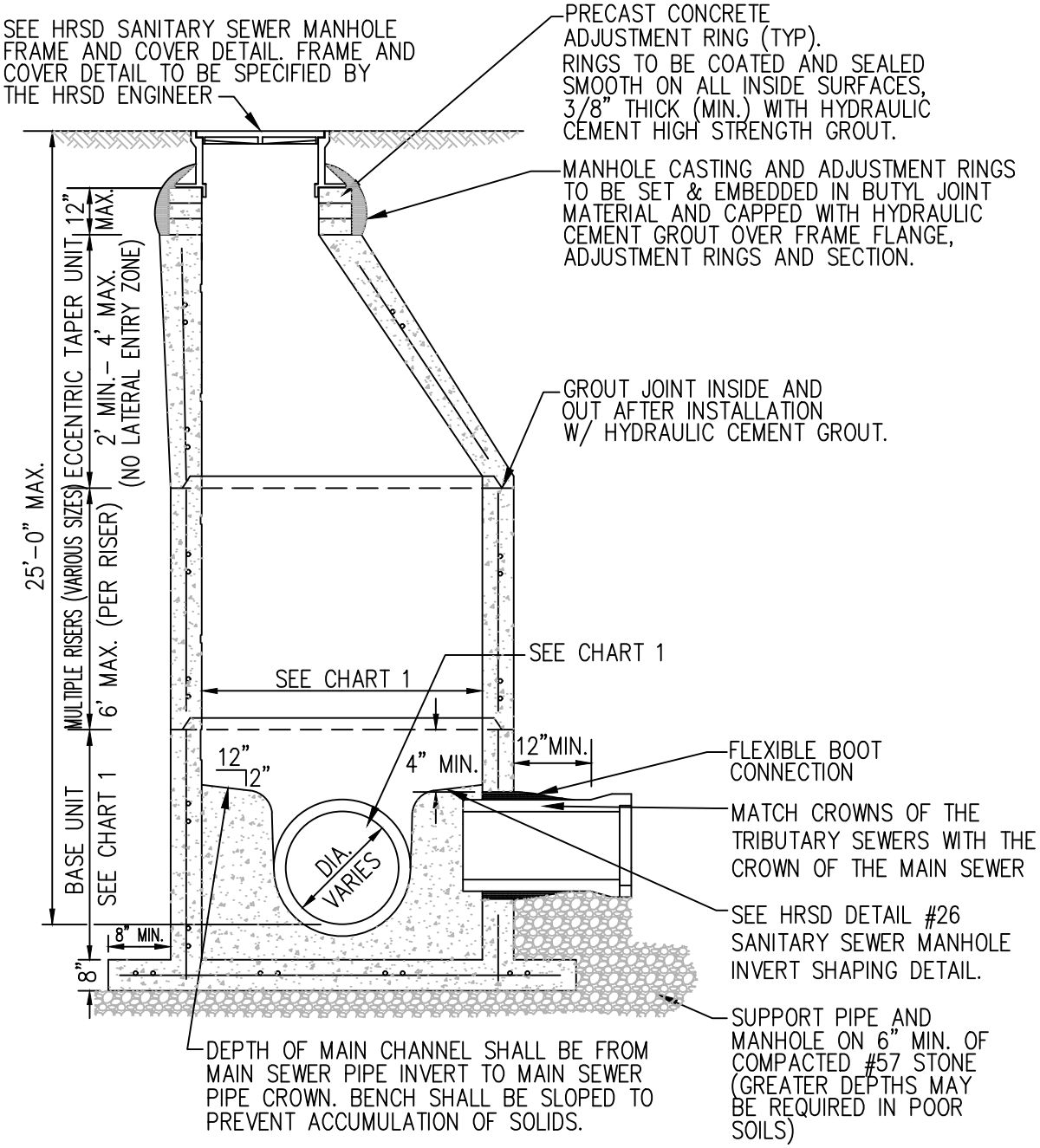


SEE DRAWING #200B FOR NOTES.

NOT TO SCALE

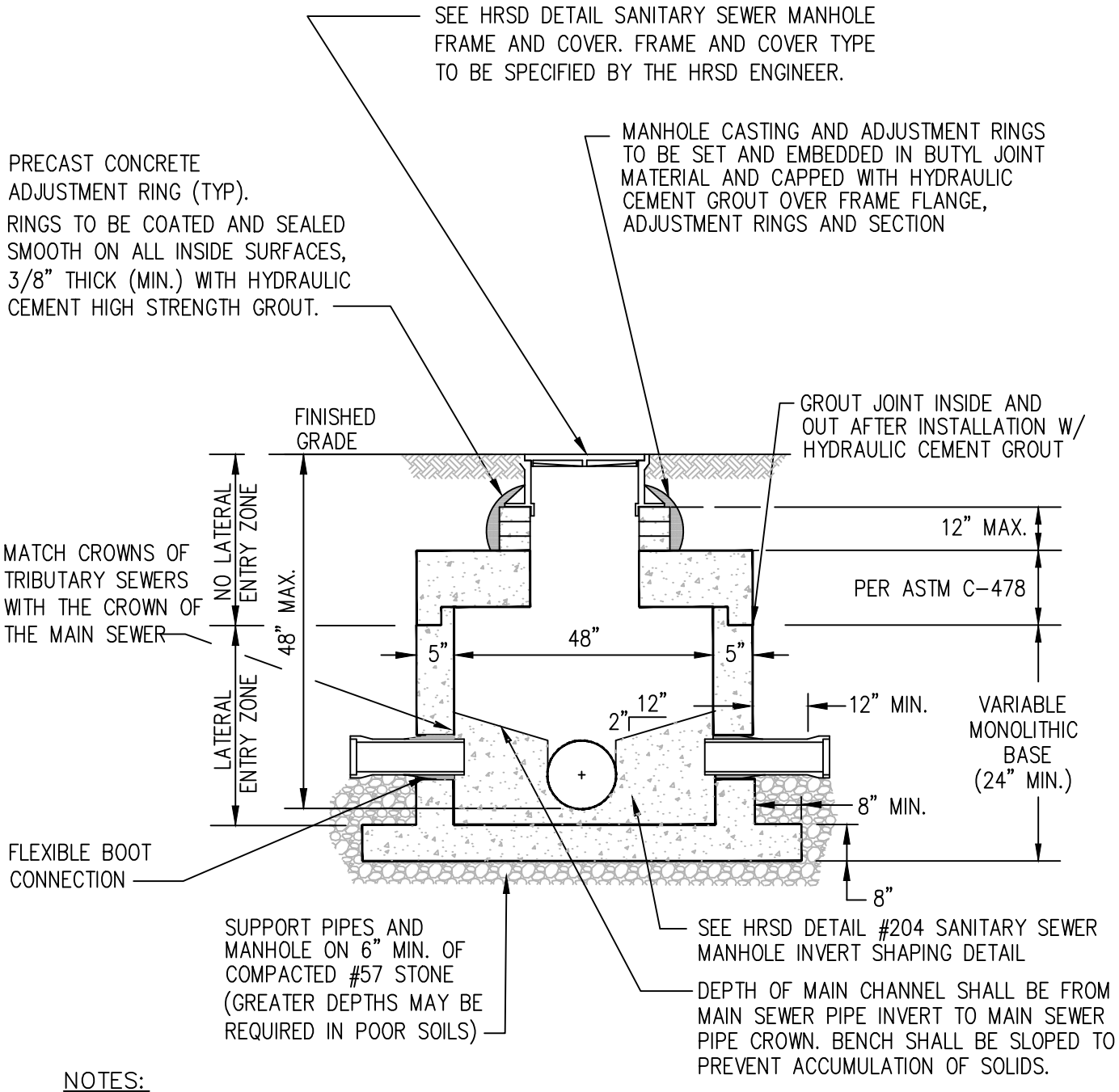
HRSD	STANDARD PRECAST CONCRETE	DRAWING NO. 200A
		SHEET 1 OF 2
	MANHOLE W/EXTENDED MONOLITHIC BASE	DATE 7/2026

CHART 1

PIPE SIZE	MANHOLE DIAMETER	BASE UNIT HEIGHT	WALL THICKNESS–MIN.
< OR = 24"	48"	24"–48"	5"
27"–36"	60"	60" (MIN.)	6"
42"	72"	72" (MIN.)	7"
48"	72"	48" (MIN.)	7"

NOTES:

1. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C–478.
2. PROVIDE A MAXIMUM OF TWO LIFT HOLES PER SECTION. PLUG LIFT HOLES WATERTIGHT WITH RUBBER PLUGS AND GROUT AFTER INSTALLATION.
3. REGARDLESS OF PIPE SIZE, INSIDE DIAMETER OF MANHOLE SHALL BE 60" (MIN.) WHEN MANHOLE DEPTH IS 12' OR GREATER. 60" DIAMETER SHALL BE CONTINUOUS UP TO CONE SECTION.
4. MAXIMUM OF FOUR LATERALS PER MANHOLE.
5. ALL MANHOLES SHALL RECEIVE CONSHIELD ADDITIVE OR APPROVED EQUAL DURING CASTING.
6. CONCRETE USED TO FORM THE BENCH SHALL RECEIVE THE CONSHIED ADDITIVE, OR APPROVED EQUAL.
7. COAT EXTERIOR OF MANHOLE IN ACCORDANCE WITH THE HRSD COATINGS MANUAL, CURRENT REVISION, COATING SYSTEM E–2–C. COATING SHALL BE FIELD APPLIED.



NOTES:

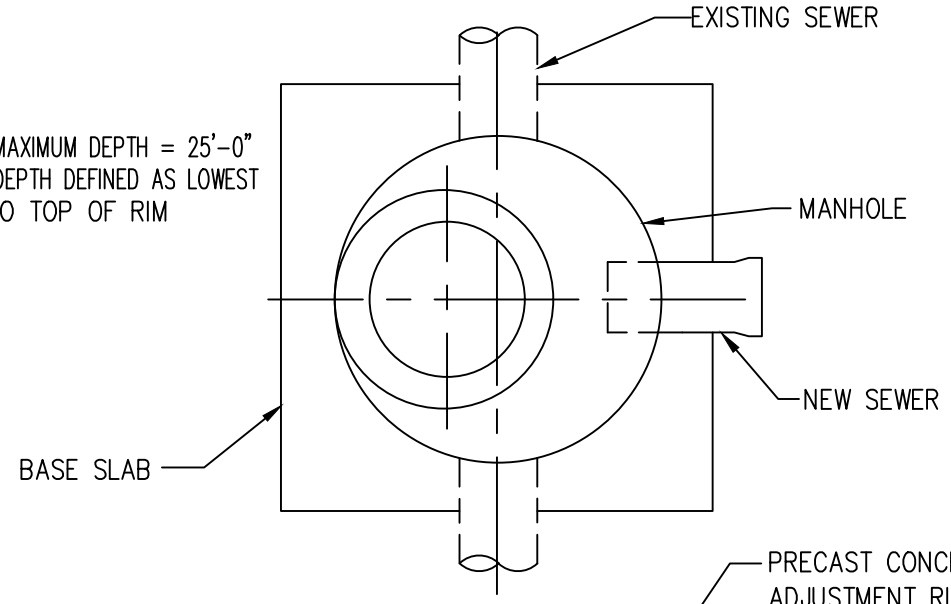
1. FLAT TOP CAN BE REPLACED W/ 1'-4" ECCENTRIC SHALLOW CONE IF APPROVED BY HRSD.
2. PRECAST MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478.
3. PROVIDE A MAXIMUM OF TWO LIFT HOLES PER SECTION. PLUG LIFT HOLES WATERTIGHT WITH RUBBER PLUGS AND GROUT AFTER INSTALLATION.
4. ALL MANHOLES SHALL RECEIVE CONSHIELD ADDITIVE OR APPROVED EQUAL DURING CASTING.
5. CONCRETE USED TO FORM THE BENCH SHALL RECEIVE THE CONSHIELD ADDITIVE, OR APPROVED EQUAL.
6. COAT EXTERIOR OF MANHOLE IN ACCORDANCE WITH THE HRSD COATINGS MANUAL, CURRENT REVISION, COATING SYSTEM E-2-C. COATING SHALL BE FIELD APPLIED.

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL – PRECAST	DRAWING NO. 201
		SHEET 1 OF 1
	CONCRETE SHALLOW MANHOLE WITH EXTENDED BASE	DATE 7/2026

NOTE:

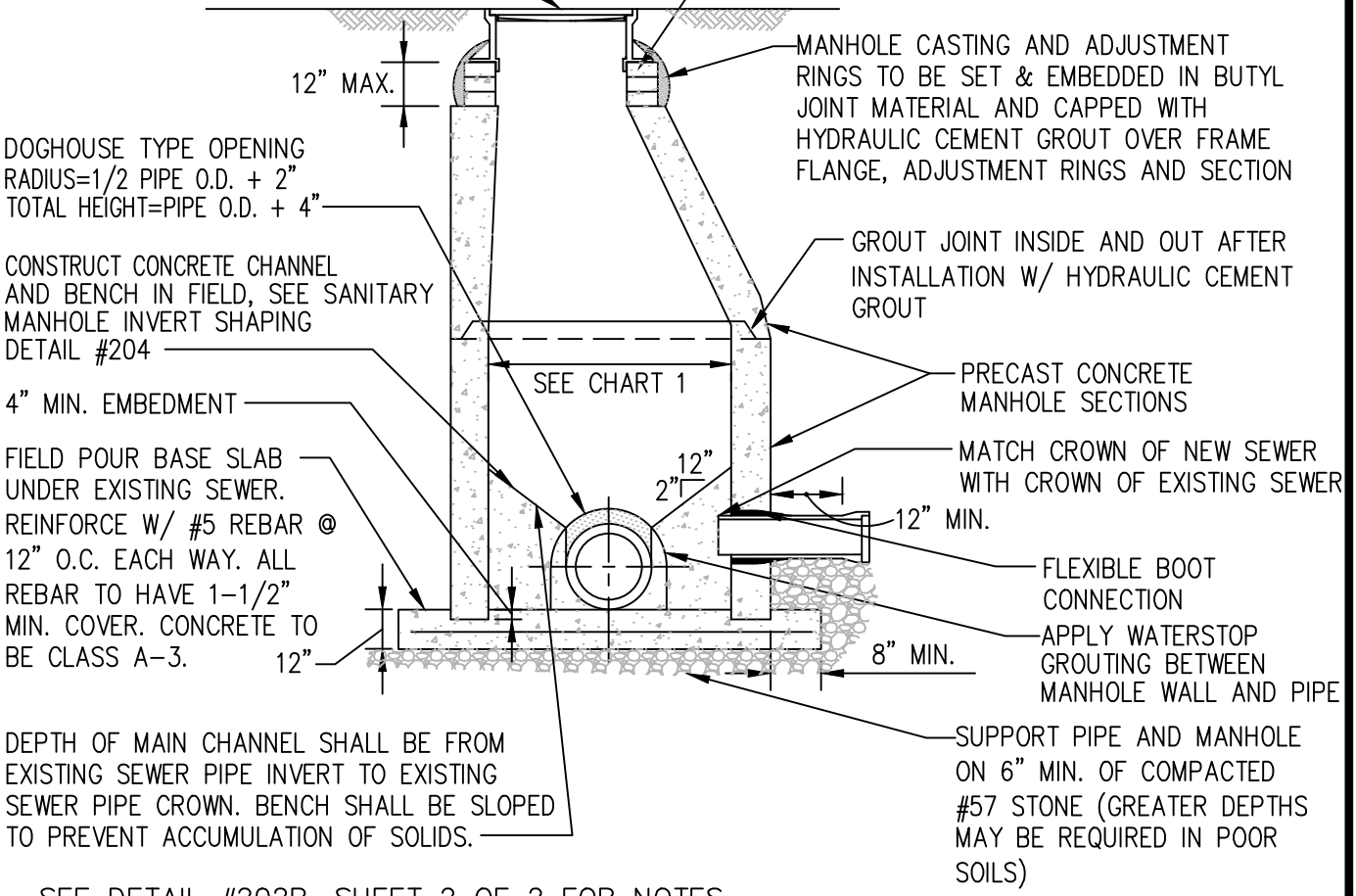
MANHOLE MAXIMUM DEPTH = 25'-0"
MANHOLE DEPTH DEFINED AS LOWEST INVERT TO TOP OF RIM



PLAN

SEE HRSD SANITARY SEWER MANHOLE FRAME AND COVER DETAIL. FRAME AND COVER TYPE TO BE SPECIFIED BY HRSD ENGINEER.

PRECAST CONCRETE ADJUSTMENT RING (TYP). RINGS TO BE COATED AND SEALED SMOOTH ON ALL INSIDE SURFACES, 3/8" THICK (MIN.) WITH HYDRAULIC CEMENT HIGH STRENGTH GROUT.



SEE DETAIL #202B, SHEET 2 OF 2 FOR NOTES.

NOT TO SCALE

HRSD

STANDARD DESIGN DETAIL

SANITARY SEWER STRADDLE MANHOLE

DRAWING NO. 202A

SHEET 1 OF 2

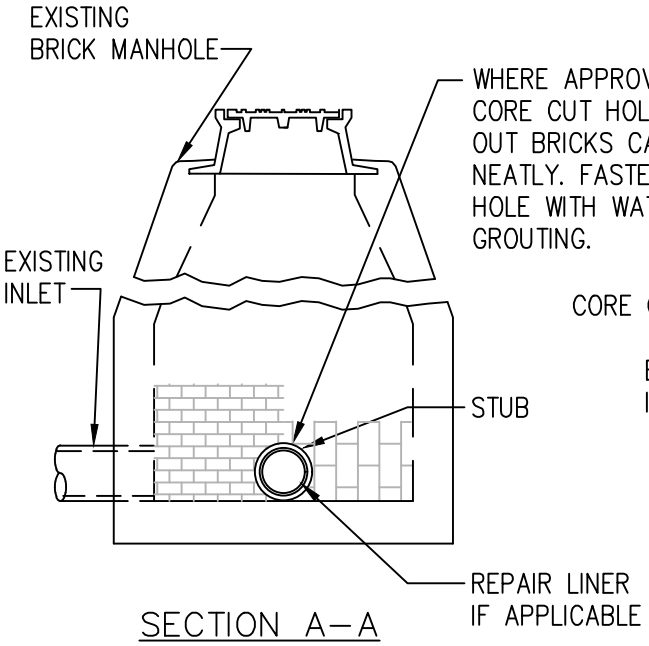
DATE 7/2026

CHART 1

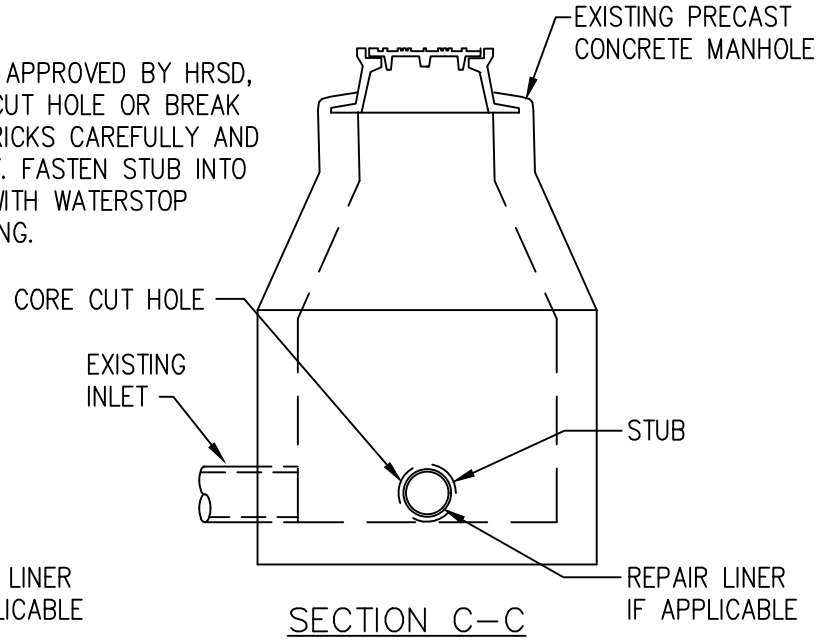
PIPE SIZE	MANHOLE DIAMETER	BASE UNIT HEIGHT	WALL THICKNESS–MIN.
< OR = 24"	48"	24"–48"	5"
27"–36"	60"	60" (MIN.)	6"
42"	72"	72" (MIN.)	7"
48"	72"	48" (MIN.)	7"

NOTES:

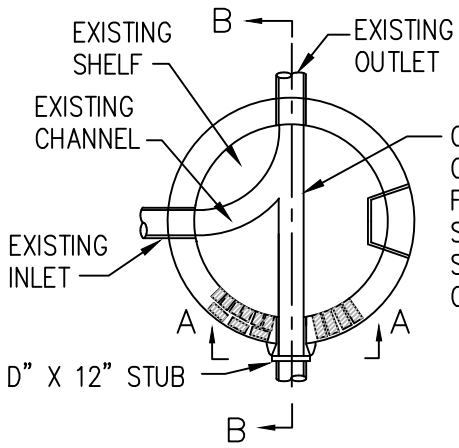
1. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C–478.
2. PROVIDE A MAXIMUM OF TWO LIFT HOLES PER SECTION. PLUG LIFT HOLES WATERTIGHT WITH RUBBER PLUGS AND GROUT AFTER INSTALLATION.
3. REGARDLESS OF PIPE SIZE, INSIDE DIAMETER OF MANHOLE SHALL BE 60" (MIN.) WHEN MANHOLE DEPTH IS 12' OR GREATER. 60" DIAMETER SHALL BE CONTINUOUS UP TO CONE SECTION.
4. MAXIMUM OF FOUR LATERALS PER MANHOLE.
5. ALL MANHOLES SHALL RECEIVE CONSHIELD ADDITIVE OR APPROVED EQUAL DURING CASTING.
6. COAT EXTERIOR OF MANHOLE IN ACCORDANCE WITH HRSD COATINGS MANUAL, CURRENT REVISION, COATING SYSTEM E–2–C. COATING SHALL BE FIELD APPLIED.
7. CONRETE USED TO FORM THE BENCH SHALL RECEIVE THE CONSHIELD ADDITIVE, OR APPROVED EQUAL.



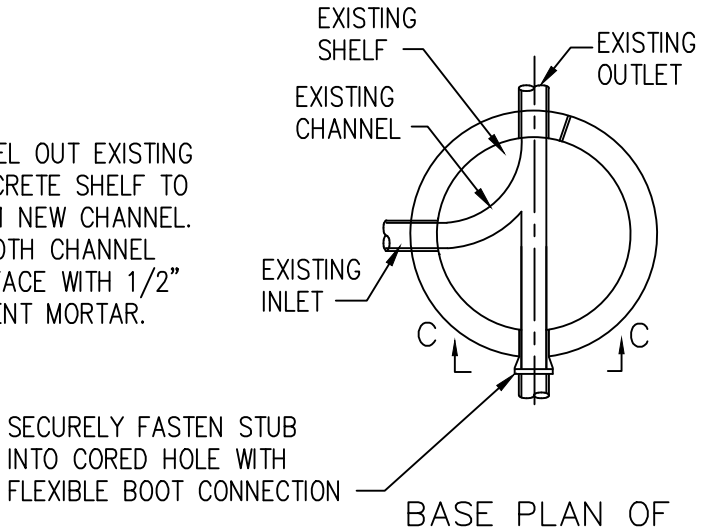
SECTION A–A



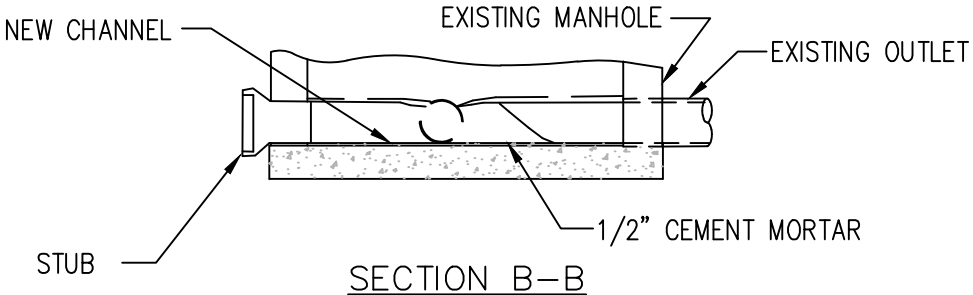
SECTION C–C



BASE PLAN OF
BRICK MANHOLE



BASE PLAN OF
PRE–CAST MANHOLE

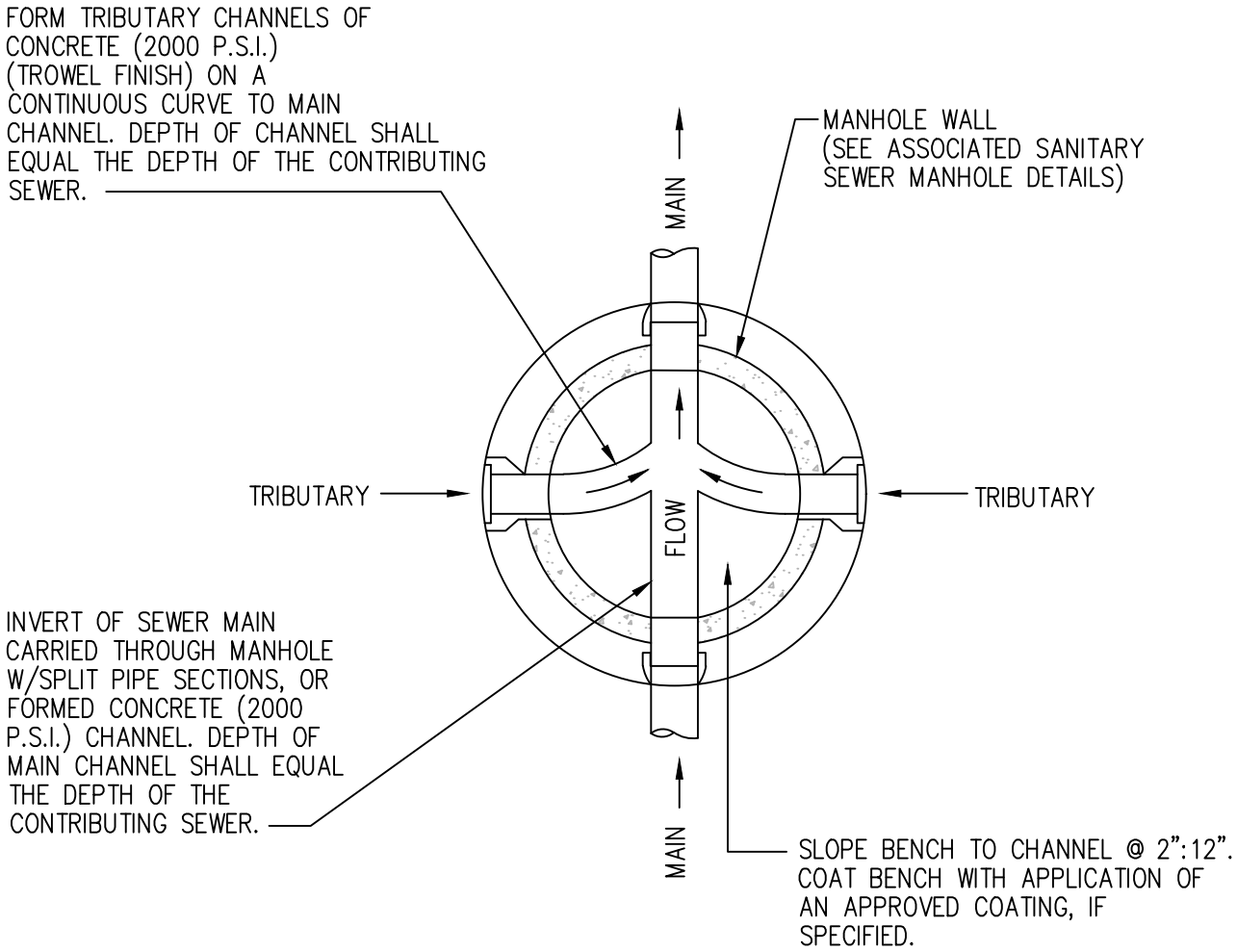


SECTION B–B

NOTES:
MATCH CROWN OF NEW PIPE STUB TO EXISTING PIPE CROWNS.

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 203
		SHEET 1 OF 1
	CONNECTION INTO EXISTING MANHOLES	DATE 7/2026

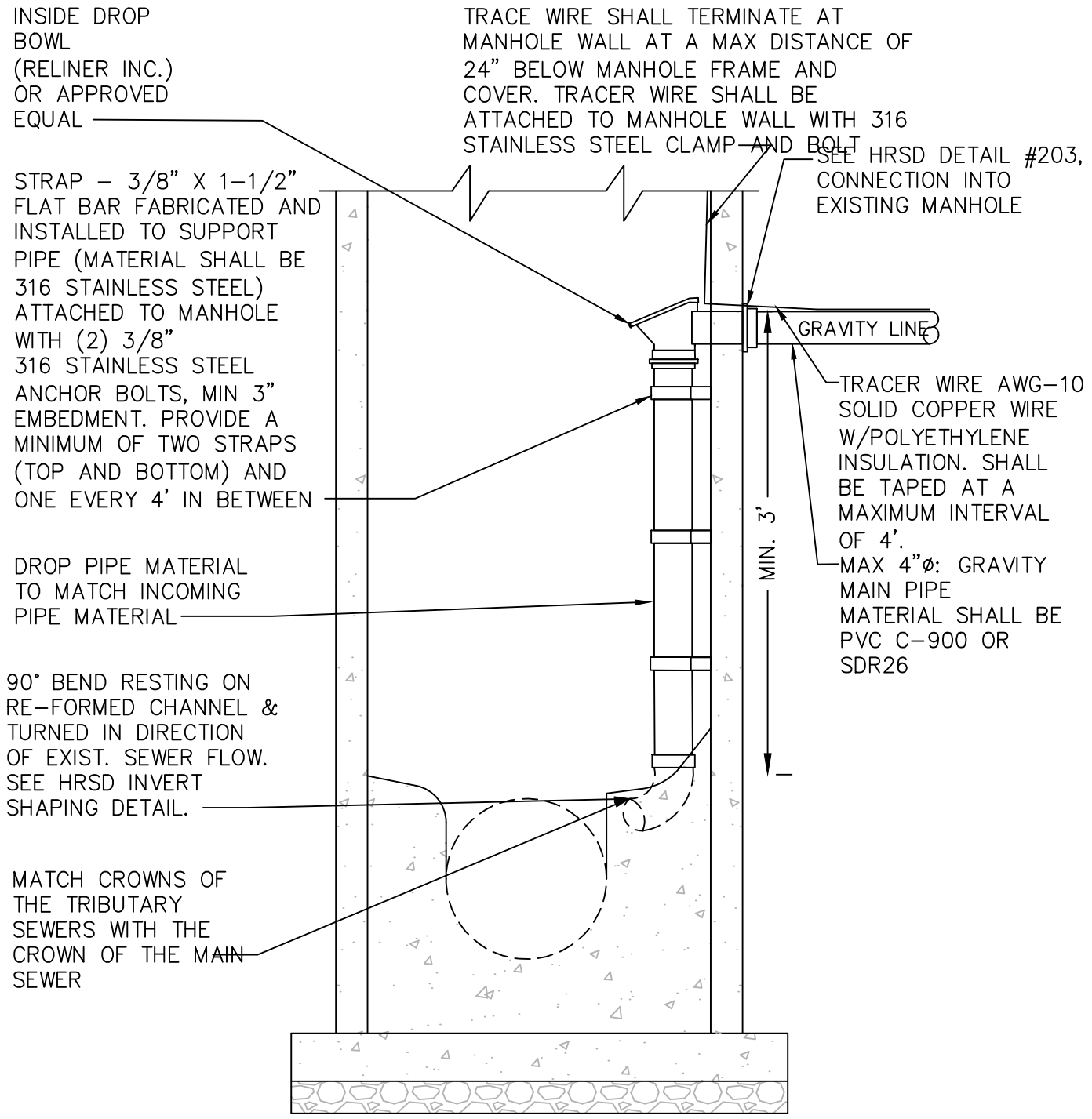


NOTES:

1. SPLIT PIPE ONLY ALLOWED IN STRADDLE MANHOLES.
2. CONCRETE USED TO FORM THE BENCH SHALL RECEIVE THE CONSHIELD ADDITIVE, OR APPROVED EQUAL.
3. BENCH SHALL BE FORMED TO ACCOMMODATE CCTV EQUIPMENT.

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 204
		SHEET 1 OF 1
	SEWER MANHOLE FLOW CHANNEL	DATE 7/2026



NOTES:

1) THIS CONNECTION WILL ONLY BE CONSIDERED FOR MANHOLES GREATER THAN 6' IN DEPTH FROM RIM TO INVERT AND WILL ONLY BE APPROVED ON A CASE BY CASE BASIS BY HRSD OPERATIONS.

2) NO LATERAL ENTRY SHALL BE ALLOWED WITHIN THE TAPER UNIT OF THE MANHOLE.

3) IF LATERAL CONNECTION IS GREATER THAN 6' IN DEPTH FROM GRADE. MARKING TAPE SHALL BE INSTALLED 3' BELOW GRADE.

NOT TO SCALE

HRSD

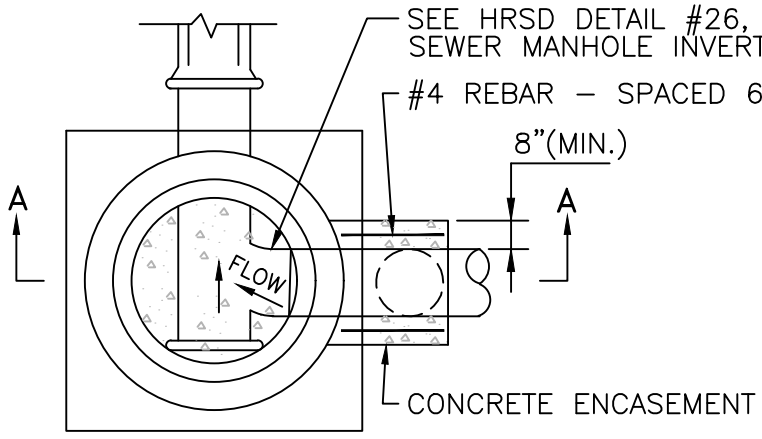
STANDARD DESIGN DETAIL

INTERIOR GRAVITY MAIN DROP CONNECTION TO EXISTING MANHOLE

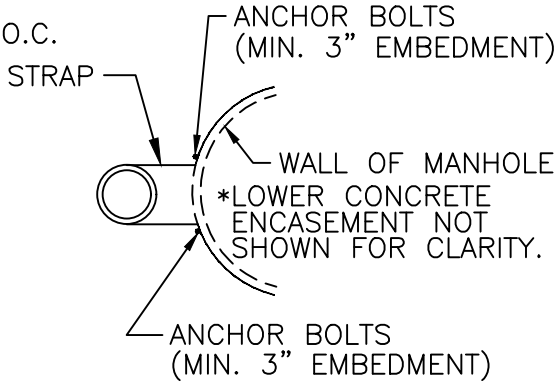
DRAWING NO. 205

SHEET 1 OF 1

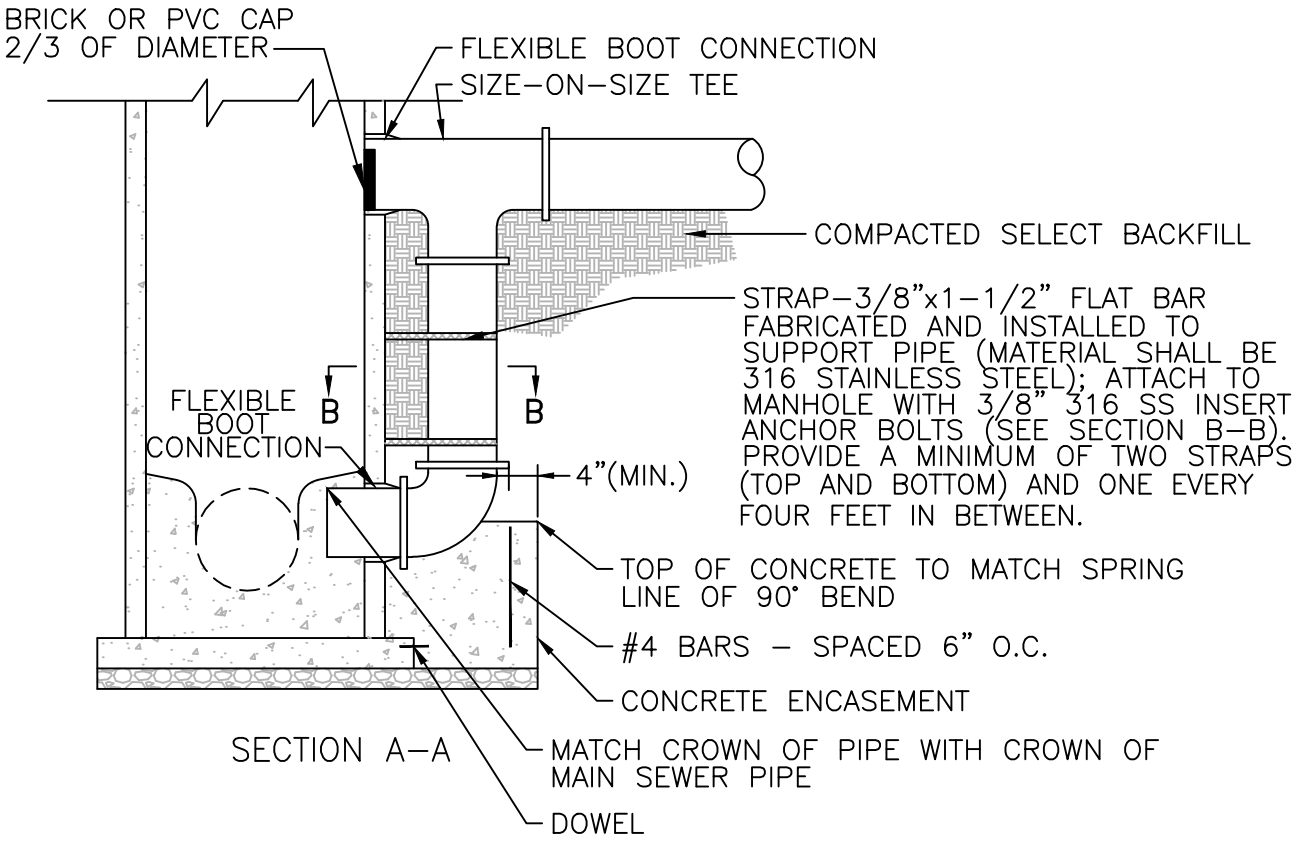
DATE 7/2026



PLAN



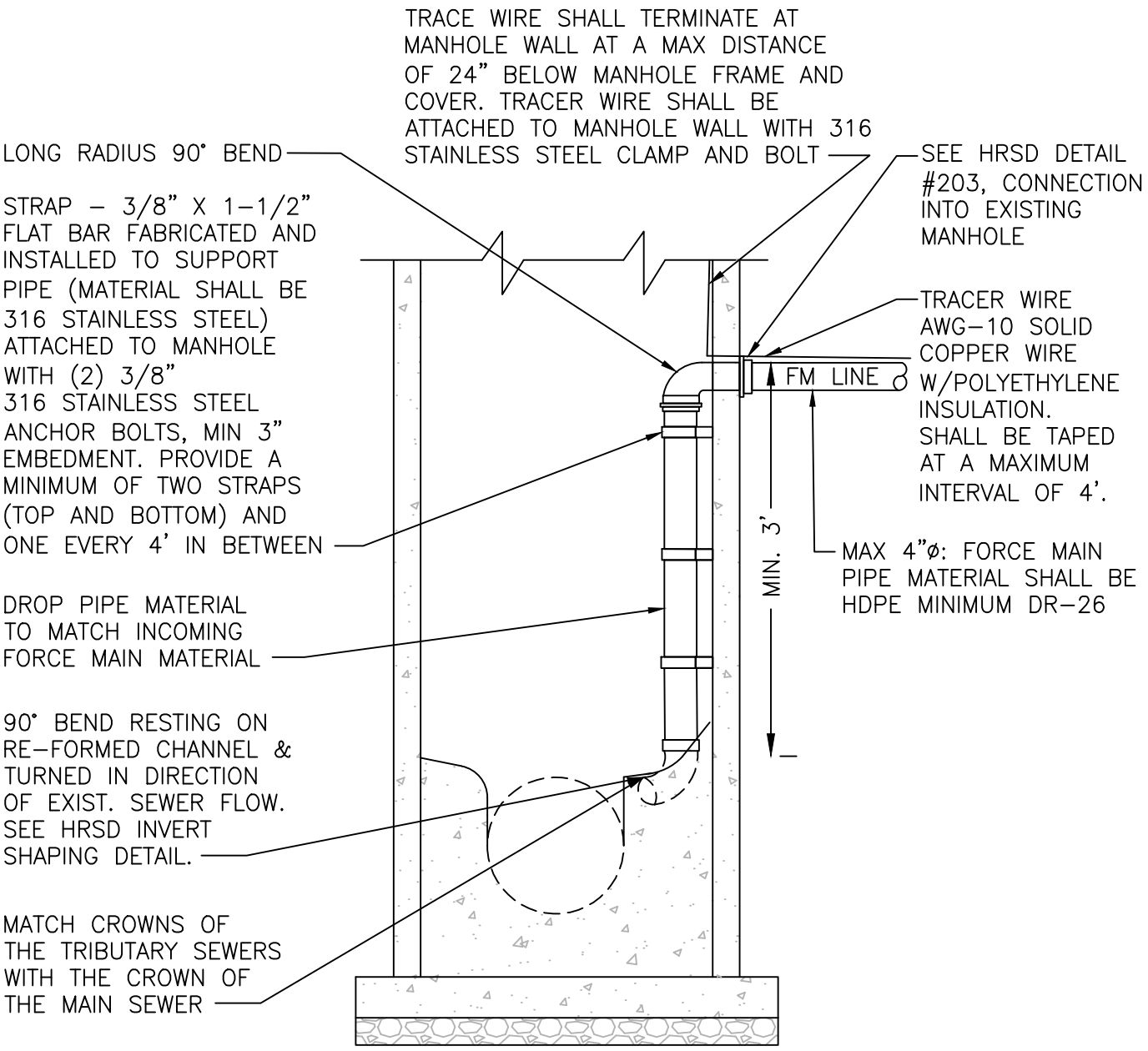
SECTION B–B



SECTION A–A

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 206
		SHEET 1 OF 1
	EXTERIOR DROP CONNECTION WITH PRECAST CONCRETE MANHOLE	DATE 7/2026



NOTES:

1) THIS CONNECTION WILL ONLY BE CONSIDERED FOR MANHOLES GREATER THAN 6' IN DEPTH FROM RIM TO INVERT AND WILL ONLY BE APPROVED ON A CASE BY CASE BASIS BY HRSD OPERATIONS.

2) NO FORCE MAIN ENTRY SHALL BE ALLOWED WITHIN THE TAPER UNIT OF THE MANHOLE.

3) REFERENCE HRPDC SAXOPHONE CONNECTION DETAIL

4) ALL BURIED PIPING SHALL BE HDPE DR–17, IF FUSION IS REQUIRED IT SHALL BE BUTT FUSION WELDED

5) IF LATERAL CONNECTION IS GREATER THAN 6' IN DEPTH FROM GRADE. MARKING TAPE SHALL BE INSTALLED 3' BELOW GRADE.

NOT TO SCALE

HRSD

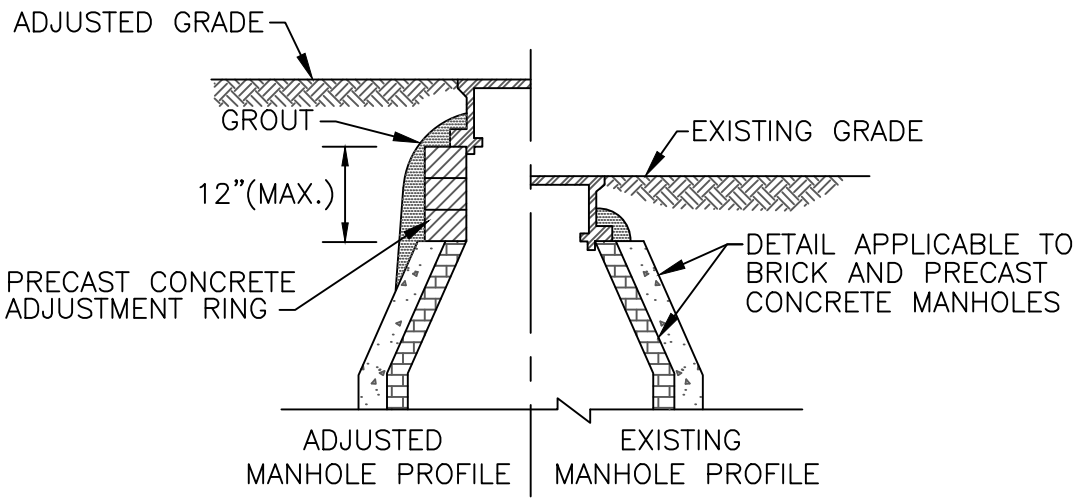
STANDARD DESIGN DETAIL

INTERIOR FORCE MAIN DROP CONNECTION TO EXISTING MANHOLE

DRAWING NO. 207

SHEET 1 OF 1

DATE 7/2026



NOTES:

1. PRECAST CONCRETE ADJUSTMENT RINGS SHALL BE USED TO RAISE THE MANHOLE FRAME FROM THE CONE SECTION. JACK UP RINGS BETWEEN THE FRAME AND COVER ARE NOT ACCEPTABLE.

2. GROUT MIX SHALL BE 1:3 CEMENT:SAND MORTAR. CAP EXTERIOR WITH GROUT OVER FRAME FLANGE, ADJUSTMENT RING(S), AND THE TOP 18" OF THE CONE SECTION. COAT INSIDE SURFACE OF THE ADJUSTMENT RINGS AND SEAL SMOOTH WITH 3/8" THICK GROUT.

3. IN LIEU OF PRECAST CONCRETE, ADJUSTMENT RINGS MAY BE COURSES OF HARD, SOUND, COMMON BRICK LAID RADIALLY AND FULLY SUPPORTING THE FRAME FLANGE. BRICK SHALL BE LAID WITH 1:3 CEMENT:SAND MORTAR WITH SHAVED JOINTS NOT TO EXCEED 3/8" THICKNESS. CAP WITH GROUT OVER FRAME FLANGE, ADJUSTMENT RING(S), AND THE TOP 18" OF THE CONE SECTION (AS SHOWN ABOVE).

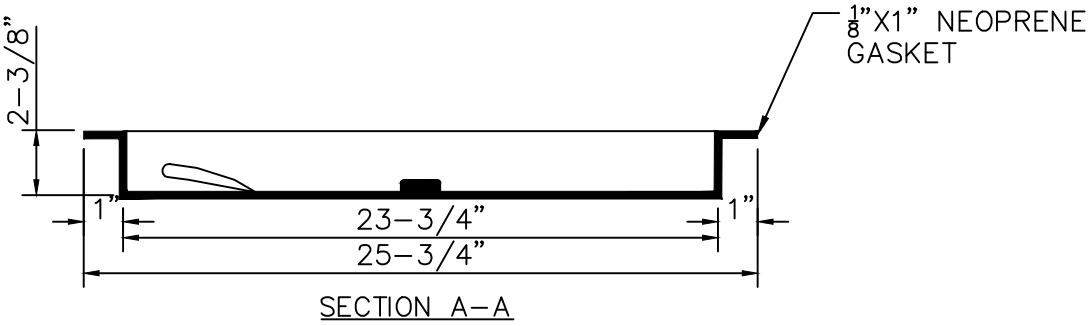
4. TOTAL HEIGHT BETWEEN THE TOP OF THE CONE AND THE BOTTOM OF THE FRAME FLANGE SHALL NOT EXCEED 12" (OR 3 OF COURSES OF BRICK) AFTER THE ADJUSTMENT. IF, ON A PRECAST MANHOLE, THE TOTAL HEIGHT IS >12" BEFORE THE ADJUSTMENT, OR IF RAISING THE TOTAL HEIGHT TO 12" PROVIDES INSUFFICIENT ADJUSTMENT, INSERT AN ADDITIONAL PRECAST CONCRETE STANDARD MANHOLE SECTION BETWEEN THE CONE SECTION AND THE UPPER MOST BARREL SECTION. THE NEW SECTION SHALL HAVE RECEIVED THE CONSHIELD ADDITIVE DURING CASTING. IF, ON A BRICK MANHOLE, THE TOTAL HEIGHT IS >12" BEFORE THE ADJUSTMENT, OR IF RAISING THE TOTAL HEIGHT TO 12" PROVIDES INSUFFICIENT ADJUSTMENT, CONTACT THE HRSD ENGINEER FOR DIRECTION.

5. THE EXISTING BARREL SECTION(S), FOUNDATION, FOOT PAD, AND MANHOLE PIPES SHALL NOT BE DISTURBED.

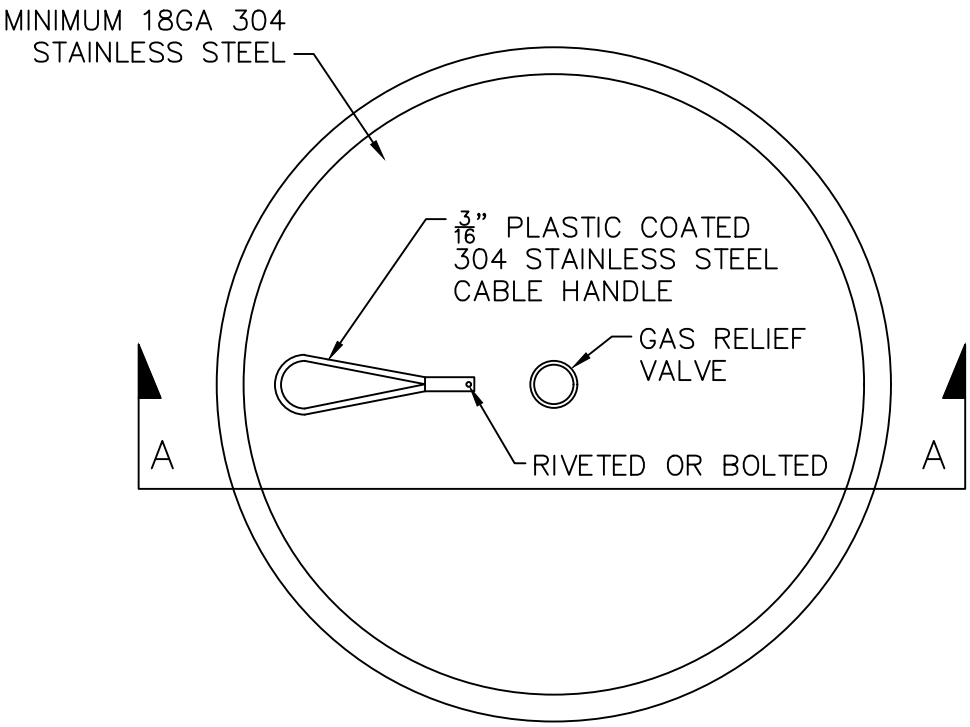
6. MANHOLES TO BE LOWERED MAY BE LOWERED BY REMOVING EXISTING ADJUSTMENT RINGS. IF ADJUSTMENT RINGS ARE NOT PRESENT BETWEEN THE FRAME AND THE CONE SECTION, OR IF THEIR REMOVAL PROVIDES INSUFFICIENT ADJUSTMENT, CONTACT THE HRSD ENGINEER.

NOT TO SCALE

HRSD	STANDARD PRECAST CONCRETE	DRAWING NO. 208
		SHEET 1 OF 1
	PRECAST CONCRETE MANHOLE ADJUSTMENT	DATE 7/2026



SECTION A-A

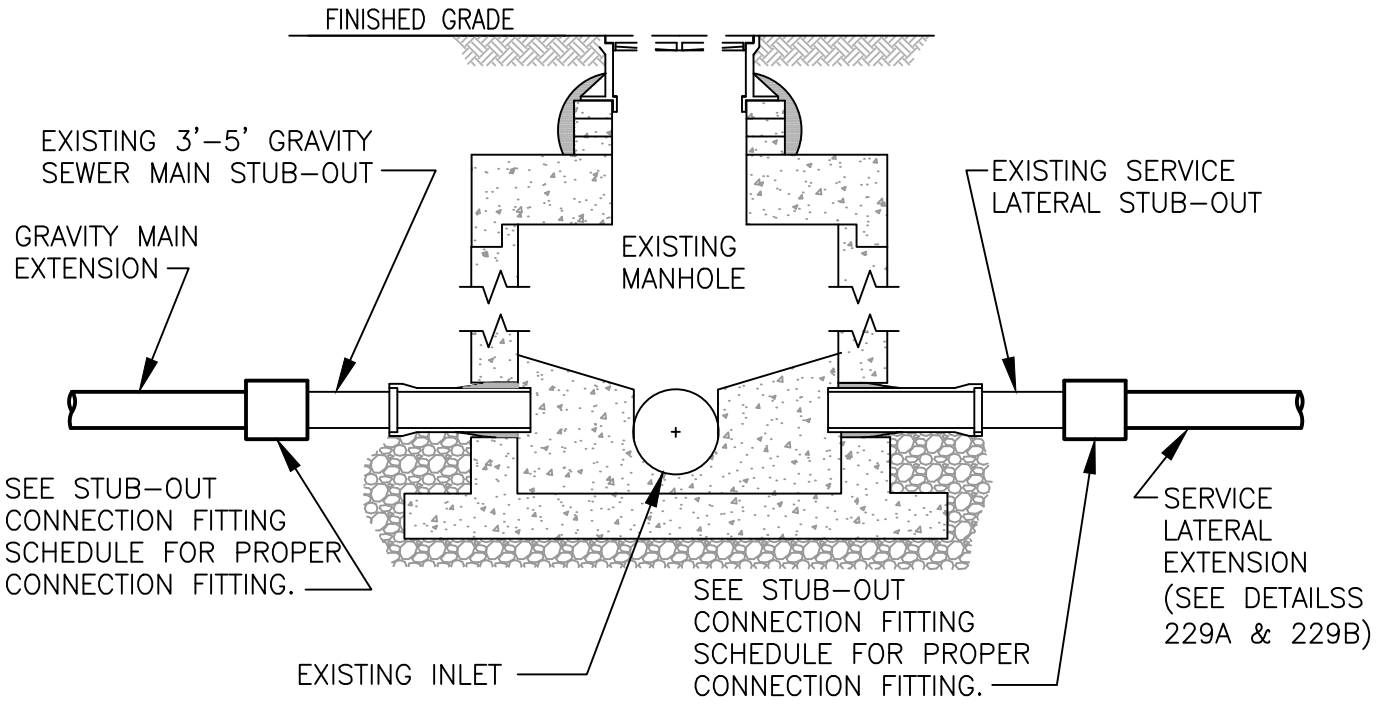


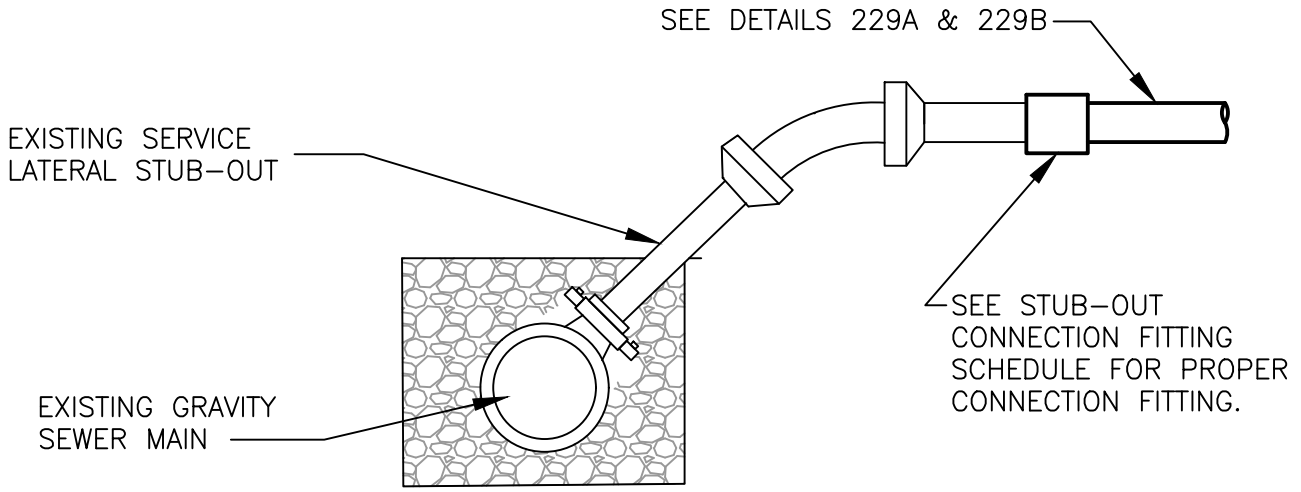
NOTES:

1. ACTUAL DIMENSIONS MUST BE COMPATIBLE WITH MANHOLE CASTING DIMENSIONS.
2. DUST COVER NOT REQUIRED WHEN USING MANHOLE INSERT.
3. GAS RELIEF VALVE SHALL BE CAPABLE OF RELEASING GAS AT A PRESSURE OF 0.5 TO 1.5 PSI AND HAVE A WATER LEAK DOWN RATE NO GREATER THAN 5 GALLONS/24 HOURS.
4. LOAD TEST STRENGTH MUST EXCEED 3,000 POUNDS.
5. HANDLE MUST BE CAPABLE OF WITHSTANDING A MINIMUM 500 POUND PULL FORCE.

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 209
		SHEET 1 OF 1
	MANHOLE INSERT	DATE 7/2026





CROSS SECTION

STUB–OUT CONNECTION FITTING SCHEDULE	
STUB–OUT MATERIAL	FITTING
PVC	PVC COUPLING
DI/CI	JCM 201
VITRIFIED CLAY	FERNCO 102 SERIES

NOTE:

1. CONTRACTOR SHALL FIELD VERIFY ALL PIPE MATERIAL AND SIZES PRIOR TO PROCURING MATERIAL

NOT TO SCALE

HRSD

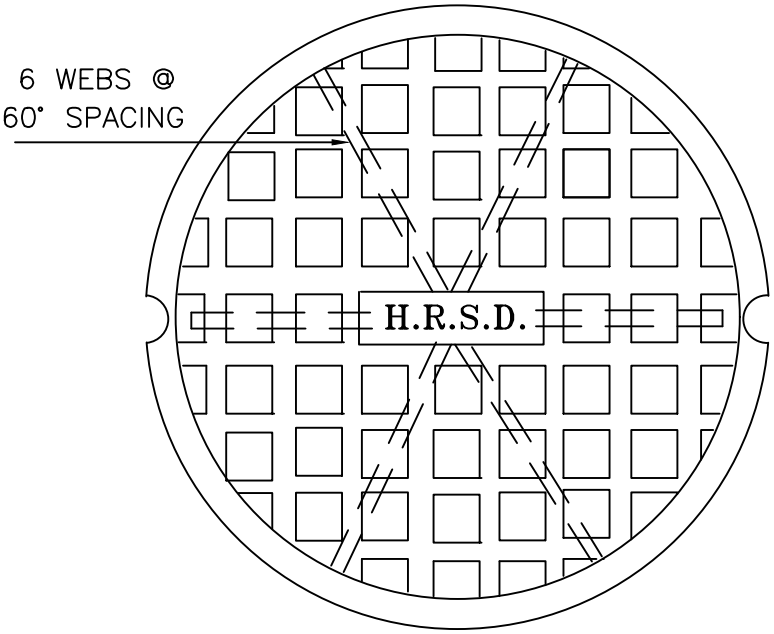
STANDARD DESIGN DETAIL

SERVICE LATERAL & GRAVITY MAIN CONNECTION TO EXISTING STUB–OUT

DRAWING NO. 226

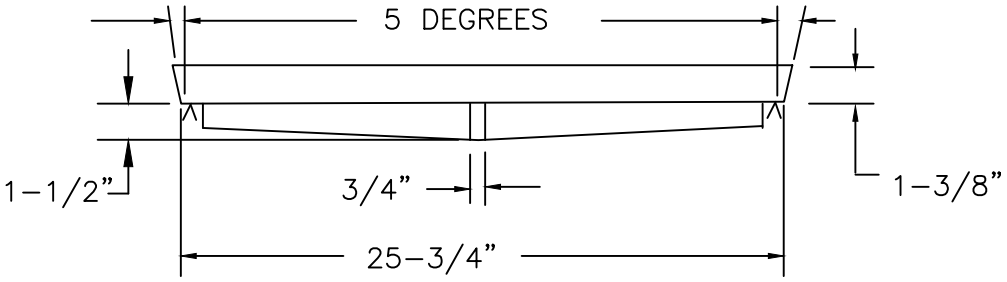
SHEET 1 OF 1

DATE 7/2026

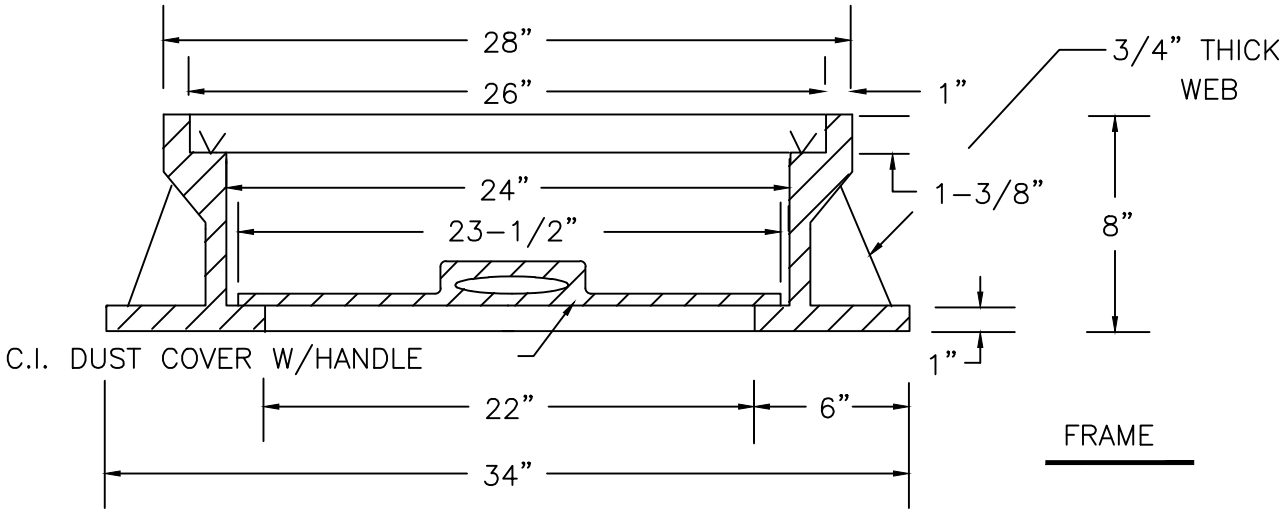


NOTES:

1. CASTINGS TO BE SHOT BLASTED
2. CASTING TO BE ASTM A–48 CLASS 30
3. TOLERANCE ±.125"
4. MACHINE SEATING SURFACE ON BOTH FRAME & COVER
5. 0.375" MIN. THICKNESS OF DUST COVER
6. MINIMUM WEIGHTS:
   COVER–165 LBS.
   FRAME–303 LBS.
7. SEE MASTER SPEC SECTION 01340 FOR AMERICAN IRON AND STEEL REQUIREMENT.



COVER

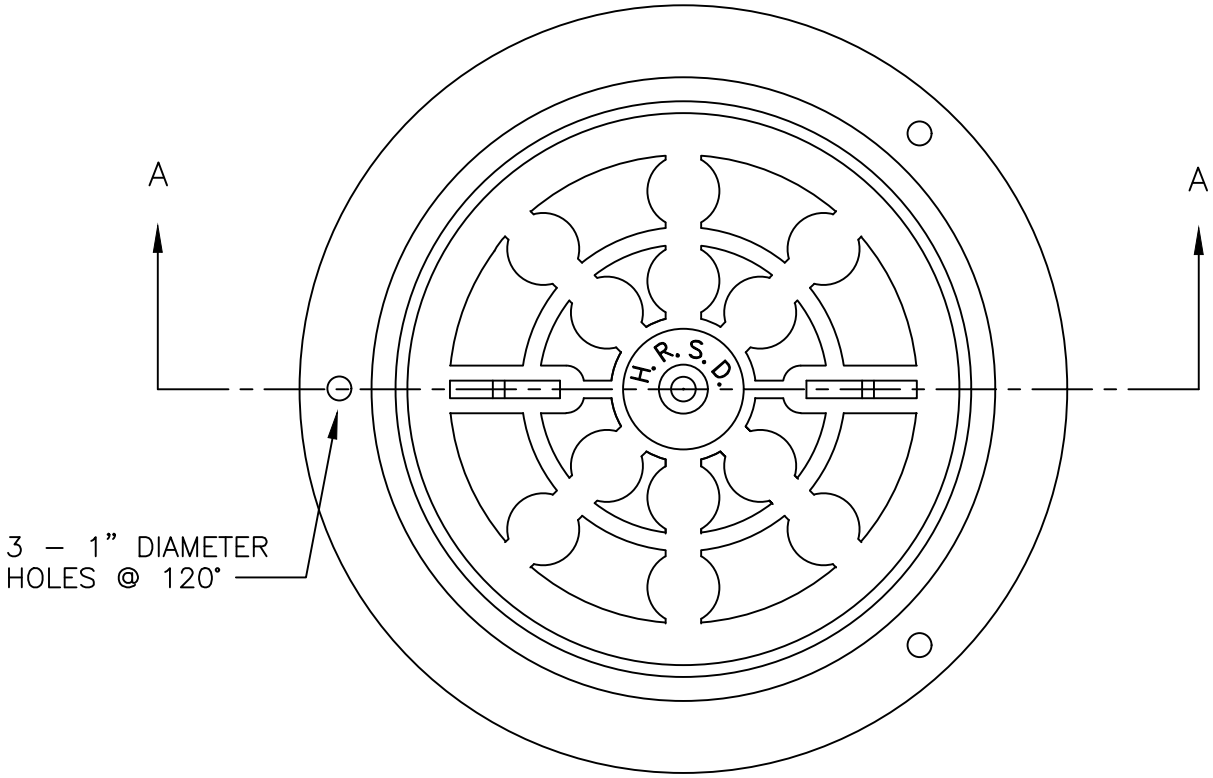


FRAME

* USE WHERE 24" WATERTIGHT M.H. MAY NOT BE APPLICABLE.

NOT TO SCALE

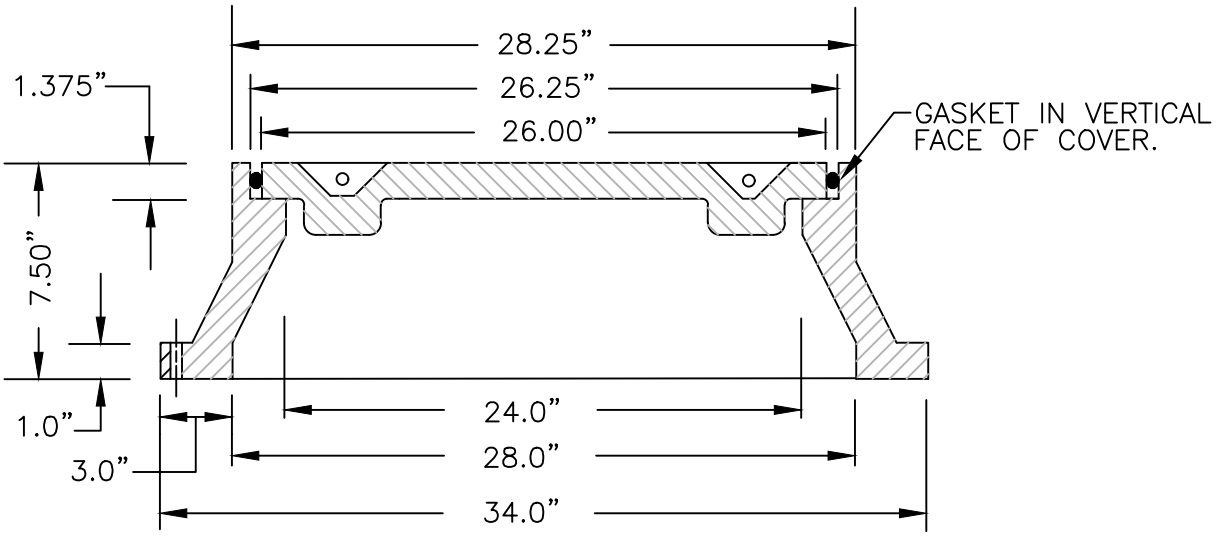
HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 227
		SHEET 1 OF 1
	STANDARD MANHOLE FRAME AND COVER	DATE 7/2026



PLAN

NOTES

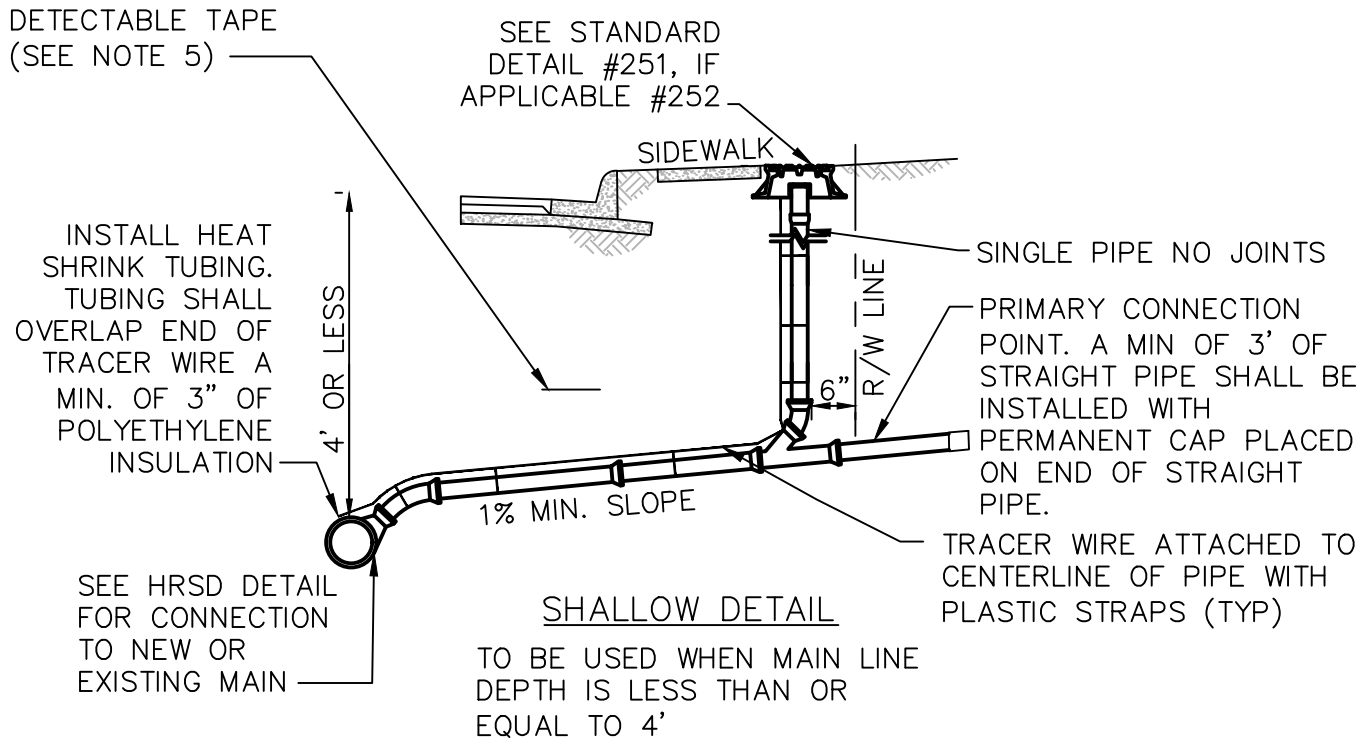
1. CASTINGS TO BE SHOT BLASTED.
2. CASTINGS SHALL MEET OR EXCEED ASTM A–48–76 CLASS 30–B.
3. TOLERANCE ±0.125".
4. MACHINE SEATING SURFACE ON BOTH FRAME & COVER.
5. FRAME & COVER TO BE DEWEY BROS. INC. MH–RCR–3000W (WATERTIGHT) OR EQUAL.
6. MINIMUM WEIGHTS:
   COVER–170 LBS.
   FRAME–262 LBS.
7. SEE MASTER SPEC SECTION 01340 FOR AMERICAN IRON AND STEEL REQUIREMENT.



SECTION A–A

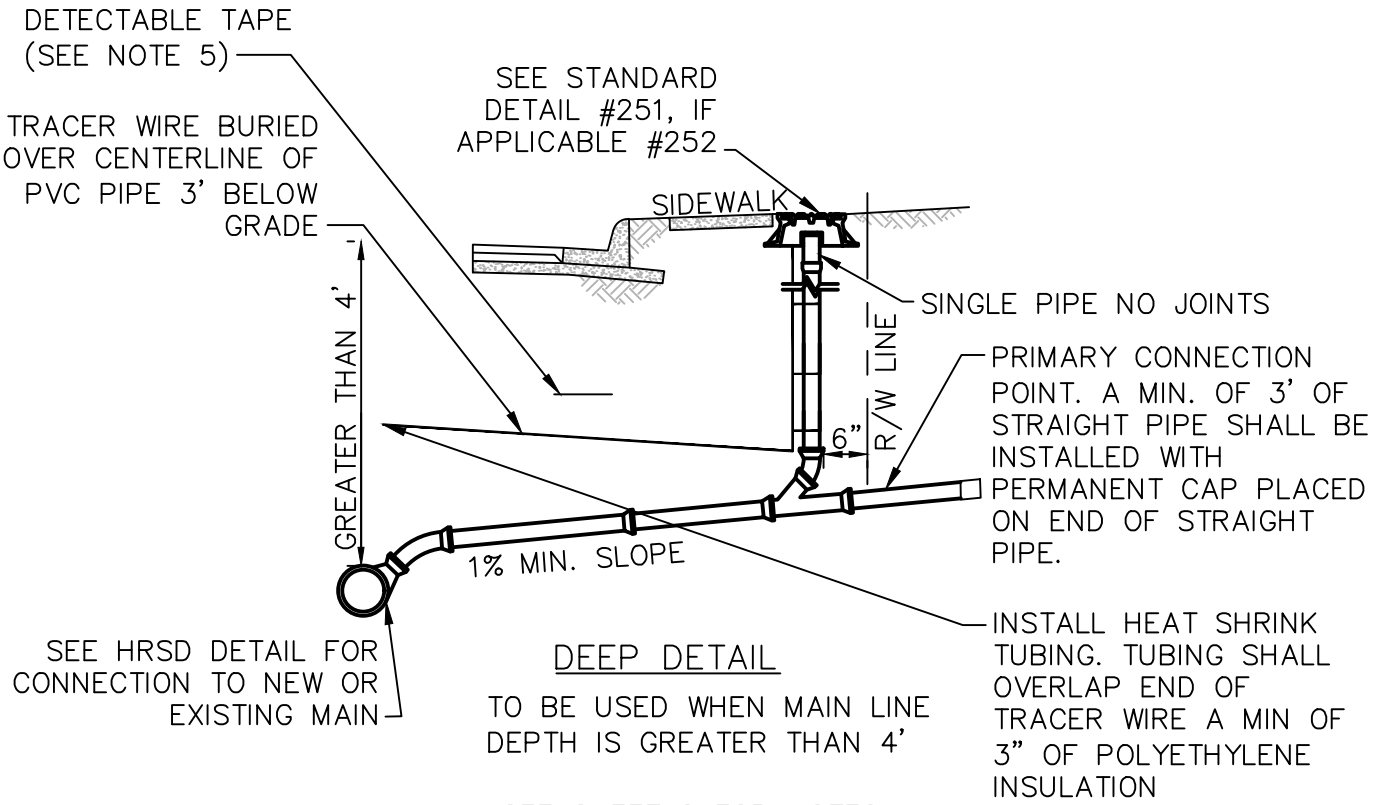
NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 228
		SHEET 1 OF 1
	WATERTIGHT MANHOLE FRAME AND COVER	DATE 7/2026



SHALLOW DETAIL

TO BE USED WHEN MAIN LINE DEPTH IS LESS THAN OR EQUAL TO 4'



DEEP DETAIL

TO BE USED WHEN MAIN LINE DEPTH IS GREATER THAN 4'

*SEE SHEET 2 FOR NOTES

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 229A
		SHEET 1 OF 2
	SANITARY SERVICE LATERAL INSTALLATION	DATE 7/2026

NOTES:

1. TYPICAL LATERAL LAYOUT:
   1.1. SHALL ONLY UTILIZE THE PRIMARY CONNECTION POINT WHEN TYING TO AN EXISTING LATERAL.
   1.2. THE CONNECTION POINT TO THE PRIVATE LATERAL AND TO THE SANITARY SERVICE LATERAL CLEANOUT SHALL BE MADE WITH SOLID SLEEVES.
   1.3. FERNCO COUPLINGS OR EQUIVALENTS ARE NOT PERMITTED ON THE LATERAL CONNECTION OR AT THE CONNECTION POINT TO THE PRIVATE LATERAL, UNLESS THE PRIVATE LATERAL IS VCP (VITRIFIED CLAY PIPE). CONNECTIONS WILL NOT BE ALLOWED IF THE PRIVATE LATERAL PIPE MATERIAL IS ORANGEBURG PIPE (BITUMINIZED FIBER SEWER PIPE).
   1.4. RC STRONG BACK FERNCO COUPLINGS SHALL BE ENCASED IN CONCRETE AND SHALL ONLY BE ALLOWED ON VITRIFIED CLAY PIPE (VCP). CONCRETE SHALL BE DIRT FORMED IN A 6" BOX TO ENCOMPASS THE ENTIRE FITTING.
   1.5. CLEANOUT RISER ASSEMBLY AND FITTING SHALL BE SAME MATERIAL AS THE SEWER LATERAL

2. CLEANOUT RISER ASSEMBLY, LATERAL CLEANOUT AND TRACER WIRE SHALL BE INSTALLED PRIOR TO FINAL INSPECTION/ACCEPTANCE. LOCATION OF WYE AND CLEANOUT MAY BE VARIED BY HRSD STAFF IF NECESSARY DUE TO UNUSUAL DEPTH OR CONDITIONS. MINIMUM COVER OF 3.0 FEET REQUIRED FOR SERVICE.

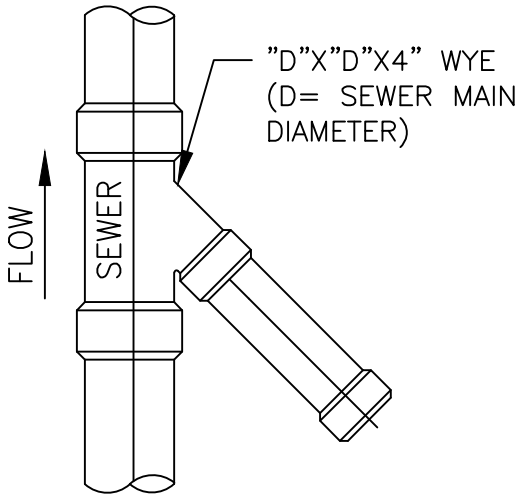
3. LATERAL MATERIAL SHALL BE POLYVINYLCHLORIDE (P.V.C.). ASTM D–3034 SDR 26, AWWA C900–CLASS 150 (DR–18) OR ASTM D–1785 SCHEDULE 40. FOR DEPTHS LESS THAN 2' OR GREATER THAN 10' CONTACT HRSD FOR PIPE MATERIAL.

4. TRACER WIRE SHALL BE AWG 10 SOLID COPPER WIRE WITH POLYETHYLENE INSULATION. THE TRACER WIRE SHALL BE ATTACHED TO THE LATERAL PIPE WHEN THE DEPTH IN NO GREATER THAN 4.0 FEET. THE WIRE SHALL BE BURIED OVER THE CENTERLINE OF THE LATERAL PIPE AT 3.0 FEET BELOW GRADE WHEN THE LATERAL DEPTH IS GREATER THAN 4.0 FEET.

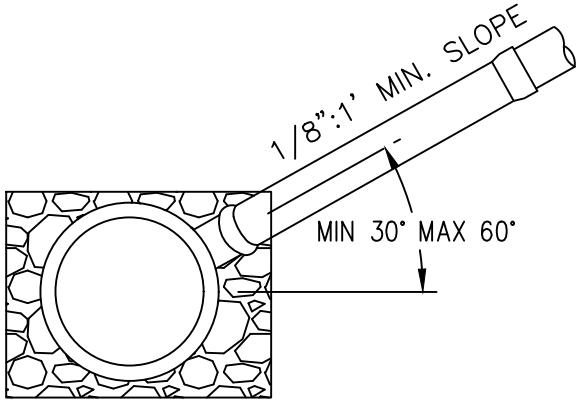
5. INSTALL DETECTABLE WARNING TAPE CONTINUOUSLY FROM THE MAIN TO THE HRSD CLEANOUT 1' ABOVE TOP OF TRACER WIRE. TAPE SHALL BE GREEN IN COLOR AND STATE " CAUTION BURIED SEWER LINE BELOW"

6. CONTRACTOR SHALL UTILIZE NO MORE THAN FOUR (4) FITTINGS FROM THE HRSD CONNECTION POINT TO THE HRSD CLEANOUT.

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 229B
		SHEET 2 OF 2
	SANITARY SERVICE LATERAL INSTALLATION	DATE 7/2026



PLAN



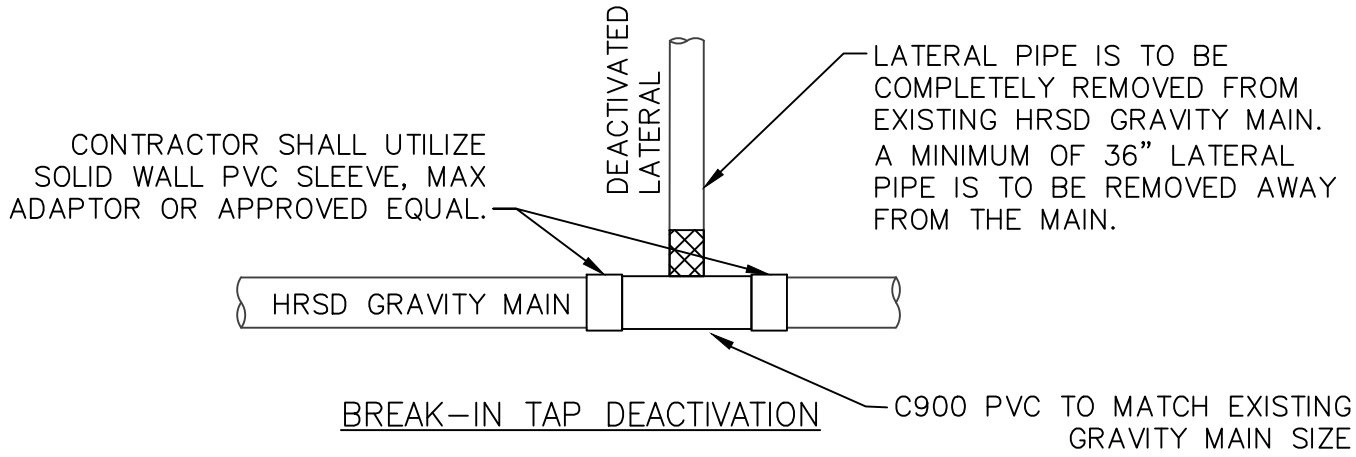
SECTION VIEW

NOTES:

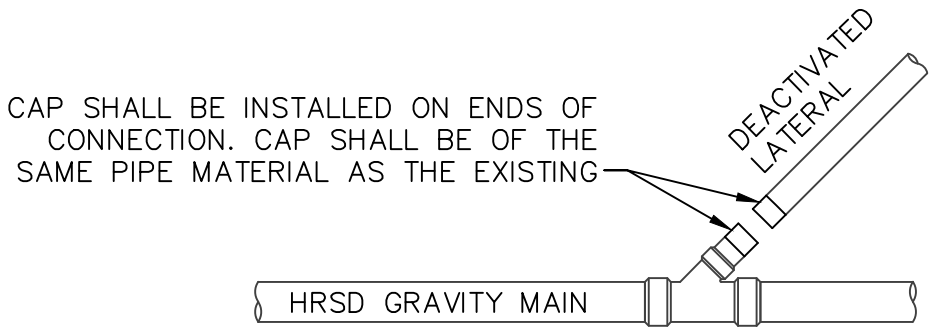
1. PROVIDE A CAPPED EXTENSION TO PROPERTY LINE PER HRSD REQUIREMENTS IF SEWER SERVICE WILL NOT BE ACTIVATED AT THE TIME OF CONSTRUCTION.
2. CLEAN OUT SHALL BE INSTALLED AT THE ROW OR HRSD EASEMENT/PROPERTY LINE, UNLESS OTHERWISE STATED.
3. CONTRACTOR SHALL USE NO MORE THAN FOUR (4) FITTINGS. BENDS SHALL HAVE A MAX ANGEL OF 60° AND A MINIMUM OF 30° ALL BENDS SHALL BE LONG RADIUS.
4. WYE CONNECTION SHALL BE PLACED BETWEEN THE 1:30–3 O'CLOCK OR 9 TO 10:30 O'CLOCK POSITION ON THE GRAVITY MAIN.
5. THIS DETAIL SHALL BE USED IN CONJUCTION WITH STANDARD DETAILS 229A & 229B AND DETAILS 251 & 252.
6. PIPING BEDDING SHALL BE TYPE IV BEDDING REFERANCE HRPDC DETAIL EW_01.

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 230
	SANITARY SEWER SERVICE CONNECTION FOR NEW OR EXISTING GRAVITY MAIN	SHEET 1 OF 1
		DATE 7/2026



BREAK–IN TAP DEACTIVATION



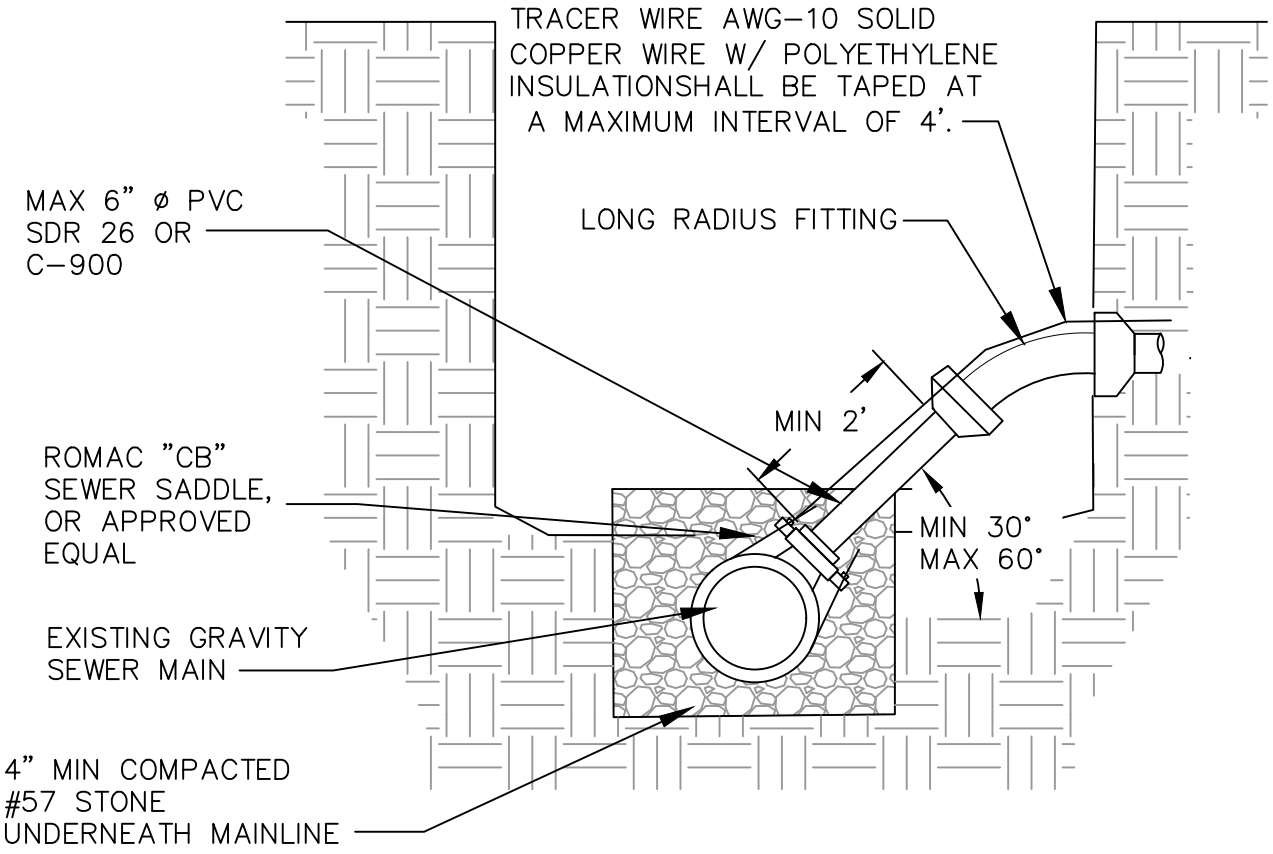
WYE OR TEE DEACTIVATION

NOTES:

1. DEACTIVATED LATERAL SHALL BE REMOVED TO THE GRAVITY MAIN AND CAPPED ON BOTH ENDS.

NOT TO SCALE

HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 231
		SHEET 1 OF 1
	SANITARY SERVICE LATERAL DEACTIVATION	DATE 7/2026



NOTES:

1. MIN OF 2' OF STRAIGHT PIPE FROM CONNECTION IS REQUIRED BEFORE INSTALLING ANY FITTING.
2. 4" SADDLE SHALL BE COMPLETELY ENCOMPASSED WITH COMPACTED #57 STONE.
3. TERMINATION OF TRACER WIRE SHALL BE AT THE BOLTS OF ROMAC FITTING. EXPOSED BARE COPPER SHALL BE WRAPPED AROUND THE BOLTS.
4. THIS DETAIL SHALL BE USED ON A CASE BY CASE BASIS, AND CONTINGENT UPON HRSD APPROVAL.

NOT TO SCALE

HRSD

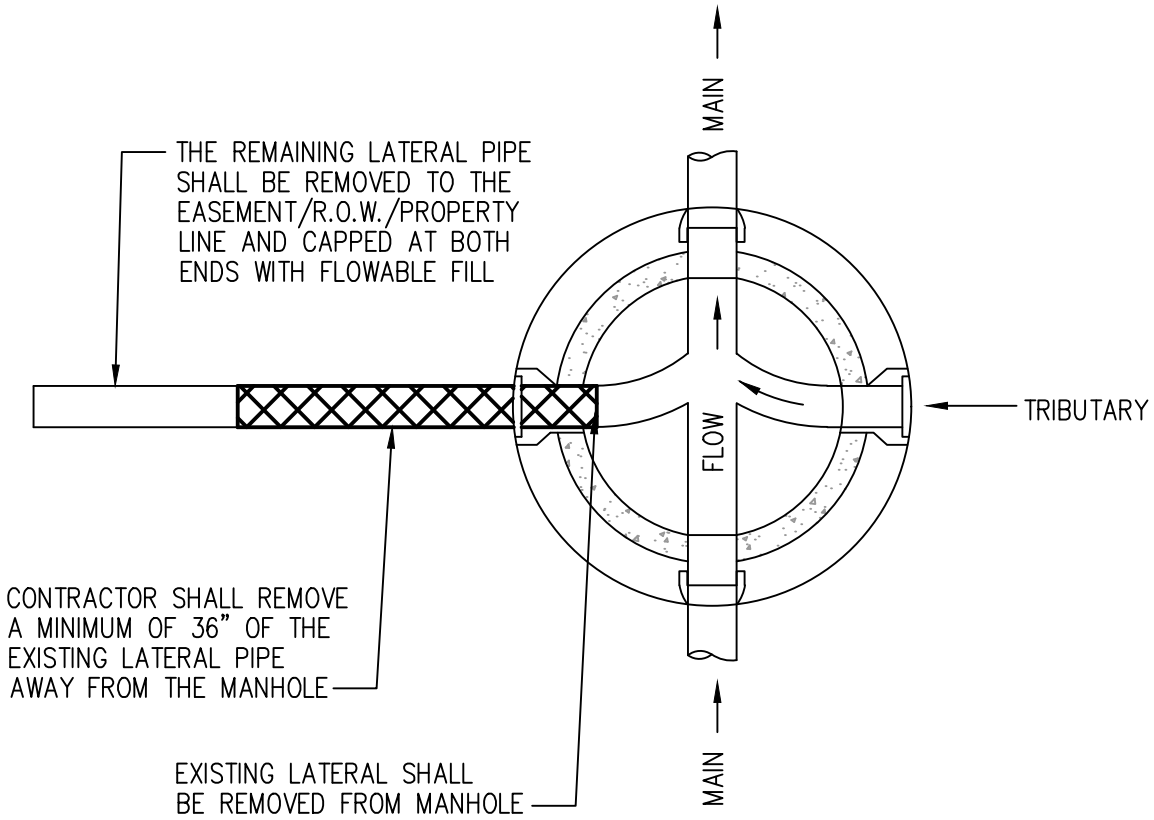
STANDARD DESIGN DETAIL

ALTERNATIVE SERVICE LATERAL CONNECTION TO EXISTING GRAVITY SEWER MAIN

DRAWING NO. 232

SHEET 1 OF 1

DATE 7/2026



NOTES:

1. VOID (CREATED FROM THE REMOVED LATERAL) SHALL BE FILLED WITH CONCRETE THAT HAS CONSHIELD ADDITIVE.

2. THE EXTERIOR SURFACE SHALL BE PARGED WITH NON-SHRINK HIGH STRENGTH GROUT.

NOT TO SCALE

HRSD

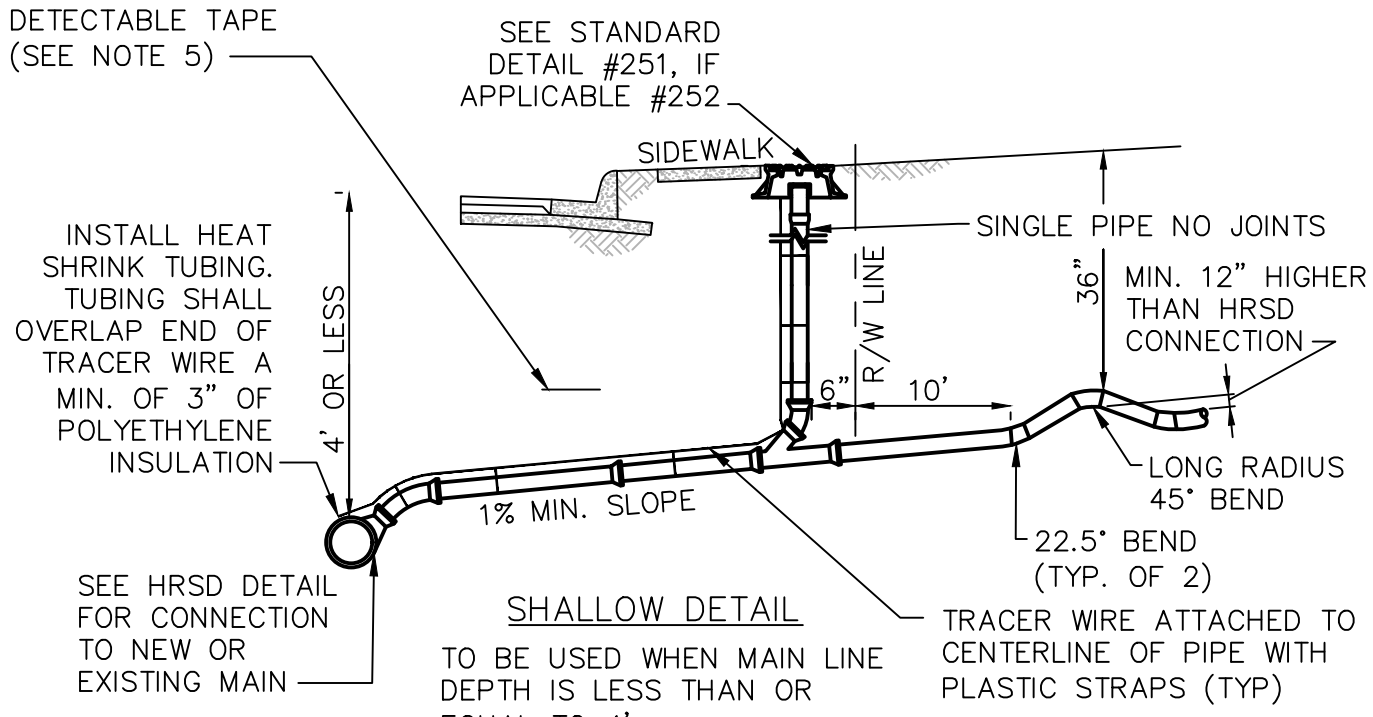
STANDARD DESIGN DETAIL

HRSD MANHOLE PERMANENT SERVICE LATERAL DEACTIVATION

DRAWING NO. 233

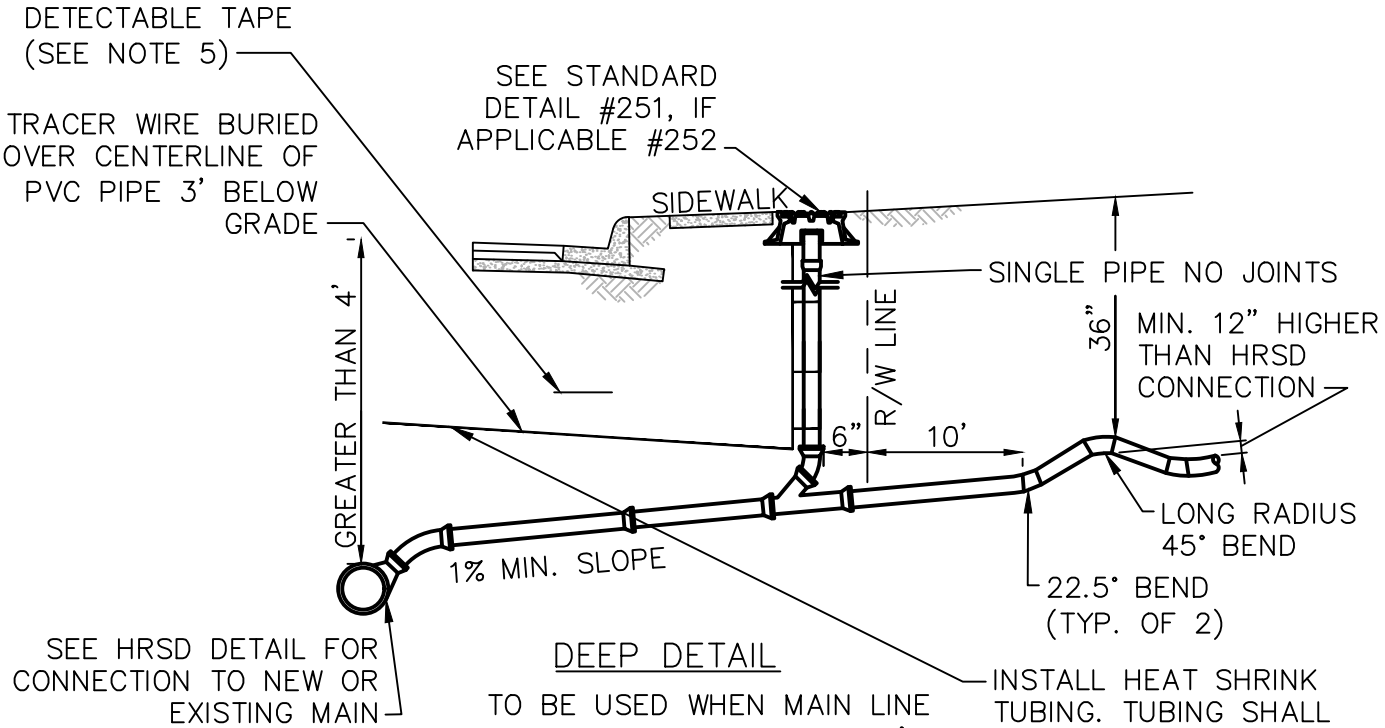
SHEET 1 OF 1

DATE 7/2026



SHALLOW DETAIL

TO BE USED WHEN MAIN LINE DEPTH IS LESS THAN OR EQUAL TO 4'



DEEP DETAIL

TO BE USED WHEN MAIN LINE DEPTH IS GREATER THAN 4'

*SEE SHEET 2 FOR NOTES

NOT TO SCALE

HRSD

STANDARD DESIGN DETAIL

PRIVATE FORCE MAIN TO HRSD GRAVITY MAIN CONNECTION

DRAWING NO. 234A

SHEET 1 OF 2

DATE 7/2026

NOTES:

1. TYPICAL LATERAL LAYOUT:
   1.1. SHALL ONLY UTILIZE THE PRIMARY CONNECTION POINT WHEN TYING TO AN EXISTING LATERAL.
   1.2. THE CONNECTION POINT TO THE PRIVATE LATERAL AND TO THE SANITARY SERVICE LATERAL CLEANOUT SHALL BE MADE WITH SOLID SLEEVES.
   1.3. FERNCO COUPLINGS OR EQUIVALENTS ARE NOT PERMITTED ON THE LATERAL CONNECTION.
   1.4. CLEANOUT RISER ASSEMBLY AND FITTING SHALL BE SAME MATERIAL AS THE SEWER LATERAL.

2. CLEANOUT RISER ASSEMBLY, LATERAL CLEANOUT AND TRACER WIRE SHALL BE INSTALLED PRIOR TO FINAL INSPECTION/ACCEPTANCE. LOCATION OF WYE AND CLEANOUT MAY BE VARIED BY HRSD STAFF IF NECESSARY DUE TO UNUSUAL DEPTH OR CONDITIONS. MINIMUM COVER OF 3.0 FEET REQUIRED FOR SERVICE.

3. LATERAL MATERIAL SHALL BE POLYVINYLCHLORIDE (P.V.C.). ASTM D-3034 SDR 26, AWWA C900-CLASS 150 (DR-18) OR ASTM D-1785 SCHEDULE 40. FOR DEPTHS LESS THAN 2' OR GREATER THAN 10' CONTACT HRSD FOR PIPE MATERIAL.

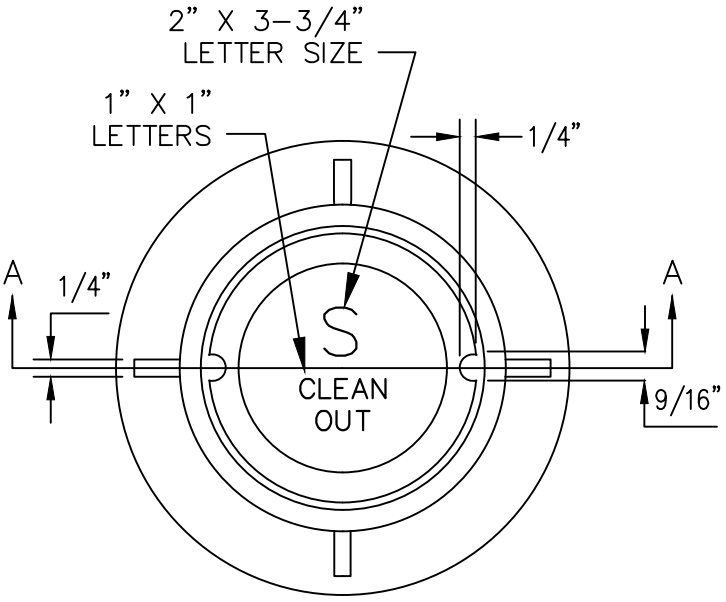
4. TRACER WIRE SHALL BE AWG 10 SOLID COPPER WIRE WITH POLYETHYLENE INSULATION. THE TRACER WIRE SHALL BE ATTACHED TO THE LATERAL PIPE WHEN THE DEPTH IN NO GREATER THAN 4.0 FEET. THE WIRE SHALL BE BURIED OVER THE CENTERLINE OF THE LATERAL PIPE AT 3.0 FEET BELOW GRADE WHEN THE LATERAL DEPTH IS GREATER THAN 4.0 FEET.

5. INSTALL DETECTABLE WARNING TAPE CONTINUOUSLY FROM THE MAIN TO THE HRSD CLEANOUT 1' ABOVE TOP OF TRACER WIRE. TAPE SHALL BE GREEN IN COLOR AND STATE " CAUTION BURIED SEWER LINE BELOW"

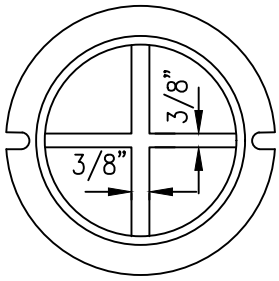
6. CONTRACTOR SHALL UTILIZE NO MORE THAN FOUR (4) FITTINGS FROM THE HRSD CONNECTION POINT TO THE HRSD CLEANOUT.

7. SAXOPHONE CONNECTION TO PRIVATE FORCE MAIN SHALL OCCUR ON PRIVATE PROPERTY AT 10' FROM HRSD CONNECTION AND SHALL BE PART OF THE PRIVATE FORCE MAIN INSTALLATION.

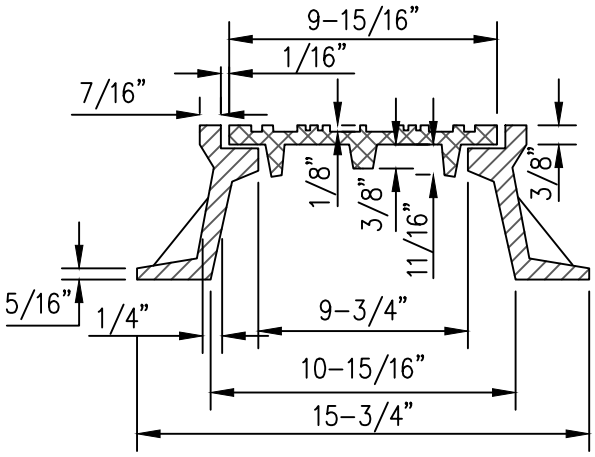
HRSD	STANDARD DESIGN DETAIL	DRAWING NO. 234B
		SHEET 2 OF 2
	PRIVATE FORCE MAIN TO HRSD GRAVITY MAIN CONNECTION	DATE 7/2026



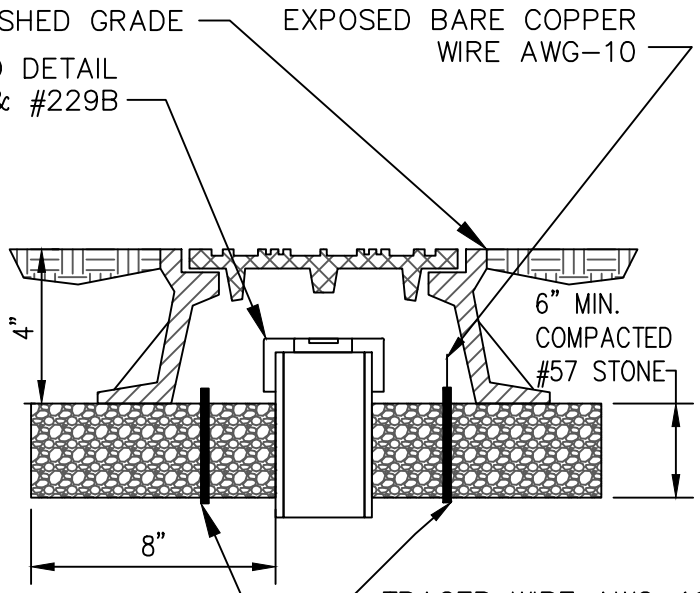
PLAN



BOTTOM



SECTION A-A



NOTES:

1. CLEAN OUT FRAME & COVER TO BE PART NUMBER NPN-CW-18 SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30
3. AND SHALL BE OF UNIFORM QUALITY.
4. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±
5. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD
6. INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.
7. THE TRACER WIRE POLYETHYLENE INSULATION SHALL ONLY FROM THE LAST INCH. TRACER WIRE SHALL HAVE A SURPLUS OF 2' OF WIRE CONNECTED INSIDE OF CASTING.
8. SEE MASTER SPEC SECTION 01340 FOR AMERICAN IRON AND STEEL REQUIREMENT.

NOT TO SCALE

HRSD

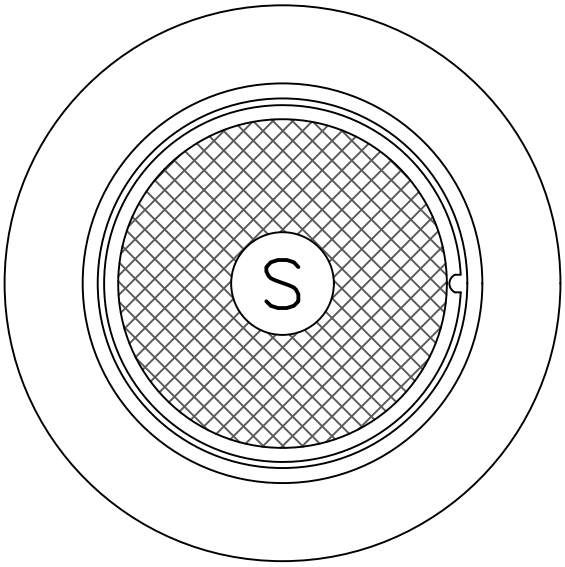
STANDARD DESIGN DETAIL

SANITARY SEWER SERVICE CLEAN OUT FRAME AND COVER (NON-TRAFFIC RATED)

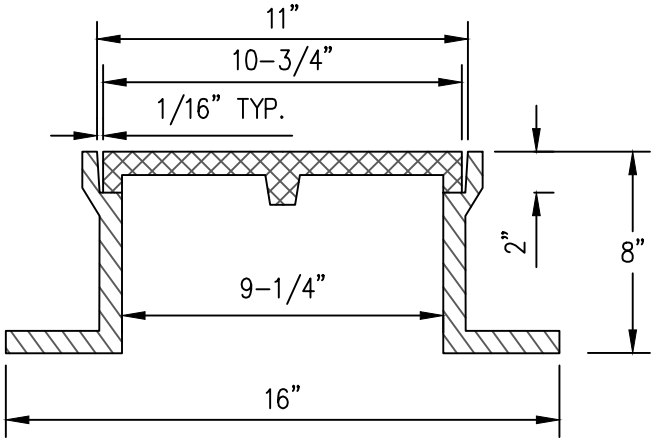
DRAWING NO. 251

SHEET 1 OF 1

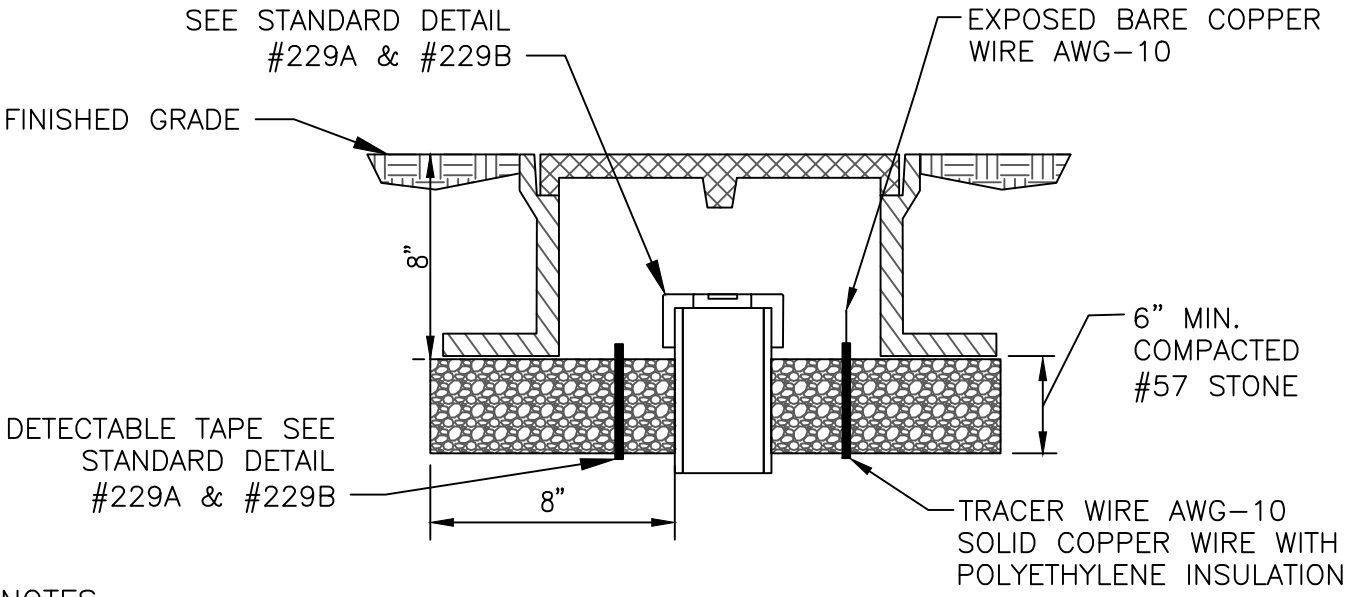
DATE 7/2026



PLAN



SECTION A-A



NOTES:

1. CLEAN OUT FRAME & COVER HIGHWAY LOAD RATED FOR USE IN DRIVEWAYS, PARKING LOTS, ETC.
2. CLEAN OUT FRAME & COVER TO BE PART NUMBER VB-9*S SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL.
3. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
4. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF 1/8"±
5. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.
6. SEE MASTER SPEC SECTION 01340 FOR AMERICAN IRON AND STEEL REQUIREMENT.

NOT TO SCALE

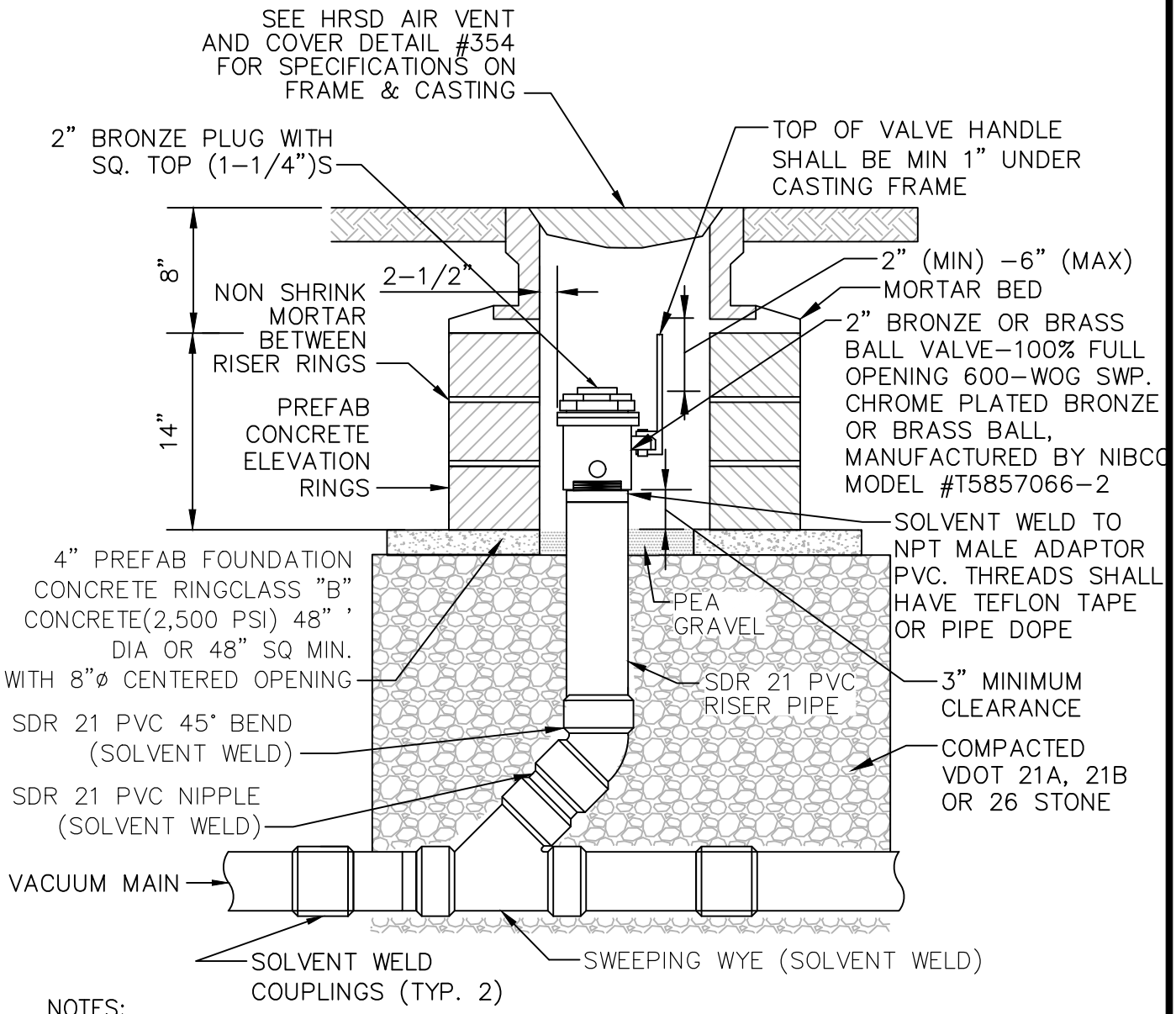
HRSD

STANDARD DESIGN DETAIL

SANITARY SEWER SERVICE CLEAN OUT FRAME AND COVER (TRAFFIC RATED)

DRAWING NO.	252
SHEET	1 OF 1
DATE	7/2026

NOTE: HANDLE AS SHOWN IS VALVE INSTALLED IN OPEN POSITION



NOTES:

1. CONSTRUCT AIR INTAKE VALVE WITH CONCRETE ELEVATION RINGS AS MANUFACTURED BY NANSEMOND PRE-CAST CONCRETE CO, INC. MODEL AV-ER-CH AND AV-BS.
2. JACK UP RINGS BETWEEN THE FRAME AND COVER NOT ACCEPTABLE.
3. PARGE CONCRETE ELEVATION RINGS WITH GROUT INSIDE AND OUT, CONTINUE ONTO CASTING.
4. IF REDUCERS ARE REQUIRED THEY MUST BE INSTALLED ONTO SWEEPING WYE
5. SOLVENT WELD PVC COUPLING SHALL BE USED TO CONNECT SWEEPING WYE TO EXISTING VACUUM MAIN
6. ACCEPTED WYES ARE 6"X6"X4", 6"X6"X2", AND 4"X4"X2"
7. WYE SHALL MATCH VACUUM MAIN DIAMETER
6. TEES WITH THE FOLLOWING DIMENSIONS CAN BE USED 6"X6"X2", AND 4"X4"X2"

NOT TO SCALE

HRSD

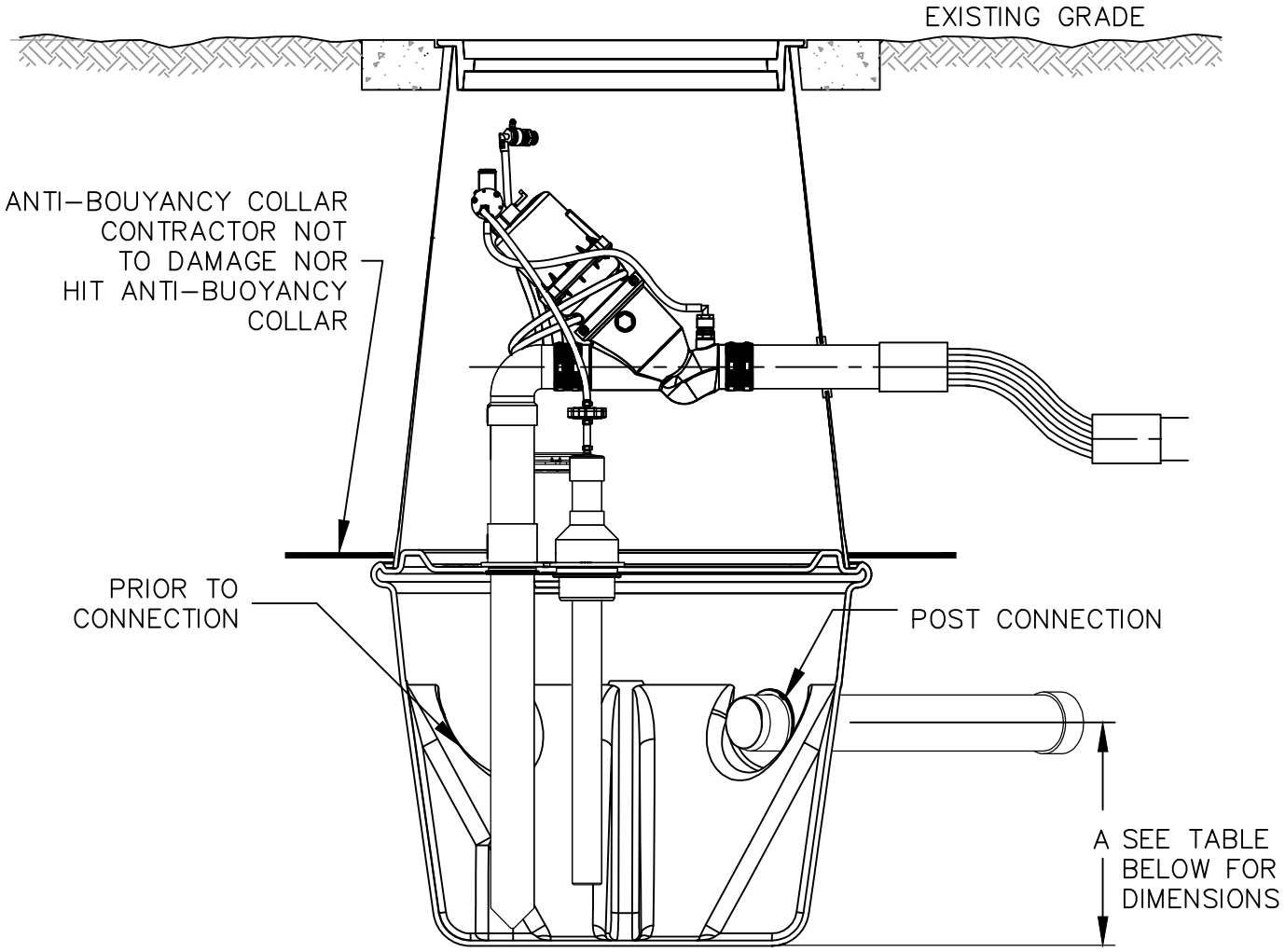
STANDARD DESIGN DETAIL

VACUUM AIR INTAKE VALVE

DRAWING NO. 276

SHEET 1 OF 1

DATE 7/2026



NOTES:

SEQUENCE FOR CONNECTION

1) CONTRACTOR WILL HAVE TO EXCAVATE TO THE BOTTOM THE EXISTING VALVE PIT
2) UTILIZING THE TABLE TO THE RIGHT MEASURE AND MARK THE CENTER OF A 5" CORE HOLE
3) CORE A 5" HOLE INTO THE SUMP AND INSTALL A 4" DOUBLE LIP SEAL RUBBER GROMMET WITH 4" SCH 40 PVC PIPE

*NOTE IF THE LATERAL IS 6" CORE WILL BE 7" AND CONTRACTOR WILL UTILIZE 6" DOUBLE LIP SEAL RUBBER GROMMET

	4" GRAVITY	6" GRAVITY
DIM "A"	1'–6"	1'–7"

NOT TO SCALE

HRSD

STANDARD DESIGN DETAIL

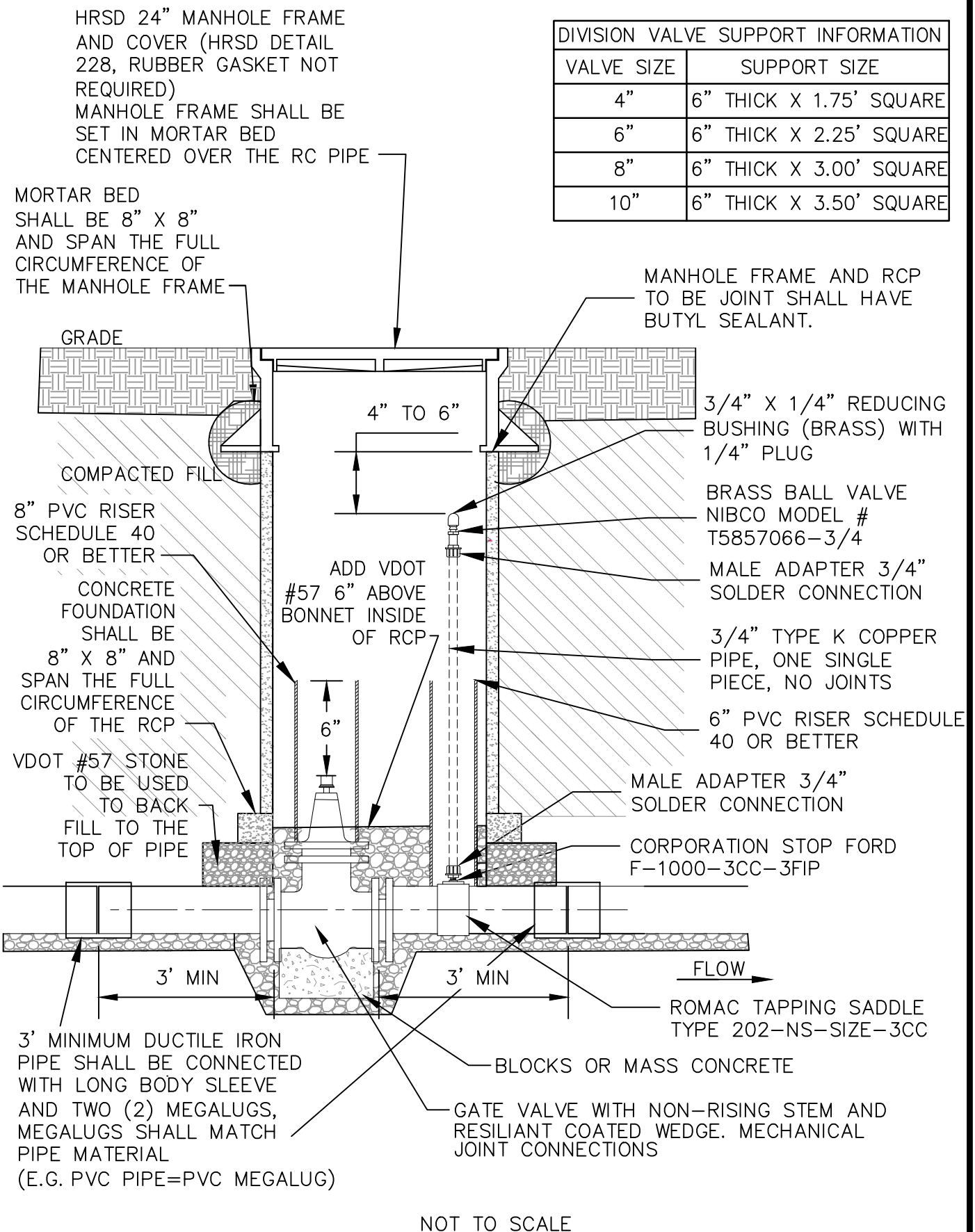
LATERAL CONNECTION TO EXISTING VACUUM VALVE PIT

DRAWING NO. 277

SHEET 1 OF 1

DATE 7/2026

DIVISION VALVE SUPPORT INFORMATION	
VALVE SIZE	SUPPORT SIZE
4"	6" THICK X 1.75' SQUARE
6"	6" THICK X 2.25' SQUARE
8"	6" THICK X 3.00' SQUARE
10"	6" THICK X 3.50' SQUARE



NOT TO SCALE

HRSD

STANDARD DESIGN DETAIL

VACUUM SYSTEM DIVISION VALVE

DRAWING NO. 278

SHEET 1 OF 1

DATE 7/2026