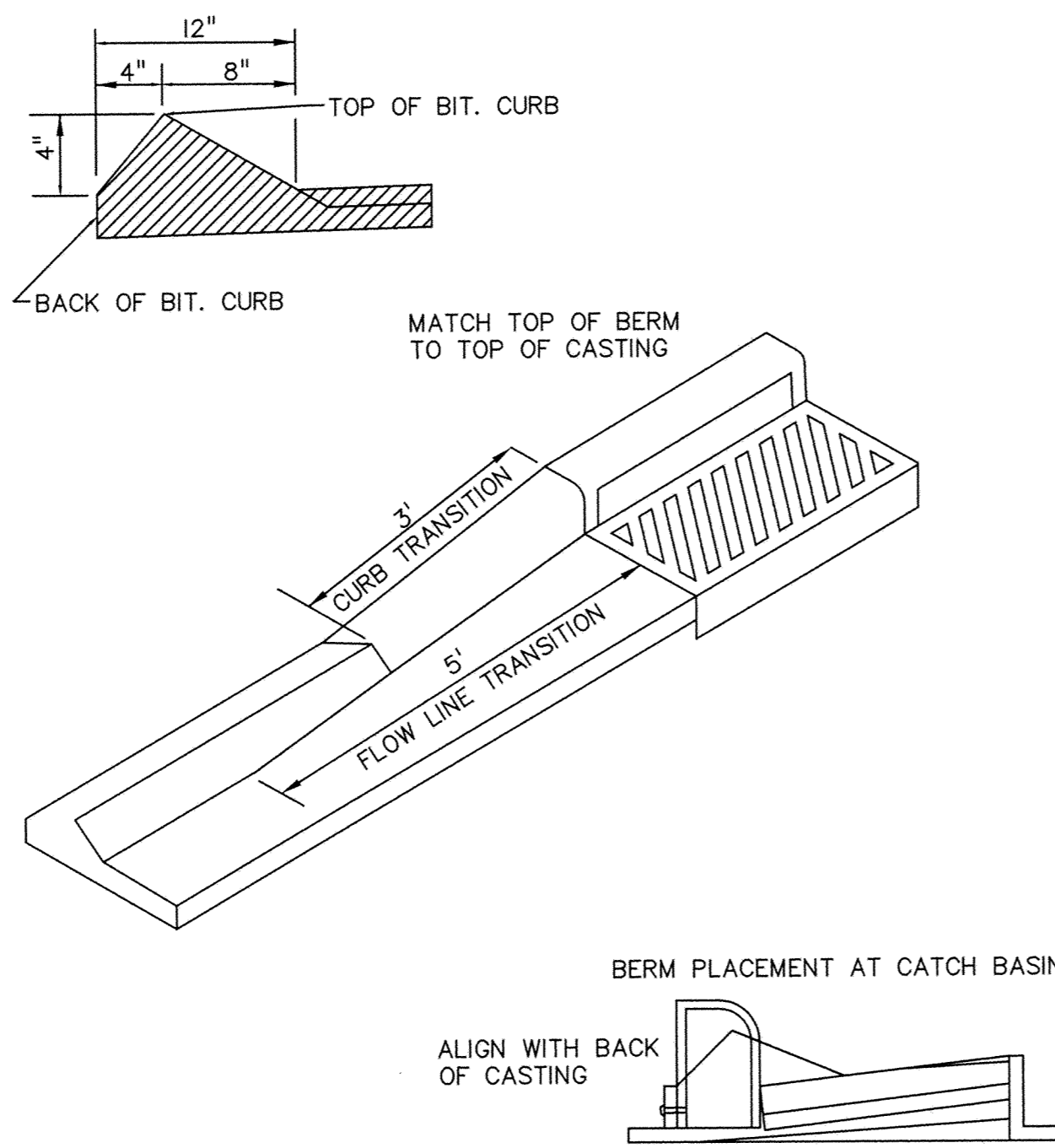


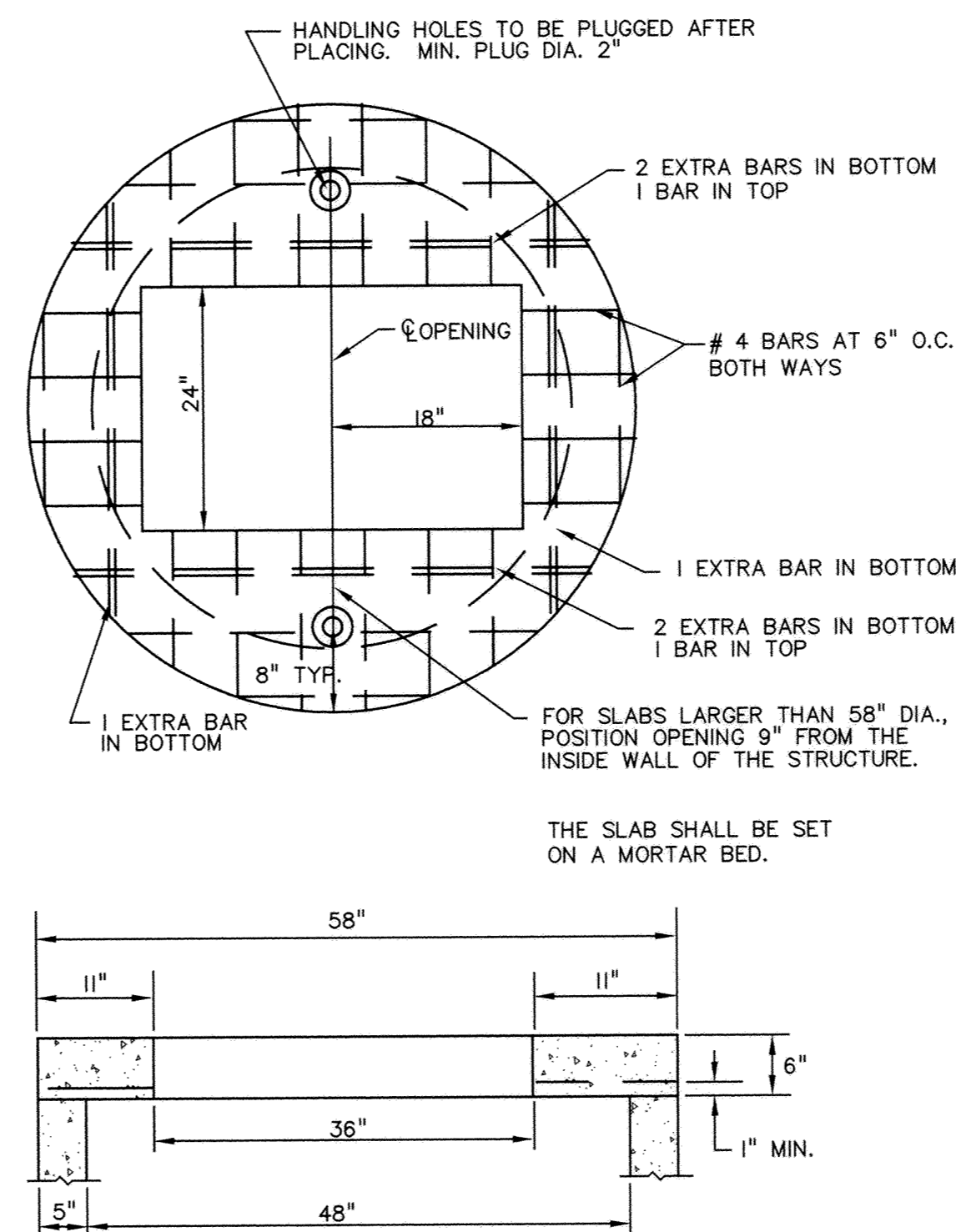
CASTINGS SHALL BE NEENAH R-3067-V OR EQUAL

STANDARD INLET CASTING

BERM FORMED WITH SHOE ATTACHED TO PAVER, WHEN BITUMINOUS BASE COURSE IS PLACED

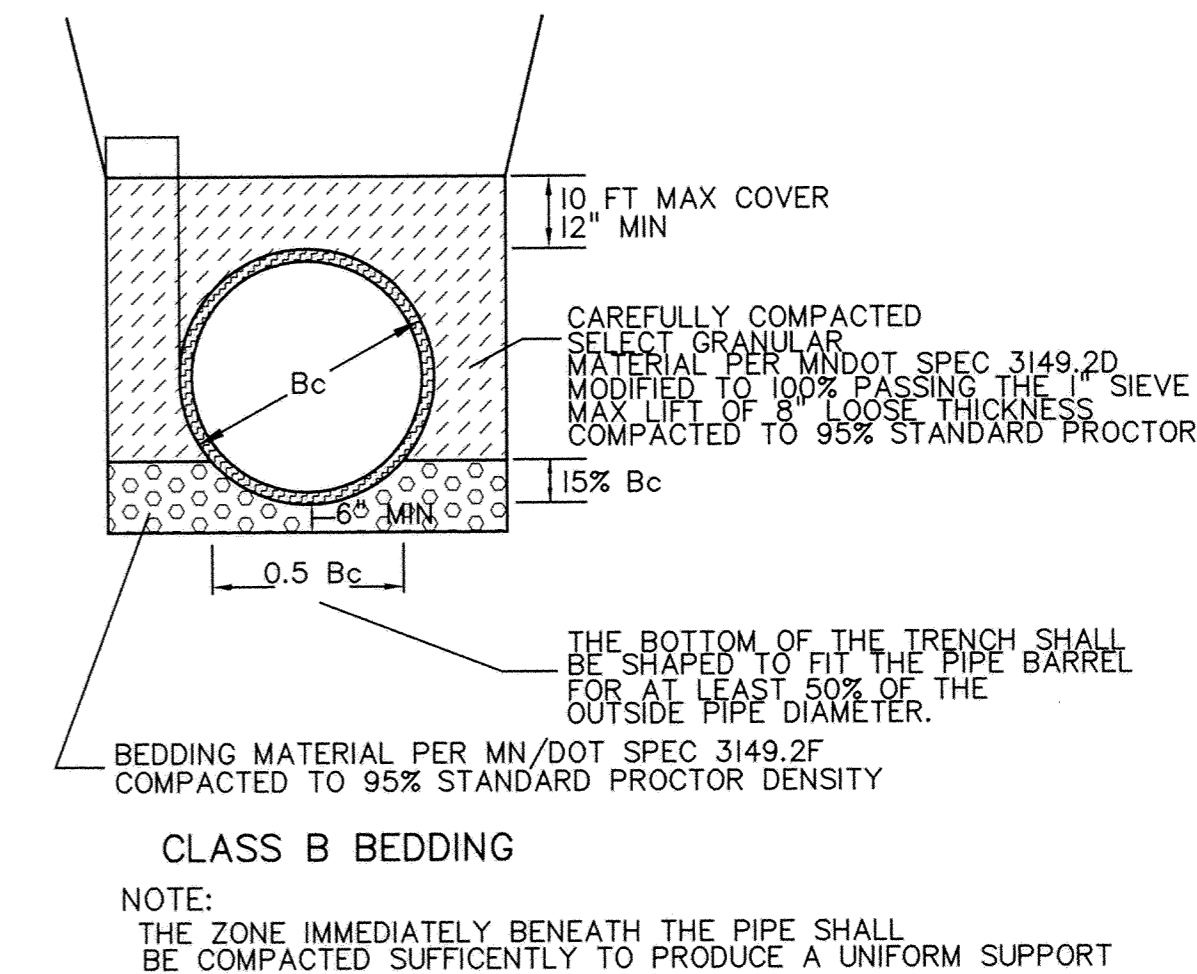


INTEGRAL BITUMINOUS BERM



H.S. 20 DESIGN MANHOLE SLAB-TOP - RECTANGULAR

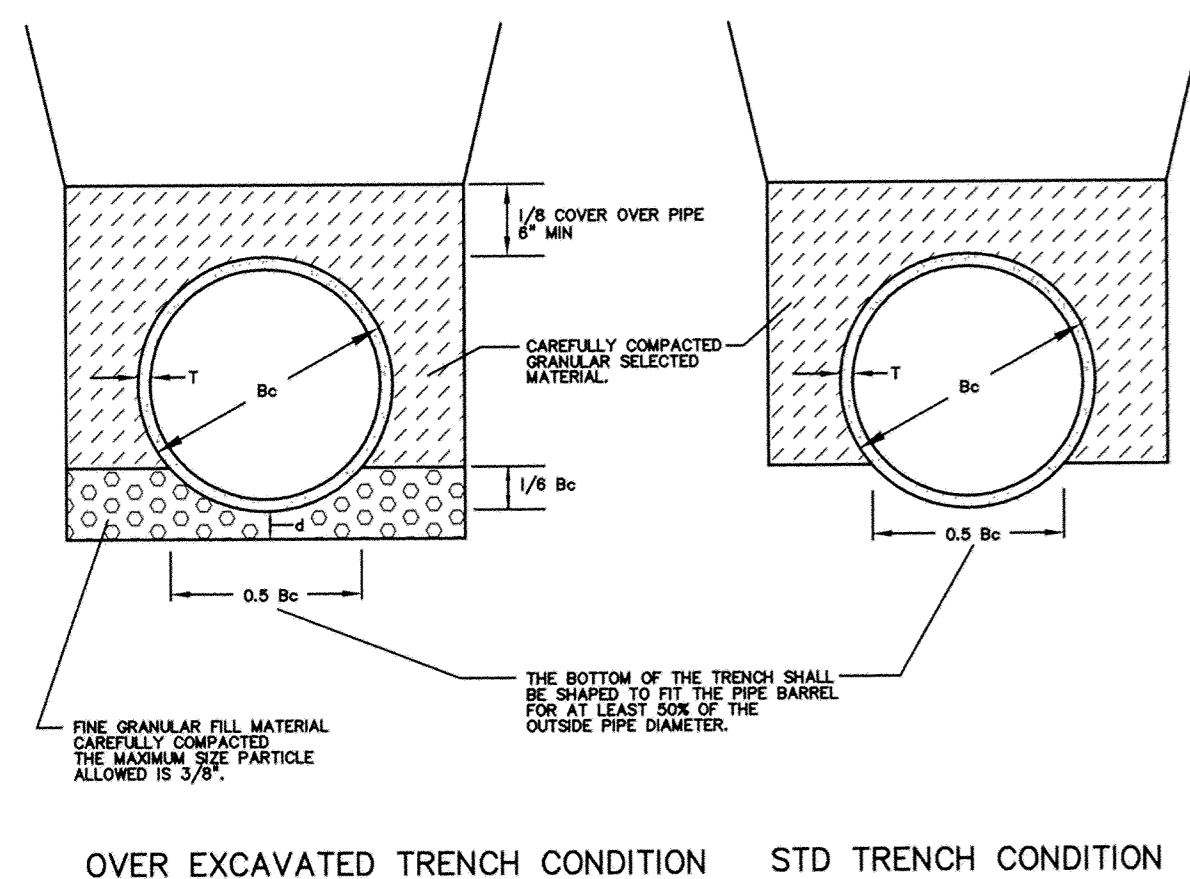
RECORD PLAN  
CONTRACTOR: RANDY KRAMER  
DEVELOPER: DENNIS T. WURM  
OBLIQUE TEXT DENOTES AS BUILT CHANGES



CLASS B BEDDING  
NOTE: THE ZONE IMMEDIATELY BENEATH THE PIPE SHALL BE COMPACTED SUFFICIENTLY TO PRODUCE A UNIFORM SUPPORT

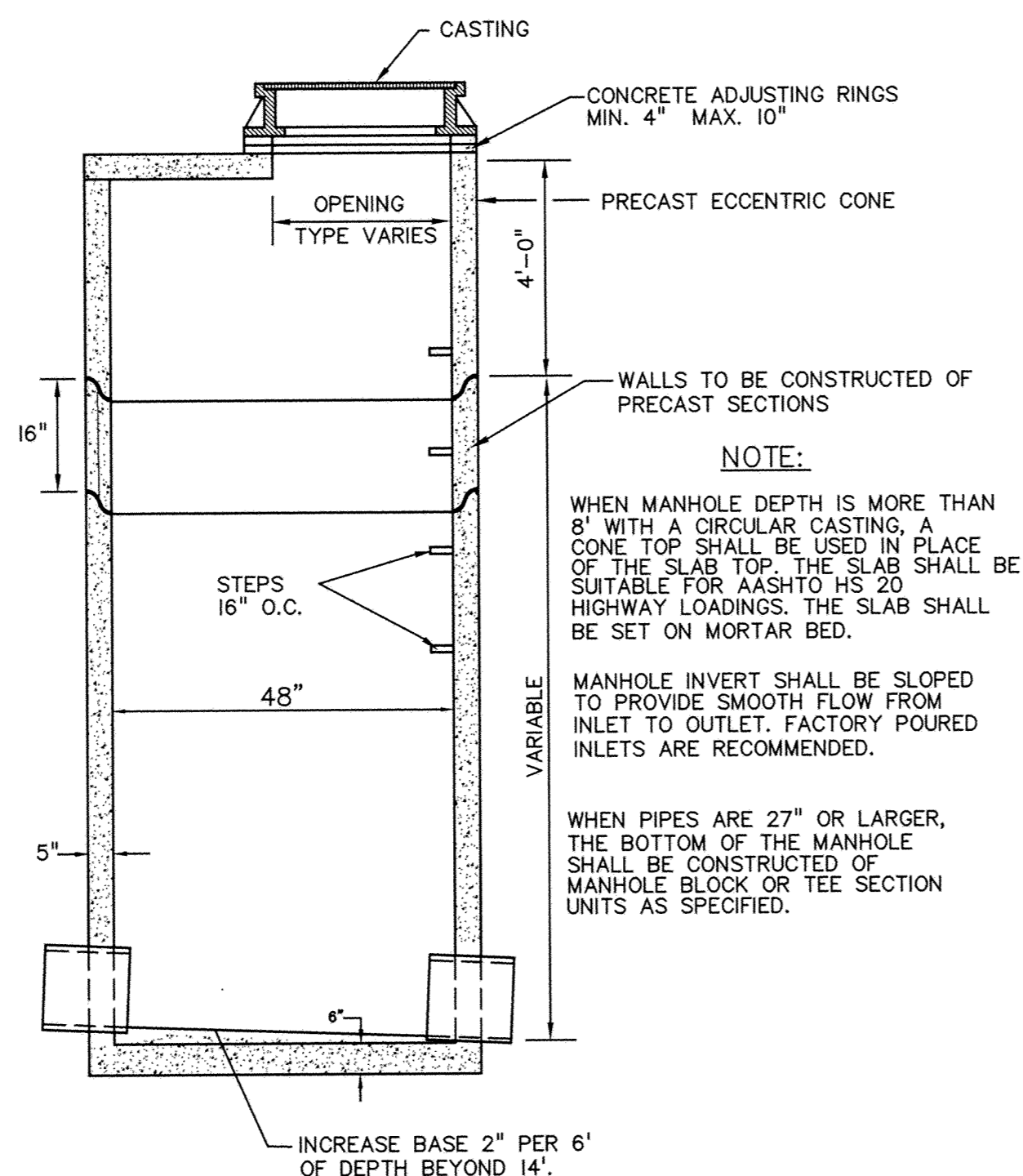
DUAL WALL PIPE BEDDING

PIPE SIZE	d
< 30"	3"
30" - 60"	4"
> 60"	6"



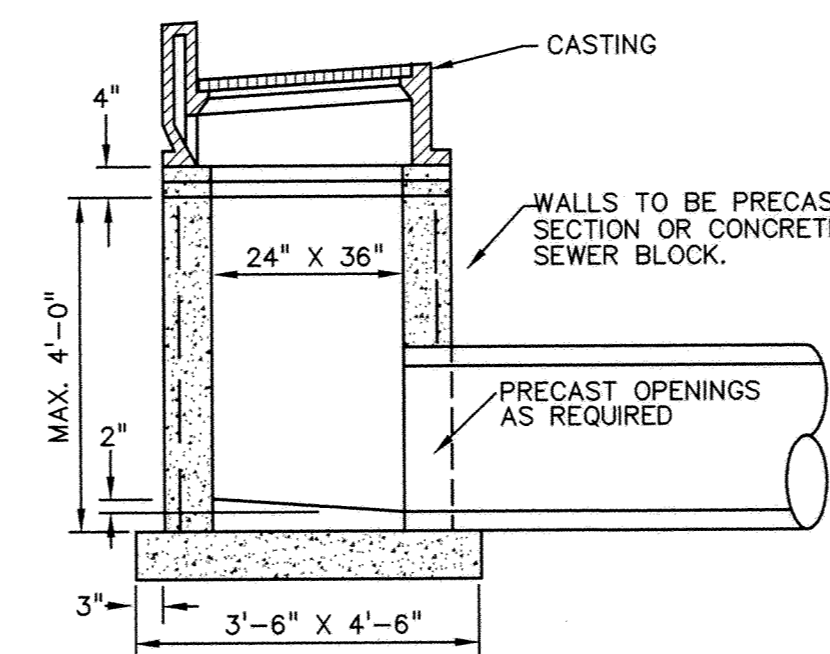
REFERENCE: CONCRETE PIPE DESIGN MANUAL PREPARED BY AMERICAN CONCRETE PIPE INSTITUTE  
NOTE: FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHOULD BE OVEREXCAVATED A MINIMUM OF 6" AND FILLED WITH GRANULAR MATERIAL.

CLASS C PIPE BEDDING

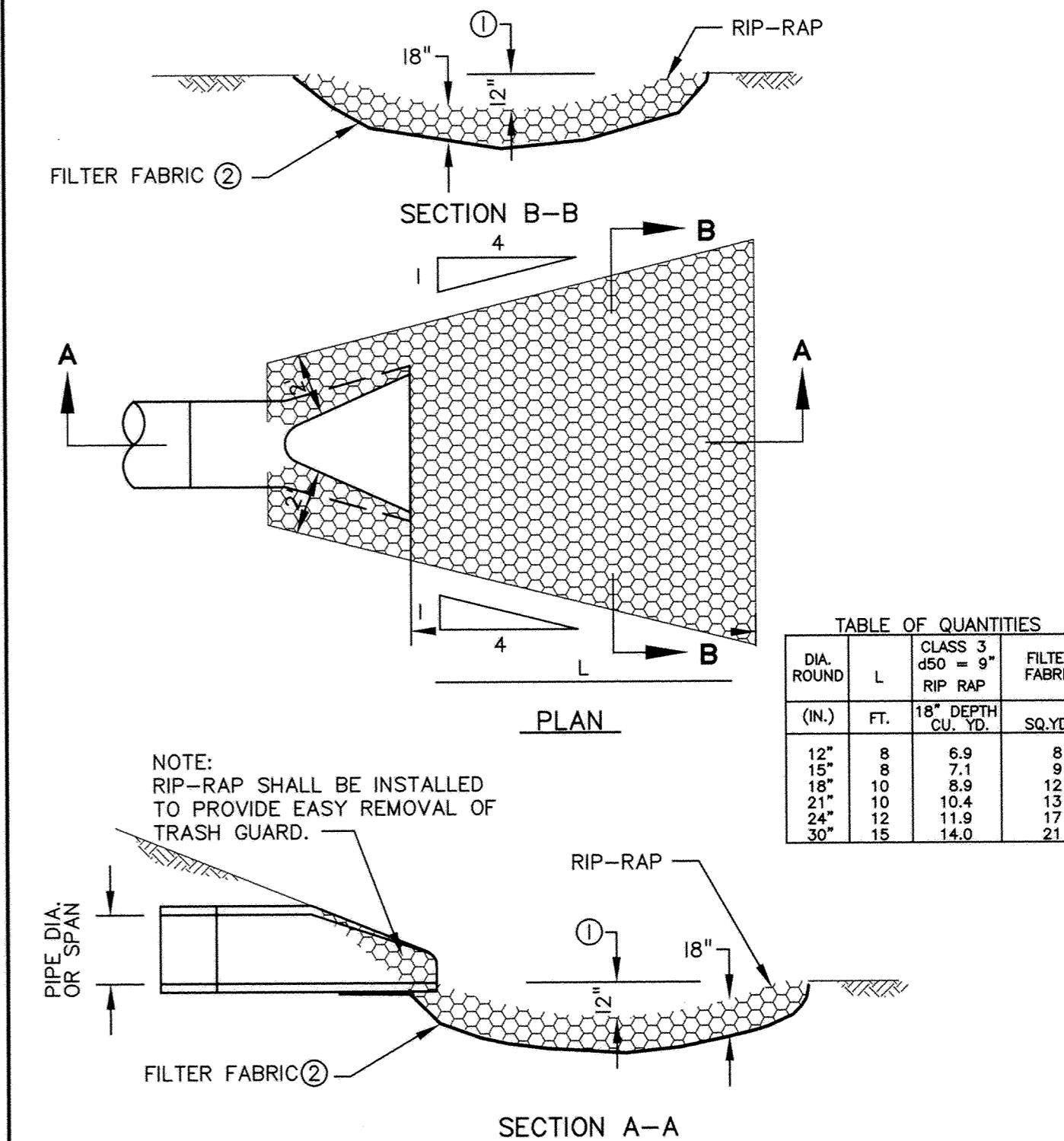


STANDARD MANHOLE FOR STORM SEWER

- CONCRETE ADJUSTING RINGS, MIN. 4" MAX 10" NO MINIMUM WITH FINAL ADJUSTMENT.
- CONCRETE BASE SHALL 6" POURED IN PLACE OR 5" PRECAST SLAB.



CATCHBASIN - RECTANGULAR - 24" X 36"



NOTE: PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.  
① FOR PIPES GREATER THAN OR EQUAL TO 30". USE 1.5'  
② GEOTEXTILE FABRIC, MNDOT SPEC. 3733, SHALL COVER THE AREA OF THE RIPRAP AND EXTEND UNDER THE CULVERT APRON 3 FT.

RIP-RAP INSTALLATION

REV. NO.	DATE	DESCRIPTION
1	09/06/05	REVISIONS TO EROSION CONTROL MEASURES
2	09/08/05	REVISIONS TO PROFILE STATIONING
3	12/22/06	RECORD DRAWINGS

DATE: 08/10/05  
DESIGN BY: MG  
DRAWN BY: MG  
CHECKED BY: DS  
DWG FILE: 5-DETAILS  
FILE NO.: 05-0356.00

I hereby certify that this plan, specification, my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Signed: Jon Bogart  
Date: 11/11/06 Reg. No. 19900

**BOGART, PEDERSON & ASSOCIATES, INC.**  
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CIVIL ENGINEERING  
MAPPING  
13076 FIRST STREET, BECKER, MN 55308-9322  
TEL: 763-262-8822 FAX: 763-262-8844

KINGDOM ESTATES 2ND ADD.  
City of Elk River, Mn.  
Dennis T. Wurm  
SHEET NO. 5

Details

6