City of Springfield
Public Improvement Project

Invitation to Bid for:

P21046
58th Street Relief Sanitary Sewer Line and Bypass Manhole

The information provided is an abridged version of the complete Invitation to Bid and is provided for review and informational purposes only. To submit a bid for consideration, a complete bid book, and any addenda issued, are required.

A complete set of bid documents may be viewed or purchased at the address shown below:

City of Springfield
Development and Public Works Department
Engineering and Transportation Division
225 Fifth Street
NW Quad
Springfield, OR 97477

Contact: Jolie Smith at 541-726-3687 of jsmith@springfield-or.gov

City of Springfield
Engineering and Transportation Division

SPECIFICATIONS
for

P21046

58th Street Relief Sanitary Sewer Line and Bypass Manhole

MANDATORY PRE-BID MEETING		BID OPENING	
Date:	**May 23, 2012**	**Date:**	**June 5, 2012**
Time:	**2:00 p.m.**	**Time:**	**2:00 p.m.**
Location:	**City of Springfield**	**Location:**	**City of Springfield**
	City Hall		**City Hall**
	Room: Jesse Maine Room		**Room: Library Meeting Room**
	225 Fifth Street		**225 Fifth Street**
	Springfield, OR 97477		**Springfield, OR 97477**

This Project is funded in full or in part by:

☐ **State Funds**

☑ **Neither State nor Federal Funds**

Please Take Note: All information required must be submitted as directed.

For your Bid to be considered responsive by the City of Springfield you must include all documents included in the Invitation to Bid with your Bid. Additionally, any addendums or revisions must be acknowledged and submitted with your Bid. *The only exception to this is any full size plans or drawings which are not required to be submitted as a part of your Bid.*

All documents requesting information must be completed in full and signed where appropriate. *The only exceptions to this requirement are the sample Performance Bond, Payment Bond, Statutory Public Works Bond and Contract documents which are provided here as a reference. However, if you are awarded the Bid, you will be required to submit fully executed copies of these documents upon request.*

A complete description of submittal requirements can be found in the Instruction to Bidders document included in this request for bid under the heading; **5. Bid.**

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**Separate Contract Documents*

CITY OF SPRINGFIELD, OREGON
Invitation to Bidders

Public Works Improvement Project

Sealed bids will be received at the office of the Finance Director, Robert Duey at the City of Springfield Finance Department, 225 Fifth Street, Springfield, OR 97477, until 2:00 p.m. Local Time, the 5th day of June, 2012 and opened at 2:05 p.m. the same day, for the construction of the following public works improvement project in the City of Springfield:

Project No. P21046 **Title:** 58th Street Relief Sanitary Sewer Line and Bypass Manhole

Description: Construction of a gravity sanitary sewer pipeline, approximately 5 to 20 feet deep, within the public right-of-way from the intersection of Main Street and 54th Street to the intersection of Thurston Road and 58th Street, including but not limited to the following items: approximately 4,800 linear feet of 18-inch diameter pvc piping; fittings, and appurtenances; manholes; one jacked and bored cased crossings of Highway 126; one sewage diversion manhole; connections to existing sanitary sewer systems; surface restoration; and performance of additional and incidental work as called for by the project contract documents.

Bid documents are available from the Department of Public Works, City of Springfield, 225 Fifth Street, Springfield, OR 97477, for a non-refundable fee of $35 and are available for viewing at this location. Bid documents available on line at http://www.springfield-or.gov/Pubworks/Current_PW_Projects.htm and those on file at plan centers are incomplete and cannot be used to submit bids. The 1994 edition, as most recently amended, of the City's Standard Construction Specifications, with subsequent revisions, are available for a fee of $40.00 or can be viewed on-line at http://www.springfield-or.gov/pubworks/specs/specs.htm .

A **MANDATORY** pre-bid meeting will be held on May 23, 2012 at 2:00 p.m. in the Jesse Maine meeting room.

All questions should be addressed to Tonja Kling, Engineering Assistant, at 541-726-3620 or tkling@springfield-or.gov. Contact with the design consultant or any other City officials may be grounds for disqualification of bid.

No Bid will be received or considered by the City unless the bidder has a current, valid certificate of registration issued by the Construction Contractor's Board as defined in ORS 701.005 and/or a valid landscape contractors license as defined in ORS 671.520 by the State Landscape Contractor's Board, as applicable, at the time the Bid is made and unless the bid contains a statement by the bidder as part of his/her bid that the provisions required by ORS 279C.838 through ORS 279C.870 shall be included in his/her contract. In accordance with ORS 279C.365, the City of Springfield will require that each bid must contain a statement as to whether the bidder is a resident bidder, as defined in ORS 279A.120.

The City of Springfield encourages contractors, sub-contractors and vendors who are minority, woman-owned and emerging small businesses to participate in City projects.

The City of Springfield may reject any or all bids not in compliance with all prescribed public bidding procedures and requirements, including the requirement to demonstrate the bidder's responsibility under ORS 279C.375, or waive minor irregularities not affecting substantial rights and may reject for good cause any or all bids upon a finding of the City of Springfield it is in the public interest to do so and accept such bids that in the opinion of the Springfield City Council are in the best interest of the City.

Bids will be accepted and awarded in accordance with the City of Springfield's document on general conditions and standard specifications for public works construction.

Note: If applicable to this project, the First-Tier Subcontractor Form must be completed in full and submitted by the specified deadline or the bid will be rejected.

Robert J Duey

ROBERT J. DUEY
Finance Director

Published: Daily Journal May 8, 2012 and May 14, 2012
Register Guard Publishing May 8, 2012 and May 14, 2012

Rev 04/26/12

Solicitation Number 736

City of Springfield
Department of Public Works
Transportation and Engineering Division

Bid Item List

Project No. P21046
Project Title: 58th Street Relief Sanitary Sewer Line and Bypass Manhole

Bid Items:

Item No.	Description	Approx. Quantity	Per	Unit Price	Total Price Extension
1	Mobilization, Demobilization, Bonds and Insurance	1	LS		$
2	Erosion Control	1	LS		$
3	Trench Foundation Overexcavation and Subgrade Stabilization	50	CY		$
4	Trench Rock Excavation	50	CY		$
5	Furnish and Install 36-Inch Diameter Class 52 DI Storm Sewer Pipe, Polyurethane Coated (granular/CDF backfill)	18	LF		$
6	Furnish and Install 18-Inch Diameter ASTM F679 PS 115 PVC Sewer Pipe	--	--	--	--
6a	18-Inch Diameter PVC ASTM F679 PS 115 (granular/CDF backfill) - 0 to 10 ft depth	1975	LF		$
6b	18-Inch Diameter PVC ASTM F679 PS 115 (granular/CDF backfill) - 10 to 15 ft depth	770	LF		$
6c	18-Inch Diameter PVC ASTM F679 PS 115 (granular/CDF backfill) - 15 to 20 ft depth	1260	LF		$
6d	18-Inch Diameter PVC ASTM F679 PS 115 (granular backfill) - 15 to 20 ft depth	585	LF		$
7	Bored/Jacked Installation of 36-Inch Diameter Steel Casing (Including 18-inch carrier pipe)	--	--	--	--
7a	Boring Through Unclassified Material	166	LF		$
7b	Boring Through Rock	10	LF		$

Item No.	Description	Approx. Quantity	Per	Unit Price	Total Price Extension
7c	Boring Through Transitional Material	10	LF		$
8	Furnish and Install New Sanitary Sewer Manholes (0 to 10 Feet Deep)	--	--	--	--
8a	New Sanitary Sewer Manholes (0 to 10 Feet Deep) - 48-Inch Diameter	19	EA		$
8b	New Sanitary Sewer Manholes (0 to 10 Feet Deep) - 72-Inch Diameter	1	EA		$
8c	New Sanitary Sewer Manholes (0 to 10 Feet Deep) - 84-Inch Diameter	1	EA		$
9	Additional Depth of Manholes Beyond 10 Feet Deep	--	--	--	--
9a	Additional Depth of Manholes Beyond 10 Feet Deep - 48-Inch Diameter	65	FT		$
9b	Additional Depth of Manholes Beyond 10 Feet Deep - 72-Inch Diameter	8	FT		$
9c	Additional Depth of Manholes Beyond 10 Feet Deep - 84-Inch Diameter	1	FT		$
10	Furnish and Install New 72-Inch Diameter Sewage Diversion Manhole	1	LS		$
11	Manhole Frame and Cover Adjustment (New and Existing)	23	EA		$
12	Furnish and Install ASTM D3034, SDR 26 PVC Sanitary Sewer Laterals (granular/CDF backfill)	100	LF		$
13	Saw-Cutting Existing Surfacing	--	--	--	--
13a	Saw-Cutting Existing Surfacing - Saw-Cut First 4-Inch Depth	8,000	LF		$
13b	Saw-Cutting Existing Surfacing - Saw-Cut per Inch Depth Beyond First 4 Inches	16,000	IN-LF		$
14	Hot Mix Asphaltic Concrete (HMAC) Trench Pavement Restoration	1,850	TON		$
15	Plain Concrete Pavement (PCP) Trench Pavement Restoration	225	SY		$
16	Standard Concrete Curb	400	LF		$
17	Standard Concrete Curb and Gutter	500	LF		$
18	Concrete Sidewalk	750	SY		$

Item No.	Description	Approx. Quantity	Per	Unit Price	Total Price Extension
19	Sidewalk Ramps	5	EA		$
20	Concrete Residential Driveway Apron	100	SY		$
21	Traffic Signal Loop Detector Replacement	4	EA		$
22	Pothole Existing 36-Inch Diameter Storm Sewer	1	LS		$
23	Traffic Control	1	LS		$
24	General Surface Restoration	1	LS		$
25	Internal Sewer Video Inspection	1	LS		$

Project Bid Item Total:	**$**

Terms, Declarations and Bid Submittal

Bidder's Understanding

Bidders shall determine for themselves all the conditions and circumstances affecting the projected cost of the proposed work by personal examination of the site, Contract documents, and by such other means they may deem to be necessary. It is understood and agreed that in the event the City has obtained information from data at hand regarding underground or other conditions or obstructions depicted in the Contract documents, there is no expressed or implied agreement that such conditions are fully or correctly shown, and the Bidder must take into consideration the possibility that conditions affecting the cost or quantity of work may differ from those indicated.

The Bidder is familiar with and is satisfied as to all federal, state and local laws and regulations that may affect cost, progress, and performance of the work.

Bid

The undersigned Bidder having examined the Specifications and Contractual Documents and having satisfied themselves as to all conditions to be encountered, hereby proposes to furnish all labor, material and equipment and perform all work necessary to complete Project No P21046 in accordance with this bid, the Contract Plans, City of Springfield Standard Construction Specifications, 1994 Edition, and all subsequent modifications, the Special Provisions, and all other Contractual Documents at the prices and on the terms herein contained.

The unit price bids are submitted with the understanding that the quantities stated are approximate and are given only as the basis of calculation for comparison of bids and determining that the unit prices are balanced and that final payment for all unit price bid items will be based on actual quantities.

It is understood that in the instance of a discrepancy between the unit price and the extension (total price extension) the unit price shall govern. The extension shall be determined by multiplying the unit price by the number of units (approximate quantity).

Bid Guarantee

As required by ORS 279C.365(4) each bid shall be accompanied by a Bid Bond, cash, or a certified or cashier's check written upon a bank in good standing, payable to the Finance Director of the City of

Springfield, Oregon, in an amount equal to at least 10 percent of the total amount of the Bid. Bid Bonds shall be issued by a surety company registered to issue bonds in the State of Oregon, and utilizing a bond form acceptable to the City. The City will accept AIA Document A310-2010. The Bid Bond may not be altered.

Such Bid Guarantee shall be forfeited and become the property of the City in case the Bidder shall fail or neglect to furnish a satisfactory Performance Bond and a satisfactory Payment Bond issued by a viable bond company acceptable to the City as required by ORS 279C.380 and to execute the Contract within ten (10) days (Saturday, Sunday, and holidays excepted) after receiving Contract from the City for execution, otherwise the Bid Guarantee accompanying this bid shall be returned to the Bidder. For information regarding Performance and Payment Bond requirements see City of Springfield Contract document, Section 5. City Bonding.

Bid Acceptance Period

This bid will remain subject to acceptance for a period of 60 days after the bid opening, or for such longer period of time that the Bidder may agree to in writing upon request of the City.

Liquidated Damages

The City of Springfield and the Contractor agree that; (a) the amounts so fixed are reasonable forecasts of just compensation for the harm that is caused by the breach; (b) the harm that is caused by the breach is one that is incapable of or very difficult of accurate estimation; and, (c) the amount so fixed is not fixed as a penalty to coerce performance of the Contract but is rather intended to be a genuine pre-estimation of injury to the City of Springfield in lieu of performance within the contract time by the Contractor.

a. Delay

It is agreed by the City of Springfield and by the Contractor that the need exists for a damage provision in the event the Contractor fails to complete the work within the Contract times specified, or any extension thereof, by the City of Springfield. The City of Springfield and the Contractor further agree that the Contractor shall be liable to the City of Springfield for fixed, agreed and liquidated damages for each and every calendar day of delay in the amounts as follows: $700 per day for failure to complete the work described in the Contract Time of Completion below by October 15, 2012; $800 per day for failure to complete the work described in the Contract Time of Completion below by August 31, 2013, in accordance with Subsection 108.07 of the Standard Construction Specifications.

b. Failure to Report Spills

The Contractor also agrees to liquidated damages in the amount of $500.00 per incident for failure to report sewage spills plus an amount sufficient to reimburse the City for any civil and administrative penalties paid by the City as a result of the Contractor's failure to report. Failure to report sewage spills may subject the City to (1) civil penalties of up to $32,500.00 per day of violation pursuant to Section 309(d) of the Clean Water Act, 33 U.S.C. § 1319(d); (2) administrative penalties of up to $11,000.00 per day for each violation, pursuant to Section 309(g) of the Clean Water Act, 33 U.S.C. § 1319(g); or (3) civil action in federal court for injunctive relief pursuant to Section 309(b) of the Clean Water Act, 33 U.S.C. § 1319(b).

Contract Time of Completion

The Contractor shall not begin work under this bid until written Notice to Proceed has been received. The Contractor shall complete the work under this bid as follows: Completion of all work from Main Street to and including the cased crossing of HWY 126 (station 0+00 to station 15+05) by October 15, 2012; completion of the project with a fully functional system by August 31, 2013. The actual commencement of work will begin within ten days after the date of the Notice to Proceed, or such other starting date as is fixed by the Notice to Proceed. No work will be allowed from October 16, 2012 to April 30, 2013 without prior approval from the City.

The Contractor shall apply for any extensions of time as specified in Subsection 108.06 of the Standard Construction Specifications.

Certifications
The undersigned Bidder hereby certifies that:

1.) If awarded the contract, they shall fully comply with all provisions regarding the prevailing wage rates as required by ORS 279C.800 to 279C.870 and/or 40 U.S.C. 2762 as applicable.

2.) They, and any subcontractors performing work on the project in question, have in place and will maintain an employee drug testing program that is in compliance with ORS 279C.505.

3.) They have not, and will not, discriminate against a subcontractor in the awarding of a subcontract because the subcontractor is a minority, women or emerging small business enterprise certified under ORS 200.055 as required by ORS 279A.110.

4.) No Contractor, Subcontractor or any firm, corporation, partnership or association in which the Contractor or Subcontractor has a financial interest who appears on the List of Contractors Ineligible to Receive Public Works Contracts, as established by the Bureau of Labor and Industries, will perform work under this Contract, as specified in ORS 279C.860.

5.) The Bidder shall have a current, valid certificate of registration issued by the Construction Contractor's Board as defined in ORS 701.005(2) and/or a valid landscape contractor's license as defined in ORS 671.520(2) by the State Landscape Contractor's Board, as applicable, in place at the time the bid is presented.

6.) All Subcontractors shall have a current, valid certificate of registration issued by the Construction Contractor's Board as defined in ORS 701.005(2) and/or a valid landscape contractors license as defined in ORS 671.520(2) by the State Landscape Contractor's Board, as applicable in place prior to performing any work under the Contract.

Bid Addenda
All Addenda issued are considered to be part of the specifications of the Invitation to Bid and, as such, are as incorporated into the Contract as specified in Section 104.02 of the Standard Construction Specifications. By signing below, I acknowledge the receipt of the following Addenda documents and certify that the specifications contained in each have been considered and incorporated into the bid as presented. All Addenda must be included with the bid submitted.

Addenda Number	Addenda Date

Declarations
The undersigned Bidder declares that the only persons or parties interested in the bid are those named herein, that this bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City, and that the bid is made without any connection or collusion with any person submitting another bid on this project.

I have read, fully understand, and agree that as Bidder I, and all Subcontractors, will comply with all of the terms and conditions of the contract for which this bid is presented. By signing below I attest that I am an officer or a duly authorized representative of the business listed below and that I possess the legal authority to submit this bid for consideration.

Bidder's Signature _____

Bidder's Name *(Please Print)* _____

Title _____

Business Name _____

Business Address _____

City _____ State _____ Zip _____

Phone Number _____ Cell Phone _____

E-mail Address _____ Fax Number _____

Date _____

The award of this Contract shall be made to the responsible Bidder with the lowest responsive bid.

TECHNICAL SPECIFICATIONS

FOR

CONSTRUCTION OF

58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE PROJECT NO. P21046

FOR

CITY OF SPRINGFIELD, OREGON

MAY 2012

MURRAY, SMITH & ASSOCIATES, INC.
121 SW Salmon, Suite 900
Portland, OR 97204
503.225.9010

SECTION 01100

SPECIAL PROVISIONS

PART 1 GENERAL

These Special Provisions supplement and amplify certain sections of the City of Springfield, Oregon, "Standard Construction Specifications". The "Standard Construction Specifications" shall apply except as modified herein. These Special Provisions and additional technical specifications may contain occasional requirements not pertinent to the project. However, these specifications shall apply in all particulars insofar as they are applicable to this project.

1.1 Applicable Standard Specifications

The current version of the City of Springfield, Oregon, "Standard Construction Specifications" (including all revisions at date of bid opening), apply except as may be modified herein. In the case of discrepancy, unless noted otherwise herein, the more restrictive provisions shall apply.

1.2 Scope of Work

The work to be performed under these contract documents consists of the following:

Construction of a gravity sanitary sewer pipeline, approximately 5 to 20 feet deep, within the public right-of-way from the intersection of Main Street and 54th Street to the intersection of Thurston Road and 58th Street, including but not limited to the following items: approximately 4,800 linear feet of 18-inch diameter pvc piping; fittings, and appurtenances; manholes; one jacked and bored cased crossings of Highway 126; one sewage diversion manhole; connections to existing sanitary sewer systems; surface restoration; and performance of additional and incidental work as called for by the project contract documents.

The above general outline of principal features of the work does not in any way limit the responsibility of the CONTRACTOR(s) to perform all work and furnish all equipment, labor and materials required by the contract documents.

No attempt has been made in these contract documents to segregate work covered by any trade or subcontract under one specification. Such segregation and establishment of subcontract limits will be solely a matter of specific agreement between the CONTRACTOR and its subcontractors and shall not be based upon any inclusion, segregation or arrangement in or of these specifications.

1.3 Permits and Licenses

The CONTRACTOR shall comply with all permit conditions, provisions and limitations. Such conditions and requirements are hereby made a part of these specifications, as fully and completely as though the same were fully set forth herein. The CONTRACTOR shall examine the permit(s) granted by any city, county, state and federal agencies. Failure to do so will not relieve the CONTRACTOR from compliance with the requirements stated therein.

The CONTRACTOR shall be responsible for payment of all fines, liability, and other damages resulting from regulatory enforcement action caused by CONTRACTOR's non-compliance with regulations or permit conditions. This responsibility shall apply to permit violations for any permit conditions, whether the permit is issued to the OWNER or the CONTRACTOR. The CONTRACTOR shall bear full responsibility for any work stoppages caused by violations of applicable regulations and permit conditions. No time extensions shall be granted due to such work stoppages, nor shall liquidated damages be waived due to same.

A. Oregon Department of Transportation (ODOT) Permit to Occupy or Perform Operations Upon a State Highway – An ODOT Permit to Occupy or Perform Operations Upon a State Highway will be required for this project for work in Main Street (Highway 126B) and for the jack and bore crossing of Highway 126. The OWNER has obtained a conditional permit from ODOT. A copy of the permit and conditions and provisions are included in these contract documents as supplementary information. The CONTRACTOR shall abide by all permit conditions and provisions. Prior to construction, the CONTRACTOR shall prepare and submit a traffic control plan to the City of Springfield and ODOT and obtain approval from the City of Springfield and ODOT prior to working in ODOT right-of-way.

1. Special Insurance Requirements

a. ODOT requires the following conditions for insurance to cover boring and jacking under Highway 126:

1. Minimum $500,000.00 General Liability.
2. State of Oregon (or Oregon Department of Transportation) listed as certificate holder.
3. State of Oregon (or Oregon Department of Transportation) listed as additional insured.
4. 30 day written notice of cancellation.

b. For more information, see Section 7, Insurance – Public Liability and Property Damage, of the Contract.

c. The CONTRACTOR shall provide the additional insurance. The cost of this insurance shall be considered incidental to the bid items.

The CONTRACTOR shall notify ODOT Freight Mobility a minimum of 28 days prior to lane closures within ODOT right-of-way. Refer to Specification Section 01552, Traffic Control Plan, for additional requirements. The form for notifying ODOT, along with links to additional information, can be found at the following website:

www.oregontruckingonline.com/cf/MCAD/pubmetaentry/restriction/

- Route Number 126B
- Highway Maintenance Number 015

Refer to Paragraph 1.8 of these Special Provisions and the ODOT permit for specific work hour limitations in Main Street.

B. Bonneville Power Administration (BPA) Right of Entry Permit – The City will obtain a right of entry permit from BPA. A copy of the permit is included in these contract documents as supplementary information. The permit includes special provisions for work within the BPA right-of-way. The CONTRACTOR shall abide by all permit provisions.

A certified BPA safety watcher shall be on-site during all construction activities within BPA right of way. A list of certified BPA safety watchers can be obtained from BPA. CONTRACTOR shall provide the services of the certified BPA safety watcher at no additional cost to the OWNER.

C. Department of Environmental Quality (DEQ) 1200-CA National Pollutant Discharge Elimination System (NPDES) Permit – The OWNER has obtained a DEQ 1200-CA NPDES permit for the work. This permit establishes requirements for stormwater discharge resulting from ground disturbing activities. A copy of the permit is available for viewing at the City of Springfield. All work shall be conducted in accordance with the requirements and conditions of the City's permit. CONTRACTOR shall accommodate all special inspections required thereof, all at no additional expense to the OWNER beyond prices as bid. The CONTRACTOR shall perform the minimum monitoring requirements as described in Schedule B of the City's 1200-CA Permit. Monitoring reports shall be submitted to the ENGINEER and OWNER monthly and shall be made available more frequently as requested by the ENGINEER or OWNER.

1.4 DEQ and EPA Requirements

It is the Policy of the City of Springfield that there will be full compliance with the City's wastewater NPDES permit and that there shall be no spillage of raw sewage during the construction phase of this project. In the event that this Policy is inadvertently violated, the CONTRACTOR shall immediately notify the Project Inspector and City Inspector of the spill. Notification is the process that ensures that the appropriate entities are informed of a release of raw sewage. If the Contractor is unable to contact the Inspector, the Contractor shall notify the Collection System Compliance Officer or his Designee.

Project Inspector:	Murray, Smith & Associates, Inc. 541-741-2975
City Inspector:	Denny Wright, 541-736-1010
Collection System Compliance Officer: Designee:	Brian Conlon, 541-726-3753 Mike Risley, 541-726-3615

The representative of the City of Springfield shall report the sewage spill within 24 hours to the Oregon **Department of Environmental Quality** and any other appropriate entities. A spill contained in an excavation is still considered a spill and must be reported.

Failure by the CONTRACTOR to report a spill to the appropriate City representative will result in liquidated damages in the amount of $500.00 per incident plus an amount sufficient to reimburse the City for any civil and administrative penalties paid by the City as a result of the CONTRACTOR's failure to report as described in the Unit Price Bid Proposal for this contract. The CONTRACTOR is to take every reasonable measure to avoid any spills during construction.

1.5 Prevention, Containment and Clean-up of Sanitary Sewer Spills

The CONTRACTOR shall have on site a sewage spill kit and provide to the Engineer a written **Prevention, Containment and Clean-up Plan** for spilled sewage at the **Pre-Construction Meeting**. The **Plan** shall describe how the Contractor will prevent spillage during construction, the equipment and materials on site, and the methods to be used to contain and clean up spilled sewage. Approval of the **Prevention, Containment and Clean-up Plan** does not relieve the CONTRACTOR of responsibility for preventing spills or properly containing and cleaning up any spills. If the written **Plan** is not received and approved prior to commencing on-site work, the ENGINEER reserves the right to shut down all work at the CONTRACTOR's expense (with a written stop work order to follow within 24 hours) until a plan has been approved and implemented.

1.6 Site Investigation and Physical Data

The CONTRACTOR acknowledges that it is satisfied as to the nature and location of the work and the general and local conditions, including but not limited to those bearing upon transportation, disposal, handling and storage of materials, availability of water, roads, groundwater and its disposal, access to the sites, coordination with other contractors, and conflicts with pipelines, structures and other contractors. Information and data furnished or referred to herein is provided for information only. Any failure by the CONTRACTOR to become acquainted with the available information and existing conditions will not be a basis for relief from successfully performing the work and will not constitute justification for additional compensation.

The CONTRACTOR shall verify the locations and elevations of existing pipelines, structures, grades and utilities, prior to construction. The OWNER assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available.

The CONTRACTOR shall pothole and verify the location and elevation of high pressure gas lines before a crossing is made.

1.7 Interferences, Obstructions and Sewer Crossings

At certain places, power, light and telephone poles may interfere with excavation and the operation of the CONTRACTOR's equipment. The CONTRACTOR shall make necessary arrangements with utility companies for moving or maintaining such poles. The utility company affected by any such interference shall be notified thereof so that the necessary moving or proper care of poles and appurtenances may have appropriate attention.
All costs resulting from any other interference and obstructions, or the replacement of such, whether or not herein specifically mentioned, shall be included and absorbed in the unit prices of the CONTRACTOR's bid.

1.8 Work Date and Work Hour Limitations

All work shall be conducted between the hours of 7:00 a.m. and 6:00 p.m. on weekdays only, except where specifically identified below. Requests for variations in work hours shall be made in writing and shall be submitted to the ENGINEER for approval by the City Council.

Work within ODOT right of way at the intersection of Main Street and 54th Street shall be conducted between the hours of 9:00 p.m. to 6:00 a.m. Monday through Friday and weekends, 12:00 a.m. Saturday to 6:00 a.m. Monday.

The Project has received a Noise Variance from the City of Springfield to accommodate the special work hour limitations for work in ODOT right of way at

Main Street. Construction activities shall comply with the Conditions of Approval. Copies of the noise control code and variance are available at the City of Springfield, office of the project manager.

No work will be allowed from October 16, 2012 to April 30, 2013 without prior written approval from the OWNER. Requests for variations in work dates shall be made in writing and shall be submitted to the ENGINEER for approval by the City Council.

1.9 Record Drawings

CONTRACTOR shall maintain at the site one set of specifications, full size drawings, shop drawings, equipment drawings and supplemental drawings which shall be corrected as the work progresses to show all changes made. Drawings shall be available for inspection by the ENGINEER. Upon completion of the contract and prior to final payment, specifications and drawings shall be turned over to the ENGINEER.

1.10 Competent Person Designation

CONTRACTOR shall designate a qualified and experienced "competent person" at the site whose duties and responsibilities shall include enforcement of Oregon - OSHA regulations regarding excavations, the prevention of accidents, and the maintenance and supervision of construction site safety precautions and programs.

1.11 Vehicle Parking

The vehicles of the CONTRACTOR's and subcontractors' employees shall be parked in accordance with local parking ordinances.

1.12 Street Cleanup

Refer to Erosion Control Notes on plan sheets.

1.13 Field Service by Manufacturer's Representative

The CONTRACTOR will be required to furnish the services of a manufacturer's or material's representative for all major equipment and materials furnished by the CONTRACTOR or OWNER under this contract, to check, place in operation and test the installation, and train operating personnel. The manufacturer's representative shall be qualified and authorized to perform repairs and maintenance on the equipment. The above gives a general scope of the services desired from the manufacturer's representative. It will be the responsibility of the CONTRACTOR and the equipment manufacturer to determine detailed requirements. Costs for services of the manufacturer's representative shall be included in the proposal of the

CONTRACTOR. The operator training mentioned above shall include sufficient time during the CONTRACTOR's operation and testing period to fully explain to the operating personnel the features of the equipment and maintenance thereof.

1.14 Construction Within Private Easements

When portions of the work contemplated are within easements held by the OWNER on private property, the CONTRACTOR shall ascertain for itself to what extent the width, status and special conditions attached to easements may have on its operations and all costs resulting therefrom shall be included and absorbed in the unit prices of the CONTRACTOR's bid. CONTRACTOR shall coordinate with private property owners and businesses if required. Landscaping, surface restoration and fence restoration shall be completed within 24 hours following piping and conduit installation and other construction work. Temporary fencing shall be provided continuously until such private fencing is properly restored.

The CONTRACTOR's attention is directed to City of Springfield Standard Specification 105.06 regarding safety and the protection of property. Certain portions of this project require working in close proximity to existing structures and private property. It is the CONTRACTOR'S responsibility to conduct its operations and limit the size of equipment used in such a manner so as to prevent damage to existing property from excessive vibration or from other direct or indirect CONTRACTOR operations. The cost associated with repairing or replacing property that is damaged by the CONTRACTOR's operations shall be the responsibility of the CONTRACTOR, in accordance with the General Conditions.

CONTRACTOR shall have daily contact with the businesses, property owners and residents when the CONTRACTOR's work will be on or adjacent to that business or property. CONTRACTOR shall give 24 hour written notice of any construction that will affect the business, property owner, or resident's daily activities.

The CONTRACTOR shall make every effort to maintain normal services throughout the duration of the project. A public notification program shall be implemented, and shall as a minimum, require the CONTRACTOR to be responsible for contacting each home or business affected by the project and informing them of the work to be conducted, and when and how they will be affected. The CONTRACTOR shall also provide the following:

A. Written notice to be delivered to each home or business at least two (2) days but not more than four (4) days prior to the beginning of work being conducted on the section adjacent to their property or in any location that will directly affect the use of their property, access, or other services. All Notices shall include a local telephone number of the CONTRACTOR they can call to discuss the project or any potential problems. CONTRACTOR shall be

available by telephone 24 hours per day for the duration of this project to address any emergency situations.

B. Where construction requires access on or through private property the OWNER will obtain a right-of-entry authorization from the property owner. It will then be the responsibility of the CONTRACTOR to comply with the terms of this authorization and coordinate their construction efforts with the individual property owners. The ENGINEER will be made available to assist the CONTRACTOR. However, if CONTRACTOR desires to access easements through private property or use private property as a staging area, it is the CONTRACTOR's responsibility to coordinate such access with the property owner. Refer to Paragraph 1.20 for further requirements.

C. Payment for the public notifications, acquisition of right-of-entry authorization, and the coordination of such effort shall be considered incidental to the project.

The OWNER will obtain any necessary right-of-entry authorizations for this project. No work shall be conducted on private property until the authorizations have been obtained and the OWNER has authorized the CONTRACTOR to proceed with the work within such private properties.

1.15 Surveys

Refer to Specification Section 01580, Construction Survey Work, for survey requirements.

1.16 On-Site Sanitary Facilities

The CONTRACTOR shall provide and maintain sanitary facilities for its employees and its subcontractors' employees that will comply with the regulations of the local and State Departments of Health and as directed by the ENGINEER.

1.17 Private Roads and Driveways

See City of Springfield's Standard Construction Specifications section 107.13

1.18 Erosion and Sedimentation Control

Temporary construction site erosion control measures shall be constructed by the CONTRACTOR in accordance with the City's NPDES 1200-CA Permit. Work shall not commence until the approved erosion and sedimentation control measures are in place. Also, refer to Erosion and Sediment Control notes on the Drawings.

1.19 Compaction Testing

Refer to City of Springfield's Standard Construction Specifications section 106.02.

The OWNER will employ the services of an independent testing laboratory for on-site compaction testing and certain materials approval.

1.20 Limits of the Work and Storage of Spoils

The limits of the site which may be used for construction, storage, materials handling, parking of vehicles and other operations related to the project include the project site as shown on the drawings and adjacent public rights-of-way subject to permission of the public owner of that right-of-way. The limits of work also include rights of access obtained by the OWNER or CONTRACTOR, subject to all public laws and regulations and rights of access by utility companies and other holders of easement rights.

Landscaping, surface restoration and fence restoration work shall commence within 72 hours following work on or removal of equipment or materials from private property. Temporary fencing shall be provided continuously until such private fencing is properly restored.

A sample release form follows:

APPROVAL AND RELEASE
58TH STREET RELIEF SANITARY
SEWER LINE & BYPASS MANHOLE
(PR0JECT NO. P21046)
CITY OF SPRINGFIELD, OREGON

Site Address: _____

I/We hereby accept the sewer construction and restoration work performed on my/our property by (Name of Contractor). The work has been performed to my/our satisfaction and I/we release (Name of Contractor) and the City of Springfield from any further obligations with respect to this work.

Owner Name:_____

Date:_____

Signature: _____

Owner Name:_____

Date:_____

Signature: _____

1.21 Sewage Diversion and By-Pass Pumping

Refer to Section 02769 of these specifications.

1.22 Field Changes, Lateral Connection Locations

Changes to lateral connection locations may be allowed during the course of work in order to avoid interference with certain unforeseen obstructions or conflicts between existing and proposed facilities. Such changes may be allowed on a case by case basis as approved by the ENGINEER. The CONTRACTOR shall locate existing laterals in the field to be reconnected, and propose new main connection locations to the ENGINEER for approval. The ENGINEER will endeavor to make prompt decisions on such matters. CONTRACTOR shall anticipate a minimum of 72 hours for any decision requiring significant change.

The CONTRACTOR shall make all attempts to stay within the public right-of-way when working to relocate laterals. When lateral replacement or relocation requires work to extend onto private property, the CONTRACTOR shall notify the ENGINEER and OWNER immediately. The OWNER will coordinate with private property owners to obtain right-of-entry authorization for work on private property where required. Refer to Paragraph 1.14 for further requirements.

1.23 Oregon Products

CONTRACTOR's attention is directed to the provisions of Oregon Law, ORS 279A.120 regarding the preference for products that have been manufactured or produced in Oregon. CONTRACTOR shall use Oregon-produced or manufactured materials with respect to common building materials such as cement, sand, crushed rock, gravel, plaster, etc., and Oregon-manufactured products in all cases where price, fitness, availability and quality are otherwise equal.

1.24 Dewatering

CONTRACTOR should anticipate that significant dewatering efforts may be required to complete the sewer installation in deep excavations. Due to the nature of the local geology, the close proximity of the project to the Willamette River and local wetlands, and the potential for relatively high and variable groundwater levels in the area, large localized flows of groundwater may be encountered and could result in areas of instability of the trench cut face. CONTRACTOR’s attention is directed to the geotechnical investigation report included as supplementary information.

1.25 Salvage and Debris

Unless otherwise indicated on the Drawings or in the Specifications, all castings, pipe, equipment, demolition debris, fences, trees, shrubs, spoil or any other discarded material or equipment shall become the property of the CONTRACTOR and shall be salvaged or disposed of in a manner compliant with applicable Federal, State and local laws and regulations governing disposal of such waste products. No burning of debris or any other discarded material will be permitted. Prior to disposal of materials, the CONTRACTOR is to provide to OWNER a copy of written permission of private property owners with copy of fill permit for said private property as may be required for disposal of materials.

1.26 Emergency Maintenance Supervisor

The CONTRACTOR shall submit to the ENGINEER the names, addresses and telephone numbers of at least two employees responsible for performing emergency maintenance and repairs when the CONTRACTOR is not working. These employees shall be designated, in writing by the CONTRACTOR, to act as its representatives and shall have full authority to act on its behalf. At least one of the designated employees shall be available for a telephone call any time an emergency arises.

1.27 Utility Properties and Service

In areas where the CONTRACTOR's operations are adjacent to or near a utility and such operations may cause damage which might result in significant expense, loss and inconvenience, the operations shall be suspended until all arrangements necessary for the protection thereof have been made by the CONTRACTOR.

The CONTRACTOR shall notify all utility offices which may be affected by the construction operation at least 48 hours in advance. Before exposing any utility, the utility having jurisdiction shall grant permission and may oversee the operation. Should service of any utility be interrupted due to the CONTRACTOR's operation, the proper authority shall be notified immediately. It is of the utmost importance that the CONTRACTOR cooperates with the said authority in restoring the service as promptly as possible. Any costs shall be borne by the CONTRACTOR.

In the event that SUB electrical is needed to suspend their power poles during construction, all costs shall be borne by the contractor.

Utilities which may be impacted include the following:

Electric	Springfield Utility Board (SUB) Emerald PUD (EPUD) Bonneville Power Administration (BPA)

Water	Springfield Utility Board (SUB)
Telephone	Qwest Communications/Century Link
Gas	Northwest Natural
Cable	Comcast/Verizon
Sanitary Sewer	City of Springfield
Storm Sewer	City of Springfield
Street Lighting	City of Springfield ODOT
Traffic Signals	City of Springfield
Highways	ODOT / Lane County
Fiber Optics	Sprint

1.28 Coordination with Collection System Customers

Refer to Paragraphs 1.14, 1.20 and 1.22 for requirements.

1.29 Submittals

Refer to Specification Section 01300, Submittals.

1.30 Coordination With Other Contractors and With OWNER

Certain work within this contract may require connection to and coordination with the work of other contractors and OWNER. The CONTRACTOR under these specifications shall cooperate fully with all other contractors and OWNER and carefully fit its own work to such other work as may be directed by the ENGINEER. The CONTRACTOR shall not commit or permit any act to be committed which will interfere with the performance of work by any other contractor or the OWNER.

1.31 Noise Limitations

All applicable City, County ordinances and State regulations shall be complied with.

The Project has received a Noise Variance from the City of Springfield to accommodate the special work hour limitations for work in ODOT right of way at Main Street. Construction activities shall comply with the Conditions of Approval. Copies of the noise control code and variance are available at the City of Springfield, office of the project manager.

1.32 Not Used

1.33 "Or Equal" Clause

In order to establish a basis of quality, certain processes, types of machinery and equipment or kinds of material may be specified on the drawings or herein by designating a manufacturer's name and referring to its brand or product designation. It is not the intent of these specifications to exclude other processes, equipment or materials of a type and quality equal to or better than those designated. When a manufacturer's name, brand or item designation is given, it shall be understood that the words "or equal" follow such name or designation, whether in fact they do so or not. If the CONTRACTOR desires to furnish items of equipment by manufacturers other than those specified, he shall secure the approval of the ENGINEER prior to placing a purchase order.

No extras will be allowed the CONTRACTOR for any changes required to adopt the substitute equipment. Therefore, the CONTRACTOR's proposal for an alternate shall include all costs for any modifications to the drawings, such as structural and foundation changes, additional piping or changes in piping, electrical changes or any other modifications which may be necessary or required for approval and adoption of the proposed alternate equipment. Approval of alternate equipment by the ENGINEER before or after bidding does not guarantee or imply that the alternate equipment will fit the design without modifications.

1.34 to 1.45 – Not Used

1.46 Contaminated Material

A. General

It is possible that the CONTRACTOR may encounter contaminated material (soil and/or water) during excavation activities. This specification identifies requirements for handling and disposing contaminated media.

B. Definitions

1. “Contaminated material” is defined as soil, water, free product, Underground Storage Tanks (UST), buried abandoned utility lines containing residual or free product, solid waste, treated wood waste, chemical containers, or other solid, liquid, or gas substances with contamination levels above background levels.

2. “Hazardous substances” shall mean those substances or materials defined in the Oregon Revised Statutes (ORS) 465.200, as amended.

3. “Release” shall have the meaning as defined in ORS 465.200, as amended.

4. "Environmental laws" shall mean any applicable statute, law, ordinance, order, consent decree, judgment, permit, license, code, covenant, deed, common law, treaty, convention or other requirement pertaining to protection of the environment, health or safety, natural resources, conservation, wildlife, waste management or disposal, hazardous substances or pollution, including but not limited to regulation of releases to air, land, water, and groundwater.

C. Execution

1. Discovery of Contaminated Material

In the event that the CONTRACTOR, during the course of construction or during any other activities authorized under this contract, should encounter suspected contaminated material or any other materials suspected of posing a threat to human health and the environment, the CONTRACTOR shall notify the ENGINEER immediately and manage according to requirements identified below.

2. Discovery of Contaminated Soil

CONTRACTOR shall note evidence of contamination (odor, visual staining of soil, free liquid product seeping from soil, sheen on groundwater etc.) and note location of evidence on a sketch of the excavation and provide to the ENGINEER.

CONTRACTOR shall report the discovery to the ENGINEER immediately. CONTRACTOR shall stop all excavation activities, and secure the site to prevent entry by the public. The excavation shall not be backfilled. Protect all open excavations with berms, plates and fencing. CONTRACTOR may continue with work in other non-contaminated areas.

CONTRACTOR shall assist ENGINEER in collecting sample(s) of suspected contaminated media for testing and characterization. CONTRACTOR shall allow 21 days, at no cost to OWNER, for testing, results and instructions as to how to proceed with contaminated materials.

The CONTRACTOR shall obtain a copy of an approved soil disposal/acceptance permit (Disposal/Treatment Facility requires transporter to have a copy of the permit.)
CONTRACTOR will transport and dispose of contaminated material at an approved disposal/treatment facility.

CONTRACTOR shall provide the ENGINEER with a copy of the contaminated soil disposal receipt.

3. Handling of Contaminated Soil

Excavation of contaminated materials shall be in the presence of the ENGINEER.

After approval from the ENGINEER, excavate the soil in a manner that prevents commingling of contaminated and non-contaminated soil. ENGINEER will make determination (based on soil saturation) if contaminated soil can be directly transported to a treatment or disposal facility, or if soil needs to be stockpiled to reduce water content. ENGINEER will determine when stockpiled soil can be transported off-site.
CONTRACTOR will be responsible for stockpiling contaminated soil in containers or on impervious surface to prevent the spread of contamination. Any water runoff from the contaminated soil stockpile area(s) must be contained by CONTRACTOR and handled as contaminated water.

Minimize movement of excavation equipment over or through contaminated soil to prevent movement of contaminated soil into areas where no contaminated soil exists.

Stockpiles will be created on an approved site and shall be surrounded by a fence to limit access. The stockpiles must be covered and bermed during periods of rainfall to prevent run-on and run-off. The stockpiles shall be covered with a minimum 10 mil high density polyethylene (HDPE) plastic during periods of strong winds, nightfall, over the weekends, or during extended work stoppages. If dust is observed coming from the stockpiles, the stockpiles shall be either covered or the dust controlled with water.

Maintain excavation equipment in good working order. Prevent spillage of oil, fuel, or hazardous substances from equipment. In particular, promptly repair oil leaks from equipment and clean up any contaminated soil.

4. Transport of Contaminated Materials

CONTRACTOR shall comply with all applicable Federal, State, or local laws, codes, and ordinances that govern or regulate contaminated substance transportation. Contaminated soils placed in stockpiles shall

be loaded into trucks in a manner that prevents the spilling or tracking of contaminated soil into areas of the site with uncontaminated soil. Loose material falling onto the exterior of the truck during loading shall be removed before the truck leaves the loading area. Any material collected in the loading area shall either be placed back into the truck or back into the stockpile. If loading areas are unpaved, the surface soil shall be sampled at the conclusion of the loading activities to confirm that contaminated soil is not present. If loading areas are paved, any loose soil shall be cleaned from the pavement at the conclusion of the loading activities.

Specific truck haul routes shall be established before beginning off-site contaminated media transport. On-site truck routes shall be established to minimize or prevent movement of trucks over contaminated soils. Off-site truck routes shall be established to reduce the risk of releases of contaminated soils and impact on local traffic. The CONTRACTOR shall be responsible for ensuring that loaded truck weights are within acceptable limits. All trucks shall be covered before they leave the loading area.

The CONTRACTOR shall ensure that all drivers of vehicles transporting contaminated substances have in their possession during transport all applicable Oregon State and local vehicle insurance requirements, valid driver's license, and vehicle registration and license. The CONTRACTOR shall be responsible for informing all drivers of transport vehicle about:

a. The nature of the material transported.

b. Required routes to and from the off-site thermal treatment or disposal facility.

c. Applicable County street regulations and requirements, and State of Oregon Department of Transportation codes, regulations and requirements.

d. The County's requirement for proper handling and transportation of the substances.

The CONTRACTOR shall not allow contaminated substances to be spilled or tracked off-site at any time during the project. Trucks used for the transportation of contaminated substances off-site shall be water tight, substance compatible, licensed, insured, and permitted pursuant to federal, state, and local statutes, rules, regulations and ordinances.

1.47 Not Used

1.48 Sequence of Construction Requirements

In order to meet the objectives of this project, certain elements of work must be completed in the following sequence or within the time periods identified below:

A. Pothole the existing 36-inch diameter storm sewer in 58th Street at the proposed sanitary sewer crossing location near F Street prior to starting construction of the new sewer. Survey the elevation of the bottom of the existing 36-inch storm sewer pipe, measure the inside diameter, outside diameter and circumference of the existing pipe.

B. Prior to October 15, 2012, as a minimum, construct the following:

1. All work required in Main Street (ODOT right-of-way). Notify ODOT Freight a minimum of 28 days prior to lane closures, see Paragraph 1.3A.

2. New pipe, manholes, backfill, surface restoration, cased crossing of HWY 126, and all additional required work from Station 0+00 to Station 15+05.

C. No work will be allowed from October 16, 2012 to April 30, 2013 without prior approval from the City.

D. Construct the remaining portion of the pipeline, manholes, diversion manhole, backfill, surface restoration, and all additional required work from Station 15+05 to 47+74. All work in 58th Street must be completed during the school summer recess period from June 17, 2013 to August 31, 2013. Keep end connections of new pipe isolated from existing sanitary sewer system until the new pipeline is constructed, tested and approved in its entirety.

The above requirements may not include all required project work and is intended only to identify the sequencing or time period restrictions of certain major milestones that are required to meet the project objectives. Variations to the above sequence of construction requirements must be approved by the ENGINEER or OWNER.

1.49 to 1.51 Not Used

1.52 Project Information Signs

The CONTRACTOR shall furnish and install project information signs in accordance with the following requirements:

A. For a project located on a confined site such as a reservoir, pumping station, well house, treatment plant, or similar facility, one project information sign shall be required. For a project located on a public right of way such as a pipeline project, a project information sign shall be installed facing each direction of traffic at each location where traffic is entering the work area. Up to ten signs may be required for pipeline projects.

B. A submittal for the project information sign(s) shall be prepared for the ENGINEER'S approval prior to fabrication.

C. The CONTRACTOR shall install the project information sign(s) at location(s) as directed by the ENGINEER.

D. No construction work shall commence on the project site until the project information signs are installed. Project information sigs shall be installed a minimum of two weeks (14 calendar days) prior to the start of work.

E. The CONTRACTOR shall maintain the signs through the duration of the project.

F. The cost of furnishing, installing and maintaining the project information signs shall be included in the CONTRACTOR's bid for traffic control. For the purposes of bidding, 10 project information signs should be expected.

The project information sign(s) shall be constructed of 3/4-inch thick plywood with a finish grade of veneer on the sign face. The sign(s) shall be sized as necessary to accommodate the required project information. The sign(s) shall be securely attached to a minimum of two 4-inch square treated wood posts for each 4-foot by 8-foot panel. The sign(s) shall be installed such that the top of the sign is approximately 10 feet above grade or as necessary to permit proper public viewing. The wood posts shall be buried at least 3 feet below grade. Provide adequate supports for the sign(s) as site conditions dictate. The sign(s) shall have black letters on a white background and they shall be the product of a commercial sign manufacturer or supplier. Logos shall be color. The letters shall be at least 4-inches in height.

The sign(s) will contain basic project information including: Project name, estimated project duration, project construction cost, project OWNER's name and OWNER's contact and phone number, ENGINEER's name, CONTRACTOR's name, OWNER's and ENGINEER's company logos, the CONTRACTOR's logo if the CONTRACTOR so desires, any funding agency logo(s) along with any required wording from those agencies. The logos shall be sized such that they are visible from a distance approved by the ENGINEER. The OWNER, ENGINEER and funding agencies will provide electronic images of their logos for the CONTRACTOR's use in developing the signs.

END OF SECTION

SECTION 01201

MEASUREMENT AND PAYMENT

PART 1 GENERAL

Measurement and payment will be on a unit price basis in accordance with the prices set forth in the proposal for individual work items. Where work is required but does not appear as a separate item in the proposal, the cost for that work shall be included and absorbed in the unit prices named in the proposal. CONTRACTOR shall make a careful assessment when preparing the bid.

Progress payment will be made by OWNER on a monthly basis not later than the 20th day of the subsequent month of the work performed, except that, additional days may be required when the CONTRACTOR fails to submit certified payroll reports when due, or a payment is accompanied by one or more of the following: an extension of completion time, change order or bill. If the CONTRACTOR fails to submit acceptable certified payroll reports when due, the progress payment may be made up to fourteen (14) days after the date the certified payroll in question is received by the OWNER. Payment may be made via use of the checks or warrants at the option of OWNER for the amount of the approved estimate, less retainage.

18-inch diameter PVC pipe will be the only materials considered for payment for materials on hand. Materials on hand will be processed in accordance with Section 109.07 of the City of Springfield Standard Construction Specifications.

Item No. Description

1. Mobilization, Demobilization, Bonds and Insurance: Payment for mobilization, demobilization, bonds and insurance will be on a lump sum basis. The amounts paid for mobilization, demobilization, bonds and insurance in the contract progress payment will be based on the percent of the original contract amount that is earned from other contract items, excluding the amount paid for materials on hand, as follows:

   A. When 5 percent of the total original contract amount is earned from other bid items, excluding the amount paid for materials on hand, 50 percent of the amount bid for mobilization, or 5 percent of the total original contract amount, whichever is least, less normal retainage, will be paid.

   B. When 10 percent of the total original contract amount is earned from other bid items, 100 percent of the amount bid for mobilization, excluding the amount paid for materials on hand, or 10 percent of the total original contract amount, whichever is least, less normal retainage, will be paid.

C. Upon completion of all work on the project, payment of any amount bid for mobilization in excess of 10 percent of the total original amount will be paid.

The above schedule of partial payments for mobilization shall not be interpreted to limit or preclude partial payments otherwise provided by the Contract.

2. Erosion Control: Measurement and payment for temporary construction site erosion and sedimentation control measures shall be on a lump sum basis. The lump sum price shall include compensation for all planning, design labor, equipment and materials for construction site erosion and sedimentation control measures all in accordance with current requirements and regulations of the City of Springfield, Lane County, the Department of Environmental Quality, and any other government agencies with jurisdiction over the project and in accordance with the City of Springfield's NPDES 1200-CA Permit.

3. Trench Foundation Over Excavation and Subgrade Stabilization: Payment for over excavation and subgrade stabilization for unsuitable trench foundation conditions will only be considered as approved by the Engineer, but when such pre-approval is obtained, payment will be made on a per cubic yard basis according to the volume of material excavated, measured by neat line at the location of the excavation, to the nearest 0.1 cubic yard. Price provided by the Contractor shall include the price for excavating beyond the normal pay limits to the limits pre-approved by the Engineer, disposal of excavated material, furnishing and installing subgrade geotextile fabric, furnishing, placing and compacting crushed rock stabilization material in the excavated void in accordance with the Contract Documents.

4. Trench Rock Excavation: Payment for trench rock excavation will be made at the unit price per cubic yard of rock excavated and rock excavation will be paid for in addition to the lineal foot price for pipe, trench excavation and backfill. The pay limits for pipe trench shall be 12 inches below the pipe invert and the width shall be the nominal pipe diameter plus 1 foot on each side of the pipe. Pay limits for manholes and other structures shall be to the depth necessary to install the structure and to a maximum of 18 inches beyond the outside walls of the manhole or structure. No payment will be made for trench rock excavation beyond these limits.

5. Furnish and Install 36-Inch Diameter Class 52 Ductile Iron Storm Sewer Pipe (Polyurethane Coated): Payment for furnishing and installing 36-inch diameter class 52 ductile iron storm sewer pipe with polyurethane coating and cement mortar lining will be on a linear foot basis and will include: trench excavation, sorting, hauling, stockpiling and protecting suitable backfill material and disposal of unsuitable excavated backfill material where necessary, trench shoring, trench dewatering, sawcutting and removing and disposing of existing 36-inch diameter concrete storm sewer pipe, furnishing and installing new pipe, bedding material, pipe zone material,

trench backfill material, compaction, connecting couplings and fittings where required, reinforced concrete collar joints, tracer wire, testing, handling of storm water during construction as may be required, construction surveying and staking, and all other incidental work and materials. Asphalt concrete (AC), gravel and native surface restoration will be paid for under other pay items. Payment will be on a linear foot basis for the total length of new storm sewer pipe installed, complete by backfill class and pipe class, with respect to depth. The pay length will be the horizontal length of new pipe installed as measured between the connections to the existing storm sewer pipe. Payment shall be regardless of depth.

6. Furnish and Install 18-Inch Diameter ASTM F679 PS115 PVC Sewer Pipe: Payment for furnishing and installing 18-inch diameter ASTM F679 PS 115 PVC sanitary sewer pipe will be on a linear foot basis and will include: trench excavation, sorting, hauling, stockpiling and protecting suitable backfill material and disposal of unsuitable excavated backfill material where necessary, trench shoring, trench dewatering, existing utility protection, coordination and relocation where necessary, furnishing and installing pipe, bedding material, pipe zone material, trench backfill material, compaction, connecting couplings and fittings where required, tracer wire, testing, handling of sewage during construction as may be required, construction surveying and staking, and all other incidental work and materials. Asphalt concrete (AC), plain concrete pavement (PCP), gravel and native surface restoration will be paid for under other pay items. Payment will be on a linear foot basis for the total length of new sanitary sewer pipe installed, complete by backfill class and pipe class, with respect to depth. The pay length will be the horizontal length of new pipe installed as measured from center of manhole to center of manhole. Pay depth shall be as measured from the final ground surface to the invert of the new sanitary sewer pipe.

   NOTE: THIS ITEM IS SUBJECT TO MATERIAL PRICE ESCALATION/DE-ESCALATION, SEE PART 2 OF THIS SECTION.

7. Bored/Jacked Installation of 36-Inch Diameter Steel Casing: Payment for furnishing and installing 36-inch diameter, 5/8-inch thick steel casing pipe will be made at the unit price per linear foot of installation complete for the following installation conditions: boring through unclassified material, boring through rock, and boring through transitional material. Additional costs incurred for rock and transitional material boring will be paid at the unit price per linear foot of installation. The unit price shall include all costs for excavation, shoring, sheeting, bracing, dewatering, backfill, bore pits, casings, welding, boring complete, rigging and re-rigging operations complete, installing 36-inch diameter welded steel casing pipe and appurtenances, grouting of exterior voids, sand filling, casing insulators, applications of cement grout end caps, backfilling of the bore and receiving pits, placing of any stockpiled topsoil, final grading, and all other items for the complete installation of the casing pipe, as shown on the drawings. Measurement will be based on the total

length of casing constructed. Payment for furnishing and installing the 18-inch diameter carrier pipe in the casing will be included in the unit price for this bid item. Payment for furnishing and installing the two 2-inch diameter and two 4-inch diameter conduits and pull boxes at the cased crossing will be included in the unit price for this bid item.

8. Furnish and Install New Sanitary Sewer Manholes (0 to 10 Feet Deep): Payment for new sanitary sewer manholes shall be made at the unit price for each manhole, by size, and will include up to the first ten feet of the structure measured from the final rim elevation down. The unit price shall be full compensation for the manhole in place including excavation and backfill, cover and frame, grade rings, piping connections, grout channel, and any other work that may be required for a complete manhole structure, as shown on the drawings. All pre-cast concrete, cast-in-place concrete and grout used for or inside manholes on this project shall include an antimicrobial additive to render the concrete uninhabitable for bacteria growth, see specifications.

9. Additional Depth of Manholes Beyond 10 Feet Deep: Payment for manholes beyond the first ten feet deep will be on a per foot basis, by manhole size, in place, complete. Measurement shall be from ten feet below the final rim elevation to the lowest pipe invert elevation in the manhole. No additional payment will be made for any portion of the manhole base located below the lowest pipe invert elevation. All pre-cast concrete, cast-in-place concrete and grout used for or inside manholes on this project shall include an antimicrobial additive to render the concrete uninhabitable for bacteria growth, see specifications.

10. Furnish and Install New 72-Inch Diameter Sewage Diversion Manhole: Payment for the sewage diversion manhole, including all labor and materials, excavation and backfill, manhole structure, pipe connections, cover, frame, stop log frame, stop logs, stop log lifting device, concrete, reinforcing steel, grout channelization, and all other miscellaneous related work not included in other pay items will be on a lump sum basis.

11. Manhole Frame and Cover Adjustment (New and Existing): Payment for manhole frame and cover adjustments will be on a per each basis, complete, for all new and existing manholes where new asphalt concrete (AC) pavement is placed. The unit price for each manhole frame adjustment shall be full compensation for the final adjusted manhole frame in place including saw cutting and removing asphalt, installing concrete grade rings and shims, furnishing and placing rebar, furnishing and placing concrete, and all other work, as shown on the drawings.

12. Furnish and install ASTM D3034, SDR 26 PVC Sanitary Sewer Laterals: Payment for furnishing and installing ASTM D3034, SDR 26 PVC sanitary sewer laterals includes: excavation of a trench and removal of the existing lateral, installation of a new lateral, connection of the new lateral to the existing lateral, reconnection of the

lateral to the existing main, trench backfill, connecting couplings and fittings, handling of sewage during construction, disposal of the existing lateral piping and excavated material, plugging of laterals abandoned in place, and all other incidental work and materials. Surface restoration will be paid for under other pay items. Payment will be on a linear foot basis for the total length of new sanitary sewer service laterals installed, complete by backfill class, without respect to depth. The pay length will be the horizontal length of new sanitary sewer lateral pipe installed as measured from the center of the existing sanitary sewer main to the end of the new lateral at its point of connection to the existing lateral. Backfill classes shall be compacted granular backfill and/or CDF. This item is only to be used upon approval of the ENGINEER or OWNER and only when existing laterals must be relocated due to a conflict in grade of the existing lateral and the new sewer. Payment will not be made for laterals relocated or replaced for convenience to accommodate construction.

13. Saw-Cutting Existing Surfacing: Payment for saw-cutting shall include the trench width cuts and t-cuts as shown on the typical pipe trench detail. Payment for saw-cutting existing surfacing, which includes AC and concrete surfaces, for cuts up to 4 inches in depth and for each 1-inch depth beyond the first 4-inch thickness will be on a per linear foot basis. The t-cut shall be performed just prior to pavement re-surfacing. Payment for re-sawing, required as a result of pavement undermining, will be made under this pay item and shall be completed just prior to pavement resurfacing.

14. Hot Mix Asphaltic Concrete (HMAC) Trench Pavement Restoration: Payment for replacing removed existing pavement with final HMAC paving will be on a per ton basis. Furnishing and installing temporary paving or its maintenance during construction is considered to be incidental work and no additional payment will be made. Saw cutting shall be paid for under a separate pay item. All other work incidental to existing surfacing replacement shall be included in bid price stated. Payment for this item shall be understood to be full compensation for all work and materials, furnishing and placing tack coat, adjusting permanent castings to proposed grade, hauling, placing HMAC, screeding, and compacting the HMAC pavement to the depths and locations as shown on the Drawings. Measurements will be based on field measurements and verified by certified weight tickets furnished for each delivery with scales and certification procedures approved by the ENGINEER. This Pay Item will also be used for areas where the pavement is required to be replaced between the edge of the top of trench and the edge of pavement, as identified on the Drawings.

15. Plain Concrete Pavement (PCP) Trench Pavement Restoration: Payment for plain concrete pavement trench pavement restoration, complete including furnishing and installing, concrete pavement, stamped and colored concrete where required, dowel bars, tie bars, welded wire mesh, jointing, joint sealant, finishing, curing, process control, acceptance testing and other incidental work performed to provide a complete PCC pavement as shown on the drawings will be made on a square yard basis. PCC

pavement will be measured on the surface, regardless of total thickness, to the nearest foot, and total square yardage shall be calculated from these measurements. No additional payment over the contract unit price will be made for pavement having a thickness greater than that shown on the drawings. When PCC pavement fails to meet the strength requirements specified or is deficient in thickness, and the ENGINEER allows the pavement to remain in place, payment shall be subject to a reduction in accordance with the provisions in Section 00756.92 and 00756.93 of the Oregon Department of Transportation Standard Specifications for Construction.

16. Standard Concrete Curb: Payment for standard concrete curb, including all work, materials, tools, equipment, labor and incidentals necessary to complete the work, including earthwork, sawcutting, removing existing curb, furnishing and placing aggregate base, furnishing and placing concrete, jointing, finishing concrete surfaces, curing, as required, in accordance with the plans and the Specifications, will be on a linear foot basis. Measurement shall be made along the face of the installed curb, from end to end including tapers or depressed lengths at driveways and ramps. This item is only to be used upon approval of the ENGINEER or OWNER and only when existing standard concrete curb must be removed and replaced to accommodate construction of the new sewer. CONTRACTOR shall make all attempts to protect existing features during the course of construction.

17. Standard Concrete Curb and Gutter: Payment for standard concrete curb and gutter, including all work, materials, tools, equipment, labor and incidentals necessary to complete the work, including earthwork, sawcutting, removing existing curb, furnishing and placing aggregate base, furnishing and placing concrete, jointing, finishing concrete surfaces, curing, as required, in accordance with the plans and the Specifications, will be on a linear foot basis. Measurement shall be made along the face of the installed curb, from end to end including tapers or depressed lengths at driveways and ramps. This item is only to be used upon approval of the ENGINEER or OWNER and only when existing standard concrete curb and gutter must be removed and replaced to accommodate construction of the new sewer. CONTRACTOR shall make all attempts to protect existing features during the course of construction.

18. Concrete Sidewalk: Payment for concrete sidewalk, including all work, materials, tools, equipment, labor and incidentals necessary to complete the work, including earthwork, sawcutting, and furnishing and placing aggregate base, placing concrete, finishing concrete, jointing in accordance with the plans and Specifications, will be on a square yard basis. Measurement of the concrete sidewalk shall be made by measuring the finished in-place area. Protection of sidewalk from adverse weather conditions and traffic during curing shall be included in the payment for this pay item. The area of sidewalk where sidewalk ramps are installed will be measured and paid for under this pay item. This item is only to be used upon approval of the ENGINEER or OWNER and only when existing concrete sidewalk must be removed

and replaced to accommodate construction of the new sewer. CONTRACTOR shall make all attempts to protect existing features during the course of construction.

19. Sidewalk Ramps: Measurement and payment for ADA compliant sidewalk ramps with truncated domes, complete as shown on the drawings shall be on a per each basis. Payment for sidewalk ramps will be the additional cost for the installation of the ramp in addition to the measured sidewalk ramp area which will be paid for under the Concrete Sidewalk pay item.

20. Concrete Residential Driveway Apron: Payment for concrete residential driveway aprons complete shall be made on a per square yard basis, regardless of the apron style or required installed thickness. Work shall include furnishing and installing concrete and aggregate base, jointing, finishing concrete surfaces, removal and disposal of existing concrete driveways, saw cutting of existing concrete and/or AC surfacing as required to provide a smooth driveway approach, and other incidental work as required. Measurement of the concrete residential driveway apron shall be made by measuring the finished in-place area. Protection of sidewalk from adverse weather conditions and traffic during curing shall be included in the payment for this pay item. This item is only to be used upon approval of the ENGINEER or OWNER and only when existing concrete residential driveway aprons must be removed and replaced to accommodate construction of the new sewer. CONTRACTOR shall make all attempts to protect existing features during the course of construction.

21. Traffic Signal Loop Detector Replacement: Payment for replacing damaged traffic signal loop detectors including all work, materials, tools, equipment, labor and incidentals necessary to complete the work in accordance with the ODOT standard drawings will be on a per each basis. This item is only to be used upon approval of the ENGINEER or OWNER and only when existing traffic signal loop detectors must be removed and replaced to accommodate construction of the new sewer. CONTRACTOR shall make all attempts to protect existing features during the course of construction.

22. Pothole Existing 36-Inch Diameter Storm Sewer: Payment for potholing the existing 36-inch diameter concrete storm sewer pipe near the intersection of 58th Street and F Street where the new sanitary sewer crosses the storm sewer including excavation, backfill, furnishing and installing temporary AC surface restoration, surveying the elevation of the bottom of the existing pipe, measuring the inside diameter, outside diameter and circumference of the existing pipe and notifying the ENGINEER of the measured and surveyed values, will be on a lump sum basis.

23. Traffic Control: Payment for traffic control, maintenance and protection including all coordination, materials, signs, project information signs, removing and replacing existing signs where required including replacing sign support posts, traffic control devices, labor and equipment, temporary and permanent pavement markings and

striping, traffic control plan, portable changeable message signs, flagging and all other traffic control, as required, will be on a lump sum basis.

24. General Surface Restoration: Payment for all required general surface restoration, other than streets, sidewalks and curbs, including stripping and stockpiling topsoil, re-grading to original contours, bark mulching planting areas, repairing landscaped areas, seeding and cleanup following construction as required including resurfacing gravel surfaces as required, will be on a lump sum basis.

25. Internal Sewer Video Inspection: Payment for internal sewer video inspection, including all equipment, inspection reports, and the DVD of the inspection, will be on a lump sum basis.

PART 2 MATERIAL PRICE ESCALATION/DE-ESCALATION

Certain Pay Items in this project will be subject to the requirements of material price escalation/de-escalation as follows:

2.1 PVC Material Price Escalation/De-Escalation Clause

A PVC escalation/de-escalation clause will be in effect during the life of the Contract.

A. Monthly PVC Materials Value (MV) and Base PVC Materials Value (BV)

The Monthly PVC Materials Value (MV) will be established by McGraw-Hill Engineering News Record (ENR) from the monthly published price for 8-inch diameter PVC sewer pipe for Seattle, Washington.

The Base PVC Materials Value (BV) for this Project will be the MV published in ENR magazine on the month that the bids are opened for this project. The MV and BV will be available at the ENR website at:

http://enr.construction.com/

If the selected index ceases to be available for any reason, the ENGINEER in its discretion will select and begin using a substitute price source or index to establish the MV each month. The ENGINEER makes no guarantee that PVC material will be available at any stated or implied materials price.

B. Monthly PVC Materials Price Adjustment

A PVC price adjustment evaluation will be made for the PVC pipe. No adjustments will be made using the BV or MV until such time as they are listed

as final values by ENR. The price adjustment as calculated in this provision for the PVC pipe will use the MV for the month that the pipe is ordered from the pipe manufacturer/supplier, thus establishing a price for the pipe. The CONTRACTOR shall submit copies of invoices from the pipe manufacturer/supplier that shows the date the materials were ordered, the quantities of pipe materials and the price of the pipe. A price adjustment for the PVC pipe will be considered as per the above. A price adjustment for the PVC Pay Items will only be made if the MV for the month that the pipe is purchased differs by more than 5% from the BV. A PVC materials price adjustment will be made for the PVC pipe Pay Items identified below only.

The Monthly PVC Materials Price Adjustment will be determined as follows:

- If the MV is within 5% ± of the BV, there will be no adjustment.

- If the MV is more than 105% of the BV, then:

  PA = (((MV-BV) ÷ BV) - 0.05) x ((BV ÷ MV) x (PIP))

- If the MV is less than 95% of the BV, then:

  PA = (((MV-BV) ÷ BV) + 0.05) x ((BV ÷ MV) x (PIP))

  Where:
  PA = Price Adjustment, dollars.
  MV = Monthly PVC Materials Value from ENR for 8-inch diameter PVC sewer pipe for Seattle, Washington for the month determined above.
  BV = Base PVC Materials Value from ENR for 8-inch diameter PVC sewer pipe for Seattle, Washington from month of the bid opening.
  PIP = Amount paid for PVC pipe material only, based on invoices provided by the CONTRACTOR, for the month for which the adjustment is made.

C. PVC Materials Pay Items

A PVC material price adjustment for fluctuations in the cost of PVC will apply only to the major PVC usage Pay Items shown in the following list:

PAY ITEM DESCRIPTION

Furnish and Install 18-Inch Diameter ASTM F679 PVC Sewer Pipe

D. Regardless of the number of Pay Items listed, the PVC price escalation/de-escalation clause (and program) contained in this Section are included in this

Contract and are the only PVC price escalation/de-escalation clause (and program) that apply to this Contract.

E. The CONTRACTOR shall submit all invoices for materials that apply to material price escalation/de-escalation to the ENGINEER. Payment for escalation/de-escalation will be calculated and applied at the completion of the project.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

The CONTRACTOR shall provide submittals including shop drawings, schedules, drawings, and such other information as may be necessary for the prosecution of the work in the shop and in the field as required by the contract documents or the ENGINEER's instruction. There may be other submittals required elsewhere in these Specifications that are not necessarily included or mentioned in this Section.

Within fourteen (14) days after award of the contract, the CONTRACTOR shall submit to the ENGINEER a proposed list of manufacturers, suppliers, and subcontractors and a schedule of specific target dates for the submission and return of shop drawings required by the contract documents. The list and schedule shall be updated and re-submitted when requested by the ENGINEER. All shop drawings for interrelated items shall be scheduled for submission at the same time. Not less than one (1) week shall be allocated to each submittal for processing by the ENGINEER. At least six (6) copies of all submittals shall be provided to the ENGINEER. Four (4) copies of all submittals will be kept by the ENGINEER. If the CONTRACTOR requests that more than two (2) copies be returned, then the CONTRACTOR shall submit the appropriate quantity of submittals.

The ENGINEER will review shop drawings to determine compliance with the design concept of the project and return them to the CONTRACTOR within the period established in the shop drawings schedule. The ENGINEER may hold shop drawings in cases where partial submission cannot be reviewed until the complete submission has been received or where shop drawings cannot be reviewed until correlated items affected by them have been received. When such shop drawings are held, the ENGINEER will advise the CONTRACTOR in writing that the shop drawing submitted will not be reviewed until shop drawings for all related items have been received.

The CONTRACTOR shall submit to the ENGINEER, for review, six (6) copies each of such shop drawings, electrical diagrams and catalog information for fabricated items and manufactured items required for construction. The ENGINEER will review the submitted data and shop drawings, and will make notations thereon indicating "No Exception Taken", "Make Corrections Noted", "Rejected", "Revise and Resubmit", or "Submit Specified Item". The ENGINEER will then return two copies of the submitted data and shop drawings to the CONTRACTOR. The ENGINEER’s review of submittals and shop drawings is not a check of any dimension or quantity, and will not relieve the CONTRACTOR from responsibility for errors of any sort in the submittals and shop drawings.

When shop drawings and/or submittals are required to be revised or corrected and resubmitted, the CONTRACTOR shall make such revisions and/or corrections and resubmit those items or other materials in the same manner as specified above.

Submitted data shall be sufficient in detail for determination of compliance with the Contract Documents. Color samples for all items for which colors are to be selected shall be submitted at the same time. No equipment or material for which listings, drawings, or descriptive material is required shall be installed until the CONTRACTOR has received review from the ENGINEER.

Regardless of corrections made in or review given to the drawings by the ENGINEER, the CONTRACTOR shall be responsible for the accuracy of such drawings and for their conformity to the drawings and specifications. The CONTRACTOR shall check all submittals before submitting them to the ENGINEER and shall stamp its approval on all copies of the shop drawing documents. Any submittals received by the ENGINEER which do not bear the CONTRACTOR's approval shall be returned without review. If more than two (2) submissions are required to meet the project specifications, the cost of reviewing these additional submissions may be charged directly against the CONTRACTOR and the OWNER may withhold the funds necessary to cover these costs.

Materials and equipment shall be ordered a sufficient time in advance to allow time for reviews, and shall be available on the job when needed. Last minute review will not be given for inferior substitutes for material or equipment.

Required submittals include items listed below. This list is provided for CONTRACTOR's convenience only and may not be complete in all respects. CONTRACTOR shall provide all submittals required, whether or not specifically listed herein.

A. Schedules – Prior to or at the Preconstruction Meeting CONTRACTOR shall submit for written approval a proposed construction schedule to the ENGINEER. If it is desirable to carry on operations in more than one location simultaneously, a schedule shall be submitted for each location two weeks in advance of beginning such operations. In the event that the CONTRACTOR's proposed construction schedule does not meet the necessary construction program schedule as determined by OWNER, the CONTRACTOR shall resubmit a schedule that conforms as approved.

   The schedule shall show the proposed order of work and indicate the time required for completion of the major items of work. This working schedule shall take into account the passage or handling of traffic with the least practicable interference therewith and the orderly, timely and efficient prosecution of work. It will also be used as an indication of the sequence of the major construction operations and as a check on the progress of work, but does not become a part of the Contract.

The CONTRACTOR shall provide weekly progress schedules of expected project activities. The progress schedules shall indicate the CONTRACTOR's plan of prosecution of the work in sufficient detail to enable both the CONTRACTOR and the ENGINEER to plan, coordinate, appraise, document, and control their respective Contract responsibilities. Any work done without notification to the ENGINEER is subject to rejection.

The Schedule shall show the order in which the CONTRACTOR proposes to carry out the work, the dates on which the important features of the work will start, and the contemplated dates for completing same. In addition to a time-scaled bar chart schedule depicting the project critical path, the CONTRACTOR shall submit a detailed CPM logic diagram. The CPM diagram and time-scaled bar chart shall include the following:

- Construction activities
- Submittal and approval of material samples and shop drawings
- Procurement of critical materials
- Fabrication, installation, and testing of special material and equipment
- Duration of work, including completion times of all stages and their sub-phases

The activities shall be separately identifiable by coding or use of sub-networks or both. The duration of each activity shall be verifiable by manpower and equipment allocation, in common units of measure, or by delivery dates and shall be justifiable by the CONTRACTOR upon the request of the ENGINEER.

Detailed subnetworks will include all necessary activities and logic connectors to describe the work and all restrictions to it. In the restraints, include those activities from the project schedule which initiated the subnetwork as well as those restrained by it.

Include a tabulation of each activity in the computer mathematical analysis of the network diagram. Furnish the following information as a minimum for each activity:

- Event (node) number(s) for each activity
- Activity description
- Original duration of activities (in normal workdays)
- Estimated remaining duration of activities (in normal workdays)
- Earliest start date or actual start date (by calendar date)
- Earliest finish date or actual finish date (by calendar date)
- Latest start date (by calendar date)

- Latest finish date (by calendar date)
- Slack or float time (in workdays)

Computer printouts shall consist of at least a node sort and an "early start/total-float" sort.

CONTRACTOR'S attention is drawn to typical local climatic weather patterns and the CONTRACTOR shall coordinate work accordingly.

B. Breakdown of Contract Price -- The CONTRACTOR shall, at the preconstruction meeting, submit a complete breakdown of all lump sum bid items showing the value assigned to each part of the work including an allowance for profit and overhead adding up to the total lump sum contract price. Breakdown of lump sum bids shall be coordinated with the items in the schedule. Preparatory work, bonds, and insurance required in setting up the job will be allowed as a separate entry on the cost breakdown but shall not exceed 5 percent of the total base bid. Upon acceptance of the breakdown of the contract price by the ENGINEER, it shall be used as the basis for all requests for payment.

C. Shop Drawings, Schedules and Drawings -- The CONTRACTOR shall provide shop drawings, schedules and such other drawings and information as may be necessary for the prosecution of the work in the shop and in the field as required by the contract documents and/or ENGINEER's instruction.

D. Design Submittals -- Design submittals as may be required for equipment and systems elsewhere in these Specifications.

E. Erosion and Sedimentation Control Plan (ESCP) -- The CONTRACTOR shall submit an ESCP conforming to the requirements of the City's NPDES 1200-CA Permit.

F. Materials Lists

G. CONTRACTOR Contact Persons

H. Material Safety Data Sheets

I. Traffic Control and Protection Plans for work in City right-of-way and for work in ODOT right-of-way.

J. Miscellaneous Materials, Equipment, and Other Submittals as Required Elsewhere in the Specifications

K. Operation and Maintenance Instructions

Before acceptance of the installation, the CONTRACTOR shall submit four (4) copies of complete operation and maintenance instructions for all equipment supplied. Submit items in 8-1/2 x 11-inch heavy-duty three-ring binders when appropriate, or in 8-1/2 x 11-inch file folders. All binders and folders shall have clear plastic pockets on the front of the cover and the spine to allow for insertion of identifying information. The equipment manufacturer may furnish instruction manuals prepared specifically for the equipment furnished or standard manuals may be used if statements like "if your equipment has this accessory..." or listings of equipment not furnished are eliminated. Poorly reproduced copies are not acceptable. Operation and maintenance instructions shall contain the following as a minimum:

1. Approved shop drawings and submittal data

2. Model, type, size and serial numbers of equipment furnished

3. Equipment and driver nameplate data

4. List of parts showing replacement numbers

5. Recommended list of spare parts

6. Complete operating instructions including start-up, shutdown, adjustments, cleaning, etc.

7. Maintenance and repair requirements including frequency and detailed instructions

8. Name, address and phone numbers of local representative and authorized repair service

L. Contractor’s Safety Program – CONTRACTOR shall adopt a written safety program complying with the requirements for employee and public safety as set forth in the City of Springfield Standard Specification 105.05. Four (4) copies of the CONTRACTOR's safety program shall be submitted to the Engineer. Adoption of and compliance with such program and submission of the copies thereof to the ENGINEER shall be a condition precedent to the CONTRACTOR's right to receive progress payments.

M. Spill Containment and Cleanup Plan

N. Sanitary Sewer By-Pass Pumping and Diversion Plan

O. Dewatering Plan

P. Lane County Materials Lab certification for HMAC for 2012

END OF SECTION

SECTION 01552

TRAFFIC CONTROL PLAN

PART 1 GENERAL

1.1 Summary

This section shall include the requirements for submission of a traffic control plan (TCP) for work within the public right-of-way during all phases of work. The plan shall show each individual phase of the project with a schedule and map showing placement and description of each temporary traffic control device. The plan shall comply with the current Manual on Uniform Traffic Control Devices (including the Oregon Supplements) and the current Oregon Department of Transportation "Oregon Temporary Traffic Control Handbook." The plan must illustrate changes in lane usage, locations, and types of traffic control devices, and shall encompass advanced warning for all intersecting streets.

1.2 Related Specifications

A. Springfield Standard Construction Specifications

B. Manual on Uniform Traffic Control Devices for Streets and Highways

1.3 Submittals

A. Traffic Control Plan: Traffic Control Plan(s) (TCP) shall be submitted for all projects in the public right-of-way no later than two (2) weeks before any work that impacts traffic begins and **shall be submitted using the attached City of Springfield TCP submittal form for work within City right-of-way or other format as may be appropriate for work within ODOT right-of-way.** If the TCP(s) are not received and approved prior to starting, the Engineer reserves the right to shut down all work at the contractors expense (with a written stop work order to follow within 24 hours) until a plan has been approved and implemented. Any sidewalk closures or detours shall also be noted and submitted with the traffic control plan.

PART 2 PRODUCTS

2.1 Equipment

A. The devices to be furnished and used by the Contractor and their placement shall conform to the requirements indicated on the plans. Cases, conditions, and details not covered on the plans shall conform to the applicable provisions

of Part IV of the Manual on Uniform Traffic Control Devices for Streets and Highways (M.U.T.C.D.), including the current Oregon Supplements.

PART 3 EXECUTION

3.1. Temporary Traffic Control

A. No work shall be permitted until the area has been signed as per the approved Traffic Control Plan. The signing shown on the traffic control plan is the minimum required signing. All signs, barricades, cones, flaggers, and other such "devices" to warn, safeguard, protect, guide, and inform the public and the workers during the life of the project shall be furnished, constructed, installed, maintained, moved and removed by the Contractor.

B. The Contractor has the obligation to determine how to construct the project and control traffic throughout the area during the construction period with a proper TCP. Lane shifts and lane reductions will be allowed.

C. Proposed traffic control shall include provisions for maintaining at least one lane of traffic in each direction during work hours on Main Street (Highway 126B). Open lanes during construction shall be a minimum 16-foot width. All lanes shall be re-opened to traffic during non-work hours on Main Street (Highway 126B). See Section 01100, Special Provisions, and ODOT permit for work hour limitations.

D. All work areas shall be properly controlled for pedestrian and bicycle safety in addition to standard vehicle traffic and shall comply with the standards stated above. All relevant government agencies shall be notified with relative permits and documentation provided for detours and road work to be performed.

E. The CONTRACTOR shall notify residents a minimum of seven (7) days prior to impacting access to resident’s homes. Notification shall be by mail or door hanger and shall at a minimum include a brief description of the work to be performed, the beginning date of the impact, the estimated duration of the impact, a message that vehicles shall be removed from the project area, and the CONTRACTOR’s contact information. Notifications shall be submitted to the ENGINEER for approval prior to implementation.

F. The CONTRACTOR shall notify schools, police, and emergency services where alternative secondary routes/detours will be required for access prior to construction requiring street closures.

3.2 Signing

A. Existing Signing: All existing guide signs, warning signs, and regulatory signs shall be maintained at locations readily visible to the traveling public throughout the life of the project, or until new signs replacing them are installed, whichever occurs first.

B. Construction Signing: All temporary construction signs when not in use shall be either covered or moved so as not to be seen by the traveling public. If construction signing is left in effect when there is no need, the Contractor has 2 hours after notification to cover or move these signs. If the Contractor has not taken care of the signs beyond 2 hours of notification, the Engineer reserves the right to have City of Springfield employee/s move or cover the signs and bill the Contractor for time and materials (1 hour minimum).

C. Measurement and payment of traffic control devices for temporary business access shall be considered as incidental to the construction of the work and all costs thereof shall be included in the various contract prices in the bid forms.

D. The CONTRACTOR shall install advance notice signs at work zones a minimum of two weeks (14 calendar days) prior to traffic impacts showing traffic impact times and dates. Refer to section 01100 Special Provisions for project information sign requirements.

City of Springfield – Traffic Control Plan (TCP) Submittal Form

PROJECT NAME: _____ **CITY PROJECT#:** _____

PROJECT ENGINEER: _____ **PHONE:** _____

PRIME CONTRACTOR: _____ **PHONE:** _____

SUB CONTRACTOR: _____ **PHONE:** _____

TCP SUPERVISOR: _____ **PHONE:** _____

WORK HOURS: _____ **START DATE:** _____ **END DATE:** _____

EQUIPMENT: _____

TRAFFIC IMPACTS: _____

TRAFFIC SIGNAL TURN OFF/ON: _____

CRITERA for CITY of SPRINGFIELD - TRAFFIC CONTROL PLAN SUBMITALS

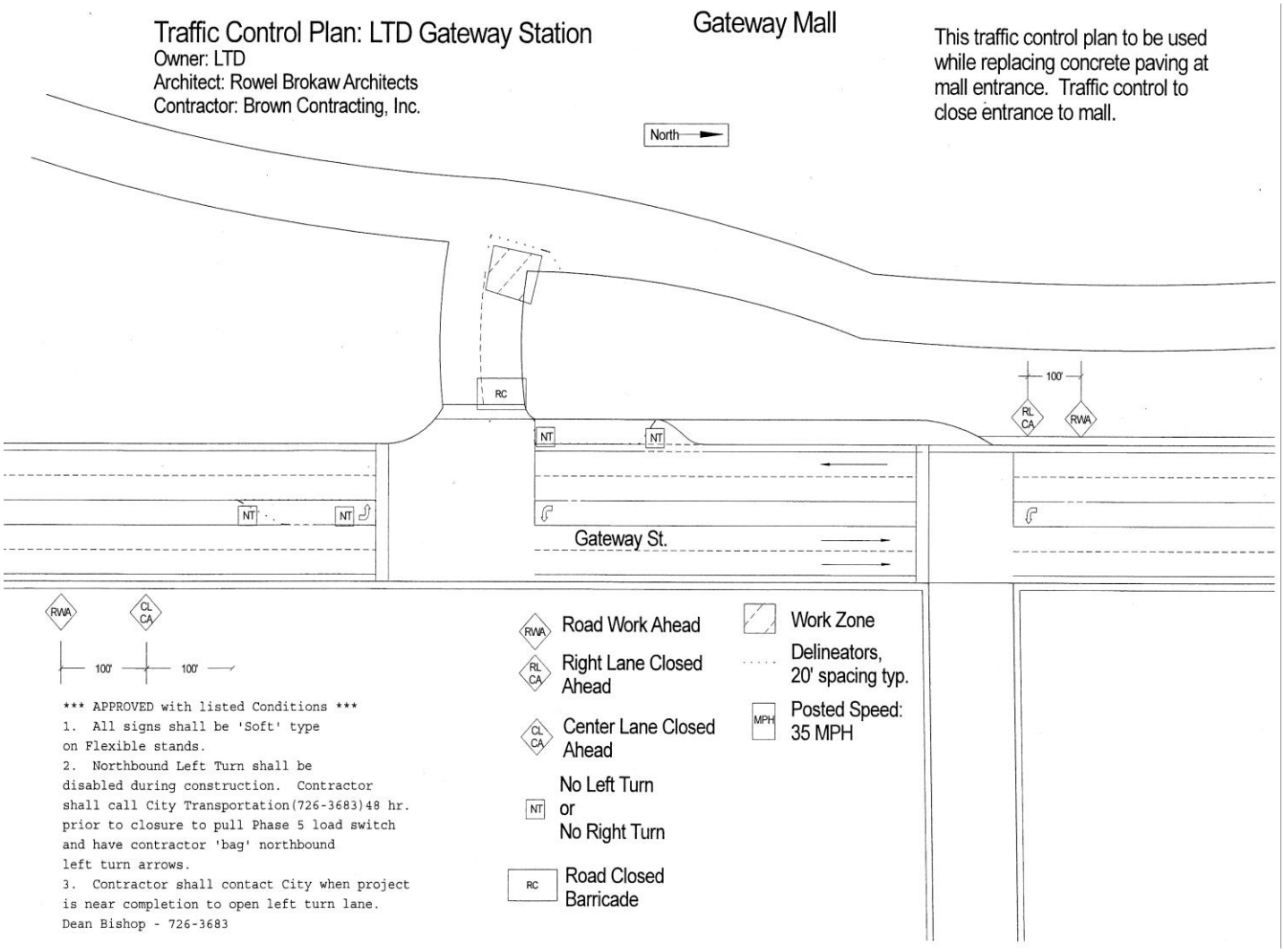
Submit your Traffic Control Plan (TCP) with the following information on 8.5" x 11" or 11" x 17" paper. **Fill out and include this form with your TCP.**

1) The TCP shall be a legible hand drawing, or a computer aided design with the following information:
    a. A vicinity map, a north arrow, road names, intersection/driveway access points, curb lines, the work zone, and any special features (buildings, access points, sight obstructions) that could affect the TCP.
    b. Location(s) where the TCP will be active. - This can be a 'line drawing' of the work zone(s) and/or a map that clearly indicates where traffic control devices will be placed, including spacing and cone tapers.
    c. Attachments of the appropriate traffic control diagram(s) as shown in the current MUTCD and/or the ODOT - Oregon Temporary Traffic Control Handbook that reflect the work zone may be included as a standard reference.
    d. ODOT Traffic Control Handbook Website (PDF) - http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/docs/pdf/OTTCH_06.pdf?ga=t

TCP - CITY APPROVAL: _____ **DATE**:_____

SPECIAL CONDITIONS:

Traffic Control Plan - Example



END OF SECTION

SECTION 01580

CONSTRUCTION SURVEY WORK

PART 1 GENERAL

1.1 Description

This work consists of all surveying activities necessary to control the many phases of work required to construct the project to the lines and grades as shown, specified, established or required. The ENGINEER will provide construction staking for the project to the level of detail the ENGINEER views as sufficient for layout of the work. If the CONTRACTOR needs additional supplementary construction staking then such additional staking will be provided by the CONTRACTOR. The CONTRACTOR's surveyor shall complete all supplementary surveying and make all supporting computations and field notes required for control of the work and as necessary to establish the exact position, orientation, and elevation of the work from the staking provided by the ENGINEER, including furnishing and setting additional construction stakes and marks, reference marks, and additional control stations.

The CONTRACTOR is to provide the ENGINEER a minimum of two weeks' notice when construction staking will be needed.

The Contractor shall take necessary measures to insure the preservation of survey monuments, stakes, lot stakes and bench marks. The Contractor shall not disturb permanent survey monuments, stakes, lot stakes or bench marks without the consent of the ENGINEER, and shall notify the ENGINEER and bear the expense of replacing any that may be disturbed. When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the monument cover shall be adjusted to the new grade without disturbing the underlying monument.

1.2 Surveyor

The individual designated by the CONTRACTOR to perform the work shall be licensed in the State as a Professional Land Surveyor and placed in "responsible charge" of the survey work.

1.3 Mandatory Pre-Survey Conference

The prime CONTRACTOR, relevant subcontractors, the surveyor and survey crew leader shall meet with the ENGINEER at least two weeks prior to beginning survey

work. The purpose of this meeting will be to review and discuss the proposed methods and practices for accomplishing the required survey work.

1.4 ENGINEER's Survey Responsibilities

The ENGINEER will perform the following:

A. Provide basic construction staking. This work will include setting one offset stake for tangent manholes and two offset stakes for manholes at angle points. The offset stakes will include the offset distance to the center of the manhole and the cut height to the pipe inverts at the manholes. The ENGINEER's surveyor will also set offset stakes at approximately 100 foot intervals along the pipe alignment. This information will be established one time for the entire alignment at the beginning of the project. The CONTRACTOR shall be responsible for protecting and/or re-setting horizontal and vertical alignment data following the initial staking. The CONTRACTOR shall provide traffic control during the ENGINEER's staking of initial horizontal and vertical alignment data.

B. Provide copies of plans and specifications.

C. Establish initial horizontal and vertical survey control stations in the proximity of the work.

D. Perform measurements and calculations for pay quantities.

E. Perform final "as constructed" measurements to verify the CONTRACTOR's as-built drawing mark-ups.

1.5 CONTRACTOR's Responsibilities

The CONTRACTOR will be responsible for performing the following:

A. Staking of Easements – The CONTRACTOR's surveyor shall locate and stake all lines of the permanent easements and all lines of the associated temporary construction easements within which any construction is being conducted.

B. Staking of New Sewers Constructed by Open-Cut Method – The CONTRACTOR's surveyor shall provide any supplementary survey staking required by the CONTRACTOR. During construction, the CONTRACTOR shall check line and grade at 25 foot intervals or less if necessary or directed by the ENGINEER. Variance from the established line and grade shall not be greater than 1/32-inch per inch of pipe diameter and, regardless of pipe size, shall not exceed 1/2-inch for line and 1/4-inch for grade compared to the

design line and grade at any given location. Any variances from grade will not be allowed if such variance results in a level or reverse-sloping invert.

C. Staking of Final Pavement Line and Grade – The Contractor shall establish references at reasonable intervals for line and grade control of placement operations for the following:

- Before placing each leveling lift.
- Before placing the top base course.

Line and grade for the top base course and top leveling lift shall be within 1/2 inch of existing line and grade.

D. Staking of Existing and Replacement Fences – The CONTRACTOR's surveyor shall survey and record the location of all existing fences with respect to existing rights of way or easement lines or property corners or property lines. The surveyor will set offset stakes for all existing fences that will be partially or totally removed and replaced so that the fences can be reconstructed in the same location with reasonable accuracy. Reasonable accuracy is defined as 1.5-inches on either side of the existing fence centerline. The surveyor will set centerline stakes for any fence replacement. The stakes shall be set on each side lot line of each parcel and at 50 foot stations in between on each parcel.

E. As-built surveying – The CONTRACTOR shall provide all as-built surveying for the project. For new sewer work, all manhole rim locations and elevations, and all pipe invert elevations at all manholes will be surveyed by the CONTRACTOR's surveyor. Manhole rim data can be surveyed following construction. Pipe invert elevations shall be surveyed within 48 hours following construction of each manhole. Provide pipe invert data to ENGINEER in writing within 24 hours of surveying showing pipe stationing and invert elevations. Final as-built information will be provided to the ENGINEER as hard copy as-built mark-ups of the design drawings.

F. Prior to removing any existing pavement markings or striping, the CONTRACTOR shall survey the existing striping and pavement marking layout and submit the survey documentation to the ENGINEER.

G. Following paving operations, the CONTRACTOR shall place control points for re-establishing striping lines every 50 feet on tangent and every 25 feet on a curve. Using these control points, the CONTRACTOR shall layout a continuous narrow guideline for each line, along one edge of, or uniformly offset from the intended permanent line location. Do not proceed with

installation of the striping until the guidelines are approved by the ENGINEER.

H. The CONTRACTOR shall be responsible for protecting and/or re-setting horizontal and vertical alignment data following the initial staking.

I. The CONTRACTOR shall provide traffic control during the ENGINEER's staking of initial horizontal and vertical alignment data.

J. The CONTRACTOR shall be responsible for setting control points along the Highway 126 bored crossing and for monitoring the points daily during casing and carrier pipe installation. See Specification Section 02340, Casings and Appurtenances for additional information.

1.6 Protection of Survey Markers

A. Permanent Survey Markers

1. The Contractor shall take necessary measures to insure the preservation of survey monuments, stakes, lot stakes and bench marks. The Contractor shall not disturb permanent survey monuments, stakes, lot stakes or bench marks without the consent of the ENGINEER, and shall notify the ENGINEER and bear the expense of replacing any that may be disturbed. When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the monument cover shall be adjusted to the new grade without disturbing the underlying monument.

2. The CONTRACTOR shall research and identify any existing survey monuments, stakes, lot stakes, bench marks or other permanent survey monumentation in the vicinity of the project that could be disturbed as a result of the CONTRACTOR's activities. The CONTRACTOR shall perform a pre-construction survey of any such monuments and set temporary offsets for the purpose of re-establishing the permanent monuments following construction. Following construction, the CONTRACTOR shall re-set permanent survey monuments, stakes, lot stakes, bench marks or other permanent survey monumentation. The CONTRACTOR shall file the surveys with Lane County in accordance with all applicable laws and codes.

B. Construction and Survey Markers

1. The CONTRACTOR shall preserve construction survey stakes and markers for the duration of their usefulness during construction. If

survey stakes are lost or disturbed by the CONTRACTOR and need to be replaced, the CONTRACTOR shall restore the stakes or markers and shall bear the expense of performing that work.

2. At the completion of construction and upon approval of the ENGINEER, the CONTRACTOR shall remove from the construction site all construction and temporary stakes and markers.

END OF SECTION

SECTION 02010

SUBSURFACE INVESTIGATIONS

PART 1 GENERAL

1.1 Description

Subsurface investigations and reporting have been performed for the purpose of obtaining data for the planning and design of this project. Copies of such reporting are attached to the Contract Documents as Supplementary Information. Subsurface samples that have been retained are also available for inspection. Bidders and the CONTRACTOR shall make arrangements for viewing the samples through the ENGINEER's office.

1.2 Limitations

A. The subsurface investigations and reporting are being made available solely for the convenience of the Bidder and shall not relieve the Bidder or the CONTRACTOR of any risk or duty to make examinations and investigations as required by the Contract Documents.

B. It is mutually agreed to by all parties that the written reports are reference documents and are not part of the Contract Documents, that the subsurface investigations are for the purpose of obtaining data for planning and design of the project, and that the data concerning borings and test pits is intended to represent with reasonable accuracy conditions and material found in specific borings and test pits at the time the borings and test pits were made.

C. It is expressly understood and agreed that the OWNER and ENGINEER assume no responsibility whatsoever in respect to the sufficiency or accuracy of the investigation thus made, the records thereof, or of the interpretations set forth therein, or made by the OWNER in his use thereof; and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations, or records thereof, are representative of those existing throughout such areas, or any part, or that unforeseen developments may not occur.

D. The OWNER's subsurface investigations and reporting are made available to Bidder or CONTRACTOR only on the basis of the understandings and agreement herein stated.

END OF SECTION

SECTION 02081

CONCRETE ADDITIVE FOR WASTEWATER MANHOLES

PART 1 GENERAL

1.1 Description

Work under this Section applies to the furnishing and installation a protective additive to pre-cast and cast in place concrete and grout to be used in new wastewater manholes and miscellaneous grout and concrete used in wastewater manholes and appurtenances to prevent microbiologically induced corrosion (MIC).

1.2 Reference Specifications, Codes, and Standards

A. Commercial Standards

ASTM C478	Standard Specification for Precast Reinforced Concrete Manhole Sections
ASTM C76	Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

B. Reference Standards

Refer to revised City of Springfield 1994 Standard Construction Specifications, Section 403, Sanitary Sewer Pipe, Fittings and Appurtenances and to the 1998 revisions.

1.3 Submittals

A. See Section 01300 - Special Provisions, for submittal procedures.

B. Technical data sheet showing characteristics of the additive to be used by the precaster.

C. A letter of certification from the precaster stating that the correct amount and correct mixing procedures as recommended by the manufacturer were followed for all antimicrobial concrete.

PART 2 PRODUCTS

2.1 Concrete Additive

A. Antimicrobial additive shall be used in all pre-cast and cast-in-place concrete used for or inside manholes to render the concrete uninhabitable for bacteria growth.

B. The liquid antibacterial additive shall be an EPA registered material and the registration number shall be submitted for approval prior to use in the project.

C. The amount to be used shall be as recommended by the manufacturer of the antibacterial additive. This amount shall be included in the total water content of the concrete mix design.

D. The additive shall be added into the concrete mix water to insure even distribution of the additive throughout the concrete mixture.

E. The antibacterial additive shall have successfully demonstrated prevention of MIC in sanitary sewers for ten or more years.

F. The antibacterial additive shall be used by factory certified precast concrete plants.

2.2 Non-Shrink Grout Additive

All grout used inside manholes shall contain Con^{mic}Shield antimicrobial concrete additive, manufactured by ConShield Technologies, Inc. The amount to be used shall be as recommended by the manufacturer of the antibacterial additive.

2.2 Approved Manufacturer

A. Con^{mic}Shield antimicrobial concrete additive along with CS Indentifier, as manufactured by Conshield Techologies, Inc. shall be used.

PART 3 EXECUTION

3.1 General

A. All concrete and grout used for manholes and manhole appurtenances used on this project shall contain antimicrobial concrete additive.

B. Concrete additive shall be used during concrete mixing process of precast and cast-in-place concrete for manholes and manhole appurtenances strictly in accordance with the product manufacturer's recommendations.

3.2 Product Surface Marking

A. The name of the antimicrobial additive shall be plainly stenciled on the exterior and interior of each piece. The CONTRACTOR shall spray green colored sealer, "CS Identifier" as manufactured by Conshield Technologies, Inc. onto the interior surface of the manholes before or after installation, per manufacturer's application recommendations.

3.3 Field Repairs

A. Where approved by the ENGINEER, field repairs to the precast concrete shall be made using Con^{mic}Shield Joint Set Grout pre-portioned and factory packaged that requires the addition of no other components, or non-shrink grout with additive as described in paragraph 2.2. This repair grout may be used for filling joints, lift holes, and damaged areas.

END OF SECTION

SECTION 02140

DEWATERING

PART 1 GENERAL

1.1 Description

A. The CONTRACTOR shall provide portable pumps and water control service for the entire project, including water control for all excavations and dewatering for all project structures and utilities until project completion.

B. CONTRACTOR shall implement all measures required to ensure that receiving stream water quality is not negatively impacted by discharge from dewatering systems, and that all regulatory requirements are complied with, including but not limited to settling ponds, special treatment systems, filtration bags, check dams, Baker Tanks, etc.

C. All work shall comply with all permit conditions and limitations including those contained in the City's DEQ NPDES 1200-CA permit, and all other permits and regulations.

D. CONTRACTOR should anticipate that significant dewatering efforts may be required to complete the sewer installation in deep excavations. Due to the nature of the local geology, the close proximity of the project to the Willamette River and local wetlands, and the potential for relatively high and variable groundwater levels in the area, large localized flows of groundwater may be encountered and could result in areas of instability of the trench cut face. CONTRACTOR's attention is directed to the geotechnical investigation report included as supplementary information.

E. Water will be allowed to be discharged to the existing storm drainage system provided that all silt has been removed and that all water quality requirements contained in the City's NPDES 1200-CA Permit are met.

1.2 Submittals

The CONTRACTOR shall submit a dewatering plan to be reviewed by the ENGINEER prior to the beginning of construction activities requiring dewatering. Review by the ENGINEER of the CONTRACTOR's design shall not be construed as a detailed analysis of the adequacy of the dewatering system, nor shall any provisions of the above requirements be construed as relieving the CONTRACTOR of its overall responsibility and liability for the work.

1.3 Quality Control

A. It shall be the sole responsibility of the CONTRACTOR to control the rate and effect of the dewatering in such a manner as to avoid all objectionable settlement and subsidence.

B. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the CONTRACTOR.

C. Where the critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at frequent intervals to detect any settlement which may develop. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely with the CONTRACTOR. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the CONTRACTOR.

PART 2 PRODUCTS

2.1 Equipment

Dewatering, where required, may include the use of well points, sump pumps, temporary pipelines for water disposal, rock or gravel placement, settling ponds, settling tanks, and other means. Standby pumping equipment shall be maintained on the jobsite.

PART 3 EXECUTION

3.1 Dewatering

A. The CONTRACTOR shall provide all equipment necessary for dewatering. The CONTRACTOR shall have on hand, at all times, sufficient pumping equipment and machinery in good working condition and shall have available, at all times, competent workers for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failure.

B. Dewatering for structures and pipelines shall commence when groundwater is first encountered, and shall be continuous until such times as water can be allowed to rise in accordance with the provisions of this Section or other requirements.

C. At all times, site grading shall promote drainage. Surface runoff shall be diverted from excavations. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.

D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.

E. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with drain rock at no additional cost to the OWNER.

F. The CONTRACTOR shall maintain the water level below the bottom of excavation in all work areas where groundwater occurs during excavation construction, backfilling, and up to acceptance.

G. Flotation of new and existing facilities shall be prevented by the CONTRACTOR by maintaining a positive and continuous removal of water. The CONTRACTOR shall be fully responsible and liable for all damages which may result from failure to adequately keep excavations dewatered.

H. If well points or wells are used, they shall be adequately spaced to provide the necessary dewatering and shall be sandpacked and/or other means used to prevent pumping of fine sands or silts from the subsurface. A continual check by the CONTRACTOR shall be maintained to ensure that the subsurface soil is not being removed by the dewatering operation.

I. The CONTRACTOR shall dispose of water from the work in a suitable manner without damage to the environment or adjacent property. The CONTRACTOR shall be responsible for obtaining any permits that may be necessary to dispose of water. No water shall be drained into work built or under construction without prior consent of the ENGINEER. Water shall be filtered using an approved method to remove sand and fine sized soil particles before disposal into any drainage system.

J. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures, pipelines, and sewers.

K. Dewatering of trenches and other excavations shall be considered as incidental to the construction of the work and all costs thereof shall be included in the various contract prices in the bid forms.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 GENERAL

1.1 Description

Work covered in this section includes general excavation, fill and backfill work.

1.2 Submittals

A. Submit results of aggregate sieve analysis and standard proctor tests for all granular material.

B. See Section 01300 for CONTRACTOR submittals.

1.3 Reference Specifications, Codes and Standards

A. Commercial Standards

ASTM C 94	Specification for Ready-Mixed Concrete
ASTM C 403	Test Method for Time of Setting Concrete Mixtures by Penetration Resistance
ASTM D 422	Method for Particle-Size Analysis of Soils
ASTM D 698	Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb (2.49-kg) Rammer and 12-inch (304.8-mm) Drop (AASHTO T-99)
ASTM D 2487	Classification of Soils for Engineering Purposes
ASTM D 2922	Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 4253	Test Methods for Maximum Index Density of Soils Using a Vibratory Table
ASTM D 4254	Test Methods for Minimum Index Density of Soils and Calculation of Relative Density

B. Reference Standards

Refer to revised City of Springfield 1994 Standard Construction Specifications, Section 301, Earthwork, Section 401, Trenching, and to the 1998 revisions. The following temporary amendments to the Standard Construction Specifications will also apply.

1.4 Classification of Excavation

A. Modify Sections 301.1.03A, and 401.1.02A, Rock Excavation, as follows:

Replace Section 301.1.03A and 401.1.02A with the following:

Rock Excavation

A. Rock excavation is defined as the removal of rock by systematic and continuous drilling and blasting, if allowed, and hammering, breaking, splitting or other approved methods. Rock is defined as material including boulders, solid bedrock, or ledge rock, which, by actual demonstration, cannot be reasonably excavated with suitable power excavation equipment. Suitable machinery is defined as a track-mounted hydraulic excavator of the 52,800 to 72,500 pound class equipped with a single shank ripper. The ENGINEER may waive the demonstration if the material encountered is well-defined rock. The term "rock excavation" shall be understood to indicate a method of removal and not a geological formation.

If material which would be classified as rock by the above definition is mechanically removed with equipment of a larger size than specified, it shall be understood that any added costs for the removal of material by this method shall be included in the unit price for common excavation.

Before the removal of rock by the methods described above will be permitted, the CONTRACTOR shall expose the material by removing the common material above it and then notify the ENGINEER who, with the CONTRACTOR or his representative, will measure the amount of material to be removed.

In trench excavations, boulders or pieces of concrete below grade larger than one half (1/2) cubic yard will be classified as rock if blasting, hammering, breaking or splitting actually required and used for their removal from the trench. If material, which would be classified as rock by the definition above and elsewhere within these specifications, is mechanically removed without blasting, hammering, breaking or

splitting, it will be considered common excavation. If equipment larger than the "suitable machinery" as defined above is brought on the project site for the sole purpose of rock removal without blasting, hammering, breaking or splitting, then such removal will be considered rock excavation.

B. The use of explosives for excavation of rock is not allowed on this project.

END OF SECTION

SECTION 02340

CASINGS AND APPURTENANCES

PART 1 GENERAL

1.1 Description

A. Work under this section includes all labor, equipment and materials required for constructing cased crossings by tunneling/boring/jacking and open trench installation, as shown on the Plans. The CONTRACTOR shall furnish and install reinforced concrete and/or steel casings, carrier pipe, sand fill, and grout, complete and in place, all in accordance with these provisions and as shown on the Plans.

B. If the CONTRACTOR is not ready to place the carrier pipe in the casing upon completing the casing installation, the casing ends shall be bulkheaded. In addition, all trenches and pits in public streets, private property, and within City, County or State right-of-way shall be backfilled, temporary or permanent surfacing placed thereon, and the affected area reopened to traffic, as necessary.

C. The CONTRACTOR shall be responsible for maintaining the specified line and grade of the casing and carrier pipe.

D. The plans and these specifications indicate a specific type (tunneled/bored/jacked or open trench), size, wall thickness and other required characteristics of casing to be installed at each cased crossing. The CONTRACTOR may propose to install casing types and sizes other than those specified on the plans and in these specifications. No changes will be allowed without the prior approval of the ENGINEER. The CONTRACTOR's attention is directed to the measurement and payment section. Measurement and payment shall be made for the size and type of casing identified on the plans only regardless of any ENGINEER-approved changes. If the CONTRACTOR receives approval by the ENGINEER to install casing types and sizes other than those specified on the plans and in these specifications, it is the CONTRACTOR's responsibility to ensure that casing types and sizes are fully compatible with project constraints, including traffic control, project work limits, roadway and utility system shut down requirements, work hour limitations, and adjacent structures.

1.2 Reference Specifications, Codes, and Standards

ANSI/AWS D1.1, Structural Welding Code

ANSI/AWWA C200, Standards for Steel Water Pipe (6 inches and larger)

ANSI/AWWA C151/A21.51, Ductile Iron Pipe, Centrifugally Cast, for Water or Other Liquids

ANSI/AWWA C111/A21.11, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

ANSI/AWWA C600, Installation of Ductile-Iron Water Mains and Their Appurtenances

ASTM C76, Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

1.3 Submittals

A. The CONTRACTOR shall submit Shop Drawings of casings. Shop Drawings shall include the following:

1. Casing installation schedules, including excavation, pipeline installation, and backfill operations.

2. Material list, including diameter, thickness, and class of reinforced concrete and/or steel casings and the type of insulators to be used.

3. Method of sand fill installation and quality assurance.

B. The CONTRACTOR shall submit a plan to be approved by the ENGINEER for preventing loss-of-ground or settlement during all casing installation and related work. This plan shall also include the CONTRACTOR's method for monitoring surface settlement of existing ground above the casing alignment during all casing installation and related work.

C. The CONTRACTOR shall furnish a certified affidavit of compliance for all pipe and other products or materials furnished under this Section which shall include the physical and chemical properties of all steel.

D. All expenses incurred in making samples for certification of tests shall be borne by the CONTRACTOR.

1.4 Quality Assurance

A. The CONTRACTOR shall give the ENGINEER and right-of-way owner one (1) week advance notice prior to the start of any excavation.

B. All work shall be performed in the presence of the ENGINEER, unless the ENGINEER has granted prior approval to perform such work in their absence.

C. All shop and field welding procedures used to fabricate steel casings shall be prequalified under the provisions of ANSI/AWS D1.1. Welding procedures shall be required for, but not necessarily limited to, longitudinal and girth or special welds for pipe cylinders, casing joint welds, reinforcing plates and grout coupling connections.

D. All welding shall be done by skilled welders, welding operators, and tackers who have had adequate experience in the type of materials, welds, and positions to be used. Welders shall be qualified under the provisions of ANSI/AWS D1.1 by an independent local, approved testing agency prior to commencing work on the casing or pipeline. Machines and electrodes similar to those used in the work shall be used in qualification tests. The CONTRACTOR shall furnish all materials and bear the expense of qualifying welders.

1.5 Safety

It shall be the CONTRACTOR's responsibility to see that the work is done in conformance with all applicable federal, state, and local safety requirements.

1.6 Definitions

A. Boring Through Unclassified Material: With respect to tunneling, boring and jacking, the above term is defined as all excavation, regardless of type, character, composition or condition of the material encountered and shall further include all debris, junk, broken concrete, and all other material. All excavation shall be unclassified unless provided for otherwise elsewhere in these specifications.

B. Boring Through Rock: With respect to tunneling, boring and jacking, the above term is defined as the removal of rock by systematic and continuous drilling and splitting, or the necessary use of special rock cutting heads as demonstrated to the ENGINEER for rock removal. Rock is defined as material which, by actual demonstration, cannot be reasonably excavated with standard equipment and shall be considered where 50 percent or more of the cross-sectional face requires removal as described above. The above term shall be understood to indicate a method of removal and not a geological formation.

C. Boring Through Transitional Material: With respect to tunneling, boring and jacking, the above term is defined as the removal of rock by systematic and continuous drilling and splitting. Transitional material is defined as material which, by actual demonstration, cannot be reasonably excavated with standard equipment and shall be considered where 50 percent or less of the cross-sectional face requires removal as described above. The above term shall be understood to indicate a method of removal and not a geological formation.

D. For casings installed by the open trench method, excavation shall be made without regard to material types as provided for in the City of Springfield, Standard Construction Specifications.

PART 2 PRODUCTS

2.1 General

The CONTRACTOR shall use the types of materials as designed and specified herein for all required cased crossing construction.

2.2 Casing

A. Tunneled/bored/jacked casings shall be steel. Open trench installed casings shall be reinforced concrete pipe or steel as shown on the drawings or herein specified.

B. The steel casing pipe shall be the minimum diameter and wall thickness shown on the plans or herein specified and shall be furnished complete with welded joint ends. The casing shall conform to ANSI/AWWA C200. Larger pipe diameter or greater wall thickness may be substituted at the CONTRACTOR's option and with the approval of the ENGINEER. All CONTRACTOR proposals for changing the casing and appropriate insulator modifications shall be submitted to the ENGINEER for approval prior to installation. It shall be the CONTRACTOR’s responsibility to provide casings with a wall thickness capable of withstanding jacking stresses.

C. The steel casing shall be fabricated in sections with field-welded full penetration butt weld joints. It shall be the CONTRACTOR's responsibility to provide joints capable of withstanding jacking stresses.

D. The reinforced concrete pipe (RCP) casing shall be the type and size as indicated on the plans and shall conform to ASTM C76, bell and spigot with rubber gaskets.

E. In proposing alternate casing sizes, the CONTRACTOR should consider that larger diameter casings will be beneficial during necessary manual excavation methods.

2.4 Casing Insulators

The carrier pipe shall be installed with casing insulators banded to it for guides and support as shown on the plans. Insulators shall be a minimum of 12 inches wide. A minimum of three (3) insulators shall be installed on each pipe length at a maximum spacing of six (6) feet unless closer spacing is recommended by the manufacturer. The casing insulator shall be constructed of heat-fused plastic coated galvanized steel with built up PVC lining and multi-segmented to attach firmly around the pipeline. Insulators shall be fabricated for a carrier-pipe-centered configuration with a minimum of two (2) skids on top and two (2) on the bottom. Insulator skids shall be sized to provide clearance of carrier pipe bell coupling, or retainer gland and not more than 1-1/2 inch of clearance from the top skids to the inside top of the casing. The casing insulators shall be M-12 Series, as manufactured by Calpico, Inc. or approved equal. Insulators shall be sized to fit and attach to the carrier pipe material including any identified special coatings without damage.

2.5 Sand

Sand filling is understood to be fine dry clean sand. The sand shall be thoroughly washed and reasonably free of clay, loam, shale, alkali, vegetable matter, and other deleterious matter occurring either free or as a coating on the particles.

2.6 Cement Grout

Cement grout shall consist of one (1) part Portland Cement, three (3) parts clean, well-graded sand and a minimum amount of water.

2.7 Carrier Pipe

Carrier pipe shall be as provided for elsewhere in these specifications.

PART 3 EXECUTION

3.1 General

A. Unless otherwise provided, the CONTRACTOR shall furnish and install all fittings, closure pieces, jointing materials and all appurtenances as shown and as required to provide a complete and workable installation. All fabrication and testing shall comply with the requirements listed herein.

B. The CONTRACTOR's attention is directed to the site plans which show the close proximity of adjacent structures and utilities to the proposed boring and casing areas. The CONTRACTOR shall be responsible for providing all shoring as may be required to maintain a safe excavation and shall at all times provide sufficient support and protection for existing structures and utilities, all at no additional expense to the OWNER. The CONTRACTOR shall keep the size of boring, jacking, receiving, and push pits to a minimum.

C. The CONTRACTOR shall carefully study the plans and specifications applicable to the work involved, contact the ENGINEER of any irregularities or difficulties, and become familiarized with the conditions, nature of excavation, and difficulties involved with installing pipe and casings.

D. Failure on the part of the CONTRACTOR to properly assess the factors, conditions and difficulties involved in the performance of the work will not entitle extra compensation of any kind, nor relieve any obligation for executing all details of the work as specified and planned. The CONTRACTOR shall assess push pits associated with open trench installed casings, as well as boring, jacking, and receiving pits.

E. Prior to moving the bore machine from the project, the CONTRACTOR shall verify that the installed casings are of sufficient length to facilitate construction of all drawing details. The plans identify the approximate casing length only. It is solely the CONTRACTOR’s responsibility to field verify that the casing ends terminate at a location which will facilitate the construction of all drawing details.

F. The CONTRACTOR shall monitor surface ground elevations for settlement of existing ground above the casing alignment during and following completion of all casing and carrier pipe installation and related work. A minimum of three settlement monitoring points shall be established over the casing alignment of each installation. The CONTRACTOR shall survey and submit to ENGINEER and other permitting agencies surveyed surface elevation data at each monitoring point daily during casing and carrier pipe installation, or as required by the ENGINEER.

3.2 Installation of Casings

A. Allowable grade deviations in horizontal and vertical alignments shall be no greater than 0.1 feet per 100 feet in any direction over the length of the casing to a maximum deviation of 0.25 feet.

B. The CONTRACTOR shall backfill all pits excavated for casings with compacted material (select backfill, native or imported as required for adjacent trench or as otherwise specified or shown on the drawings) once construction

is completed. Backfill shall be placed and compacted in accordance with the Typical Trench Detail as shown on the Plans and the City of Springfield, Standard Construction Specifications.

C. Compensation will be made for the casing installation as defined in the measurement and payment provisions located elsewhere in these specifications and regardless of the material encountered - unclassified material, rock, and transitional material.

3.3 Installation of Carrier Pipe

A. Installation of carrier pipe shall be in accordance with ANSI/AWWA C600. All joints of the carrier pipe within the casing shall be push-on or restrained joints as shown on the plans and shall be in accordance with the specification sections for the type of pipe material installed. Application of any coatings to the interior and exterior joints shall be performed in accordance with the requirements provided for elsewhere in these specifications.

B. Installation of insulators onto carrier pipe and the subsequent installation of carrier pipe shall not damage, rupture or tear any carrier pipe or coatings. In the event of such damage, the CONTRACTOR shall repair or replace pipe or coating systems.

C. Testing of carrier pipe shall be performed in accordance with the City of Springfield, Standard Construction Specifications.

3.4 Installation of Sand Fill

Following the ENGINEER's review of the casing and carrier pipe grade and alignment, the CONTRACTOR shall fill the annular space between the carrier pipe and casing pipe with dry sand. The sand shall be air blown into the annular space in a manner, which assures no voids around the carrier pipe. Prior to commencing this work, the CONTRACTOR shall submit to the ENGINEER for approval, the proposed method of installing the fill sand and of verifying no voids. The CONTRACTOR shall not mix sand from different geological sources. The carrier pipe shall be filled with water, or other measures shall be taken to prevent movement of the carrier pipe prior to installing sand fill. Air blown sand operations shall meet DEQ and Lane Regional Air Protection Agency Requirements.

3.5 Applications of Cement Grout

After installation of the carrier pipe and sand fill, the ends of the casing pipe shall be sealed with cement grout to prevent moisture from entering the casing. The cement grout shall consist of one (1) part Portland cement, three (3) parts clean, well-graded

sand and a minimum amount of water. Cement grout plugs shall extend a minimum of 12-inches into casings.

3.6 Grouting of Voids around Casing Pipe

A. The CONTRACTOR shall immediately notify the ENGINEER during jacking and boring operations of any situation resulting in or expected to result in the creation of voids external to the casing pipe. Upon ENGINEER's approval, voids outside the casing pipe shall be noted and recorded for subsequent filling with cement grout.

B. After the casing has been jacked into position, pressure grout to fill all noted voids, as approved by the ENGINEER. Grout shall be applied outside the casing pipe through 1-inch grout holes drilled through the casing pipe at the spring line (both sides) and the crown. Hole spacing shall be as required for each noted void area. Grout filling shall proceed as follows:

1. Start grouting at the springline hole at one end.

2. Pump grout until grout appears in the grout hole at the crown.

3. Start grouting the opposite springline hole and proceed until grout appears at the crown.

4. Grout through the crown hole until grout appears in one of the next set of holes.

5. Plug the holes.

6. Move to the next set of holes and repeat grouting sequence until grout has been applied in all the holes.

7. Finish grouting the last set of holes when grout can no longer be pumped into the crown. Grouting commenced in any approved area shall be completed without stopping.

END OF SECTION

SECTION 02505

PAVEMENT AND SURFACE RESTORATION

PART 1 GENERAL

1.1 Scope

This section covers the work necessary to furnish and install asphalt concrete pavement restoration for trenches and roadway paving. All work shall conform to the specifications of this Section, Lane County Standards and City of Springfield Standard Specifications except as modified herein. In the case of discrepancy the more stringent provisions shall apply.

1.2 Reference Standards

A. Refer to the revised 1994 City of Springfield Standard Construction Specifications, Section 310 Asphalt Concrete Pavement, and Section 407 Resurfacing Trench Areas, with 1998 revisions. The following temporary amendments to the City of Springfield Standard Construction Specifications will also apply.

B. Refer to the latest version of the Oregon Department of Transportation (ODOT) Standard Specifications for Construction, Section 00745 – Hot Mixed Asphalt Concrete (HMAC).

C. Refer to the revised 1994 City of Springfield Standard Construction Specifications, Section 317 Permanent Traffic Control, with 1998 revisions and the Plans for pavement marking, striping and legend requirements.

1.3 Submittals

Job mix Certification from Lane County Materials Laboratory.

1.4 HMAC Mix Classifications

Where "Class B" and "Class C" mixes are identified on the Plans and in the City of Springfield Standard Construction Specifications, they are understood to be Level 2, 3/4-Inch Dense HMAC and Level 3, 1/2-Inch Dense HMAC, respectively, as defined in the ODOT Standard Specifications for Construction.

PART 2 PRODUCTS

2.1 Replace the City of Springfield Standard Construction Specifications, Sub-Section 310.2.00 MATERIALS with the ODOT Standard Specifications for Construction Sub-Sections 00745.10 through 00745.30 as modified below.

00745.10 Aggregate - In the paragraph that begins "Provide and stockpile…", remove the words "and RAP aggregates".

Add the following paragraph:

Production crushing and stockpiling of aggregate for use in HMAC will be at the sole discretion of the Contractor in accordance to Section 00165 of these Special Provisions.

00745.10(a-1) Separated Sizes – Delete the third sentence from the first paragraph.

00745.10(a-2) Scalping – Delete this subsection.

00745.10(b-2) Separated Sizes – Delete this subsection.

00745.10(b-3) Grading – Delete all but the first sentence of this subsection.

00745.10(c-2) Separated Sizes – Delete this subsection.

00745.10(c-3) Grading – Delete all but the first sentence of this subsection.

00745.10(c-4) Combination of Fine Aggregate for Testing – Delete this subsection.

00745.10(f) Aggregate Production Quality Control – Delete the second sentence.

00745.10(g) Preproduced Aggregate – Replace this subsection, except for the subsection number and title, with the following:

The material shall meet the requirements of 00745.10.

00745.11(a) Asphalt Cement – Add the following:

Use PG 70-22 grade asphalt for dense graded HMAC, or grade approved by Engineer.
Use PG 64-22ER for open graded HMAC, or grade approved by Engineer.

In addition to the requirements in the ODOT Standard Specifications for Asphalt Materials, the PG 64-22ER grade for HMAC shall meet the following limit when tested according to AASHTO T 301 “Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of Ductilometer”. The samples will be conditioned per AASHTO T 240 “Standard Method of Test for Effect of Heat and Air on a Moving Film of Ashpalt (RTFOT) prior to testing per AASHTO T 301. The specified Temperature for section 3.3 of the AASHTO T 301 procedure shall be 77°F.

% Elastic Recovery – **50** minimum.

00745.11(b) Asphalt Cement Additives - Replace this subsection, except for the subsection number and title, with the following:

Use standard recognized asphalt cement additive products of known value for the intended purpose and approved for use on the basis of laboratory tests. Asphalt cement additives shall have no deleterious effect on the asphalt material and be completely miscible. Do not use silicones as an additive. Add the following asphalt cement additives when required by the JMF:

Anti-stripping asphalt cement additives to prevent stripping or separation of asphalt coatings from aggregates to satisfy the TSR specified in 00745.13.

Asphalt cement admixtures used to aid in the mixing or use of asphalt mixes or for experimental purposes.

00745.13(a) Contractor Provided JMF – Delete first paragraph and add the following:

A CMDT will prepare, sign and submit a JMF to the Engineer for each mixture according to ODOT Contractor Mix Design Guidelines for Asphalt Concrete. The Engineer will verify the performance characteristics of all Contractor provided JMF. Submit material samples for verification testing no later than March 1 of the calendar year of the anticipated use of HMAC mixture. Furnish representative samples of materials to be used in the JMF verification testing as follows:

Materials	**Amount**
New Coarse Aggregate	100 lbs *
New Fine Aggregate	100 lbs
Reclaimed Asphalt Concrete	45 lbs
Hydrated Lime	5 lbs
Mineral Filler	5 lbs
Asphalt Cement (without antistrip)	3 gal in 1-qt cans
Antistrip Additive	1 qt

*If coarse or fine aggregate is in multiple stockpiles, divide the submittal evenly between stockpiles.

Verification testing will use Gyratory compaction methods.

00745.13(b) JMF Requirements – Add the following:

A request for an adjustment to the JMF targets may be made to the Engineer by the Contractor's CAT-II. The requested change will be reviewed and documented by the Engineer. If acceptable, a revised JMF will be allowed. Clearly document the sublot test for which the adjusted targets are in effect. Adjustments for gradation shall not exceed the tolerances specified below. Adjustments for AC content shall be within 0.5% of the original JMF, but shall not exceed the requirements of 00745.03. Regardless of these tolerances, the adjusted JMF shall be within the mixture specification control points of 00745.12. If a redesign of the mixture becomes necessary, submit a new JMF according to the requirements of the Specifications.

Aggregate Passing Sieve Size	(%) From JMF
No. 4	+/- 2
No. 8	+/- 1
No. 30	+/- 1
No. 200	+/- 0.5

Field adjustments will not be made unless the change produces material of equal or better quality. Adjustments beyond these limits will require development of a new JMF according to 00745.13(b). The adjusted JMF, plus or minus the allowed tolerances, shall be within the broadband limits specified in 00745.12(b).

00745.13(c) Performance Test – Delete this subsection.

00745.14 Tolerances and Limits - Replace the tolerance list with the following tolerance list:

Gradation Constituent	Dense-Graded HMAC Type				Open-Graded HMAC TYPE		
	1"	3/4"	1/2"	3/8"	3/4"	1/2"	ATPB
1 1/2"	JMF ± 5%*						
1"	90 - 100%	JMF ± 5%*			99 - 100%		99 - 100%
3/4"	JMF ± 5%	90 - 100%	JMF ± 5%*		85 - 96%	99 - 100%	85 - 95%
1/2"	JMF ± 5%	JMF ± 5%	90 - 100%	JMF ± 5%*	55 - 71%	90 - 98%	35 - 68%
3/8"**	–	–	–	90 - 100%	–	–	–
No. 4	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%	JMF ± 5%
No. 8	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%
No. 16**	–	–	–	–	–	–	–
No. 30	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	JMF ± 4%	–
No. 50**	–	–	–	–	–	–	–
No. 100**	–	–	–	–	–	–	–
No. 200	JMF ± 2.0%	JMF ± 2.0%	JMF ± 2.0%	JMF ± 2.0%	JMF ± 2.0%	JMF ± 2.0%	JMF ± 2.0%

* Maximum not to exceed 100%
** Report percent passing sieve when no tolerance is listed

In the “Constituent of Mixture” table; Moisture content at time of discharge test, delete “WAQTC TM6” and replace with “AASHTO T329; or AASHTO T255, Microwave method”.

00745.16 HMAC Production QC/QA – Delete subsections (a) and (b) in their entirety and add the following:

Quality control sampling and testing by the Contractor, as defined by the Standard Specifications, is suggested but not required. The Contractor is advised to perform sufficient testing to insure compliance to the material requirements.

00745.16(c) Quality Assurance and Acceptance – Replace this subsection, except for the subsection number and title, with the following:

The Engineer, according to Section 00165.40 and the following, will perform acceptance sampling and testing of HMAC**:**

(1) Random Sampling – Random sampling of HMAC shall be performed by Lane County according to the following:

(a) Grade Samples – A minimum of one grade sample from each lot or sublot after placing and before rolling. Samples will not be taken within 1 foot of the edge of the panel. Samples will be obtained according to AASHTO T168.

(b) Plant Samples – A minimum of one sample from each lot or sublot from the discharge of the paving plant mixer and before placing into a storage silo or hopper when:

- The nominal compacted thickness as shown on the typical section of the plans, for an entire pavement panel will be less than 1 1/2 inches.
- The paving panel being placed is less than 8 feet wide.
- Paving miscellaneous areas, such as driveways, approaches, guardrail flares, and areas of restricted width or limited length.
- Paving temporary surfacing or leveling courses.
- Paving open-graded mixtures.

(c) Moisture Samples – Moisture samples will be taken from the discharge of the paving plant mixer a minimum once each day, or as directed.

(d) Partial Sublots – Each day, at the end of the production shift, regardless of the project size, the quantity exceeding the 750-ton sublot increment by 250 ton, or less, shall be represented by the previous 750-ton sublot. If the quantity exceeds the 750-ton sublot increment by more than 250 ton, the quantity shall be considered an independent sublot.

(2) Testing – HMAC testing shall be performed by the Engineer according to the following:

(a) Asphalt Cement Content – Test according to "Asphalt Content by Ignition Method, Lane County Procedure" (a modified AASHTO T308). The test procedure is available from the Project Manager.

(b) Aggregate Gradation – Test according to AASHTO T27 test method.

(c) Moisture Content – Test according to AASHTO T255 test method, Microwave Method.

(d) Compaction – Acceptance testing for compaction will be according to Section 00745.49. For any failing sublot of pavement, the Contractor may request one new backup compaction test on the same day. New nuclear gauge tests will be obtained at new randomly selected sites. The average of these five new nuclear density tests will constitute the backup in-place density of the sublot. The higher of the original and backup test results will prevail.

The Engineer may test any area that appears defective in compaction and require further compaction or corrective action on any area that does not meet specifications.

(e) <u>Backup Testing</u> – If the gradation test result of the sieve analysis varies from the JMF by 1.5 times or more from the tolerance limits specified in 00745.14, a backup sample from the random grade sample will be tested. The test result, which yields the highest CPF for that sublot, will be used. If the original and backup test results yield the same CPF, the original test results will be used.

(f) <u>Minimum Pay Factor for Each Constituent</u> – Stop production when the pay factor for any constituent with a weighting factor greater than 1 falls below 0.75. Resume production when the Engineer accepts a plan for correction.

00745.17 Small Quantity Acceptance – Replace this subsection, except for the subsection number and title, with the following:

When the quantity of HMAC on a Project is less than 1,750 tons or less than three test results are obtained, the Engineer may accept the HMAC according to Section 00745.16(c) of these Special Provisions. The test results will be evaluated in accordance to 00745.95(a) of these Special Provisions.

00745.17(b) Outside Specifications Limits – Replace the first sentence with the following:

If a sublot sample test result for any constituent is 1.5 times or more outside the specification limit, the Engineer will have the backup sample tested.

00745.17(b-2) Backup Out of Specification – Replace this subsection, except for the subsection number and title, with the following:

If the backup sample test results are out of specification, an adjustment will be calculated according to 00745.95(a-1). The test results that produce the lowest Cumulative Weighted Deviation will be used in the price adjustment calculation.

00745.17(b-3) In Place Samples – Delete this subsection:

00745.24(a) Steel-Wheeled Rollers - Replace this subsection with the following subsection:

(a) Steel-Wheeled Rollers - Provide steel-wheeled rollers with a minimum gross static weight as follows:

	Level 1 and Level 2	**Level 3**	**Level 4**
Breakdown and Intermediate	8 ton	10 ton	12 ton
Finish	6 ton	8 ton	10 ton

PART 3 EXECUTION

3.1 Replace the City of Springfield Standard Construction Specifications, Sub-Section 310.3.00 CONSTRUCTION with the ODOT Standard Specifications for Construction Sub-Sections 00745.40 through 00745.75 as modified below.

00745.40 Season and Temperature Limitations In the table, for Surface Temperature of Dense Graded Mixes 2 inches to 2 1/2 inches, replace "50 °F" with 40 °F".

00745.46 Control of Line and Grade - Add the following paragraphs to the end of this subsection:

The Contractor shall establish references at reasonable intervals for line and grade control of placement operations for the following:

Before placing each leveling lift.
Before placing the top base course for new construction.

If grade controls are established, line and grade for the top base course of new construction and top leveling lift shall be within 1/2 inch of existing line and grade.

00745.48(c) Placing – Add the following:

The Engineer will establish leveling locations and paving needs.

Paving equipment used shall be sized appropriately for the size roads listed in the contract. Equipment that is either undersize or oversize for the intended work, which will not produce satisfactory workmanship, will be replaced with appropriately sized equipment.

Change the reference in the last paragraph from 00745.16(b-1) to 00745.13(b) of these Special Provisions.

00745.49 Compaction, QC – Add the following:

The QC program as described in this section of the Standard Specifications will not be used. The Engineer will perform acceptance compaction testing using procedures as modified or added in these Special Provisions. The Contractor is responsible to perform sufficient compaction testing to insure minimum compaction requirements have been attained.

00745.49(b) Normal Pavement (Nominal Thickness 2 inch or Greater) – Replace the subsection heading with the following:

00745.49(b) Normal Pavement (Nominal Thickness 1 1/2 inch or Greater)

00745.49(b-1) General - In the paragraph that begins "Compliance with the density...", replace the sentence that begins "Use the MAMD method..." with the following sentence:

Use the MAMD method of compaction measurement.

Replace the paragraph that begins "For Level 3 and Level 4..." with the following two paragraphs:

For Level 2, Level 3, and Level 4 mixes, construct a control strip at the beginning of work on each JMF on the project according to ODOT TM306. The purpose of the control strip is to determine the maximum density that can be achieved for the JMF, paving conditions, and equipment on the project. Additional control strips are necessary when there is a change in compaction equipment or when JMF targets are adjusted according to 00745.16(b-1-a). The Engineer may waive the control strip for irregular areas or areas too small to establish a reasonable roller pattern.

Stop paving if three consecutive control strips fail to achieve the specified density. Take all actions necessary to resolve compaction problems. Do not resume paving until allowed by the Engineer.

Add the following to the third paragraph:

Pneumatic tired roller will be required on Level 2 HMAC, unless waived by the Engineer.

00745.49(b-2) Random Testing – Delete reference to “QC” in the first sentence.

00745.49(b-2-a) Testing – Add the following:

Sanding of test locations will not be required.

00745.49(b-2-b) Core Correlations of Nuclear Gauge Readings – Replace this subsection, except for the subsection number and title, with the following:

Core correlation of the nuclear gauge readings is not required. If core correlations are requested, and approved, determine the core correlation factors according to WAQTC TM8 and ODOT TM327. Cut the required cores and patch the core holes with dense graded HMAC.

The party requesting core correlations will pay the costs of coring and lab testing of cores. The costs of nuclear gauge testing performed by each party will be paid by each party.

00745.49(b-3) Moving Average Maximum Density (MAMD) Method - Replace the MAMD list with the following list:

Course of Construction	**HMAC**
First HMAC lift less than 3 inches placed on aggregate base	91.0 *
All other	92.0

* If any part of the width of a lift at a station requires 91.0%, then the entire width of that lift at that station shall be 91.0%

Delete the last paragraph of this subsection.

00745.49(b-4) Control Strip Method - Delete this subsection.

00745.49(b-5) Test Results – Renumber this subsection to b-4, delete the sentence and replace with the following:

The Engineer will provide density test results to the Contractor by the middle of the following work shift.

00745.49(c) Thin Pavement – Replace this subsection, except for the subsection number and title, with the following:

Compaction to a specified density will not be required for leveling, patches, or where the nominal compacted thickness of a course of dense graded mixtures will be less than 1 1/2 inches. Perform breakdown and intermediate rolling until the entire surface has been compacted by at least four coverages of the roller(s). Perform additional coverages, as directed, to obtain finish rolling of the HMAC. In areas were pre-leveling is greater than 1 1/2 inches, the HMAC shall be compacted to a minimum of 91.0 of the JMF's most recent Maximum Density result.

00745.70 Pavement Smoothness - Replace this subsection with the following subsection:

00745.70 Pavement Smoothness - Construct the pavement wearing surface of travel lanes to a profile that does not deviate from longitudinal and transverse smoothness more than the specified limits of 00745.73.

Perform smoothness testing under the supervision of the Engineer with equipment furnished and operated by the Contractor at the Contractor's expense. Complete all required smoothness testing no later than seven calendar days following final completion of all travel lane paving on the Project. The Contractor accepts the risk that the smoothness may be affected by exposure to traffic between the date the travel lanes are paved and the date the smoothness testing is completed. If the Contractor elects to perform smoothness measurements on a day other than the day the pavement is placed, additional traffic control required for smoothness measurement, and not required for other work, will be at the Contractor's expense.

Add the following subsection:

00745.72 Smoothness Testing Equipment - Furnish all equipment and supplies for determining smoothness.

(a) Straightedge - Provide one 12 foot straightedge.

(b) Rolling Straightedge – Provide one 12 foot rolling straightedge capable of measuring, on an exaggerated scale, deviations in the paved surface, at the center of the scale, to accuracy of 0.002 foot or less. If requested by the Engineer, the Contractor shall demonstrate the accuracy of the measuring device by setting the equipment up on a flat surface and passing the sensing mechanism over an item of known height. In all cases, the equipment shall be subject to acceptance by the Engineer.

Add the following subsection:

00745.73 Smoothness Testing and Surface Tolerances - Test according to the following:

(a) General - Test the base and wearing courses with a 12 foot straightedge and a 12 foot rolling straightedge as directed.

(b) Base Course Surface Test:

(1) Transverse - Test with the 12 foot straightedge perpendicular to the centerline, as directed. The pavement surface shall not vary by more than 0.02 foot.

(2) Longitudinal - Test with the 12 foot rolling straightedge parallel to the centerline, as directed. The pavement surface shall not vary by more than 0.02 foot.

(c) Wearing Course Surface Test:

(1) Transverse - Test with the 12 foot straightedge perpendicular to the centerline, as directed. The pavement surface shall not vary by more than 0.02 foot.

(2) Longitudinal – Test with the 12 foot rolling straightedge over the full width of travel lanes for the entire length of the project, or as directed by the Engineer. The pavement surface shall not vary by more than 0.015 foot.

(3) Transverse Joints - Test with the 12 foot straightedge parallel to the centerline, as directed. The pavement surface shall not vary by more than 0.02 foot.

(d) Utility Appurtenances - If the Contractor is required to construct or adjust utility appurtenances, such as manhole covers and valve boxes, the pavement surface shall not vary by more than 0.02 foot.

(e) Shoulders and Paved Medians - Test the base and wearing course with the 12 foot straightedge parallel to and perpendicular to the centerline for shoulders and paved medians. The pavement surface shall not vary by more than 0.02 foot.

00745.75 Correction of Pavement Roughness - Replace this subsection with the following subsection:

00745.75 Correction of Pavement Roughness - Should testing described in 00745.73 show the pavement does not conform to the prescribed limits of deviation, the following shall apply:

(a) General - The Contractor, under the supervision of the Engineer, is responsible for locating areas that require corrective work.

(b) Base Course - If the requirements of 00745.73(b) are not met, correct according to one of the following and retest.

(1) Cold Plane Removal - Profile with equipment meeting the requirements of Section 00620.20 to a maximum depth of 0.03 foot.

(2) Grinder - Profile with abrasive grinder(s), equipped with a cutting head comprised of multiple diamond blades to a maximum depth of 0.03 foot.

(c) Wearing Course - After the Contractor has located and staked all individual deviations exceeding 0.02 foot, the Engineer and the Contractor shall meet at a mutually agreed upon time and drive the Project together. Each deviation will be evaluated during the drive-through to determine what corrective work will be required. Disagreements will be resolved by the Engineer.

Correct all individual deviations identified for corrective work during the drive-through and any transverse joint that exceeds the requirements of 00745.73(c-3) by one of the methods listed below to the specified limits.

(1) Remove and Replace - Remove and replace the wearing surface lift. Removal and replacement is required when in the opinion of the Engineer a durable long-term repair of the defect cannot be accomplished by conventional means.

(2) Grind - Profile with abrasive grinder(s) equipped with a cutting head comprised of multiple diamond blades to a maximum depth of 0.3 inch and apply an emulsion fog seal as directed.

Under the observation of the Engineer, retest each location requiring corrective work according to 00745.73 with a 12 foot rolling straightedge to verify that the deviation has been corrected to within the 0.02 foot tolerance. Perform all corrective work and surface tolerance testing at the Contractor's expense, including traffic control.

(d) Utility Appurtenances – If the requirements of 00745.73(d) are not met, the Contractor shall perform sawcutting, removal and readjustment of the utility appurtenance(s) to the required elevation(s) and/or perform other corrective measures to the satisfaction of the Engineer.

(e) Time Limit - Complete correction of all surface roughness within 14 calendar days following notification, unless otherwise directed.

3.2 A PRE-PAVING MEETING SHALL BE REQUIRED 24 HOURS PRIOR TO PAVING.

3.3 Trip tickets shall normally be given to the ENGINEER by the end of the day delivery is made, but in no event shall they be given to the ENGINEER later than 12 noon the following calendar day (Saturday, Sunday, and legal holidays excluded). Trip tickets will be considered as valid only when received by the ENGINEER in accordance with this special provision. All other requirements of the above referenced sub-sections shall apply.

3.4 GEOTEXTILE INSTALLATION – In the event that the City's wet weather construction standard is invoked on this project, refer to Standard Construction Specification 301.1.01 General, the use of geotextile fabric and an additional eight (8) inches of rock substructure will be required. Where specified, geotextile shall be woven and conform to Standard Construction Specification for Subgrade Geotextile. CONTRACTOR shall comply with Standard Construction Specification 308, Geotextile Installation. Payment shall be incidental to the pavement Bid Items.

3.5 After the final saw cut is made for the trench "Tee Cut" (see trench detail on Drawings), in areas where the remaining strip of existing asphalt is less than three feet in width, the remaining strip of existing asphalt shall be removed and replaced as follows:

A. If remaining strip of asphalt is less than 6 inches thick, remove asphalt and base material to 6 inches below final grade, compact base and place 6-inch thick Level 3, 1/2" Dense, HMAC. Place asphalt in 3 inches maximum lifts.

B. If remaining strip of asphalt is greater than 6 inches thick, remove full depth of asphalt, place compacted 3/4" – 0 crushed rock to 6 inches below final grade, then place 6-inch thick Level 3, 1/2" Dense, HMAC. Place asphalt in 3-inch maximum lifts.

END OF SECTION

SECTION 02620

DUCTILE IRON PIPE, FITTINGS AND SPECIAL ITEMS

PART 1 GENERAL

1.1 Description

Work under this Section applies to the furnishing and installation of ductile iron pipe, fittings and special items for buried and exposed service. The CONTRACTOR shall furnish and install ductile iron pipe, fittings, valves, special items and all appurtenant work, complete in place, all in accordance with the requirements of the Contract Documents.

1.2 Reference Specifications, Codes, and Standards

A. Commercial Standards

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800
ANSI/NSF Standard 61	Listed Drinking Water System Components - Health Effects
ASTM A 126	Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ANSI/AWWA C104/A21.4	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
AWWA C105	Polyethylene Encasement for Ductile- Iron Pipe Systems
ANSI/AWWA C110/21.10	Ductile-Iron and Gray-Iron Fittings, 3-Inch Through 48-inch for Water and Other Liquids
ANSI/AWWA C111/A21.11	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
ANSI/AWWA C115/A21.15	Flanged Ductile-Iron Pipe with Threaded Flanges

ANSI/AWWA C150/A21.50	Thickness Design of Ductile-Iron Pipe
ANSI/AWWA C151/A21.51	Ductile-Iron Pipe, Centrifugally Cast, for Water and Other Liquids
ANSI/AWWA C153/A21.53	Ductile-Iron Compact Fittings, 3-inch Through 16-inch, for Water and Other Liquids
AWWA C600	Installation of Ductile-Iron Water Mains and Their Appurtenances

1.3 Submittals

A. See Section 01300 - Special Provisions, for submittal procedures.

B. Product technical data and material data; including all pipe, fitting, restrained joint system, lining, coating and appurtenance information.

C. Lining and coating data.

D. Applicable material certifications and testing certificates.

E. Manufacturer's handling delivery storage and installation requirements.

1.4 Quality Assurance

A. Unless otherwise noted, all water works materials provided for the project shall be new, of first class quality and shall be made by reputable manufacturers. All material of a like kind shall be provided from a single manufacturer unless otherwise approved by the ENGINEER. All material shall be carefully handled and installed in good working order free from defect in manufacture, storage and handling. Where an item is to be used but does not have its quality specified herein, it shall be equal to that specified in the appropriate American Water Works Association (AWWA) Standard Specification.

B. All references to standards of AWWA or other organizations shall be the latest version of those standards.

PART 2 PRODUCTS

2.1 General

A. Ductile iron piping materials and specials shall meet the specifications of this Section and of the appropriate AWWA Standard Specifications. In the case of conflict, the more stringent specifications shall apply.

B. Unless otherwise specified herein or shown on the plans, the minimum working pressure rating of all water works material specified herein shall be 1.5 times the operating pressure, 150 psi minimum.

C. All coatings and materials specified herein that come in contact with potable water shall be National Sanitation Foundation (NSF) approved.

2.2 Ductile Iron Pipe

A. Ductile iron pipe shall conform to AWWA Standard C151 and shall be the standard push-on joint type or restrained joint type as identified on the drawings. Push-on joints shall be "TYTON" type or "Fas-Tite" type without exception. Unless otherwise specified herein or shown on the plans, ductile iron pipe shall be thickness Class 52. Polyethylene encasement, where required on the drawings or specified elsewhere, shall conform to AWWA Standard C105.

B. Ductile iron pipe shall be cement mortar lined, interior and exterior sealed in accordance with ANSI/AWWA C104.A21.4. See Specification Section 09800, Protective Coatings, for special coating requirements.

C. Push-on or mechanical type pipe joints shall conform to AWWA Standard C111. Flanged ductile iron pipe shall conform to AWWA Standard C115.

D. Restrained Joint Ductile Iron Pipe

1. Restrained joint ductile iron pipe and fittings shall be provided as identified on the drawings and required for the application. Joint restraint for pipe shall be accomplished with an integral lock mechanism except as may be otherwise specified. Any such system shall be a manufacturer's standard proprietary design, shall be as recommended by the manufacturer for the application, and shall be performance proven.

2. Restraining components for pipe shall be ductile iron in accordance with applicable requirements of ANSI/AWWA C110/A21.10 and/or

C153/A21.53 with the exception of the manufacturer's proprietary design dimensions. Push-on joints for such fittings shall be in accordance with ANSI/AWWA C111/A21.11.

The following is the approved list of restrained joint systems:

a. For pipe 12-inch diameter and smaller, "Grip Ring", Romac Industries, Inc. without exception.

b. For pipe larger than 12-inch diameter, the following restrained joint systems are approved:

i. "Thrust-Lock", Pacific States Cast Iron Pipe Company.
ii. "Fast Grip", American Cast Iron Pipe Company.
iii. "TR Flex", United States Pipe and Foundry Company.
iv. "Snap-Lok", Griffin Pipe Products Company.
v. "Megalug", EBAA Iron, Inc.
vi. "Field-Lok", United States Pipe and Foundry Company.
vii. "Super Lock", Clow
viii. "Restrained Joint", McWane
ix. "MJ-TJ" pipe with "Megalugs", Pacific States Cast Iron Pipe Company.
x. "Flex-Ring", American Cast Iron Pipe Company

Where such a system may require "Mega-Lugs" for restraint, "Mega-Lugs" shall be provided in quantities as may be required and shall be considered incidental to the joint restraint system.

3. Restrained joints for pipe shall be designed for a water working pressure as shown on the drawings.

4. Restrained joint for pipe shall be capable of being deflected after assembly as follows:

Size	Maximum Deflection
4	5.00°
6	5.00°
8	5.00°
10	5.00°
12	5.00°
14	3.25°
16	3.25°
18	3.00°
20	2.75°
24	2.25°

Size	Maximum Deflection
30	1.75°
36	1.50°
42	0.50°
48	0.50°
54	0.50°

2.3 Fittings and Specials

A. Fittings

1. Fittings used for joining ductile iron pipe shall be of the type, size and strength designated on the plans, elsewhere in the specifications, or in the proposal and, to the extent therein specified, shall conform to the appropriate specification in this section. Fittings shall have pressure ratings as specified above and as shown on the plans.

2. Fittings shall be mortar lined and seal coated. Mortar lining of fittings shall be factory installed only, unless otherwise directed by ENGINEER. All fitting lining interior surfaces shall be smooth finished.

3. Pipe fittings and specials used with ductile iron pipe shall be gray-iron or ductile iron and shall conform to AWWA Standard C110. Ductile iron (compact) fittings conforming to AWWA Standard C153 may be substituted in lieu of AWWA C110 fittings for fitting sizes 3 inches through 24 inches in diameter. Fittings shall be mechanical joint, push-on type, flanged or plain-end as required and shown on the plans. When fitting joints are to be restrained, pipe joint restraint systems as specified herein shall be used.

B. Flanges

Flanges shall conform to either ANSI/AWWA C207 Class D or ANSI B 16.5 150-lb class for 150 psi pressure rating and either ANSI/AWWA C207 Class E or ANSI B 16.5 150-lb class for pressure ratings between 150 and 275 psi. Flanges shall have flat faces and shall be attached with bolt holes straddling the vertical axis of the pipe unless otherwise shown. CONTRACTOR shall coordinate with pipe, valve and fitting suppliers to make certain that pipe, valve and fitting flanges match in bolt pattern.

Threaded flanges shall meet the requirement of AWWA Standard C115 and shall be installed only on pipe with a minimum Class 53 wall thickness. All flanged fittings shall be provided with bolts and gaskets as specified herein.

C. Gaskets

Gaskets for flanged joints shall be full faced. Ring gaskets shall not be permitted.

D. Flexible Couplings

1. All flexible couplings shall be cast or ductile iron in accordance with ASTM Standard A536 and high strength alloy bolts and nuts conforming to ANSI/AWWA C111.

2. Insulating flexible couplings shall be of the gasketed sleeve type with insulating boot and shall be Romac Industries, Inc. Style IC501 or approved equal. All coupling materials shall be constructed to diameters that properly fit the pipe.

3. Insulating boot shall be fabricated from Nitrile Butadiene Rubber suitable for water service with electric insulating properties in accordance with ASTM D2000 3 BA 715.

4. CONTRACTOR is responsible for selecting sleeve lengths appropriate to application, recognizing longer sleeves allow larger deflections and may ease installation.

E. Insulating Flanged Joints

Each complete insulating flange kit shall include a full faced gasket, a full-length pyrox insulating sleeve for each flange bolt and two pyrox insulating washers and two steel washers for each bolt. Gaskets shall be Garlock Style 3000 or equal.

F. Flexible Expansion Joints

Flexible expansion joints shall be installed in the locations indicated on the drawings and shall be manufactured of ductile-iron conforming to the material properties of ANSI/AWWA C153/A21.53. Flexible joints shall be provided with end connections as shown on the plans. All flexible expansion joints shall consist of an expansion joint designed and cast as an integral part of a ball and socket type flexible joint, having a minimum of 15° deflection per ball and 4" expansion. Actual expansion and deflection requirements will be as shown on the drawings. Each flexible expansion joint shall be hydrostatically tested to the manufacturer's published pressure rating prior to shipment. All pressure containing parts shall be lined with a minimum of 15 mils of Fusion Bonded Epoxy conforming to the applicable requirements of ANSI/AWWA C213 and

shall be holiday tested with a 1500 volt spark test conforming to said specification. All flexible-expansion joints shall be Flex-Tend as manufactured by EBAA Iron, Inc. or approved equal.

G. Tapping Sleeves

Tapping sleeves shall be stainless steel conforming to 18-8 Type 304 stainless steel with a CF 8 cast stainless steel flanged end with ANSI 150 lb drilling. Bolts and hardware to be Type 304 stainless steel and the branch outlet shall be heavy stainless steel pipe. The gasket shall be full circumferential gasket. Tapping sleeve shall be JCM 432 or approved equal.

Valve for tapping sleeve shall be cast iron body with fusion bonded epoxy coating. Tapping valve shall be as specified in Section 15101.

PART 3 EXECUTION

3.1 General

A. All materials, workmanship and installation shall conform to referenced AWWA Standards and other requirements of these specifications. The methods employed by the CONTRACTOR in the storage, handling, and installation of pipe, fittings, valves, hydrants, equipment and appurtenances shall be such as to insure that the material, after it is placed, tested and permanently covered by backfilling is in as good a condition as when it was shipped from the manufacturer's plant. Should any damage occur to the material, repairs or replacement shall be made to the satisfaction of the ENGINEER.

B. Ductile iron pipe shall be installed in accordance with AWWA Standard C600, except as modified elsewhere in these specifications. The requirements for trench excavation and backfill of ductile iron piping system shall be as specified elsewhere.

3.2 Thrust Restraint

A. All tees, plugs, caps, bends, offsets, as well as other appurtenances which are subject to unbalanced thrust, shall be properly braced with concrete thrust blocks. Concrete thrust blocks shall have a minimum 28-day compressive strength of 3000 psi. The concrete blocking shall bear against solid undisturbed earth at the side and bottom of the trench excavation and shall be shaped so as not to obstruct access to the joints of the pipe or fittings.

B. Where shown on the plans or specified elsewhere in the Technical Specifications, the CONTRACTOR shall provide internal or external joint restraint systems at the fittings and on all joints within the specified or shown distance on each side of the fitting or joint.

3.3 Testing and Disinfection of Ductile Iron Pipe Water Mains

A. Testing and disinfection of ductile iron pipe mains shall be done in accordance with AWWA Standard 600, AWWA Standard 651 and Section 01650, Pipeline Testing and Disinfection.

B. All chlorinated water used in disinfection of the water main shall either be discharged through an approved connection to a public sanitary sewer system or shall be dechlorinated to limits acceptable by the Oregon State Department of Environmental Quality (DEQ) prior to discharge into any storm drainage system or open drainageway. No chlorinated water shall be discharged into storm drainage system or open drainageway without a dechlorination plan meeting DEQ's requirements.

END OF SECTION

SECTION 02750

PLAIN CONCRETE PAVEMENT

PART 1 GENERAL

1.1 Scope

This section covers the work necessary to furnish and install plain concrete pavement.

1.2 Reference Standards

A. All work shall comply with Section 00756 of the Oregon Department of Transportation Oregon Standard Specifications for Construction (2008) as modified herein. Where Section 00756 refers to other sections of the Oregon Standard Specifications for Construction, the work shall also comply with those referenced sections as modified herein.

1.3 Submittals

A. Concrete mix designs.

B. Certification of aggregate compliance and source of supply and location of all materials and cement.

1.4 Modifications to the Oregon Standard Specifications for Construction.

SECTION 00756 - PLAIN CONCRETE PAVEMENT

Comply with Section 00756 of the Standard Specifications modified as follows:

00756.11 Classes of Concrete – Replace this subsection with the following subsection:

00756.11 Classes of Concrete – Furnish Class 4000 – ¾ paving concrete unless otherwise shown or indicated in the Special Provisions.

00756.80 Measurement – Delete this subsection.

00756.90 Payment – Delete this subsection.

00756.95 Bonus Payment for Smoothness – Delete this subsection.

SECTION 02030 - MODIFIERS

Comply with Section 02030 of the Standard Specifications modified as follows:

02030.10 Fly Ash - Replace this subsection with the following subsection:

02030.10 Fly Ash - Furnish Class C, Class F, or Class N fly ash from the QPL and meeting the requirements of AASHTO M 295 (ASTM C 618).

SECTION 02050 - CURING MATERIALS

Comply with Section 02050 of the Standard Specifications modified as follows:

02050.10 Liquid Compounds - In the paragraph that begins "Furnish liquid…", replace "AASHTO M 148" with "ASTM C 309".

Add the following to the end of this subsection:

Before using liquid compounds, submit one quart samples of each lot for testing except samples are not required for commercial grade concrete applications unless the liquid compound is a conditionally approved product.

SECTION 02440 - JOINT MATERIALS

Comply with Section 02440 of the Standard Specifications modified as follows:

02440.10 Preformed Joint Fillers for Concrete - Replace this subsection, except for the subsection number and title with the following:

Furnish preformed joint fillers for concrete from the QPL conforming to the requirements of AASHTO M 153 or AASHTO M 213.

SECTION 02690 - PCC AGGREGATE

Comply with Section 02690 of the Standard Specifications modified as follows:

02690.20(e-1) Fracture - In the sentence that begins "Provide aggregate…", replace "AASHTO TP 61" with "AASHTO T 335".

END OF SECTION

SECTION 02761

SANITARY SEWER MAIN CLEANING AND TV INSPECTION

PART 1 GENERAL

1.1 Description

A. This Section includes all labor, materials, equipment, and incidentals necessary for cleaning and internal TV inspection of sanitary sewer main lines. Work under this section shall include, but not be limited to: cleaning of mainlines and manholes and TV inspection of designated sanitary sewer main lines, traffic control as shown or required by all local, state, and federal agencies, and all other incidental work specified or shown in the Contract Documents.

B. CONTRACTOR shall perform all work in accordance with Federal OSHA and State safety requirements, including those for confined space entry.

1.2 Submittals

A. Submittals shall be in accordance with the requirements of these Contract Documents, and shall include the following:

1. Information on all cleaning and TV inspection equipment proposed for use by the CONTRACTOR, including a listing of size, type, and capabilities of each piece of equipment.

2. A traffic control plan that shall include but not be limited to: staging sites, impacts to traffic patterns, considerations of bus traffic, as well as proposed signs, detours, and flaggers. See Technical Specification 01100, Special Provisions.

1.3 CONTRACTOR'S Record Drawings

A. The CONTRACTOR shall maintain a detailed record, including a neatly marked set of construction drawings if applicable, of the sanitary sewer pipes associated with this work, including but not limited to: any differences in alignment, pipe size, and manhole or cleanout location discovered during the progress of the work. Records and drawings shall be kept current with the work as it progresses and shall be subject to inspection by the ENGINEER at any time.

B. The location, alignment, lengths, and sizes of the sanitary sewer lines shown on the drawings are compiled from available records and/or field surveys. The ENGINEER does not guarantee the completeness of such records. All dimensions shall be verified by the CONTRACTOR.

PART 2 PRODUCTS

2.1 Water for Cleaning

The CONTRACTOR will obtain and pay for all water required for cleaning operations from metered hydrants from the local water utility, The Springfield Utility Board (SUB). The CONTRACTOR shall provide all hoses, adapters, and appurtenances required for obtaining water from the designated hydrants. Access to the hydrants shall not be obstructed in case of fire in the area served by the hydrant.

2.2 Cleaning Equipment

A. General

The CONTRACTOR shall furnish and utilize a combination of high velocity hydraulic cleaning equipment and a vacuum unit as specified or required. High velocity cleaning equipment shall be used to clean all sewer mainlines unless otherwise specified or approved by the ENGINEER. Low velocity or mechanical cleaning equipment shall not be used in lieu of high velocity equipment.

B. High Velocity Cleaning Equipment with Vacuum Pickup of Materials

1. High velocity cleaning equipment shall be capable of providing up to 200 gallons per minute at 2,000 pounds per square inch (psi) of working pressure. CONTRACTOR shall provide a minimum of 500 feet of 1-inch ID high-pressure hose with at least two (2) cleaning nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. The equipment shall also include a high velocity “gun” for cleaning manhole walls and bottoms. The equipment shall be complete including 1,200 gallon water tanks suitable for holding corrosive or caustic chemicals, pumps, hose, hydraulically driven hose reel, auxiliary engines, controls, and all safety features required by law.

2. The cleaning equipment shall have an integral vacuum unit to allow the material cleaned from the pipes to be vacuumed directly from the manhole.

3. CONTRACTOR shall provide additional cleaning equipment, including root cutters, as required to satisfactorily clean the pipe.

2.3 TV Inspection Equipment

A. A closed circuit color television (CCTV) camera capable of providing still pictures and videos shall be used on all lines. The CCTV equipment shall be specifically designed for sewer inspection operations and shall be operative in 100 percent humidity conditions. Lighting and camera quality shall be suitable to allow a clear focused picture a minimum of six (6) linear feet in front of the camera of the entire inside periphery of the pipe. The camera shall have an adjustable focus distance from six inches to infinity, and the camera lights shall be variable intensity, with light, focus, and aperture remotely controlled by the operating technician at the monitoring station.

B. Camera travel speed shall be from 1.8 to 30 feet per minute (fpm) with smooth, uniform motion. Sudden stops and starts will not be acceptable. Camera shall be capable of stopping and reversing direction as necessary to document sewer conditions. Video pictures shall be clear, sharp, and free from vibratory or electrical interference when the camera is in operation.

C. A CCTV camera with pan-tilt capabilities shall be used on all lines larger than six-inches in diameter. The CCTV camera shall be a tractor-powered camera being able to inspect dead end lines, and shall be remotely controlled by an operating technician.

D. The monitoring station shall be truck-mounted, capable of seating two viewing personnel and one operating technician. The monitoring station shall be fully enclosed within a rigid weatherproof enclosure on the TV truck.

E. A minimum of two color display monitors (minimum 650 lines horizontal resolution) operating simultaneously shall be used in the monitoring station. The monitors shall be of a proper size to allow all viewing personnel in the monitoring station a satisfactory view, and shall continuously display the current date, manhole designation of the mainline being inspected, and a continuous forward and reverse read-out of the camera distance from the manhole of reference.

PART 3 EXECUTION

3.1 Temporary Traffic Control

See Section 202: City of Springfield, Oregon “Standard Construction Specifications”

3.2 Maintaining Sewer Flows and Cleaning Precautions

A. All sanitary sewer system components shall remain in service through the cleaning and TV inspection operations unless specific exceptions are approved in writing by the ENGINEER.

B. During cleaning operations, precautions shall be taken by the CONTRACTOR in the use of cleaning equipment. When hydraulically propelled cleaning tools which retard the flows in the sewer lines are used, precautions shall be taken to insure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. Precautions shall be taken to protect the sewer lines and manholes from damage that may result from the improper use of cleaning equipment. The CONTRACTOR shall be solely responsible for the repair of any damage to structurally sound lines or damage to properties connected to the sewer which results from the cleaning operations.

C. The methods used to maintain flows shall be at the CONTRACTOR'S option and may include use of flow-through plugs with periodic release of sewage flow or bypass pumping. The bypass system, if used, shall be capable of conveying flows when the sewers are flowing full.

3.3 Cleaning

A. Clean all sewer lines and manholes designated on the drawings or directed by the ENGINEER prior to CCTV inspection including the manholes at both ends of the section to be inspected. Equipment as specified shall be used for cleaning.

B. All dirt, sand, grease, rocks, roots, or other accumulations shall be removed from pipe walls and manholes. Existing lines shall be protected from damage caused by cleaning operations. Hydraulic cleaning operations shall be conducted with care to avoid damage to pipes and manholes, or flooding of adjacent property.

C. All sewers shall be cleaned with high velocity equipment unless the ENGINEER allows otherwise. The ENGINEER may order the use of other methods or equipment when it appears necessary.

D. All materials removed from the pipes during the cleaning operations shall be collected by a vacuum unit from the manhole downstream of the section being cleaned and removed by the CONTRACTOR. Passing accumulated materials from manhole section to manhole section shall not be permitted.

E. The CONTRACTOR shall be responsible for the proper and legal disposal of all materials removed from the sewers and in a manner acceptable to the ENGINEER.

F. Manhole and sewer cleaning reports shall be submitted on forms matching or similar to the format of the cleaning report forms included at the end of this section. All reports shall be completely filled out and provide all essential data, including:

1. Location of mainline segment or manhole being cleaned (street name and manhole designation as shown on the drawings);

2. Diameter of sewers, in inches;

3. Estimated amount and type of material removed from pipe or manhole.

G. Two (2) copies of the typed Mainline Cleaning Report forms shall be furnished to the ENGINEER as specified below.

H. Acceptance of the cleaning work will not be made until after the submittal of the cleaning reports and the CCTV inspection reports and tapes. Lines will be considered acceptably clean when sufficient material has been removed to restore the sewer line to 95 percent of its original flow capacity.

3.4 Sewage Flow Controls

A. The methods used to maintain flow shall be at the CONTRACTOR'S option and may include the use of flow-through plugs or bypass pumping.

B. During periods of very high flows when lines flow greater than half full, the CONTRACTOR, with the ENGINEER'S approval, shall suspend sewer cleaning operations until flows are again less than half full.

C. Depths of flow at the downstream manhole during television inspection shall not exceed those shown below when performing television inspection of the lines.

Pipe Diameter (inches)	**Maximum Flow Depth % of Pipe Diameter**
6 – 10	20
12 – 24	25
30 - 42	30
48 - 72	35

D. When the sewage depth of flow at the downstream manhole of the mainline section being inspected is above the maximum allowable for television inspection, the CONTRACTOR shall provide flow-through plugs or other means where necessary to ensure that the flows are reduced to the levels specified above.

3.5 CCTV Inspection

A. Internal CCTV inspection of sanitary sewer mainlines as shown on the drawings shall be performed only after the sewers have been thoroughly cleaned so that service connections, cracks, leaks and structural failures may be located.

B. The CCTV inspection shall be performed on one mainline section at a time and between two manholes. Each mainline section being inspected shall be isolated from the remainder of the line as necessary by the use of line plugs or bypass pumping to insure viewing of the inside periphery of the pipe. The TV inspection shall be performed by moving the television camera through the line along the axis of the pipe. The inspection shall be performed in a forward and/or backward direction, according to line conditions at the time the inspection is made.

C. The pan-tilt camera shall be turned to view directly up the axis of each service lateral encountered.

D. During the CCTV inspections, a record shall be kept which shows clearly the exact location in relation to the centerline of the adjacent manhole of each service connection, crack, leak or structural fault discovered. To insure accurate measurement, the measurement shall be made at or above ground level by means of a meter device. Marking on a cable or the like which would require interpolation for the depth of the manholes shall not be used. Accuracy of the distance meter shall be checked by use of a walking meter, measuring wheel, or other suitable device, and the accuracy shall be satisfactory to the ENGINEER.

E. The TV inspection record shall be submitted on forms matching or similar to the format of the report forms included at the end of this section. All reports shall be completely filled out and provide all essential data, including:

1. Location of mainline segment being tested (street name and designation as shown on the drawings);

2. Pipe diameter in inches;

3. Type and condition of the pipe;

4. Length and type of joints;

5. Presence and location of roots or visible leaks;

6. Location and description of any cracks, breaks, misalignments, or obstructions;

7. Location and diameter of service laterals, including clock position as viewed from the camera;

8. Condition of the portion of lateral visible from pan-tilt camera;

9. Estimates of flows from service pipes and estimates of whether flow is domestic or I/I.

F. Two (2) copies of the printed Television Inspection Report form shall be furnished to the ENGINEER.

G. All video inspections shall be recorded on digital video disc (DVD) together with voice transmissions of sewer conditions. The video records shall be accurately referenced to the corresponding inspection report and shall be organized and catalogued so that specific faults can easily be located on the DVD-ROM. Two (2) DVDs shall be furnished to the ENGINEER.

H. The DVD shall be created in a format compatible with the majority of DVD players sold in the past five years. DVDs and inspection runs shall be numbered sequentially. Each DVD shall have a label which lists the date, the DVD number, and all runs (including run number and mainline segment) included on the disk. The DVDs shall become the property of the OWNER upon payment for the line segments inspected.

3.6 Manhole Inspection Reports

Manholes at each end of any sewer section that is TV inspected shall be inspected. The manhole inspection reports shall be completed and submitted on forms matching or similar to the format of the report forms included at the end of this section. Two (2) copies of the printed Manhole Inspection Report form shall be furnished to the ENGINEER.

3.7 Report Submittals

All cleaning and TV inspection and manhole inspection reports shall be typed and organized by manhole numbers and submitted in 3-ring binders along with the DVDs.

MAINLINE CLEANING REPORT

Date:	Client: City:			Basin No.
Technician:	Unit #:	Weather:	Cleaned By:	Report No.

Method of Measurement: ☐ Scaled from map ☐ TV Report ☐ Measured by Tape ☐ Approximated	# TANKS / Hours	FOOTAGE / Diameter (in)	GALLONS REMOVED & TYPE OF DEBRIS / Line Completion Status
1. MH #_____TO MH #_____. Location:_____.			
Comments:			Line Complete? (Yes / No)
2. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)
3. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)
4. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)
5. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)
6. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)
7. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)
8. MH #_____TO MH #_____. Location:_____.			
Comments			Line Complete? (Yes / No)

Type of Debris: S = Sand; R = Rock; G = Grease; B = Broken Pipe; RT = Roots	**Total Line Footage Complete This Date** SIZE (in)	FOOTAGE
Notes:		

TELEVISION INSPECTION REPORT

Date:	Client: City:					Basin No.	
Technician:	Inspector:		Weather:	Cleaned By:		Report No.	Tape No.
From MH #: Street:	Pipe Dia (in):	Joint Length (ft):	Section Length (ft):	Joint Type:	Pipe Mat'l:	To MH #: Street:	

PIPELINE DATA: Cleanliness: _____ Alignment: _____ Grade: _____ Age: _____ % Leaking Joints _____ (Estimated) Other: _____ _____ _____ _____	Footage	Problem Code	Comments	I/I (gpm)
MANHOLE DATA: (See attached Manhole Inspection Report) **TURNAROUND:** Requested (Date/Time): _____ Authorized (Date/Time): _____				

MANHOLE INSPECTION REPORT

Date:	Client: City:		Basin No.
Technician:	Weather:	Cleaned By:	Report No.
MH #:	MH Location (street and nearest cross-street, or address):		

SURFACE COVER:

Cover: AC ____ Concrete ____ Gravel ____ Dirt ____ Other (specify) _____

Ability to access MH: Satisfactory ____ Poor ____

CONDITION:

Deterioration:
Light _____
Medium _____
Heavy _____

Condition of Rim:
Satisfactory _____
Poor _____

TRAFFIC:

Light _____
Medium _____
Heavy _____

MATERIALS OF CONSTRUCTION:

Number of holes in lid: _____

Manhole Type: Flat-top ___ Cone ___

Cone _____ Precast ___Brick ___ Block ____ CIP ___

Wall _____ Precast ___Brick ___ Block ____ CIP ___

Base _____ Precast ___Brick ___ Block ____ CIP ___

HYDRAULIC CONDITIONS:

Location	Est'd I/I (gpm)
Cover	_____
Ring	_____
Riser	_____
Cone	_____
Wall	_____
Bench	_____
Pipe Collar	_____

INLETS AND OUTLET:

Line	Dia	Depth from rim
Outlet	_____	____ ft ____ in
Inlets:		
A	_____	____ ft ____ in
B	_____	____ ft ____ in
C	_____	____ ft ____ in
D	_____	____ ft ____ in

FLOW & LEAKS:

Flow Depth (in) _____

Leaks?
Yes _____
No _____

Leak locations = X

RIM LOCATION :

Rim Height: _____ at grade

_____ below grade by _____ inches

_____ above grade by _____ inches

END OF SECTION

SECTION 02769

SEWAGE DIVERSION AND BYPASS PUMPING

PART 1 GENERAL

1.1 Description

This Section includes the work necessary for sewage diversion and bypass pumping as needed for construction on existing active sewage facilities and where existing facilities are temporarily removed to accommodate construction activities.

1.2 Requirements

A. The CONTRACTOR shall submit a "Sewage Diversion and Bypass Pumping Plan" to the ENGINEER prior to the start of construction. Under no circumstances shall sewage be allowed to flow or leak onto the ground surface, into gutters or onto streets, over sidewalks, or into storm inlets. All diverted sewage shall be discharged back to the existing sanitary sewer system. The Sewage Diversion and Bypass Pumping Plan shall outline the CONTRACTOR's proposed method of handling all sewage flow during all elements of construction. The plan shall show all flow inputs (connections) in the work area and how the flow from each connection will be managed. Flow inputs shall be confirmed by the contractor during initial field surveys and television inspections. The contractor shall provide complete diversion regardless of flow rate. Additionally the plan shall contain, at a minimum, a plan view of each proposed diversion on a site map and the individual components of the diversion including but not limited to:

1. Pumps: type, size and placement
2. Diversion pipe: size, type, and placement
3. Power supply to pumps
4. Method of damming the flow
5. Facilities for redundancy

B. When necessary to provide for the construction on an existing sewer system, the flow shall be diverted by the use of pumps to a manhole downstream of the construction. The CONTRACTOR shall have adequate pumps and piping or alternative methods to divert flow to the downstream sewer lines. The pumping or transportation capacity shall be sufficient to maintain normal sewage flows plus additional flows that may occur during a rainstorm.

C. Sewage diversion piping shall be buried or arranged such that the piping is protected from traffic loads, traffic is maintained at driveways and roadways, and sidewalks are free of obstruction unless otherwise approved by the ENGINEER. All sewage diversion piping shall be water-tight. Surface restoration that is required for installing sewage diversion piping and other appurtenances is considered incidental.

D. The CONTRACTOR shall use critically silenced generators and pump units with hospital-grade mufflers and shall meet or exceed the requirements of any local noise ordinances. Such approved generators and accompanying pumps shall be continuously monitored while in operation and shall be placed to minimize disturbances to residential areas. If necessary to meet noise ordinances, sound baffles and temporary sound walls shall be installed to deflect sound from generators and bypass-pumps away from residential areas or as directed by the ENGINEER. No variance from any local noise ordinances will be allowed unless the CONTRACTOR secures a noise variance at no additional expense to the OWNER.

E. Diversion of all sewage flow shall be maintained at all times. The CONTRACTOR shall provide a qualified operator who is capable of making emergency repairs or who is able to mobilize forces to handle power, pump or other problems. This operator shall be on site immediately near the pumping system at all times. The CONTRACTOR shall be responsible for continuity of sewer service to each facility connected to the section of the sewer being impacted during the execution of the work. Diversion pumping equipment and piping shall be tested for leaks prior to pumping sewage. Leak testing shall be performed any time the diversion pumping system is disassembled, reassembled and/or modified. No leaks in the diversion piping shall be permitted. Only potable water shall be used for leak testing of pipes. Diversion pipes shall be cleaned and disinfected prior to disassembly and the liquid shall be discharged into an existing sanitary sewer. Service connections or laterals shall not be disconnected or plugged overnight. Service must be restored to service connections or laterals within the normal work day.

F. Each sewage diversion pump shall be powered by a dedicated power generator and shall operate as a single pumping unit. For system redundancy, the CONTRACTOR shall have on site an equivalent back-up sewage pumping unit for each pumping operation.

G. Flow diversion piping and pumps shall be free of leaks. Leaking pipes and pumps shall be replaced immediately. Sewage spills shall be cleaned up immediately. If a sewage release occurs during any sewage diversion activity, the CONTRACTOR shall be responsible for taking immediate action to cease, contain, and clean up the release, and to notify the proper authorities. The

CONTRACTOR shall have sufficient equipment and materials at the work site to cease, contain and cleanup any sewage release that occurs during diversion operations and will be responsible for all costs associated with sewage spill cleanup including associated fines. The CONTRACTOR shall be responsible for cleanup, repair, property damage costs and claims.

H. No sewage diversion operations may proceed unless the CONTRACTOR has, at the work site, the following items:

1. Dry granular lime, of sufficient quantities, to be spread on any release for purposes of disinfectant. A 10% bleach solution may also be used as a disinfectant. Disinfectants may not be directly applied to any surface waters, streams, creeks, etc.

2. Equipment to secure the area of sewage release and isolate the public from accessing the release site. As a minimum this shall include barricades and caution tape.

3. The equipment and materials on hand to stop the release and repair the failed item.

4. Equipment and materials to clean the site, rake up solid debris and to dispose of material properly.

I. In case of sewage release during diversion operations, the CONTRACTOR shall immediately contact the following authorities notifying them of the release:

1. City of Springfield or MSA (541-741-2975) On-Site Project Inspector

2. If the Project Inspector is not capable of being immediately notified, then contact the City of Springfield Collection System Compliance Officer or their Designee. Those individuals are:

a) City Inspector - Denny Wright – Phone: 541-736-1010
b) Collection System Compliance Officer – Brian Conlon – Phone: 541-726-3753
c) Designee – Mike Risley – Phone: 541-726-3615

The representative of the City of Springfield shall report the sewage spill within 24 hours to the Oregon Department of Environmental Quality and any other appropriate entities. Even if a sewage spill or release is contained within an excavation, the spill or release must be reported.

Failure by the CONTRACTOR to report a spill or release to the appropriate City representative will result in liquidated damages in the amount of $500.00 per incident plus an amount sufficient to reimburse the City for any civil and administrative penalties paid by the City as a result of the CONTRACTOR's failure to report as described above.

J. The CONTRACTOR shall be responsible for providing the following information to the authorities in case of a spill or release:

1. Release location
2. Date and time release found or started and time stopped
3. Release flow rate and estimated total volume
4. Receiving stream, if any
5. Action taken to stop release
6. Cause of release
7. Clean-up actions taken
8. Any other information as requested by relevant authorities

K. Upon completion of construction, all flow diversion piping and pumps and related facilities shall be removed and all affected areas restored to their prior condition.

END OF SECTION

SECTION 09800

PROTECTIVE COATINGS

PART 1 GENERAL

1.1 General

A. Work under this Section shall include the protective coating of all specified surfaces including all surface preparation, pretreatment, coating application, touch-up of factory coated surfaces, protection of surfaces not to be coated, cleanup, and appurtenant work, all in accordance with the requirements of the Contract Documents.

B. The Coating System Schedules summarize the surfaces to be coated, the required surface preparation and the coating systems to be applied. Coating notes on the drawings are used to show exceptions to the schedules, to show or extend the limits of coating systems, or to clarify or show details for application of the coating systems.

C. Related Work Specified in Other Sections -- Shop coatings and/or factory finishes on fabricated or manufactured equipment may be specified in other divisions. Some items with factory finishes, or corrosion resistant finishes may be scheduled or directed to be painted by the ENGINEER to unify a wall finish or color scheme, at the ENGINEER's discretion.

D. Exclusions -- Do not coat the following surfaces unless specified or directed elsewhere: Stainless steel, aluminum, copper, brass, bronze and other corrosion-resistant material (except for valve bodies and piping); Electrical switch-gear and motor control centers having factory finish; Fencing; Multiple coated factory finished baked enamel or porcelain products; Concealed areas such as ducts, piping, conduits and items specified elsewhere for special linings and coatings.

E. Damaged Factory Finish -- If directed by the ENGINEER, refinish the entire exposed surfaces of equipment chipped, scratched or otherwise damaged in shipment or installation.

F. All coating coming in contact with potable water shall be NSF approved.

1.2 Reference Specifications, Codes and Standards

A. Comply with the provisions of the following codes, specifications and standards, except as otherwise shown or specified.

1. "Architectural Specification Manual" by the Painting and Decorating Contractors of America (PDCA), 333 Taylor Avenue North, Seattle, Washington 98109.

2. "Systems and Specifications" - Volume 2 of Steel Structures Painting Council (SSPC).

3. National Sanitation Foundation (NSF) Standard No. 61.

B. References herein to "NACE" shall mean the published standards of the National Association of Corrosion Engineers, P.O. Box 986, Katy, TX 77450.

C. Pipe Coating Commercial Standards

ANSI/AWWA C105	Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
ANSI/AWWA C203	Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot Applied.
ANSI/AWWA C205	Cement-Mortar Protective Lining and Coating for Steel Water Pipe - 4-inch and Larger - Shop Applied
ANSI/AWWA C209	Cold Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Pipelines.
ANSI/AWWA C210	Liquid Epoxy Coating for Exterior and Interior of Steel Pipe.
ANSI/AWWA C213	Fusion Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines.
ANSI/AWWA C214	Tape Coating systems for the Exterior of Steel Water Pipelines.

D. Federal Specifications

DOD-P-23236A(SH)	Military Specification, Paint Coating Systems, Steel Ship Tank, Fuel and Salt Water Ballast.

1.3 Contractor Submittals

A. Coating Materials List -- The CONTRACTOR shall provide a coating materials list which indicates the manufacturer and the coating number, keyed to the coating systems herein. The amount of copies to submit shall be as specified within Section 01100, Special Provisions.

B. Coating Manufacturer's and Applicator Information -- For each coating system to be used the CONTRACTOR shall submit, the following listed data.

1. Manufacturer's data sheet for each product used, including statements on the suitability of the material for the intended use.

2. Manufacturer's instructions and recommendations on surface preparation and application.

3. Colors available for each product and each coat.

4. Compatibility of shop and field applied coatings (where applicable).

5. Material safety data sheet (MSDS) for each product used.

6. The manufacturer’s recommended products and procedures for field coating repairs and field preparation of field cut pipe ends.

7. The name of the proposed coating applicator shop along with certification that the applicator shop is qualified and equipped to apply the coatings systems as specified.

8. Certificate -- Submit manufacturer's certificate of compliance with the specifications and standards signed by a representative in the manufacturer's employ.

9. Samples -- Provide painted surface areas at the job for approval of main color selections, or submit sample on 12-inch sample of substrate using required finish system at ENGINEER’s discretion.

1.4 Quality Assurance

A. The CONTRACTOR shall give the ENGINEER a minimum of three (3) days advance notice of the start of any field surface preparation work of coating application work, and a minimum of seven (7) days advance notice of the start of any shop surface preparation work.

B. All such work shall be performed only in the presence of the ENGINEER, unless the ENGINEER has granted prior approval to perform such work in its absence.

C. Inspection by the ENGINEER, or the waiver of inspection of any particular portion of the work, shall not relieve the CONTRACTOR of its responsibility to perform the work in accordance with these Specifications.

D. Surface Preparation -- Evaluation of blast cleaned surface preparation work will be based upon comparison of the blasted surfaces with the standard samples available from the NACE, using NACE standard TM-01-70.

E. Scaffolding shall be erected and moved to locations where requested by the ENGINEER to facilitate inspection. Additional illumination shall be provided by the CONTRACTOR to cover all areas to be inspected.

F. Paint Products -- No request for substitution shall be approved which decreases the film thickness designated or the number of coats to be applied, or which offers a change from the generic type of coating specified. Painting shall be done at such times as the CONTRACTOR and ENGINEER may agree upon in order that dust-free and neat work be obtained. All painting shall be in strict accordance with the manufacturer's instructions and shall be performed in a manner satisfactory to the ENGINEER.

G. Manufacturer's Representative -- Require coating manufacturer's representative to be at job site when the first day's coating application is in progress and periodically during progress of the work.

H. Labels -- Deliver to the job site in the original sealed containers with manufacturer's name, product name, type of product, manufacturer's specification or catalog number or federal specification number, and instructions for reducing where applicable.

I. Colors -- Colors will be selected from manufacturer's standard colors as reviewed by ENGINEER and approved by the OWNER. Colors for special coatings that are limited in their availability and color selection will be chosen on the basis of manufacturer's standard colors, provided that the manufacturer's

product line represents a color range comparable to similar products of other manufacturers.

K. Flame Spread -- Provide paint materials which will result in a Class II finish for all coated surfaces in exit corridors, and a Class III finish for all other interior rooms or areas.

L. Film Thickness Testing -- On ferrous metals, the dry film coating thickness shall be measured in accordance with the SSPC "Paint Application Specification No. 2" using a magnetic-type dry film thickness gage such as Mikrotest model FM, Elcometer model 111/1EZ, or approved equal. Each coat shall be tested for the correct thickness. No measurements shall be made until at least eight (8) hours after application of the coating. On non-ferrous metals and other substrates, the coating thicknesses shall be measured at the time of application using wet film gage readings and destructive film thickness tests.

1.5 Delivery, Handling and Storage

A. Deliver in labeled containers as specified above and store in a locked room accessible for inspection. Comply with fire and health regulations.

B. Provide adequate heat and forced mechanical ventilation for health, safety and drying requirements. Use explosion proof equipment. Provide face masks.

C. Protect adjacent surfaces with suitable masking and drop cloths as required. Remove cloths or waste from the project daily.

D. Apply to surfaces under recommended environmental conditions and within the limitations established by the material manufacturer. Do not apply coating in snow, rain, fog or mist; or when the relative humidity exceeds 85 percent; or to damp or wet surfaces, unless otherwise permitted by the coating manufacturer's printed instructions. Coating application may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacturer during application and drying periods.

1.6 Protection

A. Follow all safety recommendations of manufacturer regarding ventilation and danger from explosion or breathing paint fumes or skin exposure, and all applicable O.S.H.A. and other regulations.

B. Protect surface adjacent to work being coated from overspray, drips or other damage.

1.7 Extra Stock

Provide one gallon of each type and color, fully labeled, at completion of job.

PART 2 PRODUCTS

2.1 General

A. Definitions -- The terms "paint," "coatings" or "finishes" as used herein, shall include surface treatments, emulsions, enamels, paints, epoxy resins, tape and all other protective coatings, excepting galvanizing or anodizing, whether used as a pretreatment, primer, intermediate coat, or finish coat. The term "DFT" means minimum dry film thickness.

B. General -- Coating materials shall be sealed in containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's directions, and name of manufacturer, all of which shall be plainly legible at the time of use.

C. The CONTRACTOR shall use coating materials suitable for the intended use and recommended by their manufacturer for the intended service.

D. Compatibility -- In any coating system only compatible materials from a single manufacturer shall be used in the work. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, subject to the approval of the ENGINEER, a barrier coat shall be applied between existing prime coat and subsequent field coats to ensure compatibility.

E. Colors -- All colors and shades of colors of all coatings shall be as selected or specified by the ENGINEER. Each coat shall be of a slightly different shade, to facilitate inspection of surface coverage of each coat. Finish colors shall be as selected from the manufacturer's standard color samples by the ENGINEER. Color pigments shall be lead free.

F. Protective Coating Materials -- Products shall be standard products produced by recognized manufacturers who are regularly engaged in production of such materials for essentially identical service conditions. Where requested, the CONTRACTOR shall provide the ENGINEER with the names of not less than 10 successful applications of the proposed manufacturer's products demonstrating compliance with this specification requirement.

G. Substitute or "Or-Equal" Submittals -- Unless otherwise specified, materials are from the catalogs of the companies listed herein. Materials by other manufacturers are acceptable provided that they are established as being compatible with and of equal quality to the coatings of the companies listed. The CONTRACTOR shall provide satisfactory documentation from the firm manufacturing the proposed substitute or "or equal" material that said material meets the specified requirements and is equivalent or better than the listed materials.

H. The cost of all testing and analyzing of the proposed substitute materials that may be required by the ENGINEER shall be paid by the CONTRACTOR. If the proposed substitution requires changes in the contract work, the CONTRACTOR shall bear all such costs involved and the costs of allied trades affected by the substitution.

2.2 Industrial Coating Systems

A. General

Provide and apply the industrial coatings systems which follow as listed in the coating schedule, as required by these specifications and as directed by the ENGINEER. Coat all existing and new exposed interior or exterior surfaces and submerged and intermittently submerged surfaces as indicated, except as specifically excluded in Part 1 of this section or on the drawings or finish schedules. Coating System Numbers listed below shall be used as the Coating System code letter, and shall be used on any coating submittals or correspondence.

B. Industrial coating systems shall be as follows

1. Coating System 100

a. Location -- Exposed, unprimed, non-galvanized, nonsubmerged metal surfaces, both interior and exterior including piping and structural steel.

b. Surface Preparation -- As specified herein.

c. Coating System -- Apply prime coat and topcoat, 4.0-6.0 mils each coat of Tnemec Series 66-2 Hi-Build Epoxoline, or approved equal. Color as selected by OWNER.

2. Coating System 101

   a. Location -- Exposed metal surfaces, shop primed, both interior and exterior including piping, railings, ladders, steel doors, and any other metal items not otherwise specified.

   b. Surface Preparation -- As specified herein.

   c. Coating System -- Apply shop prime coat 3.0 mils DFT Tnemec Series 90-97 Tneme-Zinc, one coat 4.0 - 6.0 mils DFT Tnemec Series 66 Hi-Build Epoxoline, and 3.0 - 4.0 mils DFT of Tnemec Series 175 Endura Shield, or approved equal. Color as selected by OWNER.

3. Coating System 102

   a. Location -- Unprimed or non-galvanized, continuously or intermittently submerged metal items, both interior and exterior including piping, structural steel and all other metal items not otherwise specified.

   b. Surface Preparation -- As specified herein.

   c. Coating System -- Prime, intermediate and topcoat, 4.0-6.0 mils each coat of Tnemec Series 20 Pota-Pox, or approved equal. Color as selected by OWNER.

4. Coating System 103

   a. Location -- Vertical concrete walls, exterior, below finish grade, not exposed to view.

   b. Surface Preparation -- As specified herein.

   c. Paint System -- Apply two coats 2.0-3.0 mils each, Kop-Coat Bitumastic Super Service Black, or approved equal.

5. Coating System 104

   a. Location - Nonsubmerged, exposed to view, PVC piping.

   b. Surface Preparation -- As specified herein.

c. Coating System -- Apply one coat, 4.0-6.0 mils Tnemec Series 66-2 Hi-Build Epoxoline, or approved equal. Color as selected by OWNER.

2.3 Special Pipe and Severe Service Coating Systems

A. General

The following coatings are for buried pipe and surfaces used in severe service conditions. The manufacturers' products listed in this paragraph are materials which satisfy the material descriptions of this paragraph and have a documented successful record for long term submerged or severe service conditions. Proposed substitute products will be considered as indicated within the paragraph entitled " 'Or-Equal' Clause" in Section 01100, Special Provisions.

B. Special pipe and severe service coating systems shall be as follows:

1. Coating System 200 -- Cement Mortar Coating

a. Location -- Exterior surfaces of buried steel pipe and fittings, non-galvanized.

b. Surface Preparation - As specified herein.

c. Coating System -- A 1-1/2-inch minimum thickness mortar coating reinforced with 3/4-inch galvanized welded wire fabric shall be provided. The cement mortar shall contain no less than one part Type V cement to three (3) parts sand. The cement mortar shall be cured by a curing compound meeting the requirements of "Liquid Membrane-Forming Compounds for Curing Concrete" ASTM C 309-81, Type II, white pigmented, or by enclosure in an 8-mil thick polyethylene sheet with all joints and edges lapped by at least six (6) inches. At the ENGINEER's discretion, the hot applied coal tar epoxy coating may be used as the curing membrane for the mortar coating.

2. Coating System 201 -- Hot Applied Coal Tar Epoxy Coating

a. Location -- Exterior surface of concrete pipe and cement-mortar coated pipe and fittings.

b. Surface Preparation -- As specified herein.

c. Coating System -- The hot applied coal tar epoxy shall be a solvent free 100 percent solids coal tar epoxy chemically compatible with hydrating cement and suitable for application on moist surfaces of freshly placed cement mortar or concrete and properly prepared cured surfaces. The coal tar epoxy coating material shall be Amercoat 1972B or approved equal. The finish coal tar epoxy coating shall have a minimum DFT of 26 mils.

3. Coating System 202 -- Coal-Tar Epoxy Coating System

a. Location -- Exterior surface of buried steel pipe, fittings and other ferrous surfaces.

b. Surface Preparation -- As specified herein.

c. Coating System -- High build, 2-component amine or polyamide cured coal-tar epoxy shall have a solids content of at least 68 percent by volume, suitable as a long term coating of buried surfaces, and conforming to AWWA C210. Prime coats are for use as a shop primer only. Prime coat shall be omitted when both surface preparation and coating are to be performed in the field. The coal-tar epoxy coating system shall include:

i. Prime coat (DFT = 1.5 mils), Amercoat 83HS, Tnemec P66, or equal.

ii. Finish coats (2 or more, DFT = 18 mils), Amercoat 78 HB, Tnemec 46 H-413, or equal.

iii. Total system DFT = 19.5 mils.

4. Coating System 203 -- Fusion Bonded Epoxy

a. Location -- Ferrous surfaces of sleeve couplings, steel pipe and fittings.

b. Surface Preparation -- As specified herein.

c. Coating System -- The coating material shall be a 100 percent powder epoxy applied in accordance with the ANSI/AWWA C213 "AWWA Standard for Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines". The coating shall be applied using the fluidized bed process.

i. Liquid Epoxy -- For field repairs, the use of a liquid epoxy will be permitted, applied in not less than 3 coats to provide a DFT 16 mils. The liquid epoxy shall be a 100 percent solids epoxy recommended by the powder epoxy manufacturer.

ii. Coating (DFT = 16 mils), Scotchkote 203, or equal.

iii. Total system DFT = 16 mils.

5. Coating System 204 -- Hot, Coal-Tar Enamel

a. Location -- Exterior surfaces of buried steel pipe and fittings, non-galvanized.

b. Surface Preparation - As specified herein

c. Coating System -- Coal-Tar Enamel materials and procedures shall be in accordance with ANSI/AWWA C203. This system shall consist of a primer layer, coal-tar enamel layer, coal-tar saturated nonasbestos felt outerwrap and a finish coat. Total system DFT = 188 mils.

6. Coating System 205 -- Hot Applied Tape

a. Location -- Exterior surfaces of buried steel pipe and fittings, non-galvanized.

b. Surface Preparation -- As specified herein.

c. Coating System -- Tape coating materials and procedures shall be in accordance with ANSI/AWWA C203. This system shall consist of a cold-applied liquid primer and heated coal-tar base tape. Total system DFT = 50 mils.

7. Coating System 206 -- Cold Applied Tape

a. Location -- Exterior surfaces of buried steel pipe and fittings, non-galvanized.

b. Surface Preparation -- As specified herein.

c. Coating System -- Tape coating materials and procedures shall be in accordance with ANSI/AWWA C209. Prefabricated tape

shall be Type II. The system shall consists of a primer layer, inner layer tape of 35 mils, and an outer layer tape of 35 mils. Total system DFT = 70 mils.

8. Coating System 207 -- PVC Tape

   a. Location -- Small galvanized steel pipe and fittings.

   b. Surface Preparation -- As specified herein.

   c. Coating System -- Prior to wrapping pipe with PVC tape, the pipe and fittings shall be primed using a primer recommended by the PVC tape manufacturer. After being primed, the pipe shall be wrapped with a 20-mil adhesive PVC tape, half lapped for a total thickness of 40 mils.

9. Coating System 208 -- Mastic

   a. Location -- Pipe and fitting joints, and general buried surface coating repair and touch up.

   b. Surface Preparation - As specified herein.

   c. Coating System -- Mastic shall be a one-part solvent drying heavy bodied thixotropic synthetic elastomeric coating with chemically inert resins and fillers and an average viscosity of 650,000 CPS at 77 degrees Fahrenheit, thereby requiring generous applications by hand or trowel. Total coat thickness shall be 30 mils, minimum. Mastic shall be Protecto Wrap 160 H or approved equal and be fully compatible with pipeline coating systems.

10. Coating System 209 -- Polyethylene Encasement

   a. Location -- Ductile iron, steel and concrete cylinder pipe and fittings.

   b. Surface Preparation -- None required.

   c. Coating System -- Except as otherwise specified, application of polyethylene encasement shall be in accordance with ANSI/AWWA C105 using Method C.

11. Coating System 210 -- Elastomeric Polyurethane Encasement

a. Location – Exterior surface of ductile iron pipe where exposed to sanitary sewer system environment. Full lengths of pipe shall be coated, do not coat partial lengths of pipe segments.

b. Surface Preparation – Abrasive blast to achieve a minimum 3 mil sharp angular profile of the bare ductile iron pipe surface.

c. Coating System – Shop apply 80 mils minimum thickness Carboline Reactamine 760, or approved equal, per manufacturer's recommendations. Color as selected by OWNER.

PART 3 EXECUTION

3.1 Storage, Mixing and Thinning of Materials

A. Manufacturer's Recommendations -- Unless otherwise specified herein, the coating manufacturer's printed recommendations and instructions for thinning, mixing, handling, applying, and protecting its coating materials, for preparation of surfaces for coating, and for all other procedures relative to coating shall be strictly observed.

B. All protective coating materials shall be used within the manufacturer's recommended shelf life.

C. Storage and Mixing -- Coating materials shall be protected from exposure to cold weather, and shall be thoroughly stirred, strained, and kept at a uniform consistency during application. Coatings of different manufacturers shall not be mixed together.

3.2 Surface Preparation Standards

A. The following referenced surface preparation specifications of the Steel Structures Painting Council shall form a part of this specification.

1. Solvent Cleaning (SSPC-SP1) -- Removal of oil, grease, soil, salts and other soluble contaminants by cleaning with solvent, vapor, alkali, emulsion or steam.

2. Hand Tool Cleaning (SSPC-SP2) -- Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, by hand chipping, scraping, sanding, and wire brushing.

3. Power Tool Cleaning (SSPC-SP3) -- Removal of loose rust, loose mill scale, loose paint, and other loose detrimental foreign matter, by power tool chipping, descaling, sanding, wire brushing and grinding.

4. White Metal Blast Cleaning (SSPC-SP5) -- Removal of all visible rust, oil, grease, soil, dust, mill scale, paint, oxides, corrosion products and foreign matter by blast cleaning.

5. Commercial Blast Cleaning (SSPC-SP6) -- Removal of all visible oil, grease, soil, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except that staining shall be limited to no more than 33 percent of each square inch of surface area.

6. Brush-Off Blast Cleaning (SSPC-SP7) -- Removal of all visible oil, grease, soil, dust, loose mill scale, loose rust and loose paint.

7. Near-White Blast Cleaning (SSPC-SP10) -- Removal of all visible oil, grease, soil, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except that staining shall be limited to no more than 5 percent of each square inch of surface area.

3.3 Corrections and Cleanup

At completion any damaged, de-laminated or defaced coated surfaces shall be touched up, restored and left in first class condition. Any coated or finished surfaces damaged in fitting or erection shall be restored. If necessary, an entire wall shall be refinished rather than spot finished. Upon completion and prior to final acceptance, all equipment and unused materials accumulated in the coating process shall be removed from the site and any spillage, spatter spots or other misplaced coating material shall be removed in a manner which will not damage surfaces. Perform required patching, repair and cleaning to the satisfaction of the ENGINEER. Cooperate and coordinate work with the work of other trades in the removal and replacement of hardware, fixtures, covers, switch plates, etc., as required for coating.

3.4 Surface Preparation

A. General

Prepare all surfaces scheduled to receive new coating systems, as required to provide for adequate bonding of the specified coating system to the substrate

material. Request review of prepared surfaces by the ENGINEER prior to proceeding. For existing coated surfaces, hand wash with cleaner or product recommended by coating manufacturer to properly prepare existing surface and provide for bonding of coating specified to follow. Remove any loose, peeling or flaking coating, or mildewed areas. Surface preparation minimums shall be as follows:

1. Exposed metal items, nonsubmerged, unprimed, non-galvanized both interior and exterior, including: piping, structural steel and all other metal items not otherwise specified, shall undergo surface preparation in accordance with SSPC-SP6, "Commercial Blast Cleaning".

2. Exposed metal items, shop primed, both interior and exterior including: piping, steel doors, steel ladders to be painted, and railings, and all other metal items not otherwise specified, shall undergo surface preparation in accordance with SSPC-SP1, "Solvent Cleaning"; SSPC-SP2, "Hand Tool Cleaning"; and SSPC-SP3, "Power Tool Cleaning" as may be required to remove grease, loose or peeling or chipped paint.

3. Metal items, unprimed or non-galvanized, continuously or intermittently submerged, both interior and exterior including: piping, structural steel and all other metal items not otherwise specified, shall undergo surface preparation in conformance with SSPC-SP10, "Near-White Blast Cleaning".

4. Stainless Steel - Nonsubmerged and submerged, exposed piping and fittings, both interior and exterior shall undergo surface preparation in accordance with SSPC-SP1, "Solvent Cleaning".

5. Polyvinyl Chloride (PVC) - Nonsubmerged, both interior and exterior, process piping and plumbing, shall be lightly sanded prior to application of the specified coating system to follow.

6. Nonsubmerged Concrete - Clean all concrete surfaces of dust, form oil, curing compounds or other incompatible matter. Etch and prime if required by manufacturer for specified coating products to follow. Allow minimum 28-day cure of concrete prior to application of coating systems.

7. Concrete Masonry Units -- Repair all breaks, cracks and holes with concrete grout. The surface must be free of dirt, dust, loose sand and other foreign matter. Brush clean. Allow minimum 28-day cure of concrete joint mortar and repair grout prior to application of coatings system.

8. Wood -- Wood surfaces shall be thoroughly cleaned and free of all foreign matter with cracks, nail holes and other defects properly filled, smoothed and sandpapered to fine finish. Wipe clean of dust.

9. Preparation of All Existing Coated Surfaces -- Removed rough and defective coating film from material surfaces to be painted. Touch up with approved primer. Clean all greasy or oily surfaces, to be painted, with benzine or mineral spirits or Rodda's Gresof before coating, or as recommended by manufacturer. For walls, patch existing nicks and gouges, sand to match wall finish.

3.5 Prime Coating

A. Exposed Steel -- Prime coat all exposed steel in accordance with SSPC PS 13.01 for epoxy-polyamide coating systems. Prime coats shall be applied following completion of surface preparation requirements as specified in paragraph 3.4.A.1 above.

B. Galvanized Metal -- After surface preparation specified above, prime galvanized metal items receiving paints as specified with Tnemec Series 66 Hi-Build Epoxaline or equal, verifying with manufacturer before application the compatibility with coatings specified to follow.

C. Shop Primed Metal -- Where indicated on the plans or coating schedule and following the surface preparation procedures specified in paragraph 3.4.A.2 above, the CONTRACTOR shall apply intermediate and topcoats of the specified paint system to shop primed metal. The CONTRACTOR shall verify with the manufacturer(s) representative of the item(s) to be painted, before application, the compatibility of shop primers with the specified intermediate and topcoat coating systems.

D. Non-Shop Primed Metal and Piping -- Prime coat all exposed metal and piping, except stainless steel, received at job site following completion of surface preparation requirements as specified in paragraph 3.4.A.1 above. Prime paint in accordance with SSPC PS No. 13.01 for epoxy-polyamide primers. Epoxy-polyamide primers shall conform to the standards set forth in SSPC Paint Specification No. 22.

E. Cast-In-Place Reinforced Concrete -- After surface preparation specified above, prime coat concrete as specified in the coating schedule found elsewhere in the specifications.

F. Concrete Masonry Units -- After surface preparation specified above, prime coat as specified in the coating schedule found elsewhere in the specifications.

G. Wood Surfaces -- Following surface preparation specified above, prime coat exterior exposed wood surfaces with appropriate coating system as specified in the painting schedule.

3.6 Field Prime

Wherever shop priming has been damaged in transit or during construction, the damaged area shall be cleaned and touched up with field primer specified herein or returned to the shop for resurfacing and repriming, at the ENGINEER's discretion. Metal items delivered to the job site unprimed shall be cleaned and primed as specified herein.

3.7 Application

A. Thickness -- Apply coatings in strict conformance with the manufacturer's application instructions. Apply each coat at the rate specified by the manufacturer to achieve the dry mil thickness specified. If material must be diluted for application by spray gun, build up more coating to achieve the same thickness as undiluted material. Correct apparent deficiency of film thickness by the application of an additional coat.

B. Porous Surfaces -- Apply paint to porous surfaces as required by increasing the number of coats or decreasing the coverage as may be necessary to achieve a durable protective and decorative finish.

C. Blast cleaned ferrous metal surfaces shall be painted before any rusting or other deterioration of the surface occurs. Blast cleaning shall be limited to only those surfaces that can be coated in the same working day.

D. Coatings shall be applied in accordance with the manufacturer's instructions and recommendations, and this Section, whichever has the most stringent requirements.

E. Special attention shall be given to edges, angles, weld seams, flanges, nuts and bolts, and other places where insufficient film thicknesses are likely to be present. Use stripe coating for these areas.

F. Special attention shall be given to materials which will be joined so closely that proper surface preparation and application are not possible. Such contact surfaces shall be coated prior to assembly or installation.

G. Ventilation -- Adequately ventilate enclosed rooms and spaces during painting and drying periods.

H. Drying Time -- Do not apply next coat of coat until each coat is dry. Test non-metallic surfaces with moisture meter. The manufacturer's recommended drying time shall mean an interval under normal condition to be increased to allow for adverse weather or drying conditions. Coating manufacturer's representative shall verify by cure testing, complete cure of coatings systems used for immersion service.

3.8 Coating Schedule

Coating Schedule

Item	Location	Material	Coating System
Piping[1]	Interior, exposed in sanitary sewer manholes	Ductile Iron	Coating System 210

Notes:
[1] Pipe linings shall be as specified elsewhere in these specifications.

END OF SECTION

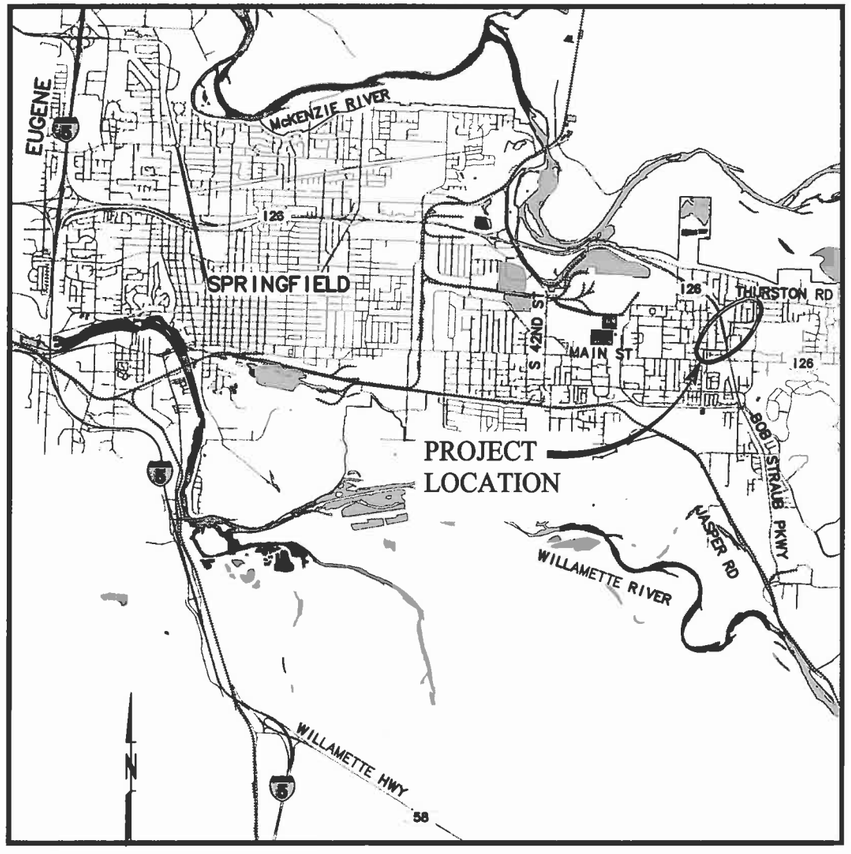
CONSTRUCTION PLANS AND DRAWINGS

CITY OF SPRINGFIELD, OREGON

58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE

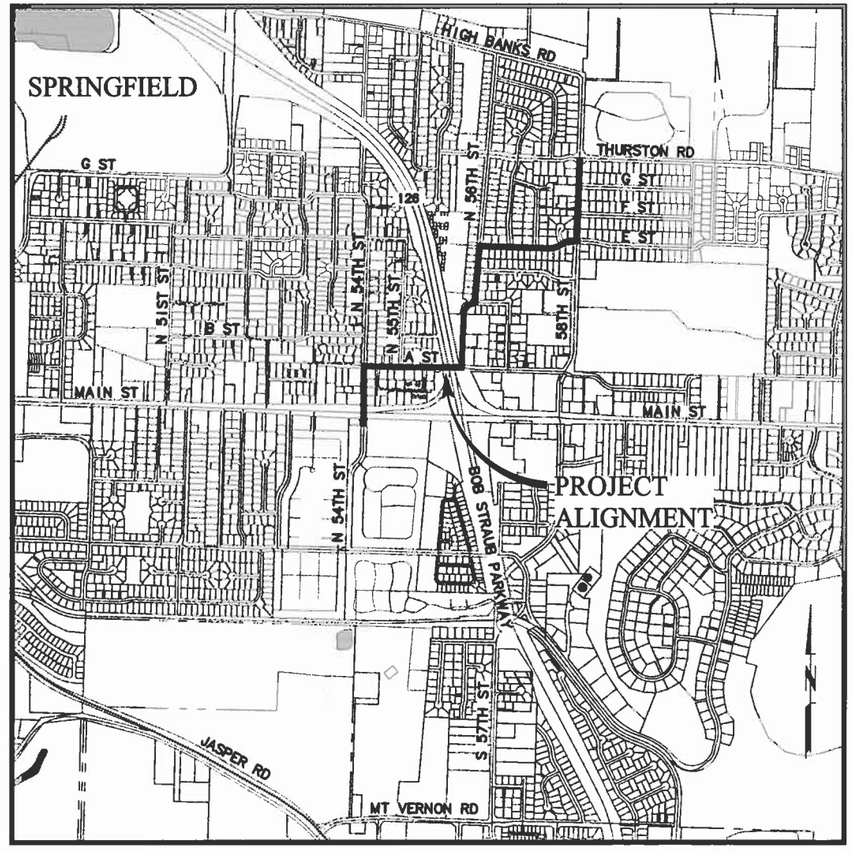
PROJECT NUMBER P21046

MAY 2012



VICINITY MAP

SCALE: 1"=3,500'



LOCATION MAP

SCALE: 1"=800'

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: COVER SHEET, VICINITY MAP & LOCATION MAP

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

G-1 1 OF 20

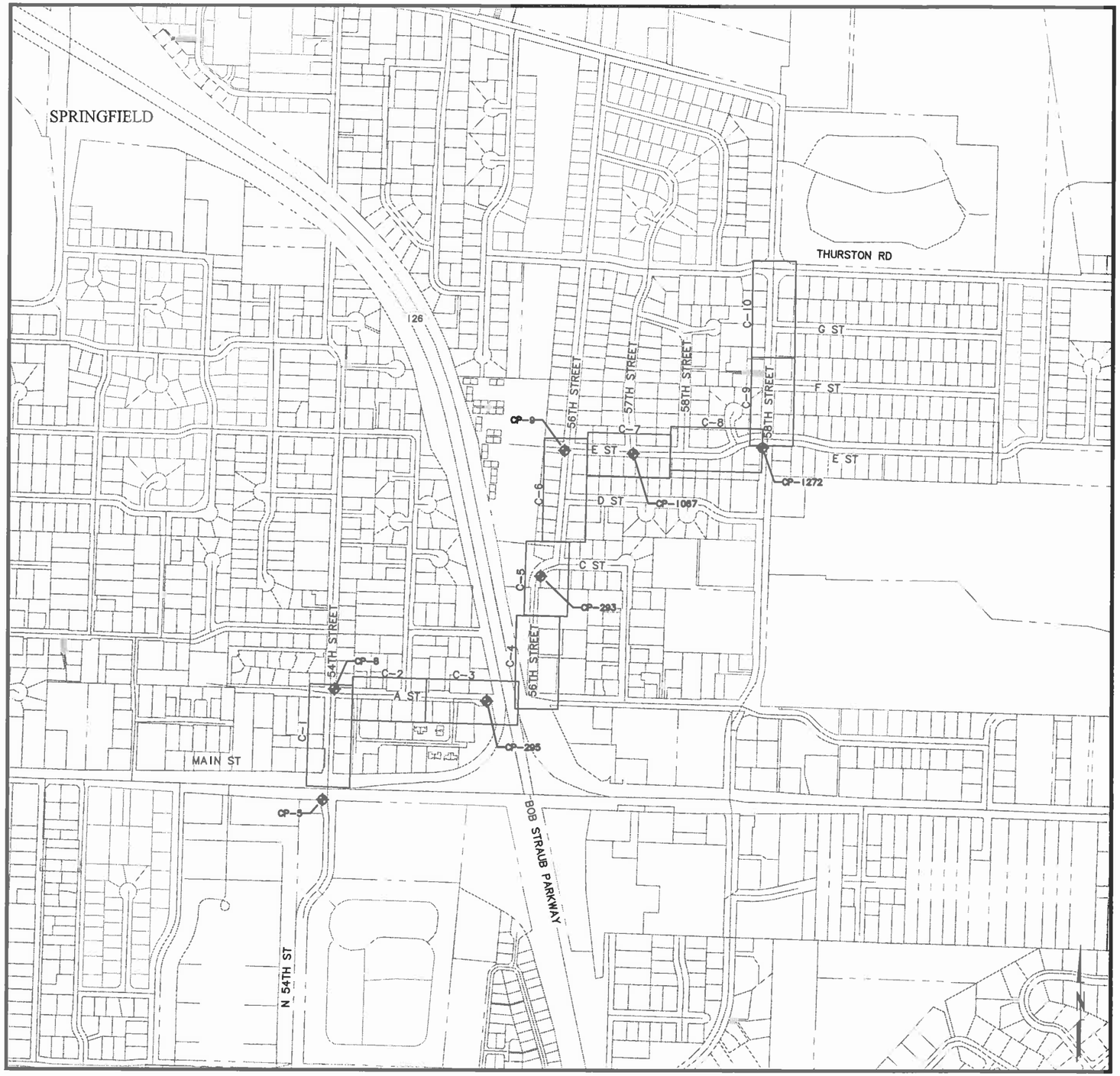
INDEX OF SHEETS

SURVEY CONTROL DATUM

HORIZONTAL–NAD 83/91 (INTERNATIONAL FEET)
OREGON STATE PLANE COORDINATES, SOUTH ZONE

VERTICAL – NAVD 88 (INTERNATIONAL FEET)

SURVEY CONTROL POINT SCHEDULE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP-5	876298.78	4281127.41	506.505	SCRIBE
CP-8	876869.49	4281187.29	505.730	MAG
CP-9	878103.78	4282375.75	500.964	MAG
CP-293	877454.30	4282252.27	507.337	MAG
CP-295	876809.33	4281976.97	508.448	MAG
CP-1067	878088.23	4282732.24	502.883	MAG
CP-1272	878120.33	4283400.23	507.433	MAG



SURVEY CONTROL AND DRAWING KEY MAP

SCALE: 1"=300'

CITY PROJECT NUMBER P21046

REVISION | BY | NO. | DATE

DESIGNED: GNL
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 10, 2007 WILLIAM S. EVANS 56547 RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.
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PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: INDEX OF DRAWINGS, SURVEY CONTROL & DRAWING KEY MAP

G-2
2 OF 20

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

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TOPOGRAPHIC LEGEND

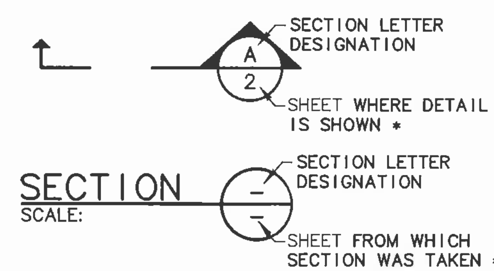
	EXISTING	PROPOSED
WATERLINE	16"W	
ELECTRICITY	E	
GAS	4"G	
TELEPHONE/TELEMETRY	T	
CABLE TELEVISION	CATV	
SANITARY SEWER LINE	8"SS	8"SS
CASING		
SANITARY SEWER FORCE MAIN	6"FM	
STORM DRAIN	8"SD	
CULVERT		18"D
ABANDON PIPE		
DRAINAGE DITCH		
BARBED WIRE FENCE		
CHAIN LINK FENCE		
GATE		
GUARDRAIL		
CENTERLINE		
RAILROAD		
URBAN GROWTH BOUNDARY		
RIGHT-OF-WAY EASEMENT/PROPERTY LINE		
WETLAND BOUNDARY		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SIDEWALK	S/W	
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR	200	
MANHOLE		
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
THRUST BLOCK		
VALVE		
AIR INJECTION ASSEMBLY		
BLOW-OFF ASSEMBLY		
AIR RELEASE ASSEMBLY		
FIRE HYDRANT ASSEMBLY		
WATER METER		
UTILITY POLE		
GUY WIRE		
LIGHT POST		
MAIL BOX		
SIGN		
BENCH MARK/SURVEY CONTROL POINT		
TREE DECIDUOUS		
TREE CONIFEROUS		
TREE DECIDUOUS TO BE REMOVED		
TREE CONIFEROUS TO BE REMOVED		
TELECOMMUNICATIONS PEDESTAL		

ABBREVIATIONS

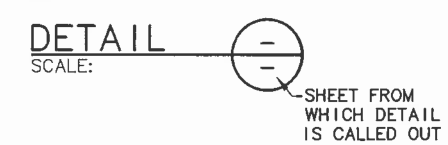
AC	ASPHALTIC CONCRETE
ABAN	ABANDON(ED)
ADWF	AVERAGE DRY WEATHER FLOW
AL	ALUMINUM
APPROX	APPROXIMATELY
APPVD	APPROVED
ASSY	ASSEMBLY
ARV	AIR RELEASE VALVE
BLDG	BUILDING
BM	BENCHMARK
BO	BLOWOFF
BTM	BOTTOM
C/L	CENTER LINE
CB	CATCH BASIN
CCP	CONCRETE CULVERT PIPE
CI	CAST IRON
CG	CURB/GUTTER
CL	CLASS
CO	CLEANOUT
CONC/CON	CONCRETE
CONST	CONSTRUCTION
COP	COPPER
COS	CITY OF SPRINGFIELD
CPLG	COUPLING
CR	CRUSHED ROCK
CV	CHECK VALVE
CY	CUBIC YARD
D	DRAIN
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DR	DRIVE
DWG	DRAWING
DWY	DRIVE WAY
EA	EACH
EL	ELEVATION
ELEC/E	ELECTRICAL
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ESMT	EASEMENT
EXIST	EXISTING
EG	EXISTING GRADE
FAB	FABRICATE
FD	FLOOR DRAIN
FH	FIRE HYDRANT
FIN GR	FINISHED GRADE
FL	FLOW LINE
FLG	FLANGE(D)
FM	FORCE MAIN
FT	FOOT
FTG	FITTING
G	GAS
GALV	GALVANIZED
GR	GRADE
GRVL	GRAVEL
GV	GATE VALVE
HORIZ	HORIZONTAL
HWY	HIGHWAY
HP	HIGH PRESSURE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INSTL	INSTALL
LAT	LATERAL
LF	LINEAL FEET
LP	LOW PRESSURE
MATL(S)	MATERIAL(S)
MAX	MAXIMUM
MFR(S)	MANUFACTURER('S)
MH(S)	MANHOLE(S)
MIN	MINIMUM
MJ	MECHANICAL JOINT
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODOT	OREGON DEPARTMENT OF TRANSPORTATION
OVHD	OVERHEAD LINE
P	POWER
PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
PCP	PLAIN CONCRETE PAVEMENT
PE	PLAIN END
PERM	PERMANENT
P/L	PROPERTY LINE
POLY	POLYETHYLENE
PRESS	PRESSURE
PROP	PROPOSED
PS	PUMP STATION
PUGD	UNDERGROUND POWER
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDCR	REDUCER
REINF	REINFORCE(D)(ING)(MENT)
RESTR	RESTRAIN(ED)
REQ'D	REQUIRED
R/W	RIGHT OF WAY
SCHED	SCHEDULE
SD	STORM DRAIN
SERV	SERVICE
SHT(S)	SHEET(S)
SL	SLOPE
SPECS	SPECIFICATIONS
SPL	SPOOL
SQ	SQUARE
SQ FT	SQUARE FOOT
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STL	STEEL
STD	STANDARD
SUB	SPRINGFIELD UTILITY BOARD
S/W	SIDEWALK
TEL/T	TELEPHONE
TB	THRUST BLOCK
TEMP	TEMPORARY
THK	THICK
THRU	THROUGH
TV	TELEVISION
TYP	TYPICAL
VERT	VERTICAL(LY)
W	WATER
W/	WITH
W/IN	WITHIN
W/O	WITHOUT
WM	WATER METER

SECTION AND DETAIL DESIGNATIONS

SECTION DESIGNATIONS



DETAIL DESIGNATIONS



* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

CITY PROJECT NUMBER P21046

NO. | DATE | REVISION | BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER 65434 OREGON WILLIAM S. EVONIUK RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF SPRINGFIELD, OREGON 58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE PROJECT NUMBER P21046

SHEET TITLE: SYMBOLS, LEGEND & ABBREVIATIONS

MSA Murray, Smith & Associates, Inc. Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL, AT A MINIMUM, MEET CITY OF SPRINGFIELD DEPARTMENT OF PUBLIC WORKS "STANDARD CONSTRUCTION SPECIFICATIONS, 1994" AS AMENDED IN 1998 (OR CURRENT EDITION), IN ADDITION TO THESE PLANS.

2. OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0100. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (800) 332-2344.

3. LOCATION AND/OR DEPTH OF EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE. ALL UTILITIES MAY NOT APPEAR ON PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES FOR UNDERGROUND LOCATION OF FACILITIES AT LEAST 48 HOURS PRIOR TO EXCAVATING OR "POTHOLING". THE UTILITY "ONE-CALL" NUMBER IS (800) 332-2344 OR 811.

4. LOCATIONS OF EXISTING UTILITIES ARE BASED ON INFORMATION SUPPLIED BY THE UTILITIES AND CONSIDERED APPROXIMATE ONLY. WORK FOR THIS CONTRACT MAY BE LOCATED IN CLOSE PROXIMITY TO EXIST UTILITIES. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES AND SIZES OF EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING SHALL SUFFICIENTLY PRECEDE LAYING OF PIPE TO ALLOW REQUIRED ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK.

5. NOTIFY UTILITIES PRIOR TO WORK IMPACTING UTILITY POLES. COORDINATE PROTECTION, RELOCATION, OR REPLACEMENT OF UTILITY POLES AND OR GUY WIRES WITH UTILITIES. NO SEPARATE PAYMENT WILL BE MADE FOR PROTECTION, RELOCATION OR REPLACEMENT OF UTILITY POLES AND OR GUY WIRES NECESSARY TO FACILITATE CONSTRUCTION ACTIVITIES.

6. FOR CLARITY, OVERHEAD LINES ARE NOT SHOWN ON THE DRAWINGS. NUMEROUS EXIST. OVERHEAD LINES OCCUR ALONG THE PIPE ALIGNMENT. CONTRACTOR TO CONFIRM CONDITIONS IN VICINITY OF OVERHEAD LINES.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH UTILITY COMPANIES ON THE TIMING OF INSTALLATION OF THE FACILITIES.

8. THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES NECESSARY TO PROTECT AND SAFEGUARD THE PUBLIC AND WORKERS AGAINST INJURY AND PROTECT THE WORK AGAINST DAMAGE. ALL TEMPORARY TRAFFIC CONTROL SIGNING AND DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING WORK. ALL TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD), CURRENT EDITION, AS SUPPLEMENTED AND AMENDED BY THE OREGON SUPPLEMENTS. FLAGGING SHALL BE PERFORMED AS SHOWN IN THE "OREGON TEMPORARY TRAFFIC CONTROL HANDBOOK FOR OPERATIONS OF THREE DAYS OR LESS", 2006 OR CURRENT EDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REQUIRED TRAFFIC CONTROL AS FIELD CONDITIONS WARRANT. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TWO WEEKS PRIOR TO THE PRE-CONSTRUCTION CONFERENCE FOR CITY AND ODOT REVIEW AND APPROVAL.

9. ALL SANITARY AND STORM SEWER CONNECTIONS TO EXISTING CITY OWNED FACILITIES (PIPE, CATCH BASINS, MANHOLES, ETC.) SHALL BE INSPECTED BY THE CONTRACTOR AND THE CITY'S PUBLIC WORKS MAINTENANCE DEPARTMENT PRIOR TO HOOK UP. CONTACT MIKE RISLEY (541-726-3615) OR GENE ENOS (541-726-6062) NO LESS THAN 48 HOURS PRIOR TO DESIRED INSPECTION TIME.

10. WHERE CONNECTING TO AN EXISTING PIPE THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE AND ALLOW THE ENGINEER TO VERIFY EXACT LOCATION AND ELEVATION, CONDITION, AND POSITIVE FLOW BEFORE LAYING ANY NEW PIPE ON THAT SYSTEM.

11. THE SEWER GRADE SHALL BE PER THE PLANS, SPECIFICATIONS AND WITH THE MINIMUM COVER AS SHOWN ON THE PLANS.

12. ALL PVC SEWER PIPE 15-INCH DIAMETER AND SMALLER SHALL BE ASTM D3034. ALL PVC SEWER PIPE 18-INCH DIAMETER AND LARGER SHALL BE ASTM F679. PVC SEWER PIPE WITH LESS THAN 10 FEET OF COVER SHALL BE SDR 35/PS 46. PVC SEWER PIPE WITH COVER 10 FEET OR GREATER SHALL BE SDR26/PS 115, UNLESS OTHERWISE SHOWN ON THE PLANS.

13. CONTRACTOR TO SCHEDULE A PRE-PAVING MEETING TO BE HELD A MINIMUM OF 24 HOURS PRIOR TO PAVING.

14. ALL JOINTS BETWEEN EXISTING AND NEW ASPHALT PAVING SHALL BE SEALED WITH POLYMERIZED ASPHALT AND SANDED TO PREVENT PICK UP.

15. COMPACTION REQUIREMENTS, REFER TO COS STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS:

LAYER	RATE	TEST
SUBGRADE	95%	T99
CRUSHED ROCK	95% OR 100% (AS SPECIFIED OR SHOWN)	T99
ASPHALT (LOCAL)	90%	RICE
ASPHALT (COLLECTOR/ARTERIAL)	92%	RICE

16. CONCRETE COMPRESSIVE STRENGTH REQUIREMENTS (PSI), REFER TO COS STANDARD CONSTRUCTION SPECIFICATIONS:

CONCRETE USE	FIELD	LABORATORY
SIDEWALK/ADA RAMPS	3000	3450
CURBS/GUTTERS	3500	4025
DRIVEWAYS	3500	4025
PAVEMENT	4000	4600
CLSM/CDF	100-200	100-200

17. THE CONTRACTOR SHALL INTERNALLY TELEVISION INSPECT THE SEWER AFTER ALL BACKFILL AND BEFORE THE FINAL LIFT OF ASPHALT PAVING. THE CONTRACTOR SHALL SUPPLY THE CITY WITH A WRITTEN TV REPORT AND VIDEO DVD FOR CITY APPROVAL AT LEAST 2 WORKING DAYS BEFORE PAVING.

18. THIS PROJECT SHALL COMPLY WITH THE AMERICAN DISABILITIES ACT REQUIREMENTS SUCH AS INCORPORATION OF DESIGN CRITERIA FOR HANDICAP RAMPS, MAXIMUM PROFILE AND CROSS SECTION SLOPES FOR SIDEWALKS, UPGRADING EXISTING HANDICAP FACILITIES WHERE MAJOR CONSTRUCTION OCCURS.

19. ALL IMPROVEMENTS THAT WILL BE PRIVATELY OWNED AND MAINTAINED WILL BE BOUND BY THE CURRENT REQUIREMENTS OF THE STATE OF OREGON STRUCTURAL SPECIALTY CODE, PLUMBING SPECIALTY CODE, AND/OR CITY OF SPRINGFIELD BUILDING DIVISION REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPLICABLE PERMITS FROM OTHER CITY DEPARTMENTS PRIOR TO DOING PRIVATE WORK.

20. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED BEFORE START OF CONSTRUCTION. ALL UTILITIES, CONTRACTORS, ODOT REPRESENTATIVES AND CITY REPRESENTATIVES SHALL HAVE RECEIVED THE FINAL APPROVED PLANS AT LEAST 5 WORKING DAYS PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

21. THE ENGINEER AND/OR CITY HAVE THE RIGHT TO REQUIRE ADDITIONAL WORK NOT SHOWN HEREIN BUT NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE PROJECT.

22. REQUESTS BY THE CONTRACTOR FOR CHANGES SHALL BE APPROVED BY THE ENGINEER AND THE CITY IN WRITING PRIOR TO IMPLEMENTATION.

23. CONTRACTOR SHALL BE AWARE OF CITY STANDARDS IF PAVING IS NOT SCHEDULED OR DOES NOT OCCUR PRIOR TO OCTOBER 15TH. WET WEATHER PROVISIONS INCLUDING ADDITIONAL ROCK SUBSTRUCTURE AND GEOTEXTILE FABRIC SHALL BE USED OUTSIDE OF THE MAY 1ST TO OCTOBER 15TH TIMEFRAME. REFER TO STANDARD SPECIFICATION SECTION 301.1.01 AND THE TYPICAL CROSS SECTIONS FOR DETAILS.

24. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF ORS 757.541 TO 757.571. CONTRACTOR SHALL NOTIFY EACH UNDERGROUND UTILITY AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS, PRIOR TO EXCAVATING, BORING, OR POTHOLING.

25. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE CAUSED BY CONSTRUCTION OF NEW SEWER FACILITIES. NO ADDITIONAL PAYMENT SHALL BE MADE FOR UTILITY RELOCATION COORDINATION OR DELAYS CAUSED BY UTILITY CONFLICTS. ALL COSTS RELATED TO UTILITY COORDINATION, PROTECTION AND RELOCATION, INCLUDING ADDITIONAL POTHOLING, ARE TO BE CONSIDERED INCIDENTAL AND INCLUDED IN THE UNIT PRICES OF THE BID.

26. UTILITIES OR INTERFERING PORTIONS OF UTILITIES THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK. CONTRACTOR SHALL PLUG THE REMAINING EXPOSED ENDS OF ABANDONED UTILITIES, UNLESS OTHERWISE REQUIRED BY THE ENGINEER.

27. CONTRACTOR SHALL KEEP AND MAINTAIN A CURRENT SET OF DRAWINGS ON SITE. CONTRACTOR TO CREATE ACCURATE "AS-BUILT" MARK-UP RECORD DRAWINGS. "AS-BUILT" PLANS TO BE RETURNED TO ENGINEER AT COMPLETION OF PROJECT.

28. CONTRACTOR SHALL PROTECT ALL PROPERTY CORNERS, SURVEY MONUMENTS AND CONTROL POINTS. SURVEY MONUMENTS OF THIS TYPE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE, WITH APPROPRIATE SURVEYS FILED WITH THE COUNTY SURVEYOR.

29. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED OR REPLACED MATERIAL AND EQUIPMENT IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS, EXCEPT THOSE ITEMS DESIGNATED BY THE OWNER FOR SALVAGING. SALVAGED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER, AND SHALL BE CAREFULLY REMOVED AND STORED AS DIRECTED.

30. ALL EXISTING FEATURES INCLUDING STRUCTURES, LOTS, SWALES, DITCHES, CURBS, FENCES, WALLS, MAILBOXES, SIGNS, POLES, GUY WIRES, PIPING, AND UTILITIES DISTURBED DURING CONSTRUCTION ARE TO BE RESTORED TO EXISTING CONDITION UNLESS OTHERWISE SPECIFIED.

31. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL HOMES AND BUSINESSES AT ALL TIMES. PROVIDE WRITTEN NOTICE TO ALL PROPERTY OWNERS AT LEAST TWO BUSINESS DAYS IN ADVANCE OF WORK IN AND/OR CROSSING OF DRIVEWAYS.

32. AT THE END OF EACH WORK DAY ALL OPEN TRENCHES SHALL BE BACKFILLED OR ADEQUATELY COVERED TO ACCOMMODATE TRAFFIC. ALL TRENCHES LONGER THAN 500 FEET SHALL BE TEMPORARILY PAVED WITH BASE COURSE. ALL TRENCHES REGARDLESS OF LENGTH SHALL BE TEMPORARILY PAVED NO LESS THAN BY-WEEKLY WITH BASE COURSE.

33. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL FLAG TREES PROPOSED FOR REMOVAL AS MAY BE REQUIRED TO FACILITATE THE CONTRACTORS OPERATIONS. CONTRACTOR SHALL OBTAIN ALL NECESSARY TREE REMOVAL PERMITS FROM THE CITY OF SPRINGFIELD, SEE SPECIFICATIONS. TREE REMOVAL WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE SEWER.

34. PRIOR TO CONSTRUCTION, PROTECT EXISTING TREES NOT DESIGNATED FOR REMOVAL FROM ALL CONSTRUCTION OPERATIONS. DO NOT FILL OR OTHERWISE DISTURB THE AREA WITHIN THE DRIP LINE OF TREES TO BE PRESERVED.

35. THE CONTRACTOR IS RESPONSIBLE FOR ALL SEWAGE BY-PASS PUMPING AND/OR TEMPORARY DIVERSION CONNECTIONS NECESSARY FOR CONSTRUCTION. SEE SPECIFICATIONS.

36. MANHOLE RIMS AND ALL OTHER CASTINGS INCLUDING VALVE BOXES SHALL BE SET TO FINISHED GRADE PRIOR TO PAVING.

37. SPRINGFIELD CODE 10.2.1 REQUIRES NOTIFICATION OF OPEN TRENCHING FOR THE PROJECT TO ALLOW POSSIBLE AT&T CABLE INSTALLATION.

38. BEFORE BACKFILLING THE END OF A MAINLINE PIPE NOT ENDING AT A MANHOLE OR A CLEANOUT, THE CONTRACTOR SHALL PERFORM THE TV INSPECTION AS REQUIRED BY THE STANDARD SPECIFICATIONS TO ALLOW THE ENGINEER TO DETERMINE THE EXACT LOCATION AND ELEVATION OF THE END OF THE PIPE.

39. STREET TREES SHALL BE SELECTED FROM THE APPROVED LIST OF STREET TREES IN THE SPRINGFIELD DEVELOPMENT CODE.

40. CONTRACTOR SHALL SUBMIT EVIDENCE OF INSURANCE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO THE CITY FOR APPROVAL PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

41. NOTIFY NW NATURAL GAS AT LEAST 24 HOURS PRIOR TO EXCAVATING WITHIN 10 FEET OF ANY HIGH PRESSURE GAS LINE AT (503-220-2415). A NW NATURAL GAS REPRESENTATIVE WILL BE REQUIRED TO BE ONSITE WHEN EXCAVATING WITHIN 10 FEET OF ANY HIGH PRESSURE GAS LINE, UNLESS OTHERWISE APPROVED IN WRITING BY NW NATURAL GAS.

42. PROTECT EXISTING SIDEWALKS AND SIDEWALK RAMPS DURING CONSTRUCTION. WHERE DAMAGE TO SIDEWALKS AND SIDEWALK RAMPS OCCURS AND WHERE APPROVED BY THE ENGINEER OR OWNER, REMOVE DAMAGED SECTIONS AND REPLACE ACCORDING TO APPROVED CITY OF SPRINGFIELD STANDARD DRAWINGS.

43. PROTECT EXISTING SANITARY SEWER SERVICE LATERALS DURING CONSTRUCTION. WHERE THE ELEVATION OF AN EXISTING SERVICE LATERAL IS IN CONFLICT WITH THE ELEVATION OF THE NEW PIPELINE, REMOVE AND RECONSTRUCT SERVICE LATERAL TO SEWER MAIN CONNECTION PER CITY OF SPRINGFIELD STANDARD DRAWINGS 4-6 AND 4-7. REPLACE LENGTH OF LATERAL AS NEEDED TO MAINTAIN POSITIVE SLOPE FROM HOUSE CONNECTION TO MAIN.

44. ALL PERMANENT PAVEMENT MARKINGS, STRIPING AND LEGENDS DAMAGED OR REMOVED AS A RESULT OF CONSTRUCTION WITH IN CITY RIGHT OF WAY SHALL BE REPLACED TO MATCH EXISTING LAYOUT WITH NEW MATERIAL OF LIKE KIND. REFER TO CITY OF SPRINGFIELD STANDARD CONSTRUCTION SPECIFICATIONS, SECTION 317, PERMANENT TRAFFIC CONTROL FOR REQUIREMENTS.

CITY PROJECT NUMBER P21046

NO. | DATE | REVISION | BY

REGISTERED PROFESSIONAL ENGINEER 85634 OREGON WILLIAM S. EVONIUK RENEWS 12-31-13

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF SPRINGFIELD, OREGON 58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE PROJECT NUMBER P21046

SHEET TITLE: GENERAL NOTES

MSA Murray, Smith & Associates, Inc. Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

G-4
4 OF 20

EROSION CONTROL NOTES

1. EROSION CONTROL SHALL COMPLY WITH CITY'S NPDES – 1200CA PERMIT AND THESE NOTES AND DETAILS.

2. THESE PLANS DO NOT RELIEVE THE PERMIT HOLDER AND OR THE CONTRACTOR FROM ALL OTHER PERMITTING REQUIREMENTS. PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES, ALL OTHER NECESSARY APPROVALS SHALL BE OBTAINED.

3. AN INSPECTION OF THE EROSION CONTROL MEASURES BY CITY LAND AND DRAINAGE ALTERATION PERMIT (LDAP) STAFF IS REQUIRED PRIOR TO ANY GROUND DISTURBANCE ON THE SITE.

4. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT–LADEN WATER DOES NOT LEAVE THE SITE.

5. THE IMPLEMENTATION AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THE EROSION AND SEDIMENT CONTROL (ESC) MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE CITY AND VEGETATION/LANDSCAPING IS ESTABLISHED PER THE REQUIRED WARRANTY PERIOD.

6. IN THE EVENT THE FACILITIES ARE NOT FUNCTIONING PROPERLY, THE CONTRACTOR IS RESPONSIBLE FOR IMMEDIATELY IMPLEMENTING CHANGES AS DIRECTED BY THE ENGINEER OR INSPECTOR. THE ENGINEER, INSPECTOR OR THE CITY MAY STOP ALL CONSTRUCTION ACTIVITY ON SITE UNTIL THE EROSION PROBLEM IS CORRECTED AND ALL EROSION AND SEDIMENTATION CONTROL (ESC) FACILITIES ARE FUNCTIONING PROPERLY. IF THE CONTRACTOR DOES NOT IMMEDIATELY IMPLEMENT CHANGES TO THE EROSION AND SEDIMENTATION CONTROL (ESC) IDENTIFIED BY THE ENGINEER OR INSPECTOR, THE CITY MAY IMPLEMENT THE NECESSARY CHANGES AND REQUIRE PAYMENT FROM THE CONTRACTOR PRIOR TO PROJECT ACCEPTANCE BY THE CITY.

7. IN PREPARATION OF THE WET SEASON, ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE CITY BY SEPTEMBER 15. THE CITY CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES. DISTURBED AREAS IDENTIFIED FOR SEEDING AREAS SHALL BE SEEDED PRIOR TO THE BEGINNING OF THE WET SEASON (OCTOBER 1).

8. THE EROSION AND SEDIMENT CONTROL MEASURES ON ACTIVE SITES SHALL BE INSPECTED AND MAINTAINED DAILY AND WITHIN 24 HOURS AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD. MEASURES SHALL BE INSPECTED BY THE PERMIT HOLDER AND OR THE CONTRACTOR AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS OR ADJUSTMENTS SHALL BE MADE IMMEDIATELY. THE EROSION AND SEDIMENT CONTROL MEASURES ON INACTIVE SITES SHALL BE INSPECTED A MINIMUM OF ONCE EVERY TWO (2) WEEKS OR WITHIN 48 HOURS FOLLOWING A STORM EVENT. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES DURING THE WET SEASON (OCTOBER 1 TO APRIL 30) AND OF MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPTEMBER 30).

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROTECTED FROM DAMAGE AT ALL TIMES. CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL PERMANENT OR TEMPORARY RE–VEGETATION HAS BEEN STABILIZED. ANY MEASURE THAT IS DAMAGED OR DESTROYED SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

10. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON (OCTOBER 1 TO APRIL 30) OR SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPTEMBER 30) SHALL BE IMMEDIATELY STABILIZED WITH ON APPROVED ESC METHOD (SEEDING & MULCHING WITH STRAW, BARK, COMPOST, OR PLASTIC COVERING, ETC.).

11. A SUPPLY OF MATERIALS NECESSARY TO MEET COMPLIANCE UNDER ALL WEATHER CONDITIONS SHALL BE MAINTAINED AT ALL TIMES ON THE CONSTRUCTION SITE.

12. NO HAZARDOUS SUBSTANCES, SUCH AS PAINTS, THINNERS, FUELS AND OTHER CHEMICALS SHALL BE RELEASED ONTO THE SITE, ADJACENT PROPERTIES, OR INTO WATER FEATURES, THE CITY'S STORM WATER SYSTEM, OR RELATED NATURAL RESOURCES.

13. STREET SWEEPING SHALL BE PERFORMED AS NEEDED OR WHEN DIRECTED TO ENSURE PUBLIC RIGHT–OF–WAYS ARE KEPT CLEAN AND FREE OF DEBRIS. STREET FLUSHING IS PROHIBITED.

14. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER WATER–TIGHT TRUCKS SHALL BE USED OR LOADS SHALL BE DRAINED ON SITE UNTIL DRIPPING HAS BEEN REDUCED TO NO MORE THAN ONE GALLON PER HOUR. SEDIMENT LADEN WATER WILL NOT BE ALLOWED TO ENTER THE STORM WATER SYSTEM.

15. EXTRACTED GROUND WATER FROM EXCAVATED TRENCHES SHALL BE DISPOSED OF IN A SUITABLE MANNER WITHOUT DAMAGE TO ADJACENT PROPERTY, PUBLIC STORM WATER SYSTEM, WATER FEATURES, AND RELATED NATURAL RESOURCES. APPROVAL OF A DEWATERING SYSTEM DOES NOT GUARANTEE THAT IT WILL MEET COMPLIANCE OR BE ACCEPTABLE FOR USE IN ALL SITUATIONS. MODIFICATIONS TO THE DEWATERING SYSTEM WILL BE REQUIRED IF COMPLIANCE CAN NOT BE MET. AT NO TIME WILL SEDIMENT LADEN WATER BE ALLOWED TO LEAVE THE CONSTRUCTION SITE.

16. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT–LADEN WATER INTO THE DOWNSTREAM SYSTEM.

17. ANY REQUIRED STABILIZED CONSTRUCTION ENTRANCES AND ROADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

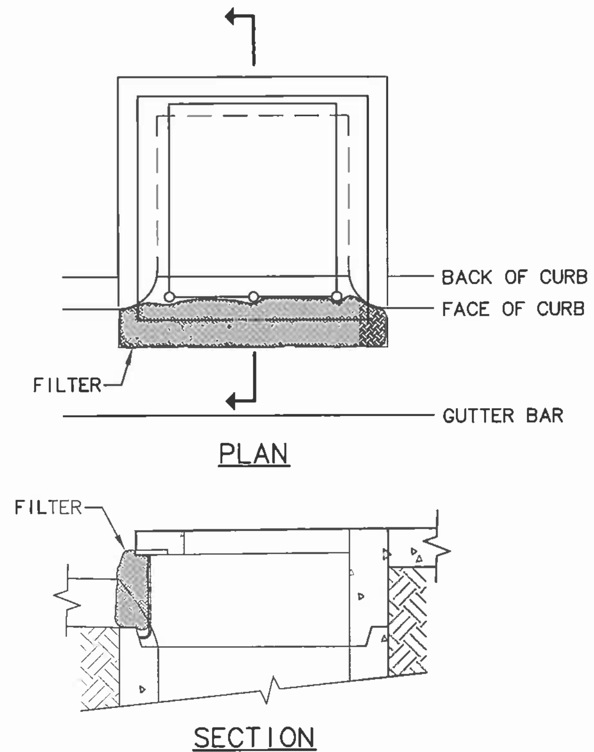
18. ANY PERMANENT FLOW CONTROL FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY.

19. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF TWO TO THREE INCHES.

20. APPROVAL OF THE CONTRACTOR'S EROSION AND SEDIMENTATION CONTROL PLAN (ESCP) DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC).

21. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THESE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

22. IN PREPARATION OF THE WET SEASON, ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE CITY BY SEPTEMBER 15. THE CITY CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES. DISTURBED AREAS IDENTIFIED FOR SEEDING SHALL BE SEEDED PRIOR TO THE BEGINNING OF THE WET SEASON (OCTOBER 1).



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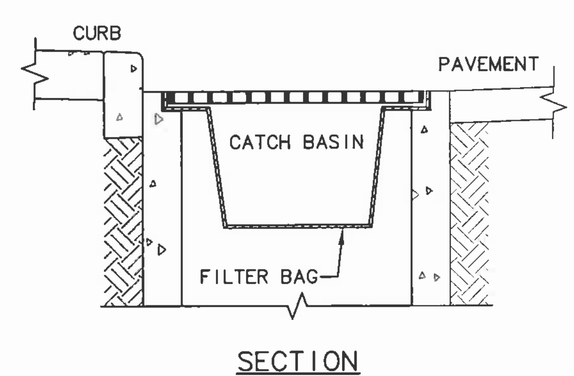


CATCH BASIN PROTECTION (2/–)
SCALE: NTS

CITY PROJECT NUMBER P21046

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: EROSION CONTROL NOTES & DETAILS

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204 PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

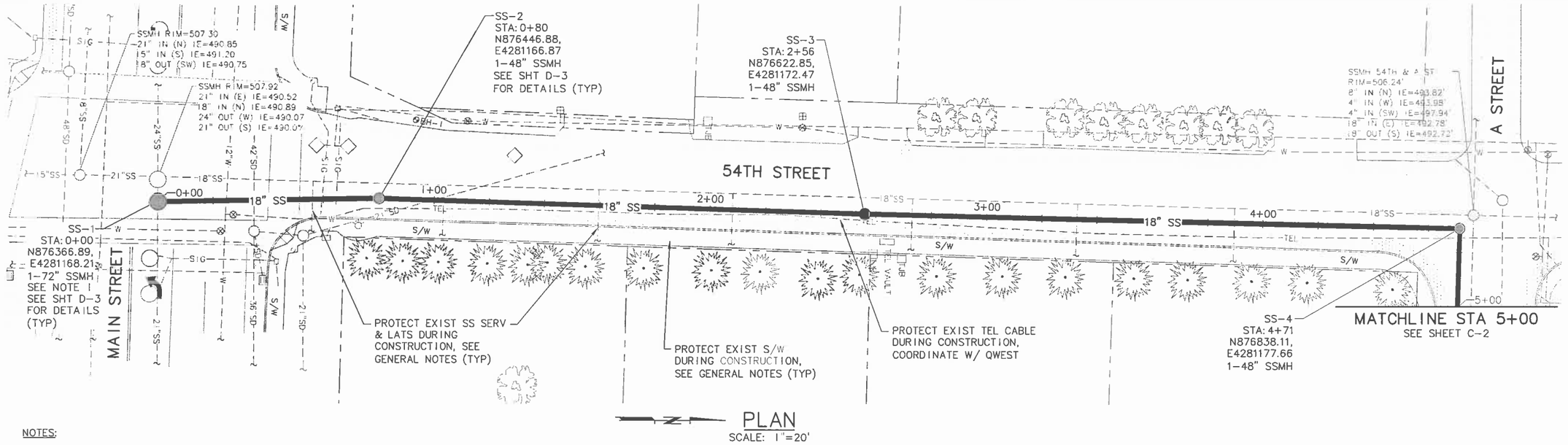
SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER, OREGON, WILLIAM S. ... RENEWS 12-31-13

NO. | DATE | REVISION | BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM



PLAN

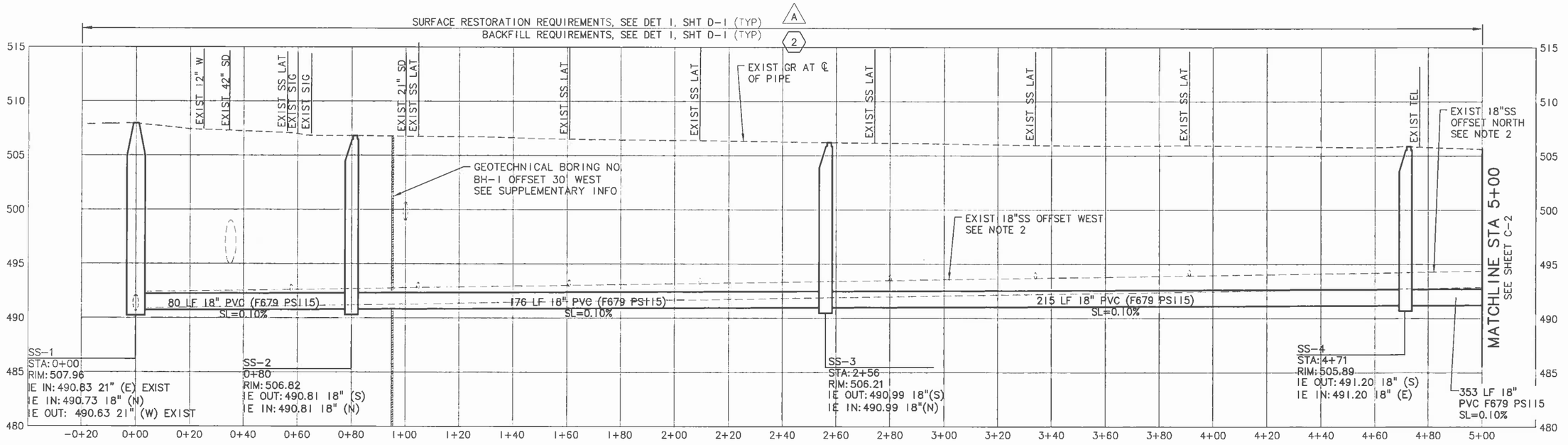
SCALE: 1"=20'

NOTES:

1. INSTALL NEW 72" DIAMETER SANITARY SEWER MANHOLE SS-1 AT LOCATION SHOWN. CUT AND REMOVE EXISTING 21" DIAMETER PVC PIPE AS NECESSARY TO INSTALL PRE-CAST CONCRETE MANHOLE BASE. PROVIDE SEWAGE BYPASS PUMPING AS NECESSARY. UPSTREAM MANHOLE IS LOCATED APPROXIMATELY 225' EAST OF INTERSECTION.

2. WHERE EXCAVATING NEAR EXISTING UTILITIES, THE EXISTING TRENCH BACKFILL MATERIAL MAY SLOUGH OUT OF THE EXISTING UTILITY TRENCH. REFER TO DETAIL 1 ON SHEET D-1 FOR BACKFILL REPLACEMENT REQUIREMENTS.

3. SEE DETAIL 2 ON SHEET D-2 FOR ROADWAY RESTORATION REQUIREMENTS AT MAIN STREET.



PROFILE

SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON JAN. 19, 2006 WILLIAM S. ELLIS 15434 RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

C-1
6 OF 20

PROJECT NAME:
CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE:
PLAN AND PROFILE - 54TH STREET
STA -0+11 TO STA 5+00

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

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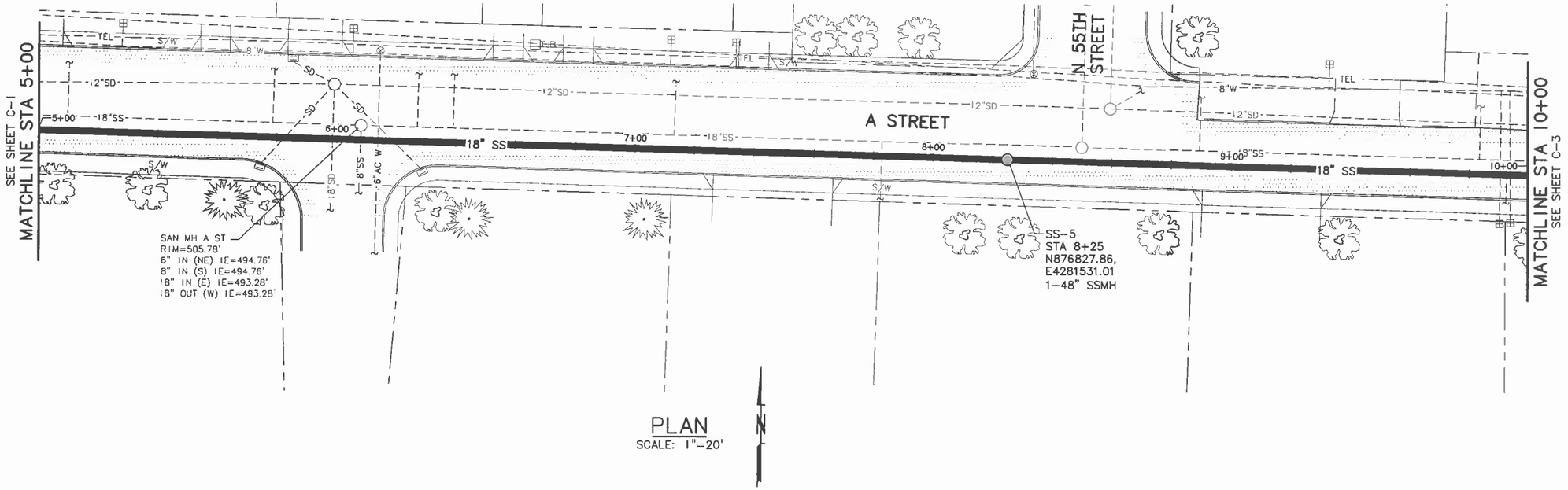

PLAN
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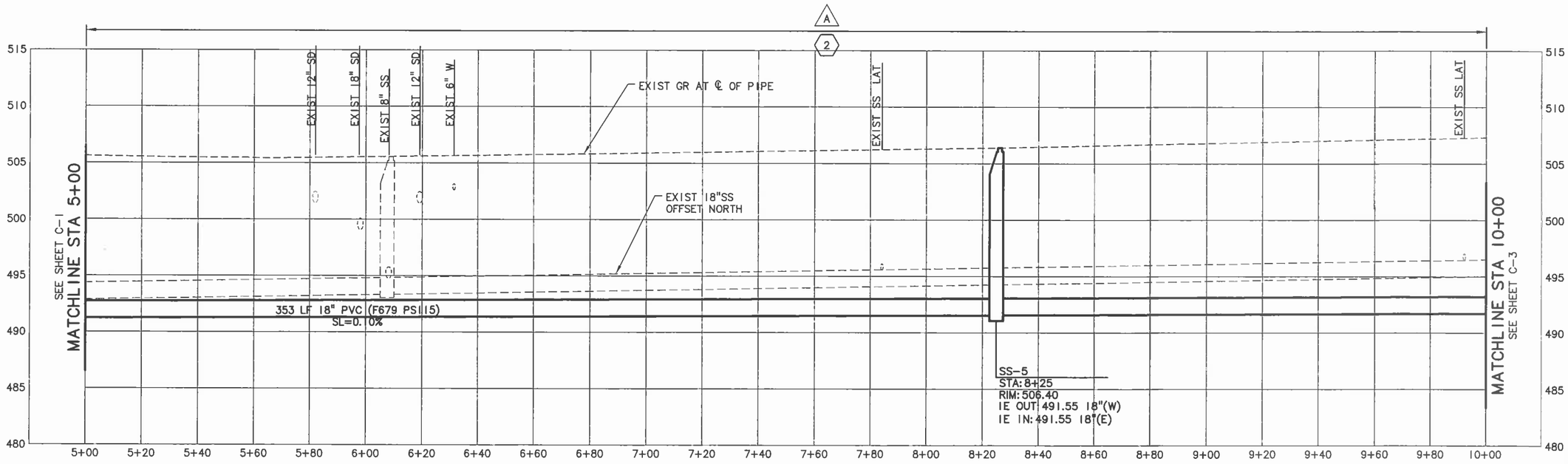

PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 13, 1984 WILLIAM S. EDMONDS
RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - A STREET
STA 5+00 TO STA 10+00

C-2
7 OF 20

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

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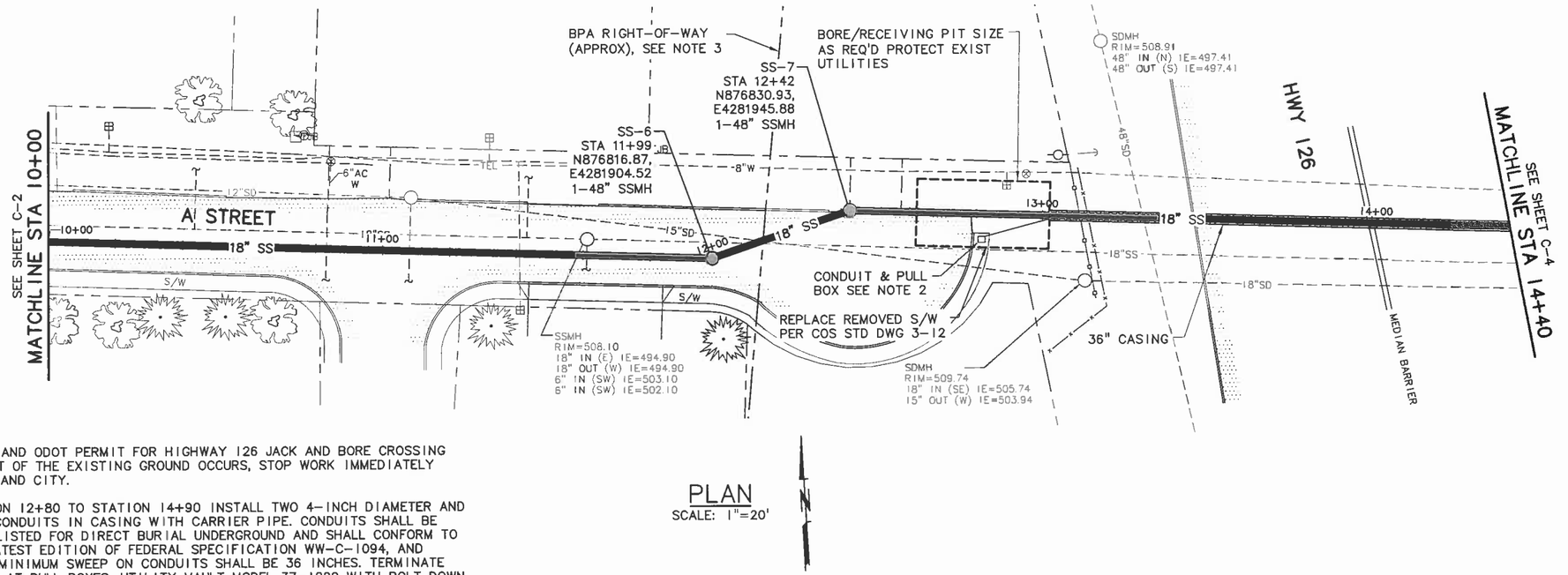


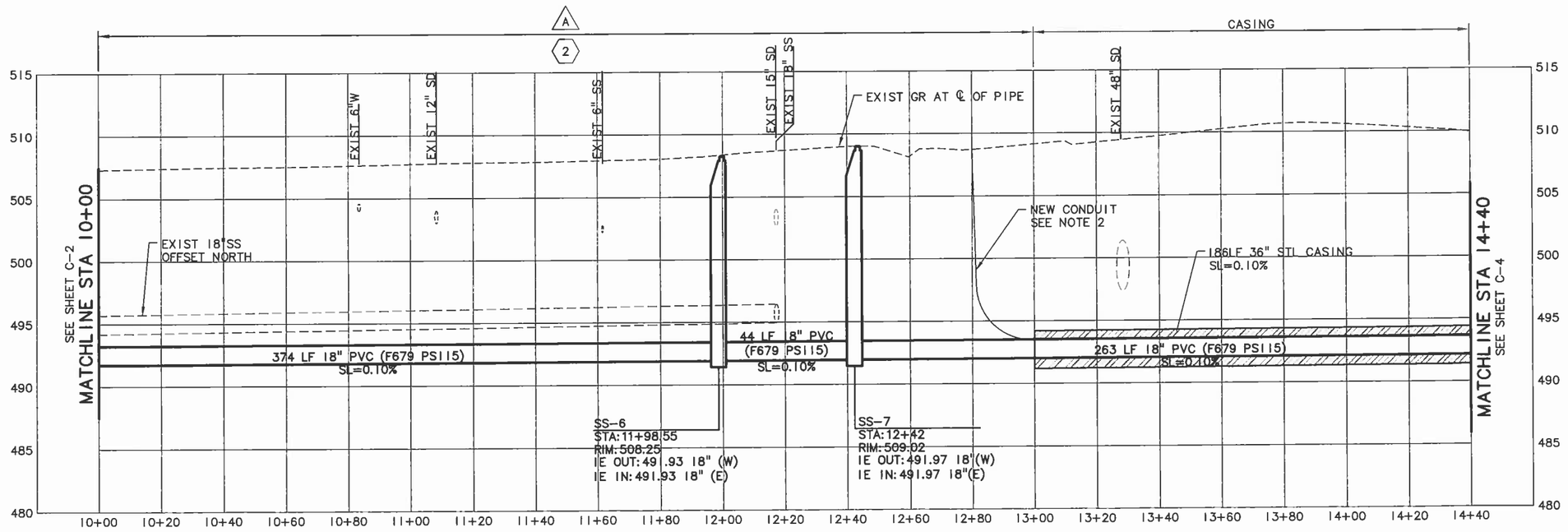
PLAN
SCALE: 1"=20'

NOTES;

1. REFER TO SPECIFICATIONS AND ODOT PERMIT FOR HIGHWAY 126 JACK AND BORE CROSSING REQUIREMENTS. IF SETTLEMENT OF THE EXISTING GROUND OCCURS, STOP WORK IMMEDIATELY AND NOTIFY ENGINEER, ODOT AND CITY.

2. FROM APPROXIMATE STATION 12+80 TO STATION 14+90 INSTALL TWO 4-INCH DIAMETER AND TWO 2-INCH DIAMETER PVC CONDUITS IN CASING WITH CARRIER PIPE. CONDUITS SHALL BE RIGID PVC SCHEDULE 40, UL LISTED FOR DIRECT BURIAL UNDERGROUND AND SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF FEDERAL SPECIFICATION WW-C-1094, AND NATIONAL ELECTRICAL CODE. MINIMUM SWEEP ON CONDUITS SHALL BE 36 INCHES. TERMINATE CONDUITS WITH CAPPED ENDS AT PULL BOXES, UTILITY VAULT MODEL 37-1220 WITH BOLT DOWN GALVANIZED STEEL COVER. FINAL LOCATION OF PULL BOXES TO DETERMINED IN THE FIELD WITH THE ENGINEER.

3. A CERTIFIED BPA SAFETY WATCHER MUST BE ON-SITE DURING ALL CONSTRUCTION ACTIVITIES WITHIN BPA RIGHT-OF-WAY. A LIST OF CERTIFIED BPA SAFETY WATCHERS CAN BE OBTAINED FROM BPA. CONTRACTOR SHALL PROVIDE THE SERVICES OF THE CERTIFIED BPA WATCHER AT NO ADDITIONAL COST TO THE OWNER.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1978
WILLIAM S. ELDRIDGE
85541
RENEWS 12-31-13

SCALE
VERT: AS SHOWN
HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1"

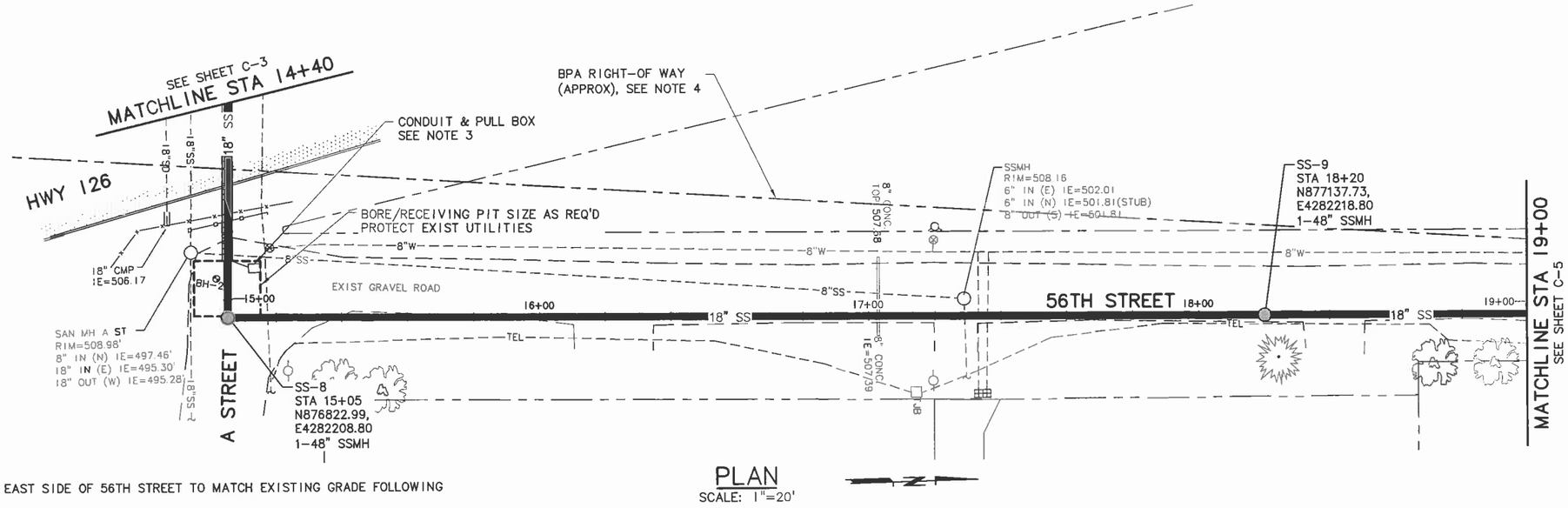
PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - A STREET
STA 10+00 TO STA 14+40

C-3
8 OF 20

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

MSA PROJECT: 11-1226.201
DATE: MAY 2012



PLAN
SCALE: 1"=20'

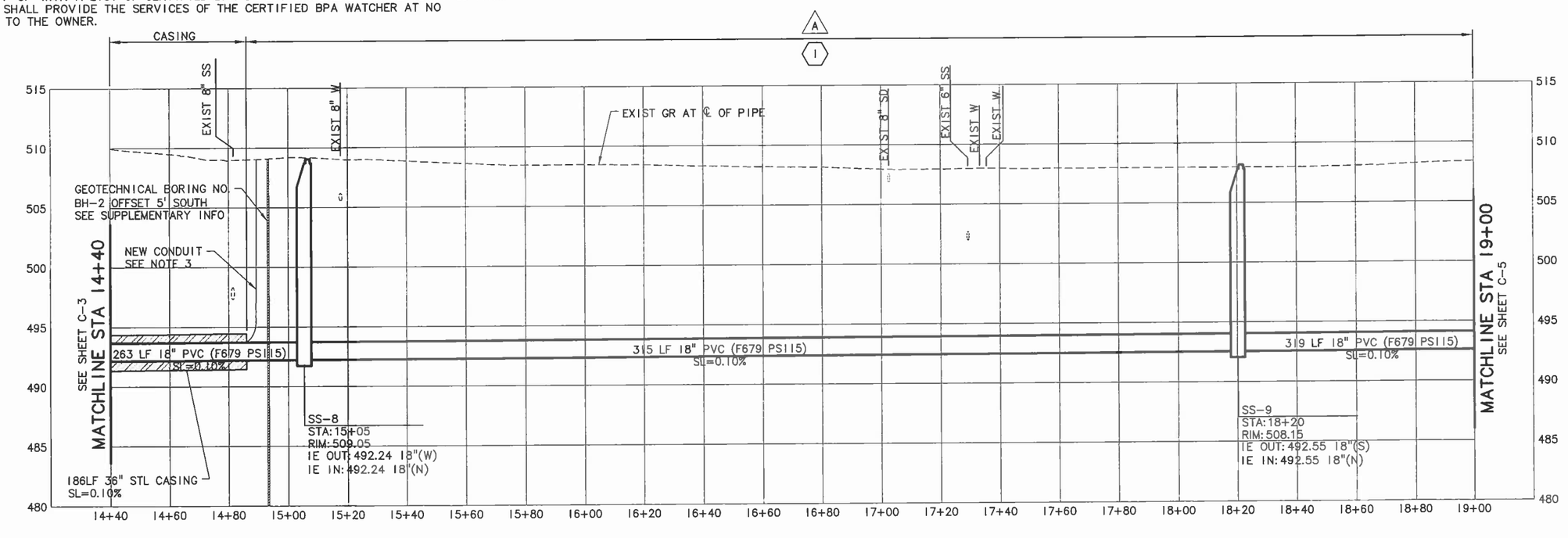
NOTES:

1. REGRADE EXISTING DITCH ALONG EAST SIDE OF 56TH STREET TO MATCH EXISTING GRADE FOLLOWING PIPE INSTALLATION.

2. REFER TO SPECIFICATIONS AND ODOT PERMIT FOR HIGHWAY 126 JACK AND BORE CROSSING REQUIREMENTS. IF SETTLEMENT OF THE EXISTING GROUND OCCURS, STOP WORK IMMEDIATELY AND NOTIFY ENGINEER, ODOT AND CITY.

3. FROM APPROXIMATE STATION 12+80 TO STATION 14+90 INSTALL TWO 4-INCH DIAMETER AND TWO 2-INCH DIAMETER PVC CONDUITS IN CASING WITH CARRIER PIPE. CONDUITS SHALL BE RIGID PVC SCHEDULE 40, UL LISTED FOR DIRECT BURIAL UNDERGROUND AND SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF FEDERAL SPECIFICATION WW-C-1094, AND NATIONAL ELECTRICAL CODE. MINIMUM SWEEP ON CONDUITS SHALL BE 36 INCHES. TERMINATE CONDUITS WITH CAPPED ENDS AT PULL BOXES, UTILITY VAULT MODEL 37-1220 WITH BOLT DOWN GALVANIZED STEEL COVER. FINAL LOCATION OF PULL BOXES TO DETERMINED IN THE FIELD WITH THE ENGINEER.

4. A CERTIFIED BPA SAFETY WATCHER MUST BE ON-SITE DURING ALL CONSTRUCTION ACTIVITIES WITHIN BPA RIGHT-OF-WAY. A LIST OF CERTIFIED BPA SAFETY WATCHERS CAN BE OBTAINED FROM BPA. CONTRACTOR SHALL PROVIDE THE SERVICES OF THE CERTIFIED BPA WATCHER AT NO ADDITIONAL COST TO THE OWNER.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 13, 1982 WILLIAM S. SMITH 8544 RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.
0 1"

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - 56TH STREET
STA 14+40 TO STA 19+00

C-4
9 OF 20

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

4/27/2012 9:56 AM JLP 18.1s (LMS Tech)
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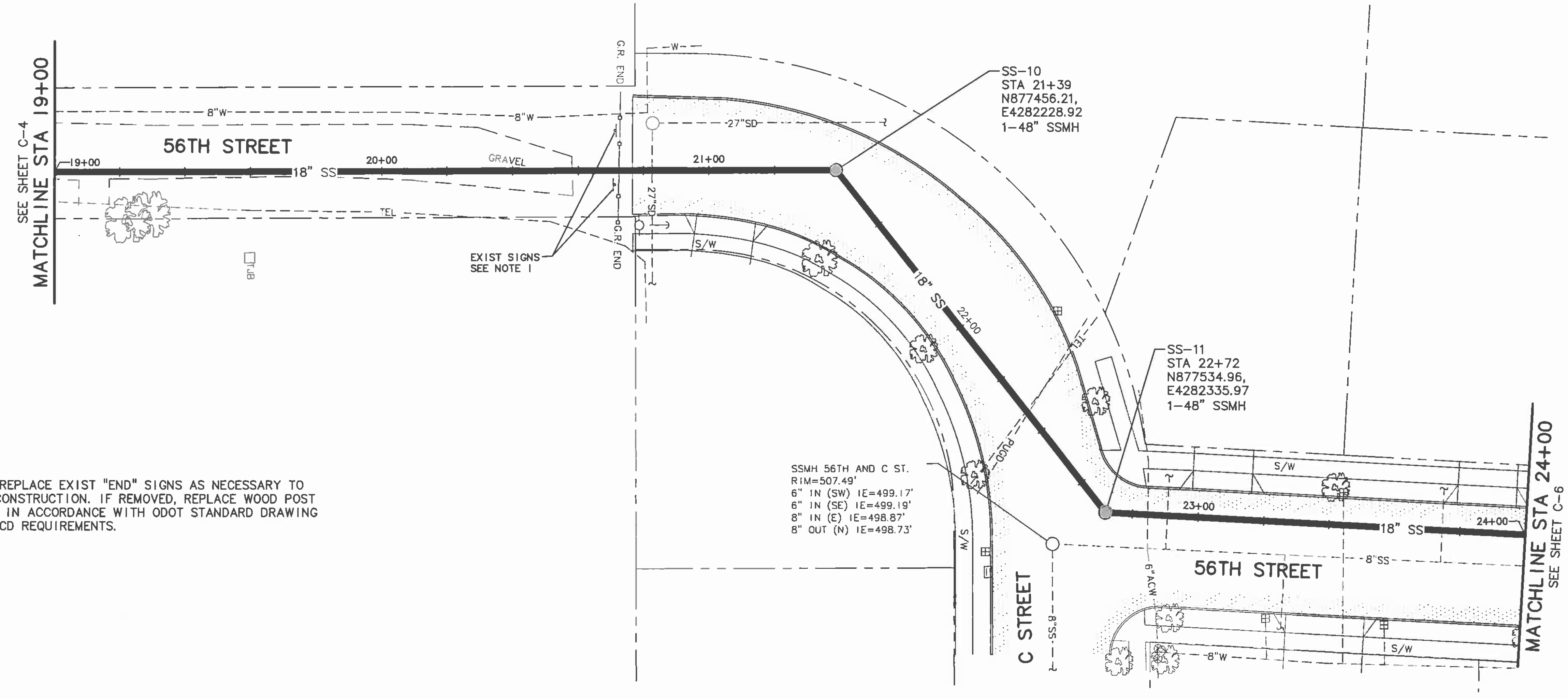
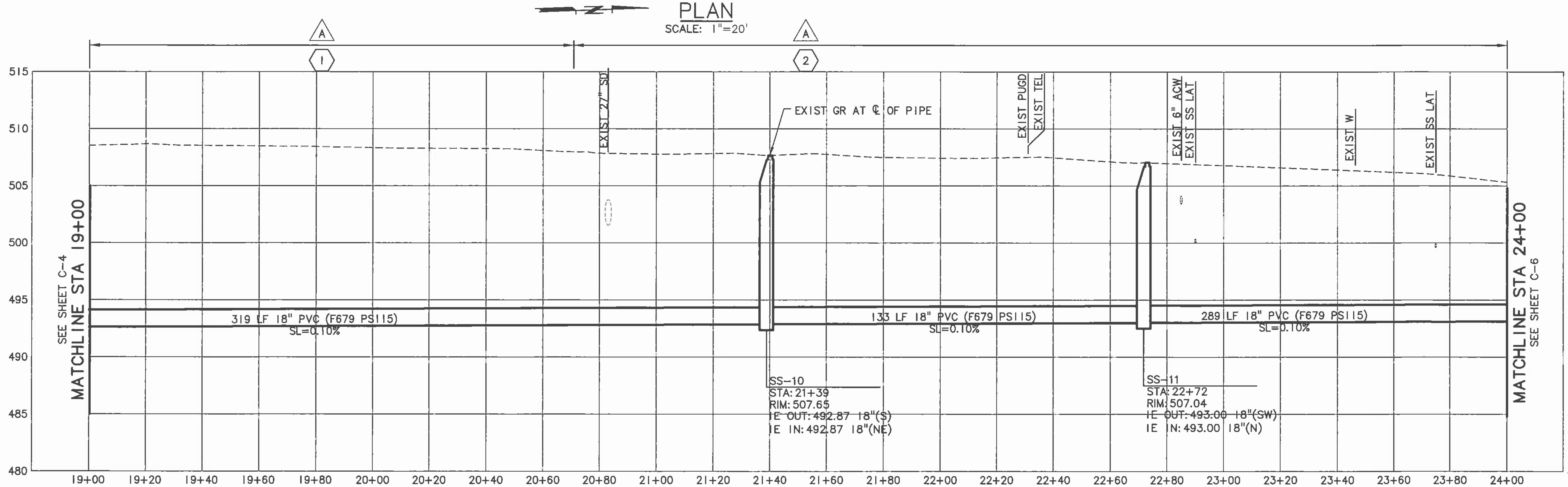


NOTES:

1. REMOVE AND REPLACE EXIST "END" SIGNS AS NECESSARY TO ACCOMMODATE CONSTRUCTION. IF REMOVED, REPLACE WOOD POST SIGN SUPPORTS IN ACCORDANCE WITH ODOT STANDARD DRAWING TM670 AND MUTCD REQUIREMENTS.

PLAN
SCALE: 1"=20'



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

REGISTERED PROFESSIONAL ENGINEER 65434 OREGON WILLIAM S. EVONUK
RENEWS 12-31-13

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

SCALE VERT: AS SHOWN
HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

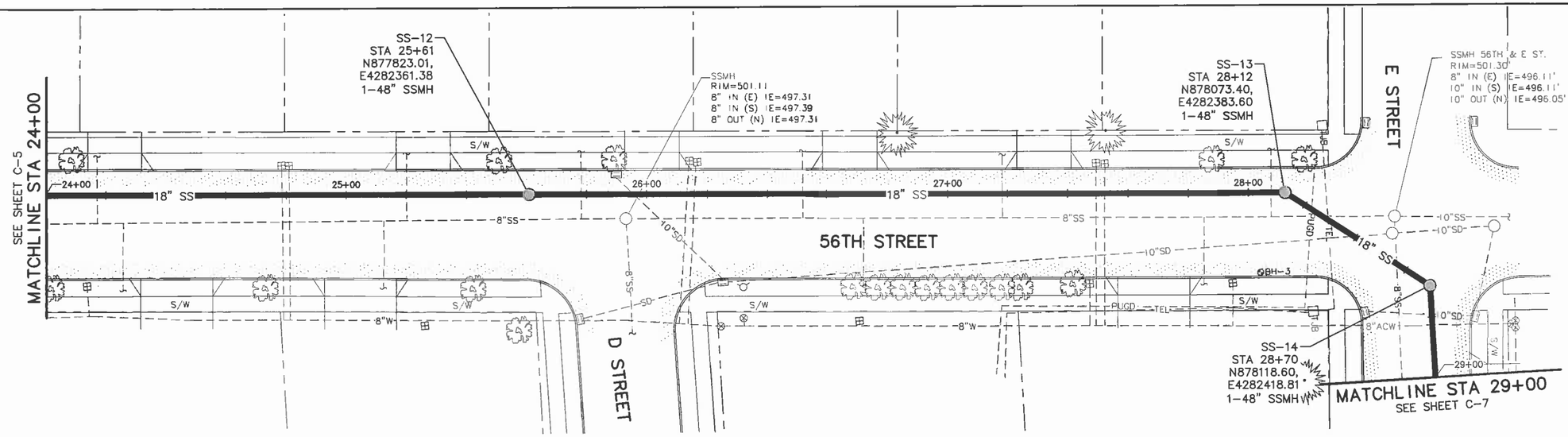
PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - 56TH STREET
STA 19+00 TO STA 24+00

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

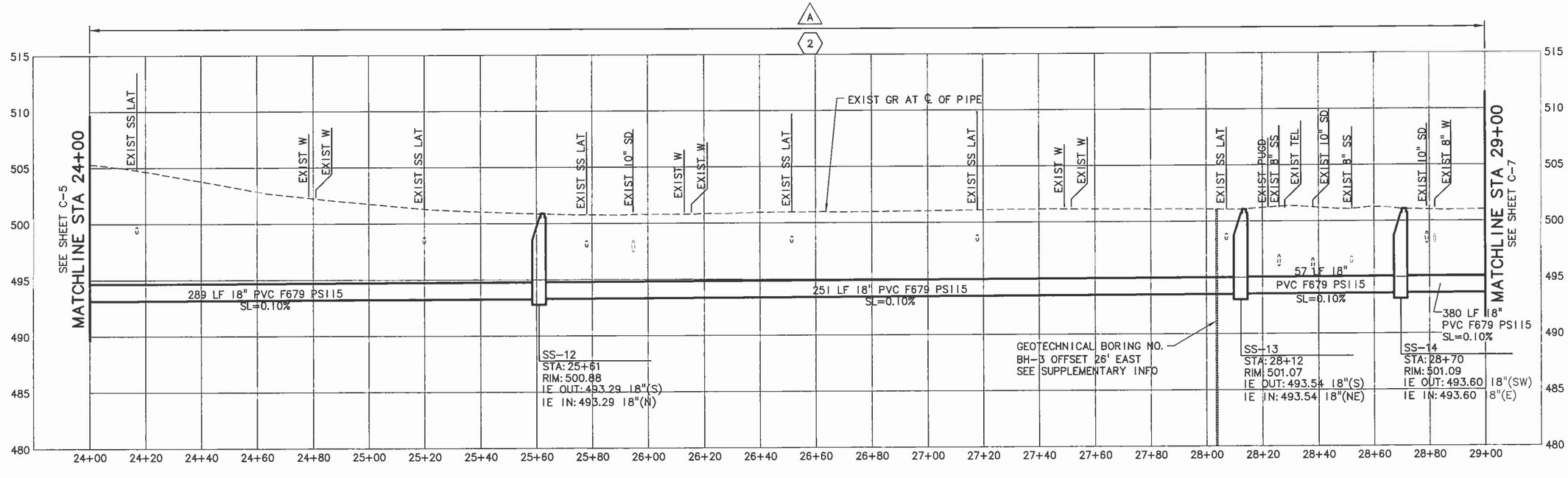
MSA PROJECT: 11-1226.201
DATE: MAY 2012

C-5
10 OF 20



PLAN

SCALE: 1"=20'



PROFILE

SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER — OREGON — WILLIAM S. ELKINS — 65434 — RENEWS 12-31-13

SCALE: VERT: AS SHOWN; HORIZ: AS SHOWN

NOTICE
0 1"
IF THIS BAR DOES NOT MEASURE 1" THE DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - 56TH STREET
STA 24+00 TO STA 29+00

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

C-6 11 OF 20

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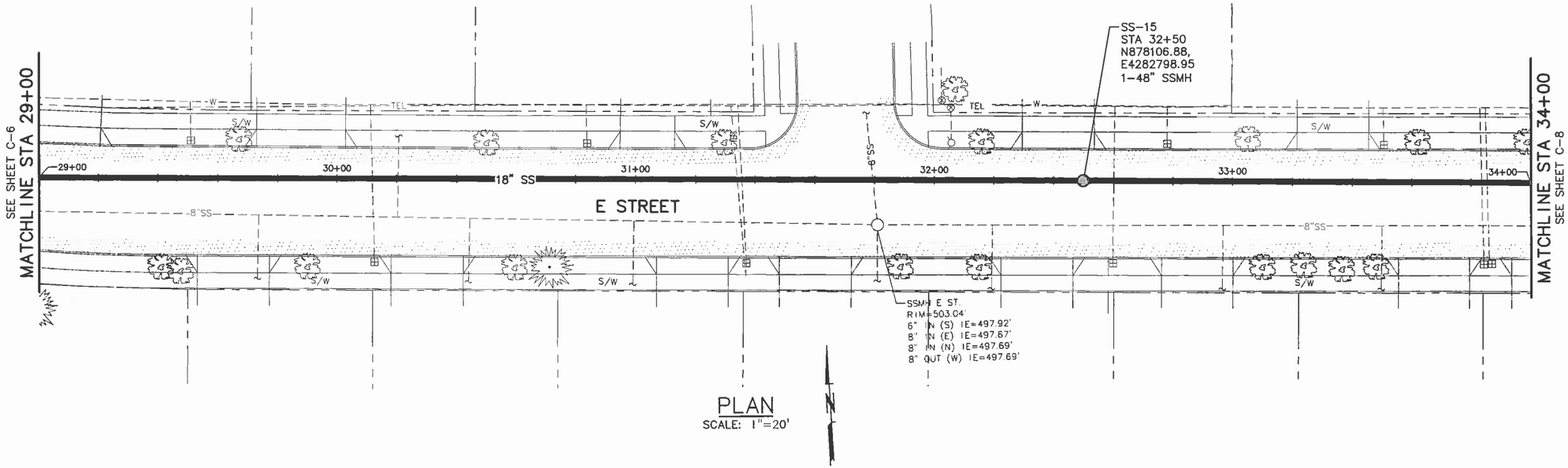

PLAN
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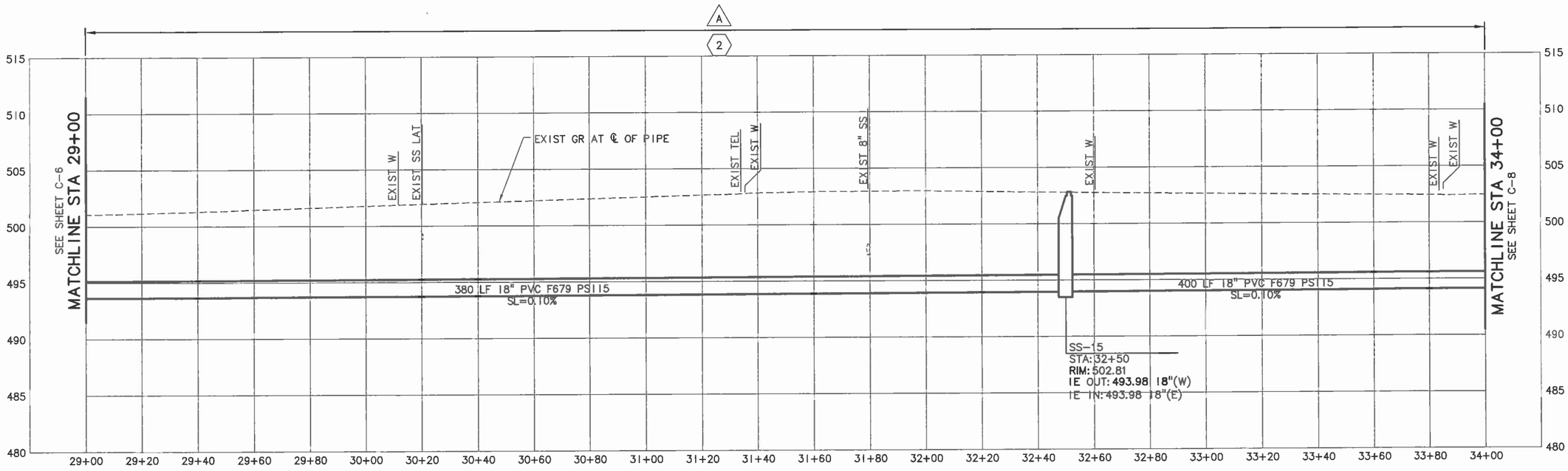


PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 18, 2006
WILLIAM S. EVONUK
RENEWS 12-31-13

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

C-7
12 OF 20

SCALE
VERT: AS SHOWN
HORIZ: AS SHOWN

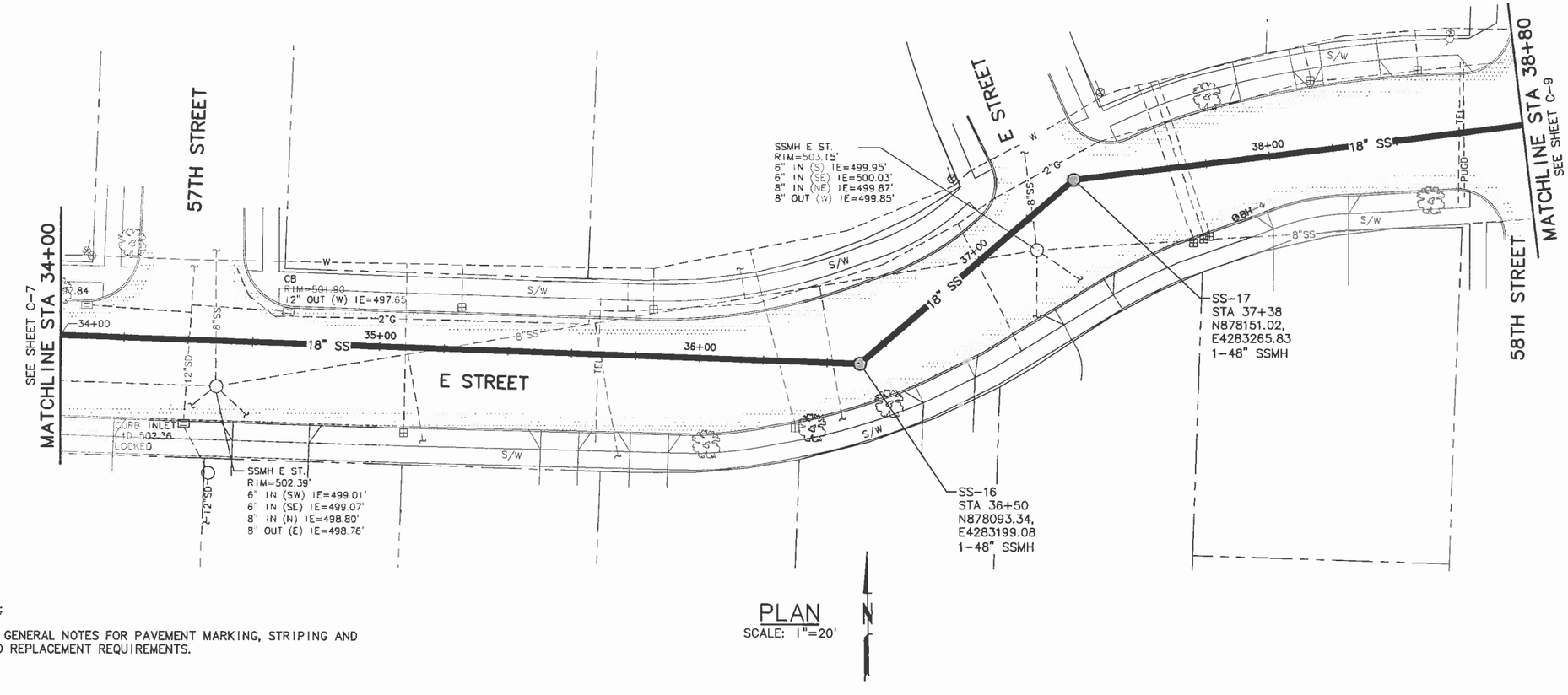
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME:
CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE:
PLAN AND PROFILE - E STREET
STA 29+00 TO STA 34+00

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

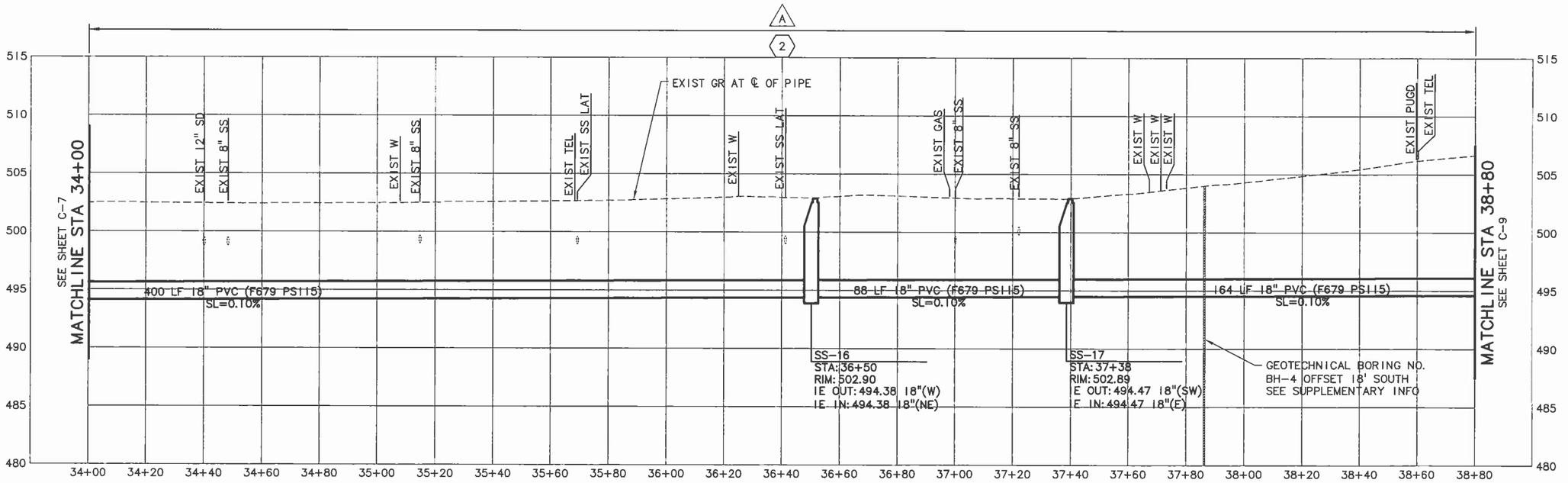
MSA PROJECT: 11-1226.201 | DATE: MAY 2012



PLAN
SCALE: 1"=20'

NOTES:

1. SEE GENERAL NOTES FOR PAVEMENT MARKING, STRIPING AND LEGEND REPLACEMENT REQUIREMENTS.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER
OREGON
JAN. 10, 2006
WILLIAM S. EVANICK
RENEWS 12-31-13

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

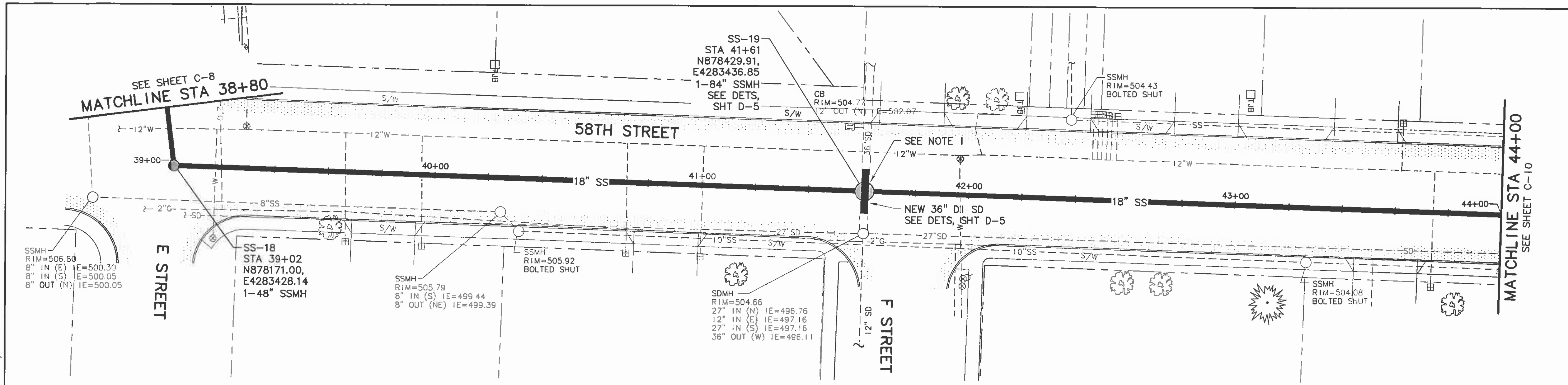
PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - E STREET
STA 34+00 TO STA 38+80

C-8
13 OF 20

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 PHONE 503-225-9010
Portland, Oregon 97204 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

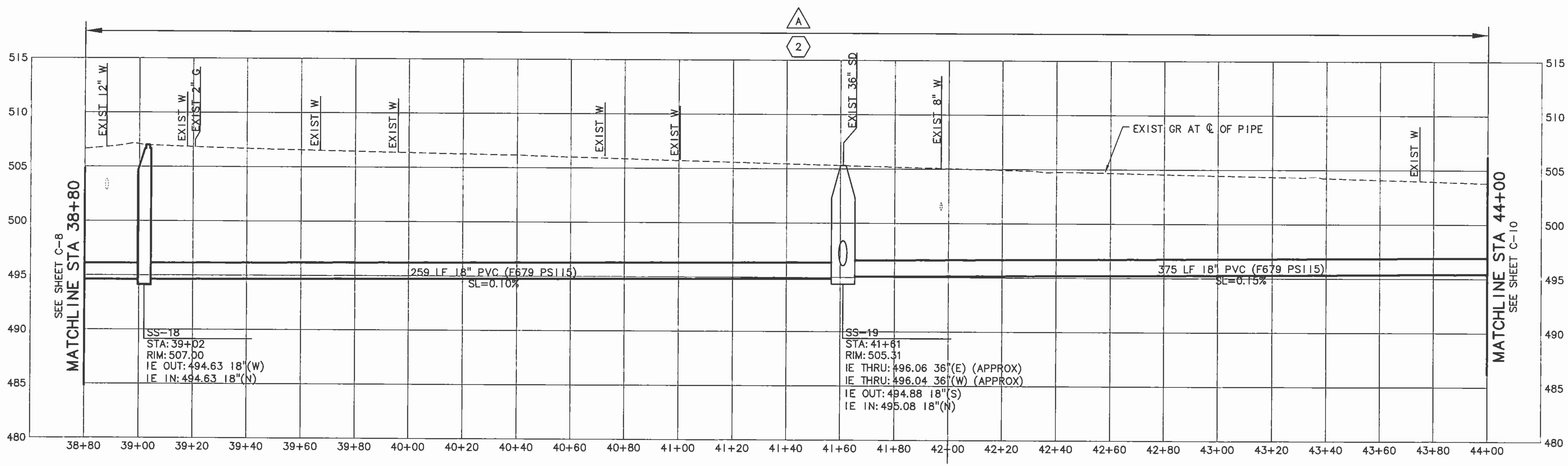


PLAN
SCALE: 1"=20'

NOTES:

1. PRIOR TO CONSTRUCTION POTHOLE AND CONFIRM ELEVATION OF BOTTOM OF EXISTING 36" SD. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

2. SEE GENERAL NOTES FOR PAVEMENT MARKING, STRIPING AND LEGEND REPLACEMENT REQUIREMENTS.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: PLAN AND PROFILE - 58TH STREET
STA 38+80 TO STA 44+00

MSA Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

C-9
14 OF 20

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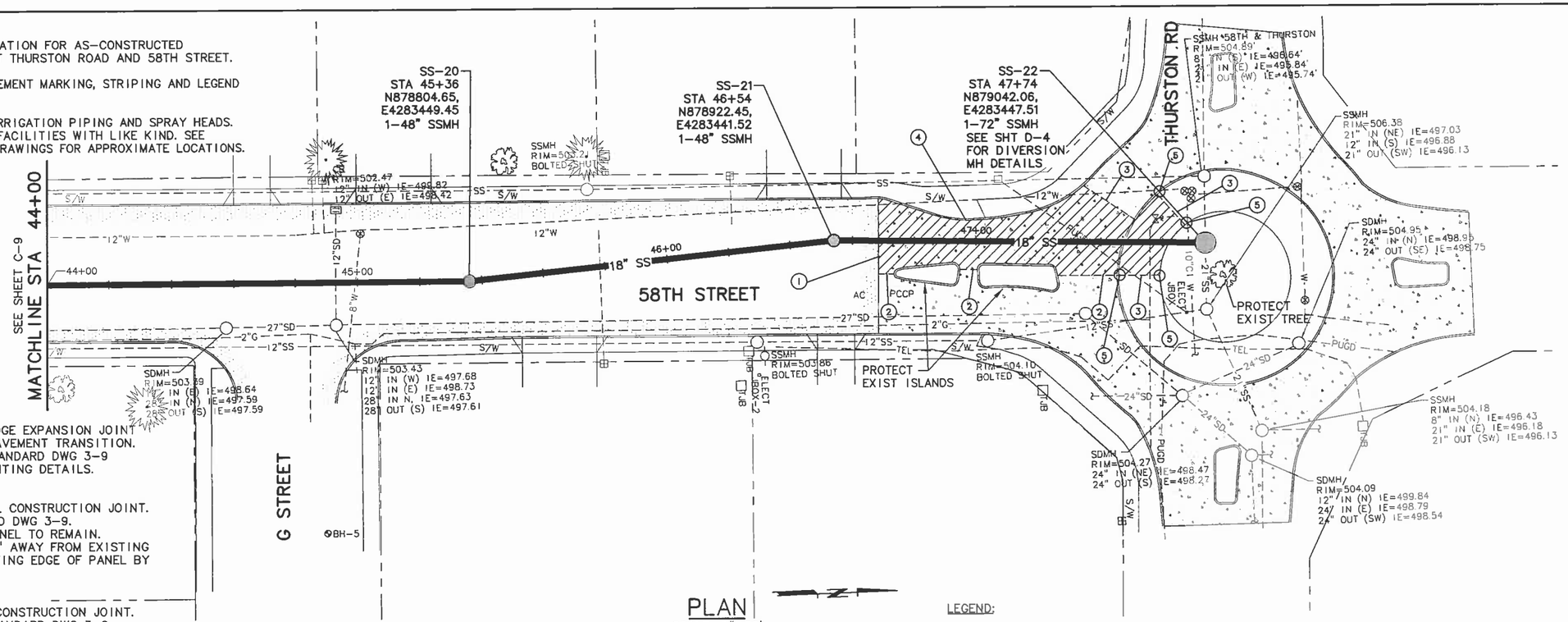
NOTES:

1. SEE SUPPLEMENTARY INFORMATION FOR AS-CONSTRUCTED DRAWINGS FOR ROUNDABOUT AT THURSTON ROAD AND 58TH STREET.

2. SEE GENERAL NOTES FOR PAVEMENT MARKING, STRIPING AND LEGEND REPLACEMENT REQUIREMENTS.

3. PROTECT EXISTING ISLAND IRRIGATION PIPING AND SPRAY HEADS. REPLACE DAMAGED IRRIGATING FACILITIES WITH LIKE KIND. SEE ROUNDABOUT AS-CONSTRUCTED DRAWINGS FOR APPROXIMATE LOCATIONS.



PLAN
SCALE: 1"=20'

KEY NOTES:

(1) CONSTRUCT THICKENED EDGE EXPANSION JOINT CONCRETE TO ASPHALT PAVEMENT TRANSITION. SEE DETAIL 5 ON COS STANDARD DWG 3-9 CONCRETE PAVEMENT JOINTING DETAILS.

(2) CONSTRUCT LONGITUDINAL CONSTRUCTION JOINT. SEE DETAIL 3 ON COS STD DWG 3-9. PROTECT EXIST KEYED PANEL TO REMAIN. SAW CUT APPROXIMATE 6" AWAY FROM EXISTING JOINT AND REMOVE EXISTING EDGE OF PANEL BY HAND.

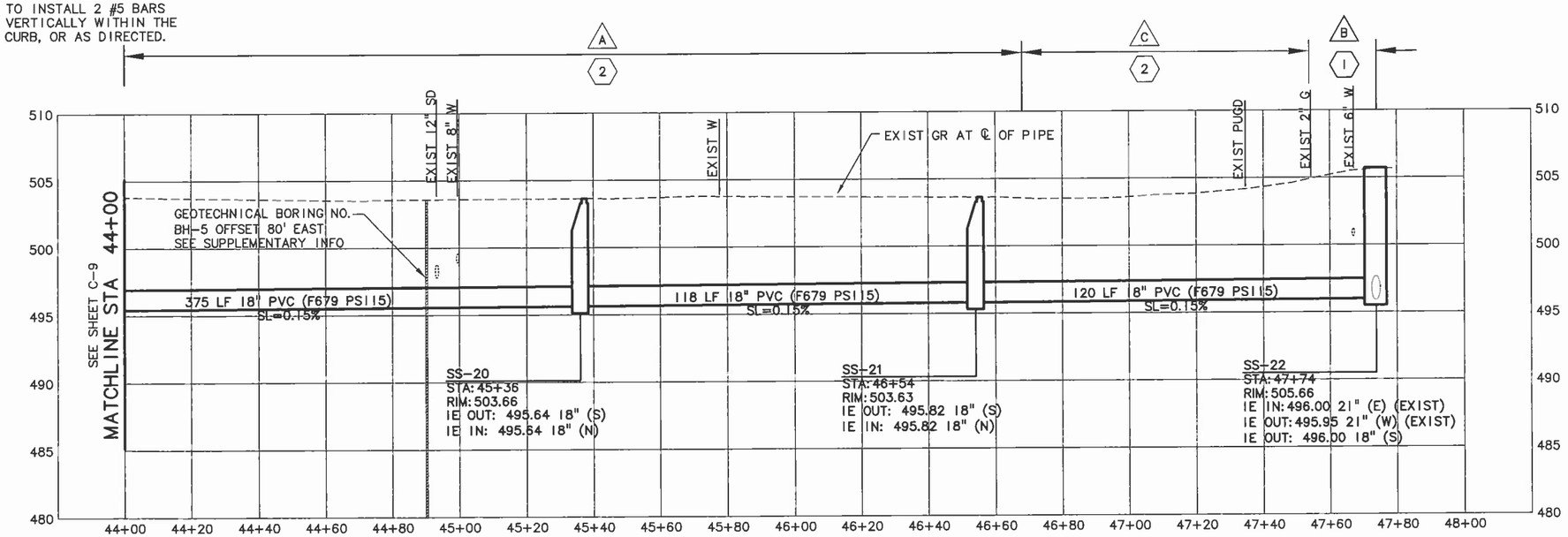
(3) CONSTRUCT TRANSVERSE CONSTRUCTION JOINT. SEE DETAIL 4 ON COS STANDARD DWG 3-9.

(4) CONSTRUCT TIED CONTRACTION JOINT PAVEMENT TO CURB AND GUTTER. SEE DETAIL 2 ON COS STANDARD DWG 3-9.

(5) CONSTRUCT TIED CONTRACTION JOINT PAVEMENT TO CURB AND GUTTER (MODIFIED) SEE DETAIL 2 ON COS STANDARD DWG 3-9. MODIFY DETAIL TO INSTALL 2 #5 BARS EVENLY SPACED VERTICALLY WITHIN THE HEIGHT OF THE CURB, OR AS DIRECTED.

LEGEND:

APPROXIMATE LIMITS OF PLAIN CONCRETE PAVEMENT RESTORATION. EXTEND FINAL TEE CUT TO NEAREST EXISTING PAVEMENT JOINT. MATCH EXISTING PAVEMENT SECTION, COLOR, STAMPED PATTERN AND JOINT PATTERN. SEE SUPPLEMENTARY INFORMATION FOR ROUNDABOUT AS-CONSTRUCTED DRAWINGS.



PROFILE
SCALE: 1"=20' HORIZ, 1"=5' VERT

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON 65434 WILLIAMS S. MUNCK
RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1"

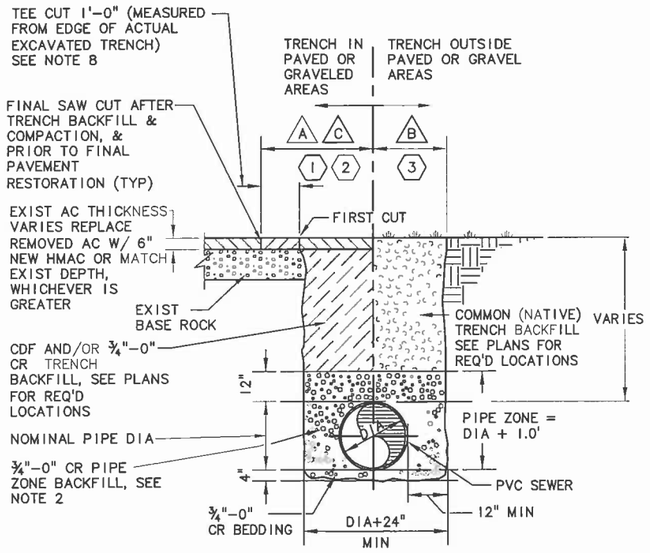
C-10
15 OF 20

PROJECT NAME:
CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE:
PLAN AND PROFILE - 58TH STREET
STA 44+00 TO STA 47+74

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012



NOTES:

1. FOR TRENCHES OUTSIDE PAVED OR GRAVEL AREAS REMOVE AND STOCKPILE THE TOP 12 INCHES OF TOPSOIL FOR REUSE AS SURFACE RESTORATION.

2. USE ¾"-0" PIPE ZONE BACKFILL & BEDDING – ALL LOCATIONS.

3. COMPACT ALL ¾"-0" BACKFILL IN LIFTS TO ACHIEVE 95% OF MAXIMUM TRENCH DENSITY IN ACCORDANCE WITH AASHTO T-99. THE TOP 3 FEET OF CR TRENCH BACKFILL IN PAVED OR GRAVELED AREAS SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY IN ACCORDANCE W/AASHTO T-99.

4. COMPACT ALL COMMON (NATIVE) BACKFILL IN LIFTS TO ACHIEVE 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-99.

5. REFER TO STANDARD SPECIFICATIONS FOR BACKFILL/BEDDING REQUIREMENTS.

6. THE TRENCH WIDTH MAY VARY DEPENDING ON THE CONTRACTOR'S SHORING METHODS DUE TO SLOUGHING OR UNRAVELING OF THE NATIVE SOILS (REFER TO GEOTECHNICAL REPORT IN SUPPLEMENTARY INFORMATION). BACKFILL AND SURFACE RESTORATION SHALL EXTEND THE FULL TRENCH WIDTH TO NATIVE SOIL REGARDLESS OF SHORING METHOD USED.

7. WHERE EXCAVATING NEAR EXISTING UTILITIES, THE EXISTING TRENCH BACKFILL MATERIAL MAY SLOUGH OUT OF THE EXISTING UTILITY TRENCH. REPLACE ALL LOST BACKFILL FROM EXISTING TRENCHES PER THIS DETAIL. NO ADDITIONAL PAYMENT WILL BE MADE FOR REPLACING LOST BACKFILL IN ADJACENT TRENCHES.

8. TEE CUT IS NOT REQUIRED IN AREAS WHERE COLD PLANE PAVEMENT REMOVAL AND INLAY IS PERFORMED.

9. AT THE END OF EACH WORKDAY, ALL OPEN TRENCHES SHALL BE BACKFILLED TO THE TOP OF THE TRENCH OR ADEQUATELY COVERED TO ACCOMMODATE TRAFFIC. PRIOR TO OPENING TO TRAFFIC ALL TRENCHES WITHIN THE ROADWAY SHALL BE TEMPORARILY OR PERMANENTLY PAVED TO MATCH THE ADJACENT PAVEMENT GRADE. TEMPORARY TRENCH PAVEMENT SHALL BE 2 INCH THICK MINIMUM. TEMPORARY TRENCH PAVEMENT SHALL BE REPLACED WITHIN 14 DAYS OF INSTALLATION WITH FULL-DEPTH PERMANENT TRENCH PAVEMENT.

10. FURNISH & INSTALL TRACER WIRE ABOVE ALL PIPELINES IN ACCORDANCE WITH THE OREGON DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00445

11. AFTER THE FINAL SAW CUT IS MADE FOR THE TRENCH "TEE CUT", IN AREAS WHERE THE REMAINING STRIP OF EXISTING ASPHALT IS LESS THAN THREE FEET IN WIDTH BETWEEN THE CUT AND THE EDGE OF AC PAVEMENT, THE REMAINING STRIP OF EXISTING ASPHALT SHALL BE REMOVED AND REPLACED AS FOLLOWS:

A. IF REMAINING STRIP OF ASPHALT IS LESS THAN 6 INCHES THICK, REMOVE ASPHALT AND BASE MATERIAL TO 6 INCHES BELOW FINAL GRADE, COMPACT BASE AND PLACE 6-INCH THICK LEVEL 3, ½" DENSE, HMAC. PLACE ASPHALT IN 3 INCHES MAXIMUM LIFTS.

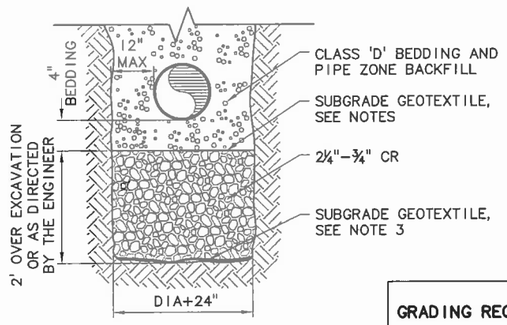
B. IF REMAINING STRIP OF ASPHALT IS GREATER THAN 6 INCHES THICK, REMOVE FULL DEPTH OF ASPHALT, PLACE COMPACTED ¾" – 0" CRUSHED ROCK TO 6 INCHES BELOW FINAL GRADE, THEN PLACE 6-INCH THICK LEVEL 3, ½" DENSE, HMAC. PLACE ASPHALT IN 3-INCH MAXIMUM LIFTS. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL BASE ROCK.

12. SEE DETAIL 2 ON SHEET D-2 FOR ADDITIOONAL REQUIREMENTS AT MAIN STREET.

SYMBOL	BACKFILL REQUIREMENTS
1	FURNISH & INSTALL ¾"-0" TRENCH BACKFILL TO PVMT BASE OR EXISTING GRADE.
2	FURNISH & INSTALL ¾"-0" TRENCH BACKFILL FROM PIPE ZONE TO 24" BELOW PVMT BASE. FURNISH & INSTALL CONTROL DENSITY FILL (CDF) TRENCH BACKFILL FROM 24" BELOW PVMT BASE TO PVMT BASE. CDF BACKFILL TO BE COMPRESSIVE TESTED IN ACCORDANCE W/ ASTM D 4832.
3	FURNISH & INSTALL COMMON (NATIVE) TRENCH BACKFILL TO 12" BELOW FIN GR.

SYMBOL	SURFACE RESTORATION REQUIREMENTS
A	REPLACE REMOVED ASPHALT W/ 6" THICK LEVEL 3, ½" DENSE HAMC OR MATCH EXIST AC THICKNESS, WHICHEVER IS GREATER. PLACE IN 3" THICK MAXIMUM LIFTS. FOR NON AC SURFACES BRING ¾"-0" BACKFILL TO GRADE.
B	REPLACE TOP 12" DEPTH OF BACKFILL W/ STOCKPILED TOPSOIL. FINISH TRENCH SURFACE TO MATCH ORIGINAL CONTOURS. REPLACE EXIST LANDSCAPING.
C	REPLACE REMOVED CONC PAVEMENT TO MATCH EXIST THICKNESS, PATTERN AND COLOR. INSTEAD OF 1'-0" TEE CUT, CUT AND REMOVE CONC PAVEMENT TO THE NEAREST EXIST PANEL JOINT.

TYPICAL TRENCH & SURFACING DETAIL (1 – –)
SCALE: NTS



SECTION

GRADING REQUIREMENTS	
SIEVE SIZE	2¼"-¾"
1.50"	25% TO 60%
0.50"	0% TO 5%
0.25"	0% TO 2%
#200	0% TO 1%

NOTES:

1. WHERE DIRECTED BY THE ENGINEER, OVEREXCAVATE THE TRENCH BOTTOM TWO (2) FEET DEEP (OR AS DIRECTED BY THE ENGINEER) AND INSTALL SUBGRADE GEOTEXTILE AND 2¼"-¾" CRUSHED ROCK.

2. 2¼"-¾" CRUSHED ROCK FOR SUBGRADE STABILIZATION SHALL MEET THE GRADING REQUIREMENTS SHOWN IN THE TABLE ABOVE AND ALL OTHER REQUIREMENTS FOR BASE AGGREGATES. SEE SPECIFICATIONS.

3. SUBGRADE GEOTEXTILE SHALL BE A WOVEN GEOTEXTILE MEETING THE REQUIREMENTS OF AN AASHTO M288-05 CLASS 2 GEOTEXTILE. MIRAFI 600X, OR APPROVED EQUAL.

4. PLACE SUBGRADE STABILIZATION ROCK IN HORIZONTAL LAYERS WITH LOOSE THICKNESS NOT EXCEEDING 12 INCHES AND COMPACT EACH LAYER WITH A MINIMUM OF THREE PASSES USING MACHINE OR HAND OPERATED PNEUMATIC OR MECHANICAL TAMPERS.

TRENCH SUBGRADE STABILIZATION (2 – –)
SCALE: NTS

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

D-1
16 OF 20

REGISTERED PROFESSIONAL ENGINEER OREGON WILLIAM S. ELY 69538 RENEWS 12-31-13

SCALE VERT.: AS SHOWN HORIZ.: AS SHOWN

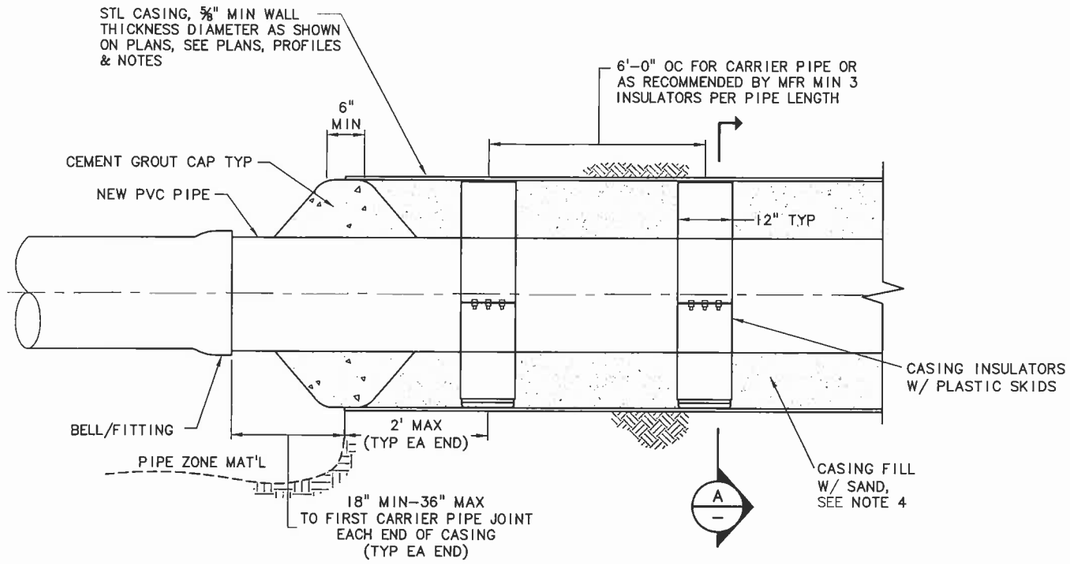
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1", THEN DRAWING IS NOT TO SCALE

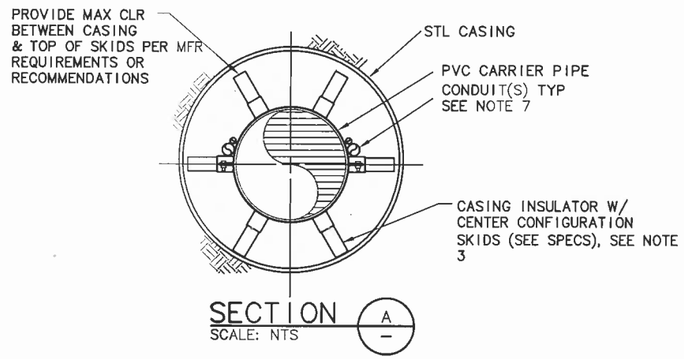
PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: MISCELLANEOUS DETAILS

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012





SECTION A
SCALE: NTS

CASING NOTES:

1. ANSI/AWWA C200 STEEL CASING.

2. PROVIDE 2" MINIMUM CLEARANCE BETWEEN CASING AND CARRIER PIPE BELLS AND APPURTENANCES.

3. CONTRACTOR TO VERIFY CASING SIZES PRIOR TO SIZING AND ORDERING CASING INSULATORS.

4. CASING SHALL BE FILLED WITH FINE CLEAN DRY SAND CAREFULLY AIR BLOWN IN SUCH A WAY AS TO ELIMINATE ANY VOIDS. AIR BLOWN SAND OPERATIONS SHALL MEET DEQ AND LANE REGIONAL AIR PROTECTION AGENCY REQUIREMENTS.

5. CARRIER PIPE INSTALLED WITHIN BORE PITS SHALL BE INSTALLED WITH THE SAME BEDDING AND BACKFILL REQUIREMENTS AS PIPELINES SEE TYPICAL TRENCH SECTION.

6. PRIOR TO FILLING CASING W/ SAND, FILL CARRIER PIPE W/ WATER OR OTHER APPROVED METHOD TO PREVENT CARRIER PIPE FROM RISING DURING THE SAND BLOWING PROCEDURE.

7. INSTALL CONDUITS WITH CARRIER PIPE IN THE SIZES AND QUANTITIES SHOWN ON THE PLANS. SECURE CONDUITS TO CARRIER PIPE AND PREVENT SKIDS FROM SLIPPING OR ROTATING DURING CARRIER PIPE AND CONDUIT INSTALLATION.

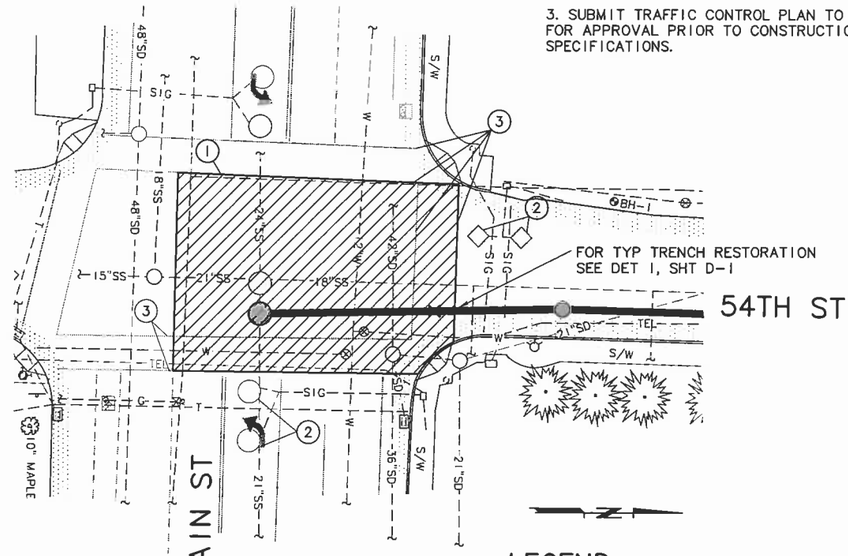
CASING DETAIL 1
SCALE: NTS

NOTES:

1. SEE ODOT PERMIT FOR ADDITIONAL REQUIREMENTS.

2. SEE SPECIFICATIONS AND ODOT PERMIT FOR WORK HOUR LIMITATIONS AND LANE CLOSURE RESTRICTIONS.

3. SUBMIT TRAFFIC CONTROL PLAN TO ODOT AND CITY FOR APPROVAL PRIOR TO CONSTRUCTION. SEE SPECIFICATIONS.



LEGEND

2-INCH COLD PLANE PAVEMENT REMOVAL & 2-INCH INLAY LEVEL 3, 1/2-INCH DENSE HMAC

KEY NOTES

(1) LIMITS OF 2-INCH COLD PLANE PAVEMENT REMOVAL & 2-INCH INLAY AS SHOWN ARE APPROXIMATE. FINAL LIMITS TO BE DETERMINED DURING CONSTRUCTION. COORDINATE WITH ODOT, CITY AND ENGINEER.

(2) PROTECT EXISTING TRAFFIC LOOPS, WIRES, AND TRAFFIC SIGNAL CONDUITS. WHERE DAMAGED, REPLACE TRAFFIC LOOPS AND WIRES TO LOOP WIRE ENTRANCE PER ODOT STANDARD DRAWINGS TM475 & TM480. REPLACE ALL DAMAGED SIGNAL CONDUIT AND WIRES PER ODOT REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.

(3) REPLACE ALL DAMAGED PERMANENT PAVEMENT STRIPING, MARKINGS, AND LEGENDS TO MATCH EXISTING LAYOUT FOLLOWING 2-INCH GRIND & INLAY. FOR PAVEMENT MARKINGS, SEE ODOT STANDARD SPECIFICATIONS SECTION 00855. FOR LONGITUDINAL PAVEMENT MARKINGS-PAINT, SEE ODOT STANDARD SPECIFICATIONS SECTION 00860. FOR TRAVERSE PAVEMENT MARKINGS-LEGENDS AND BARS, SEE ODOT STANDARD SPECIFICATIONS SECTION 00867, TYPE B: PREFORMED, FUSED THERMOPLASTIC FILM.

ROADWAY RESTORATION-MAIN STREET 2
SCALE: NTS

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 13, 2007 WILLIAM S. ELLIS RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
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PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: MISCELLANEOUS DETAILS

D-2
17 OF 20

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 DATE: MAY 2012

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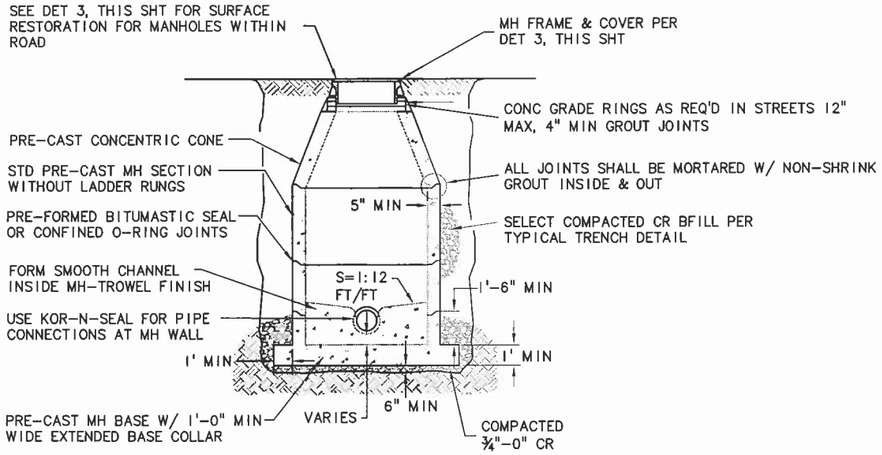


STANDARD 48" PRECAST MANHOLE (1)

SCALE: NTS

NOTES:

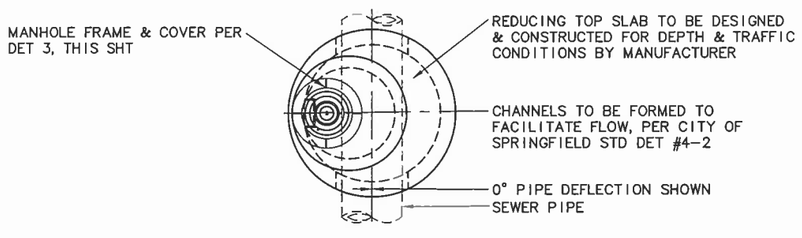
1. IF MANHOLE IS LESS THAN 8' DEEP, USE FLAT TOP MANHOLE INSTEAD OF CONCENTRIC CONE.

2. CHANNELS TO BE FORMED TO FACILITATE FLOW PER CITY OF SPRINGFIELD STANDARD DETAIL #4-2.

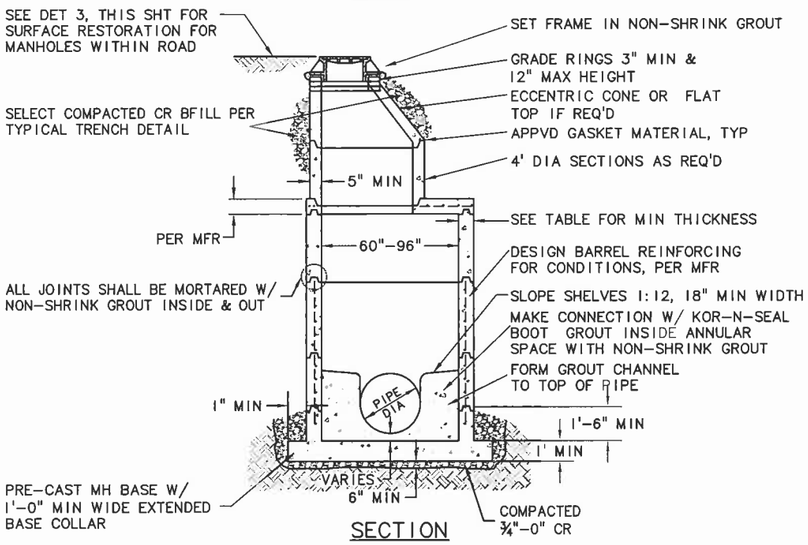
3. OPENINGS FOR PIPE SHALL BE PREFORMED OR CORED BY THE MANUFACTURER.

4. ALL MANHOLES AND CONCRETE MANHOLE ACCESSORIES ON THIS PROJECT SHALL BE CAST WITH CON-SHIELD ANTIMICROBIAL CONCRETE ADDITIVE, SEE SPECIFICATIONS.

5. ALL GROUT AND CAST-IN-PLACE CONCRETE USED INSIDE MANHOLES SHALL CONTAIN CON-SHIELD ANTIMICROBIAL CONCRETE ADDITIVE, SEE SPECIFICATIONS.



PLAN



SECTION

MINIMUM WALL THICKNESS	
MH DIA	THICKNESS
48"	5"
60"	6"
72"	7"
84"	8"
96"	9"

NOTES:

1. ROTATE TOP SECTION OF THE MANHOLE TO LOCATE FRAME AND COVER OUTSIDE OF THE WHEEL PATH OF THE TRAVEL LANE, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

2. OPENINGS FOR PIPE SHALL BE PREFORMED OR CORED BY THE MANUFACTURER.

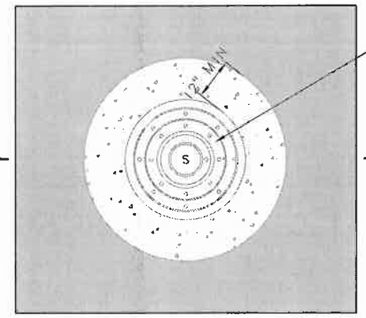
3. IF MANHOLE IS LESS THAN 8' DEEP, USE FLAT TOP MANHOLE INSTEAD OF A CONE.

4. ALL MANHOLES AND CONCRETE MANHOLE ACCESSORIES ON THIS PROJECT SHALL BE CAST WITH CON-SHIELD ANTIMICROBIAL CONCRETE ADDITIVE, SEE SPECIFICATIONS.

5. ALL GROUT AND CAST-IN-PLACE CONCRETE USED INSIDE MANHOLES SHALL CONTAIN CON-SHIELD ANTIMICROBIAL CONCRETE ADDITIVE, SEE SPECIFICATIONS.

STANDARD 60"-96" PRECAST MANHOLE (2)

SCALE: NTS



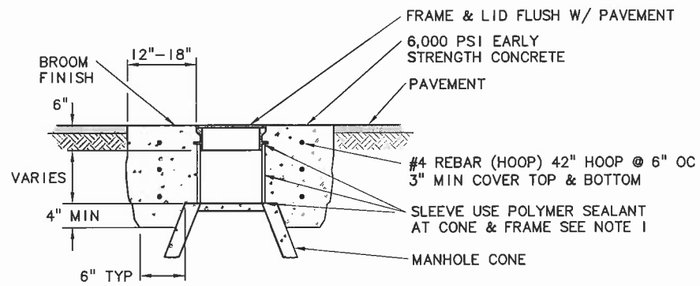
FRAME & COVER:
INLAND FOUNDRY CO. OR EQUAL
FRAME.....NO. 802
COVER.....NO. 802-VENTED
W/ 16 ¾"DIA HOLES

NOTES:

1. SLEEVE SHALL BE 27" DIAMETER PVC PIPE (ASTM F769) WITH POLYMER SEALANT TOP & BOTTOM.

2. INSTALL SEQUENCE:
   a. CUT ROUND HOLE IN PAVEMENT.
   b. PLACE MANHOLE COVER & FRAME AT FINISH GRADE.
   c. PRESS PVC & FRAME INTO MANHOLE CONE TO SEAT.
   d. PLACE REBAR & CONCRETE TO GRADE.

PLAN



SECTION

STANDARD MANHOLE FRAME & COVER ADJUSTMENT (3)

SCALE: NTS

CITY PROJECT NUMBER P21046

NO.	DATE	REVISION	BY

DESIGNED: JL
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

D-3
18 OF 20

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 1979
WILLIAM S. EVONUK
65434
RENEWS: 12-31-13

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
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PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE & BYPASS MANHOLE
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SHEET TITLE: MISCELLANEOUS DETAILS

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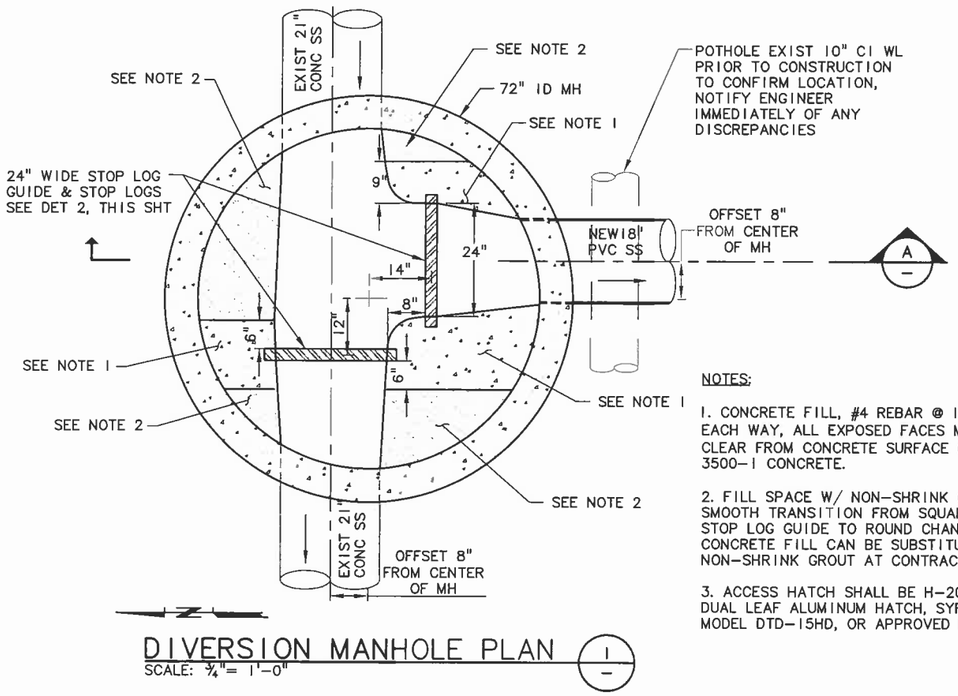


DIVERSION MANHOLE PLAN

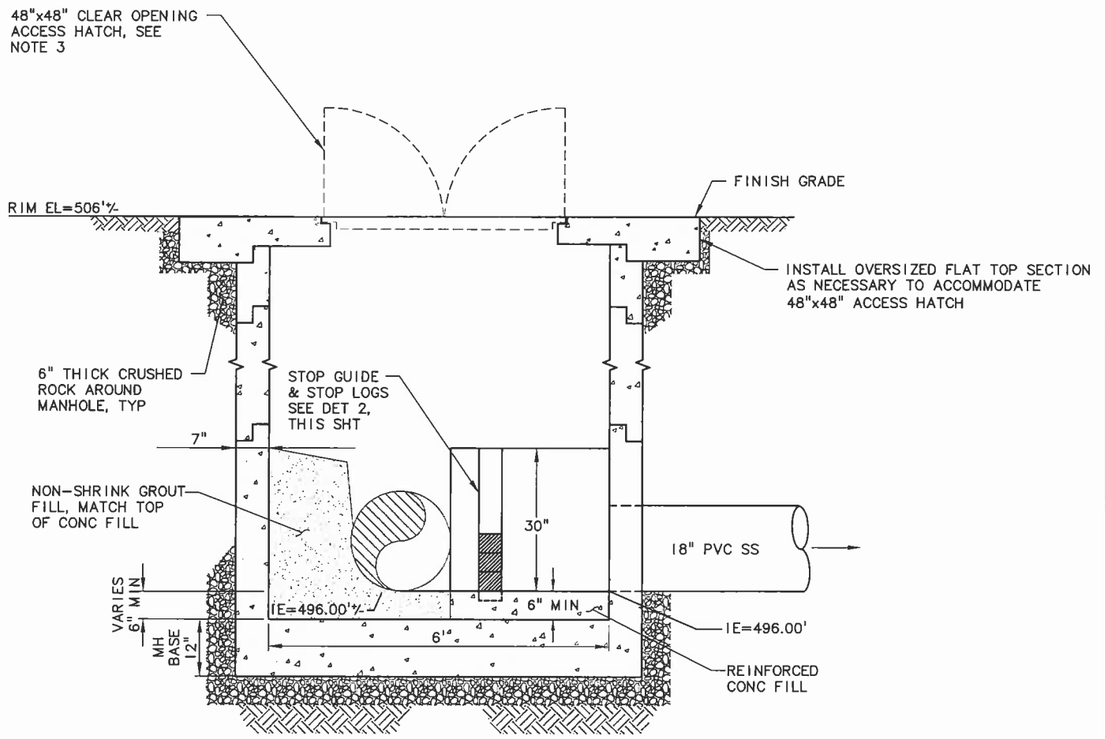
SCALE: ¾"= 1'-0"

NOTES:

1. CONCRETE FILL, #4 REBAR @ 12" ON CENTER EACH WAY, ALL EXPOSED FACES MAINTAIN 2" CLEAR FROM CONCRETE SURFACE (TYP), CLASS 3500-1 CONCRETE.

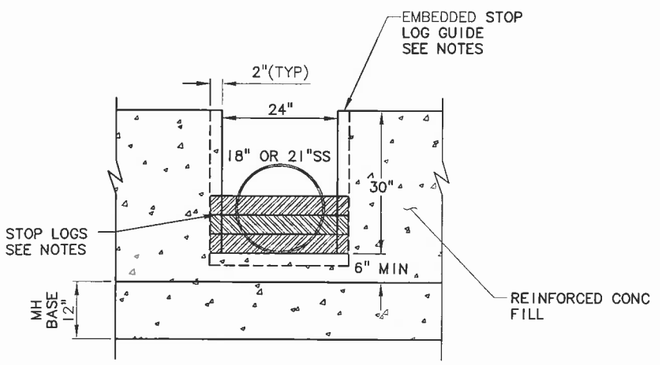
2. FILL SPACE W/ NON-SHRINK GROUT. CREATE SMOOTH TRANSITION FROM SQUARE CHANNEL AT STOP LOG GUIDE TO ROUND CHANNEL. REINFORCED CONCRETE FILL CAN BE SUBSTITUTED FOR NON-SHRINK GROUT AT CONTRACTORS OPTION.

3. ACCESS HATCH SHALL BE H-20 TRAFFIC RATED DUAL LEAF ALUMINUM HATCH, SYRACUSE CASTINGS MODEL DTD-15HD, OR APPROVED EQUAL.



DIVERSION MANHOLE SECTION

SCALE: ¾"= 1'-0"



TYPICAL STOP LOG AND GUIDE DETAIL

SCALE: ¾"= 1'-0"

NOTES:

1. STOP LOG GUIDES SHALL BE TYPE 316 STAINLESS STEEL EMBEDDED GUIDE WITH NEOPRENE SEALS, AS MANUFACTURED BY PLASTI-FAB INC, OR APPROVED EQUAL. GUIDES SHALL HAVE A CLEAR OPENING OF 24" WIDE BY 30" TALL. INSTALL GUIDES PER MANUFACTURER'S RECOMMENDATIONS.

2. STOP LOGS SHALL BE FIBERGLASS REINFORCED POLYESTER (FRP) WITH NEOPRENE SEALS, AS MANUFACTURED BY PLASTI-FAB INC, OR APPROVED EQUAL. STOP LOGS SHALL HAVE TYPE 316 STAINLESS STEEL LIFTING PINS.

3. PROVIDE ONE DUAL HOOK LIFTING POLE FROM STOP LOG MANUFACTURER.

4. PROVIDE THE FOLLOWING OF STOP LOGS IN THE DIMENSIONS SHOWN IN THE STOP LOG TABLE.

STOP LOG TABLE			
QTY	LENGTH*	HEIGHT	THICKNESS
2	24"	3"	2.5"
3	24"	5"	2.5"
3	24"	6"	2.5"

* LENGTH IS CLEAR OPENING LENGTH. FURNISH TOTAL LENGTH PER MANUFACTURER REQUIREMENTS.

CITY PROJECT NUMBER P21046

NO. | DATE | REVISION | BY

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER — OREGON — WILLIAM S. ENDICOTT — 8543 — RENEWS 12-31-13

SCALE — VERT: AS SHOWN — HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

D-4
19 OF 20

PROJECT NAME: CITY OF SPRINGFIELD, OREGON
58TH STREET RELIEF SANITARY SEWER LINE
& BYPASS MANHOLE
PROJECT NUMBER P21046

SHEET TITLE: MISCELLANEOUS DETAILS

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 11-1226.201 | DATE: MAY 2012

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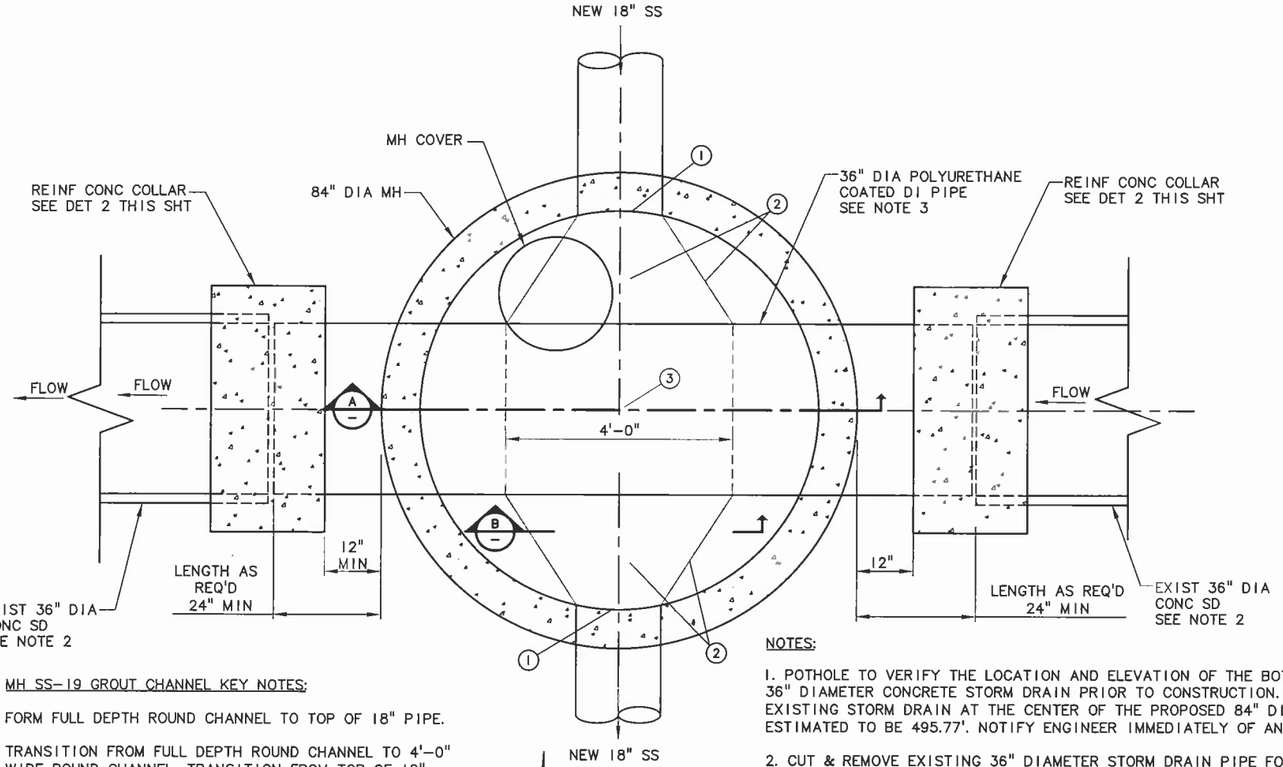


MH SS-19 GROUT CHANNEL KEY NOTES:

(1) FORM FULL DEPTH ROUND CHANNEL TO TOP OF 18" PIPE.

(2) TRANSITION FROM FULL DEPTH ROUND CHANNEL TO 4'-0" WIDE ROUND CHANNEL. TRANSITION FROM TOP OF 18" PIPE TO 36" PIPE CRADLE. SEE SECTION B.

(3) UNDER 36" PIPE, FORM 4'-0" WIDE ROUND CHANNEL. FROM 36" PIPE CRADLE. SEE SECTION A.

NOTES:

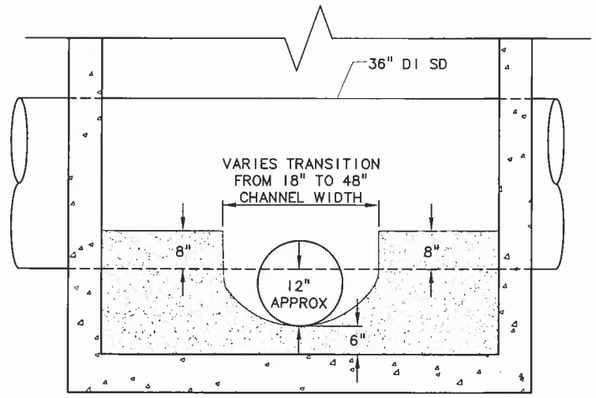
1. POTHOLE TO VERIFY THE LOCATION AND ELEVATION OF THE BOTTOM OF EXISTING 36" DIAMETER CONCRETE STORM DRAIN PRIOR TO CONSTRUCTION. BOTTOM OF EXISTING STORM DRAIN AT THE CENTER OF THE PROPOSED 84" DIAMETER MANHOLE IS ESTIMATED TO BE 495.77'. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

2. CUT & REMOVE EXISTING 36" DIAMETER STORM DRAIN PIPE FOR INSTALLATION OF NEW 36" DUCTILE IRON PIPE AND FITTINGS.

3. INSTALL NEW 36" DIAMETER POLYURETHANE COATED DUCTILE IRON PIPE THROUGH NE 84" DIAMETER MANHOLE. PIPE SHALL BE ONE CONTINUOUS PIECE OF PIPE AND EXTEND BEYOND THE MANHOLE THE DISTANCES SHOWN OR AS REQUIRED TO CONNECT TO THE CUT ENDS OF THE EXISTING 36" CONCRETE PIPE. SEE SPECIFICATIONS FOR DUCTILE IRON PIPE COATING REQUIREMENTS.

4. ALL DUCTILE IRON PIPE SHALL BE CLASS 52, SEE SPECS.

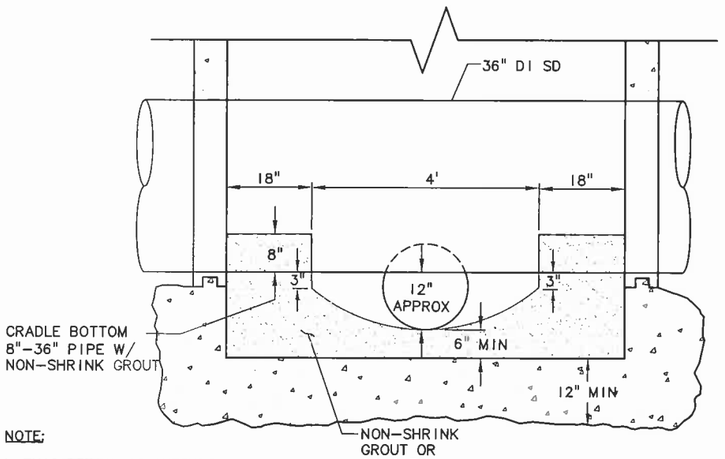
MANHOLE SS-19 PLAN (1)
SCALE: 3/4"= 1'-0"



NOTE:

1. THIS DETAIL IS INTENDED TO SHOW THE REQUIREMENTS FOR THE GROUT CHANNEL. SEE SHEET D-3 FOR STANDARD MANHOLE DETAILS.

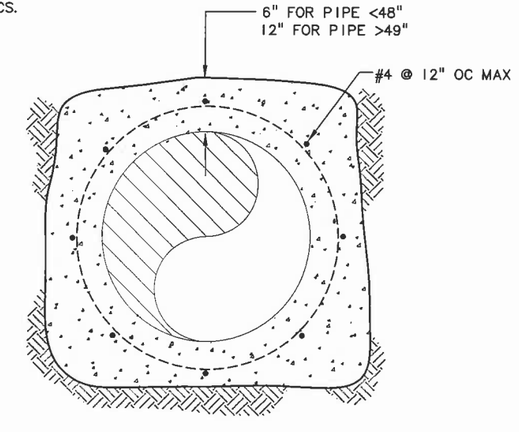
MANHOLE SS-19 GROUT CHANNEL SECTION (B)
SCALE: NTS



NOTE:

1. THIS DETAIL IS INTENDED TO SHOW THE REQUIREMENTS FOR THE GROUT CHANNEL. SEE SHEET D-3 FOR STANDARD MANHOLE DETAILS.

MANHOLE SS-19 GROUT CHANNEL SECTION (A)
SCALE: NTS

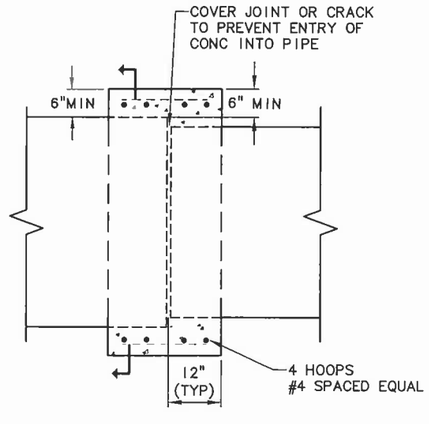


SECTION

NOTES:

1. ALL CONCRETE SHALL BE CLASS 3500-1 CONCRETE.

2. END ALL REINFORCING 3" CLEAR OF PIPE, GROUND, FORMS OR TOP SURFACE.



PLAN

REINFORCED CONCRETE COLLAR DETAIL (2)
SCALE: NTS

CITY PROJECT NUMBER P21046

D-5
20 OF 20

REVISION | BY

NO. | DATE

DESIGNED: WSE
DRAWN: TED
CHECKED: WSE
APPROVED: KPM

REGISTERED PROFESSIONAL ENGINEER OREGON 1982 WILLIAM S. EVANOK
RENEWS 12-31-13

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
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MSA PROJECT: 11-1226.201 DATE: MAY 2012

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