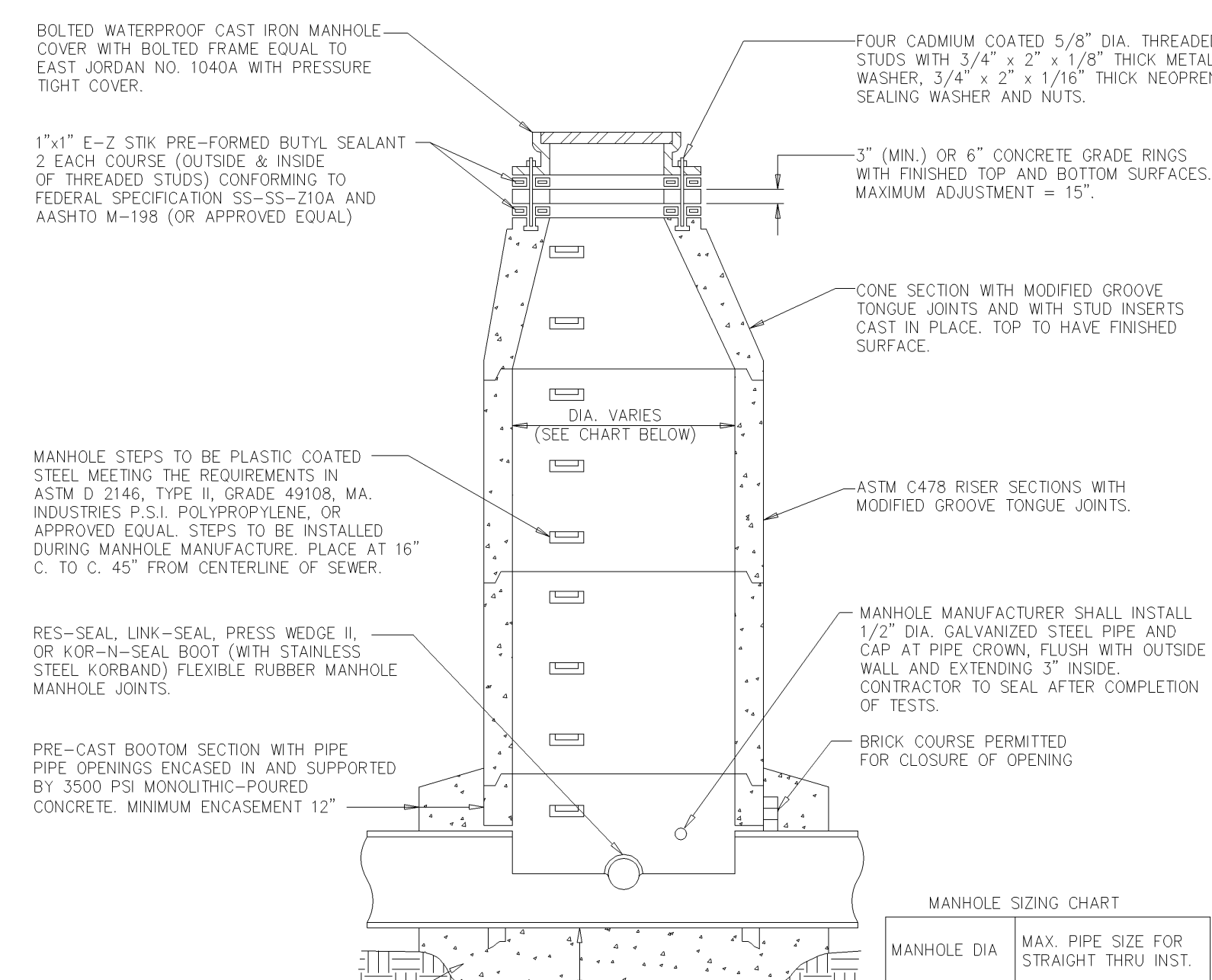


MAX. PIPE SIZE FOR STRAIGHT THRU INST.	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
24"	18"

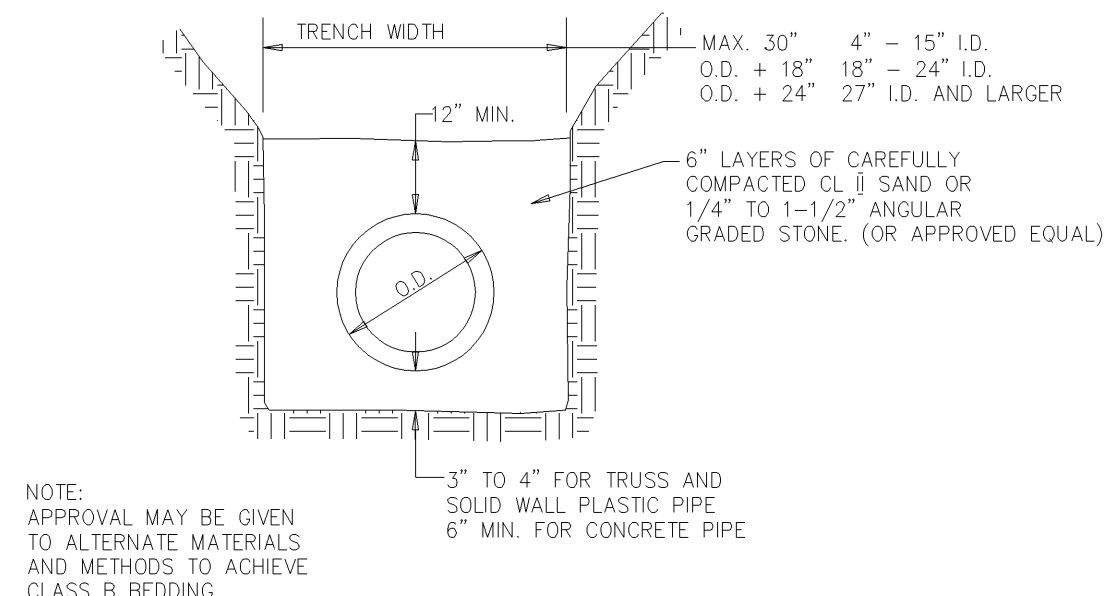
STANDARD MANHOLE



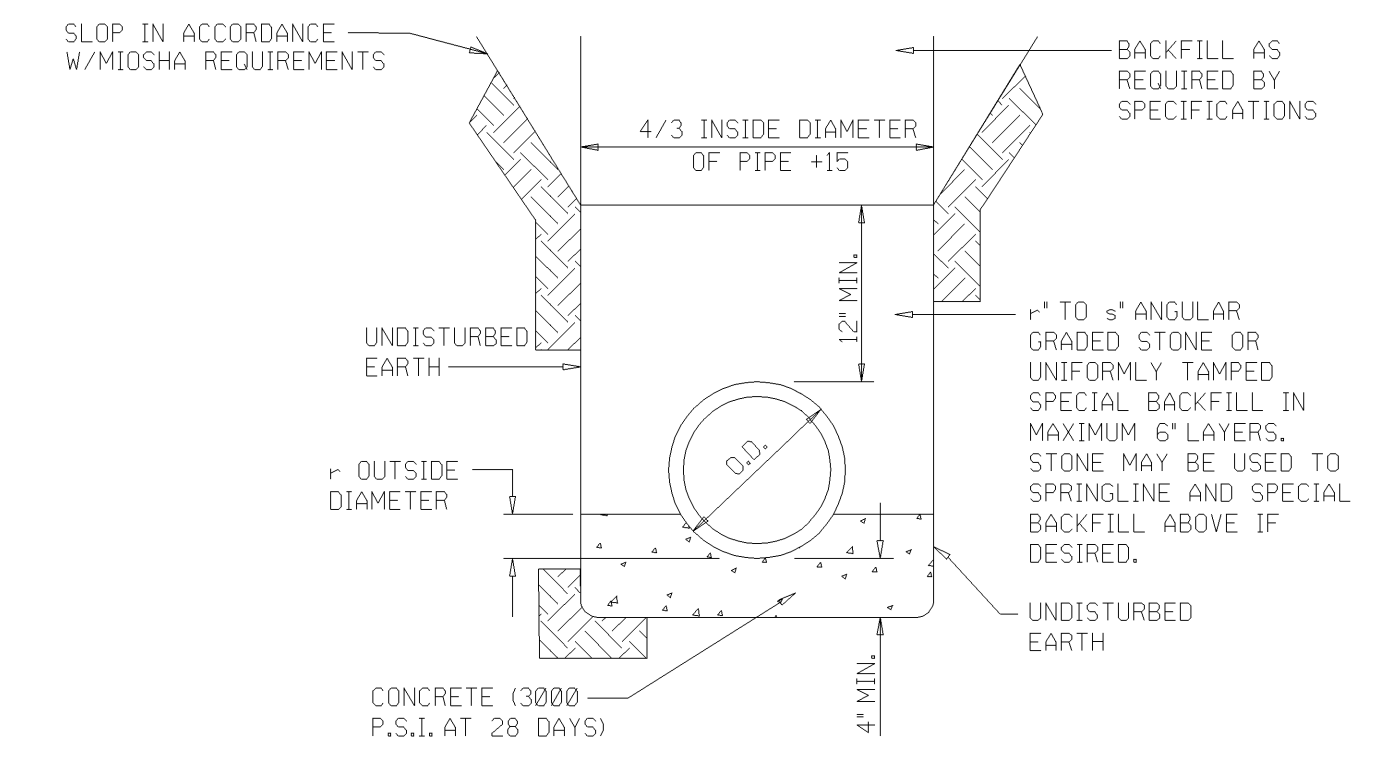
MANHOLE SIZING CHART

MANHOLE DIA.	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4"	24"
5"	36"
6"	42"
7"	60"

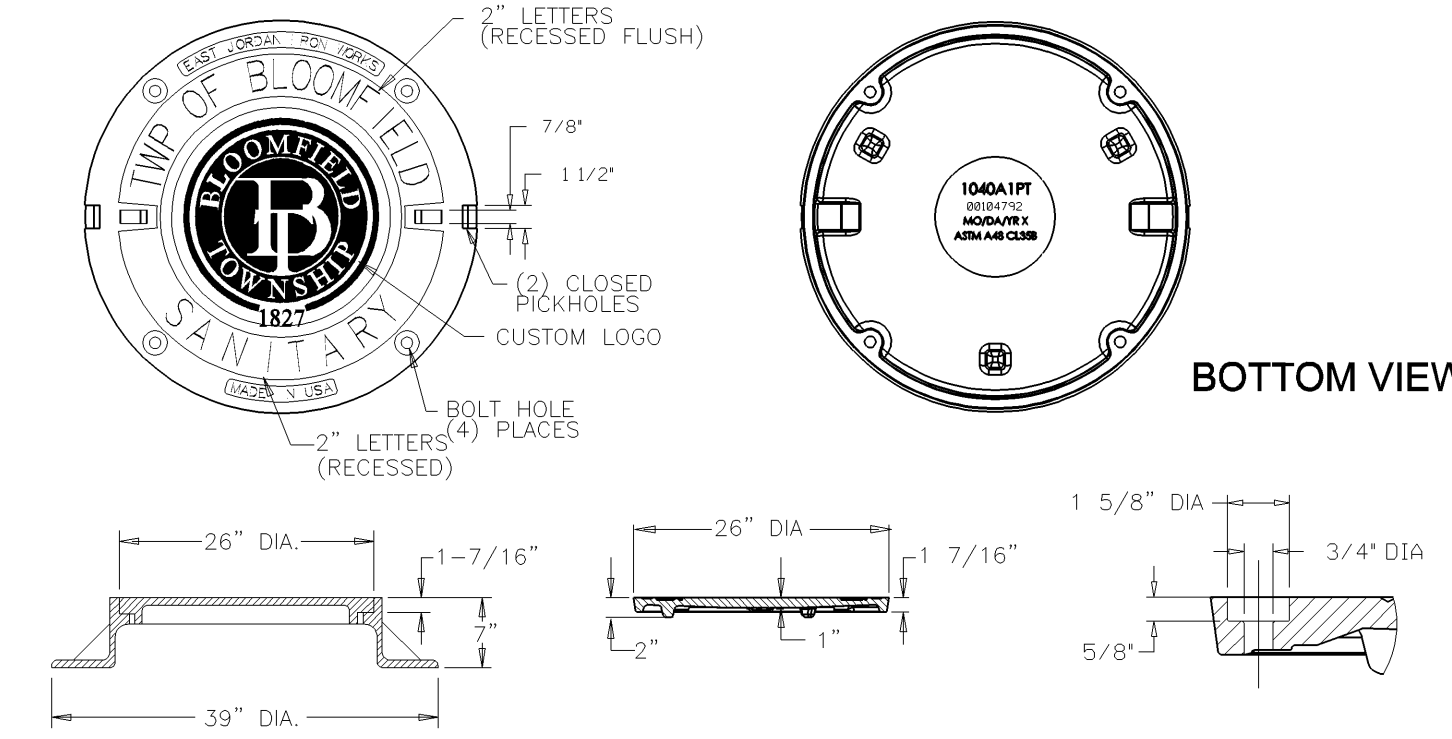
MANHOLE CONSTRUCTED OVER EXISTING SEWER



STANDARD CLASS "B" BEDDING (CLASS B)



CONCRETE CLASS "A" BEDDING

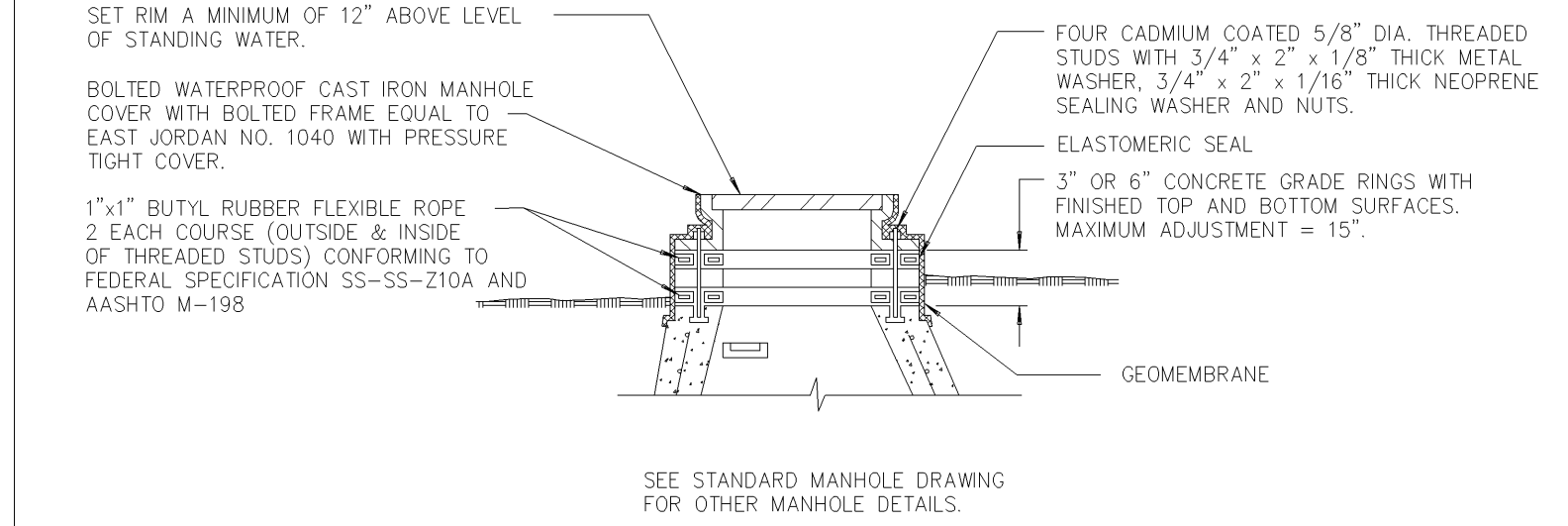


CROSS SECTION

BOLTHOLE DETAIL

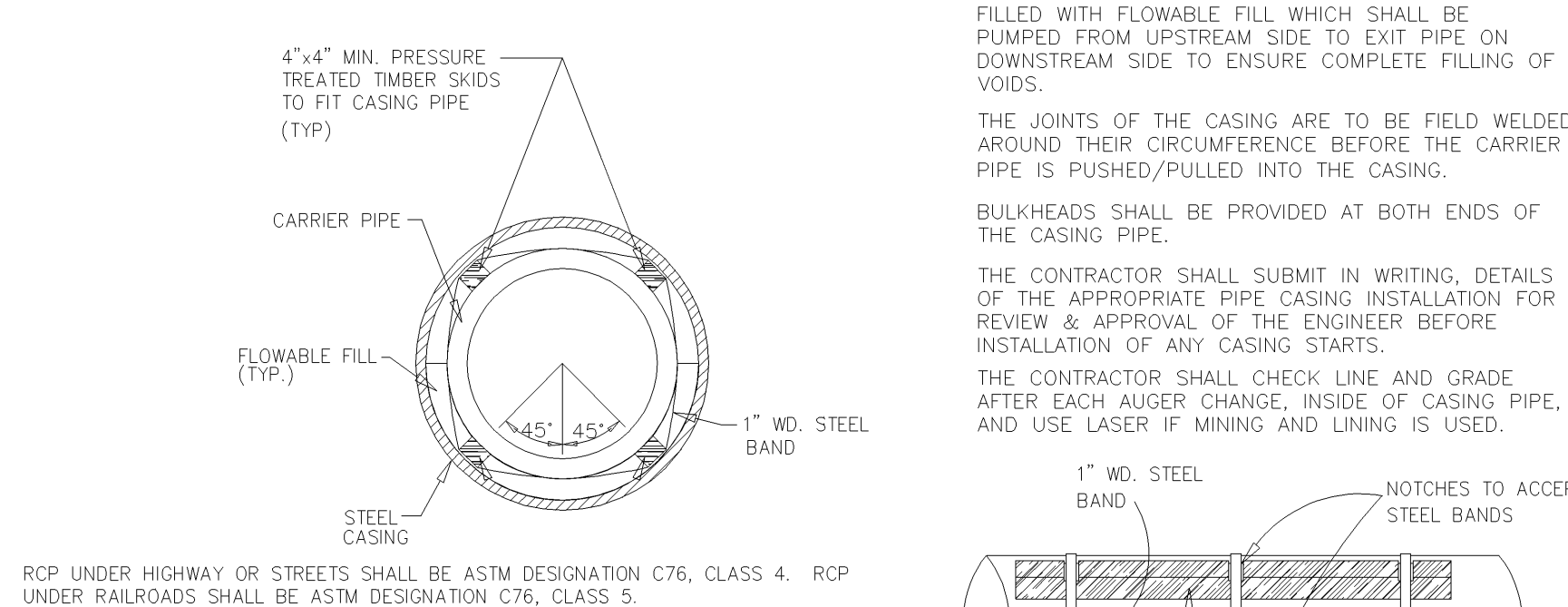
EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL 35B
COVER WT. 115 LBS., CATALOG NO. 1040A1PT
PATTERN NO. 1040A, PRODUCT NO. 1040A1PT
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

MANHOLE COVER



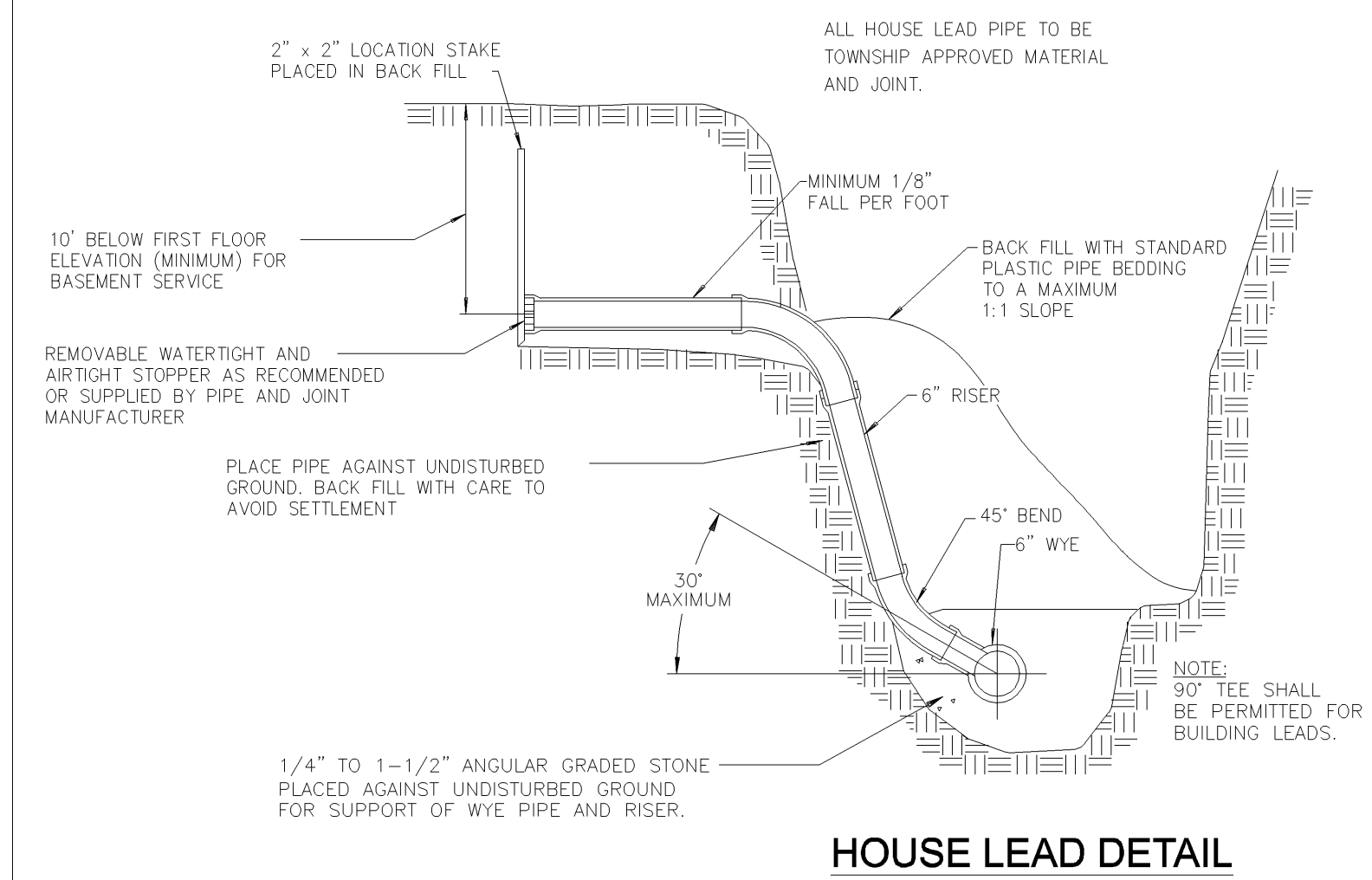
ADJUSTMENT DETAIL MANHOLE TOPS

CASING DETAILS

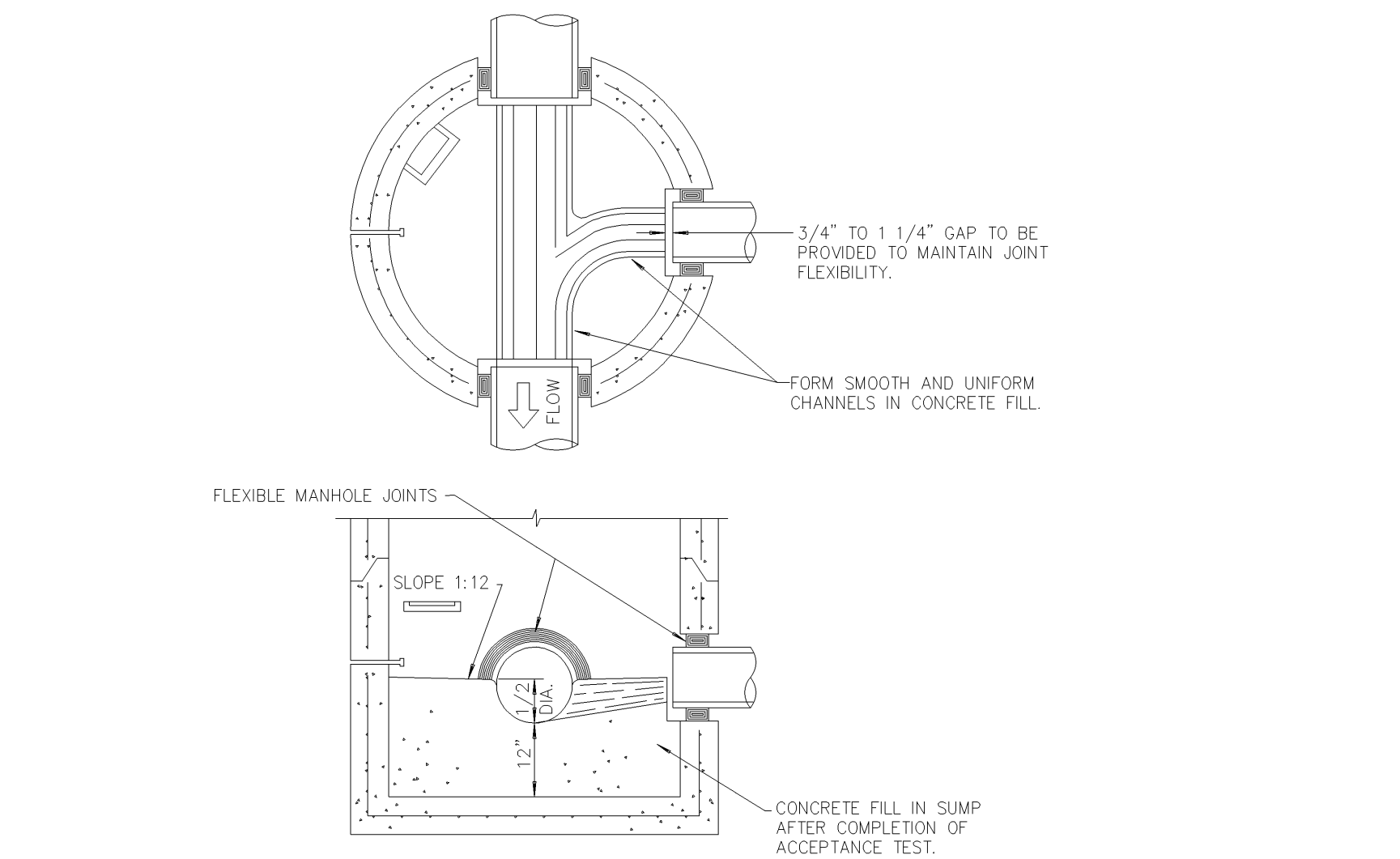


STEEL CASING PIPE SHALL BE UNCOATED PIPE MEETING THE REQUIREMENTS OF EITHER ASTM A53, (TYPE E OR S, GRADE B) OR ASTM A139 (GRADE B) AND SHALL CONFORM TO THE FOLLOWING TABLE:

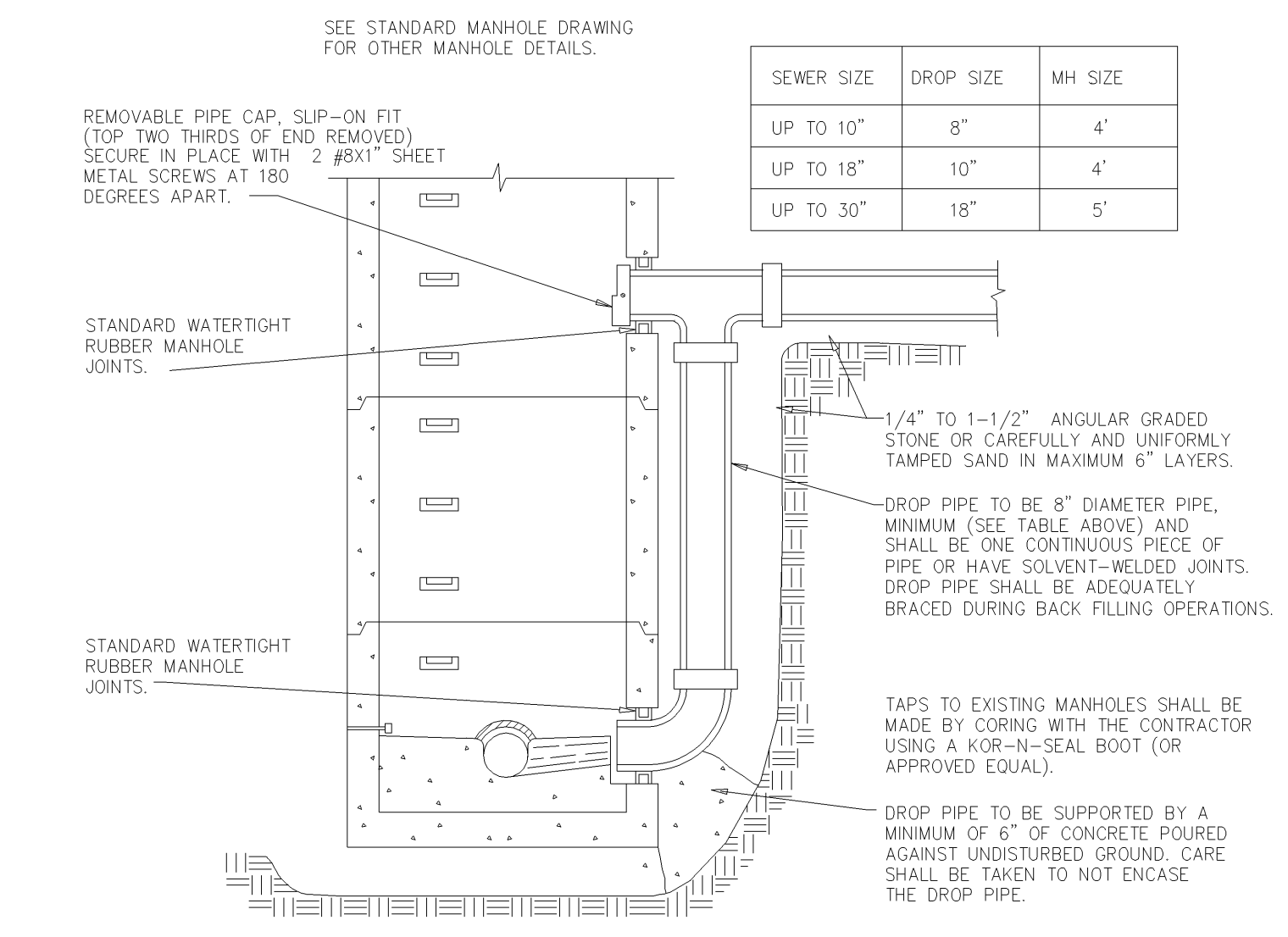
NOMINAL SIZE OF CASING PIPE (INCHES)	MIN. WALL THICKNESS UNDER HIGHWAY OR STREET (INCHES)	MIN. WALL THICKNESS UNDER RAILROAD (INCHES)
12	0.250	0.281
18	0.250	0.312
20	0.250	0.344
24	0.250	0.406
30	0.312	0.469
36	0.312	0.531
42	0.531	0.562
48	0.609	0.609
54	0.687	0.687



HOUSE LEAD DETAIL



SUMP MANHOLE FOR TESTING, CLEANING AND DEWATERING



EXTERIOR DROP CONNECTION

SANITARY SEWER CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF BLOOMFIELD TOWNSHIP AND THE OAKLAND COUNTY DRAIN COMMISSIONER (OCDC) WHERE APPLICABLE. ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A PROFESSIONAL ENGINEER PROVIDED BY BLOOMFIELD TOWNSHIP.
- AT ALL CONNECTIONS TO PUBLIC SEWERS FOR NEW EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER TAP PERMIT ISSUED BY OCDC.
- INFILTRATION TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH OCDC OPEN CUT SANITARY SEWER SPECIFICATIONS ITEM # 14 "ACCEPTANCE TESTS". ALL TESTS MUST BE WITNESSED BY AN OCDC INSPECTOR.
- AT ALL CONNECTIONS TO AN EXISTING TOWNSHIP SEWER, OR EXTENSION THERETO, A WATERTIGHT BULKHEAD WITH A CAPPED ONE INCH DIAMETER PIPE TO PERMIT MEASURING INFILTRATION SHALL BE PROVIDED. A TEMPORARY 12- INCH DEEP SUMP SHALL ALSO BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED WITH CONCRETE AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL.
- ALL BUILDING LEADS AND RISERS SHALL BE SIX INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS TO BE FURNISHED WITH REMOVABLE AIRTIGHT AND WATERTIGHT STOPPERS.
- ALL RIGID SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER.
- ALL NEW MANHOLES SHALL HAVE APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
- DROP CONNECTIONS SHALL BE REQUIRED AT ALL CONNECTIONS TO MANHOLES WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES. (18" MAX. MAY NOT BE APPLICABLE WITH LARGER PIPES).
- TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR-N-SEAL BOOT TO ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
- THE CONTRACTOR SHALL CONTACT MISS DIG (800-482-7171) WITHIN A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATIONS FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- A 18 INCH MINIMUM VERTICAL SEPARATION AND 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
- ALL NEWLY CONSTRUCTED TOWNSHIP SEWERS SHALL BE CLEANED OF MUD, DEBRIS AND OTHER DEFICIENCIES AND SHALL BE VIDEO INSPECTED PRIOR TO BEING PLACED INTO SERVICE. VIDEO INSPECTION MUST BE IN THE PRESENCE OF THE TOWNSHIP INSPECTOR. VIDEO TAPES ARE TO BE DELIVERED TO THE TOWNSHIP IN A VHS FORMAT OR EQUIVALENT.

GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

- ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER BLOOMFIELD TOWNSHIP INSPECTOR.
- FOR ALL OCDC-OPERATED SYSTEMS, CALL 248-858-1110 24-HOURS IN ADVANCE OF WORK TO BE SCHEDULED INSPECTION.
- NO SANITARY SEWER MAY BE USED AS A CLEANOUT OF DETERMINING OUTLET.
- WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING AN APPROVED ADAPTER.
- APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
 - ABS PLASTIC, ASTM D2751, SDR 23.5.
 - PVC PLASTIC, ASTM D3034, SDR 23.5 OR ASTM D2665, SCHEDULE 40.
 - DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54 JOINTS SHALL BE SUPER BEL TITL, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
 - ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY BLOOMFIELD TOWNSHIP.
- ALLOWABLE TYPES OF SEWER PIPE ADAPTERS: SHALL BE IN CONFORMANCE WITH CURRENT STATE PLUMBING CODE.

NO.	BY	DATE	REVISION DESCRIPTION
01		02-16-2005	UPDATED DETAIL SHEET
02		08-09-2005	UPDATED PER BTEES
03		11-22-2005	UPDATED PER BTEES

SANITARY SEWER STANDARD DETAILS AND NOTES



BLOOMFIELD TOWNSHIP ENGINEERING & ENVIRONMENTAL SERVICES
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P.O. BOX 489
BLOOMFIELD HILLS, MI 48303-0489
PHONE: (248) 433-7771
24 HRS: (248) 433-7730
www.BloomfieldTwp.org

DRAWN	DATE	CHECKED	DATE	SHEET NO.:
BTEES	02/16/05	BTEES	02/16/05	OF
PROJECT MANAGER	SCALE		NO SCALE	