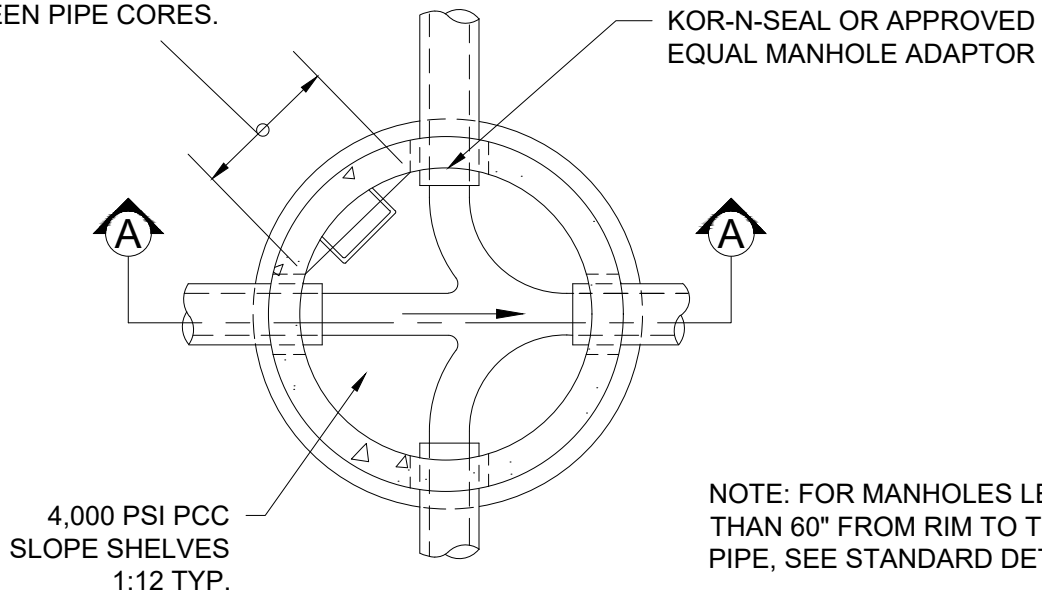


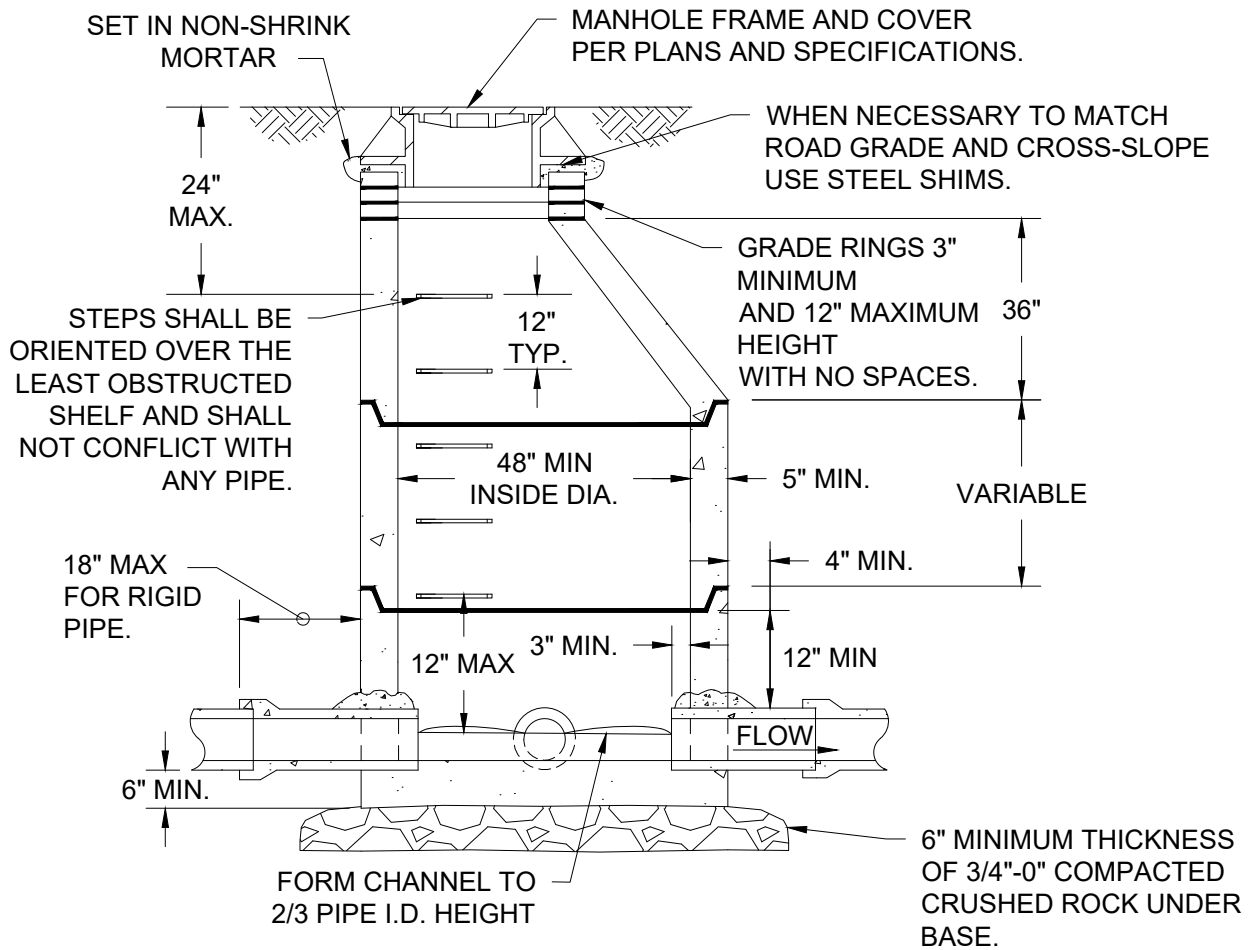
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MINIMUM OF 12" PRECAST WALL BETWEEN PIPE CORES.



NOTE: FOR MANHOLES LESS THAN 60" FROM RIM TO TOP OF PIPE, SEE STANDARD DETAIL 203.

**PLAN**



**SECTION A-A**

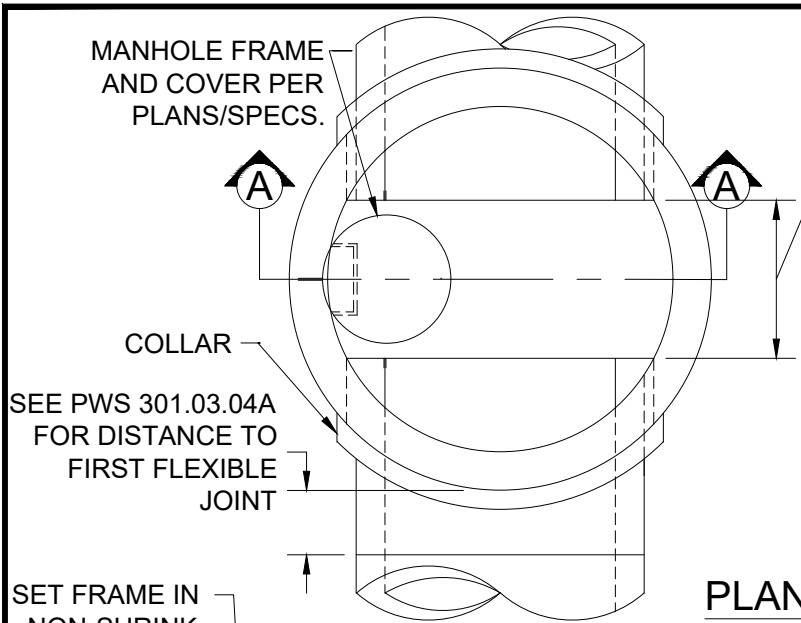
**CITY OF GRESHAM**

**STANDARD MANHOLE FOR 27" AND LESSER DIAMETER PIPES**

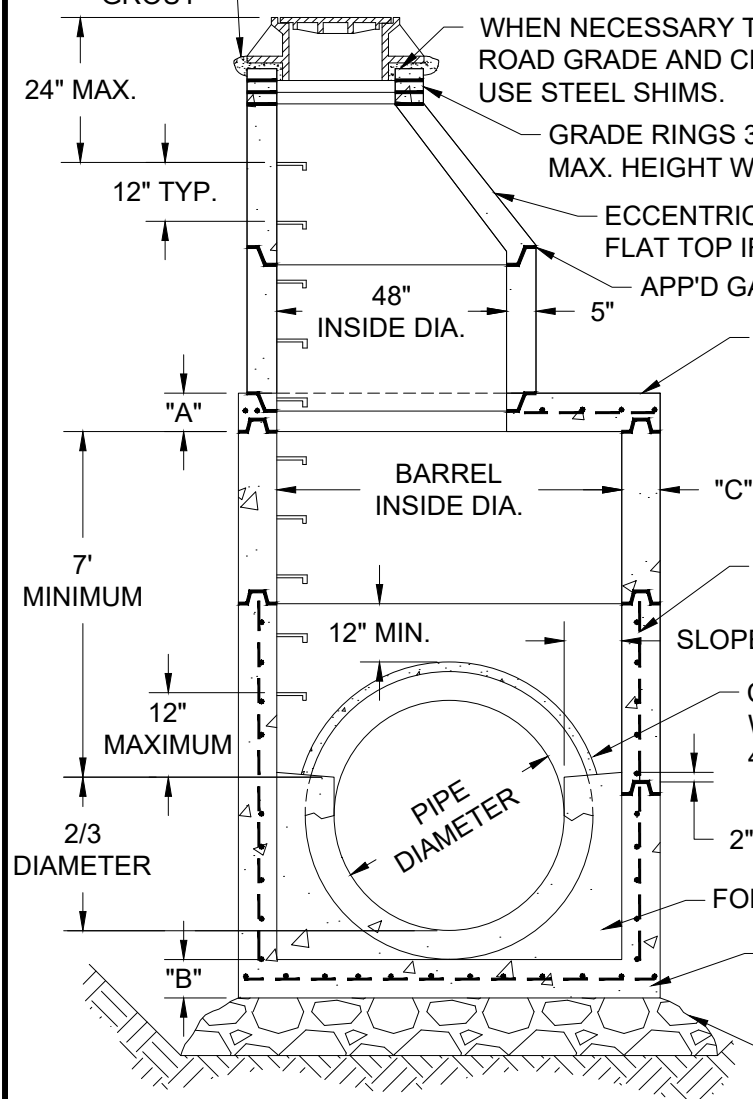
PWS VERSION: JAN 2026

DRAWN	AAD
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	201

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\cad - all\200\_general\202.dwg, Plotted 3/31/2026 8:45 AM, By: Anthony Dollovlitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



PIPE DIA. IN.	BARREL DIA.* IN.	MINIMUMS		
		"A" DIM. IN.	"B" DIM. IN.	"C" DIM. IN.
30"	72"	7"	10"	7"
33"	72"	7"	10"	7"
36"	72"	7"	10"	7"
42"	84"	12"	12"	8"
48"	84"	12"	12"	8"
54"	96"	12"	12"	9"
60"	96"	12"	12"	9"
66"	108"	12"	12"	10"
72"	108"	12"	12"	10"
78"	120"	12"	12"	11"
84"	120"	12"	12"	11"
90"	132"	12"	12"	11"
96"	132"	12"	12"	11"



WHEN NECESSARY TO MATCH ROAD GRADE AND CROSS-SLOPE USE STEEL SHIMS.

GRADE RINGS 3" MIN. & 12" MAX. HEIGHT WITH NO SPACES

ECCENTRIC CONE OR FLAT TOP IF REQ'D.

APP'D GASKET MATERIAL, TYP.

REDUCING TOP SLAB TO BE DESIGNED & CONSTRUCTED FOR DEPTH AND TRAFFIC CONDITIONS BY MANUFACTURER. FOR SLABS WITHIN 17" OF STREET, OPENING TO BE 25"

DESIGN BARREL REINFORCING FOR CONDITIONS

SLOPE SHELVES 1:12, 18" MINIMUM WIDTH

CORE MANHOLE WALL 2" MIN., 4" MAX. CLEAR OF PIPE WALL. GROUT WITH NON-SHRINK GROUT & INCLUDING 4"x4" COLLAR AROUND PIPE CONNECTION

2" MIN. FOR CAST-IN-PLACE BASE

FORM 4,000 PSI PCC CHANNEL TO 2/3 DIA. HEIGHT

REINFORCED PRE-CAST OR CAST-IN-PLACE BOTTOM SLAB. SUBMIT CALCULATIONS & DESIGN FOR PRIOR APPROVAL

12" MINIMUM THICKNESS OF 3/4"-0" COMPACTED CRUSHED ROCK

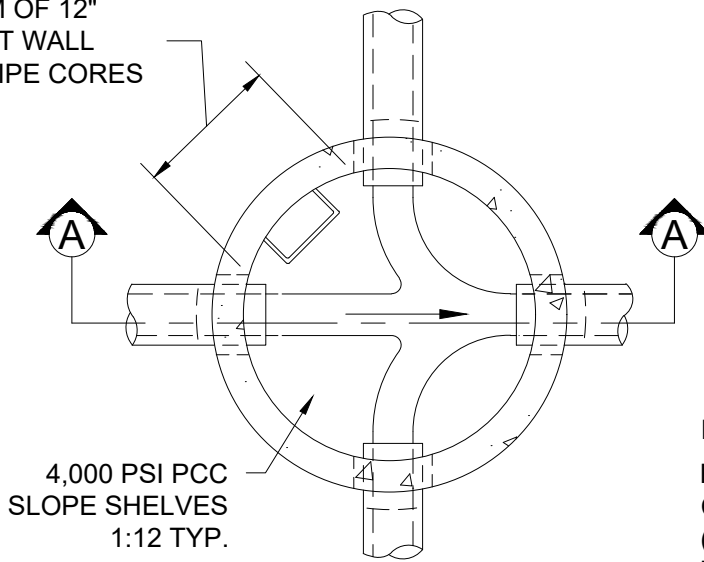
\* APPLIES TO (2) PIPE MANHOLES WITH 0° DEFLECTION. OTHER NUMBERS OF PIPES OR DEFLECTION WILL REQUIRE LARGER SIZE.

NOTES:  
STEPS TO BE AS DETAILED IN STANDARD DETAIL 210

<p><b>CITY OF GRESHAM</b></p> <p>STANDARD MANHOLE FOR 30" AND LARGER DIAMETER PIPES</p> <p>PWS VERSION: JAN 2026</p>	<p>DRAWN KCK</p>
	<p>REV. DATE MARCH 2026</p>
	<p>APPR.</p>
	<p>DETAIL NO. 202</p>

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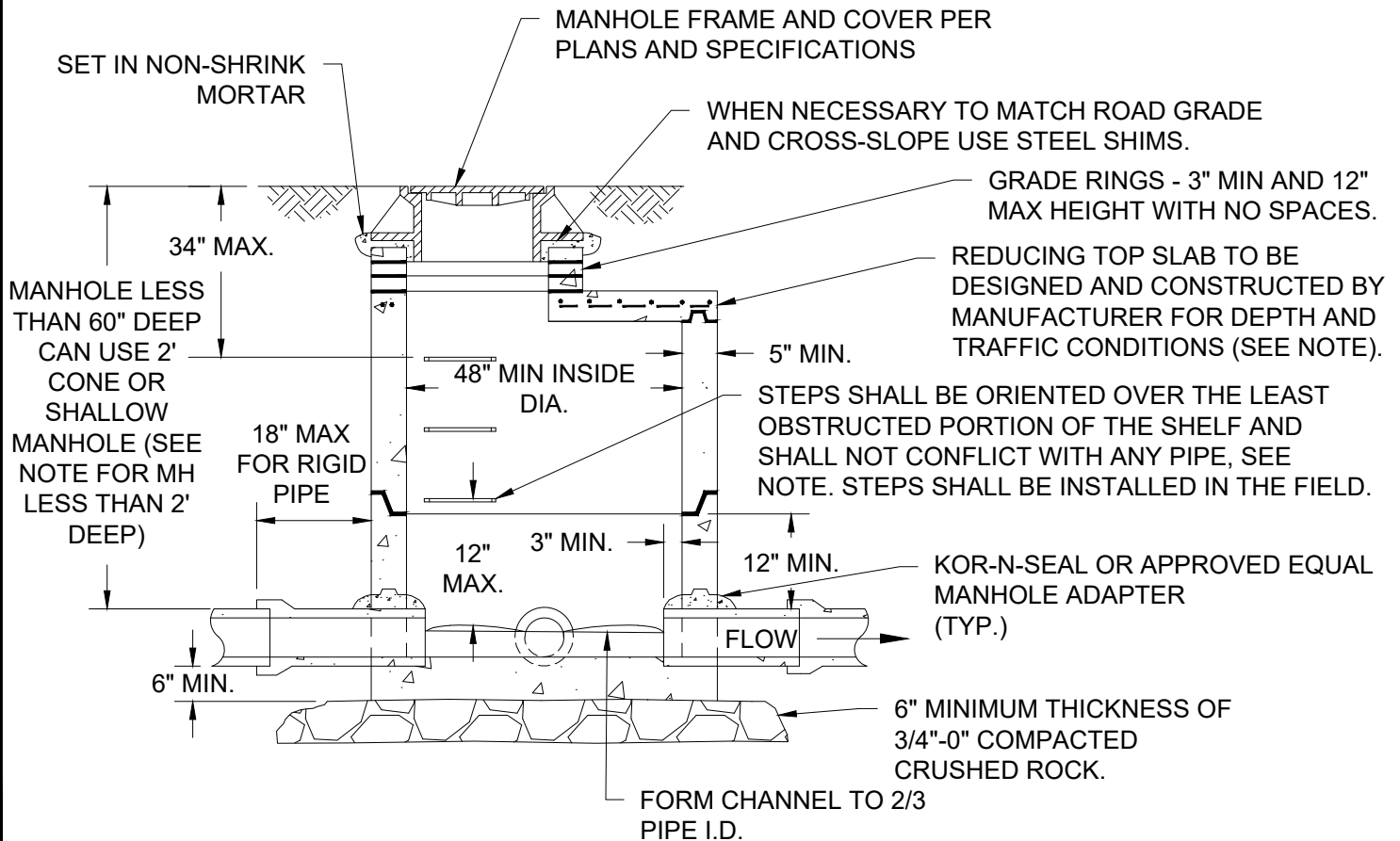
MINIMUM OF 12"  
PRECAST WALL  
BETWEEN PIPE CORES



**PLAN**

NOTE:

FOR MANHOLES LESS THAN 2' DEEP A CONCENTRIC FLATTOP SHALL BE USED (NOT SHOWN), AND NO STEPS SHALL BE INSTALLED.



**SECTION A-A**

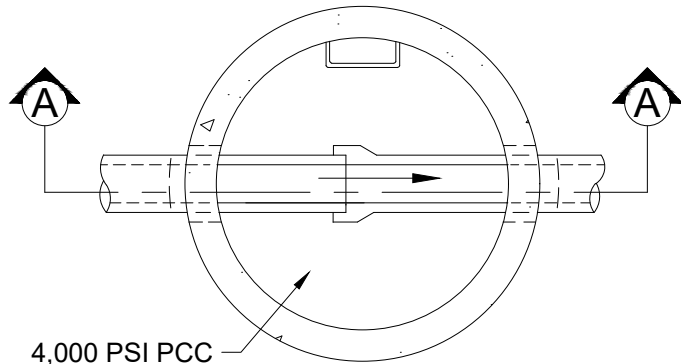
**CITY OF  
GRESHAM**

**SHALLOW MANHOLE FOR 27" AND LESSER  
DIAMETER PIPES**

PWS VERSION: JAN 2026

DRAWN	AAD
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	203

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\cad - all\200\_general\204.dwg, Plotted 3/31/2026 8:51 AM, By: Anthony Dolloowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

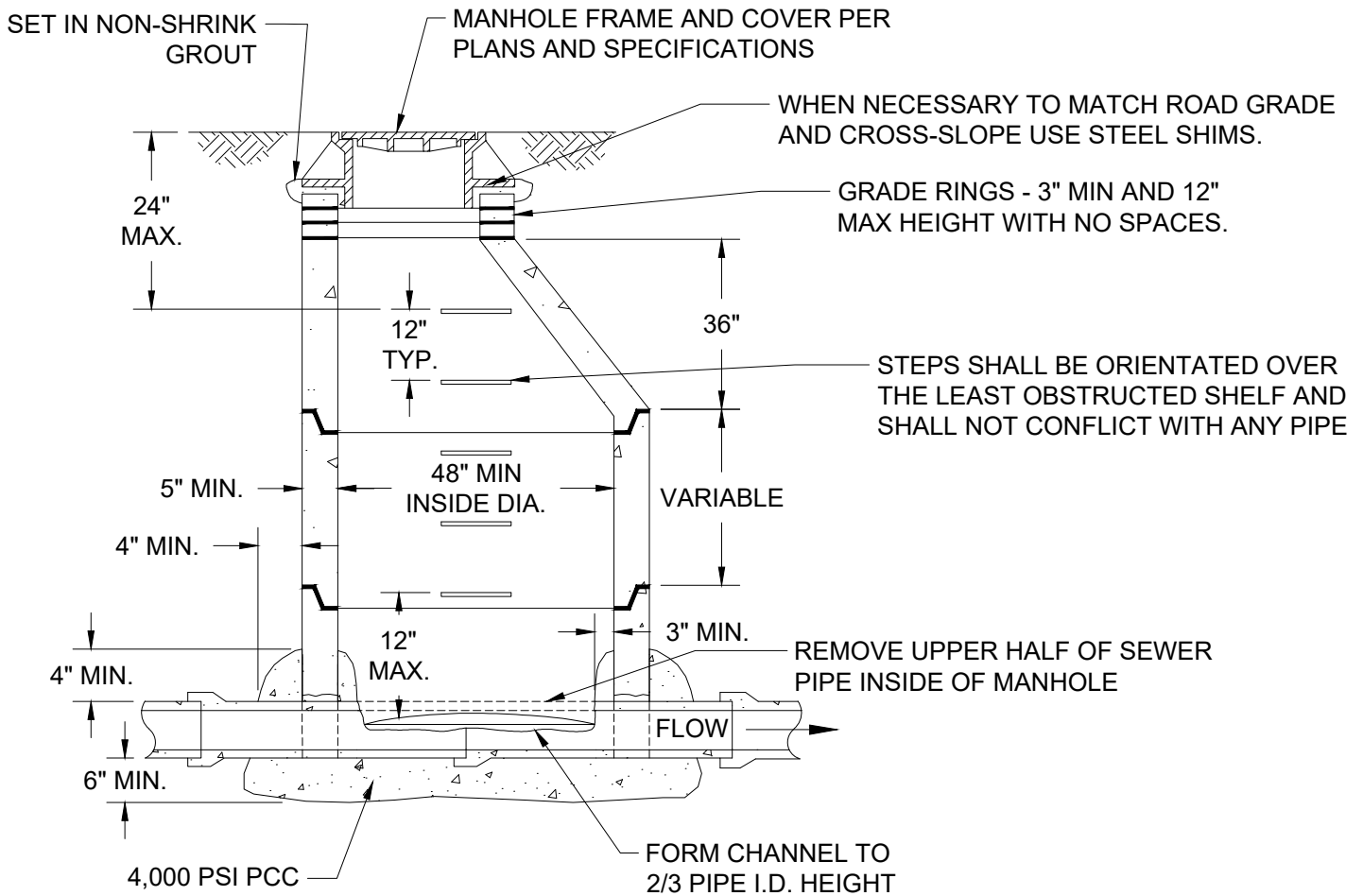


4,000 PSI PCC  
SLOPE SHELVES  
1:12 TYP.

**PLAN**

**NOTES:**

1. JOINTS SHALL BE WATER TIGHT AND COATED WITH WATERPROOF RUBBERIZED MASTIC MATERIAL BEFORE SETTING RISERS AND TOP. INSIDE JOINTS SHALL BE GROUTED.
2. MANHOLES SHALL HAVE A 12" MIN., 24" MAX. BOTTOM RISER. RISER TO BE BEDDED IN THE CAST-IN-PLACE CONCRETE AS THE BASE TAKES ITS INITIAL SET.
3. 3" TO 12" CLEARANCE BETWEEN BOTTOM RISER SECTION AND TOP OF PIPE. RISER SECTION MUST BE CAST TO ACCOMODATE PIPE (DOG HOUSE) NO SAWING OR BREAKING OF RISER WILL BE ALLOWED.
4. AFTER SHELF IS FORMED REMOVE TOP OF PIPE.



**SECTION A-A**

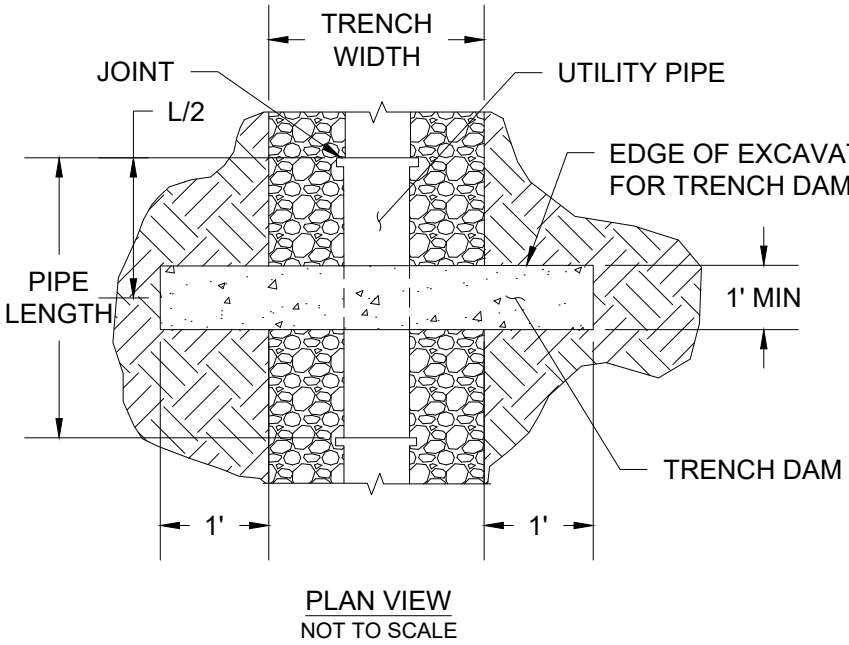
**CITY OF  
GRESHAM**

**CAST-IN-PLACE MANHOLE**

PWS VERSION: JAN 2026

DRAWN	KRB
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	204

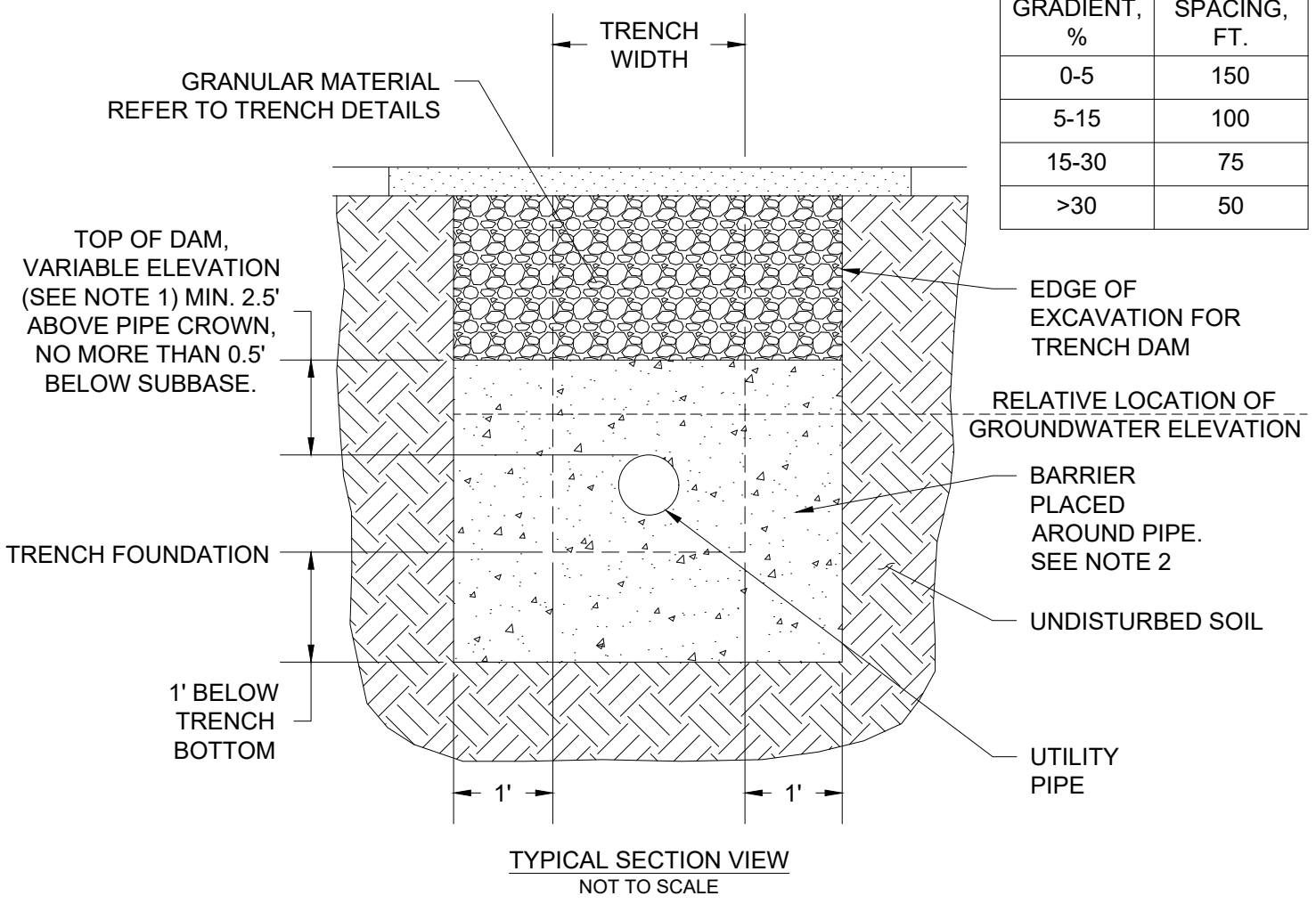
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- NOTES:**
1. REFER TO PLANS FOR TRENCH DAM LOCATIONS AND TOP ELEVATIONS DETERMINED BY CITY.
  2. PLUG SHALL BE IMPERMEABLE AND COMPOSED OF A BENTONITE CLAY, OR CONTROLLED LOW STRENGTH MATERIAL (CLSM), CONSTRUCTED AS SHOWN.
  3. TRENCH DAM SHALL EXTEND BEYOND THE EXISTING UTILITY TRENCH WIDTH INTO NATIVE SOIL PER THE MINIMUM DIMENSIONS SHOWN.
  4. WHEN REQUIRED, TRENCH DAM SHALL BE CONSTRUCTED IN AREAS OF SHALLOW GROUNDWATER, SEE TABLE 1.

**TABLE 1**

FLOW GRADIENT, %	DAM SPACING, FT.
0-5	150
5-15	100
15-30	75
>30	50



<p><b>CITY OF GRESHAM</b></p>	<p><b>IMPERVIOUS DAM</b></p>	<p>DRAWN <b>AAD</b></p>
		<p>REV. DATE <b>MARCH 2026</b></p>
		<p>APPR.</p>
		<p>DETAIL NO. <b>215</b></p>
<p>PWS VERSION: JAN 2026</p>		