

# 17th Street 'S' to 'T' Storm Sewer P21095

## PROJECT DESCRIPTION

This project will consist of placing 484lf of 12" pvc storm pipe, three manholes, and an area drain in 17th street.

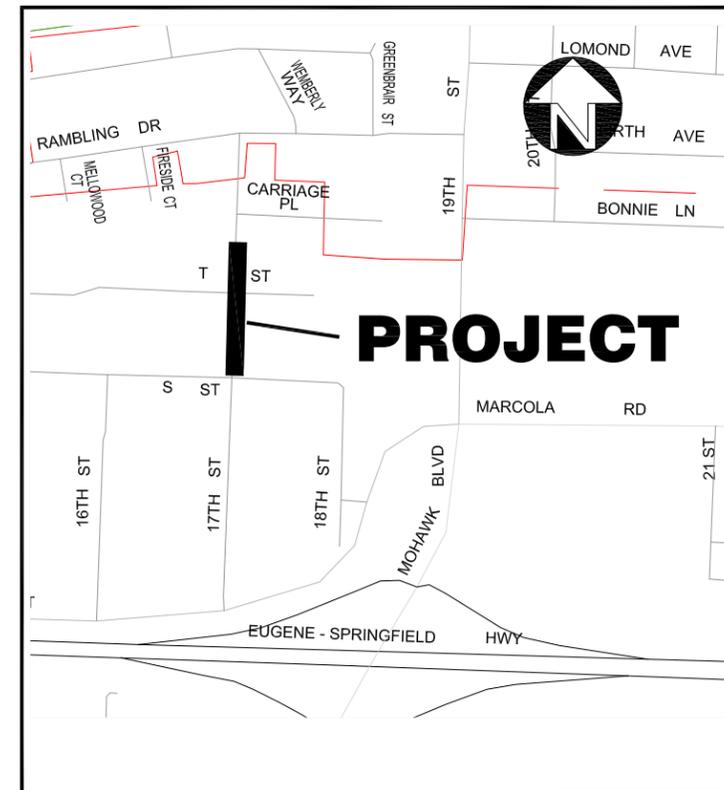
## LEGEND

RIGHT OF WAY (ROW) LINE	
GAS LINE	
FIBER OPTIC (NO. OF CABLES)	
WATER LINE	
POWER (ELECTRIC)	
STORM SEWER (STATE)	
SANITARY SEWER (EXISTING)	
STORM SEWER (NEW)	
SANITARY SEWER (NEW)	
GAS VALVE	
WATER VALVE	
FIRE HYDRANT	
WATER METER	
UTILITY BOX	
POWER POLE/LIGHT	
CATCH BASIN EXISTING	
CURB INLET NEW	
STORM MANHOLE (NEW)	
SANITARY MANHOLE (EXISTING)	
SANITARY MANHOLE (NEW)	
STORM AREA DRAIN (NEW)	
MAIL BOX	
UTILITY POLE	

## ABBREVIATIONS

AC ASPHALTIC CONCRETE	FM FORCE MAIN	RCP REINFORCED CONCRETE PIPE
ABAN ABANDON(ED)	FT FOOT	RD ROAD
ADA AMERICANS W/ DISABILITIES ACT	FTG FITTING	RDCR REDUCER
AL ALUMINUM	G GAS	REINF REINFORCE(DNG)(MENT)
APPROX APPROXIMATELY	GALV GALVANIZED	RESTR RESTRAINED
APPVD APPROVED	GR GRADE	REQ'D REQUIRED
ASSY ASSEMBLY	GRVL GRAVEL	ROW RIGHT OF WAY
ARV AIR RELEASE VALVE	GV GATE VALVE	SCHED SCHEDULE
BLDG BUILDING	HORIZ HORIZONTAL	SD STORM DRAIN
BM BENCHMARK	HWY HIGHWAY	SERV SERVICE
BO BLOWOFF	HP HIGH PRESSURE	SHT(S) SHEET(S)
BTM BOTTOM	ID INSIDEDIAMETER	SL SLOPE
C/L CENTER LINE	IE INVERT ELEVATION	SPECS SPECIFICATIONS
CB CATCH BASIN	INSTL INSTALL	SPL SPOOL
CCP CONCRETE CULVERT PIPE	LDAP LAND & DRAINAGE ALTERATION PERMIT	SQ SQUARE
CI CAST IRON	LAT LATERAL	SQ FT SQUAREFOOT
CG CURB/GUTTER	LF LINEAL FEET	SS SANITARY SEWER
CL CLASS	LP LOWPRESSURE	SST STAINLESSSTEEL
CO CLEANOUT	MATL(S) MATERIAL(S)	ST STREET
CONC/CON CONCRETE	MAX MAXIMUM	STA STATION
CONST CONSTRUCTION	MFR(S) MANUFACTURER(S)	STL STEEL
COP COPPER	MH(S) MANHOLE(S)	STD STANDARD
COS CITY OF SPRINGFIELD	MHSD MANHOLE STORM DRAIN	SUB SPRINGFIELD UTILITY BOARD
CPLG COUPLING	MHSS MANHOLE SANITARY SEWER	S/W SIDEWALK
CR CRUSHED ROCK	MIN MINIMUM	TEL/T TELEPHONE
CV CHECK VALVE	MJ MECHANICAL JOINT	TB THRUST BLOCK
CY CUBIC YARD	MUTCD MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	TEMP TEMPORARY
D DRAIN	NTS NOT TO SCALE	THK THICK
DET DETAIL	OC ON CENTER	THRU THROUGH
DI DUCTILE IRON	OD OUTSIDEDIAMETER	TV TELEVISION
DIA / Ø DIAMETER	ODOT OREGON DEPARTMENT OF TRANSPORTATION	TYP TYPICAL
DR DRIVE	OVHD OVERHEAD UTILITY	VERT VERTICAL(LY)
DWG DRAWING	P POWER	W WATER
DWY DRIVE WAY	PCC PORTLAND CEMENT CONCRETE	W/ WITH
EA EACH	PE PLAIN END	W/IN WITHIN
EL ELEVATION	PERM PERMANENT	W/O WITHOUT
ELEC/E ELECTRICAL	P/L PROPERTY LLNE	WM WATER METER
EOP EDGE OF PAVEMENT	POLY POLYETHYLENE	
EQ EQUAL	PROP PROPOSED	
EQUIP EQUIPMENT	PS PUMP STATION	
ESMT EASEMENT	PUGD UNDERGROUND POWER	
EX EXISTING	PV PLUG VALVE	
EG EXISTING GRADE	PVC POLYVINYL CHLORIDE	
PRESS PRESSURE	PVMT PAVEMENT	
FAB FABRICATE		
FD FLOOR DRAIN		
FH FIREHYDRANT		
FIN GR FINISHED GRADE		
FL FLOW LINE		
FLG FLANGE(D)		

## VICINITY MAP



## SHEET INDEX

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NOTE: STATIONING RUNS FROM NORTH TO SOUTH.

No.	Revision/Issue	Date
DRAWN: RBK		

## NOTE:

UTILITY LOCATIONS ARE APPROXIMATE DO NOT SCALE OR LOCATE UTILITY LINES OR MAINS FROM THESE DRAWINGS CALL FOR UTILITY LOCATES 811 or (1-800-332-2344)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING UTILITY LOCATIONS PRIOR TO BEGINNING OF CONSTRUCTION. THESE PLANS MAY NOT SHOW ALL UTILITIES OR THE CORRECT LOCATIONS.

P21095  
17th STREET S TO T STORM SEWER

*City of Springfield*  
PUBLIC WORKS / ENGINEERING  
225 FIFTH STREET, SPRINGFIELD, OR 97477  
PHONE (541) 226-5753 FAX (541) 736-1021  
INTERNET www.dspnigibid.or.us



SHEET

1

# GENERAL CONSTRUCTION NOTES:

## GENERAL CONSTRUCTION NOTES

- A. ALL MATERIALS AND WORKMANSHIP WITHIN THE PUBLIC RIGHT-OF-WAY OR PUBLIC EASEMENTS SHALL MEET CITY OF SPRINGFIELD DEPARTMENT OF PUBLIC WORKS "STANDARD CONSTRUCTION SPECIFICATIONS, 1994" AS AMENDED IN 1998 (OR CURRENT EDITION), IN ADDITION TO THESE PLANS.
- B. 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 OR 811.
- C. 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 "ONE-CALL" NUMBER (800) 332-2344 OR 811.
- D. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH UTILITY COMPANIES ON THE TIMING OF INSTALLATION OF THEIR FACILITIES.
- E. SPRINGFIELD CODE 10.2.1 REQUIRES NOTIFICATION OF OPEN TRENCHING FOR THE PROJECT TO ALLOW POSSIBLE COMMUNICATION CABLE INSTALLATION.
- F. 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 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 AT THE PRE-CONSTRUCTION CONFERENCE FOR CITY REVIEW AND APPROVAL.
- G. 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 MAINTENANCE AT (541-726-3761) OR CITY CONSTRUCTION INSPECTOR (541-726-3753) NO LESS THAN 48 HOURS PRIOR TO DESIRED INSPECTION TIME.
- H. 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.
- I. THE SEWER GRADE SHALL BE PER THE PLANS SPECIFICATIONS AND WITH THE MINIMUM COVER AS SHOWN ON THE PLANS
- J. 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 T.V. REPORT AND VIDEO TAPE OR DVD FOR CITY APPROVAL AT LEAST 2 WORKING DAYS BEFORE THE PRE-PAVING MEETING.
- K. CONTRACTOR TO SCHEDULE A PRE-PAVING CONFERENCE 24 HOURS PRIOR TO PAVING. CONTACT THE CONSTRUCTION INSPECTOR (541-726-3753).
- L. ALL JOINTS BETWEEN EXISTING and NEW ASPHALT PAVING SHALL BE SEALED WITH POLYMERIZED ASPHALT AND SANDED TO PREVENT PICK UP.
- M. COMPACTION REQUIREMENTS:
- | LAYER                        | RATE | TEST |
|------------------------------|------|------|
| SUBGRADE                     | 95%  | T99  |
| CRUSHED ROCK                 | 95%  | T180 |
| ASPHALT (LOCAL)              | 90%  | RICE |
| ASPHALT (COLLECTOR/ARTERIAL) | 92%  | RICE |
- N. CONCRETE COMPRESSIVE STRENGTH REQUIREMENTS (PSI):
- | CONCRETE USE       | FIELD | LABORATORY |
|--------------------|-------|------------|
| SIDEWALK/ADA RAMPS | 3000  | 3450       |
| CURBS/GUTTERS      | 3500  | 4025       |
| DRIVEWAYS          | 3500  | 4025       |
| PAVEMENT           | 4000  | 4600       |
- O. 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 IS OCCURRING, AND BUILDING WARNING FOR OBJECTS IN SIDEWALK SUCH AS CURBING OR LANDSCAPING AROUND MAILBOXES.
- P. CONTRACTOR IS RESPONSIBLE TO OBTAIN APPLICABLE PERMITS FROM OTHER AGENCIES WITH JURISDICTIONS SUCH AS LANE COUNTY, OREGON DEPARTMENT OF TRANSPORTATION, OREGON DIVISION OF STATE LANDS, THE ARMY CORPS OF ENGINEERS, OR THE DEPARTMENT OF ENVIRONMENTAL QUALITY.
- Q. 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 TO OBTAIN APPLICABLE PERMITS FROM OTHER CITY DEPARTMENTS PRIOR TO DOING PRIVATE WORK.
- R. EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION. SEE EROSION CONTROL PLAN.
- S. STREET TREES: ONLY STREET TREES WITH A MINIMUM TRUNK CALIPER OF 2 IN. MEASURED 6 IN. ABOVE THE ROOT STEM SHALL BE SELECTED FOR PLANTING.
- T. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED BEFORE START OF CONSTRUCTION. ALL UTILITIES, CONTRACTORS and CITY REPRESENTATIVES SHALL HAVE RECEIVED THE FINAL APPROVED PLANS AT LEAST 5 WORKING DAYS PRIOR TO THE PRE CONSTRUCTION CONFERENCE.
- U. THE ENGINEER AND/OR CITY HAVE THE RIGHT TO REQUIRE ADDITIONAL WORK NOT SHOWN HEREIN BUT NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE PROJECT. STD.SPEC. 104.08.
- V. REQUESTS BY THE CONTRACTOR FOR CHANGES SHALL BE APPROVED BY THE ENGINEER AND THE CITY IN WRITING PRIOR TO IMPLEMENTATION.
- W. CONTRACTOR SHALL SUBMIT EVIDENCE OF INSURANCE IN ACCORDANCE WITH THE STANDARD SPECIFICATION TO THE CITY FOR APPROVAL PRIOR TO BEGINNING WORK.
- X. CONTRACTOR SHALL BE AWARE IF PAVING IS NOT SCHEDULED OR DOES NOT OCCUR PRIOR TO OCTOBER 15TH, WET WEATHER PROVISIONS INCLUDING ADDITIONAL ROCK SUBSTRUCTURE AND GEOTEXTILE FABRIC SHALL USED. REFER TO STANDARD SPECIFICATION SECTION 301.1.01 AND THE TYPICAL CROSS SECTIONS CONTAINED HEREIN FOR DETAILS
- Y. THE CONTRACTOR SHALL VERIFY EACH EXISTING SANITARY AND STORM CONNECTION.

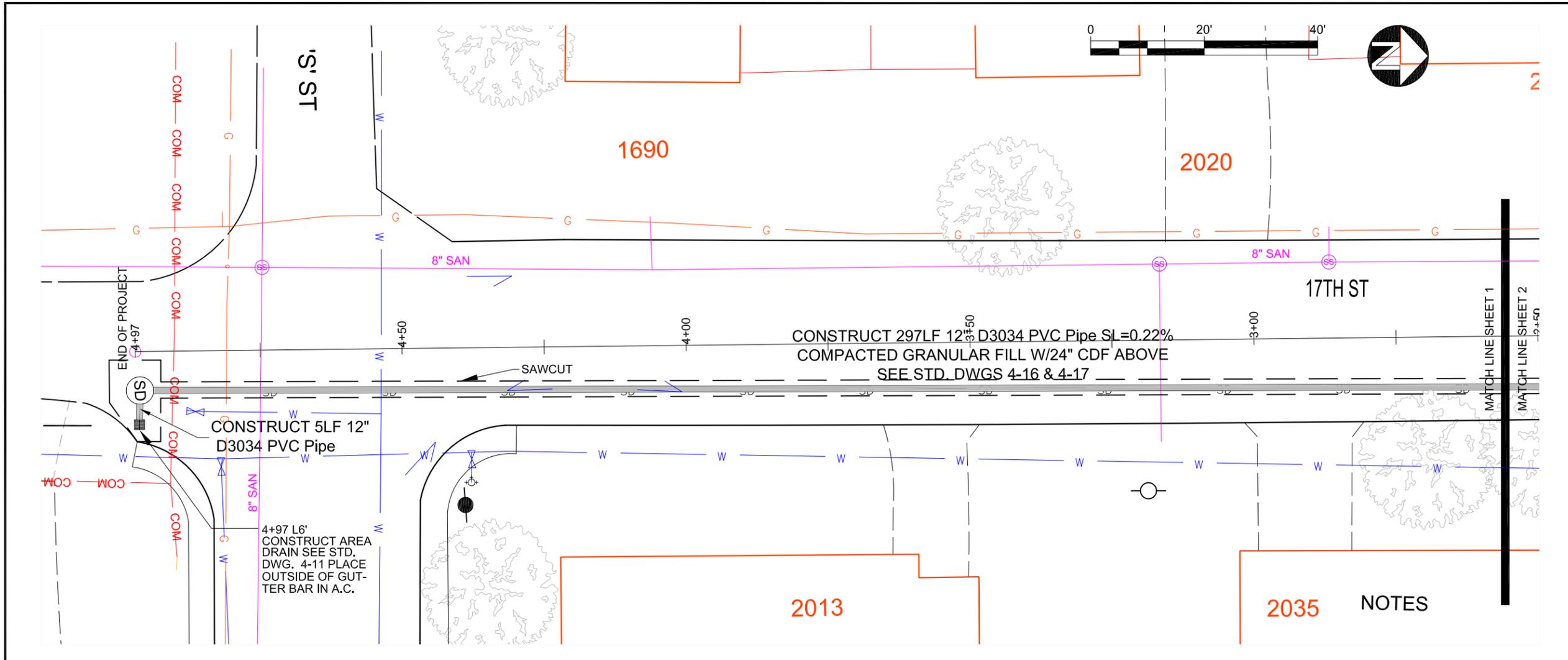
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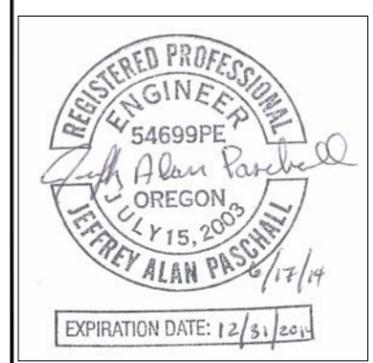
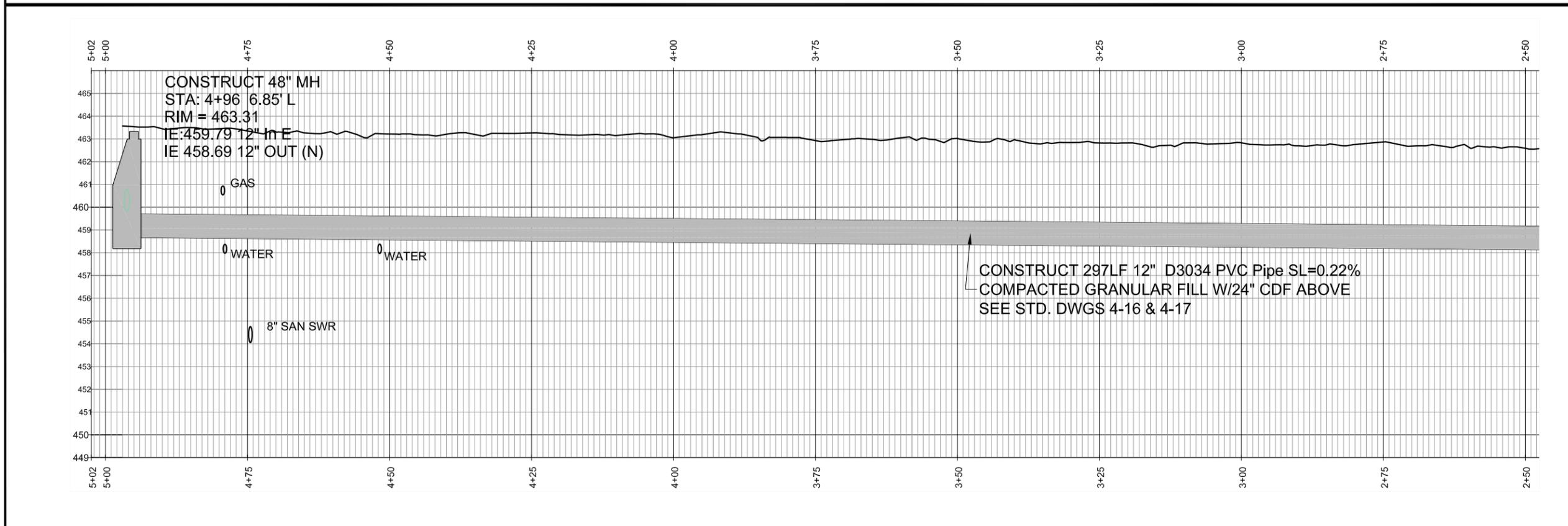


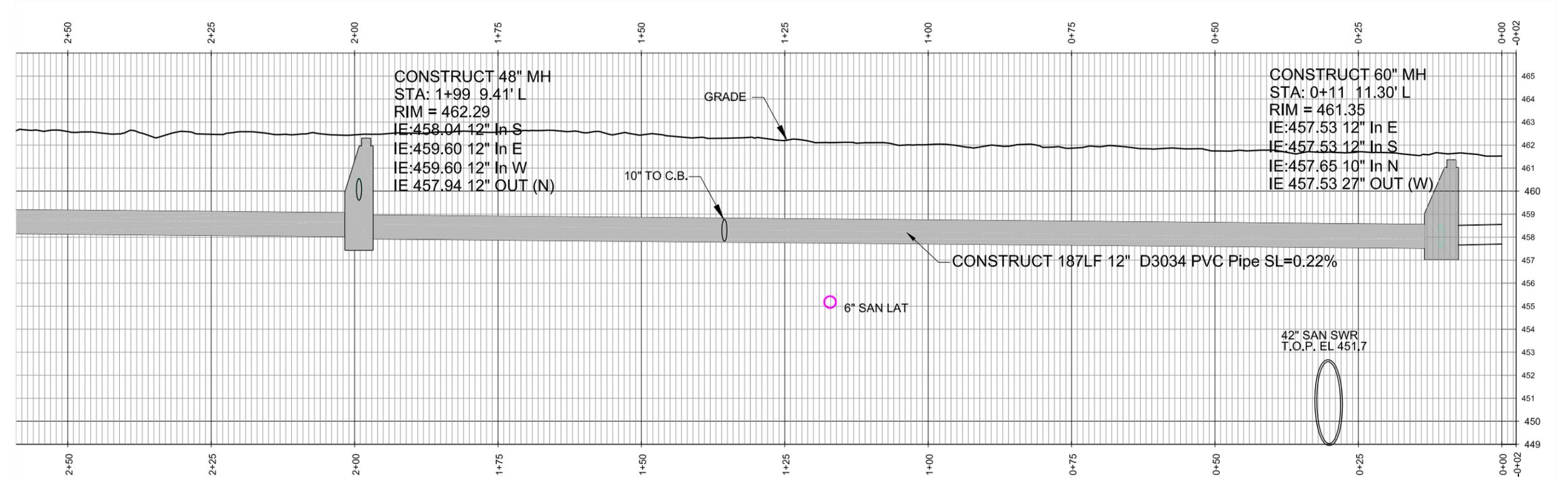
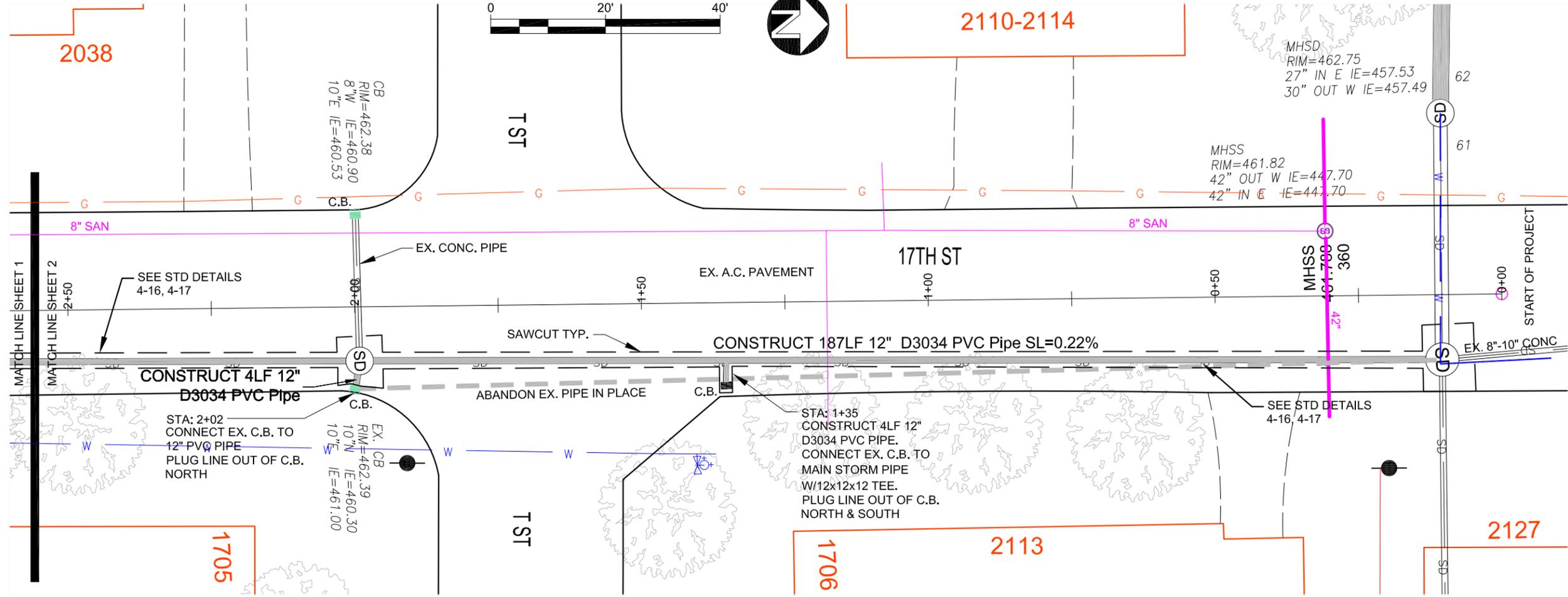


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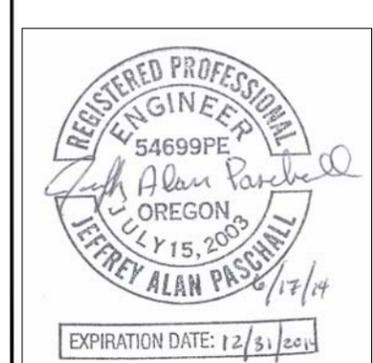




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# NOTES:

1. PLACE INLET/CATCH BASIN PROTECTION AT EXISTING FIXTURES (SEE DETAIL ON SHEET E2.)

# GENERAL NOTES:

1. CONCRETE WASHOUTS ARE NOT PROVIDED ON THIS PROJECT
2. SAW CUTTING SLURRY IS TO BE VACUMED
3. 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 AN APPROVED ESC METHOD (SEEDING & MULCHING WITH STRAW, BARK, COMPOST, OR PLASTIC COVERING, ETC.).

# EROSION CONTROL STANDARD NOTES:

- |  |   |
|--|---|
| <p>A. Approval of this 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.).</p> <p>B. Approval of this ESCP does 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.</p> <p>C. An inspection of the erosion control measures by City LDAP staff is required prior to any ground disturbance on the site.</p> <p>D. The erosion and sediment control measures shown on the plan are the minimum requirements for anticipated site conditions. During the construction period, these measures shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment-laden water does not leave the site.</p> <p>E. The implementation of the ESCP and the construction, maintenance, replacement, and upgrading of the erosion and sediment control measures is the responsibility of the permit holder and or the contractor until all construction is completed and accepted by the City and vegetation/landscaping is established per the required warranty period.</p> <p>F. In the event the ESC facilities identified on the ESCP are not functioning properly, the contractor is responsible for immediately implementing changes to the ESCP as directed by the ESCP engineer or his inspector. The engineer, his inspector or the City may stop all construction activity on site until the erosion problem is corrected and all ESC facilities are functioning properly. If the contractor does not immediately implement changes to the ESCP identified by the ESCP engineer or his inspector, the City may implement the necessary changes and require payment from the contractor prior to project acceptance by the City.</p> <p>G. The boundaries of the clearing limits shown on this plan shall be clearly flagged in the field by the engineer prior to construction. During the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the permit holder and or the contractor for the duration of construction.</p> <p>H. The erosion and sediment control measures on active sites shall be inspected and maintained daily and within the 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).</p> <p>I. 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.</p> | <p>J. 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 an approved ESC method (seeding &amp; mulching with straw, bark, compost, or plastic covering, etc.).</p> <p>K. A supply of materials necessary to meet compliance and implement the LDAP or other best management erosion practices under all weather conditions shall be maintained at all times on the construction site.</p> <p>L. 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.</p> <p>M. Street sweeping shall be performed as needed or when directed by the City inspector to ensure public right-of-ways are kept clean and free of debris. Street flushing is prohibited.</p> <p>N. 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</p> <p>O. 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.</p> <p>P. 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.</p> <p>Q. 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.</p> <p>R. 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.</p> <p>S. Where straw mulch for temporary erosion control is required, it shall be applied at a minimum thickness of two to three inches.</p> <p>T. 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).</p> |
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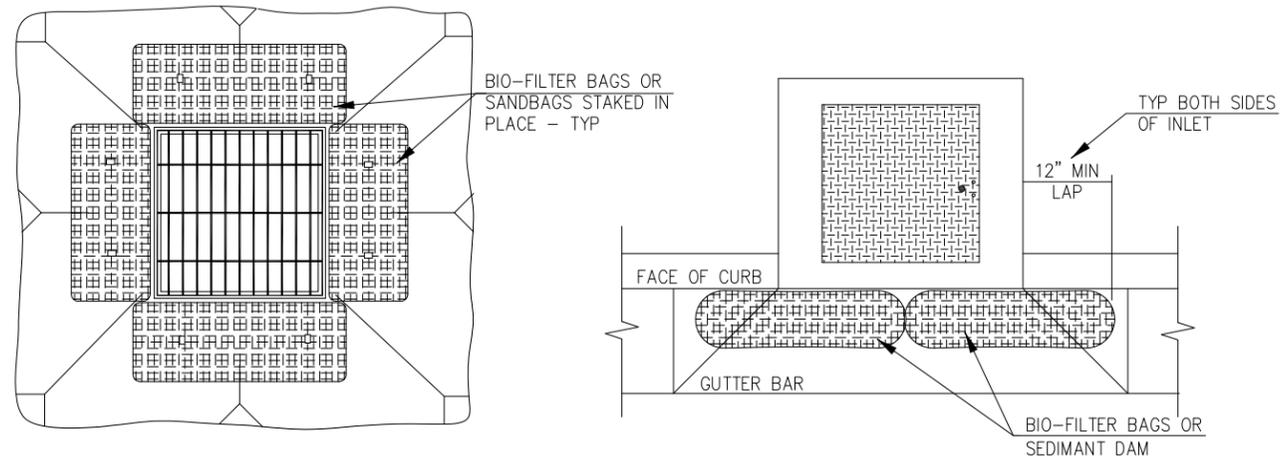
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SHEET

**E1**

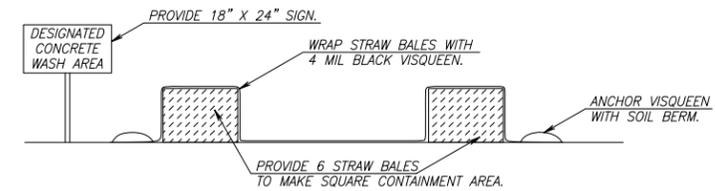


NOTES  
 1. PRIOR TO 1st PAVEMENT LIFT, REMOVE BIO-BAG/SANDBAG BARRIERS AND INSTALL BASIN INSERT BAG OR CURB INLET SEDIMENT DAM AT ALL INLET STRUCTURES.

1

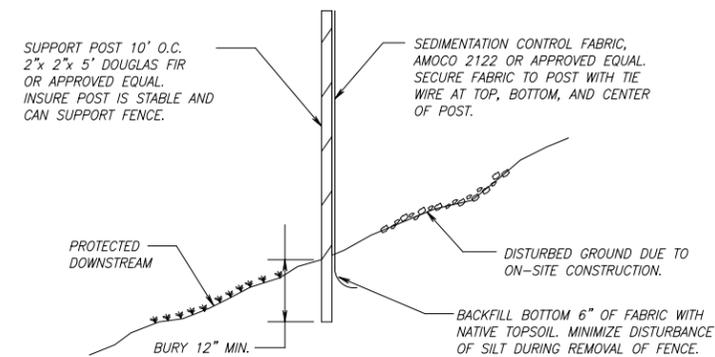
## DRAINAGE INLET STRUCTURE PROTECTION

NO SCALE



## CONCRETE WASH AREA DETAIL

N.T.S.

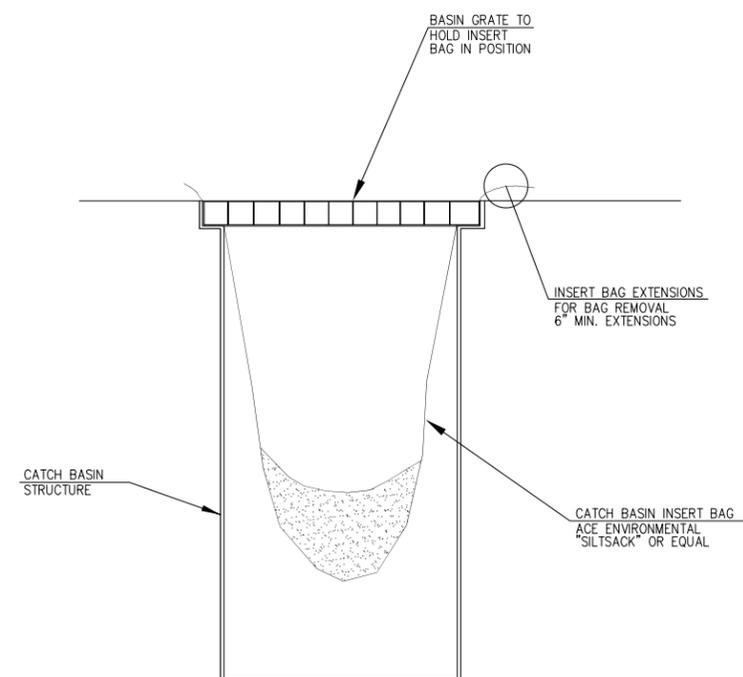


## SEDIMENTATION CONTROL FABRIC TYPE SILT FENCE

N.T.S.



**INLET PROTECTION**



1

## CATCH BASIN INSERT BAG

NO SCALE

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SHEET

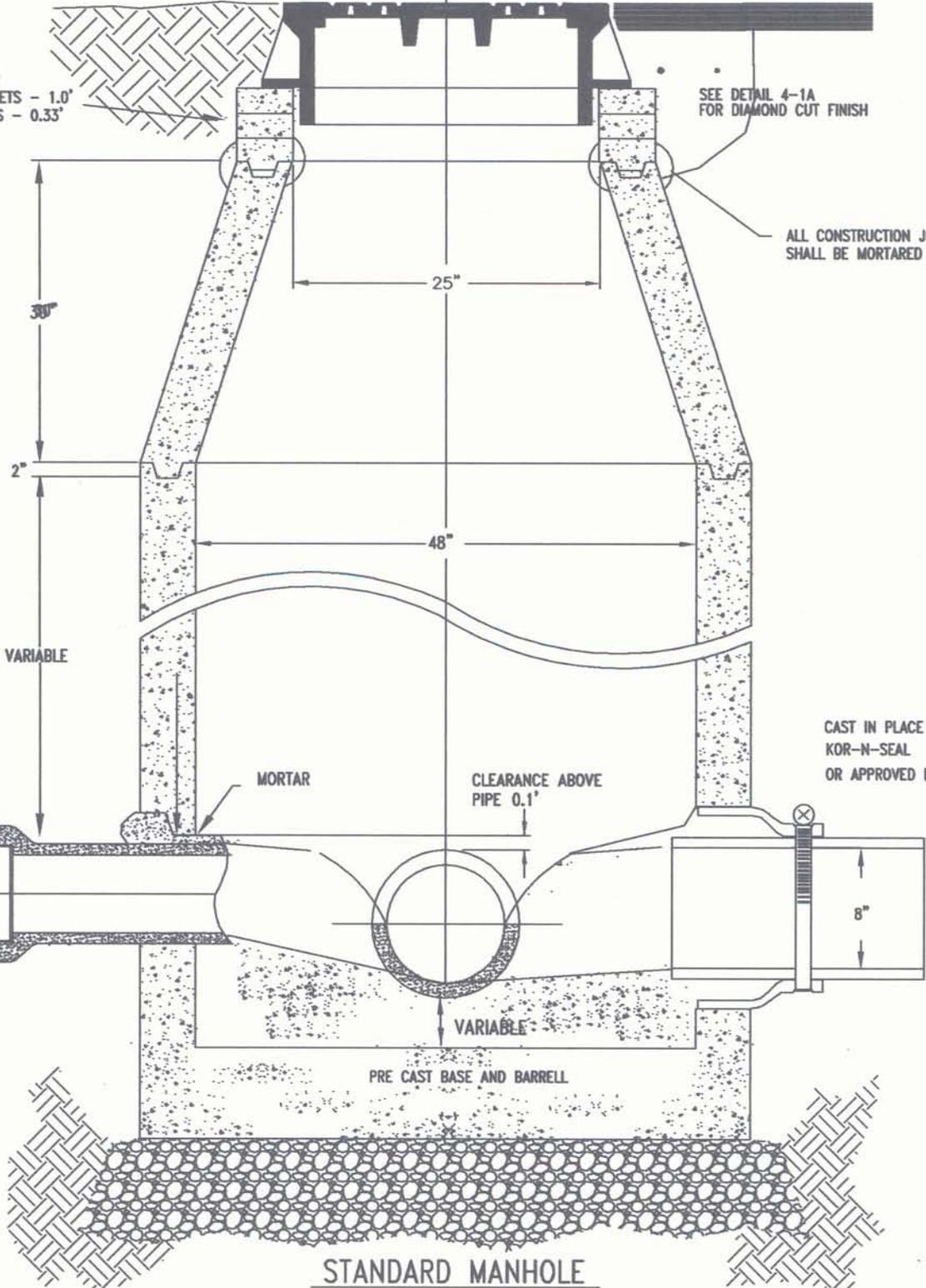
**E2**

INLAND FOUNDRY CO. INC.  
OR EQUAL  
RING.....NO. 802  
COVER.....NO. 802-2

MINIMUM RISER  
UNPAVED STREETS - 1.0'  
PAVED STREETS - 0.33'

SEE DETAIL 4-1A  
FOR DIAMOND CUT FINISH

ALL CONSTRUCTION JOINTS  
SHALL BE MORTARED



CAST IN PLACE BOOT  
KOR-N-SEAL  
OR APPROVED EQUAL

NOTE:  
ALL PIPE CONNECTIONS  
TO MANHOLES SHALL  
BE CONCRETE

CONCRETE  
OR MECH.  
PLUG

PIPE

MORTAR

CLEARANCE ABOVE  
PIPE 0.1'

VARIABLE

PRE CAST BASE AND BARRELL

STANDARD MANHOLE

NO	REVISION	DATE	BY	APPR.

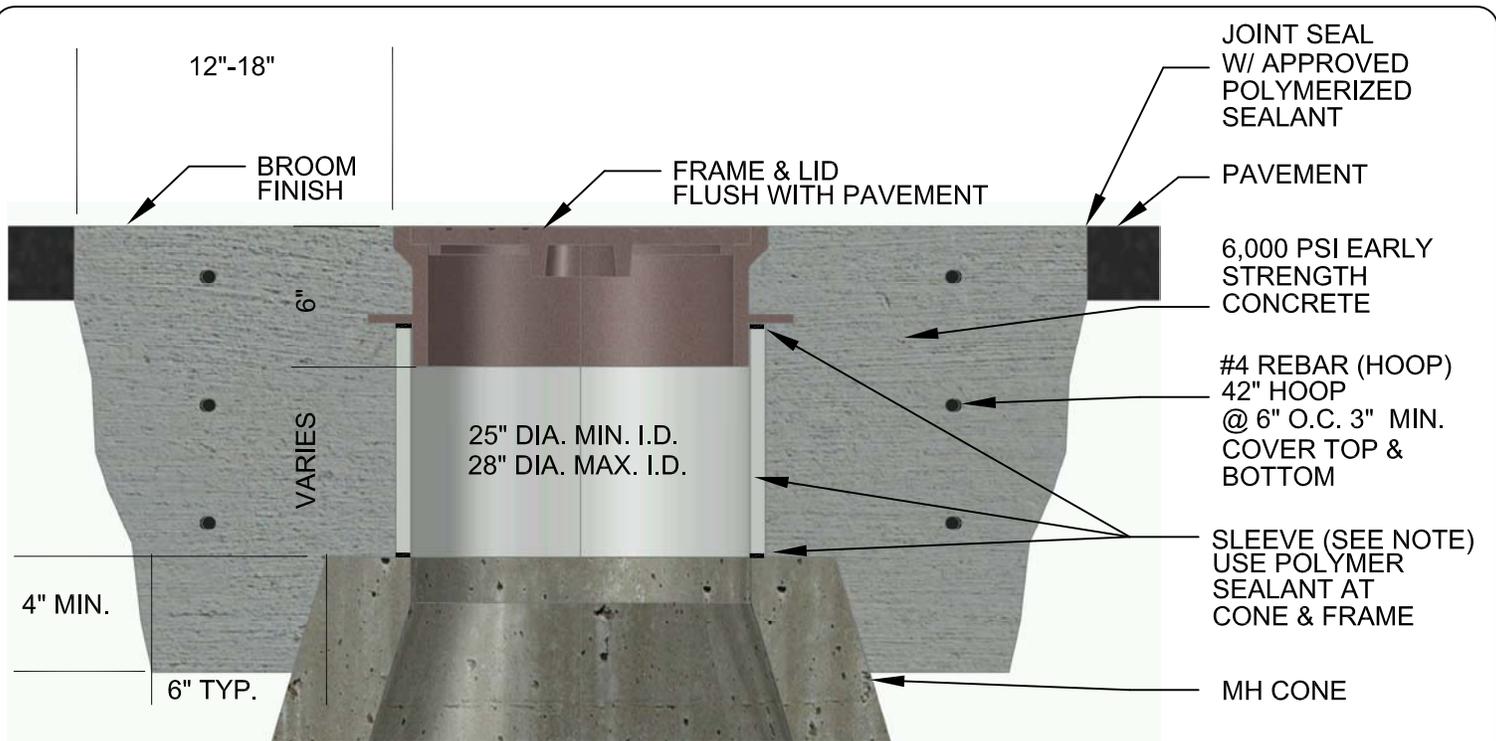


STANDARD MANHOLE

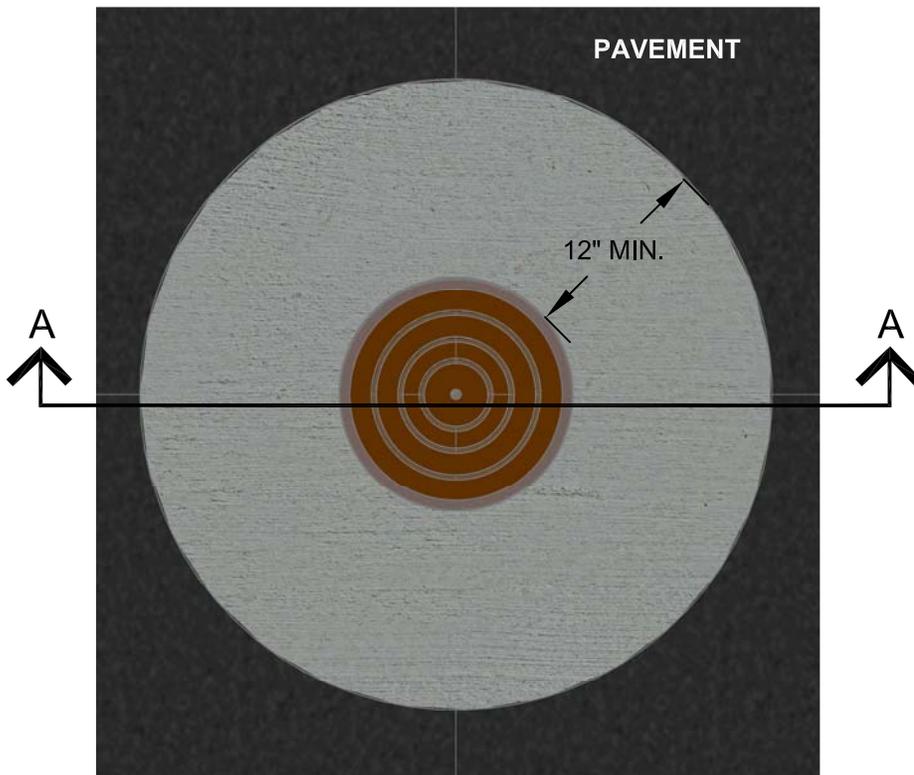
*Ken Vogoney*  
Ken Vogoney City Engineer

2006

STANDARD  
DRAWING  
4-1  
2006



**SECTION A-A**



**PLAN VIEW**

**NOTE:**

CUT ROUND HOLE IN PAVEMENT.  
PLACE MANHOLE COVER AND  
FRAME AT FINISH GRADE.

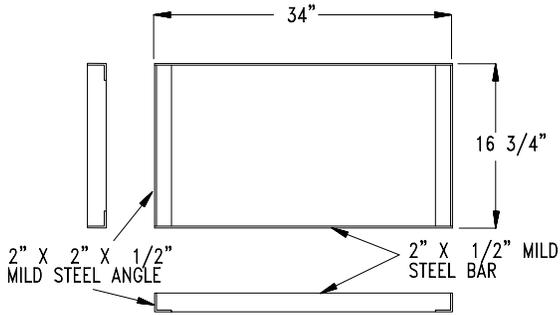
PRESS PVC AND FRAME INTO  
MH CONE TO SEAT.

FRAME AND COVER:  
INLAND FOUNDRY CO. OR EQUAL  
FRAME.....NO. 802  
COVER .....NO. 802-2

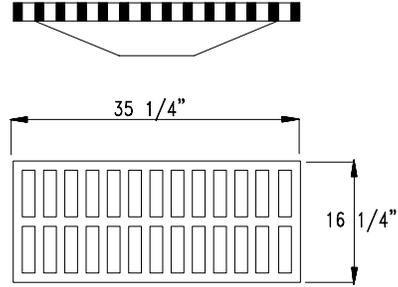
SLEEVE: USE APPROVED POLYMER  
SEALANT MATERIAL. PREFERRED  
27" PVC, HDPE, OR OTHER AS  
APPROVED BY ENGINEER.

**STANDARD MANHOLE  
FRAME AND COVER ADJUSTMENT  
FOR PAVED TRAVELLED WAY LOCATIONS**

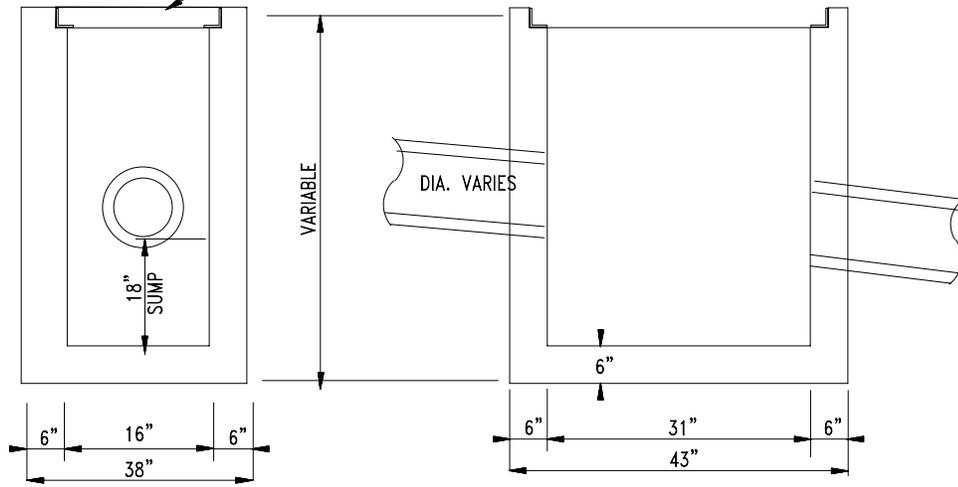
"BICYCLE PROOF"  
GRATE FRAME  
AS APPROVED BY ENGINEER.



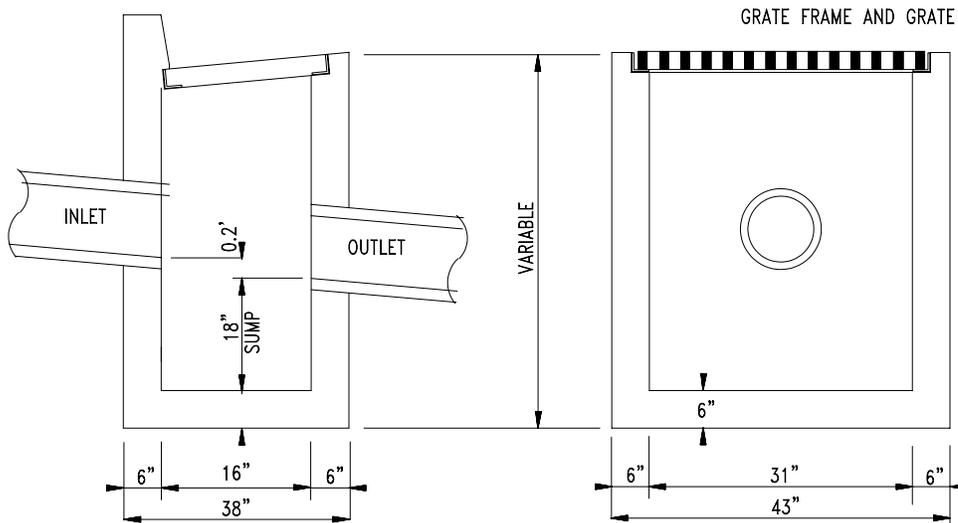
FABRICATED STEEL FRAME



GRATE FRAME AND GRATE



AREA DRAIN CATCH BASIN



STREET DRAIN CATCH BASIN

NO	REVISION	DATE	BY	APPR.

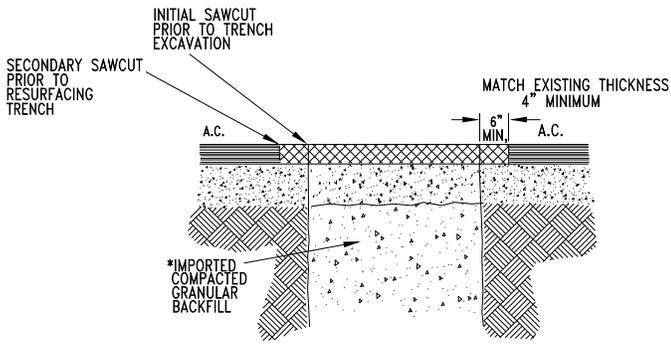
CITY OF SPRINGFIELD  
DEPT. OF PUBLIC WORKS

225 FIFTH STREET  
SPRINGFIELD, OR. 97477

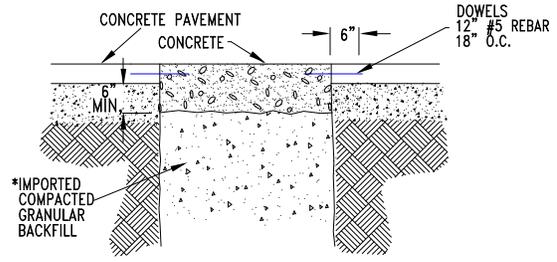
CATCH BASIN

STANDARD  
DRAWING

4-11

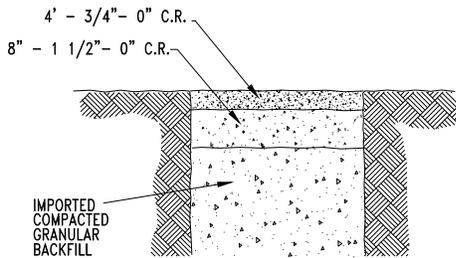


T - A  
ASPHALT PAVED STREETS

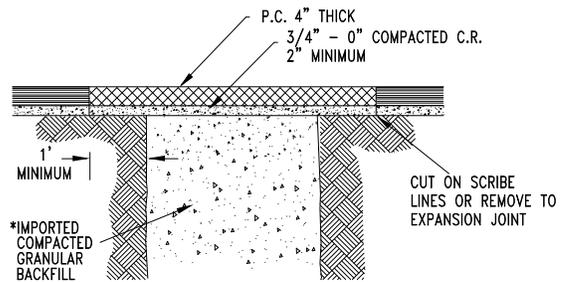


T - B  
CONCRETE PAVED STREETS

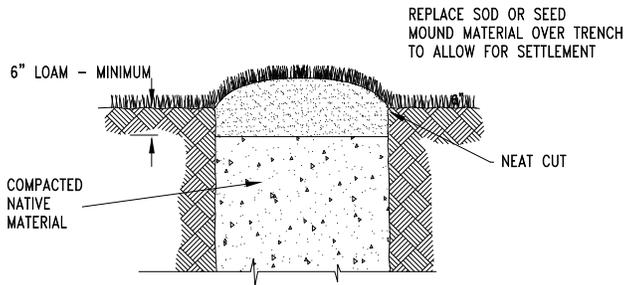
\* CUTS CROSSING THE STREET OR WITHIN THE TRAVEL LANES MUST BE BACKFILLED WITH CONTROLLED DENSITY FILL (CDF)



T - C  
UNPAVED STREETS AND ALLEYS



T - D  
SIDEWALK AREAS



T - E  
UNTRAVELED AREAS (LAWN)

NOTES:

- 1 ALL A.C. AND P.C. SURFACES SHALL BE SAWCUT
- 2 GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER
- 3 CONSTRUCT PIPE BEDDING AS SHOWN ON STD. DWG. 4-1
- 4 SEE SPECIFICATIONS, SECTION 405, BACKFILL: NATIVE AND IMPORTED

NO.	REVISION	DATE	BY	APPR.

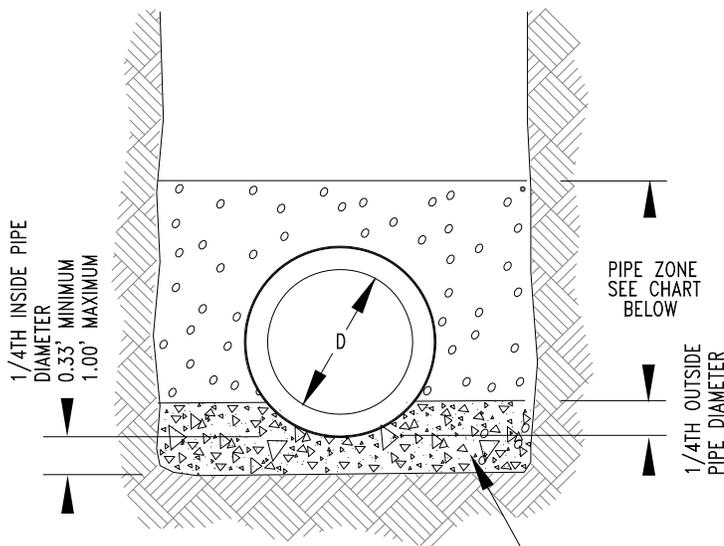
CITY OF SPRINGFIELD  
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SPRINGFIELD, OR. 97477

SURFACE RESTORATION OVER  
TRENCH EXCAVATION

STANDARD  
DRAWING

4-16



**CLASS "A"**

LOAD FACTOR 3.0

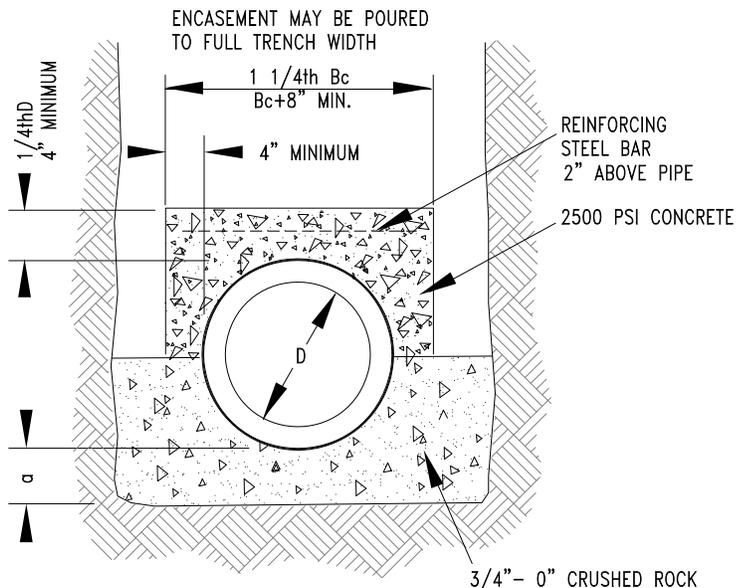
PIPE ZONE MATERIAL SHALL BE:

SANITARY SEWER  
TIGHT JOINT PIPE  
PLASTIC PIPE

STORM SEWER  
OPEN JOINTED PIPE  
PERFORATED PIPE

PEA ROCK  
BLEND  
SAND  
CRUSHED ROCK

ROUND ROCK  
( PEA ROCK )  
3/8" MIN. DIAMETER  
3/4" MAX. DIAMETER



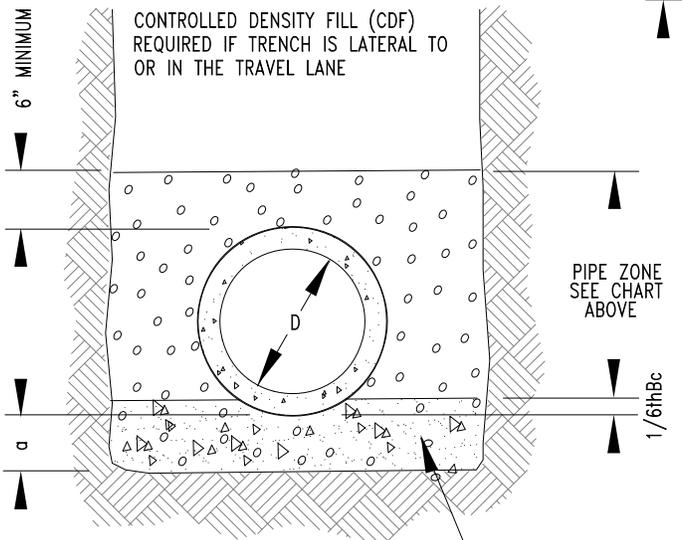
**LOAD FACTORS**

REINFORCED P = 1.00% - 4.8  
REINFORCED P = 0.40% - 3.4  
PLAIN 2.8

**CLASS "B"**

- Bc - OUTSIDE DIAMETER OF PIPE
- D - NOMINAL PIPE SIZE
- a - FILL BELOW PIPE (SEE TABLE)
- P - AREA OF TRANSVERSE STEEL IN THE CRADLE OR ARCH EXPRESSED AS A PERCENTAGE OF AREA OF CONCRETE AT INVERT OR CROWN.

TABLE OF FILL DEPTH BELOW PIPE	
D	a MINIMUM
0 - 27"	3"
30" - 60"	4"
66" +	6"



**CLASS "C"**

3/4"- 0" CRUSHED ROCK

NO	REVISION	DATE	BY	APPR.

FILE: A.DWG

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TYPICAL  
PIPE ZONE AND PIPE BEDDING

STANDARD  
DRAWING

4-17