

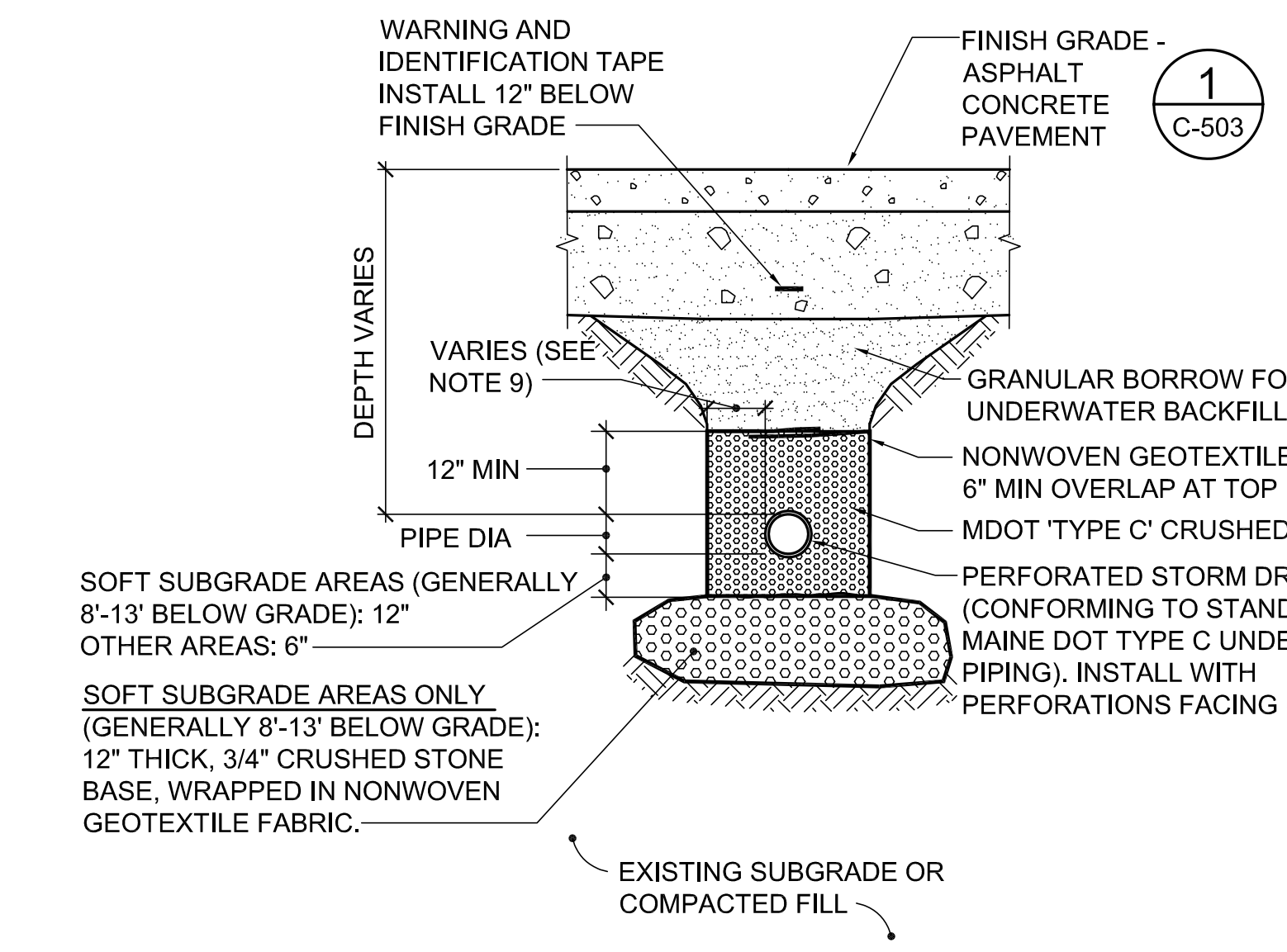
**PIPE TRENCH NOTES:**

- INSTALL THERMOPLASTIC (PVC, HDPE) GRAVITY PIPING IN ACCORDANCE WITH ASTM D 2321. SEE ALSO PIPE TRENCH BEDDING NOTES.
- INSTALL WATER SUPPLY PIPING IN ACCORDANCE WITH PORTLAND WATER DISTRICT WRITTEN INSTRUCTIONS. BEDDING REQUIRED IS INDICATED IN PIPE TRENCH BEDDING NOTES.
- ALL EXCAVATION WORK SHALL COMPLY WITH OSHA STANDARDS. TRENCH SIDEWALLS SHALL BE VERTICAL FROM TRENCH BOTTOM TO 12" ABOVE TOP OF PIPE.
- PROVIDE A MINIMUM OF 12" VERTICAL CLEARANCE BETWEEN PIPES AND WATER LINES AT CROSSINGS. PROVIDE A MINIMUM OF 8" VERTICAL CLEARANCE BETWEEN ALL OTHER CROSSING PIPES.
- MAINTAIN THE FOLLOWING DEPTH OF COVER FOR EACH SERVICE:
 

SERVICE	MIN DEPTH OF COVER
WATER SUPPLY	5'-6" (6'-0" MAX)
SANITARY SEWER	4'-6"
NATURAL GAS (IN RIGHT-OF-WAY)	3'-0"
NATURAL GAS (ON SITE)	2'-0"
STORM DRAIN	AS INDICATED

\*DEPTH OF COVER MAY BE ABLE TO BE REDUCED IF 2" THICK RIGID INSULATION IS PROVIDED ABOVE AND ON EITHER SIDE OF PIPE. OBTAIN ARCHITECT'S WRITTEN PERMISSION BEFORE INSTALLING ANY PIPES WITH REDUCED COVER.
- PROVIDE MIN 0.005/FT (0.5%) PITCH ON ALL GRAVITY PIPING.
- WRAP ALL DUCTILE IRON WATER PIPING IN MIN 8 MIL POLYETHYLENE SHEETING AND TAPE SECURELY BEFORE BURYING IN ACCORDANCE WITH PWDS WRITTEN REQUIREMENTS.
- PIPE BEDDING SHALL BE ASTM D 2321, CLASS 1B OR II BEDDING, EXCEPT WITH 100 PERCENT PASSING A 1" SIEVE AND GREATER THAN 75 PERCENT PASSING A NO. 4 SIEVE, EXCEPT AT SEWER AND STORM DRAINAGE PIPING, WHERE 3/4" CRUSHED STONE SHALL BE USED.
- MINIMUM BEDDING ON EITHER SIDE OF THE PIPE IN THE TRENCH SHALL BE AS FOLLOWS
 

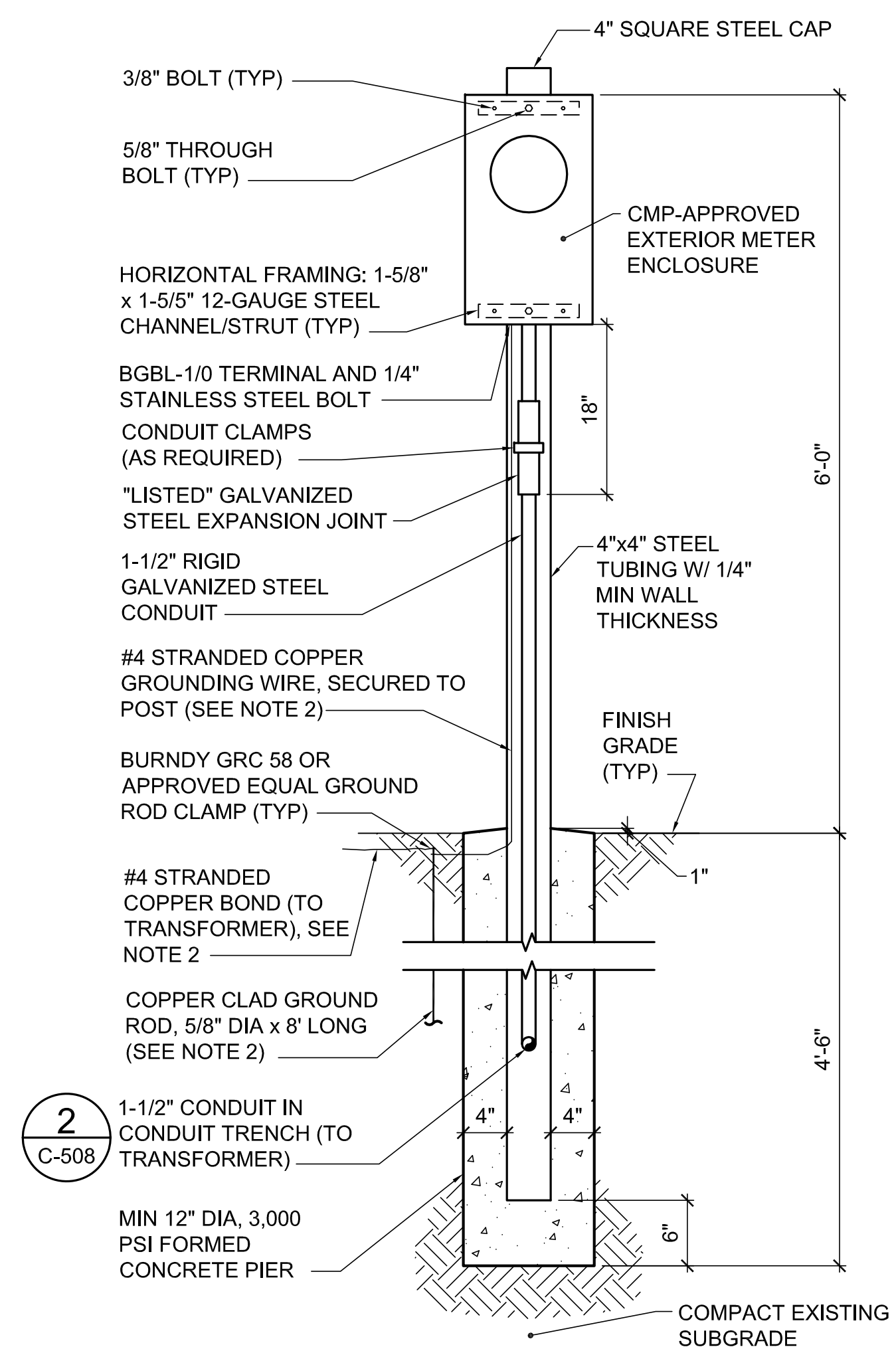
PIPE DIAMETER	BEDDING ON SIDES OF PIPE
24" OR LESS	9" EACH SIDE
30"	9-3/4" EACH SIDE



PERFORATED STORM DRAIN PIPE TRENCH (STORM DRAIN LINES IN PAVED AREAS)

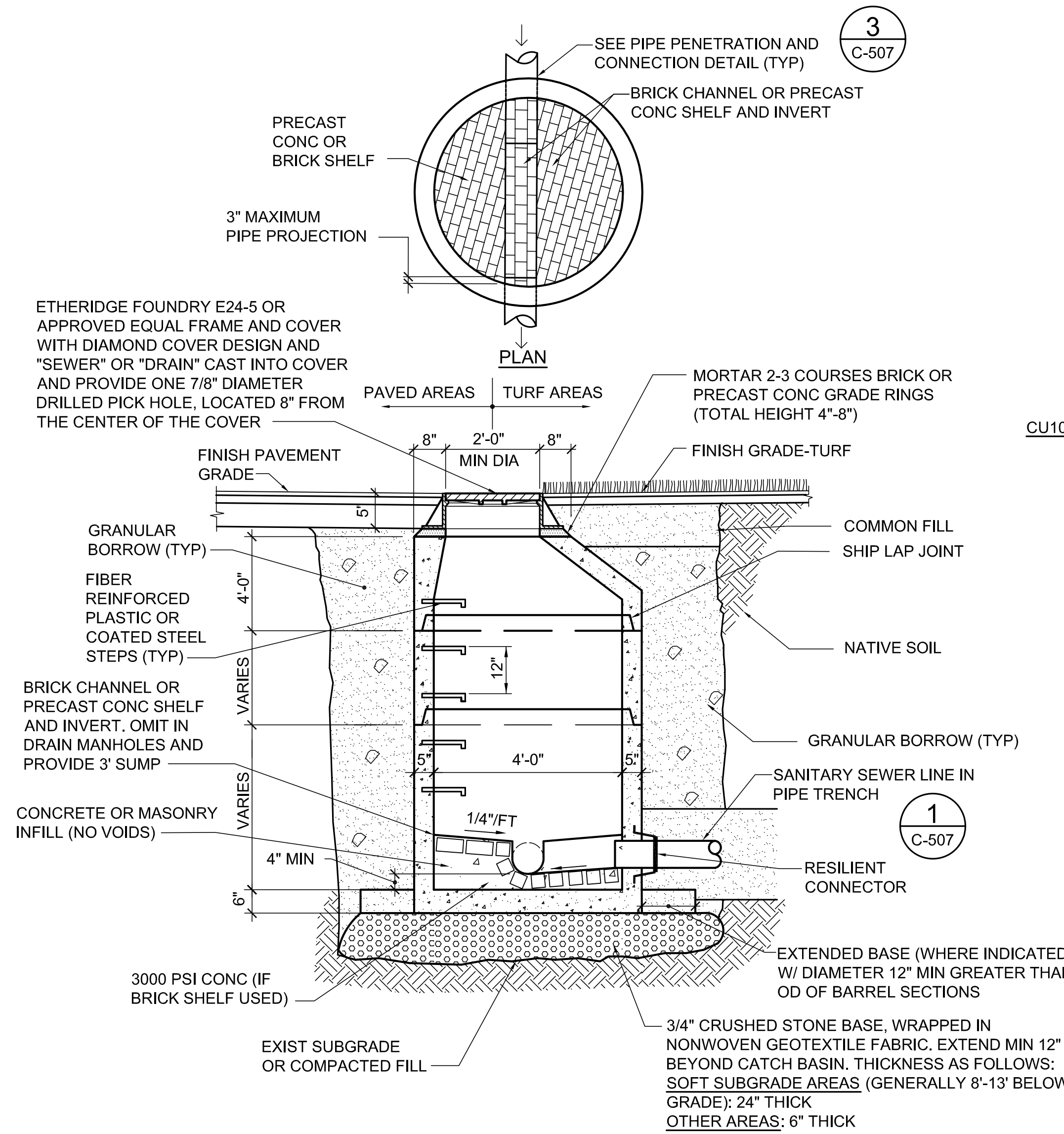
**1 PIPE TRENCH DETAILS**  
C-507 NOT TO SCALE

CU101, CU102, CU103, CU104, CG101, CG102, C-505, C-506, C-507, C-509, C-510



**5 METER PEDESTAL DETAIL**  
C-507 NOT TO SCALE

CU101



**MANHOLE NOTES:**

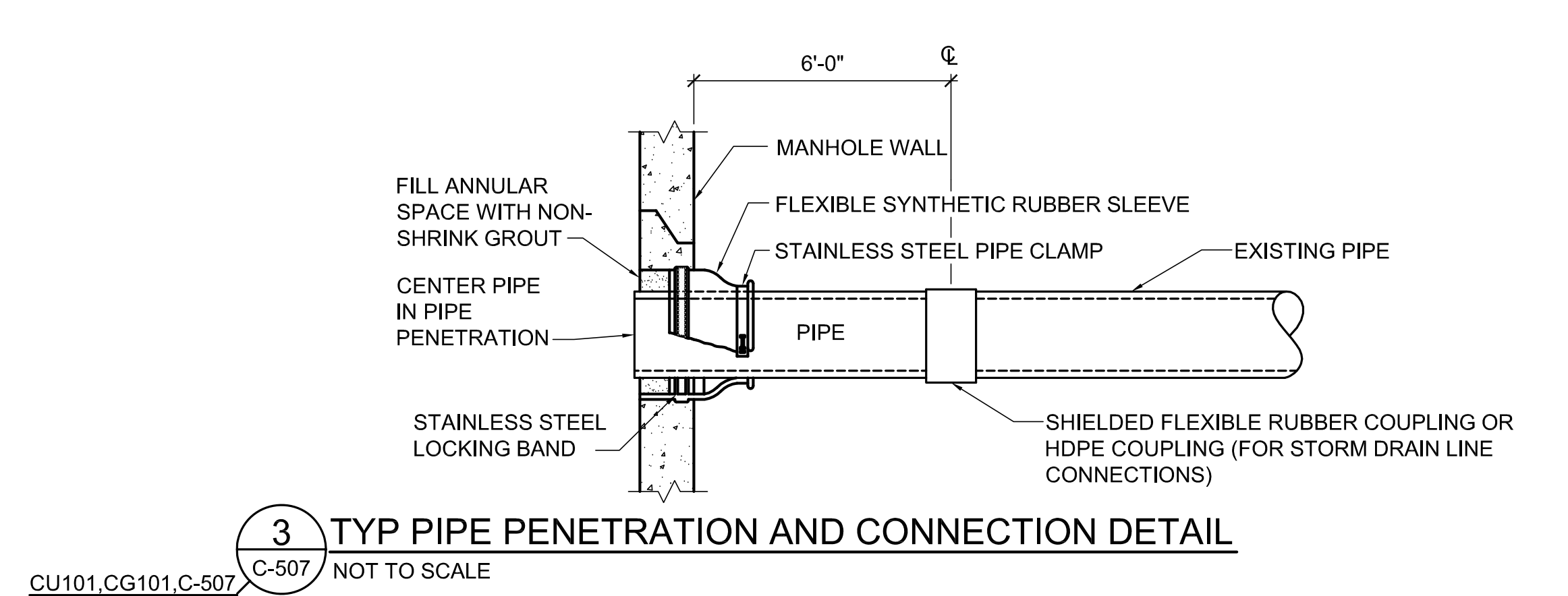
- MANHOLE FRAME AND COVERS SHALL BE IN ACCORDANCE WITH CITY OF PORTLAND'S WRITTEN REQUIREMENTS, AND FIGURES II-1, II-4, II-5, AND II-6 OF THE MOST RECENT VERSION OF THE CITY OF PORTLAND TECHNICAL MANUAL.
- CONCRETE: 5,000 PSI AFTER 28 DAYS.
- PROVIDE REINFORCING TO ACHIEVE AASHTO HS-20 LOADING CLASSIFICATION (32,000 POUND AXLE LOAD).
- SHIPLAP JOINTS SHALL BE SEALED WITH 2 STRIPS OF 1" DIA BUTYL RUBBER SEALANT.
- PROVIDE LOCK JOINT FLEXIBLE PIPE SLEEVES, CAST INTO BASE.
- EACH CASTING TO HAVE LIFTING HOLES CAST IN. PLUG LIFTING HOLES WITH GROUT AFTER PLACING MANHOLE.
- PROVIDE MANHOLE STEPS @ 12" OC.
- INVERT BRICKS SHALL BE LAID ON EDGE.
- APPLY WATERPROOFING COATING TO EXTERIOR SURFACE OF ALL SEWER MANHOLES.
- EXCAVATE TO SUBGRADE IN SOFT GRAY CLAY AND NATIVE BROWN SILTY CLAYS USING A SMOOTH-EDGE BUCKET.

**2 TYP MANHOLE DETAIL**  
C-507 NOT TO SCALE

CU101, CG101, CG102, C-507, C-510

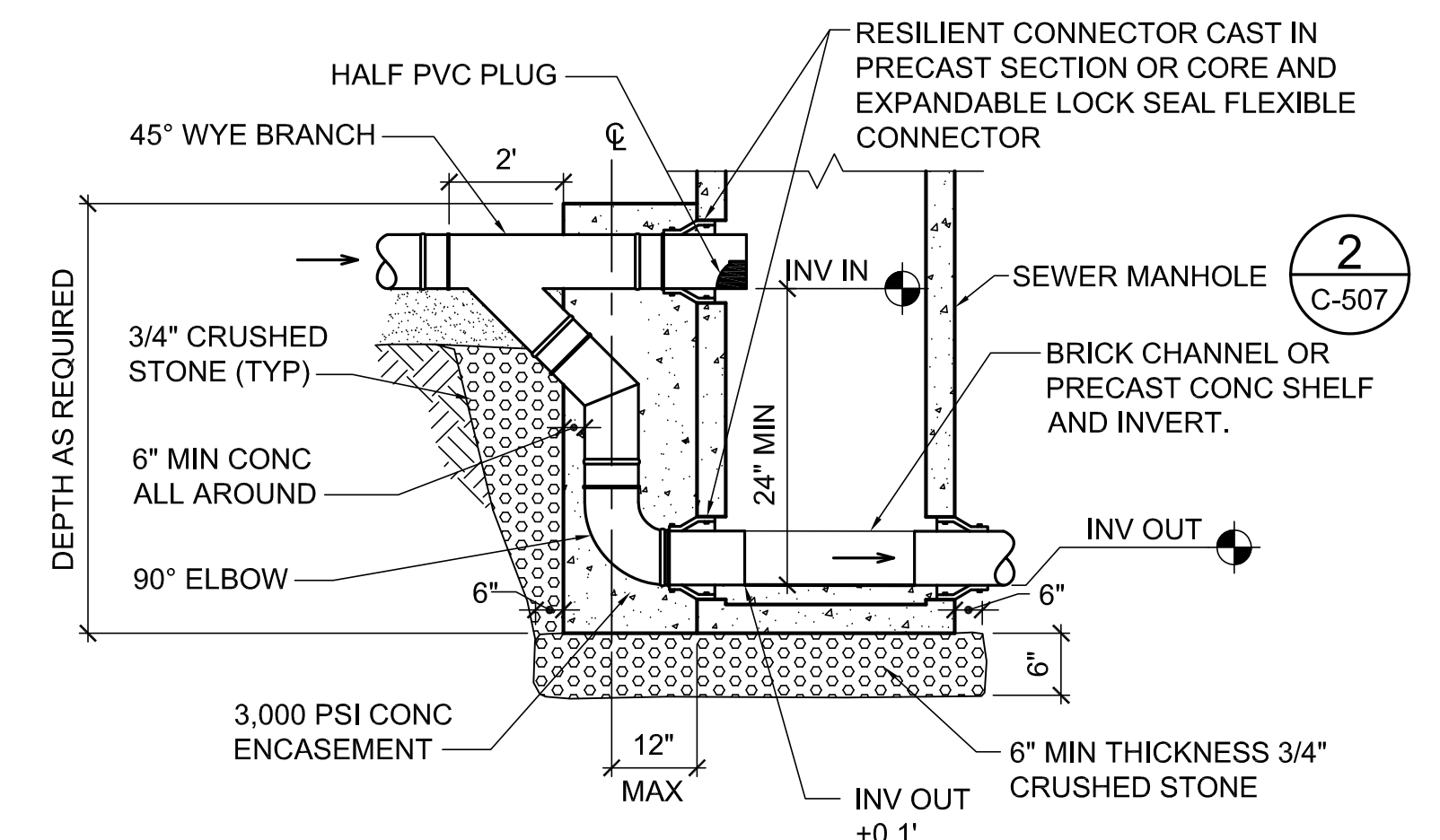
**METER PEDESTAL NOTES**

- METER PEDESTAL SHALL COMPLY WITH ILLUSTRATION NO. 16, "UNDERGROUND OUTDOOR OVERALL METER ENCLOSURE MOUNTING (1-SINGLE)" OF "THE CENTRAL MAINE POWER HANDBOOK OF REQUIREMENTS FOR ELECTRIC SERVICE AND METER INSTALLATIONS."
- METALLIC CONDUIT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH SECTION VII OF "THE CENTRAL MAINE POWER HANDBOOK OF REQUIREMENTS FOR ELECTRIC SERVICE AND METER INSTALLATIONS" AND ARTICLE 250 OF THE NATIONAL ELECTRIC CODE. PROVIDE BONDING TO TRANSFORMER AND ANY OTHER NEARBY GROUNDING SYSTEMS.
- STEEL POSTS, HORIZONTAL FRAMING, BASE PLATES, AND ALL OTHER APPURTENANCES SHALL BE GALVANIZED STEEL AND POWDER COATED GREEN IN COLOR TO MATCH TRANSFORMER.



**3 TYP PIPE PENETRATION AND CONNECTION DETAIL**  
C-507 NOT TO SCALE

CU101, CG101, C-507

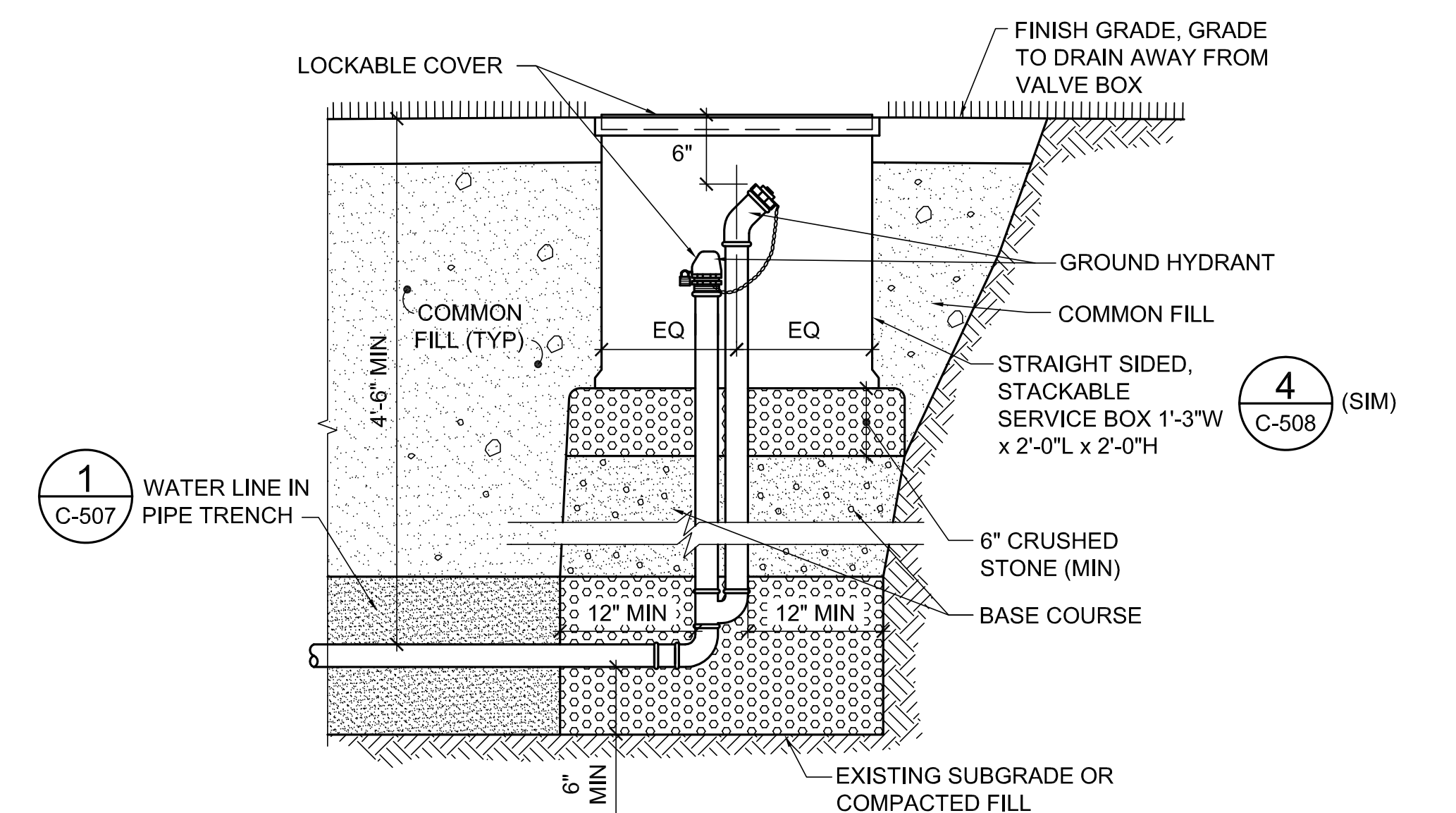


**NOTES:**

- FOR ADDITIONAL REQUIREMENTS, SEE DETAIL 2/C-507.
- DROP MANHOLE SHALL CONFORM TO CITY OF PORTLAND'S WRITTEN REQUIREMENTS (TECHNICAL MANUAL FIGURE II-3)

**4 DROP MANHOLE DETAIL**  
C-507 NOT TO SCALE

CU101



**GROUND HYDRANT NOTES:**

- PROVIDE FREEZE PROOF SANITARY GROUND HYDRANT WITH VACUUM BREAKER AND BACKFLOW PREVENTION.
- INSTALL GROUND HYDRANT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

**6 TYPICAL GROUND HYDRANT DETAIL**  
C-507 NOT TO SCALE

CU102

		<b>STATE OF MAINE</b> <b>PUBLIC SCHOOL PROJECT</b>	
		TITLE: PORTLAND PUBLIC SCHOOLS NEW FRED P. HALL ELEMENTARY SCHOOL LOCATION: 23 ORONO ROAD, PORTLAND, ME TITLE THIS DATE: UTILITY DETAILS - 1	
DRAWN BY: JSD CHECKED BY: JLG		DRAWING NO. <b>C-507</b>	
NO. DATE DESCRIPTION BY NO.		SHEET NO. 52 OF 312	
REVISIONS		DATE: 03/17/17	