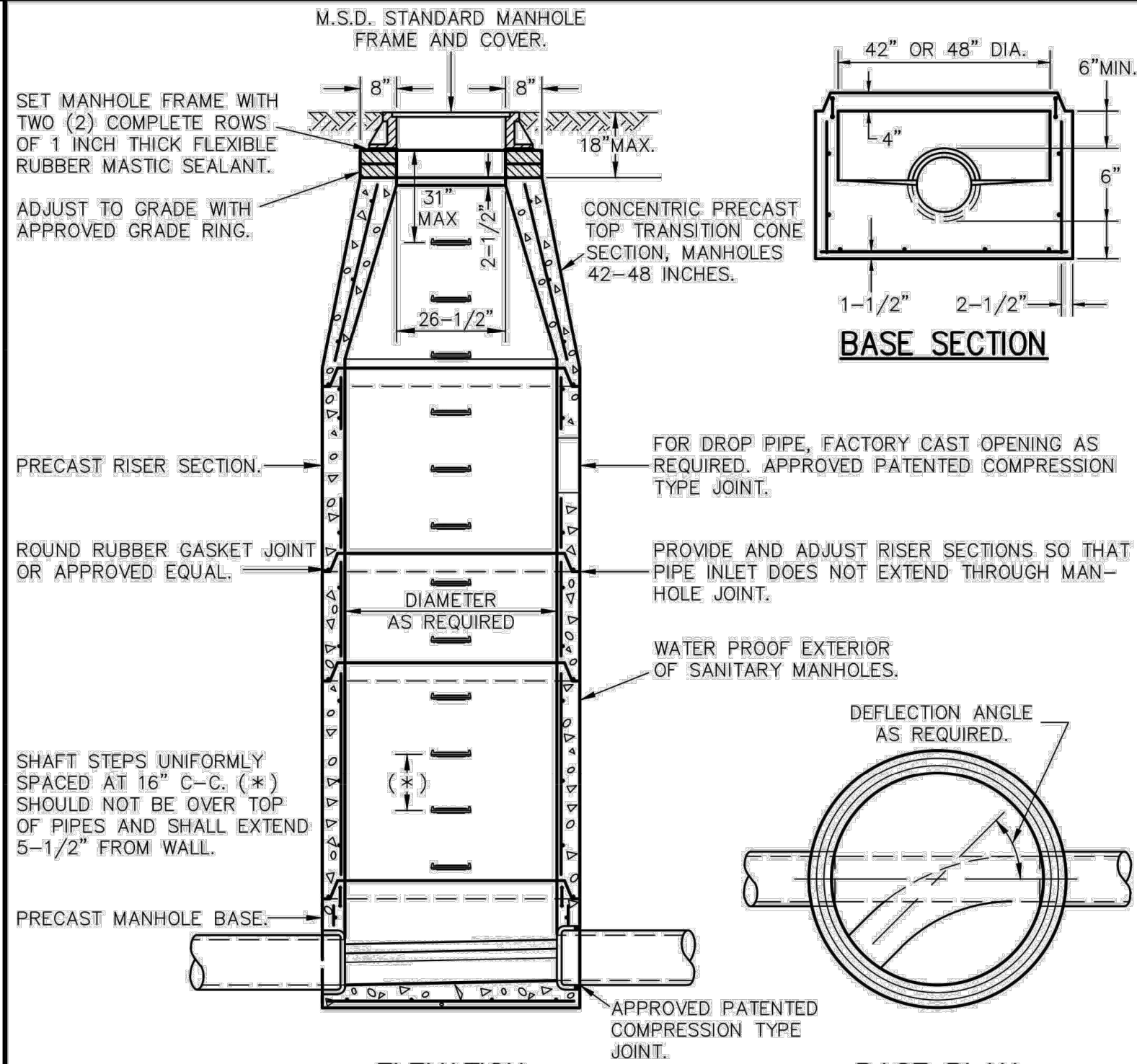
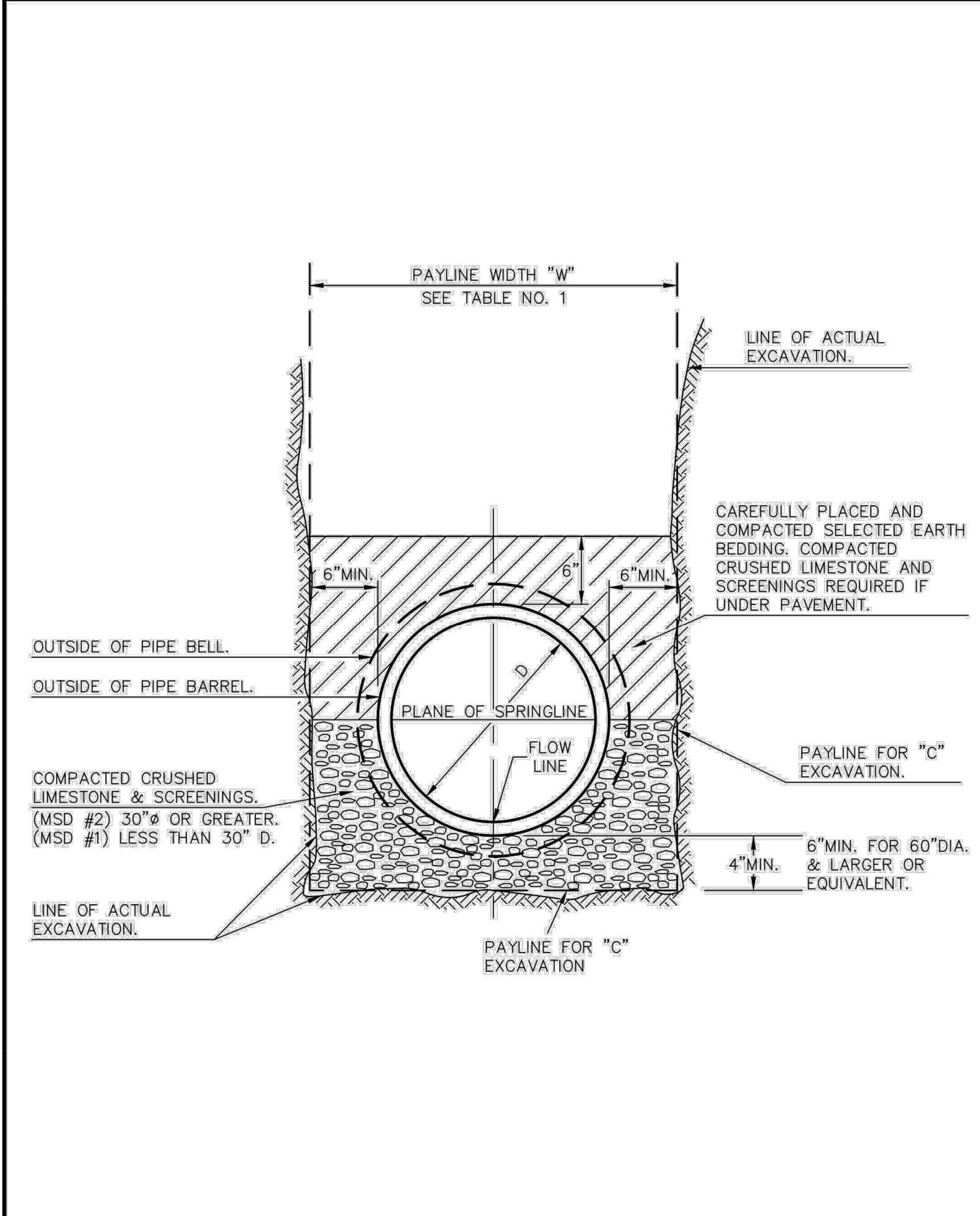


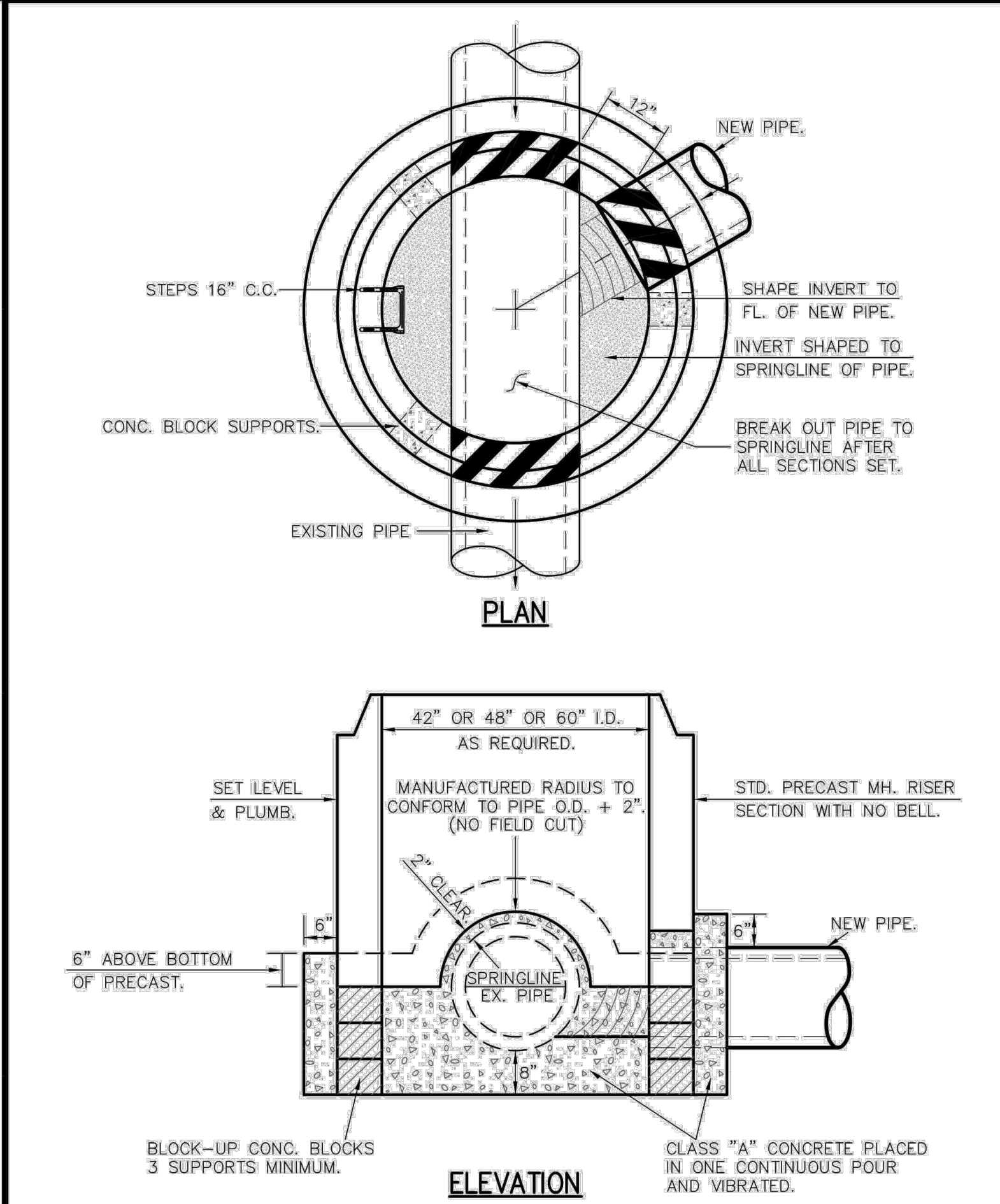


- NOTES:
- 1) THE MINIMUM INSIDE DIAMETER FOR THE BASE AND RISER SECTIONS SHALL BE 42 INCHES FOR 8 INCH DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR SANITARY SEWERS LARGER THAN 8 INCH DIAMETER IS 48 INCHES. MANHOLE SHALL MEET ASTM C-478 REQUIREMENTS.
 - 2) PIPE SIZES LARGER THAN 24 INCH DIAMETER MAY REQUIRE MANHOLE DIAMETERS OF 60 INCH, 72 INCH OR 96 INCH AS DETERMINED BY OUTSIDE DIAMETERS AND ORIENTATIONS OF CONNECTING PIPES.
 - 3) ECCENTRIC CONES SHALL BE USED ON DIAMETERS 60 INCH AND LARGER. STEPS SHALL EXTEND DOWN VERTICAL WALL OF CONE.
 - 4) PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL OF MANHOLES ON PIPE DIAMETERS LARGER THAN 24 INCH AND ALSO FOR THOSE STRUCTURES WITH A DROP PIPE CONNECTION.

PRECAST CONCRETE MANHOLES	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
Dr. WSH/SAM Ch. J.C.K.	2009
SHEET 17	

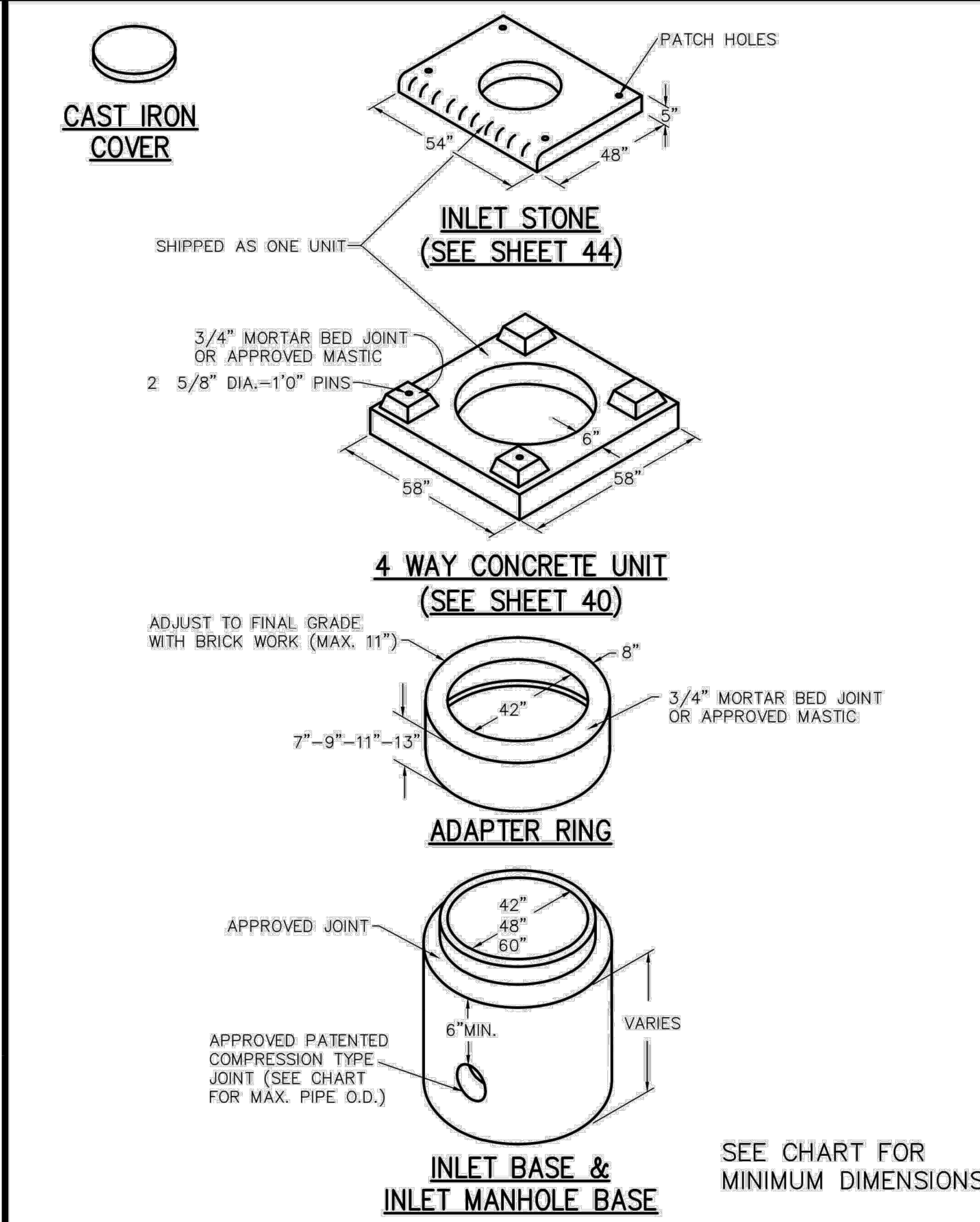


PIPE BEDDING CLASS "C"	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K.	2009
SHEET 4	



NOTE: WATER STOP REQUIRED FOR P.V.C., SANITARY & COMBINED SEWERS TO BE VACUUM TESTED.

PRECAST MANHOLE ON EXIST. PIPE W/CONTINUOUS FLOW ONLY	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
Dr. S.A.M. Ch. P.W.S.	2009
SHEET 22	



PIPE BEDDING CLASS "C"	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
Dr. JLG/SAM Ch. J.C.K.	2009
SHEET 30A	

ADS, Inc. Drainage Handbook Specifications • 1-16

ADS SANITITE® HP 12"- 60" PIPE SPECIFICATION

Scope
This specification describes 12- through 60-inch (300 to 1500 mm) ADS SaniTite HP pipe for use in gravity-flow sanitary sewer applications.

Pipe Requirements
ADS 12"-30" (300 to 750mm) SaniTite HP dual wall pipe shall have a smooth interior and annular exterior corrugations; 30"-60" (750 to 1500mm) SaniTite HP triple wall pipe shall have a smooth interior and exterior surfaces with annular inner corrugations.

- 12- through 30-inch (300 to 750 mm) dual wall pipe shall meet ASTM F2764
- 30- through 60-inch (750 to 1500 mm) triple wall pipe shall meet ASTM F2764
- 12- through 60-inch (300 to 1500 mm) pipe shall have a minimum pipe stiffness of 48 pii when tested in accordance with ASTM D2412.
- Manning's "n" value for use in design shall be 0.012.

Joint Performance
Pipe shall be joined using a bell and spigot joint meeting the requirements of ASTM F2764. The joint shall be watertight according to the requirements of ASTM D3212, with the addition of a 15 psi pressure requirement. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

Fittings
Fittings shall conform to ASTM F2764. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.

Field Pipe and Joint Performance
To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F1417 or ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties
Polypropylene compound for pipe and fitting production shall be an impact modified copolymer meeting the material requirements of ASTM F2764.

Installation
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500mm) diameter the minimum cover shall be 2-ft (0.6m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted) or Class 2 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.05. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

Nominal Pipe I.D. (in. (mm))	12 (300)	15 (375)	18 (450)	21 (530)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Average Pipe I.D. (in. (mm))	12.1 (307)	14.9 (378)	18.0 (457)	21.1 (536)	24.1 (612)	30.1 (765)	36.1 (917)	41.9 (1065)	47.3 (1201)	59.1 (1500)
Average Pipe O.D. (in. (mm))	14.5 (368)	17.6 (447)	21.2 (538)	24.8 (629)	28.0 (711)	35.7 (902)	41.5 (1054)	47.4 (1199)	54.1 (1374)	67.1 (1705)

OD values listed above are NOT for manhole connector sizing. See ADS Standard Detail 205A-F for the recommended manhole connector based on product and diameter.

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NYLOPLAST® SANITITE® HP FABRICATED REDUCING TEE 45° WYE X SWR BRANCH 12" x 4" - 18" x 15" DIAMETER (BELL/BELL/SWR)		
PART #	PIPE SIZE	JOINT
1224AGHP	12 x 4 in (300 x 100 mm)	WT
1225AGHP	12 x 6 in (300 x 150 mm)	WT
1226AGHP	12 x 8 in (300 x 200 mm)	WT
1227AGHP	12 x 10 in (300 x 250 mm)	WT
1524AGHP	15 x 4 in (375 x 100 mm)	WT
1525AGHP	15 x 6 in (375 x 150 mm)	WT
1526AGHP	15 x 8 in (375 x 200 mm)	WT
1527AGHP	15 x 10 in (375 x 250 mm)	WT
1824AGHP	18 x 4 in (450 x 100 mm)	WT
1825AGHP	18 x 6 in (450 x 150 mm)	WT
1826AGHP	18 x 8 in (450 x 200 mm)	WT
1827AGHP	18 x 10 in (450 x 250 mm)	WT
1828AGHP	18 x 12 in (450 x 300 mm)	WT
1829AGHP	18 x 15 in (450 x 375 mm)	WT

WT (INCLUDES 3 GASKETS)

NOTE: ALL FITTINGS DIMENSIONS ARE FOR REFERENCE ONLY

STORM SEWER INLET CURB MARKINGS:

PROVIDE A MARKING ON THE STORM SEWER INLETS. THE CITY WILL ALLOW THE FOLLOWING MARKERS AND ADHESIVE PROCEDURES ONLY AS SHOWN BELOW OR AN APPROVED EQUAL.

"PEEL AND STICK" ADHESIVE PADS WILL NOT BE ALLOWED.

CONTRACTOR TO CHOOSE ONE OF THE FOLLOWING:

ACP INTERNATIONAL STORM DRAIN SIDEWALK & CURB MARKERS

Standard Style Markers
UV Resistant
The das Standard Curb Marker is made from a .030 opaque white plastic. This proprietary material contains U.V. inhibitors and a layering of materials for flexibility and impact resistance. The printing is on the surface of the material which is then covered with our SolarShield™ clear coat for added U.V. resistance.

BETTER

1 SolarShield™ Clearcoat
2 Printed Image
3 .030 Opaque White Plastic Base

"PEEL AND STICK" ADHESIVE PADS WILL NOT BE ALLOWED.

WOOD POST NOTES:
MINIMUM SPACING (CENTER TO CENTER) BETWEEN TWO 4" x 4" WOOD POSTS SHALL BE 3 FEET. MINIMUM SPACING (CENTER TO CENTER) BETWEEN TWO WOOD POSTS OF ANY OTHER SIZE SHALL BE 8 FEET.

CONSTRUCTION PERMIT SIGN DETAIL

ADS, Inc. Drainage Handbook Specifications • 1-16

TECHNICAL NOTE

Minimum and Maximum Cover Heights for SaniTite® HP Pipe for Sanitary Sewer

TN 2.05
December 2016

Introduction

The information in this document is designed to provide answers to general cover height questions; the data provided is not intended to be used for project design. The design procedure described in the Structures section (Section 2) of the Drainage Handbook provides detailed information for analyzing most common installation conditions. This procedure should be utilized for project specific designs.

The two common cover height concerns are minimum cover in areas exposed to vehicular traffic and maximum cover heights. Either may be considered "worst case" scenario from a loading perspective, depending on the project conditions.

Minimum Cover in Traffic Applications

Pipe diameters from 12- through 48-inch (300-1200 mm) installed in traffic areas (AASHTO H-20, H-25, or HL-93 loads) must have at least one foot (0.3m) of cover over the pipe crown, while 60-inch (1500 mm) pipes must have at least 24 inches (0.6m) of cover. The backfill envelope must be constructed in accordance with the *Installation* section (Section 5) of the Drainage Handbook and the requirements of ASTM D2321. The backfill envelope must be of the type and compaction listed in the *Installation* section of the Drainage Handbook, Appendix A-5, Table A-5-2. In Table 1 below, this condition is represented by a Class II material compacted to 90% standard Proctor density; although other material can provide similar strength at slightly lower levels of compaction. Structural backfill material should extend six inches (0.15m) over the crown of the pipe; the remaining cover should be appropriate for the installation and as specified by the design engineer. If settlement or rutting is a concern, it may be appropriate to extend the structural backfill to grade. Where pavement is involved, sub-base material can be considered in the minimum burial depth. While rigid pavements can be included in the minimum cover, the thickness of flexible pavements should not be included in the minimum cover.

Additional information that may affect the cover requirements is included in the *Installation* section (Section 5) of the Drainage Handbook. Some examples of what may need to be considered are temporary heavy equipment, construction loading, paving equipment and similar loads that are less than the design load, the potential of pipe flotation, and the type of surface treatment which will be installed over the pipe zone. Please note Table 1 and 2 are based on the installation of SaniTite HP under pavement using a uniform backfill type and compaction level, as depicted in Figure 1.

Table 1
Minimum Cover Requirements for ADS SaniTite HP with AASHTO H-20, H-25, or HL-93 Load

Inside Diameter, ID, (in. (mm))	Minimum Cover (ft. (m))
12 (300)	1 (0.3)
15 (375)	1 (0.3)
18 (450)	1 (0.3)
24 (600)	1 (0.3)
30 (750)	1 (0.3)

Inside Diameter, ID, in. (mm)	Minimum Cover (ft. (m))
36 (900)	1 (0.3)
42 (1050)	1 (0.3)
48 (1200)	1 (0.3)
60 (1500)	2 (0.6)

Notes:

1. Minimum covers presented here were calculated assuming Class II backfill material compacted to 90% standard Proctor density around the pipe and a minimum of 6-inches (0.15m) structural backfill over the pipe crown, as recommended in Section 5 of the Drainage Handbook, with an additional layer of compacted traffic lane sub-base for a total cover as required. In shallow traffic installations, especially where pavement is involved, a good quality compacted material to grade is required to prevent surface settlement and rutting.
2. The minimum covers specified do not include pavement thickness. A pavement section of 0.4' is typical.
3. Backfill materials and compaction levels not shown in the table may also be acceptable. Contact ADS for further detail.
4. Calculations assume no hydrostatic pressure and native soils that are as strong as the specified minimum backfill recommendations.

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ATN205

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Proj. # 2494

No.	Description	Date
To City	03/29/24	
To City	04/17/24	
To City	09/16/24	
To City	10/15/24	
To City	11/01/24	

SEWER DETAILS

DRAWING NO.
C9