A.



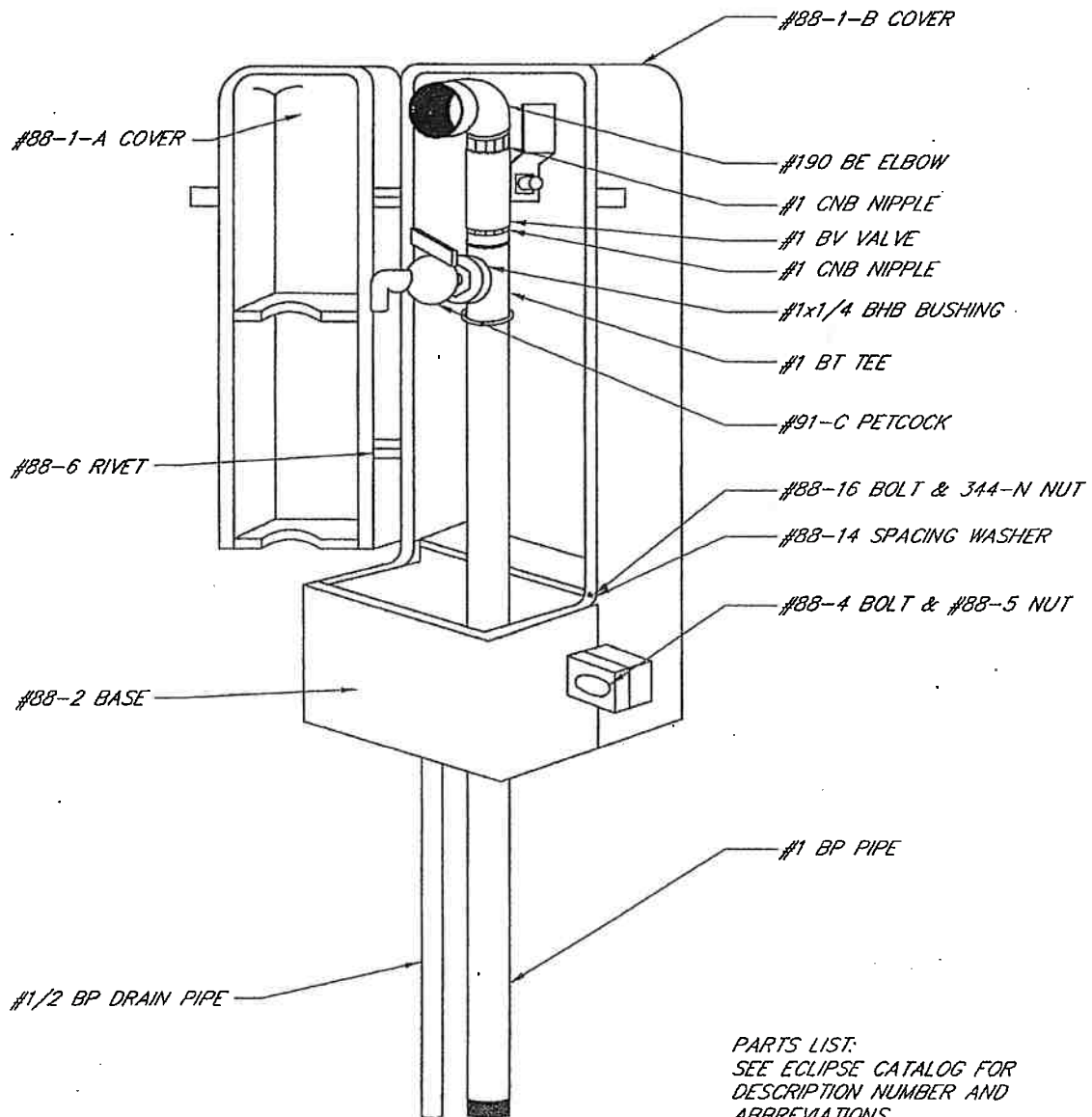
BACTERIOLOGICAL  
SAMPLING STATION

DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY: \_\_\_\_\_  
DATE APPROVED: 8/13/01

CITY OF HUGHSON

STANDARD DETAIL  
5-W.6



## BACTERIOLOGICAL SAMPLING STATION

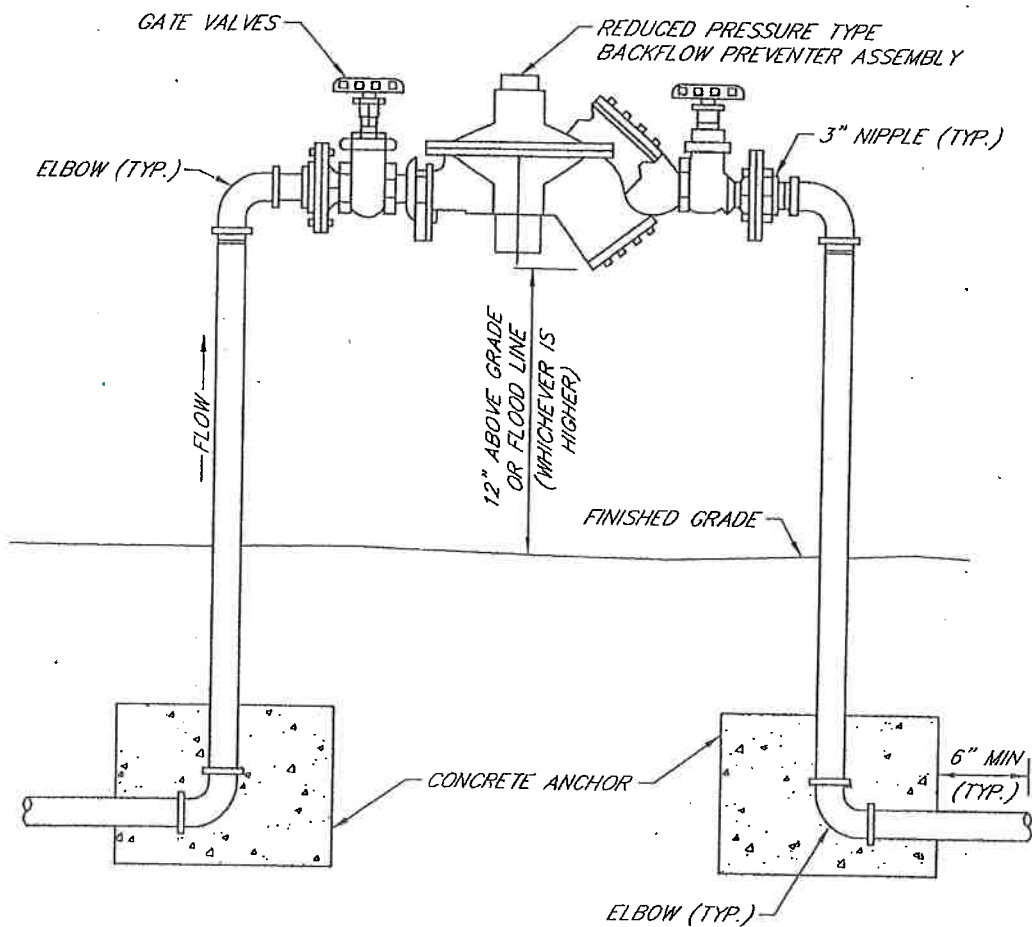
DRAWN BY: A.D.R.  
 CHECKED BY: R.H.H.  
 SCALE: NONE  
 DATE: 1/04

APPROVED BY: *[Signature]*  
 DATE APPROVED: 5/1/04

CITY OF HUGHSON

STANDARD DETAIL

5-W.6A



1. ALL PIPE FITTINGS SHALL BE SCHEDULE 40, GALVANIZED STEEL UNLESS OTHERWISE SPECIFIED.
2. CONCRETE SHALL BE 420-C-2000.
3. THE BACKFLOW PREVENTER DEVICES AND INSTALLATIONS SHALL BE APPROVED BY A.W.W.A. AND THE CITY.
4. VALVE ASSEMBLIES MAY HAVE SCREWED OR FLANGED FITTINGS.
5. COAT ALL EXPOSED THREADS WITH AN APPROVED RUST INHIBITING SEALANT.
6. APPROVED PLASTIC TAPE 1/2" WIDE SHALL BE USED ON ALL THREADED CONNECTIONS.
7. DISSIMILAR METALS SHALL BE SEPARATED BY AN APPROVED DI-ELECTRIC COUPLING.
8. PLASTIC PIPE SHALL NOT BE USED ABOVE FINISHED GRADE.



## BACKFLOW PREVENTER DEVICE

DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

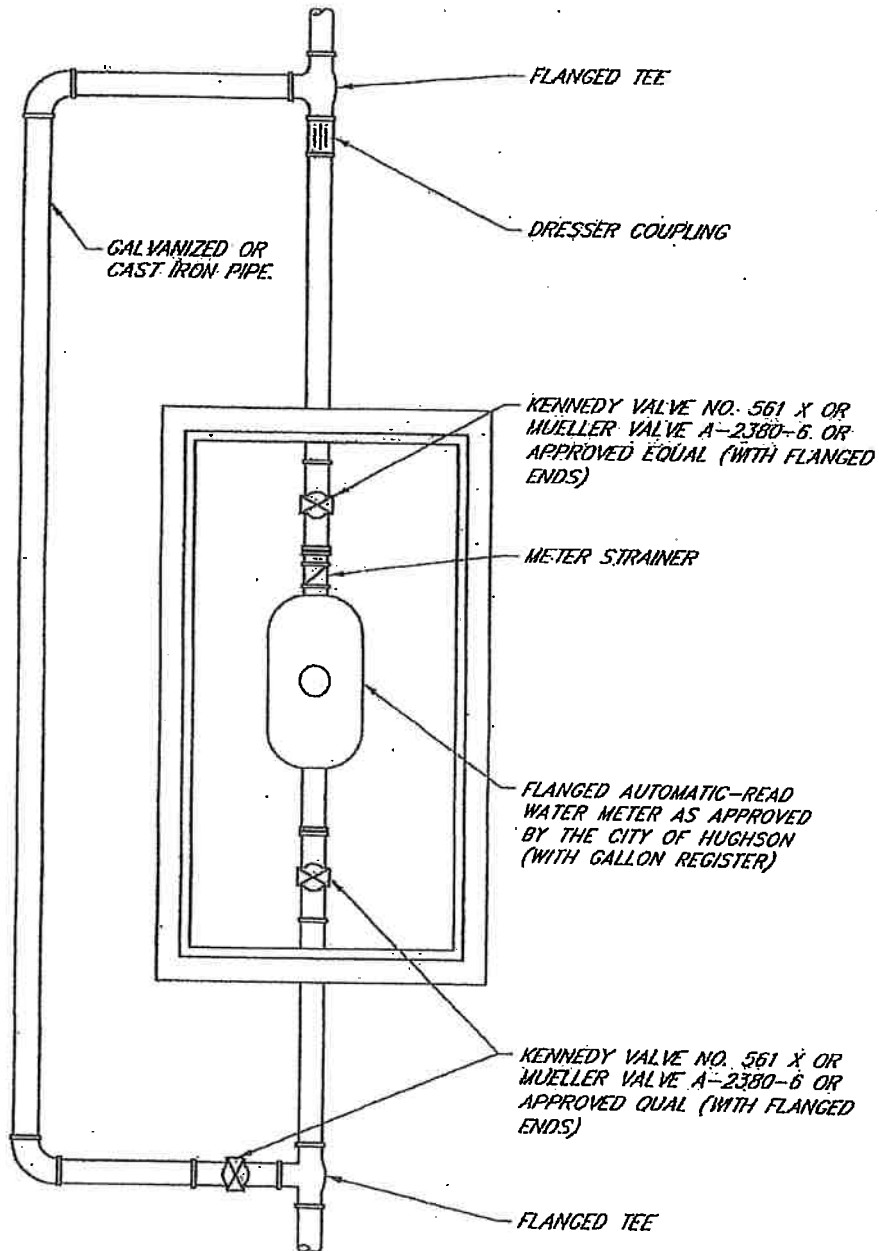
APPROVED BY: *[Signature]*  
DATE APPROVED: 5/1/04

CITY OF HUGHSON

STANDARD DETAIL

5-W.7





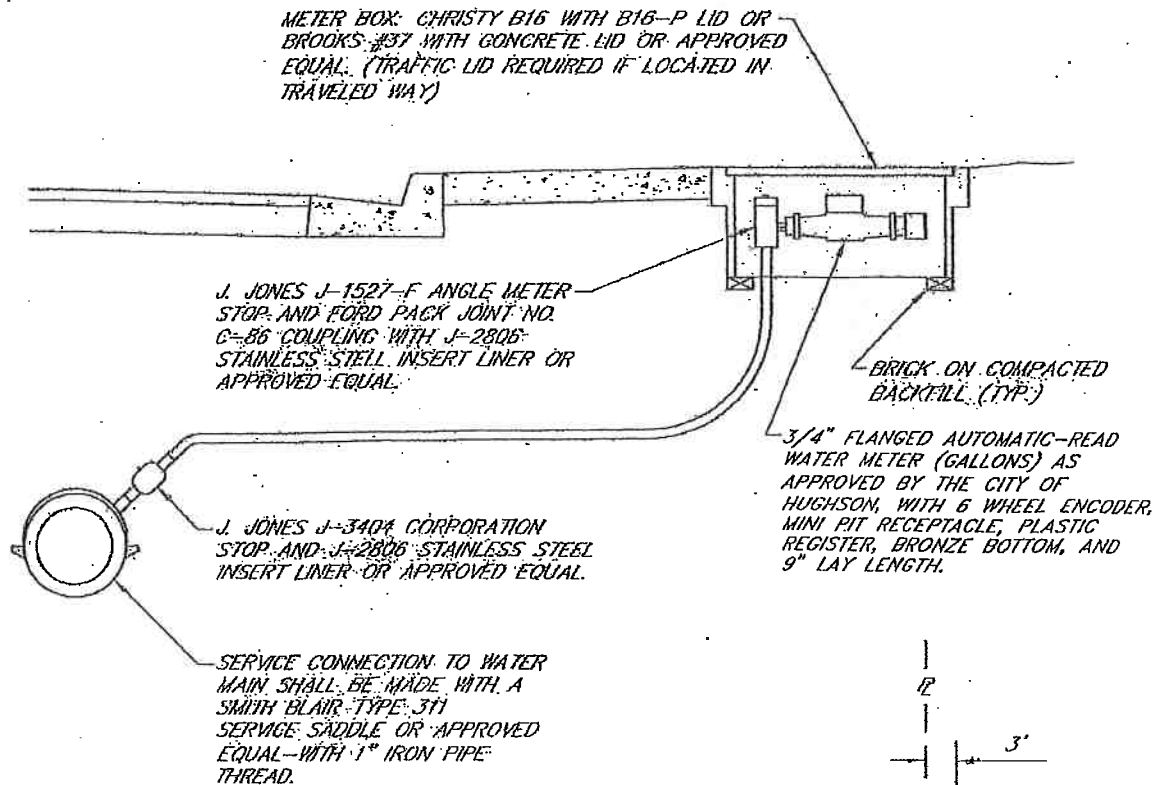
**WATER SERVICE LARGER  
THAN 2" DIAMETER**

DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY: *[Signature]*  
DATE APPROVED: 03/27/2006

**CITY OF HUGHSON**

STANDARD DETAIL  
**5-W.8**



### NOTES:

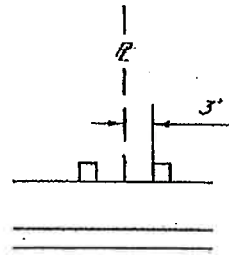
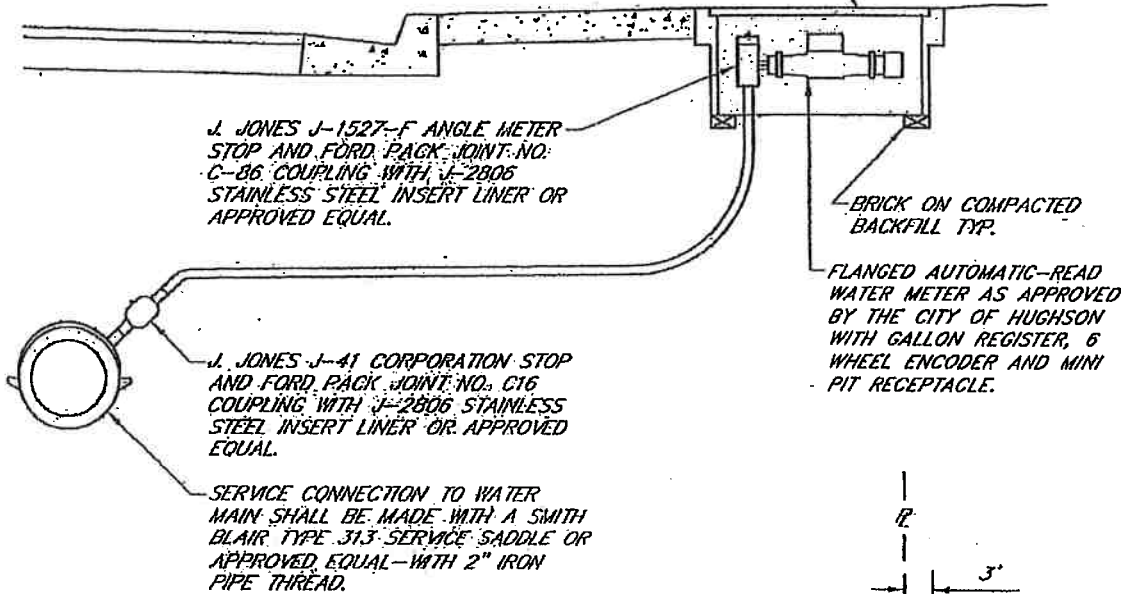
SERVICE LATERAL SHALL BE POLYETHYLENE PLASTIC PIPE (PE3406, SDR7, PR160, P.O.E.) IN IRON PIPE SIZES AND SHALL BE SUITABLE FOR TRANSPORTING POTABLE WATER. POLYETHYLENE PIPE SHALL COMPLY WITH A.S.T.M. STANDARD D2239-73.

WHEN METER IDLER IS INSTALLED PRIOR TO METER, IT SHALL BE FORD NO. 3 OR APPROVED EQUAL 3/4" METER SIZE BY 19" LONG.

### METER BOX LOCATION

	<h2>1 INCH WATER SERVICE</h2>	DRAWN BY: A.D.R. CHECKED BY: R.H.R. SCALE: NONE DATE: 1/04
APPROVED BY: DATE APPROVED: 03/27/2006	<h2>CITY OF HUGHSON</h2>	STANDARD DETAIL <h2>5-W.9</h2>

METER BOX: CHRISTY B36 WITH B36-P LID OR BROOKS #66 WITH CONCRETE LID OR APPROVED EQUAL (TRAFFIC LID REQUIRED IF LOCATED IN TRAVELED WAY)



METER BOX LOCATION

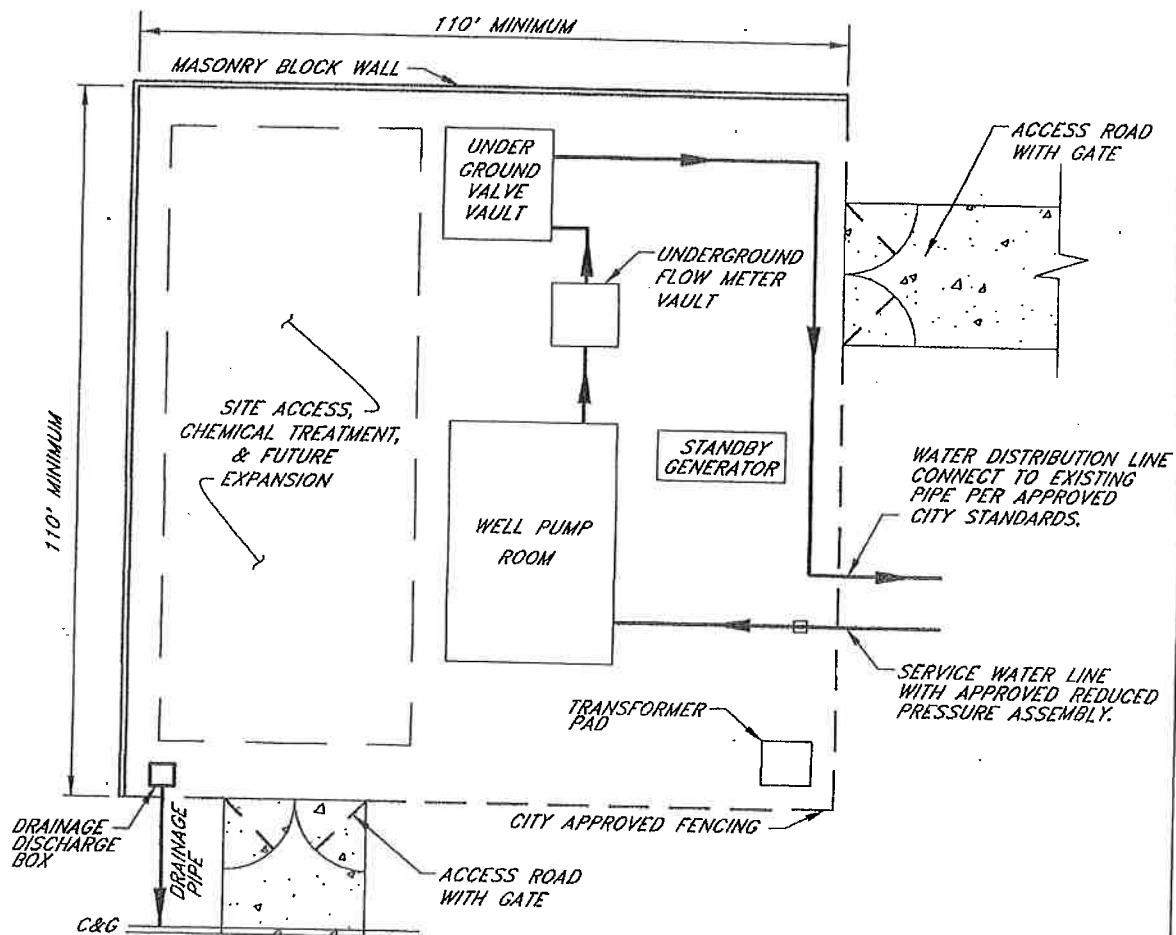
NOTES:

SERVICE LATERAL SHALL BE POLYETHYLENE PLASTIC PIPE (PE3406, SDR7, PR160, P.S.L.) IN IRON PIPE SIZES AND SHALL BE SUITABLE FOR TRANSPORTING POTABLE WATER. POLYETHYLENE PIPE SHALL COMPLY WITH A.S.T.M. STANDARD D2239-73.

WHEN METER IDLER IS INSTALLED PRIOR TO METER, IT SHALL BE FORD NO. 7 OR EQUAL 2" METER SIZE BY 17" LONG.

LATERALS SHALL BE TUNNELED UNDER CURB AND GUTTER.

	<p>2 INCH WATER SERVICE</p>	<p>DRAWN BY: A.D.R. CHECKED BY: R.H.H. SCALE: NONE DATE: 1/04</p>
<p>APPROVED BY: </p> <p>DATE APPROVED: 03/27/2006</p>	<p>CITY OF HUGHSON</p>	<p>STANDARD DETAIL 5-W.11</p>



1. ALTERNATIVE SITE LAYOUTS MAY BE APPROVED BY THE CITY ENGINEER FOR BOOM TRUCK ACCESS, CHEMICAL TREATMENT, AND FUTURE SITE EXPANSION.
2. PERIMETER FENCING SHALL BE MASONRY WALLS OR CITY APPROVED ORNAMENTAL FENCING SPECIFIED BY SITE CONDITIONS AND CITY ENGINEER APPROVAL.
3. BUILDING FEATURES AND ARCHITECTURE SHALL BE DETERMINED AND APPROVED BY THE CITY ENGINEER.
4. SITE SHALL BE SURFACE GRADED TO DRAIN AWAY FROM ALL CONCRETE PADS AND TO COLLECT ALL DRAINAGE ONSITE, CONVEYED THROUGH ONSITE DISCHARGE BOX, AND INTO APPROVED EXISTING DRAINAGE SYSTEM PER CITY STANDARDS.
5. ALL PAVEMENT SECTIONS SHALL HAVE AN ASPHALT STRUCTURAL SECTION AS DETERMINED BY A GEOTECHNICAL ENGINEER.
6. ALL OFFSITE REQUIREMENTS AND CONDITIONS MUST BE APPROVED BY APPROPRIATE REGULATORY AGENCIES.
7. WELL PUMP ROOM WILL INCLUDE, BUT NOT BE LIMITED TO, AN EYEWASH STATION, AN APPROVED ROOF HATCH FOR ACCESS REMOVAL OF WELL HEAD, A DECHLOR DRAIN BOX, A CHLORINATION STATION, AND ELECTRICAL CONTROL PANELS.
8. SITE SPECIFIC DESIGN SHOULD INCLUDE, BUT NOT BE LIMITED TO, INTERIOR AND EXTERIOR LIGHTING, SAMPLE TAPS, EQUIPMENT SIZING AND ORIENTATION, AND SIGNAGE.

### TYPICAL WELL SITE LAYOUT

APPROVED BY: *[Signature]*  
DATE APPROVED: 03/27/2006

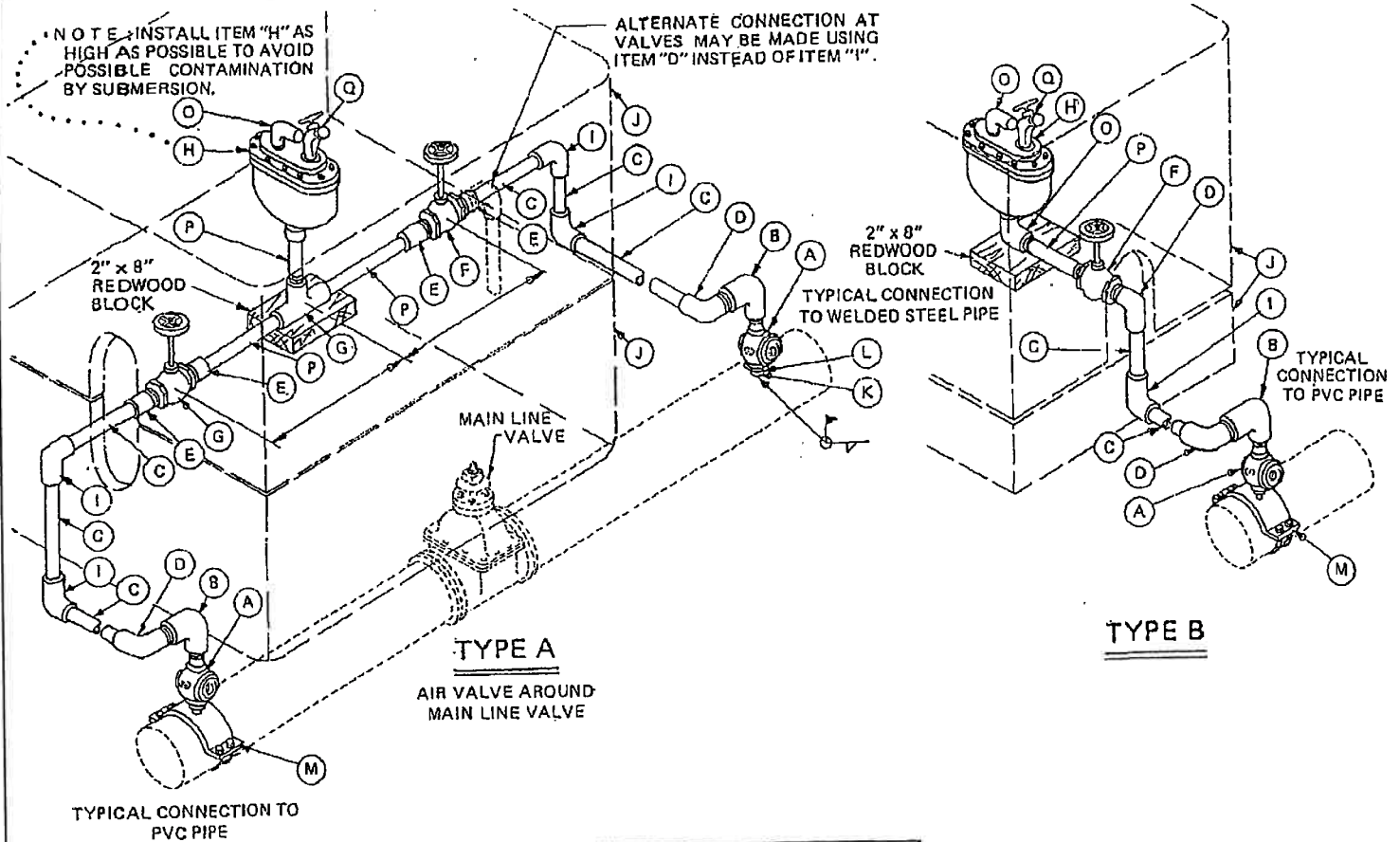
CITY OF HUGHSON

DRAWN BY: JDR  
CHECKED BY: DMC  
SCALE: NONE  
DATE: 3/06

STANDARD DETAIL

5-W.12





ITEM	MATERIAL	NO. REQ'D EA.	TYPE A			NO. REQ'D EA.	TYPE B		
			PVC MAINS	WELDED STEEL MAINS			PVC MAINS	WELDED STEEL MAINS	
SIZE OF VALVE			SIZE OF VALVE						
1"	1"	2"	1"	1"	2"				
A	CHABOT COCK	2	1"	1"	2"	1	1"	1"	2"
B	ELL, 90°, BRASS	2	1"	1"	2"	1	1"	1"	2"
C	TUBING - RIGID COPPER	LGTH REQ'D	1"	1"	2"	LGTH REQ'D	1"	1"	2"
D	ELL, 90° COPPER TO IPT M	2	1"	1"	2"	2	1"	1"	2"
E	COUPLING, COP. TO IPT M	4	1"	1"	2"	-	-	-	-
F	GATE VALVE - NONRISING STEM - BRONZE SCREW	2	1"	1"	2"	1	1"	1"	2"
G	TEE, BRASS, COP. TO COP. TO 1 PT F	1	1"	1"	2"	-	-	-	-
H	VALVE - AIR AND VACUUM AND AIR RELEASE, EPOXY LINED	1	1"	1"	2"	1	1"	1"	2"
I	ELL, 90° COP. TO COP.	4	1"	1"	2"	1	1"	1"	2"
J	METER BOX (DOUBLE STACKED OR WITH A 8" HIGH REDWOOD BOX EXTENSION)	2	NO. 6	NO. 6	NO. 6	1	NO. 5	NO. 5	NO. 6
K	HALF NIPPLE, STEEL	1	-	1" x 2"	2" x 2"	1	-	1" x 2"	2" x 2"
L	SEE NOTE 10	2	-	1"	2"	1	-	1"	2"
M	SERVICE - CLAMP	2	2 STRAP x 2"	-	-	1	2 STRAP x 2"	-	-
O	PVC, SCREW, SCHED. 80 ELL	1	1"	1"	2"	3	1"	1"	2"
P	NIPPLE, SCHED. 80 PVC OR RIGID COPPER TUBING	2	LGTH REQ'D	LGTH REQ'D	LGTH REQ'D	1	LGTH REQ'D	LGTH REQ'D	LGTH REQ'D
Q	HOSE BIBB	1	1/2"	1/2"	1/2"	1	1/2"	1/2"	1/2"

#### NOTES:

- USE 1" AIR VALVE ASSEMBLIES FOR 6" THROUGH 16" PIPE. USE 2" AIR VALVE ASSEMBLIES FOR 20" PIPE AND LARGER OR AS DESIGNATED BY THE ENGINEER.
- MAINTAIN A GRADE UPWARD FROM CHABOT COCK TO AIR VALVE. (NO TRAPS)
- THE COPPER TUBING SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT AMERICAN SOCIETY FOR TESTING MATERIALS STANDARD SPECIFICATIONS FOR COPPER WATER TUBE (SERIAL DESIGNATION 888) TYPE K, AND SHALL BE DRAWN AND HAVE A HARDNESS (ROCKWELL) WITHIN THE RANGE OF 87F TO 97F.
- REFER TO DWG. 5-W.9 FOR DETAILS OF METER BOX INSTALLATION.
- COAT ITEMS K, M AND H WITH MASTIC.
- SUPPORT AIR VALVE BODY ON FIRMLY COMPACTED EARTH, AS SHOWN.
- TAPE WRAP REDWOOD BLOCKING OR COVER WITH TWO LAYERS OF POLYWRAP.
- REFER TO DWG. 5-W.14 FOR METAL ENCLOSURE.
- USE "DELTRIN" INSULATING COUPLING, OR INSULATING DIELECTRIC UNION.



## 1" & 2" AIR VALVE INSTALLATION COMBINATION AIR, VACUUM, & AIR RELEASE VALVE

DRAWN BY: C.V.  
CHECKED BY: P.K.  
SCALE: NONE  
DATE: 7/07

APPROVED BY:   
DATE APPROVED: 8/13/07

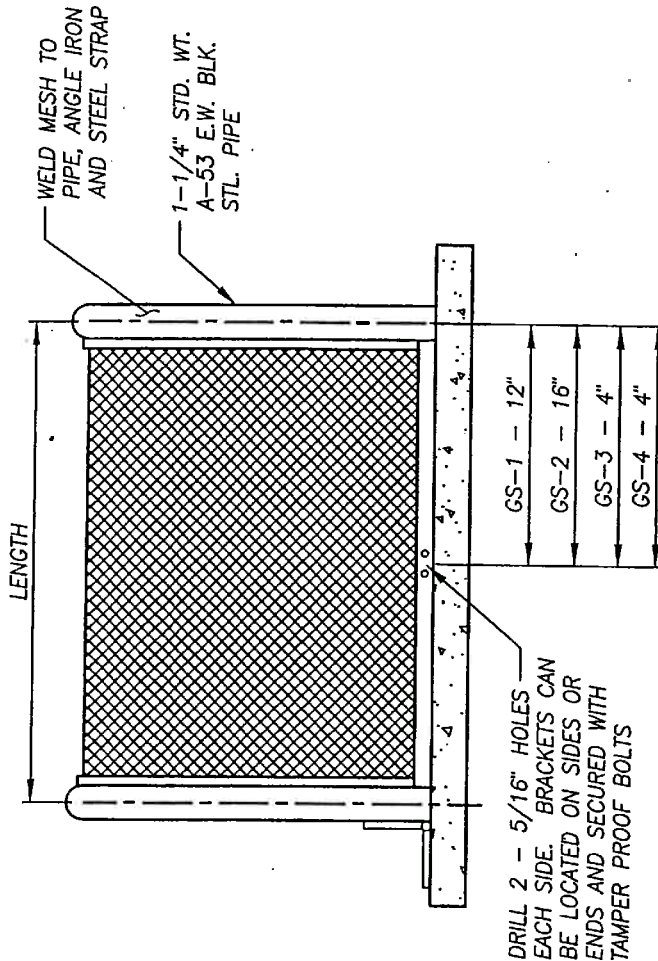
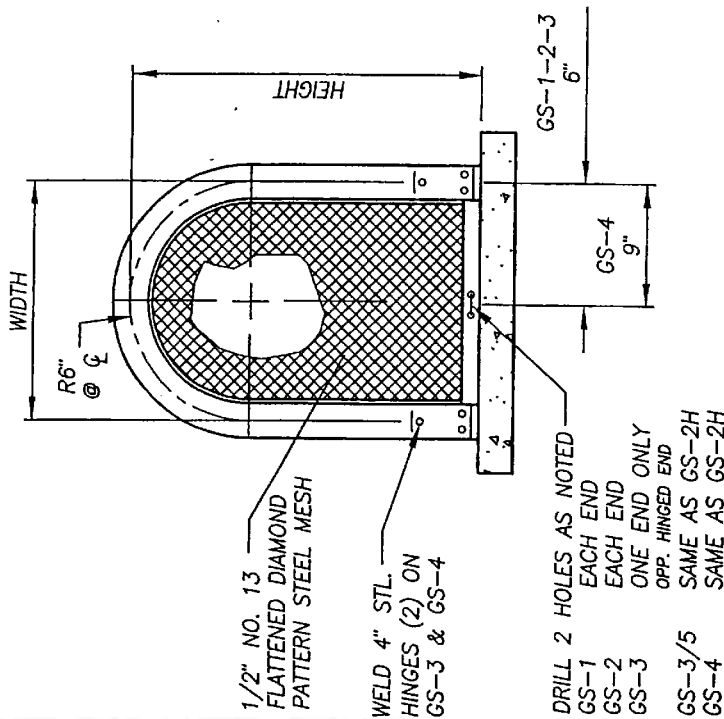
CITY OF HUGHSON

STANDARD DETAIL

5-W.13

GUARDSHACK-  
STANDARD SIZED "POWDER COATED" METAL ENCLOSURE  
MODELS GS-5 TO GS-2 FOR 1/2"-2" BACKFLOW ASSEMBLIES  
www.DPDI.com

SHALL BE DPDI OR APPROVED EQUAL



NOTE:  
ALL WELDED AREAS SHALL BE A MINIMUM OF 1/4" BEAD EVERY 4"

AFTER ALL WELDING, ENTIRE UNIT SHALL BE PROCESSED WITH IRON PHOSPHATE PRETREATMENT. ELECTROSTATIC APPLICATION OF POWDER SHALL BE FUSION BONDED - PRS-8-4004-C (BEIGE) OR PRS-8-4003-C (LEAF GREEN) OR APPROVED EQUAL

ALL UNITS ALSO AVAILABLE IN 304 SS.  
GS-3.5 AVAILABLE IN 304 S.S. ONLY.

ALL BOLTS FOR HINGES AND HASPS SHALL BE ZINC PLATED TAMPER PROOF, EXCEPTION - USE SS HARDWARE FOR SS UNITS.

STD. SIZE	CENTERLINE DIMENSIONS		WEIGHT	
			GS	CGS
GS-5	12"W x 18"H x 12"L	LIFT OFF UNIT	35	30
GS-1	12"W x 24"H x 24"L	LIFT OFF UNIT	35	34
GS-2	12"W x 24"H x 32"L	LIFT OFF UNIT	45	40
GS-3	12"W x 24"H x 42"L	HINGED UNIT	51	46
CGS-3.5	12"W x 30"H x 42"L	HINGED UNIT	N/A	55
GS-4	18"W x 30"H x 48"L	HINGED UNIT	67	60

NOTE:  
GS = POWDER COATED STEEL GUARD SHACK

CGS = STAINLESS STEEL COAST GUARD SHACK W/ SAND BLASTED STAIN FINISH



# AIR RELEASE VALVE ASSEMBLY METAL ENCLOSURE

APPROVED BY: \_\_\_\_\_

DATE APPROVED: 8/15/07

CITY OF HUGHSON

DRAWN BY: C.V.  
CHECKED BY: P.K.  
SCALE: NONE  
DATE: 7/07

STANDARD DETAIL

5-W.14



## SECTION 6

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### SEWERS

#### 6.1 GENERAL

Sewers shall be installed by a Contractor holding the appropriate license for such work under the provisions of the State of California Business and Professions Code. Maps and Plans for developments for which the City Engineer deems there to be insufficient sewer treatment or conveyance capacity shall not be processed or approved.

#### 6.2 DESIGN

Eight inch sewers not less than 0.40%, ten inch sewers not less than 0.30%, twelve inch sewers not less than 0.25%.

The minimum sewer grades set forth above may be modified only with the written approval of the City.

Normal practice is that sewers shall have a minimum cover of 3 feet from the top of the pipe to finished paving grade. Sewer with less than the minimum cover, if approved, shall be cast iron or ductile iron and shall require special written approval by the City.

Sewers within 100 feet of domestic wells shall be cast iron or ductile iron, with special seals similar to those crossing domestic water lines.

Where a sewer line crosses a water line, the sewer line shall be designed in accordance with these Improvement Standards and State Health Department Standards.

Sewer mains shall be 5' from centerline as measured from centerline to the nearest side of the pipe. Sewer mains shall be on the opposite side of the centerline from the water line.

#### 6.3 MANHOLES

Manholes as shown in Drawings No. SS.1 and SS.2 shall be constructed at all changes in vertical or horizontal alignment and at all pipe intersections. The maximum distance between manholes shall be 400 feet. A terminal manhole as shown in Drawing No. SS.3 shall be constructed at all dead ends,

When a line is to be extended at a future date, a temporary lamphole as shown in Drawing No. SS.4 may be installed when approved by the City.

Elevation differentials of manhole inlets and outlets must conform to the improvement plans. The channel through the manhole shall be formed by laying the pipe through the manhole and removing the upper half of the pipe after the concrete is set. Special care





shall be taken in the finishing of the interior of all manholes to obtain the best hydraulic characteristics. All rough edges shall be chipped away and plastered to leave a smooth surface. Where called for on the plans, stubs shall be installed and plugged in a manner approved by the City.

Manholes shall be constructed of precast reinforced concrete sections which conform to A.S.T.M. specifications C478.

The frame and cover shall conform to the elevation of the adjacent ground or pavement as shown in Drawing No. ST.7.

#### 6.4 PIPE FOR SEWER MAINS

Sewer pipe shall be Cast Iron Pipe, OVC – SDR35 or Ductile Iron Pipe.

Compression joints shall be used for all pipe and shall conform to the current standard specifications of the A.S.T.M. - C425-77.

Cast Iron Pipe shall conform to the current standard, specifications of the American National Standards Institute (A.N.S.I.) - A21.6, and shall be Class 150, with bell and spigot joints, Cast Iron fittings shall conform to A.N.S.I./A.W.W.A. CI 10-77.

Ductile Iron Pipe shall be Class 50 and shall conform to the current standard specifications of the American National Standards Institute (A.N.S.I.) A21.51. All fittings shall conform to A.N.S.I./A.W.W.A. - 0110-77.

Polyvinyl Chloride Gravity Sewer Pipe (SDR 35) and fittings shall meet or exceed the requirements of ASTM D 3034 (SDR 35). The installation of all PVC pipe shall conform to ASTM D2321. The maximum deflection shall not exceed 5% of the inside diameter of the pipe. If deflection exceeds 5% the pipe shall be removed and replaced by the Developer or City Contractor at his/her expense.

#### 6.5 STAKING OF SEWER MAINS AND SERVICES

The sewer mains and services shall be staked by the Developer's engineer on projects installed by the Developer

#### 6.6 EXCAVATION

Excavation shall include the removal of all materials encountered. All trenches shall be excavated in open cut following neat parallel lines distant from the pipe centerline as shown in Drawing No. ST.7. Maximum width of the trench at the level of the top of pipe shall not exceed the outside diameter of the pipe barrel plus 24 inches.

At no time shall there be more than 300 feet of trench open per trenching machine, including the section opened ahead for pipe laying and the section behind which is not completely backfilled, unless otherwise specified by the City.

Excavation shall be made at least 4 inches below the grade of the bottom of the pipe in areas where the material is too hard to permit proper bedding. This over-excavation shall be brought to grade with approved material compacted in place. Said material shall be a Sand Equivalent value of not less than 20 and shall conform to the following grading:

<u>Sieve Sizes</u>	<u>Percentage Passing</u>
3"	100
No. 4	35-100
No. 30	20-100

Pipeline bedding and backfill to 12" over the pipe shall conform to the manufacturer's requirement limiting the pH value of such materials, to minimize potential for corrosion.

Excess and/or rejected material shall be disposed of by the Developer or City Contractor at their expense.

No tunneling or jacking will be permitted without written permission from the City.

#### 6.7 SHORING, BRACING AND SHEETING

The Contractor shall furnish, install and maintain such shoring, bracing and sheeting as required in these Improvement Standards, and by the State of California, Division of Occupational Safety and Health.

After the pipeline has been installed and sufficiently backfilled to protect the pipe, all shoring, bracing and sheeting shall be removed. All voids left by the removal of such bracing shall be carefully filled with suitable material compacted in place.

#### 6.8 SEEPAGE, STORM WATER OR SEWAGE

The Developer or City Contractor shall remove from the trench any seepage, storm water, or sewage that may have accumulated during the progress of the work, and shall furnish all pumps and other equipment necessary. The Developer or City Contractor shall also keep his completed work reasonably free from accumulation of water and sewage and shall free it entirely at such times as may be required by the City for the purpose of inspection. The removed material shall not be discharged into the sewer.

## 6.9 LAYING PIPE

The pipe shall be laid to conform with the prescribed lines and grades. All adjustments of pipe to the line and grade shall be made by scraping away or filling in and tamping under the body of the pipe, not blocking or wedging.

Manufacturer's recommendations on proper procedure for laying pipe shall be followed.

All pipe shall be laid with bell end upstream and shall be laid upstream from structure to structure. A minimum of three grade stakes per 100 foot interval shall be provided, and each stake shall be used in establishing the grade and alignment for the sewer.

## 6.10 SEWER SERVICE MATERIALS

- A. Each individual property shall have separate sewer service(s) complete from the sewer main to the property. The minimum size sewer service lateral is 4 inch. Sewer services are not permitted in easements without prior written approval of the Engineer. This approval will be given only when insufficient grade makes it impossible to service the property directly from a sewer main in the right of way.

For non-typical single family residential, the Design Engineer shall take into account the anticipated sewer use, and service lateral length to size and grade the lateral.

If abnormal or unusual conditions occur, the City may allow alternative pipe materials. All service connections shall be installed with wye fittings.

All sewer services, including risers, wyes, tees, tee saddles and wye saddles, shall be installed in accordance with City of Hughson Standard Drawings No. SS.5 and SS.5a.

### B. PVC SDR35

Materials for Public Sewer Lines. Pipe and fittings, jointing materials, and appurtenant materials shall be shown on the drawings and as specified herein.

- a. PVC PIPE - PVC pipe and fittings shall be permitted for sewers up to 27 inches in diameter. The use of PVC pipe for sewers larger than 27 inches in diameter will be considered on a case by case basis. PVC pipe shall meet either the sewer pipe specifications or the pressure pipe specifications listed below depending upon the depth of sewer installed.
1. For Gravity Sewers Up to 15 Feet Deep. At a minimum the gravity sewer pipe shall be SDR 35 PVC. Pipe up to 15 inches in diameter shall conform to ASTM Specification D-3034 (latest revision). Pipe with a diameter 18 inches or larger shall conform to ASTM Specification F679 (latest revision). The use of pipe conforming to ASTM F-794 and ASTM F-1803 will be considered on a case-by-case basis for pipe sizes 12 inches to 27 inches in diameter. Joints shall comply

with the specifications below. Pipe embedment and backfill shall be in accordance with the Embedment of Pipe Standard Detail.

2. For Gravity Sewers Deeper Than 15 Feet but Less Than 30 Feet Deep. At a minimum the gravity sewer pipe shall be SDR 26 heavy wall gravity sewer pipe. Pipe up to 15 inches shall conform to ASTM Specification D-3034 (latest revision). Pipe with a diameter 18 inches or larger shall have a minimum stiffness of 115 psi and conform to ASTM Specification F679 (latest revision)

PVC pressure rated pipe shall be permitted as follows. PVC pipe shall meet AWWA Specification C900 (latest revision), or AWWA Specifications C909 (latest revision), or AWWA specifications C905 (latest revision), or ASTM Specification D2241 (latest revision) SDR 26.

Joints shall comply with the specifications below. Pipe 505-2 embedment and backfill shall be in accordance with the Embedment of Pipe Standard Detail.

3. For Gravity Sewers Installed Deeper Than 30 Feet Deep. Gravity sewers installed deeper than 30 feet deep shall only be approved on a case by case basis.

#### Jointing Materials

Ordinary joints	ASTM D3212, integral bell push-on type elastomeric gasket joints .
Field cut joints and connections to other piping materials	Can-Tex "C-T Adapters"; Dickey "Plastic Pipe Adapters"; Fernco "PVC Donuts"; "Flexible Couplings"; Mission "Eastern Standard Band-Seal Couplings" with stainless steel shear rings; Nashua Pre-Cast Corporation "Flex-O-Joint"; or equal.

- b. DIP - Ductile iron pipe (DIP) shall be used for sanitary sewer in areas where the minimum 30 inches of cover over the top of pipe cannot be met, under creek crossings, deep gravity sewer applications, or as specified on the Contract plans. Pipe embedment and backfill shall be in accordance with the Embedment of Pipe Standard Detail.

<u>Pipe</u>	Ductile iron, ANSI A21.51; ASTM A536, Grade 60-42-10; thickness, class 52
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#### Fittings

Material	Gray iron, ANSI A21.10. 250 psi pressure rating, except shorter laying lengths will be acceptable or ductile iron, ASTM A536, Grade 80-60-03 or 70-50-05, ANSI A21.10, 350 psi pressure rating
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<u>Push-on Joints</u>	ANSI A21.11, except gaskets shall be neoprene or other synthetic rubber. Natural rubber will not be acceptable
Flanged Joints	ANSI A21.15
Flanges	ANSI B16.1, 125 lb or U.S. Pipe "Flange-Tyte"
Bolts	ASTM A 307, chamfered or rounded ends projecting 1/4 to 1/2 inch beyond outer face of nut
Nuts	ASTM A307, Hexagonal, ANSI B18.2, heavy semifinished pattern 505-3
Gaskets	ASTM D1330, Grade I rubber, ring type, 1/8-inch thick; or U.S. Pipe "Flange-type", 1/8-inch thick
Mechanical Joints	ANSI A.21.11
Wall Castings	Mechanical joint with waterstop and tapped holes, single casting or fabricated cast iron Midwest Pipe Fabricators "Adjustable Wall Pipe." All holes shall be plugged with plastic plugs.

#### Plastic Plugs Protective Closures "Caplug Series WW"

#### Mechanical Joints with Tie Rods

Tie Rods	TM A 307
Steel Pipe	STM A210, standard weight
Washers	NSI B27.2, plain steel
Mechanical Couplings	
Couplings	Dresser Style 38 or Rockwell/Smith-Blair 441 or 411 Flexible Coupling; without pipe stop
Gaskets	Oil-resistant synthetic rubber
Shop Coating and Lining	
Cement Lining	ANSI A21.4
Bituminous Coating	Manufacturer's standard

Rust-  
Preventative  
Compound

Houghton "Rust Veto 344" or Rush-Oleum "R9"

Field Coating

Heavy coal tar paint, MIL-C-18480; Koppers  
"Bitumastic No. 50", or Mobil "35-J-10 Hi-Build  
Bituminous Coating"

- c. RCP - RCP shall be permitted for gravity sewers with a diameter of 30 inches and larger. RCP shall conform to ASTM C76 (latest revision) Class III, Wall B. Pipe embedment and backfill shall be in accordance with the Embedment of Pipe Standard Detail.

1. Joints ASTM C-361, Bell and Spigot compressive type with resilient seals embedded in both ends and joined with O Ring rubber gaskets.
2. All rubber and rings shall be extruded or molded and cured in such a manner that any cross section will be dense, homogeneous, and free of porosity, blisters, pitting and other imperfections. The basic polymer shall be EPDM hydrocarbon.

The compound shall conform to the following requirements: The rubber EPDM material shall meet ASTM C-443 with the exception of the 40-60 duro hardness. For resilient interlocked end seals the hardness duro A shall be 40 to 70 + 5.

3. Each concrete pipe section shall be tested at the project site with low pressure air or equivalent vacuum test. The test shall be conducted in a manner using a cap, plug and gasket of the type and size to be used in the field to include the tongue and bell sealing surface. End to end testing using foam plates is not acceptable. Reference ASTM C924. Pipe passing the test shall be clearly marked "Air Tested."

Materials for Private Service Laterals. Pipe and fittings, jointing materials, and appurtenant materials shall be shown on the drawings and as specified herein. Private service laterals shall be a minimum of 4 inches in diameter.

1. Pipe and fittings for private service laterals that connect to the public sewer main at a depth of 15 feet or less shall at a minimum be SDR 35 solid wall PVC sewer pipe and shall conform to ASTM Specification D-3034 (latest revision).
2. Pipe and fittings for private service laterals that connect to the public sewer main at a depth deeper than 15 feet but less than 20 feet shall at a minimum be SDR 26 heavy wall PVC gravity sewer pipe and conform to ASTM Specification D-3034 (latest revision).
3. Private service laterals shall not be connected to public sewers that are deeper than 20 feet.

Manhole Connections. The Contractor shall use precast manhole base sections with integral circular flexible gasket as specified in the sewer manholes section of these specifications, plain end pipe shall be installed through the gasket in accordance with the instructions of the gasket manufacturer.

Drawings and Data. Drawings and data shall be submitted in accordance with the submittals section. Drawings and data shall include but not limited to the following:

Details of joints

Gasket material

Pipe length

Certification

Affidavit of Compliance. An affidavit shall be submitted to the Engineer certifying that pipe, fittings, and jointing materials are in compliance with the governing standards and specifications.

#### C. Cast Iron Pipe (C.I.P.)

All Cast Iron Pipe shall conform to the current standard specifications of the American National Standards Institute (A.N.S.I.) - A21.6 and shall be Class 150, with bell and spigot joints.

##### 1. Connections

Only Cast Iron wyes and tees shall be used for connections to Cast Iron Sewer Mains, and shall conform to the current standard specifications of the A.N.S.I. - CI 10-77.

Only Class 50 Cast Iron straight pipe, elbows and fittings shall be used from the sewer main to the right of way line. Cast Iron Pipe shall be furnished with "Tyton Joints", "Ty-Seal Joints", or approved equal. Cast Iron transition couplings shall be installed in accordance with the manufacturer's specifications for each pipe size.

When connecting a sewer lateral directly from the manhole to the right of way line, Cast Iron Pipe shall be inserted into the manhole and brought to the right of way line.

#### D. Ductile Iron Pipe (D.I.P.)

All Ductile Iron Pipe shall be Class 50 and shall conform to the current standard specifications of the American National Standards Institute (A.N.S.I.) - A21.51 - 19756.



All Ductile Iron Pipe shall have a polyethylene encasement which shall conform to the current standard specifications of the A.N.S.I. - A21.5 (A.W.W.A. C105-72).

1. Connections

Connections to Ductile Iron Pipe sewer mains shall be at manholes only.

Only Cast Iron straight pipe, elbows and fittings shall be used from the sewer main to the right of way line. Cast Iron pipe shall be furnished with "Tyton Joints", "Ty-Seal Joints", or approved equal. Cast Iron transition couplings shall be installed in accordance with the manufacturer's specifications.

When connecting a sewer lateral directly from the manhole to the right of way line. Cast Iron Pipe shall be inserted into the manhole and brought to the right of way line.

6.11 MATERIALS TO BE FURNISHED AND INSTALLED BY DEVELOPER

The Contractor shall furnish all labor, materials, equipment and appliances required to complete the sewer mains and sewer services specified.

6.12 SERVICES INSTALLATION

The services shall be installed as per Standard Drawings No. SS.5 and SS.5a.

No direct connections are permitted on 15 inch or larger sewer mains without prior approval by the City. A service lateral may be connected to these mains, upon approval of the Engineer, when using one of the following methods:

1. A lateral (Min. 6 inch), may be extended from an existing manhole to the property, parallel to the main line.

The lateral extension shall end in a terminal manhole.

The building lateral shall be connected from the lateral extension to the right of way line.

Construction plans of the lateral shall be prepared by a registered civil engineer licensed in the State of California and shall be submitted to the City for approval.

2. If no manhole exists immediately adjacent to the property, a manhole may be placed over the main.
3. If manhole exists immediately adjacent to the property, the building lateral may be connected directly from the existing manhole to the right of way line.

### 6.13 BACKFILL

After the sewers and appurtenances have been properly constructed and inspected, (see Section 6.14 Inspection), the trench be backfilled and compacted as shown on Drawing No. E-1 and shall conform to Section 19-3.06 of the State Standards. The pipe shall be backfilled by hand shovel method to 1 foot over the pipe where clods exist in the spoil pile which may damage the pipe. (See note limiting pH in backfill, Section 6.6.) Above this hand placed backfill, all clods of any kind shall be removed which are larger than 4 inches in diameter.

Compaction tests on City contracts will be performed by the City. Compaction tests on other contracts shall be performed by a testing laboratory retained at the Developer's expense.

### 6.14 INSPECTION

All sewer lines shall be inspected for proper installation by the Engineer prior to backfilling of trenches.

All new sewer mains are to be inspected by television and videotaped at the contractor's expense.

The Contractor shall clean all lines of dirt and other debris, clean manholes, remove broken pipe, compact trench, raise manhole rims to grade, and correct all visible infiltration, leaks and deficiencies prior to inspection. Areas adjacent to manholes shall be leveled and made accessible to the television trailer. All inspection, including repeat work because the lines have not been cleaned, will be charged to the Developer on subdivision projects based on the time required of the crew and equipment.

All sewer mains and laterals shall be air tested as per the following paragraph.

Air tests shall be applied to length between adjacent manholes, and procedure shall be as follows:

Pressurize the test section to 3.5 psi and hold above 3.0 psi, for not less than 5 minutes. Add air if necessary to keep the pressure above 3.0 psi. At the end of this 5 minute saturation period, note the pressure (must be 3.0 psi min.) and begin the time period. If the pressure drops 0.5 psi in less the time given in the following table that section of pipe shall not have passed the test.

<u>Size</u>	<u>Minimum Time in Seconds</u>
8"	254
10"	310
12"	450

If the time for the pressure to drop 0.5 psi is 125% or less of the time indicated, the line shall immediately be re-pressurized to 3.0 psi and the test repeated. If, during the 5 minute

saturation period, the pressure drops less than 0.5 psi after the initial pressurization and air is not added, the section undergoing the test shall have passed.

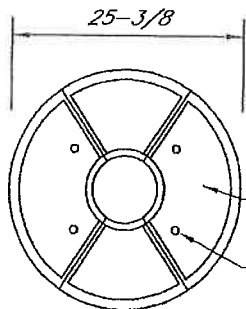
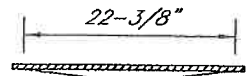
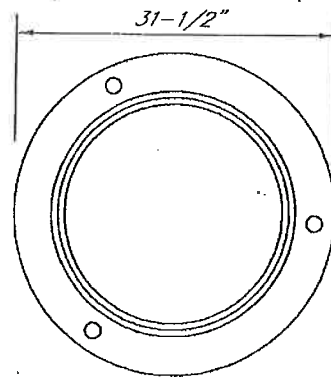
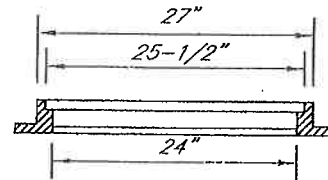
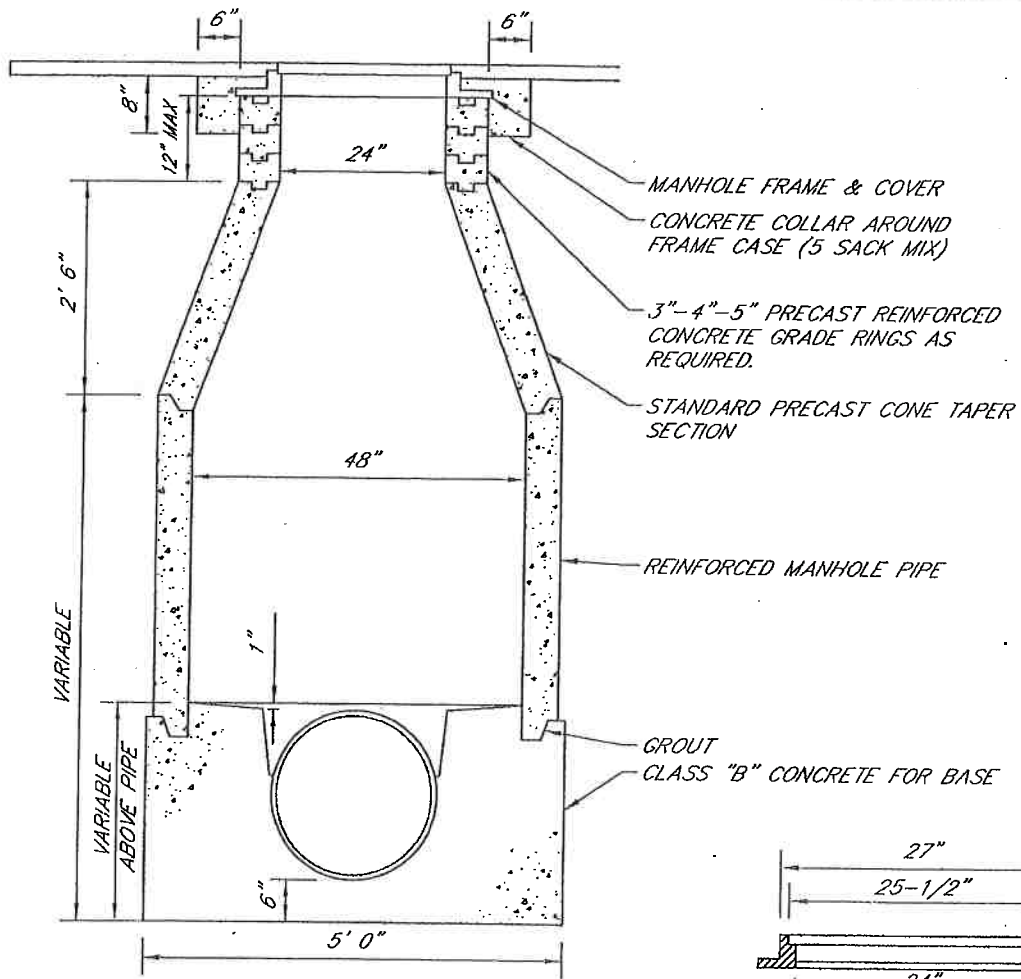
If the test is not passed, the leak shall be found and repaired to the satisfaction of the City, and the section retested.

#### 6.15 GREASE TRAPS

Grease traps and interceptors shall be constructed by the Developer on private property 35 on the sewer service lateral for any facility whose operation will result in oil, grease, sand or other solids being discharged into the City's sanitary sewer system.

The traps or interceptor shall conform to Section 708 and 711 of the Uniform Plumbing Code, 1995 Edition, and it shall be constructed where it can be easily inspected for proper operation by the City.

For additional information regarding specific requirements for grease traps, contact the Building Official. A typical detail is shown herein as Detail SS.6.



COVER

FRAME

SOUTH BAY FOUNDARY NO. A-25  
OR APPROVED EQUAL, LABELED SEWER



SANITARY SEWER MANHOLE

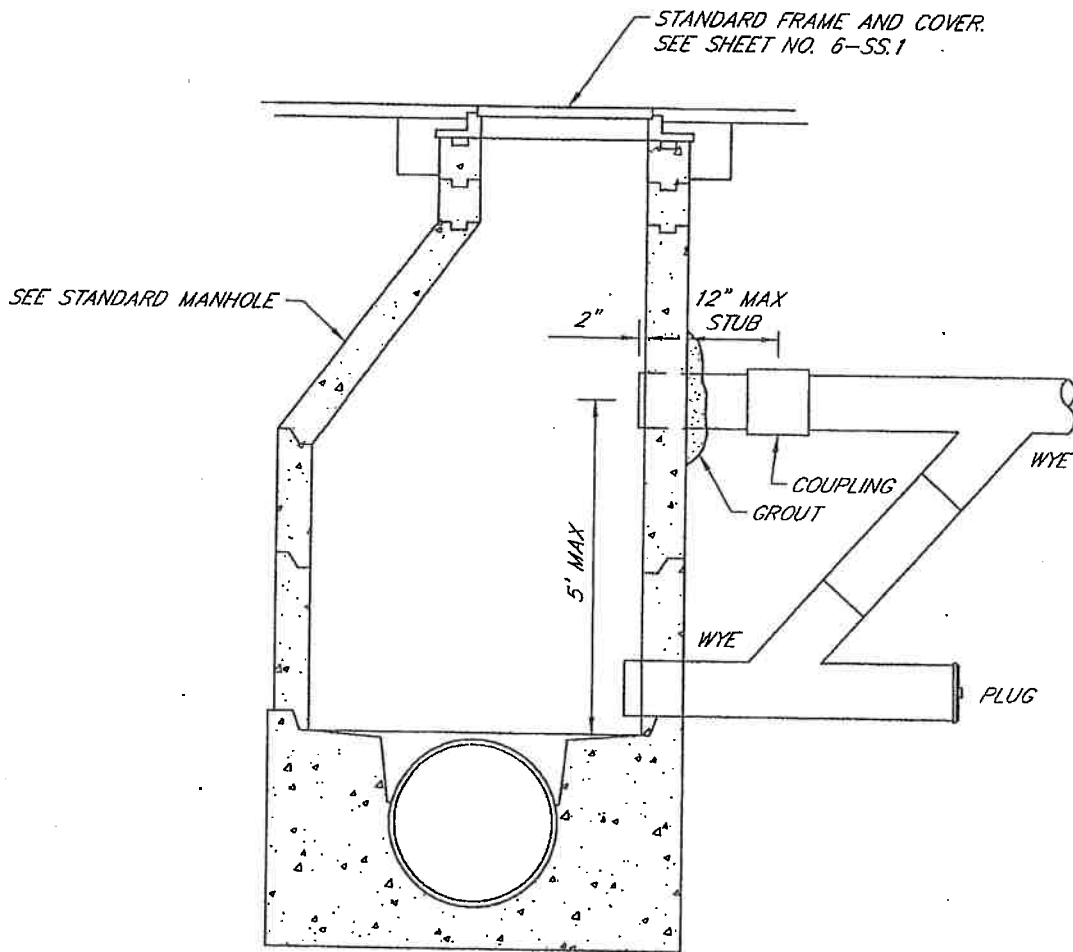
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CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY:   
DATE APPROVED: 2/2/07

CITY OF HUGHSON

STANDARD DETAIL

6-SS.1



NOTE:  
THIS TYPE MANHOLE SHALL BE USED WHERE  
DIFFERENCE IN INVERT ELEVATIONS AT  
MANHOLE EXCEED 24".



## SANITARY DROP MANHOLE

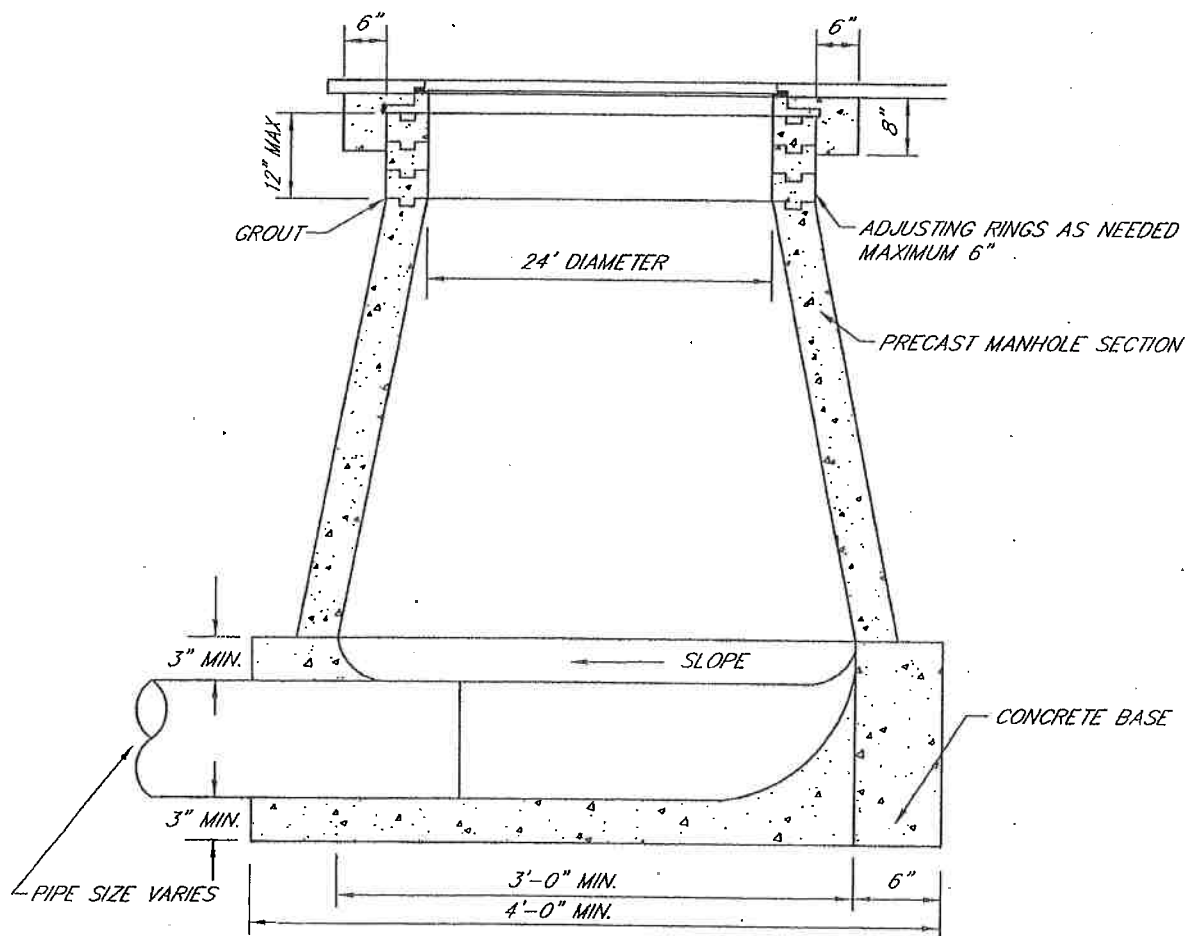
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CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY: *[Signature]*  
DATE APPROVED: 5/1/04

CITY OF HUGHSON

STANDARD DETAIL

6-SS.2



# SANITARY TERMINAL MANHOLE

APPROVED BY: *[Signature]*  
 DATE APPROVED: 5/14/04

CITY OF HUGHSON

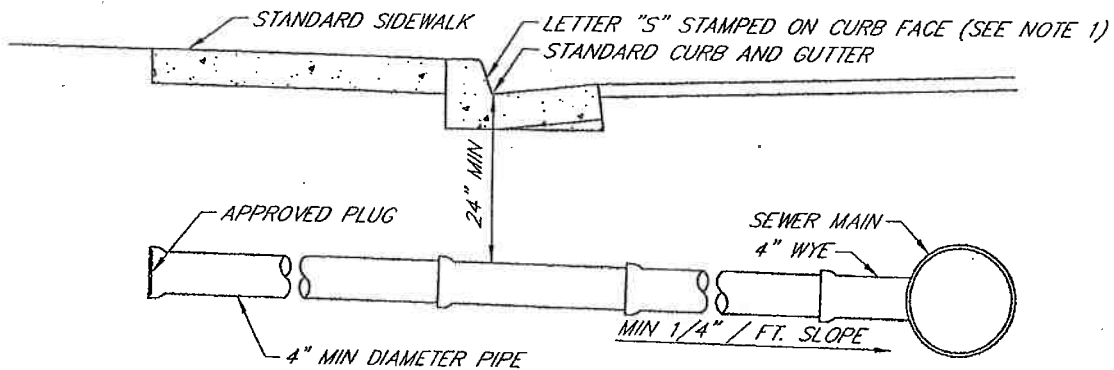
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STANDARD DETAIL

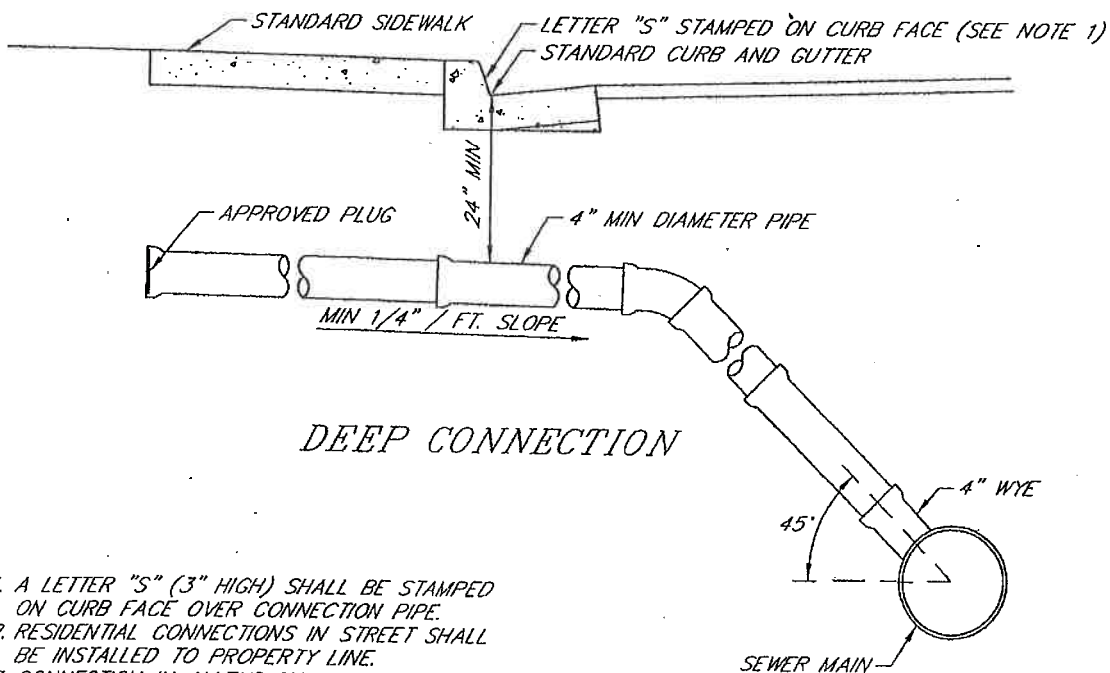
6-SS.3







STANDARD CONNECTION



DEEP CONNECTION

1. A LETTER "S" (3" HIGH) SHALL BE STAMPED ON CURB FACE OVER CONNECTION PIPE.
2. RESIDENTIAL CONNECTIONS IN STREET SHALL BE INSTALLED TO PROPERTY LINE.
3. CONNECTION IN ALLEYS SHALL BE INSTALLED TO PROPERTY LINE.



HOUSE SERVICE LATERAL

DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

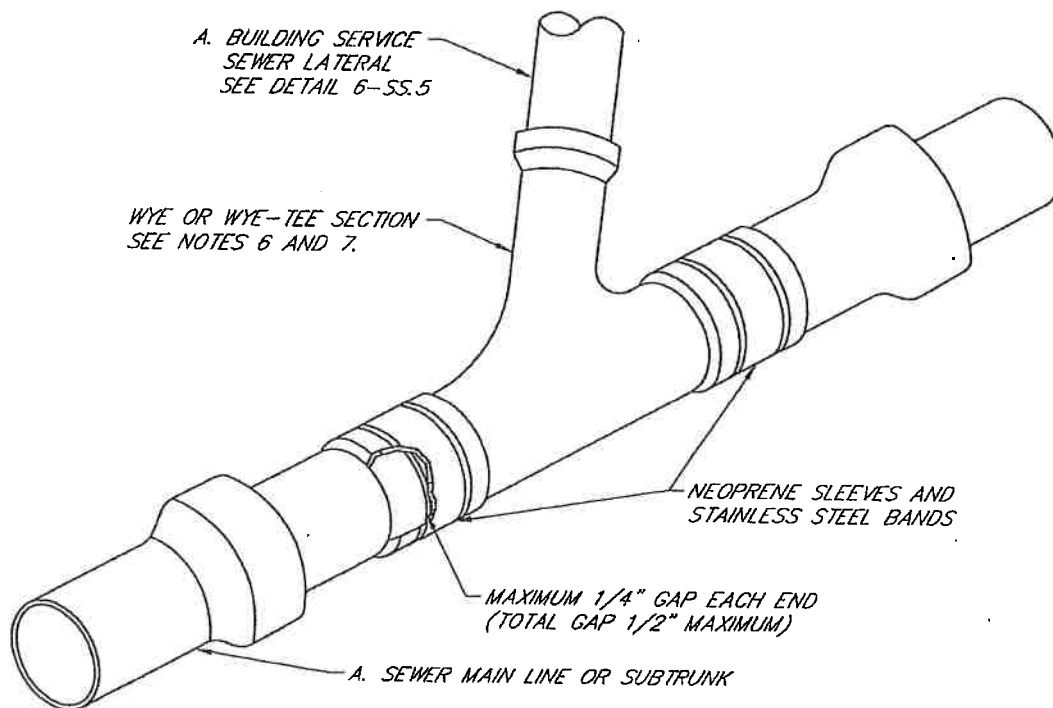
APPROVED BY: *[Signature]*  
DATE APPROVED: 5/4/04

CITY OF HUGHSON

STANDARD DETAIL

6-SS.5





CASE A. - BUILDING SERVICE TO SEWER LATERAL CONNECTION  
CASE B. - SEWER LATERAL TO SEWER MAIN CONNECTION

**NOTES:**

1. A SYNTHETIC RUBBER WEDGED INSERTED TEE, "TOP-TITE", MAY BE SUBSTITUTED FOR THE ABOVE PROCEDURE.
2. CUTS ARE TO BE MADE WITH A PIPE CUTTING TOOL.
3. THERE SHALL BE NO MORE THAN TWO BANDS IN FIVE FEET LENGTH OF SUB TRUNK RUN.
4. THERE SHALL BE NO MORE THAN TWO BANDS IN FIVE FEET LENGTH OF SEWER MAIN.
5. A MANHOLE SHALL BE REQUIRED TO CONNECT A SEWER LATERAL LARGER THAN 4" DIAMETER TO A SEWER MAIN, UNLESS OTHERWISE APPROVED BY THE CITY.
6. WYES SHALL BE INSTALLED WHEN CONNECTING TO 10" DIAMETER LINES OR SMALLER.
7. WYE-TEES CAN BE USED WHEN CONNECTING TO SEWER MAINS 5' OR DEEPER.



**SEWER WYE CUT-IN DETAIL**

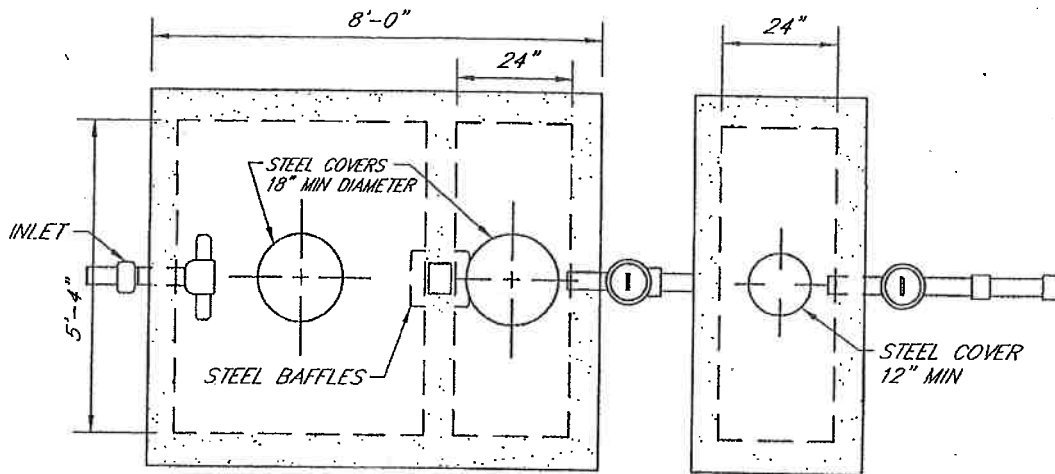
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DATE: 1/04

APPROVED BY: *[Signature]*  
DATE APPROVED: 5/1/04

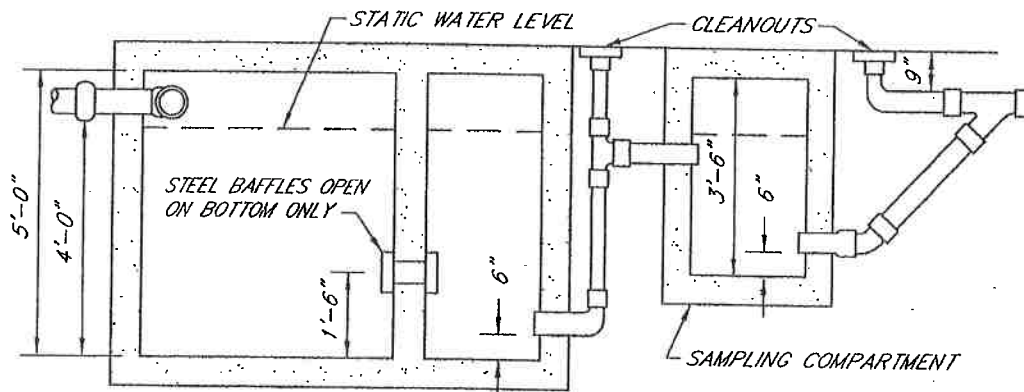
**CITY OF HUGHSON**

STANDARD DETAIL

**6-SS.5A**



PLAN



SECTION

1. SUGGESTED DETAIL. EACH UNIT SHALL BE DESIGNED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY THE CITY.
2. DIMENSIONS SHOWN ARE FOR A MINIMUM SIZE (750 GALLON) TRAP.
3. CONCRETE SHALL BE MINIMUM 3000 PSI AT 28 DAYS.
4. ON 750 OR 800 GALLON TRAPS, SAMPLE BOX MAY BE ELIMINATED.
5. COVERS SHALL BE STEEL AND SHALL BE GAS TIGHT.
6. ALL WASTE SHALL ENTER TRAP THROUGH THE INLET PIPE ONLY.
7. REINFORCEMENT SHALL BE ADEQUATE FOR TRAFFIC CONDITIONS IN AREA WHERE TRAP IS LOCATED.



## GREASE & SAND INTERCEPTOR

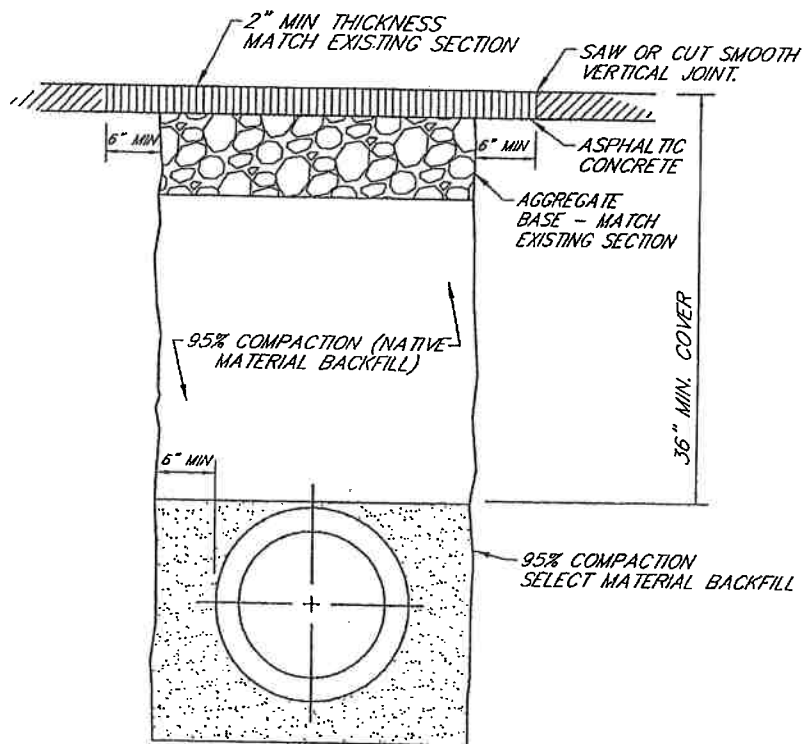
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CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY: *[Signature]*  
DATE APPROVED: 5/1/04

CITY OF HUGHSON

STANDARD DETAIL

6-SS.6



# BACKFILL AND STREET EXCAVATION

DRAWN BY: A.D.R.  
CHECKED BY: R.H.H.  
SCALE: NONE  
DATE: 1/04

APPROVED BY: *[Signature]*  
DATE APPROVED: 5/11/04

CITY OF HUGHSON

STANDARD DETAIL

6-SS.7