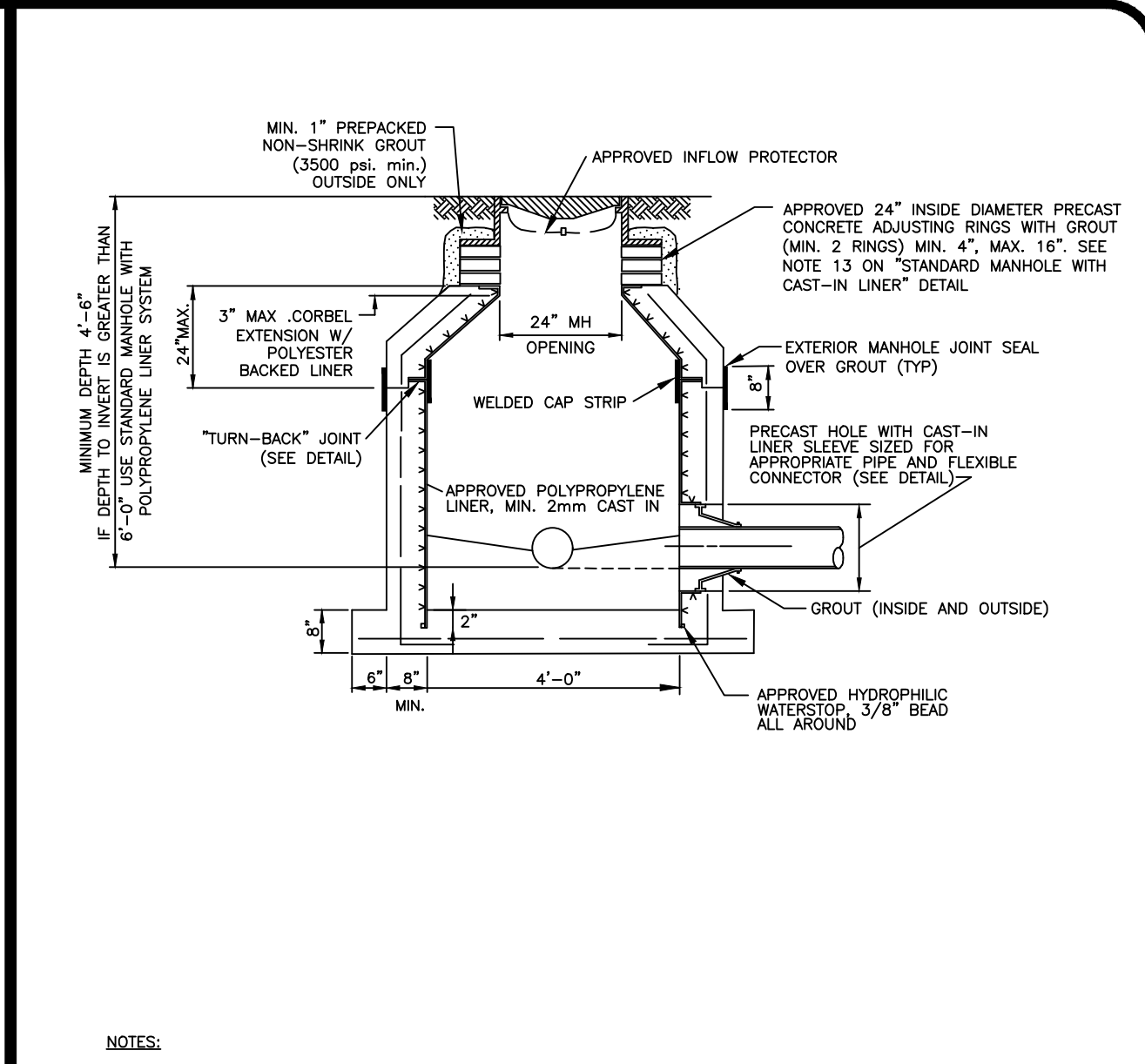


NO.	DATE	REVISION / REMARKS
BY	J.L.	
DATE	DEC 2021	GENERAL REVISION
	JAN 2023	GENERAL REVISION

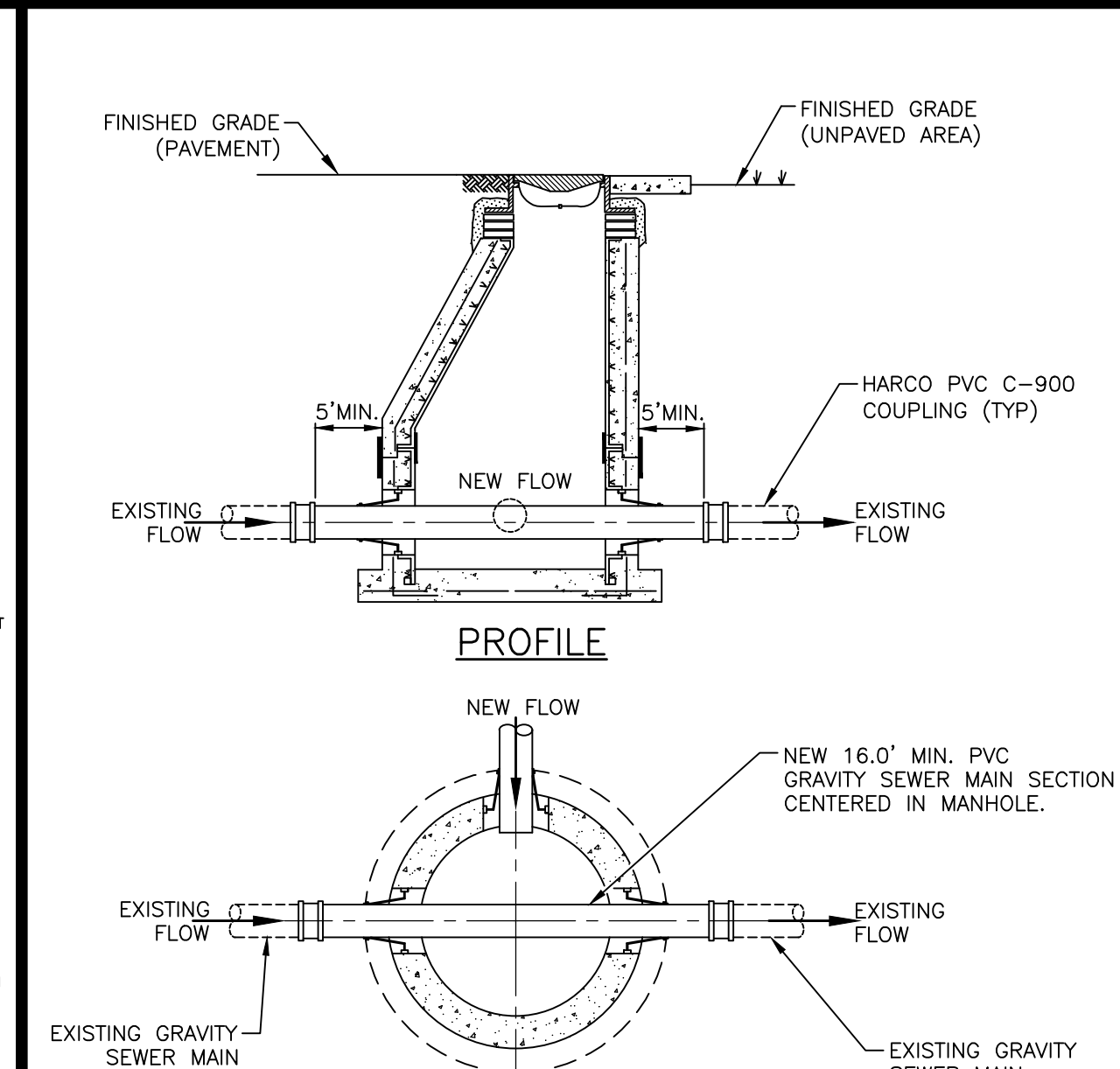
STD DETAILS SHEET NUMBER 0 OF 0

SEAL



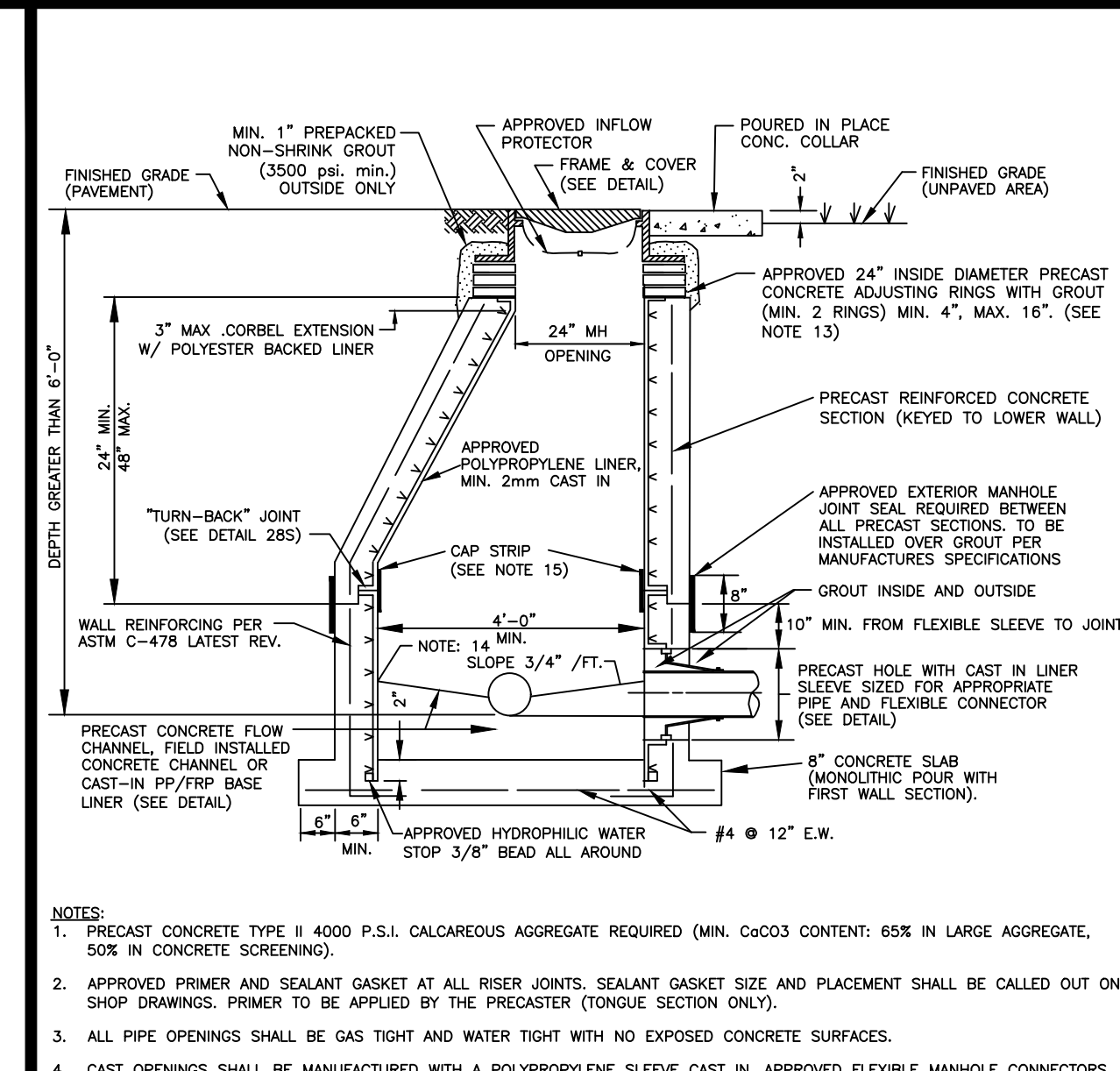
- NOTES:
1. ALL "STANDARD MANHOLE WITH POLYPROPYLENE LINER SYSTEM" NOTES AND DETAILS ARE APPLICABLE.
 2. SEAL INVERT BENCH AND CHANNEL TO WALL LINER WITH 3M WEATHERBAN 5354 SEALANT TAPE (OR APPROVED EQUAL).
 3. SEE SEPARATE DETAIL FOR OPTIONAL CAST-IN POLYPROPYLENE OR FIBER REINFORCED POLYMER BASE LINER.

SHALLOW MANHOLE WITH CAST-IN LINER 195



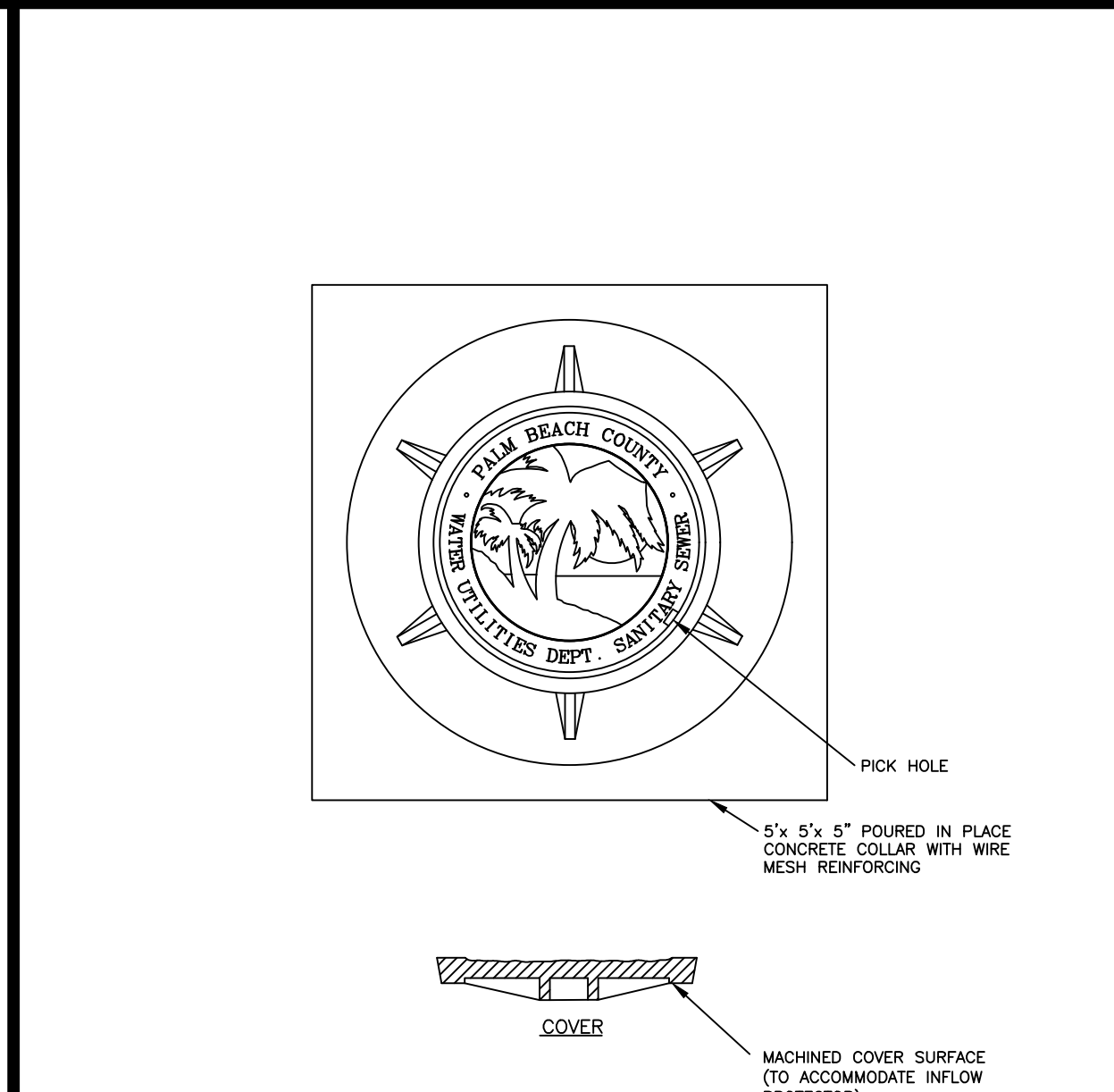
- NOTES:
1. MANHOLE TO BE CONSTRUCTED AND INSTALLED PER WUD STANDARD DETAIL 185A.
 2. A TEMPORARY GRAVITY SEWER MAIN BYPASS SIXTEEN(16) FOOT MINIMUM TO BE INSTALLED THROUGH NEW MANHOLE TO MAINTAIN EXISTING WASTEWATER FLOW DURING CONSTRUCTION OF NEW GRAVITY SEWER SYSTEM.
 3. ONCE THE NEW GRAVITY SEWER SYSTEM INSTALLATION IS COMPLETED AND HAS RECEIVED FINAL DEP WASTEWATER CERTIFICATION THE TEMPORARY BYPASS PIPE SHALL BE CUT AND REMOVED FROM WITHIN THE MANHOLE WITH A NEW FLOW CHANNEL CONSTRUCTED PER WUD MINIMUM DESIGN STANDARDS.
 4. AFTER ALL CONSTRUCTION HAS BEEN COMPLETED, INCLUDING THE REMOVAL OF THE BYPASS PIPE AND CONSTRUCTION OF THE NEW FLOW CHANNEL, THE EXISTING UPSTREAM AND DOWNSTREAM GRAVITY SEWER MAIN SHALL BE LAMPED TO VERIFY NO ADVERSE DAMAGE OCCURRED DURING CONSTRUCTION TO THE EXISTING GRAVITY SEWER MAIN.

NEW MANHOLE CUT INTO EXISTING GRAVITY SEWER MAIN 185B



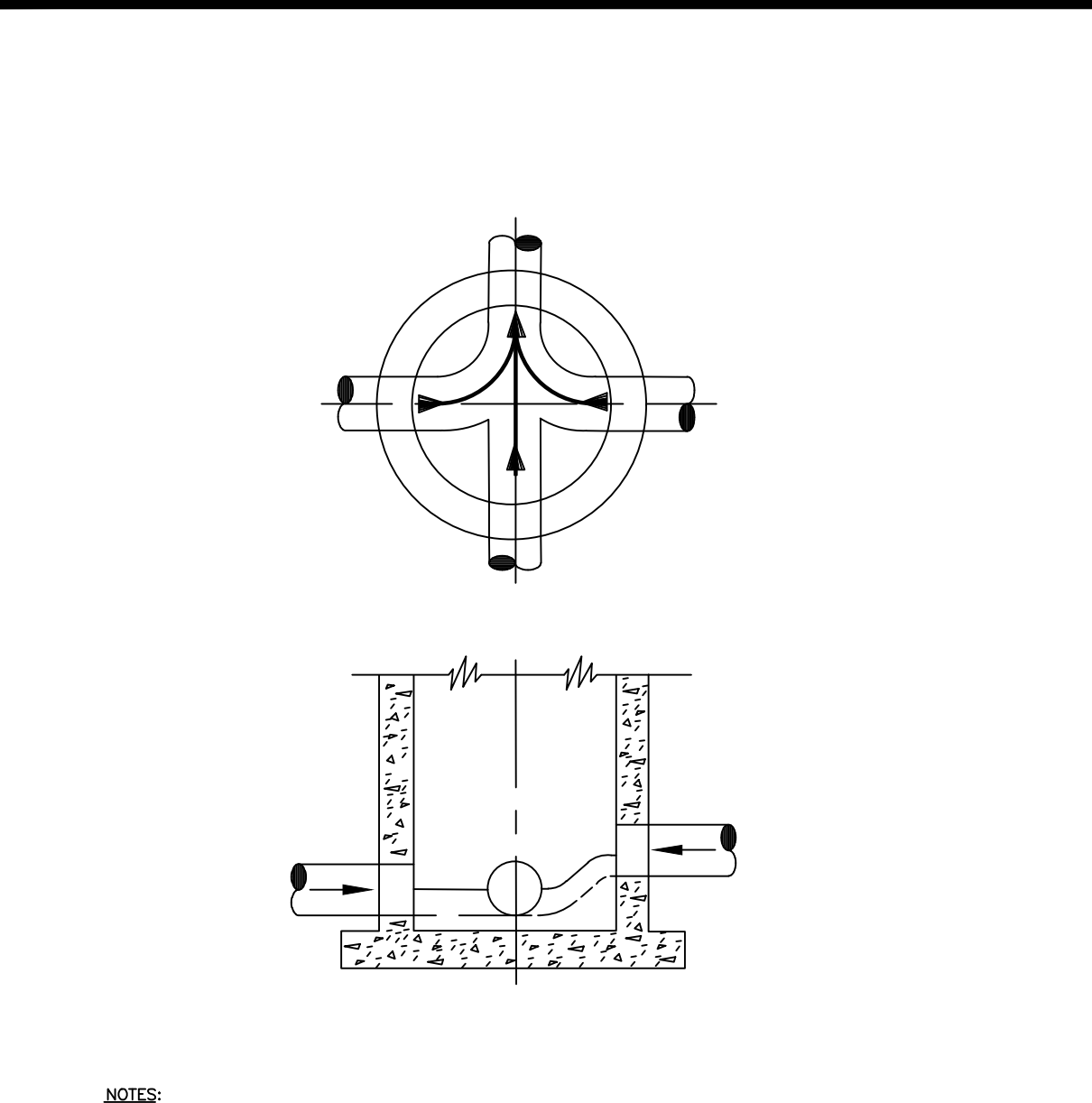
- NOTES:
1. PRECAST CONCRETE TYPE II 4000 P.S.I. CALCEAREOUS AGGREGATE REQUIRED (MIN. C60/3 CONTENT: 65% IN LARGE AGGREGATE, 50% IN CONCRETE SCREENING).
 2. APPROVED PRIMER AND SEALANT GASKET AT ALL RISER JOINTS, SEALANT GASKET SIZE AND PLACEMENT SHALL BE CALLED OUT ON SHOP DRAWINGS. PRIMER TO BE APPLIED BY THE PRECASTER (TONGUE SECTION ONLY).
 3. ALL PIPE OPENINGS SHALL BE GAS TIGHT AND WATER TIGHT WITH NO EXPOSED CONCRETE SURFACES.
 4. CAST OPENINGS SHALL BE MANUFACTURED WITH A POLYPROPYLENE SLEEVE CAST IN. APPROVED FLEXIBLE MANHOLE CONNECTORS SHALL BE USED AT PIPE CONNECTIONS. HOLE SIZE PER BOOT MANUFACTURER'S SPECIFICATIONS. DOUBLE PIPE CLAMPS MUST BE INSTALLED ON FLEXIBLE SLEEVES WHERE REQUIRED BY BOOT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 5. CORED PIPE OPENINGS SHALL BE INSTALLED PER DETAIL. APPROVED FLEXIBLE CONNECTOR WILL BE INSTALLED ONTO POLYPROPYLENE WALL SLEEVE. WALL SLEEVE SHALL BE EXPLODED INTO CORED OPENING AND THERMALLY WELDED TO WALL LINER.
 6. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM. APPROVED CAST-IN PP/FRP BASE LINER IS ACCEPTABLE (SEE DETAIL).
 7. LIFT HOLES ARE PERMITTED.
 8. INSIDE DROPS SHALL NOT BE DESIGNED TO EXCEED 1.80 FEET AND NOT CONSTRUCTED TO EXCEED 2.0 FEET. MAX. 6" INSIDE DROP IS PERMITTED FOR MANHOLES WITH 3 OR MORE INVERTS AND MANHOLES WITH A CHANGE IN FLOW DIRECTION OF MORE THAN 45 DEGREES.
 9. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH ASTM C-478, LATEST STANDARD.
 10. MINIMUM 5 FEET IS REQUIRED BETWEEN OUTSIDE OF MANHOLE AND SERVICE WYE OR ANY PIPE JOINT.
 11. ONLY APPROVED THERMOPLASTIC LINER SYSTEM SHALL BE USED. LINERS MUST BE WELDED BY LINER MFG CERTIFIED WELDERS AND BE CAST INTO THE MANHOLE BY A LINER MANUFACTURER CERTIFIED PRECASTER.
 12. APPROVED INFLOW PROTECTORS ARE REQUIRED.
 13. MAXIMUM HEIGHT OF CHIMNEY SHALL NOT EXCEED 24" (INCLUDING FRAME CASTING).
 14. SEAL INVERT BENCH AND CHANNEL TO WALL LINER WITH 3M WEATHERBAN 5354 SEALANT TAPE OR APPROVED EQUAL.
 15. MIN. 4" WIDE FIELD WELDED CAP STRIP IS REQUIRED FOR ALL JOINTS.
 16. SOLID THERMOPLASTIC CAST-IN LINER IS REQUIRED FOR LAST MANHOLE PRIOR TO LIFT STATION. MANHOLES DEEPER THAN 14 FT. MANHOLES WITH OUTSIDE DROP, AND MANHOLES WITH A FORCE MAIN CONNECTION. (SEE APPROPRIATE DETAILS)
 17. MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.

STANDARD MANHOLE WITH CAST-IN LINER 185A



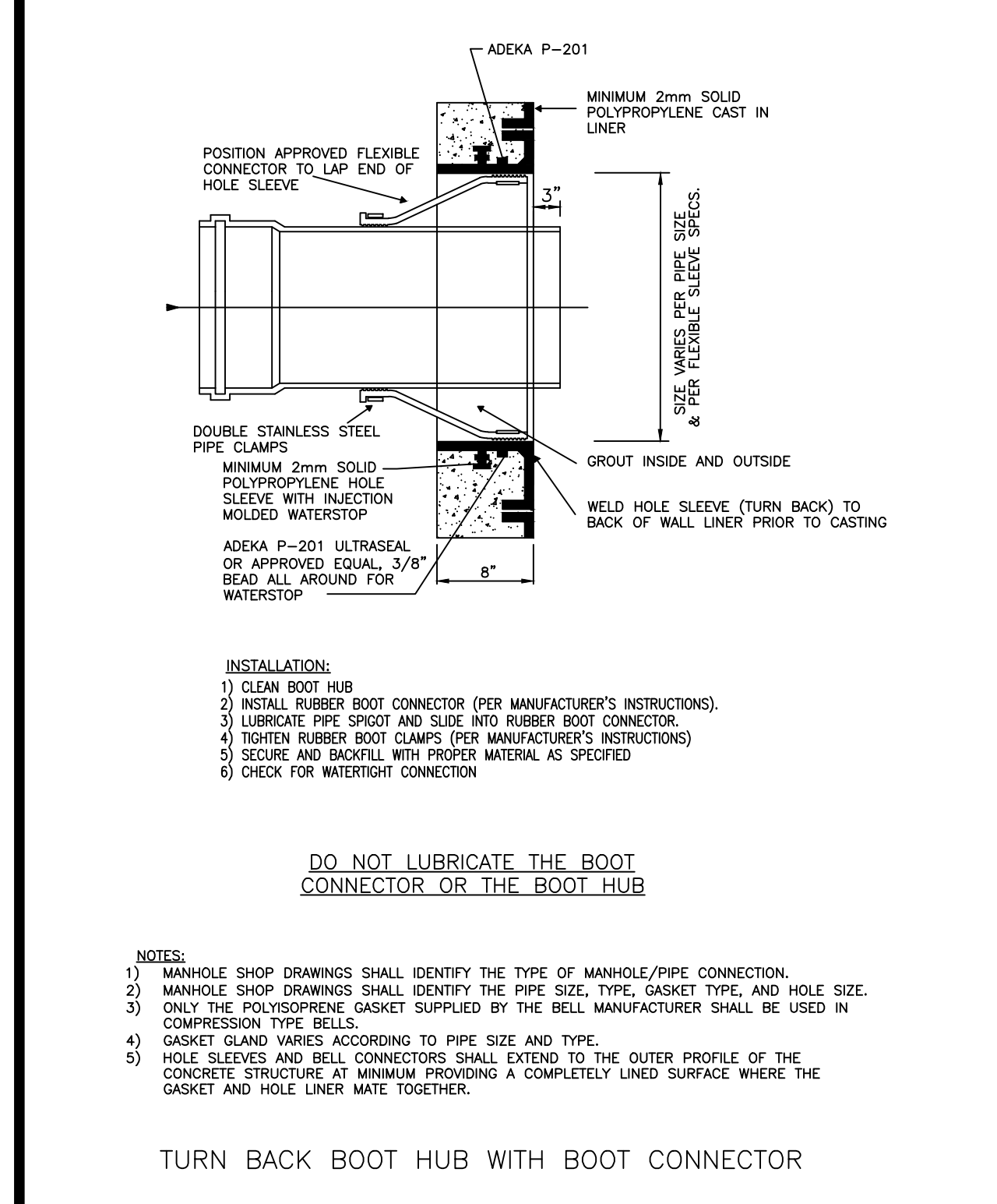
- NOTES:
1. COLLAR IS REQUIRED ONLY WHEN MANHOLE IS OUT OF PAVEMENT.
 2. STANDARD FRAME AND COVER SIZE SHALL BE SEVEN INCHES (7"). A 4" FRAME MAY ONLY BE USED WITH PRIOR APPROVAL.
 3. A STEEL MANHOLE RISER, APPROVED PRECAST CONCRETE ADJUSTING RINGS OR ADDITIONAL BRICKS MAY BE USED TO ELEVATE EXISTING MANHOLE COVERS TO RESURFACED GRADE (MAX. 4" HEIGHT).
 4. COVER SHALL FIT FLUSH WITH THE FRAME WITH THE INFLOW PROTECTOR INSTALLED.

GRAVITY SEWER MANHOLE FRAME & COVER 175



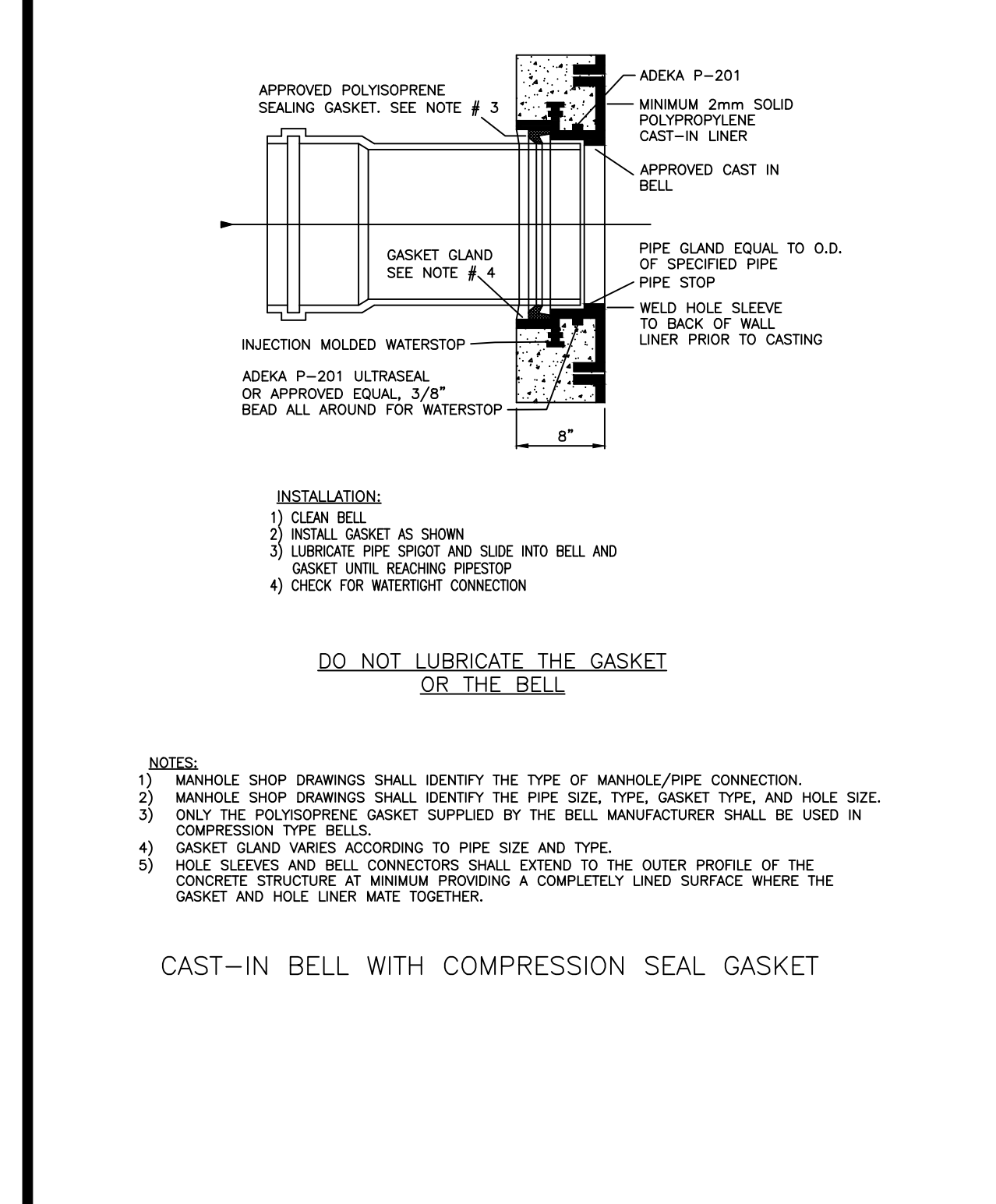
- NOTES:
1. PROPERLY SHAPED INVERT CHANNELS AND SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS TO PROVIDE FOR SMOOTH FLOWS.
 2. SERVICE LATERALS SHALL NOT ENTER MANHOLES UNLESS SPECIFIED ON PLANS AND THEN MUST BE TREATED AS MAINS (ELEVATIONS SHOWN, PRECAST HOLE, FLOW CHANNEL).
 3. APPROVED PRECAST POLYPROPYLENE OR FIBER REINFORCED POLYMER (FRP) FLOW CHANNELS WITH INTEGRATED PIPE INVERTS (SEE SEPARATE DETAILS), PRECAST CONCRETE FLOW CHANNELS, OR FIELD INSTALLED CONCRETE FLOW CHANNELS ARE REQUIRED.
 4. SIDEWALLS OF FLOW CHANNELS SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.
 5. NO INSIDE DROP LARGER THAN 4" SHALL BE ALLOWED WITH 3 OR 4 INVERTS AND MANHOLES WITH A CHANGE OF DIRECTION OF FLOW OF MORE THAN 45 DEGREES.
 6. THE FIELD APPLIED CORROSION BARRIER SYSTEM SHALL BE INSTALLED AFTER INVERT CHANNEL CONSTRUCTION UNLESS PRECAST THERMOPLASTIC BASELINER IS USED. THE FIELD APPLIED CORROSION BARRIER MAY NOT BE APPLIED TO THE FLOW CHANNEL.

INVERT FLOW CHANNELS 165



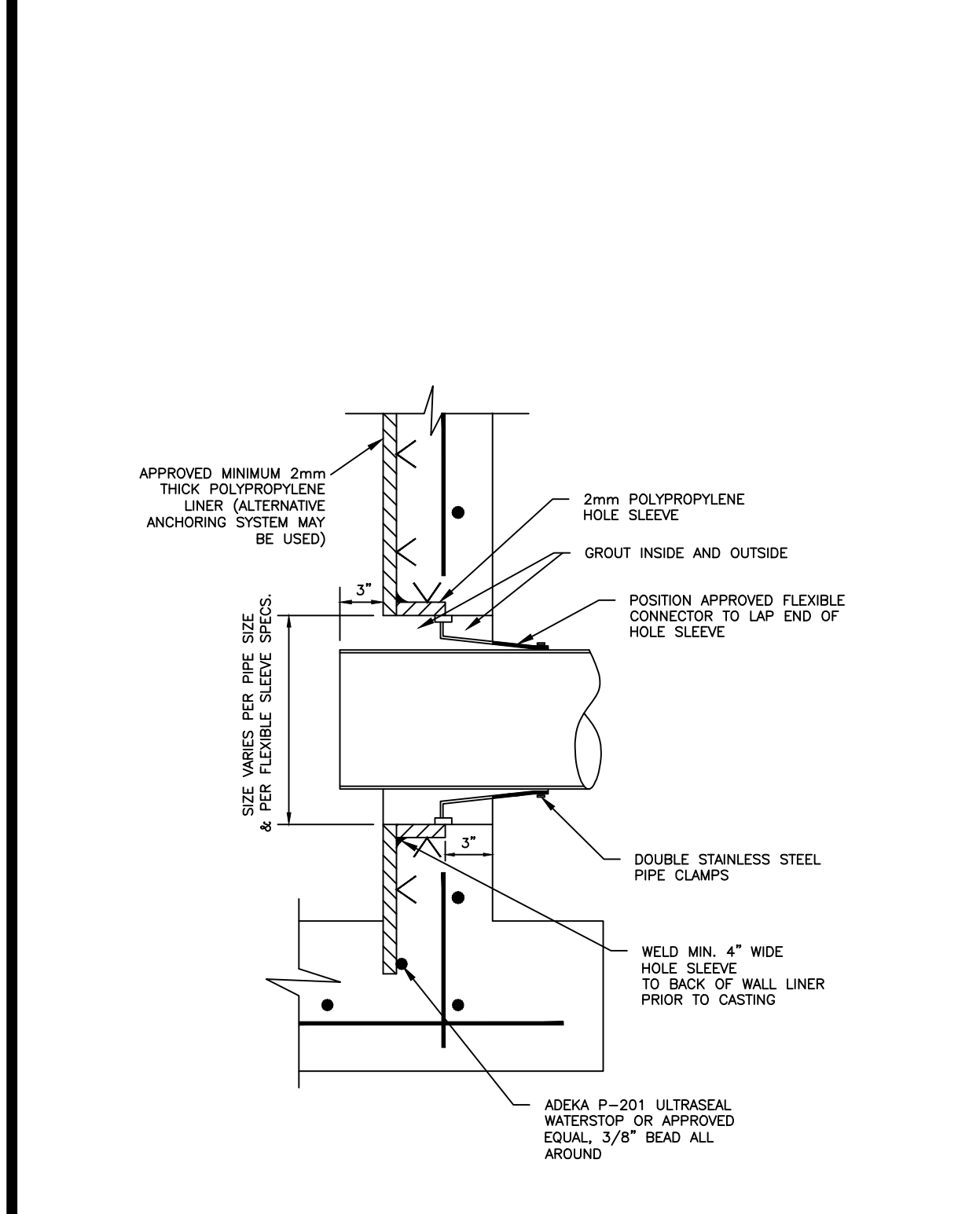
- NOTES:
- 1) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
 - 2) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE, AND HOLE SIZE.
 - 3) ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS.
 - 4) GASKET GLAND VARIES ACCORDING TO PIPE SIZE AND TYPE.
 - 5) HOLE SLEEVES AND BELL CONNECTORS SHALL EXTEND TO THE OUTER PROFILE OF THE CONCRETE STRUCTURE AT MINIMUM PROVIDING A COMPLETELY LINED SURFACE WHERE THE GASKET AND HOLE LINER MATE TOGETHER.

PIPE TO MANHOLE CONNECTION - TYPE "C" 235



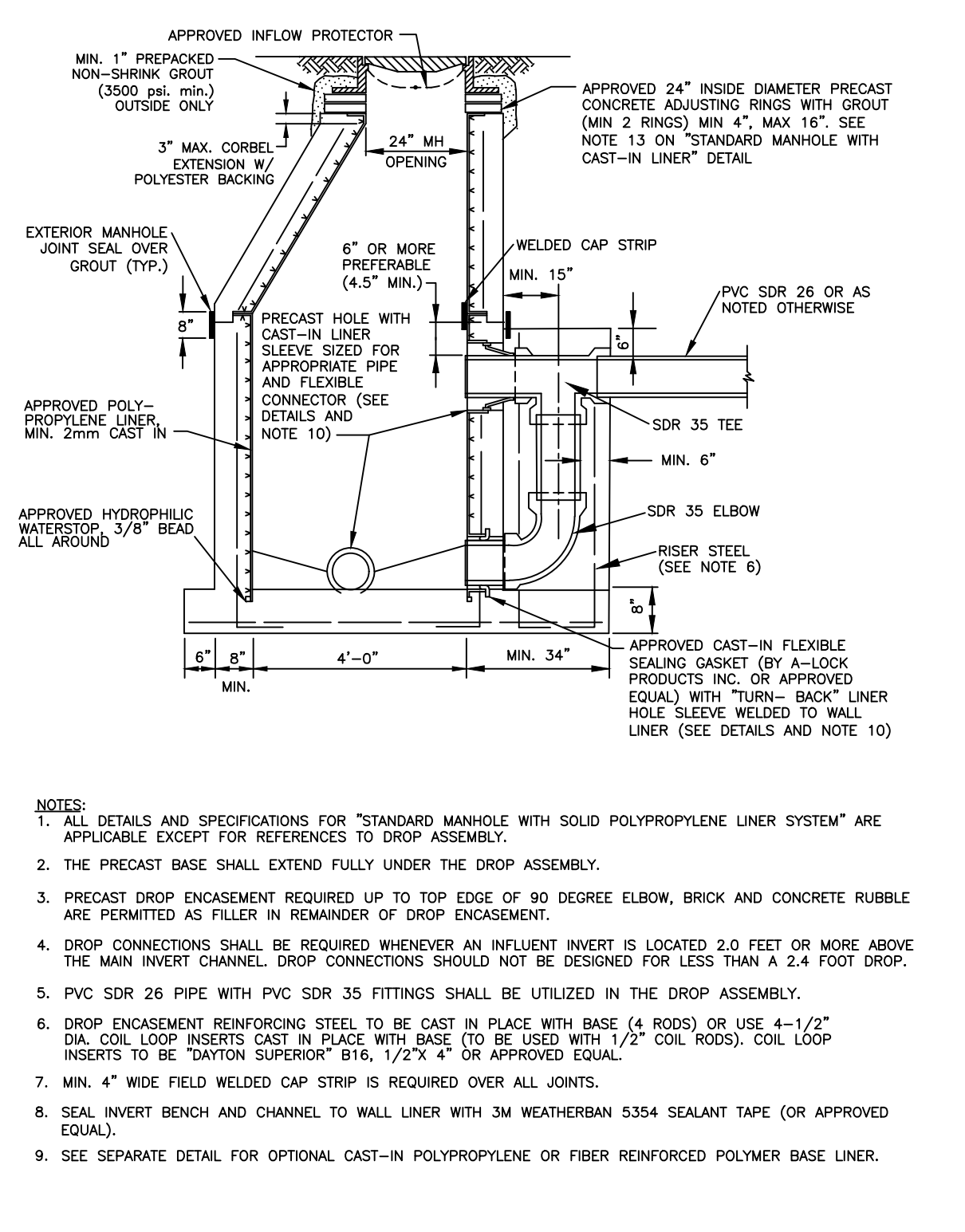
- NOTES:
- 1) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
 - 2) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE, AND HOLE SIZE.
 - 3) ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS.
 - 4) GASKET GLAND VARIES ACCORDING TO PIPE SIZE AND TYPE.
 - 5) HOLE SLEEVES AND BELL CONNECTORS SHALL EXTEND TO THE OUTER PROFILE OF THE CONCRETE STRUCTURE AT MINIMUM PROVIDING A COMPLETELY LINED SURFACE WHERE THE GASKET AND HOLE LINER MATE TOGETHER.

PIPE TO MANHOLE CONNECTION - TYPE "B" 225



- NOTES:
- 1) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
 - 2) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE, AND HOLE SIZE.
 - 3) ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS.
 - 4) GASKET GLAND VARIES ACCORDING TO PIPE SIZE AND TYPE.
 - 5) HOLE SLEEVES AND BELL CONNECTORS SHALL EXTEND TO THE OUTER PROFILE OF THE CONCRETE STRUCTURE AT MINIMUM PROVIDING A COMPLETELY LINED SURFACE WHERE THE GASKET AND HOLE LINER MATE TOGETHER.

PIPE TO MANHOLE CONNECTION - TYPE "A" 215



- NOTES:
1. ALL DETAILS AND SPECIFICATIONS FOR "STANDARD MANHOLE WITH SOLID POLYPROPYLENE LINER SYSTEM" ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY.
 2. THE PRECAST BASE SHALL EXTEND FULLY UNDER THE DROP ASSEMBLY.
 3. PRECAST DROP ENGAGEMENT REQUIRED UP TO TOP EDGE OF 90 DEGREE ELBOW, BRICK AND CONCRETE RUBBLE ARE PERMITTED AS FILLER IN REMAINDER OF DROP ENGAGEMENT.
 4. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 2.4 FOOT DROP.
 5. PVC SDR 26 PIPE WITH PVC SDR 35 FITTINGS SHALL BE UTILIZED IN THE DROP ASSEMBLY.
 6. DROP ENCASMENT REINFORCING STEEL TO BE CAST IN PLACE WITH BASE (4 RODS) OR USE 4-1/2" DIA. COIL LOOP INSERTS CAST IN PLACE WITH BASE (TO BE USED WITH 1/2" COIL RODS). COIL LOOP INSERTS TO BE "DAYTON SUPERIOR" #16, 1/2"X 4" OR APPROVED EQUAL.
 7. MIN. 4" WIDE FIELD WELDED CAP STRIP IS REQUIRED OVER ALL JOINTS.
 8. SEAL INVERT BENCH AND CHANNEL TO WALL LINER WITH 3M WEATHERBAN 5354 SEALANT TAPE (OR APPROVED EQUAL).
 9. SEE SEPARATE DETAIL FOR OPTIONAL CAST-IN POLYPROPYLENE OR FIBER REINFORCED POLYMER BASE LINER.

OUTSIDE DROP MANHOLE WITH CAST-IN LINER 205

WASTEWATER #3 STANDARD DETAILS

CONSULTANT:

IT'S THE LAW! CALL 48 HOURS BEFORE YOU DIG 1-800-432-4770 SUNSHINE STATE ONE CALL OF FLORIDA, INC. UTILITIES NOTIFICATION CENTER.

DESIGNED BY: WUD

DRAWN BY: M. BUCKNER Palm Beach County

CHECKED BY: J. LAMMERT Water Utilities Department

APPROVED BY: WUD P.O. Box 16097 West Palm Beach, FL 33416-6097