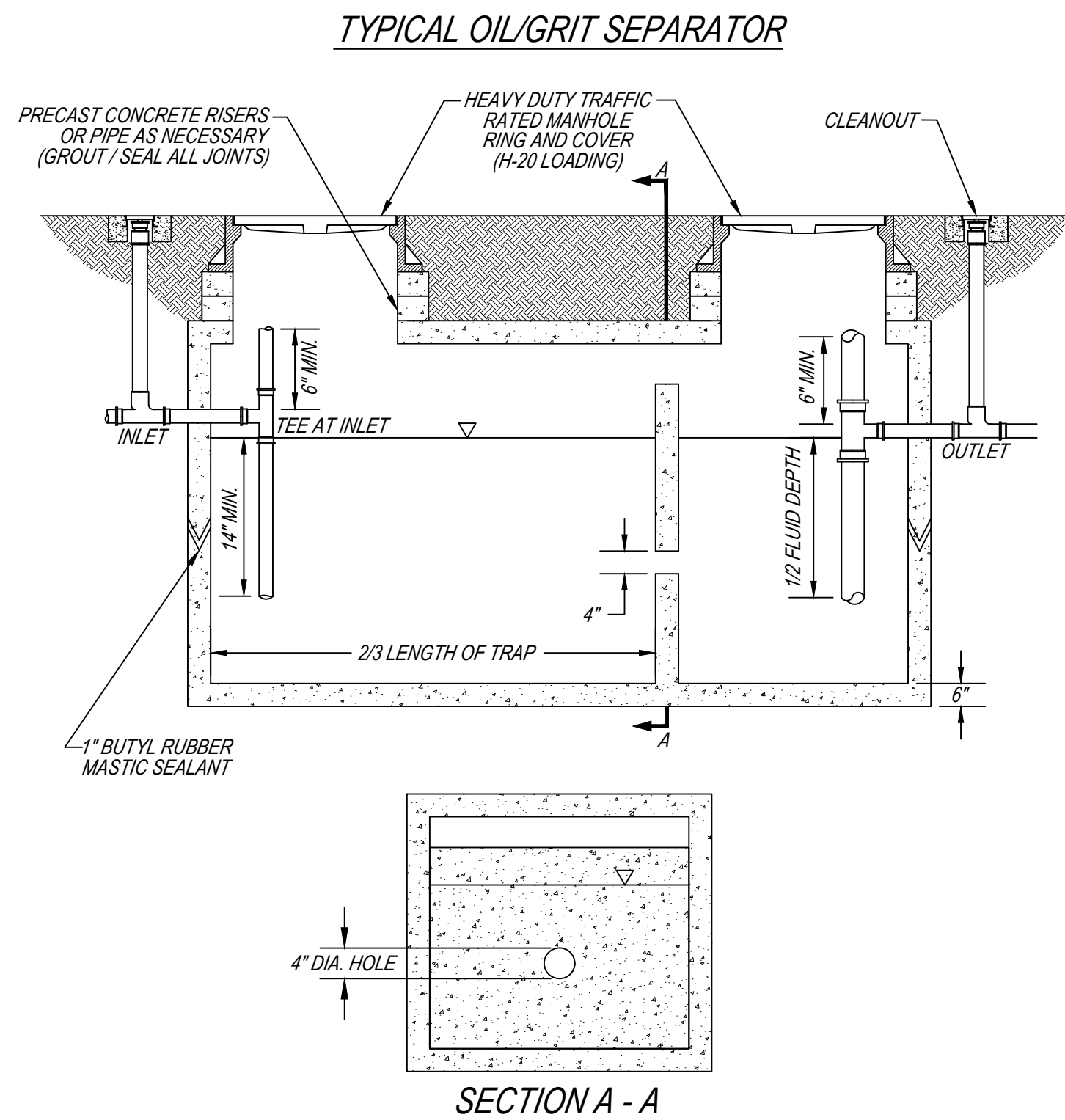


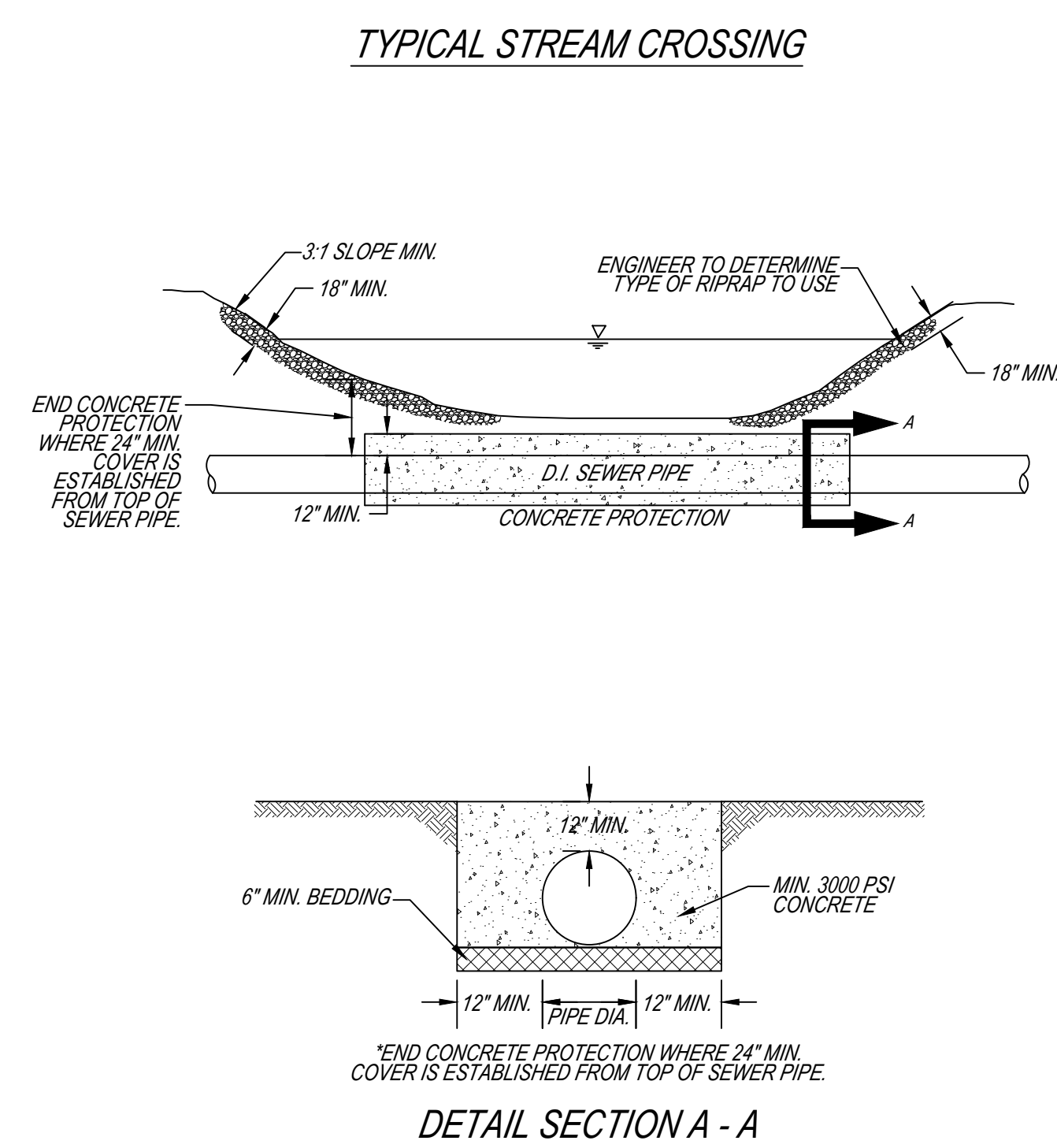
- NOTES:**
1. MANHOLE, RING AND COVERS SHALL NOT BE COVERED, OR OBSCURED BY LANDSCAPING, PAVEMENT, ETC.
 2. INLET AND OUTLET PIPES SHALL BE SCHEDULE 40 PVC, AND SHALL NOT BE COVERED OR CAPPED.
 3. INLET PIPE MUST BE A MINIMUM OF 4" IN DIAMETER. VERTICAL PIPE ON OUTLET SIDE MUST BE A MINIMUM OF 6" IN DIAMETER.
 4. TRAPS SHALL NOT BE LOCATED IN AN ENTRANCE, EXIT, DRIVE-THRU, OR UNDER A MENU BOARD.
 5. SIZE TO BE PER STANDARD SIZING WORKSHEET (MIN. 500 GALLONS).
 6. 2" DIAMETER VENTS TO BE CONNECTED TO BUILDING VENT SYSTEM (WHERE REQUIRED BY THE PLUMBING PLANS).
 7. GREASE TRAPS SHALL MEET STATE OF ALABAMA HEALTH REGULATIONS SECTION 420-3-1-23; 420-3-1-24; 420-3-1-25
 8. A DOWNSTREAM SAMPLING PORT OR MANHOLE WILL BE REQUIRED. NO OTHER CONNECTIONS ARE ALLOWED BETWEEN GREASE TRAP AND SAMPLING MANHOLE.
 9. RESTROOM AND NON GREASE LADEN WASTE SHALL NOT PASS THROUGH THE GREASE TRAP.

316



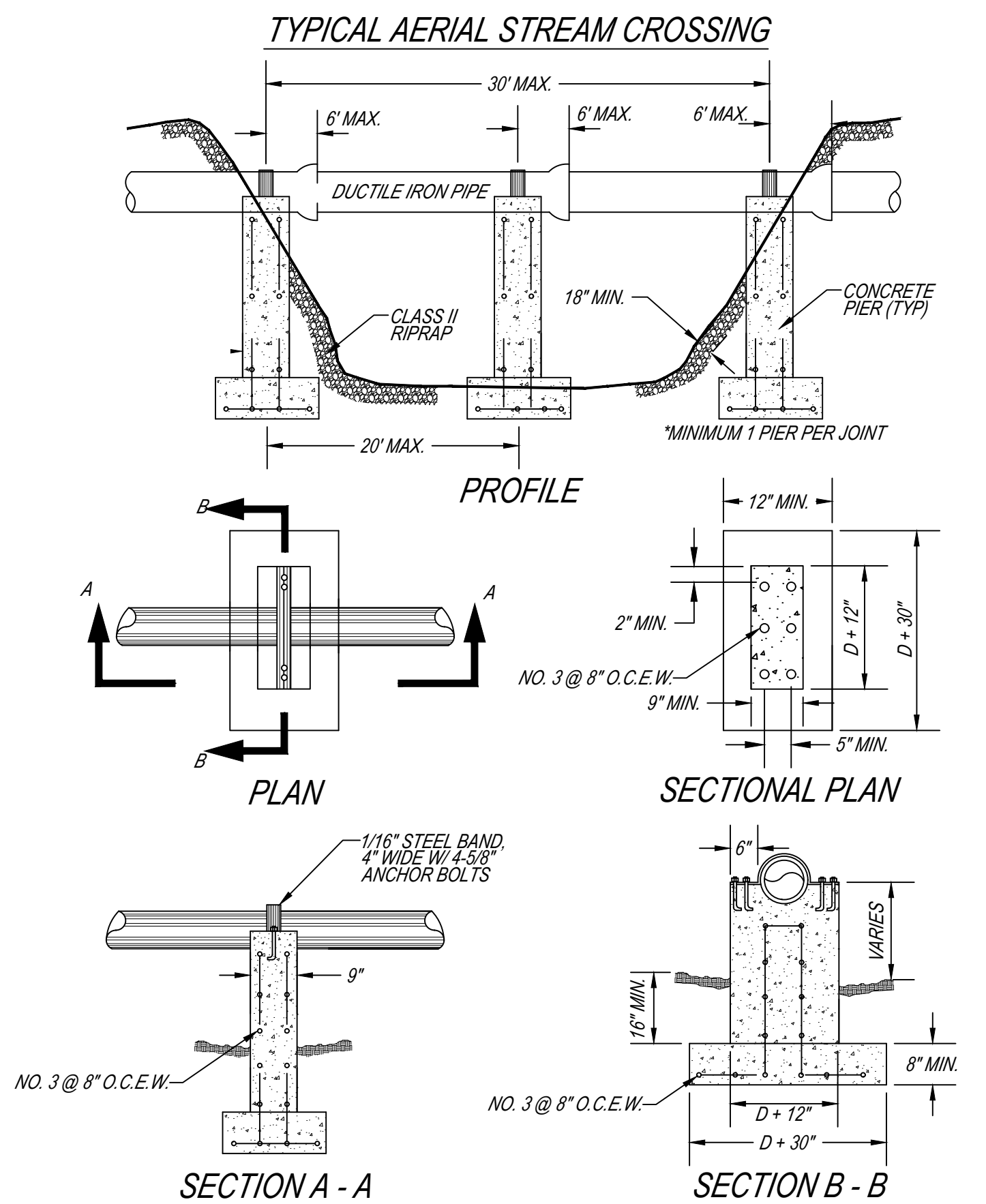
- NOTES:**
1. MANHOLE RING AND COVERS SHALL NOT BE COVERED, OR OBSCURED BY LANDSCAPING, PAVEMENT, ETC.
 2. INLET AND OUTLET PIPES SHALL BE SCHEDULE 40 PVC, AND SHALL NOT BE COVERED OR CAPPED.
 3. INLET PIPE MUST BE A MINIMUM OF 4" IN DIAMETER. VERTICAL PIPE ON OUTLET SIDE MUST BE A MINIMUM OF 6" IN DIAMETER.
 4. SEPARATOR SHALL NOT BE LOCATED IN AN ENTRANCE, EXIT, DRIVE-THRU, OR UNDER A MENU BOARD.
 5. MINIMUM SIZE: 1000 GALLONS.

318



- NOTES:**
1. ALL CREEK CROSSINGS SHALL BE DUCTILE IRON, PRESSURE CLASS 350 PIPE.
 2. PIPE SHALL HAVE LOCKING GASKETS OR RESTRAINED JOINTS WHERE LOCATED INSIDE STREAM BANKS.
 3. END CONCRETE PROTECTION WHERE 24" MINIMUM COVER IS ESTABLISHED FROM THE TOP OF THE SEWER PIPE.

320



- NOTES:**
1. ALL CREEK CROSSINGS SHALL BE DUCTILE IRON, PRESSURE CLASS 350 PIPE.
 2. FOUNDATION AND OR FOOTINGS FOR PIERS SHALL BE PLACED A MINIMUM OF TWO (2) FEET BELOW STREAM BED OR ANCHORED TO SOLID ROCK AND SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER.
 3. PIPE SHALL HAVE LOCKING GASKETS OR RESTRAINED JOINTS.

322

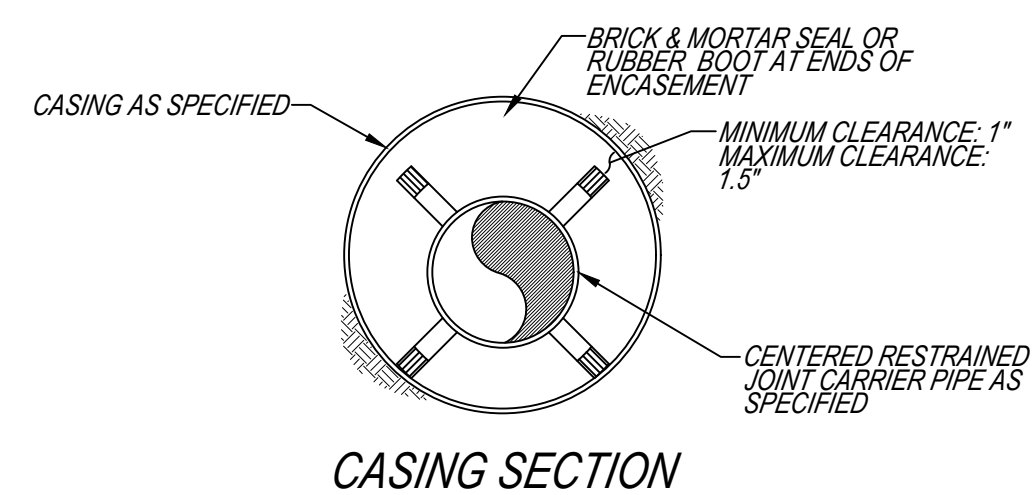
TYPICAL BORE ENCASEMENT

CARRIER PIPE NOMINAL PIPE DIAMETER	SPACER		STEEL ENCASEMENT	
	STANDARD PIPE BELL O.D.*	CASING SPACER BAND WIDTH	MINIMUM CASING THICKNESS	MINIMUM CASING DIAMETER**
4	6.40	8	0.25	14
6	8.60	8	0.25	16
8	11.16	8	0.25	18
10	13.25	8	0.25	20
12	15.22	8	0.25	22
14	17.73	12	0.25	24
16	19.86	12	0.3125	26
18	22.16	12	0.3125	30
20	24.28	12	0.3125	32
24	28.50	12	0.3125	36
30	34.95	12	0.5	42
36	41.37	12	0.5	48

ALL SIZES INDICATED ARE IN INCHES

*PIPE BELL OUTSIDE DIAMETER BASED ON PRESSURE CLASS 350 DUCTILE IRON PIPE.

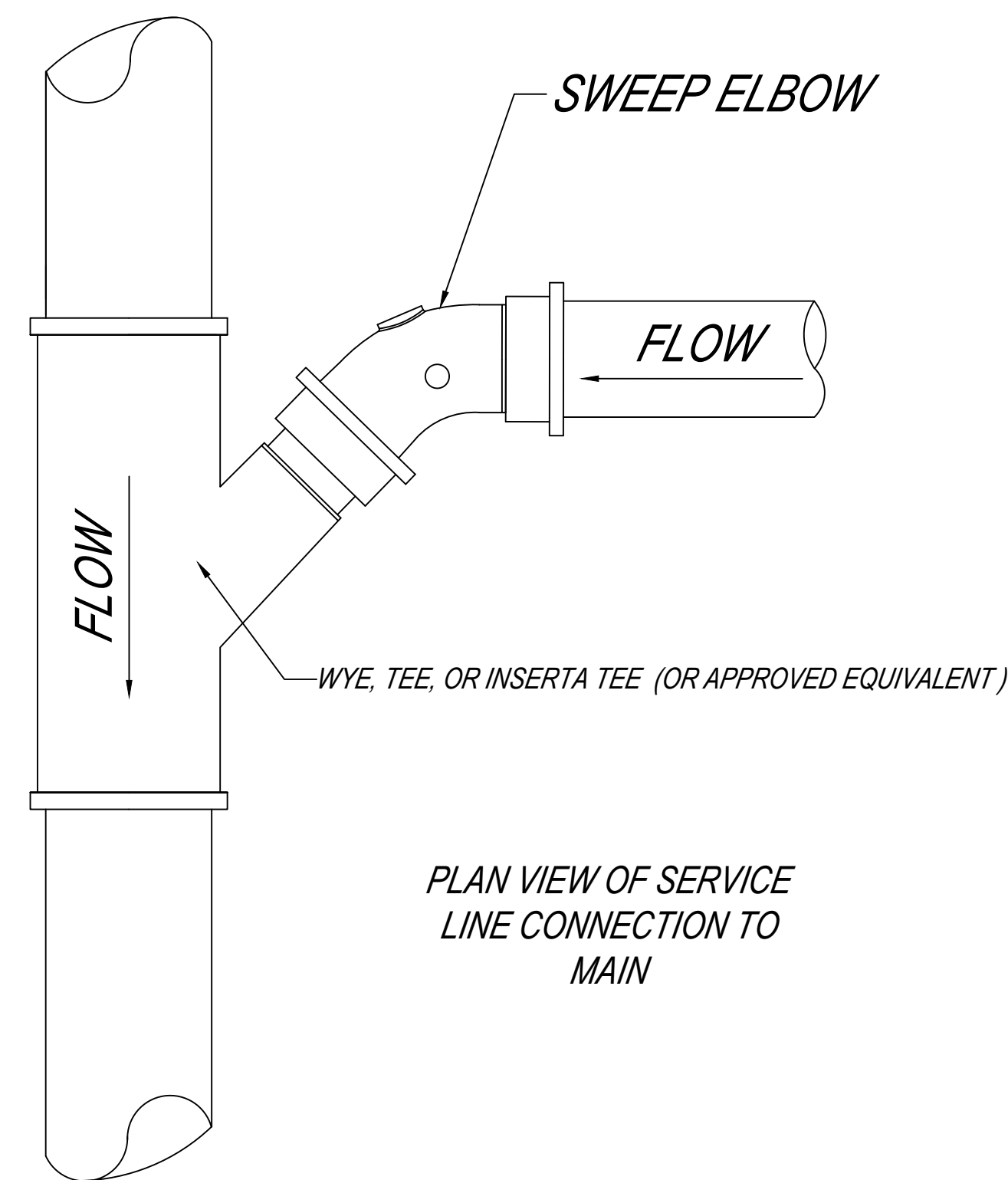
**CASING DIAMETERS BASED ON BEING A MINIMUM OF 6 INCHES GREATER THAN THE OUTER DIAMETER OF THE JOINT BELL, TO THE NEAREST EVEN SIZE.



- NOTES:**
1. ALL SPACER BANDS SHALL BE MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS.
 2. ALL SPACERS SHALL HAVE A SYNTHETIC RUBBER OR PVC LINER TO INSULATE THE PIPELINE FROM THE SPACER.
 3. ALL SPACERS SHALL HAVE 1.5" WIDE GLASS REINFORCED PLASTIC OR UHMW POLYMER RUNNERS TO INSULATE THE SPACER.
 4. SPACERS TO BE MANUFACTURED BY CASCADE WATERWORKS MFG. CO. (PSI) PIPELINE SEAL AND INSULATOR, INC. OR EQUAL.
 5. 6" THRU 12" DIAMETER PIPELINE SHALL USE 8" WIDE BANDS; GREATER THAN 12" DIAMETER PIPELINES SHALL USE 12" WIDE BANDS.
 6. CENTERED RESTRAINED CASING SPACERS SHALL BE SPACED AT A MAXIMUM OF TEN FEET APART WITH A MINIMUM OF TWO SPACERS PER JOINT OF PIPE.

324

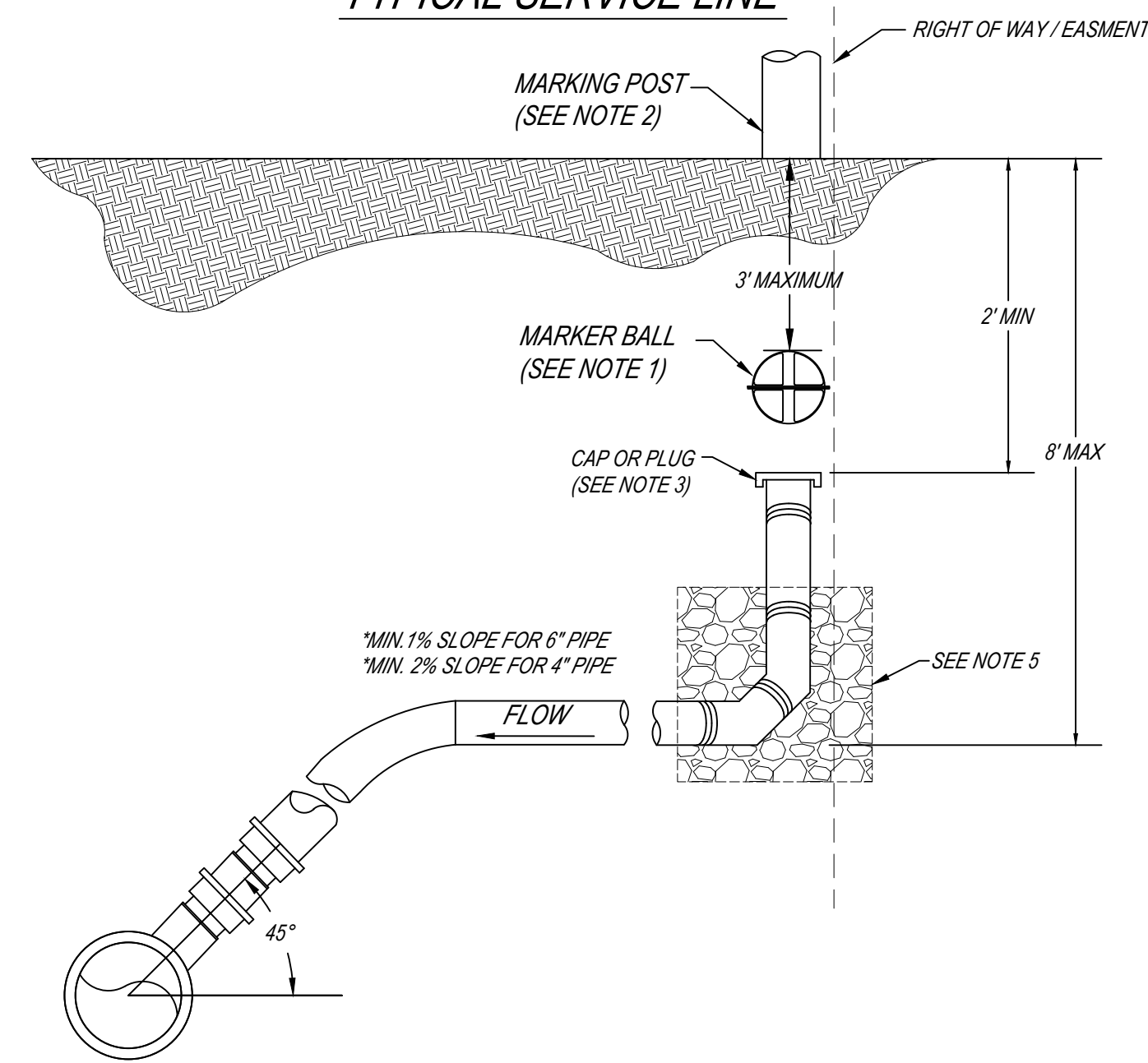
TYPICAL SERVICE CONNECTION



- NOTE:**
1. SADDLE FITTING CONNECTIONS SHALL BE MADE WITH PRIOR APPROVAL BY WRM. THE SADDLE SHALL BE PLACED OVER A CAREFULLY CUT OPENING IN THE UPPER QUADRANT OF THE SEWER MAIN AND ATTACHED TO THE MAIN USING STAINLESS STEEL BANDS. UNDER NO CIRCUMSTANCES SHALL ANY LATERAL CONNECTION BE ALLOWED TO PROTRUDE INTO THE SEWER MAIN.

326

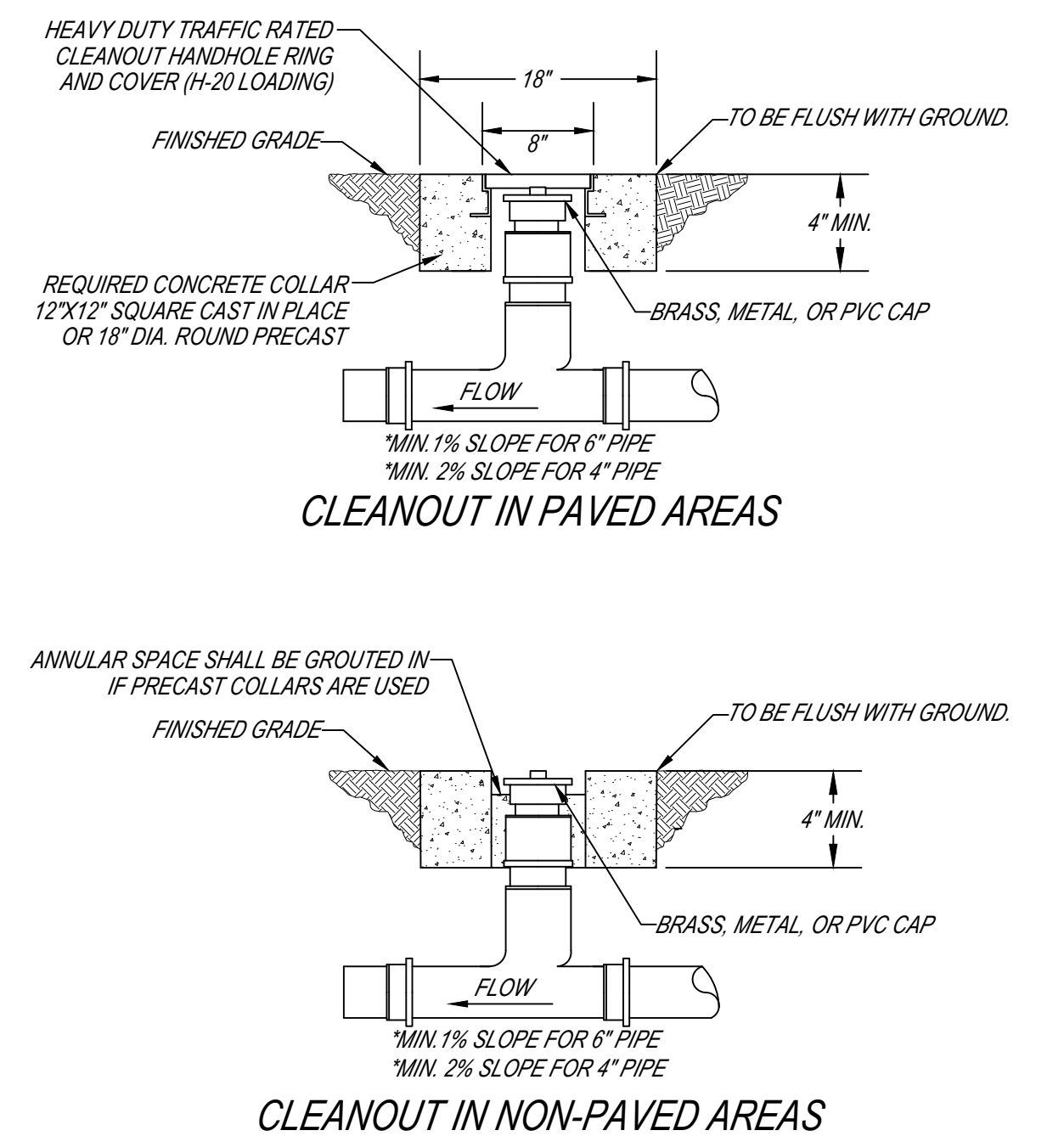
TYPICAL SERVICE LINE



- NOTES:**
1. PLUG LATERAL AND BURY MARKER BALL LOCATOR AT THE ROW OR EDGE OF EASEMENT. (TEMPO OMNI MARKER MODEL 162, 121.6 KHZ, OR APPROVED EQUAL). MARKER BALL SHALL NOT BE DEEPER THAN 3'.
 2. SERVICE LATERAL SHOULD ALSO BE MARKED ABOVE GRADE WITH A GREEN RHINO 3-RAIL FIBERGLASS MARKING POST OR APPROVED EQUAL.
 3. SERVICE LINE SHALL BE CAPPED OR PLUGGED PER COA STANDARDS.
 4. SEWER LATERAL SHALL MATCH MATERIAL OF MAIN WHERE OTHERWISE APPROVED BY WRM.
 5. DUCTILE IRON LATERALS CAN BE USED WHEN CONNECTING TO A PVC MAIN.
 6. 45° FITTING CONFIGURATION, SET IN #57 STONE, REQUIRED WHEN DEPTH IS GREATER THAN 3'. LONG SWEEP FITTING CAN BE USED WITH COA APPROVAL.
 7. THE 45° FITTING CONFIGURATION AND RISER MATERIAL SHOULD MATCH THE LATERAL.

328

TYPICAL CLEANOUT

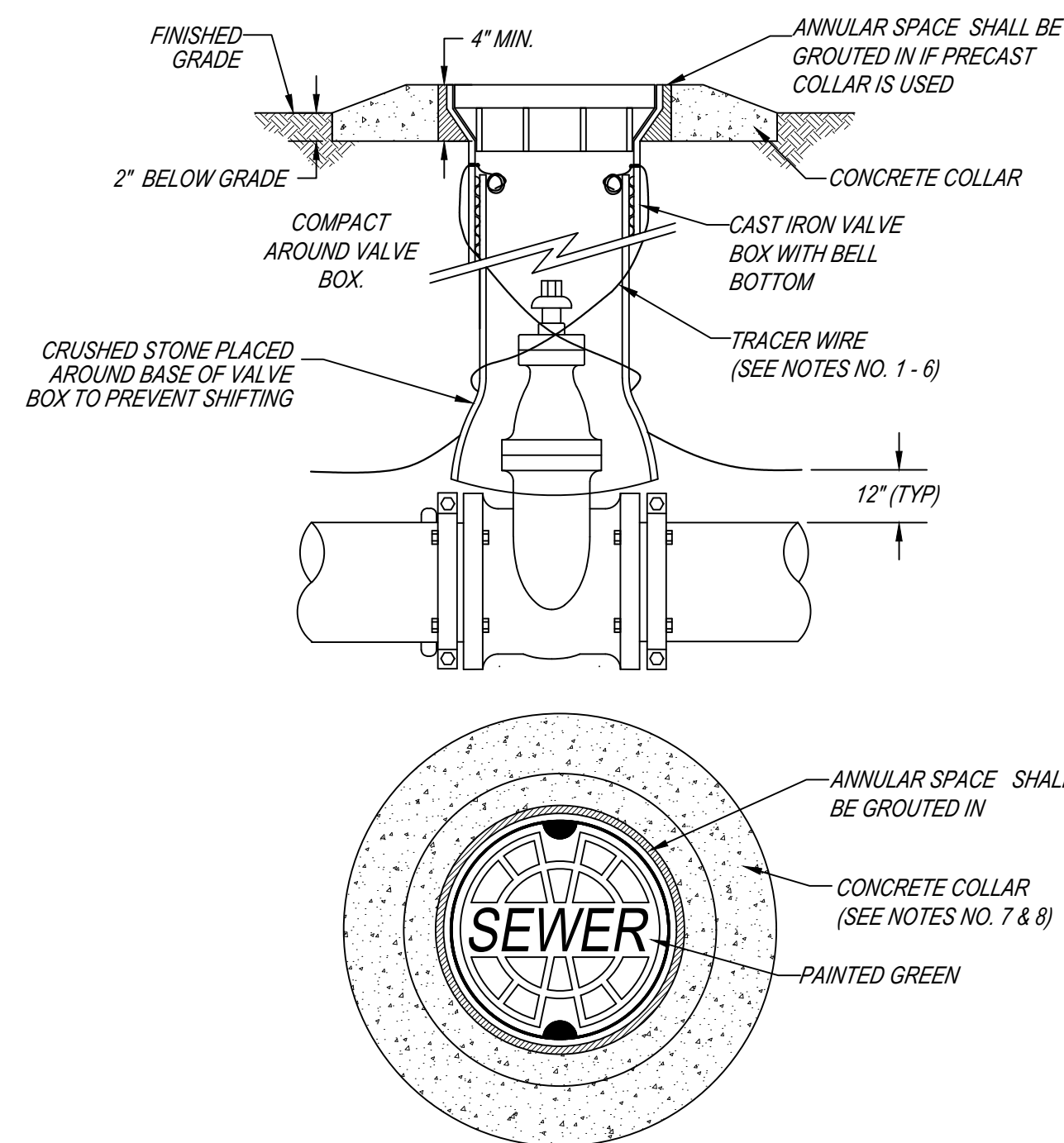


- NOTE:**
1. CLEANOUTS ARE REQUIRED AT THE EDGE OF ALL EASEMENTS AND RIGHT OF WAYS, UNLESS APPROVED OTHERWISE.

330

STANDARD DETAILS: SANITARY SEWER - SHEET 2 OF 3			
PROJECT TITLE	DEPARTMENT	WRM REVISIONS	DATE
	SCALE	N.T.S.	BS-10-25-07
	DRAWN BY:	BS	DCM-2010
	REVIEWED BY:	JC	JC-10-2011
	APPROVED BY:	EC	MM-11-2012
	IMPLEMENTED:		02/2013

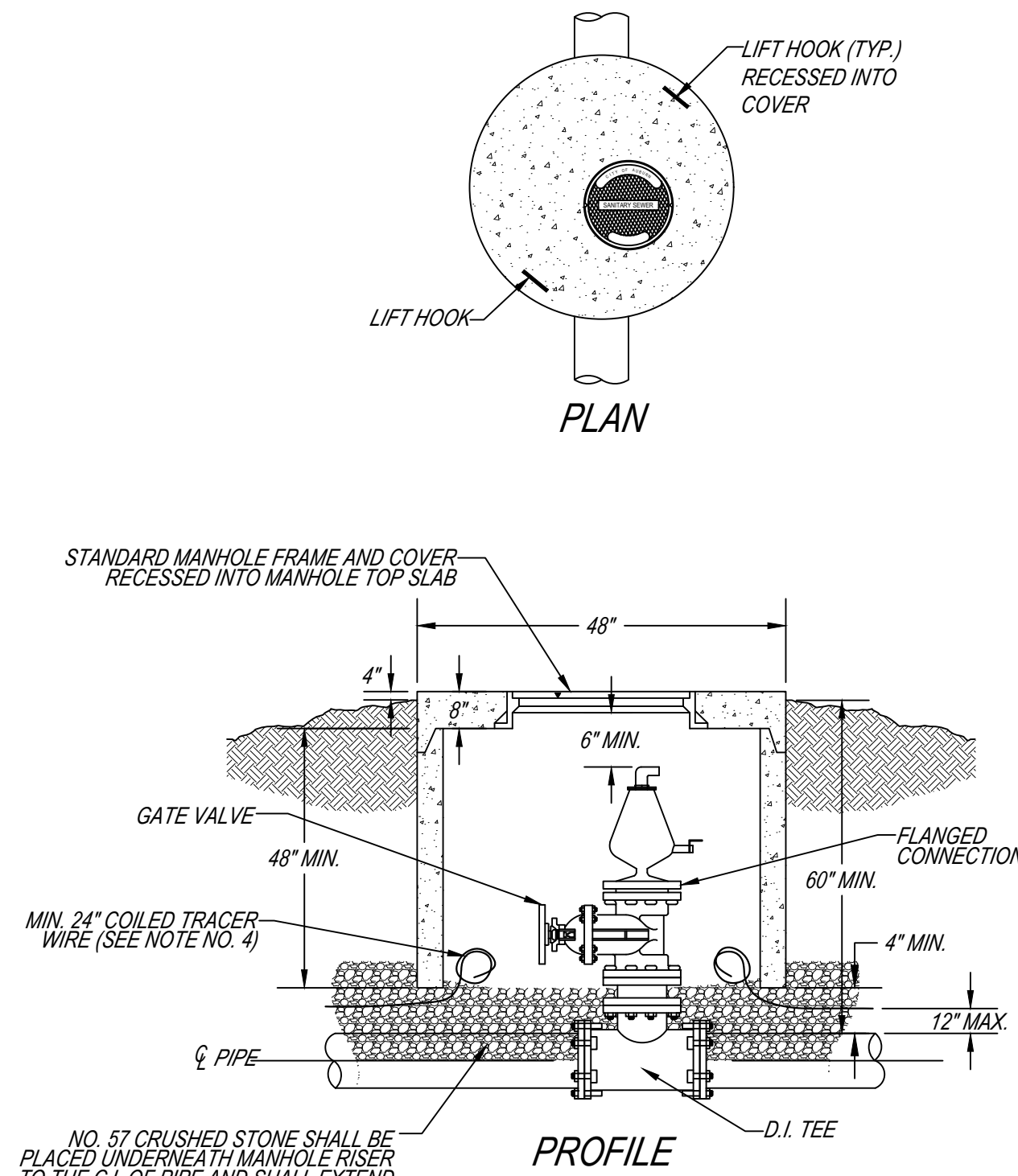
TYPICAL VALVE BOX INSTALLATION



- NOTES:**
1. TRACER WIRE SHALL BE BROUGHT TO GRADE AT A MINIMUM OF EVERY 500 FEET IN A VALVE BOX.
 2. TRACER WIRE SHALL BE WRAPPED AROUND THE VALVE BOX TO PREVENT MOVEMENT.
 3. A 3/16" DIAMETER HOLE SHALL BE LOCATED IN THE VALVE BOX NO MORE THAN 6 INCHES BELOW GRADE FOR THE TRACER WIRE TO PULL THROUGH.
 4. THE TRACER WIRE SHALL BE KNOTTED INSIDE THE VALVE BOX TO PREVENT SLIPPING BACK THROUGH THE HOLE.
 5. A MINIMUM OF 12 INCHES OF EXCESS WIRE SHALL BE COILED AND LEFT IN THE VALVE BOX.
 6. TRACER WIRE SHALL BE NO. 14 A.W.G. COPPER CLAD STEEL W/ POLYETHYLENE INSULATION.
 7. CONCRETE COLLAR MAY BE CAST-IN-PLACE OR PRECAST AND MAY BE ROUND OR SQUARE IN SHAPE.
 8. CONCRETE COLLAR SHALL BE A MIN. 4" THICK.

332

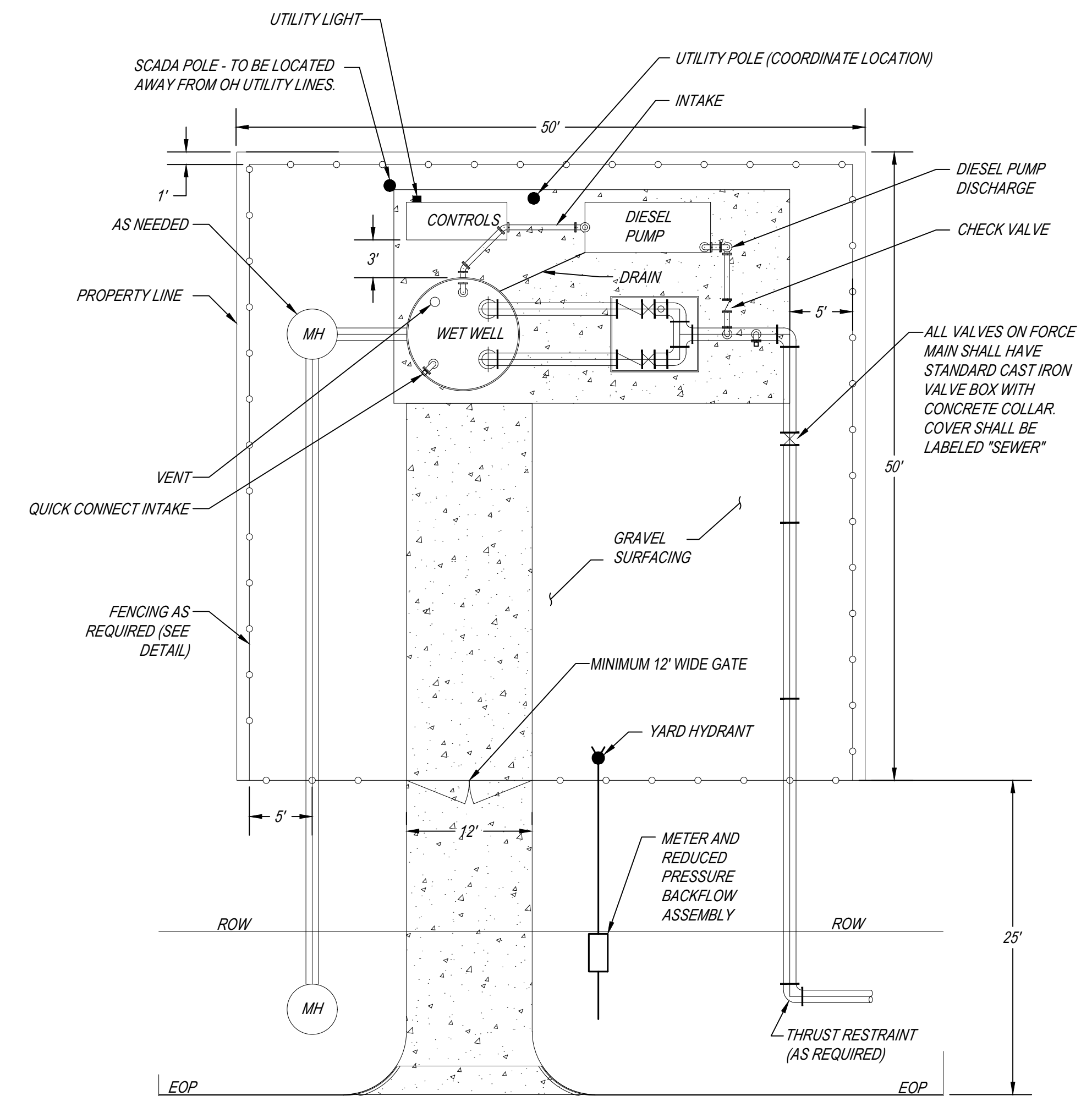
COMBINATION AIR RELEASE & AIR/VACUUM VALVE



- NOTES:**
1. AIR RELEASE VALVES SHALL BE MANUFACTURED BY ARI OR APPROVED EQUAL.
 2. VALVE BODY SHALL BE STAINLESS STEEL.
 3. AIR RELEASE VALVES SHALL BE INSTALLED ON A LEVEL SECTION OF PIPE, EQUIDISTANT BETWEEN JOINTS.
 4. TRACER WIRE SHALL BE NO. 14 A.W.G. COPPER CLAD STEEL W/ POLYETHYLENE INSULATION.

334

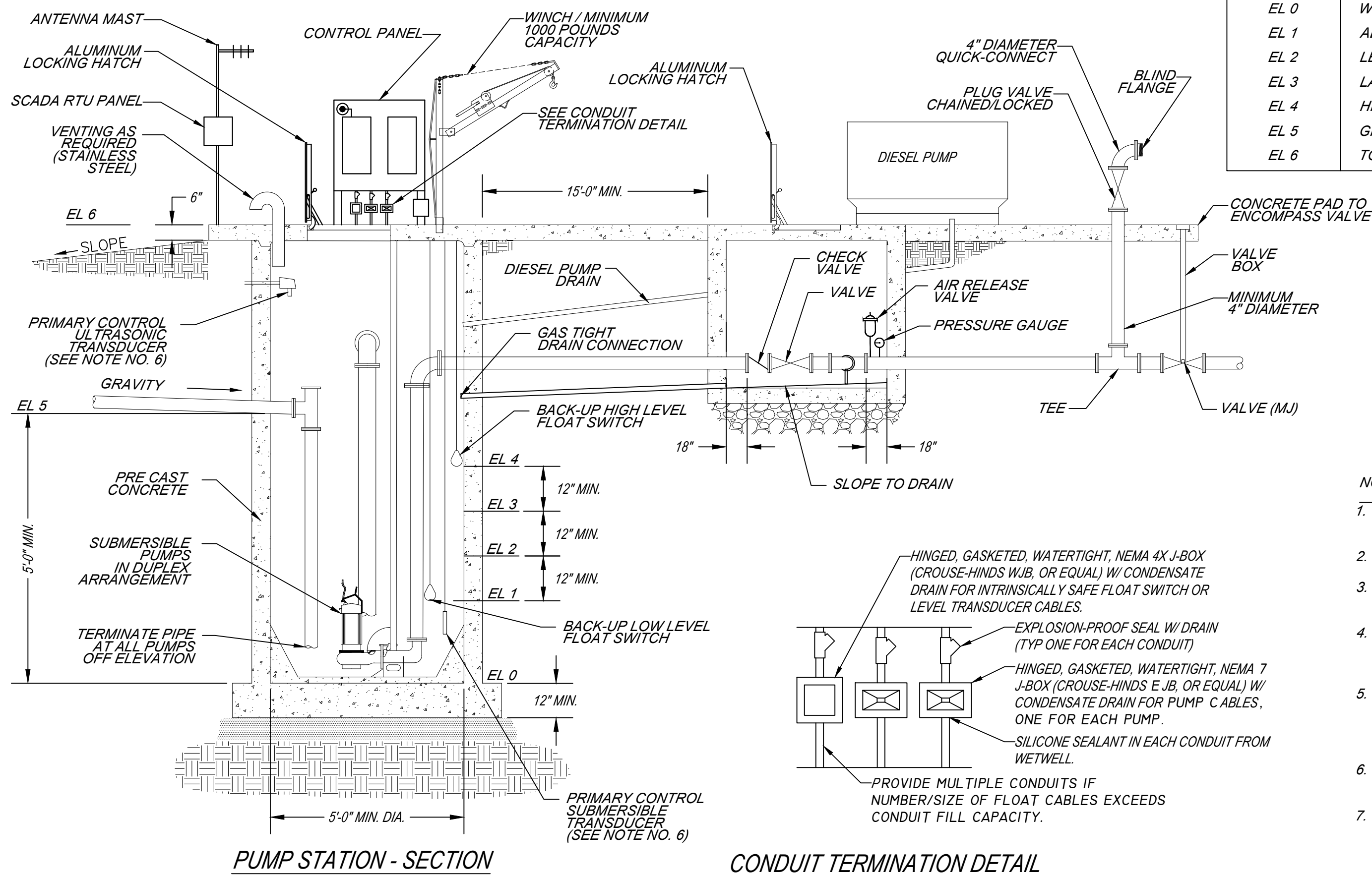
GENERAL PUMP STATION SITE PLAN



NOTE:
THIS DETAIL IS FOR GENERAL REFERENCE PURPOSES ONLY. WHILE EVERY PUMP STATION SITE SHALL CONFORM TO THIS GENERAL LAYOUT AS MUCH AS POSSIBLE, EACH SITE SHOULD BE DESIGNED APPROPRIATELY BASED ON SITE SPECIFIC CONDITIONS.

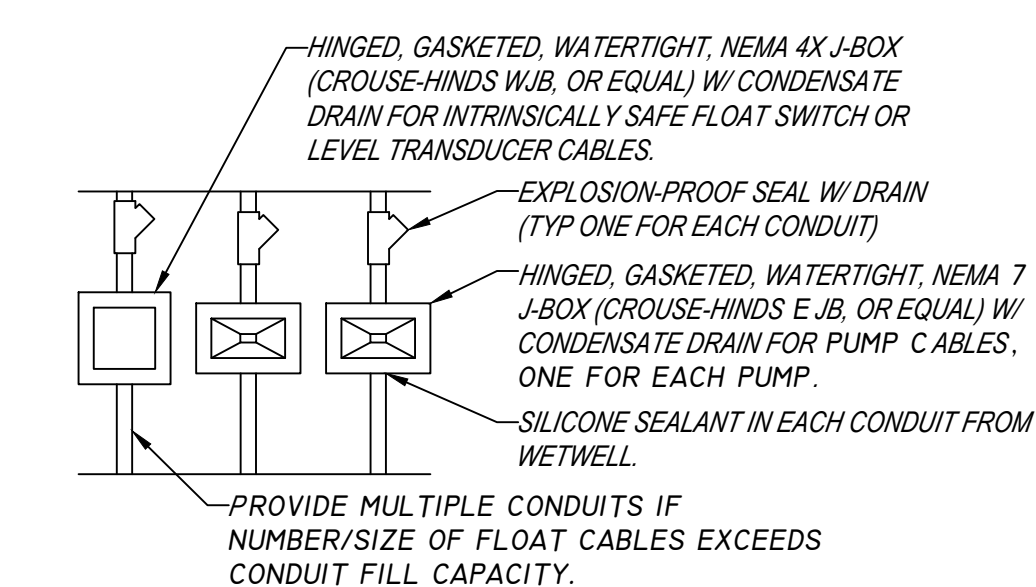
GENERAL PUMP STATION SITE SECTION

ELEVATION	DESCRIPTION	VALUE	NOTES
EL 0	WET-WELL INVERT		
EL 1	ALL PUMPS OFF		
EL 2	LEAD PUMP ON		
EL 3	LAG PUMP ON		
EL 4	HIGH LEVEL ALARM		
EL 5	GRAVITY INVERT		
EL 6	TOP OF WET-WELL		



PUMP STATION - SECTION

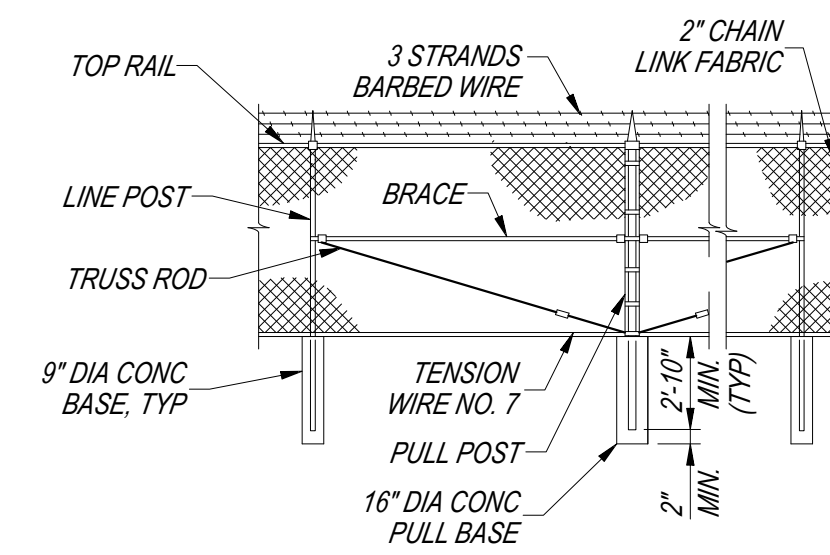
CONDUIT TERMINATION DETAIL



- NOTES:**
1. ELEVATION OF THE TOP OF THE PUMP STATION SHALL BE A MINIMUM 2'-0" ABOVE THE 100 YEAR FLOOD ELEVATION.
 2. INTERIOR OF WET WELL TO BE LINED WITH HDPE, PVC, OR APPROVED EPOXY LINING.
 3. ALL PIPING ON SITE TO BE DUCTILE IRON WITH EPOXY LINING SUITABLE FOR WASTEWATER SERVICE.
 4. DIESEL PUMP SHALL BE SIZED TO HANDLE THE PEAK HOURLY DISCHARGE OF THE STATION AND SHALL HAVE A MINIMUM 24 HOUR FUEL CAPACITY.
 5. WET WELL SIZE TO BE BASED ON SPECIFIC DESIGN CRITERIA. MINIMUM 5'-0" DIAMETER AND 5'-0" DEPTH FROM THE LOWEST INCOMING PIPE INVERT TO THE WET WELL BOTTOM.
 6. PRIMARY LEVEL CONTROL SHALL UTILIZE A 4-20mA SUBMERSIBLE OR ULTRASONIC TRANSDUCER, AS APPROVED.
 7. THIS IS A GENERAL SCHEMATIC DRAWING. EACH STATION SHALL HAVE A DETAILED SITE SPECIFIC DESIGN.

338

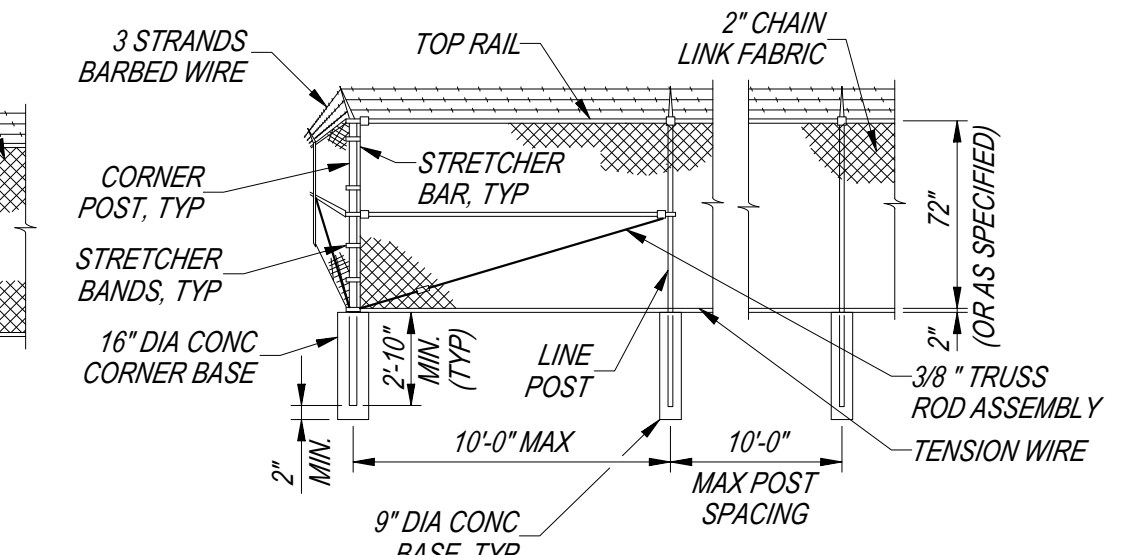
LINE POST CONNECTION



TYPICAL PULL POST

- FENCE NOTES:**
1. BRACE AND TRUSS ROD REQUIRED AT GATES AND SIDE OF ALL CORNER POSTS.
 2. FABRIC ATTACHED TO OUTSIDE OF POSTS.

TOP RAIL CONNECTION



TYPICAL CORNER POST

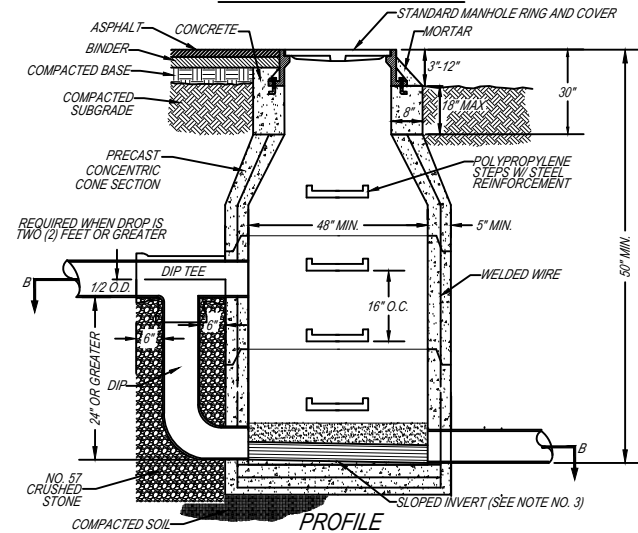
336

STANDARD DETAILS: SANITARY SEWER - SHEET 3 of 3

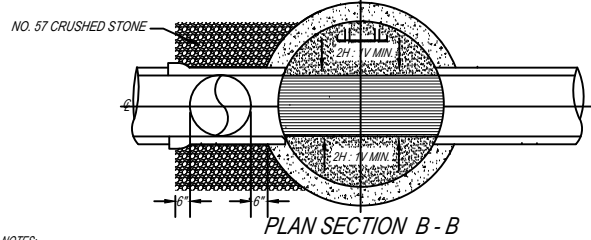
PROJECT TITLE:	DEPARTMENT:	IRM REVISIONS:	DCM 2010
	SCALE:	N.T.S.	JC-10-2011
	DRAWN BY:	BS	
	REVIEWED BY:	JC	
	APPROVED BY:	EC	
	IMPLEMENTED:	12/2007	

City of Auburn

TYPICAL DROP MANHOLE



PROFILE

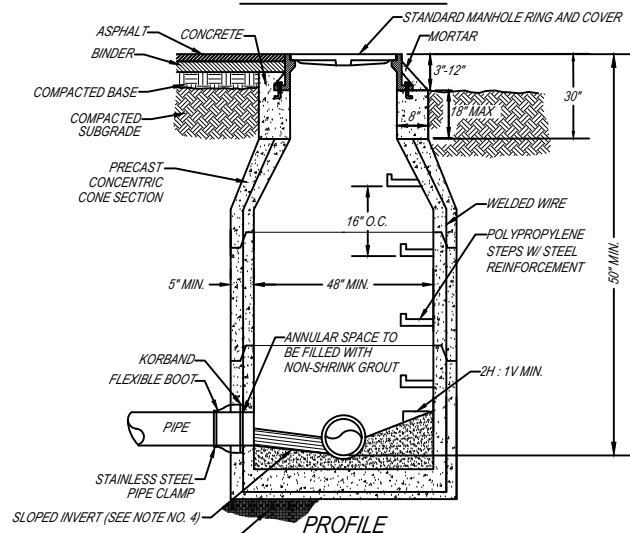


PLAN SECTION B - B

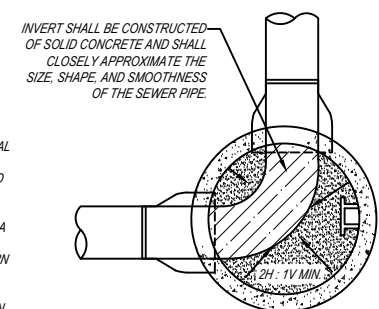
- NOTES:**
1. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS.
 2. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
 3. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.
 4. INVERT SLOPE SHALL PROVIDE A 0.10' DROP ACROSS THE MANHOLE WHERE THERE IS NOT A TURN GREATER THAN 22 DEGREES AND A 0.25' DROP ACROSS THE MANHOLE WHERE THE TURN IS GREATER THAN 22 DEGREES.
 5. VERTICAL PIPE SHALL BE DIP WITH RESTRAINED JOINTS.

300

STANDARD MANHOLE



PROFILE

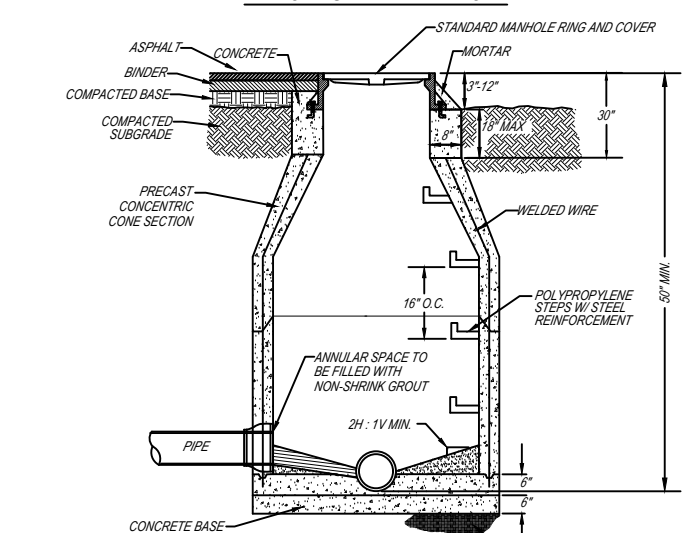


PLAN

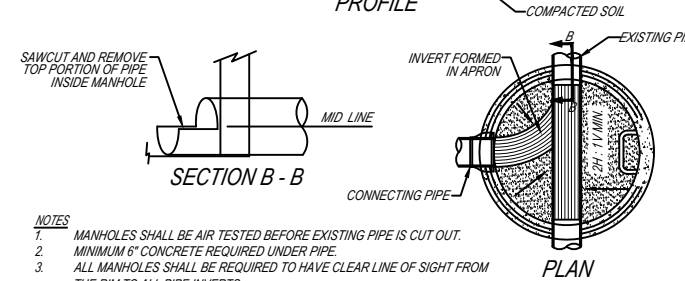
- NOTES:**
1. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS.
 2. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
 3. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.
 4. INVERT SLOPE SHALL PROVIDE A 0.10' DROP ACROSS THE MANHOLE WHERE THERE IS NOT A TURN GREATER THAN 22 DEGREES AND A 0.25' DROP ACROSS THE MANHOLE WHERE THE TURN IS GREATER THAN 22 DEGREES.
 5. DIRECTIONAL CHANGE IN THE MAIN LINE THROUGH A MANHOLE SHALL BE NO LESS THAN 90 DEGREES BETWEEN THE INVERT IN AND INVERT OUT.

302

TYPICAL SADDLE MANHOLE



PROFILE

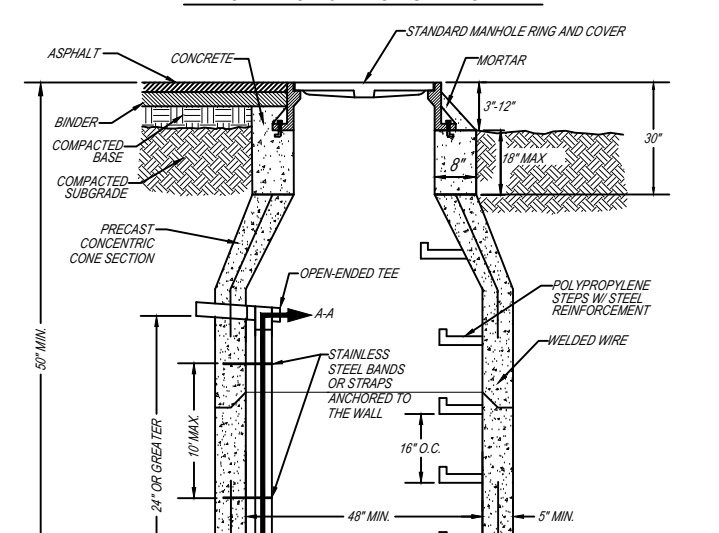


PLAN

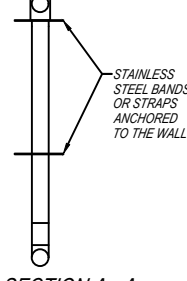
- NOTES:**
1. MANHOLES SHALL BE AIR TESTED BEFORE EXISTING PIPE IS CUT OUT.
 2. MINIMUM 6" CONCRETE REQUIRED UNDER PIPE.
 3. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS.
 4. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
 5. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.

304

TYPICAL 4" OR 6" DROP SERVICE LINE



PROFILE

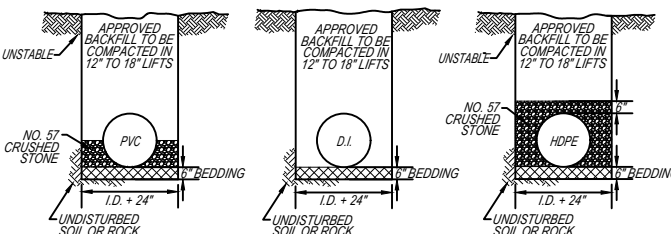


PLAN SECTION A - A

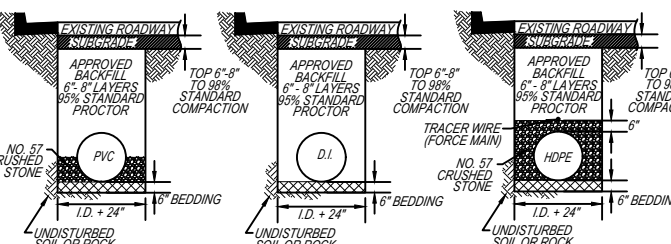
- NOTES:**
1. SERVICE LINES SHALL BE A MINIMUM OF FOUR (4) INCHES ABOVE THE INVERT OF THE MANHOLE OR FLOW LINE OF OUTGOING PIPE. SERVICE LINES ANGLED AGAINST THE DIRECTION OF FLOW SHALL BE A MINIMUM SIX (6) INCHES ABOVE THE FLOW LINE. IF THE ANGLE FROM OUTLET FLOW LINE IS LESS THAN 45°, THE SERVICE LINE SHALL TIE TO THE MAIN.
 2. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS IN THE MANHOLE.
 3. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
 4. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.
 5. DROP SERVICE LINES FOR SEWER MAINS GREATER THAN 6" WILL BE ALLOWED ON A CASE BY CASE BASIS WITH PRIOR APPROVAL BY WRM.

306

BEDDING REQUIREMENTS FOR TRENCHES



NON-STREET TRENCH

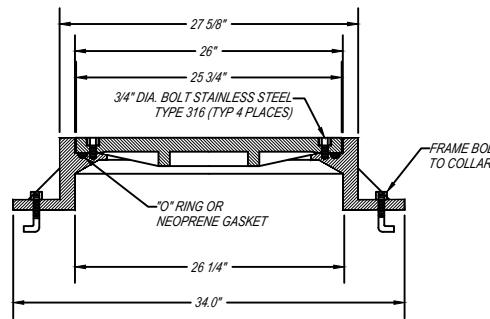
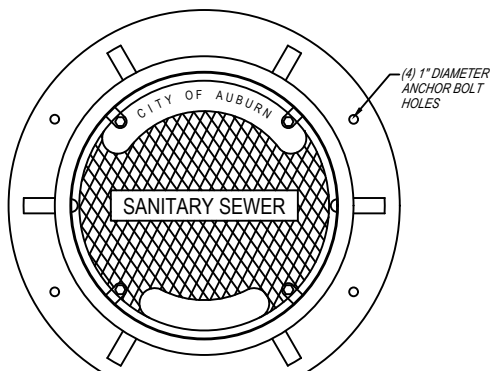


STREET TRENCH

- NOTES:**
1. BEDDING MATERIALS FOR PVC AND HDPE PIPE SHALL BE 1/4" TO 1 1/2" GRADED CRUSHED STONE SUCH AS: 36, 57, 6, 67, 68, 7, OR 78. STONE PER ALDOT STANDARD SPECS. SAND OR GRAVEL MAY BE USED AS BEDDING MATERIAL FOR D.I. PIPE.
 2. WIDTH VARIES BASED ON WALL STABILITY. STABLE WALLS WIDTH AS NEEDED TO JOIN PIPE AND COMPACT HAUNCHING AND INITIAL BACKFILL. UNSTABLE WALLS: WIDTH TO BE A MINIMUM OF FIVE TIMES PIPE DIAMETER.
 3. FLOWABLE FILL CAN BE USED AS BACKFILL, BUT MUST HAVE PRIOR APPROVAL AND MUST BE ALLOWED TO SETUP FOR 24 HOURS PRIOR TO TOPPING.
 4. APPROVED BACKFILL MATERIAL INCLUDES 825 B FLOWABLE FILL AND APPROVED DIRT. ALTERNATIVE MATERIAL MUST BE APPROVED BY PROJECT MANAGER PRIOR TO USE.

308

TYPICAL WATERTIGHT MANHOLE COVER

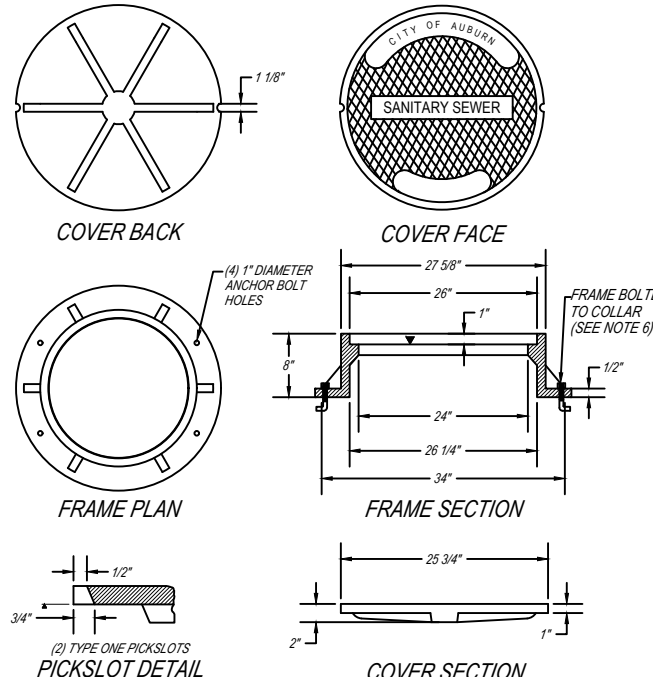


FRAME BOLTED TO COLLAR

- NOTES:**
1. REQUIRED FOR ALL MANHOLES WHERE THE RIM ELEVATION IS LESS THAN ONE (1) VERTICAL FOOT ABOVE THE 100 YEAR FLOODPLAIN ELEVATION.
 2. CAST IRON FRAME AND COVER IN ROADWAY AND TRAFFIC SHALL BE INSTALLED FLUSH WITH FINISHED GRADE OF THE PAVEMENT IN FLAT OR STEEP GRADES.
 3. THE FRAME AND COVER SHALL WEIGH APPROXIMATELY 370 POUNDS IN TRAFFIC AND NON TRAFFIC APPLICATIONS.
 4. THE DIAMETER OF THE COVER FOR ALL SANITARY SEWER MANHOLES SHALL BE 25 3/4".
 5. ALL COVERS SHALL BE MARKED "SANITARY SEWER" BY THE MANUFACTURER.
 6. APPROVED DRAWINGS ARE FROM US FOUNDRY (USF-152-BV-BWT CITY OF AUBURN).

310

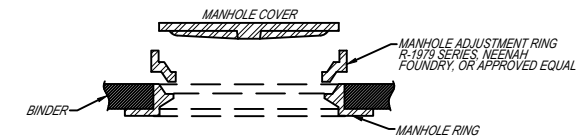
STANDARD MANHOLE RING & COVER



- NOTES:**
1. CAST IRON FRAME AND COVER IN ROADWAY AND TRAFFIC SHALL BE INSTALLED FLUSH WITH FINISHED GRADE OF THE PAVEMENT IN FLAT OR STEEP GRADES.
 2. THE FRAME AND COVER SHALL WEIGH APPROXIMATELY 370 POUNDS IN TRAFFIC AND NON TRAFFIC APPLICATIONS.
 3. THE DIAMETER OF THE COVER FOR ALL SANITARY SEWER MANHOLES SHALL BE 25 3/4".
 4. ALL COVERS SHALL BE MARKED "SANITARY SEWER" BY THE MANUFACTURER.
 5. APPROVED DRAWINGS ARE FROM US FOUNDRY (USF-152-BV-CITY OF AUBURN) OR SIGMA CORPORATION (RMH-2565).
 6. OFF ROAD MANHOLES SHALL HAVE THE RING BOLTED DOWN OR PRECAST INTO THE CONCRETE.

312

MANHOLE ADJUSTMENT RISER



- NOTES:**
1. ONE PIECE CONSTRUCTION, NO WELDS. COATED TO PREVENT RUST.
 2. MULTIPLE RISERS ARE NOT ALLOWED.
 3. ALL MANHOLES IN PAVEMENT MUST BE FLUSH WITH THE BINDER LAYER. THE MANHOLE ADJUSTMENT RISER SHALL BE USED UPON PLACEMENT OF WEARING SURFACE.

314

STANDARD DETAILS: SANITARY SEWER - SHEET 1 of 3

PROJECT TITLE:	DEPARTMENT:	WRM	REVISIONS:	GM-04/30/14
SCALE:	DATE:	11/15	BY:	BS-10-25-07
DRAWN BY:	DESIGNED BY:	BS	DATE:	DCM-2019
REVIEWED BY:	DATE:	JC	DATE:	JC-10-2011
APPROVED BY:	DATE:	EC	DATE:	MM-11-2021
IMPLEMENTED:	DATE:	02/09/23		



MACHINED BEARING SURFACE