CITY OF COOS BAY CITY COUNCIL
Agenda Staff Report

MEETING DATE	AGENDA ITEM NUMBER
June 21, 2016	

TO: Mayor Shoji and City Councilors

FROM: Jennifer Wirsing, Wastewater Project Engineer

THROUGH: Jim Hossley, Public Works Director
Rodger Craddock, City Manager RGC

ISSUE: Consider Award of Contract for Engineering Services and Construction of the Blossom Gulch & S 10th Street Sanitary Sewer Improvement project

BACKGROUND:

In May 2014 the City's sewer collections crew performed a video investigation for the portion of sanitary sewer along S. 10th Street, south of Curtis Avenue, and determined that 500 feet of pipe had significant deficiencies and assigned this as an emergency project. Because the 500 feet of pipe could not be replaced along the current alignment due to utility conflicts, it was determined that the City should contract with an engineer to prepare plans and specifications for this project. On February 17, 2015 Council approved the contract for Design Services for the S. 10th Street Sewer Line Replacement Project to HGE Inc. The Design for this project was completed in November 2015; however, bids for this project were not requested due to budgetary constraints in the wastewater emergency fund.

On September 1, 2015 Council approved the contract for HGE, Inc. for Design Services for Blossom Gulch Sewer Line Replacement Project. This project was identified in the City's Smoke Testing Report, prepared in 2009 and is located along S. 10th Street, north of Curtis Avenue. This project is one of the projects associated with the 20-year take down schedule for storm and sanitary sewer projects and is being funded by a loan and grant from Oregon Infrastructure Finance Authority (IFA).

Due to several of the projects coming in under budget on Loan 1, there are additional funds. As such, staff worked with the IFA project manager to combine the construction of these two projects (the IFA funded Blossom Gulch sewer replacement project with the emergency sewer replacement project on S 10th Street). Combining these two projects for construction allows the City to fix two deficient sanitary sewer lines while maximizing the benefits (the grant money) of Loan 1. On April 5, 2016 Council approved an addendum for HGE to move forward with combining the two projects.

The City Advertised bids on June 10, 2016. Bids are anticipated to be received on Thursday, June 23, 2016 at 2pm. Because this project is located adjacent to Blossom Gulch Elementary School it must be completed prior to September 6, 2016, which is the beginning of classes for the 2016-2017 school year. Due to the time constraints Staff is requesting approval for construction based on the Engineer's Estimate (prior to bids being received). If the results of the bids exceed the

engineer's construction estimate Staff will present those costs to the Council prior to award.

ADVANTAGES:

HGE, Inc. is a local engineering firm that has finalized design of both of these projects. They are well versed with the scope and specifications of the project and are the most appropriate firm to perform construction management. A portion of this project is one of the projects associated with the loan and grant obtained from IFA. Combining these projects and funding the emergency work through IFA, as opposed to the emergency account in the Wastewater Improvement Fund 29, allows for additional emergency projects to be completed.

If Council approves the award of this contract, the City can complete the project and repair a badly damaged sewer line thus preventing any further damage to the street, right of way, private lines and existing utilities. The repair of this line will minimize I/I from entering the system. Additionally, by performing this project during summer it will minimize the impacts that this could have on the school, buses and associated traffic.

DISADVANTAGES:

Staff sees no disadvantages.

BUDGET IMPLICATIONS:

The source of funds for this contract are from the Oregon Infrastructure Finance Authority Loan #1 (29-810-530-3015). HGE's Construction Management contract is for an amount of $30,285, the engineers estimate for construction is $373,095 for a total of $403,380. Staff has recommended a 15% contingency of $60,507 increasing the total amount to $463,887.

ACTION REQUESTED:

If it pleases the City Council, approve the award for Engineering Services and Construction for Blossom Gulch & S 10th Street Sanitary Sewer Improvements for an amount not to exceed $463,887.

City of Coos Bay

Coos County, Oregon

Contract Documents

For the Construction of

Blossom Gulch & S. 10th Street

Sanitary Sewer Improvements

This Project is Being Fully Funded by Lottery funds through Water Wastewater Financing Program administered by Oregon Business Development Department – Infrastructure Finance Authority

Volume 3 – Project Drawings

June 2016

City Project # 160031
HGE Project # 15.55

HGE, Inc. • 375 Park Ave • Coos Bay, Oregon 97420 • www.hge1.com

1 C0 PROJECT LOCATION
SCALE: NTS

CITY OF COOS BAY

Blossom Gulch & S. 10th Street I&I Project - Sanitary Sewer Improvements

City Project No. 160031
HGE Project No. 15.55

This Project is Being Fully Funded by Lottery funds through Water Wastewater Financing Program administered by Oregon Business Development Department - Infrastructure Finance Authority

SHEET INDEX

C0 - COVER
C1 - SANITARY SEWER PLAN AND PROFILE, S. 10TH ST., STA. 0+00 TO 2+00N/EXIST COND.
C2 - EXISTING CONDITIONS / SITE MAP (CURTIS AVE. SOUTH)
C3 - SANITARY SEWER PLAN AND PROFILE, S. 10TH ST., STA. 0+00 TO 2+50S
C4 - SANITARY SEWER PLAN AND PROFILE, S. 10TH ST., STA. 2+50 TO 5+00S
C5 - SANITARY SEWER PLAN AND PROFILE, S. 10TH ST., STA. 2+50 TO 5+43S
D1 - STANDARD DETAILS
D2 - STANDARD DETAILS
D3 - STANDARD DETAILS
D4 - STANDARD DETAILS

ONE-CALL REQUIRED:
CONTRACTOR MUST CONTACT "ONE-CALL" AT 1-800-332-2344 FOR UTILITY LOCATES AT LEAST 24 HRS BEFORE ANY EXCAVATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS ESPECIALLY AT CONNECTIONS AND POTENTIAL UTILITY CONFLICTS: HIGH-PRESSURE GAS ALONG S. 10TH ST. UTILITY COORD. AND PRIOR NOTIFICATION REQ'D WITH GAS, WATER, AND COMMUNICATION LINES. UTILITY STANDBY PERSONNEL MUST BE ALLOWED ACCESS. CONTACT UTILITY AT LEAST 48-HOURS BEFORE EXCAVATION WITHIN 10 FEET.

TRAFFIC CONTROL:
ONE-WAY TRAFFIC AT MINIMUM MUST BE MAINTAINED TO ALLOW ACCESS TO BUSINESS. PROVIDE FLAGGING, CONES, WARNING SIGNS, AND TEMP. FENCING AS REQUIRED AND DIRECTED. FOLLOW ODOT MANUAL FOR TRAFFIC CONTROL. PRIOR NOTIFICATION AND COORDINATION WITH PROPERTY OWNER'S SHALL BE CONTRACTOR'S RESPONSIBILITY AND IS REQUIRED BEFORE DISRUPTING DRIVEWAY ACCESS. SUBMIT TRAFFIC CONTROL PLAN FOR APPROVAL PRIOR TO THE COMMENCEMENT OF WORK. SEE SPECIFICATIONS.

STAGING:
CONTRACTOR SHALL STAGE WORK AND MATERIALS TO MINIMIZE DISRUPTION TO BUSINESS, TRAFFIC, AND PEDESTRIANS. SUBMIT STAGING PLAN FOR APPROVAL PRIOR TO THE COMMENCEMENT OF WORK. ONLY APPROVED AREAS WILL BE ALLOWED FOR STAGING. NO STORAGE OF MATERIALS ON PAVEMENT. SEE SPECIFICATIONS.

EROSION CONTROL:
CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND RUNOFF PROTECTION. CATCH BASINS SHALL BE SURROUNDED BY EROSION CONTROL FILTER SOCKS AND SHALL BE CLEANED AND MAINTAINED DURING THE PROJECT. IN ADDITION, FABRIC CATCH BASIN INSERTS SHALL BE INSTALLED TO PREVENT DEBRIS AND SEDIMENT FROM ENTERING THE SYSTEM. STREETS SHALL BE KEPT SWEPT AND AS CLEAN AS PRACTICAL DURING CONSTRUCTION. SEDIMENT LADEN RUNOFF SHALL BE PREVENTED FROM EXITING CONSTRUCTION AREA OR ENTERING STORM SEWERS OR SANITARY SEWERS, DITCHES, AND CATCH BASINS. ADDITIONAL ABSORPTION LOGS SHALL BE PLACED ALONG GUTTERS AND SEDIMENT CONTROL GRAVEL BAGS USED AS REQ'D. ADHERE TO DEQ RULES AND BEST PRACTICES (BMP) REGARDING EROSION CONTROL. SUBMIT PLANNED EROSION CONTROL PROCEDURES FOR APPROVAL. CONTRACTOR IS RESPONSIBLE TO PROPERLY PROTECT SITE AND ADJACENT SITES FROM EROSION AND RUNOFF AND TO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS.

REGISTERED PROFESSIONAL ENGINEER 17604PE OREGON JULY 25, 1995 ROBERT E. BYNUM
RENEWS: 12/31/17

HGE INC ARCHITECTS ENGINEERS & PLANNERS
375 PARK AVE. COOS BAY, OR 97420
541.269.1166 www.hge.com

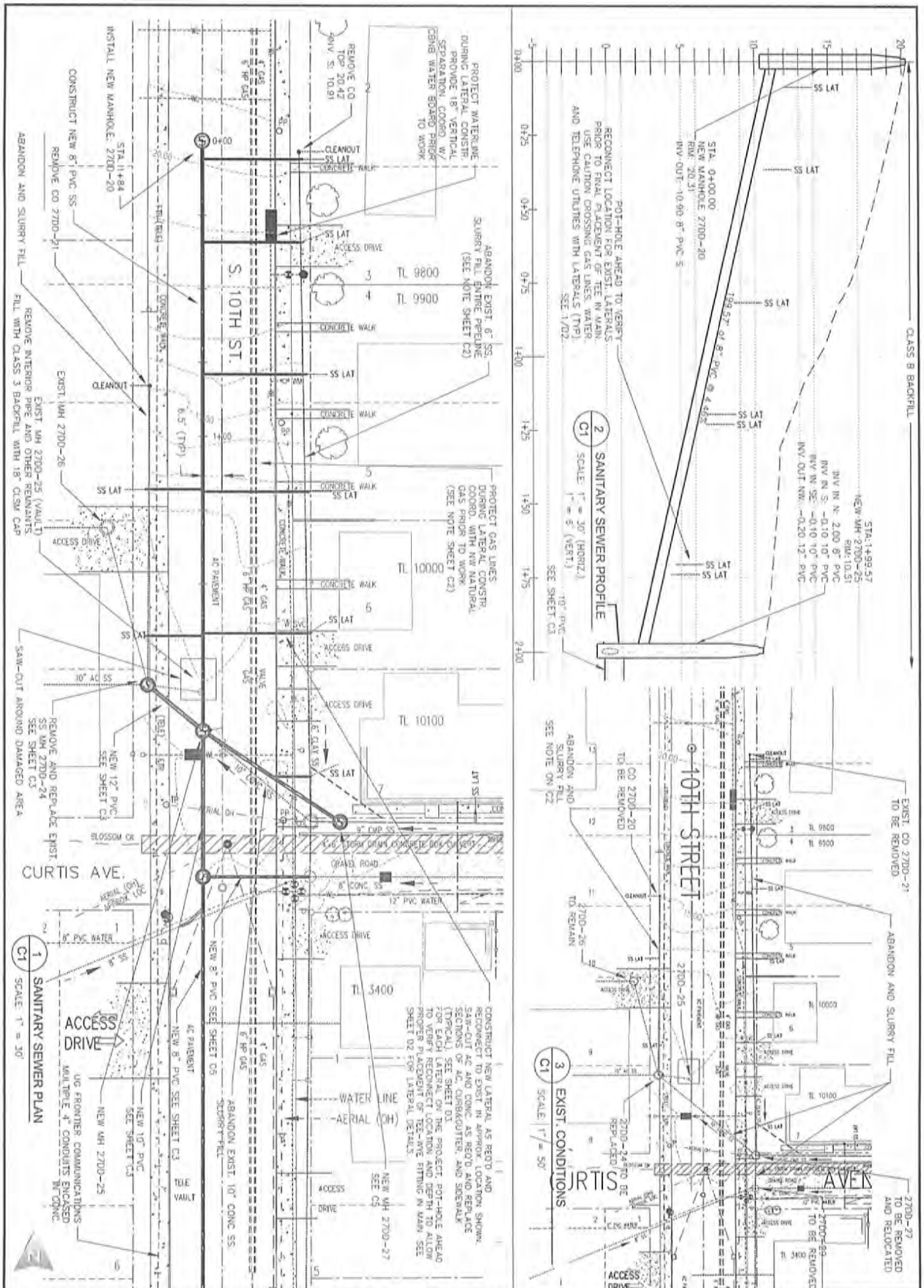
REPRODUCTION OF THESE DRAWINGS EITHER IN WHOLE OR IN PART, OR USE FOR OTHER PROJECTS WITHOUT WRITTEN PERMISSION IS STRICTLY PROHIBITED

REV	DATE	DESCRIPTION	BY

Designed By: REB | Drawn By: REB | Checked By: BRC
Project No: 15.55

CITY OF COOS BAY
COOS COUNTY, OREGON
Blossom Gulch and S. 10th Street
I/I Project - Sanitary Sewer Improvements
COVER SHEET
LOCATION MAP, SHEET INDEX, NOTES

Sheet No. C0
Date 06/09/2016



1 C1 SANITARY SEWER PLAN
SCALE: 1" = 30'

2 C1 SANITARY SEWER PROFILE
SCALE: 1" = 30' (HORIZ.)
1" = 6' (VERT.)

3 C1 EXIST. CONDITIONS
SCALE: 1" = 50'

DWG	SHEET NO.	CITY OF COOS BAY COOS COUNTY, OREGON	REV.	DATE	DESCRIPTION	BY
06/09/2016	C1	Blossom Gulch and S. 10th Street I/I Project - Sanitary Sewer Improvements				
		SANITARY SEWER PLAN AND PROFILE S. 10TH ST. - STA. 0+00 TO 2+00				

Designed By: REB | Drawn By: REB | Checked By: SRC
Project No: 16.56

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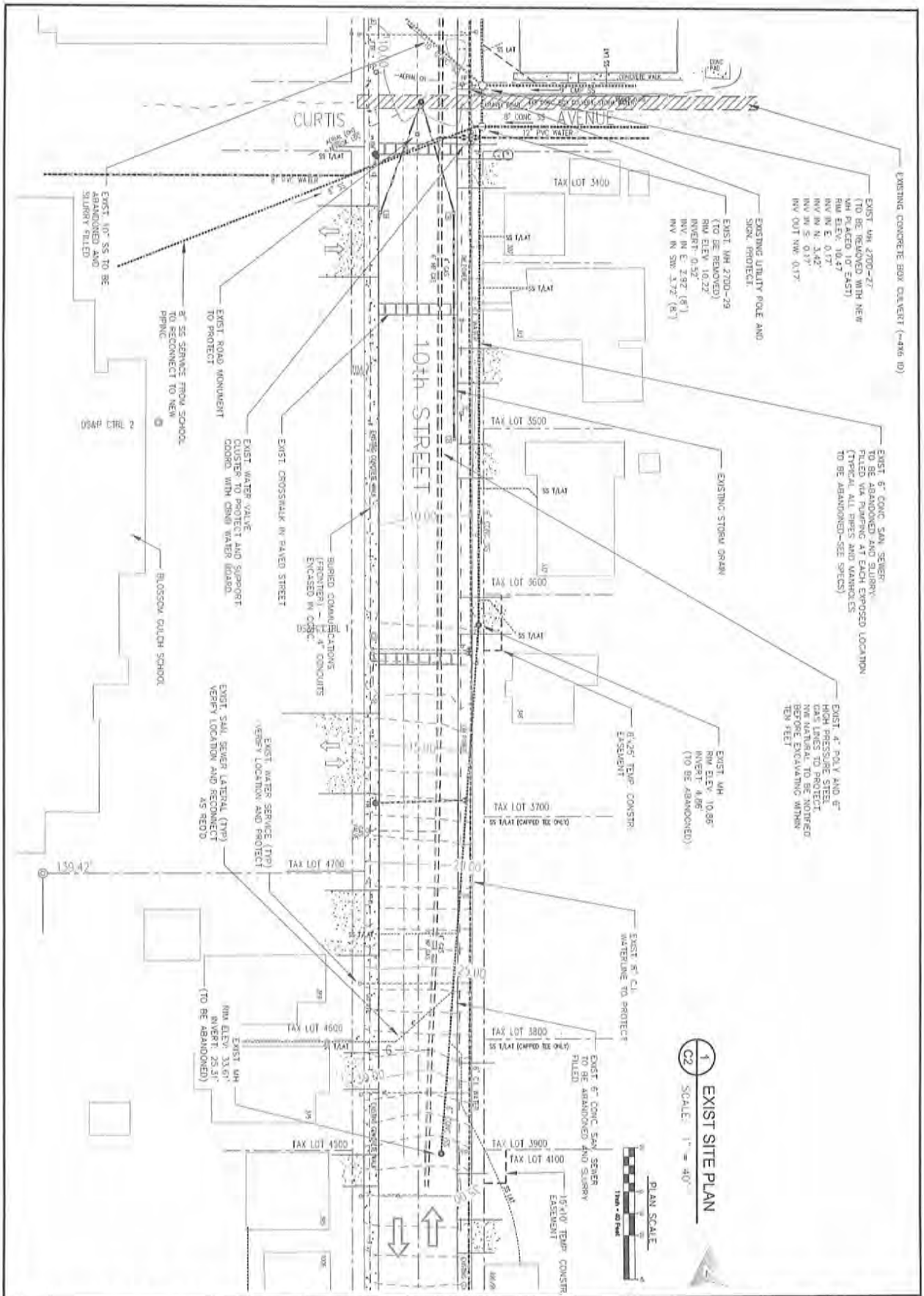
RENEWS: 12/31/17

REGISTERED PROFESSIONAL ENGINEER
17804PE
OREGON
JULY 25, 1995
ROBERT E. BYNUM



Date: 06/09/2016	Sheet No: C2	CITY OF COOS BAY COOS COUNTY, OREGON Blossom Gulch and S. 10th Street I/I Project - Sanitary Sewer Improvements SITE MAP EXISTING CONDITIONS	REV. / DATE / DESCRIPTION / BY Designed By: RDS Drawn By: RDS Checked By: SRC Project No: 1535

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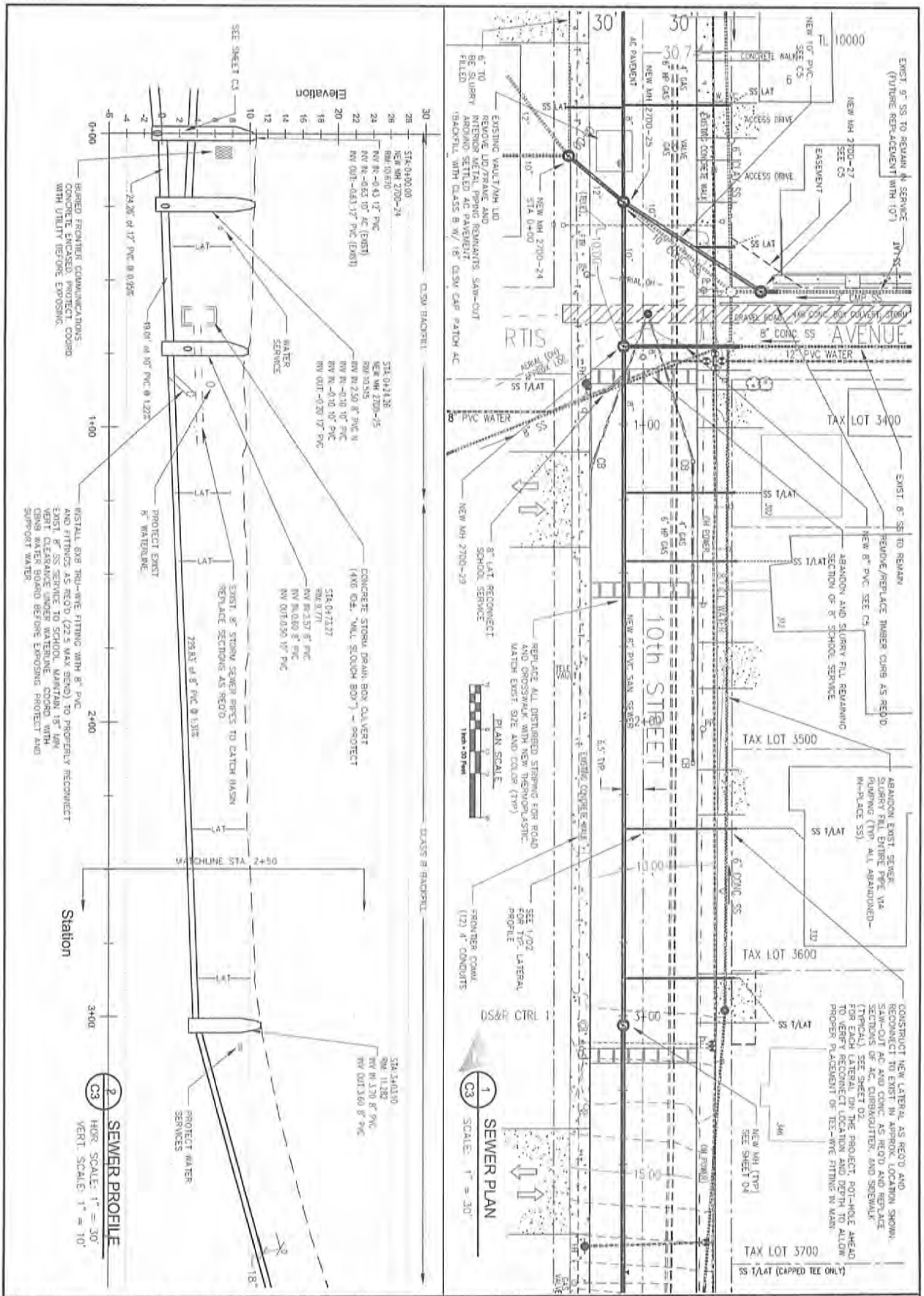
RENEWAL: 12/31/17

REGISTERED PROFESSIONAL ENGINEER 17804PE ROBERT E. BYNUM OREGON JULY 25, 1995



Date	Sheet No.	CITY OF COOS BAY COOS COUNTY, OREGON	REV.	DATE	DESCRIPTION	BY
06/09/2016	C3	Blossom Gulch and S. 10th Street I/I Project - Sanitary Sewer Improvements				
		SANITARY SEWER PLAN AND PROFILE S. 10TH ST. - STA. 0+00 TO 2+50				

Designed By: RER Drawn By: RER Checked By: SRC
Project No: 15.55

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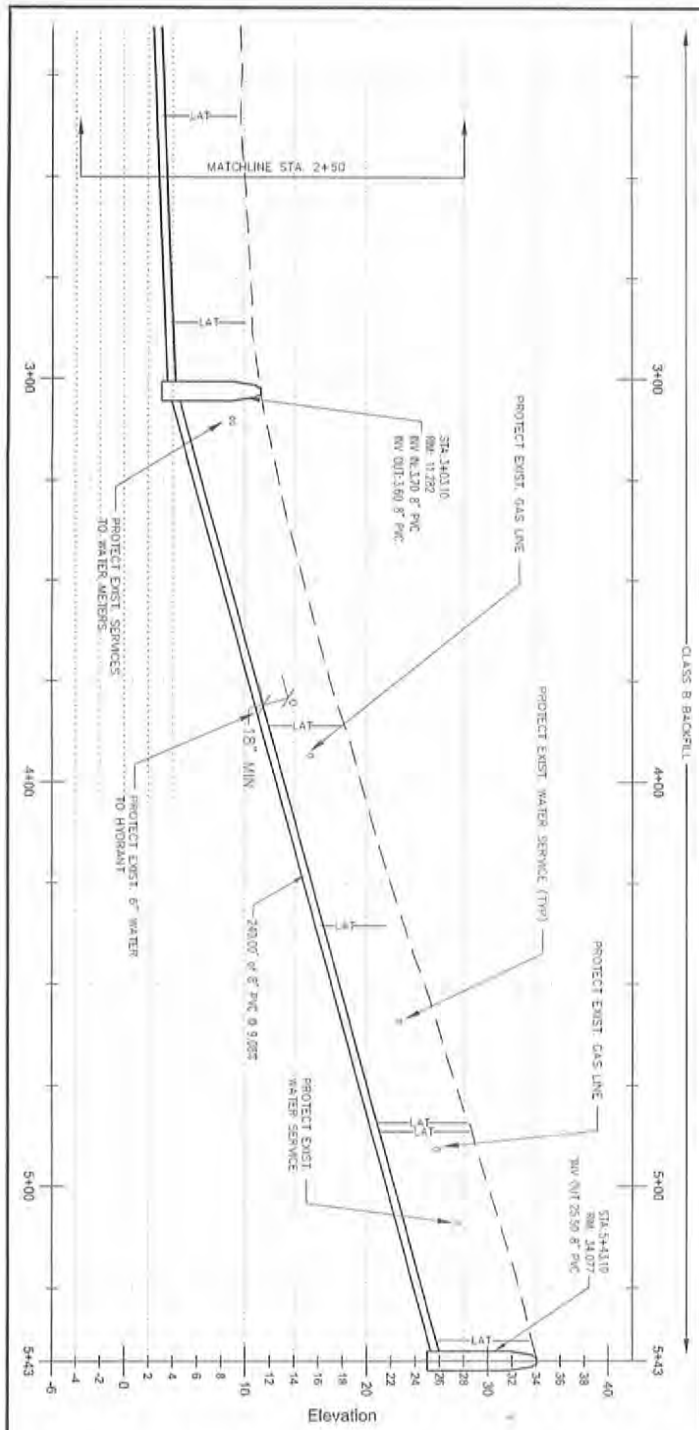
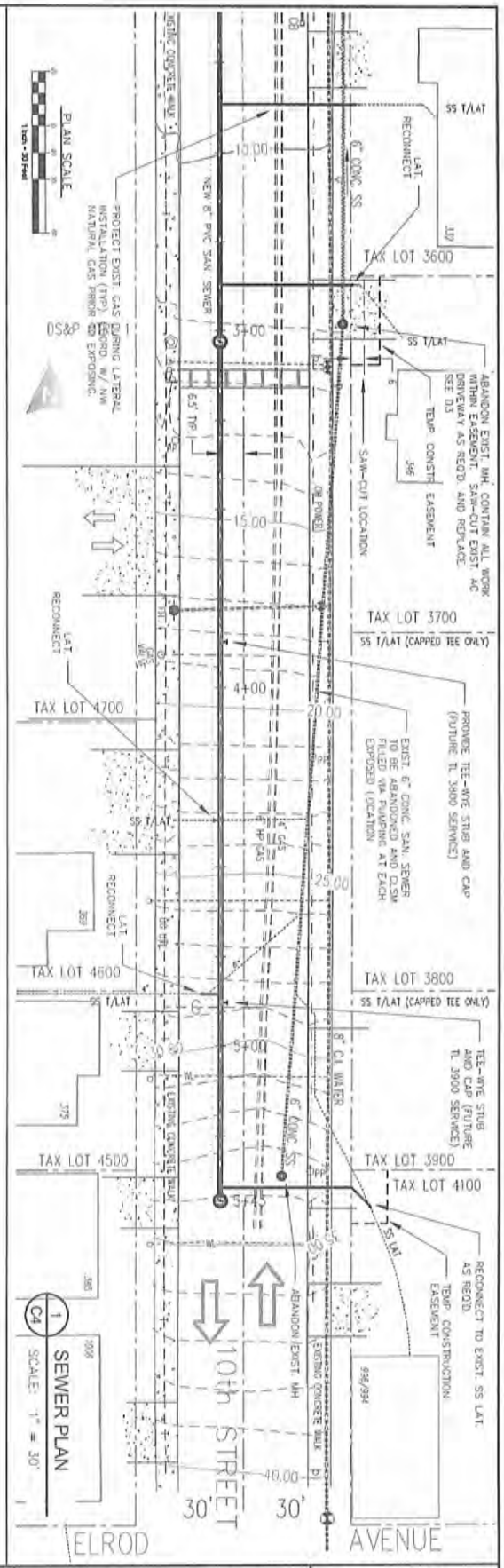
RENEWS: 12/31/17

REGISTERED PROFESSIONAL ENGINEER
ROBERT E. BYNUM
OREGON
JULY 25, 1995
17804PE



2 C4 SEWER PROFILE
HOR. SCALE: 1" = 30'
VERT. SCALE: 1" = 10'



1 C4 SEWER PLAN
SCALE: 1" = 30'

Date	Sheet No.	CITY OF COOS BAY COOS COUNTY, OREGON	REV.	DATE	DESCRIPTION	BY
06/09/2016	C4	Blossom Gulch and S. 10th Street I/I Project - Sanitary Sewer Improvements				
		SANITARY SEWER PLAN AND PROFILE S. 10TH ST. - STA. 2+50 TO 5+43				

Designed By: RGB | Drawn By: REB | Checked By: SRC
Project No: 10.35

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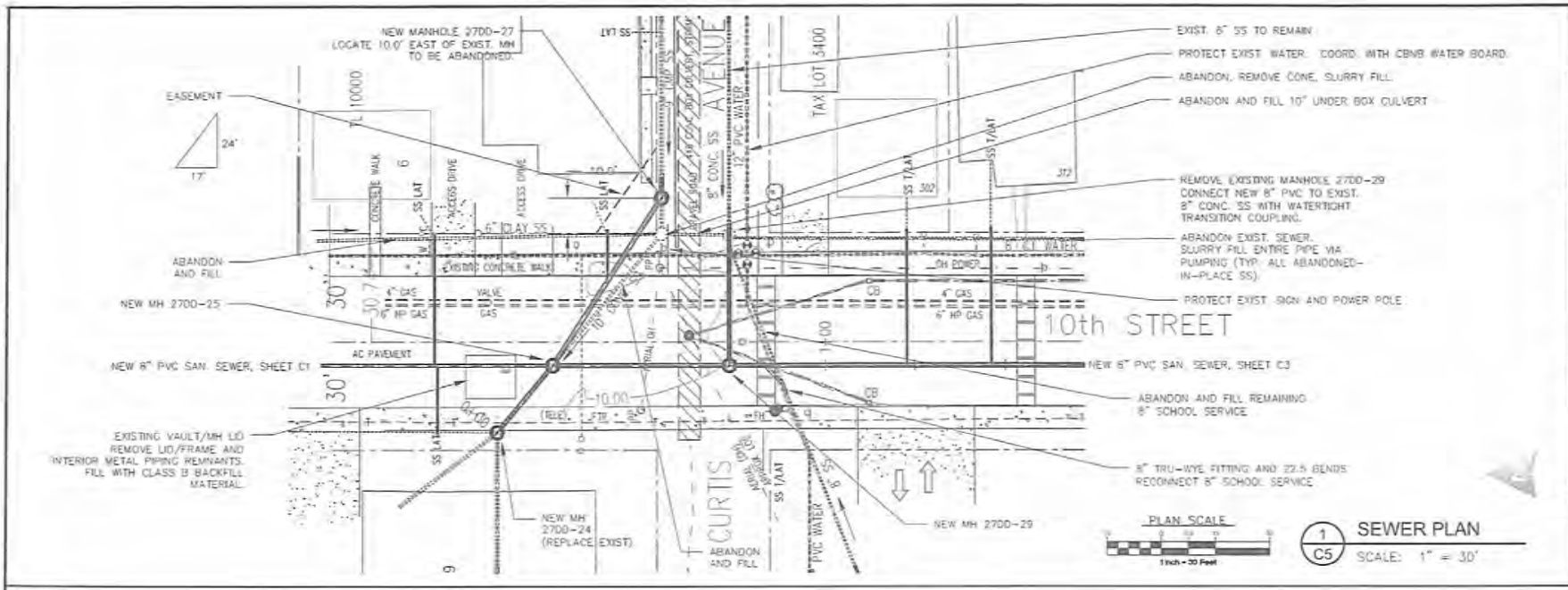
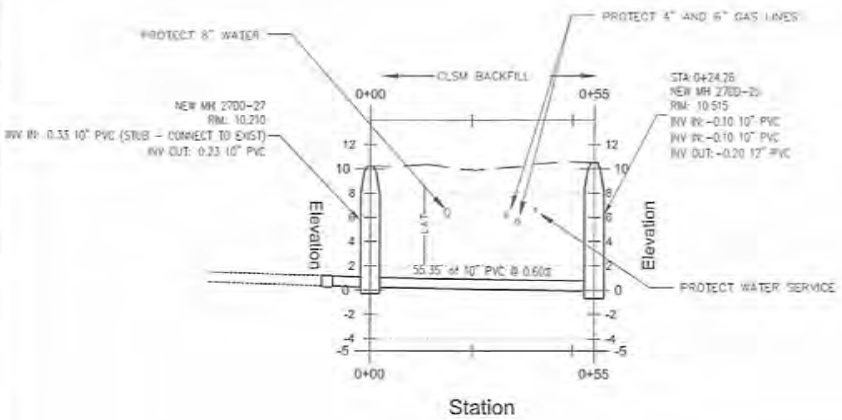
RENEWS: 12/31/17

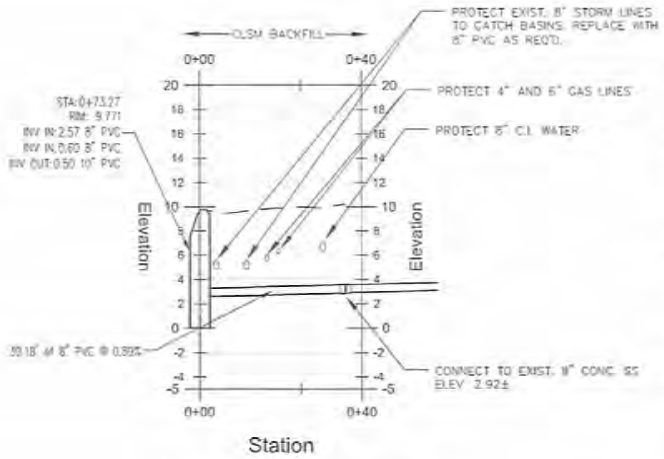
REGISTERED PROFESSIONAL ENGINEER
17804PE
OREGON
JULY 25, 1995
ROBERT E. BYNUM

Agenda Item #9



1 / C5 SEWER PLAN
SCALE: 1" = 30'





2 / C5 SEWER PROFILES
HOR. SCALE: 1" = 30'
VERT. SCALE: 1" = 10'

REGISTERED PROFESSIONAL ENGINEER
17804PE
OREGON
JULY 25, 1995
ROBERT E. BYNUM

RENEWS: 12/31/17

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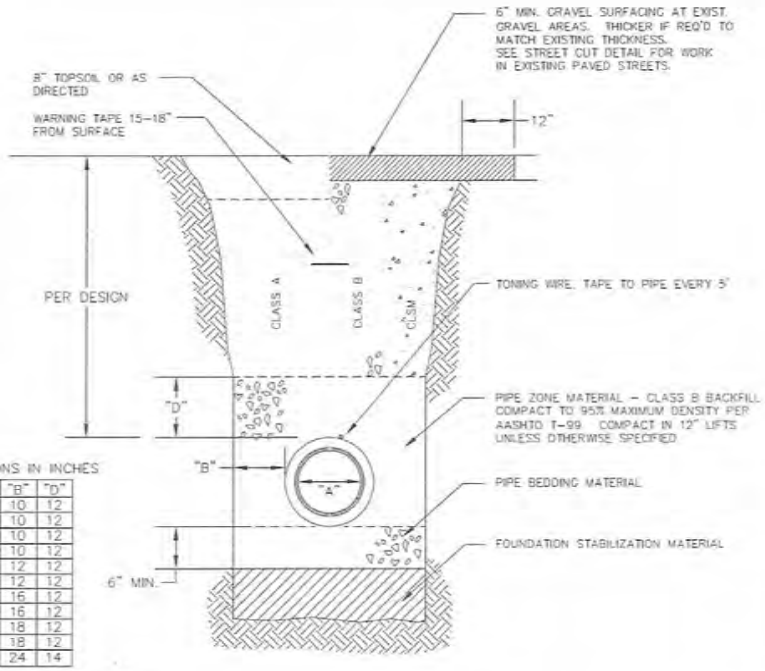
CITY OF COOS BAY
COOS COUNTY, OREGON

Blossom Gulch and S. 10th Street
I/I Project - Sanitary Sewer Improvements

SANITARY SEWER PLAN AND PROFILE
S. 10TH ST. CROSSINGS

C5
06/09/2016



DIMENSIONS IN INCHES

"A"	"B"	"D"
4	10	12
6	10	12
8	10	12
10	10	12
12	12	12
15	12	12
18	16	12
21	16	12
24	18	12
30	18	12
36	24	14

NOTES: (SEE SPECIFICATIONS ALSO)

1. TRENCH EXCAVATION SHALL BE CONDUCTED IN A SAFE MANNER WITH ALL NECESSARY BRACING AND SHORING PROVIDED FOR COMPLIANCE WITH OSHA.

2. FOUNDATION STABILIZATION SHALL BE PROVIDED WHEN MATERIAL AT BOTTOM OF TRENCH IS UNSUITABLE IN THE OPINION OF THE CITY TO PROVIDE A STABLE TRENCH BASE. SEE SPECIFICATIONS.

3. CLASS B BACKFILL REQUIRED UNLESS OTHERWISE SPECIFIED. SEE SPECIFICATIONS AND PLAN/PROFILE DRAWINGS FOR BACKFILL LOCATIONS AND CLASSES.

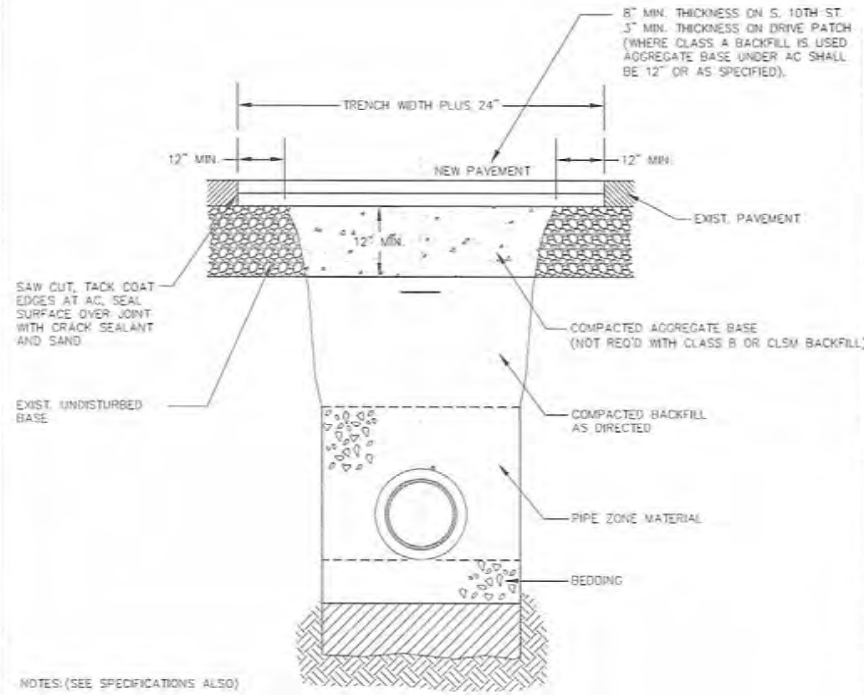
4. TONING WIRE REQUIRED AT ALL PVC PIPE. WIRE SHALL BE 10 GA. MINIMUM SOLID COPPER WIRE WITH GREEN 30 MIL THICK HDPE INSULATION RATED FOR DIRECT BURY. USE APPROVED WATERPROOF SPLICE AT ALL CONNECTIONS.

5. WARNING TAPE SHALL BE 6" WIDE, 4 MIL THICK, APWA GREEN, READING "CAUTION SEWER LINE BURIED BELOW".

6. MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF COOS BAY STANDARDS AND THESE SPECIFICATIONS.

7. COMPACT ALL FILL AS SPECIFIED.

1 / D1 STANDARD TRENCH DETAIL
SCALE: NTS



NOTES: (SEE SPECIFICATIONS ALSO)

1. ALL EXISTING AC OR PCC PAVEMENT SHALL BE SAWCUT IMMEDIATELY PRIOR TO REPAVING.

2. PLACE COMPACTED AGGREGATE BASE OR CLSM TO A MINIMUM THICKNESS OF 12 INCHES, OR THE THICKNESS OF THE AGG. BASE REMOVED, WHICHEVER IS GREATER. COMPACT AS DIRECTED.

3. CONCRETE PAVEMENT SHALL BE REPLACED WITH CONCRETE TO A MINIMUM THICKNESS OF 6 INCHES OR TO THE THICKNESS OF REMOVED CONCRETE PAVEMENT, WHICHEVER IS GREATER. SMOOTH 1" DOWEL BARS SHALL BE INSTALLED AT 6 INCHES O.C.

4. PLACE AC MIX TO A MINIMUM THICKNESS OF 4 INCHES OR THE THICKNESS OF REMOVED PAVEMENT, WHICHEVER IS GREATER. COMPACT AS DIRECTED. AC PAVEMENT SHALL BE PLACED IN AT LEAST TWO 2-INCH THICK LIFTS.

5. WHERE EXISTING PCC PAVEMENT IS OVERLAYED WITH AC PAVEMENT, PLACE PCC PAVEMENT IN ACCORDANCE WITH NOTE 3 AND COVER WITH AC IN ACCORDANCE WITH NOTE 4.

2 / D1 STANDARD STREET CUT DETAIL
SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER 17804PE OREGON JULY 25, 1995 ROBERT E. BYNUM
RENEWS: 12/31/17

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REV.	DATE	DESCRIPTION	BY

Designed By: REB | Drawn By: REB | Checked By: ERG | Project No: 15-55

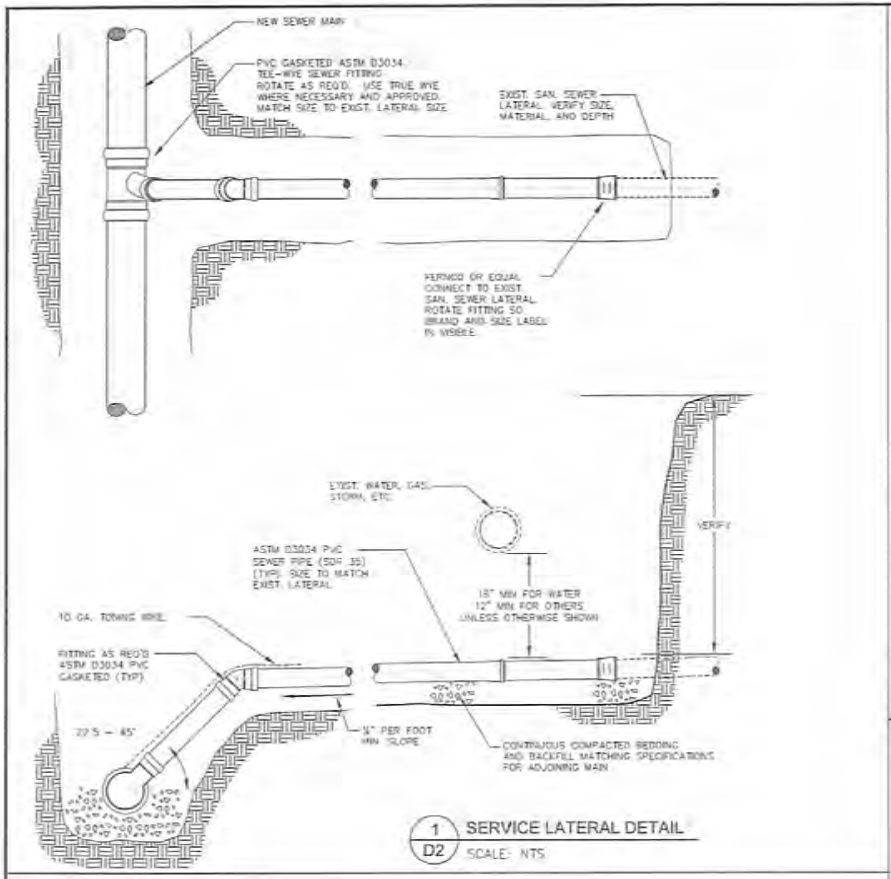
CITY OF COOS BAY
COOS COUNTY, OREGON

Blossom Gulch and S. 10th Street
I/I Project - Sanitary Sewer Improvements

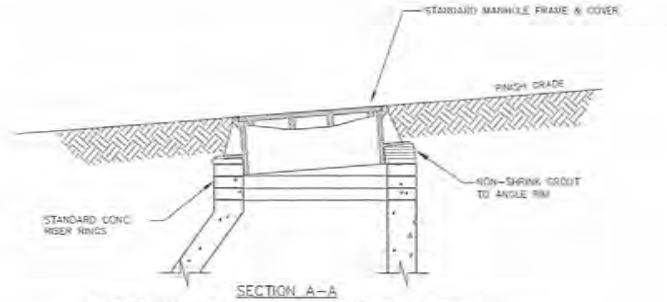
STANDARD DETAILS
TRENCHING

Sheet No. D1
Date 06/09/2016

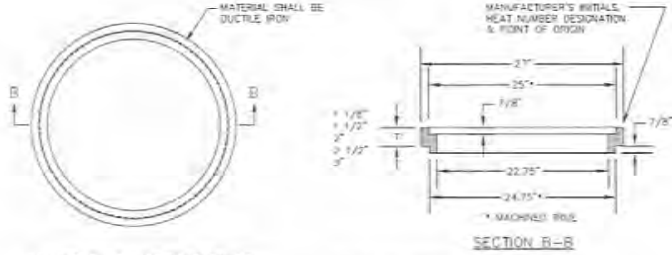
Agenda Item #9



1 / D2 SERVICE LATERAL DETAIL
SCALE: NTS



SECTION A-A
TYPICAL MANHOLE GRADE ADJUSTMENT IN STREET

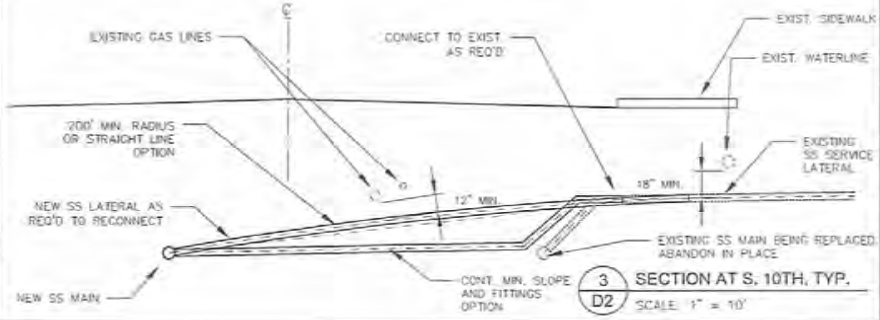


MANHOLE ADJUSTMENT RINGS FOR RESURFACING

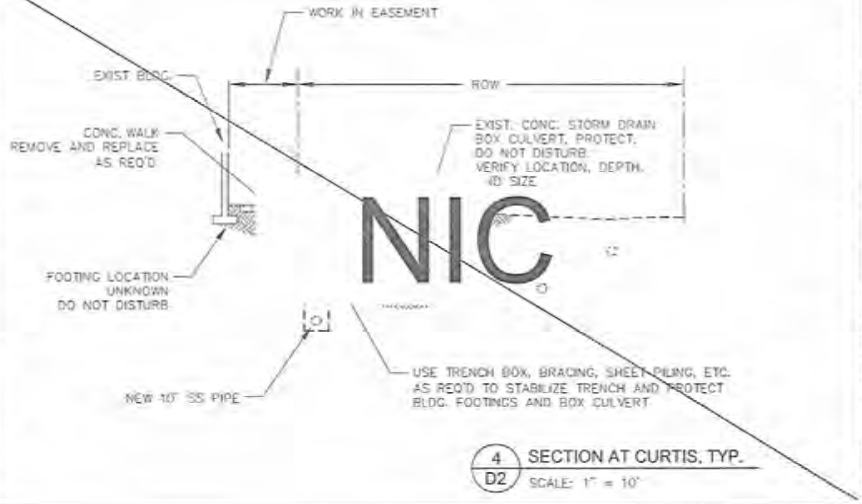
SECTION B-B

2 / D2 MH FRAME GRADE ADJUST
SCALE: NTS

SCH. B



3 / D2 SECTION AT S. 10TH, TYP.
SCALE: 1" = 10'



4 / D2 SECTION AT CURTIS, TYP.
SCALE: 1" = 10'

REGISTERED PROFESSIONAL ENGINEER 17804PE OREGON JULY 25, 1995 ROBERT E. BYNUM
RENEWS: 12/31/17

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Rev.	Date	Description	By

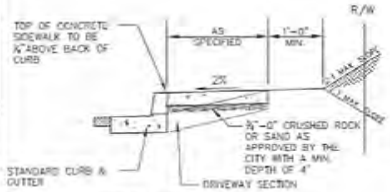
Designed By: RES | Drawn By: RES | Checked By: GPC
Project No: 1LAS

CITY OF COOS BAY
COOS COUNTY, OREGON

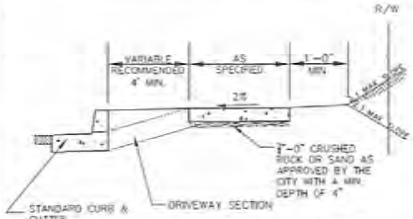
Blossom Gulch and S. 10th Street
I/I Project - Sanitary Sewer Improvements

STANDARD DETAILS
SERVICE LATERALS, MH RIM ADJUST.

Sheet No. D2
Date: 06/09/2016



TYPICAL CURB TYPE CROSS SECTION



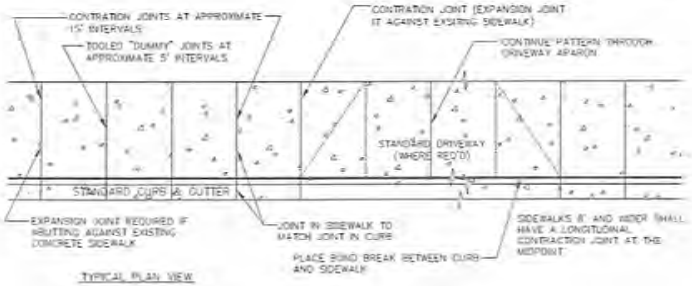
TYPICAL SETBACK TYPE CROSS SECTION

NOTES:

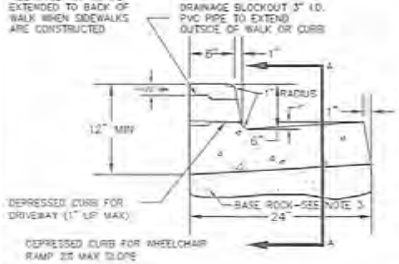
1. CONCRETE SHALL BE 3,500 PSI MIX MEETING COOS BAY CONSTRUCTION SPECIFICATIONS.
2. STANDARD SIDEWALK CROSS SLOPE SHALL BE 2% WHEN THE LOT IS BELOW THE TOP OF THE CURB AND SLOPE DOWN FROM CURB. A MINUS 2% SLOPE MAY BE REQUIRED.
3. CONCRETE DEPTH FOR SIDEWALKS SHALL SHALL BE A NOMINAL 4" MIN. DRIVEWAY SECTIONS INCLUDING SIDEWALKS THROUGH DRIVEWAYS SHALL BE NOMINAL 6" MIN FOR RESIDENTIAL APPROACHES AND 8" FOR COMMERCIAL AND INDUSTRIAL APPROACHES.
4. CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATE INTERVALS OF 15' BY CUTTING AT LEAST ¼ OF THE DEPTH OF THE CONCRETE. "DUMMY" JOINTS SHALL BE INSTALLED AT APPROXIMATE INTERVALS OF 5'. EXPANSION JOINTS WITH PREMOLDED FILLER SHALL BE INSTALLED BETWEEN DRIVEWAYS & SIDEWALKS AT THE DIRECTION OF THE ENGINEER. SEE DRIVEWAY STANDARD.
5. INSTALL A BOND BREAKER OR ISOLATION JOINT BETWEEN BACK OF CURB & SIDEWALK, & AROUND ANY OBSTRUCTION WITHIN SIDEWALK AREA.
6. DRAIN BLOCKOUTS IN THE CURB SHALL BE EXTENDED TO THE BACK OF THE SIDEWALK WITH A 3" DIA. PLASTIC PIPE AT A 2% SLOPE. A CONTRACTION JOINT SHALL BE PLACED OVER THE PIPE.
7. SEE STANDARD WHEELCHAIR/BICYCLE RAMP DETAILS FOR SIDEWALK PATTERNS AT INTERSECTION CURB RETURNS.
8. SEE ALSO, STANDARD DETAILS FOR DRIVEWAYS.
9. A MIN. SEPARATION OF 4' BETWEEN CURB & SIDEWALK IS RECOMMENDED FOR LANDSCAPE MAINTENANCE.
10. SIDEWALKS 8' AND WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT THE MIDPOINT.

1 / D3 SIDEWALK DETAIL

SCALE: NTS

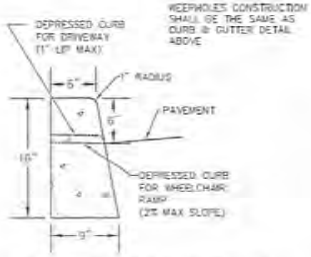


TYPICAL PLAN VIEW



TYPICAL INTEGRAL CURB & GUTTER

NOT TO SCALE



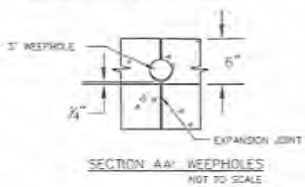
TYPICAL STRAIGHT CURB (TYPE C)

NOT TO SCALE

2 / D3 CURB/GUTTER DETAIL

SCALE: NTS

WEEPHOLES ARE TO BE CONSTRUCTED USING 3" ID DRAIN PIPE & COUPLING. PLACE WEEPHOLES AT EXPANSION JOINTS WHENEVER POSSIBLE.

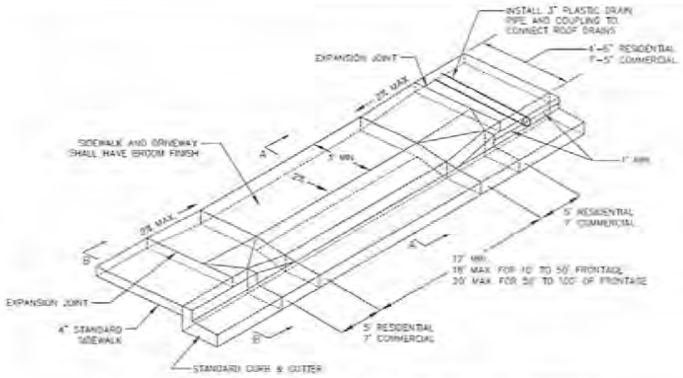


SECTION AA: WEEPHOLES

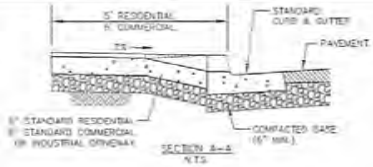
NOT TO SCALE

NOTES:

1. CONCRETE SHALL BE 3,500 PSI MIX MEETING COOS BA STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONTRACTION JOINTS
   A) TO BE PROVIDED
      - AT EACH POINT OF TANGENCY
      - AT EACH COLD JOINT
      - AT EACH SIDE OF INLET STRUCTURES
      - AT BOTH SIDES OF AN APPROACH
   B) SPACING TO BE NOT MORE THAN 10 FEET
   C) THE DEPTH OF THE JOINT SHALL BE AT LEAST 1/3 OF THE THICKNESS OF CONCRETE
   D) EXPANSION JOINTS IN CURB & GUTTER SHALL BE PLACED AT MAX 50' INTERVALS IN 10' MULTIP
3. BASE ROCK – 1-1/2"-0", 95% COMPACTION ROCK SHALL BE TO SUBGRADE OF THE STREET SECTION OR 4" IN DEPTH, WHICHEVER IS GREATER.
4. DRAINAGE BLOCK – 3" DIA. PLASTIC PIPE
   A) DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE DONE BY:
      - CORE DRILLING, OR
      - VERTICAL SAWCUT OF CURB 18" EACH SIDE OF DRAIN AND RE-POURED TO FULL DEPTH OF CURB
5. STAMP TOP OF CURB WITH "W" AT WATER SERVICE CROSSING AND "S" AT SANITARY LATERAL CROSSING AS SPECIFIED.
6. SEE STANDARD CURB CUT DETAIL FOR DRIVEWAY.
7. TYPICAL STRAIGHT CURB (TYPE C) ALLOWED FOR REPLACEMENT OF EXISTING TYPE C CURBS AND NOT RECOMENDED FOR NEW CONSTRUCTION.

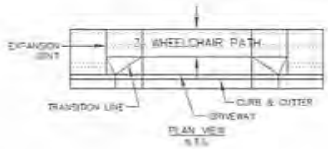


TYPICAL DRIVEWAY / DROP CURB FOR STANDARD SIDEWALK – OPTION "A"



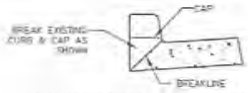
SECTION A–A

N.T.S.



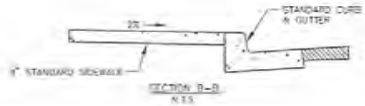
PLAN VIEW

N.T.S.



CURB BREAK (EXISTG CURB & GUTTER)

N.T.S.



SECTION B–B

N.T.S.

NOTES:

1) MINIMUM 3,500 PSI CONCRETE REQUIRED FOR ALL DRIVEWAY APRONS AND DRIVEWAY EXTENSIONS. MIX SHALL MEET COOS BAY STANDARD CONSTRUCTION SPECIFICATIONS.
2) COMPACT BACKFILL UNDER SIDEWALK & DRIVEWAY TO 95% RELATIVE COMPACTION PER AASHTO T-99 METHOD.
3) CONCRETE APRON REQUIRED FOR ALL DRIVEWAYS (3' WIDE FOR RESIDENTIAL, 6' WIDE FOR COMMERCIAL) WHERE NO SIDEWALK IS CONSTRUCTED.

3 / D3 DRIVEWAY DETAIL

SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER 17804PE OREGON JULY 25, 1995 ROBERT E. BYNUM

RENEWS: 12/31/17

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ISSUE	DATE	DESCRIPTION	BY

Designed By: RTB | Drawn By: RTB | Checked By: BAC | Project No: 7506

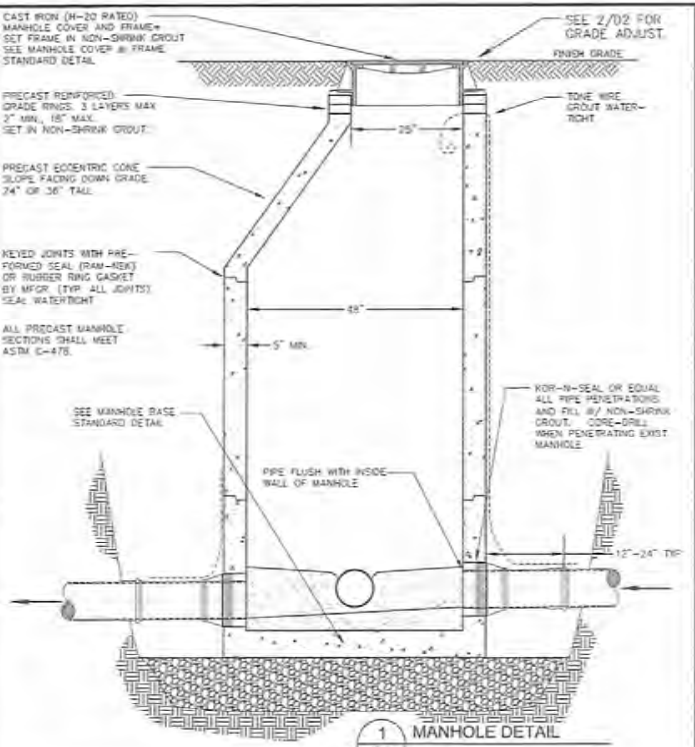
CITY OF COOS BAY
COOS COUNTY, OREGON

Blossom Gulch and S. 10th Street
I/I Project - Sanitary Sewer Improvements

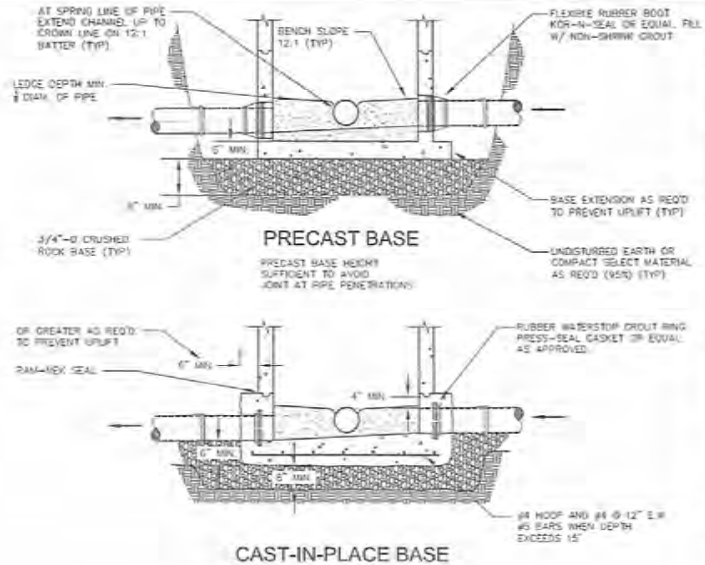
STANDARD DETAILS
CONCRETE WORK

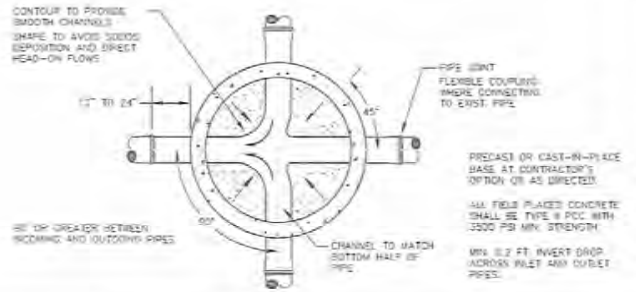
Sheet No. D3

Date 06/09/2016

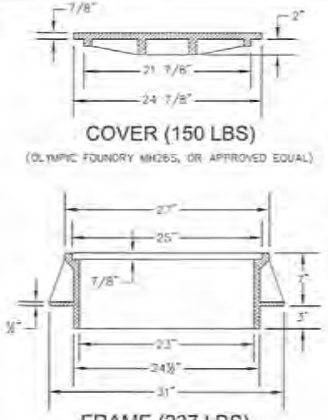


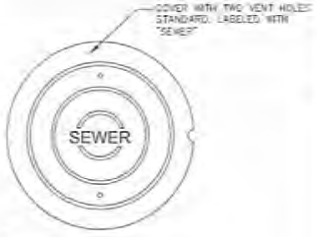
1 / D4 MANHOLE DETAIL
SCALE: NTS





2 / D4 MANHOLE BASE DETAIL
SCALE: NTS





NOTE
1) TAMPER PROOF FRAME AND COVER REQUIRED IN OFF-STREET AREAS AND EASEMENTS AS DIRECTED
2) MANHOLE FRAMES AND COVER SHALL HAVE H-20 RATING

3 / D4 MANHOLE COVER DETAIL
SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER 17804PE OREGON JULY 25, 1995 ROBERT E. BYNUM
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Designed By: REB | Drawn By: JEB | Checked By: RMC
Project No: 15.05

CITY OF COOS BAY
COOS COUNTY, OREGON

Blossom Gulch and S. 10th Street
I/I Project - Sanitary Sewer Improvements

STANDARD DETAILS
MANHOLES

Sheet No. D4
Date 06/09/2016