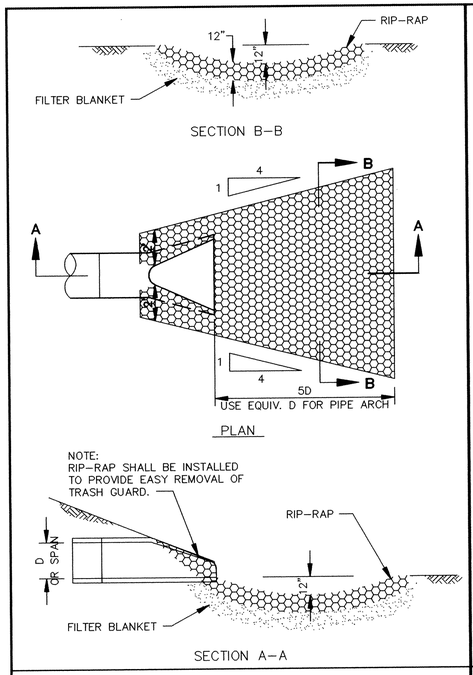
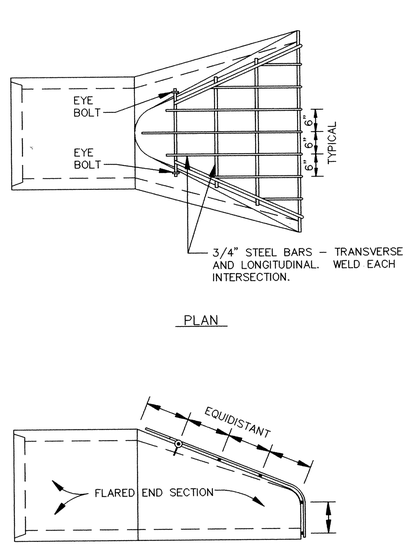
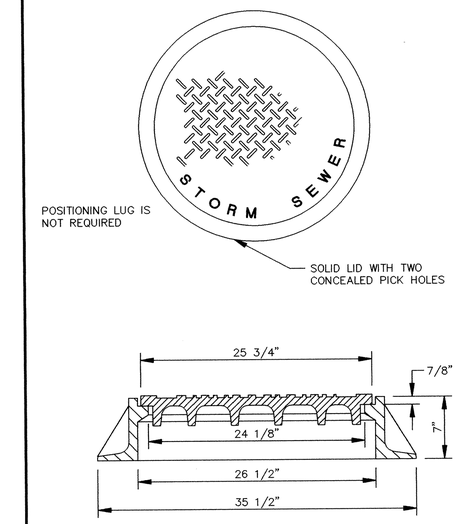


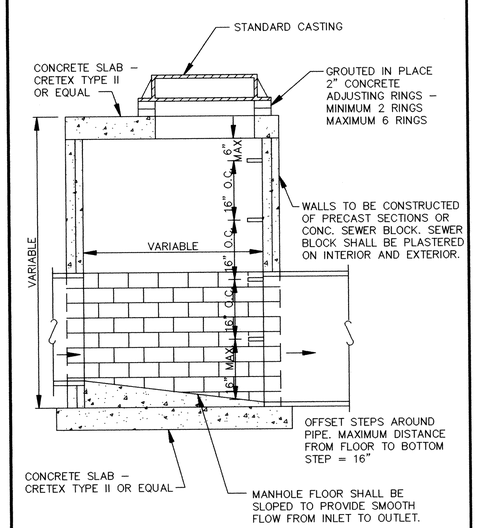
RIP-RAP INSTALLATION



TRASH GUARD

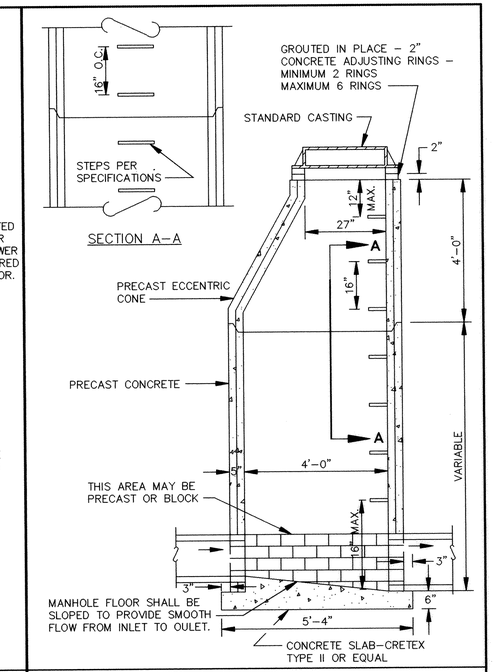


STANDARD MANHOLE CASTING

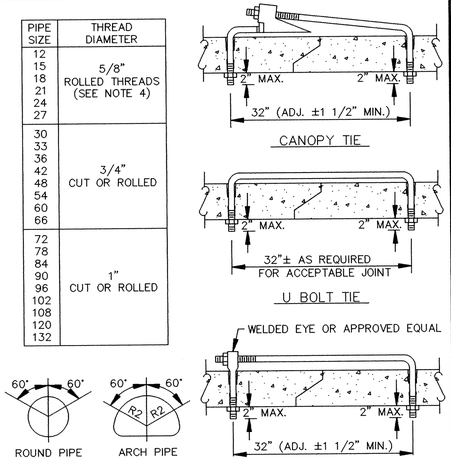


NOTE:
THIS TYPE MANHOLE SHALL BE USED WHEN SPECIFIED OR WHEN THE MANHOLE DEPTH IS LESS THAN EIGHT FEET.

SLAB TOP MANHOLE

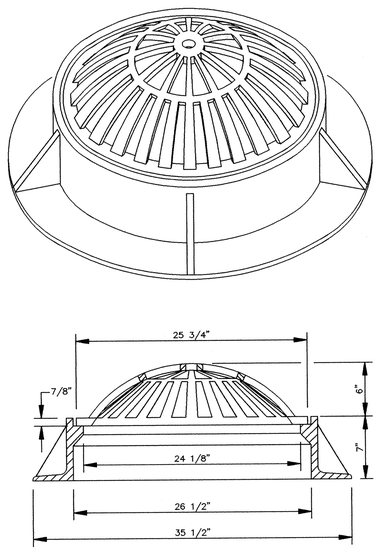


STANDARD MANHOLE



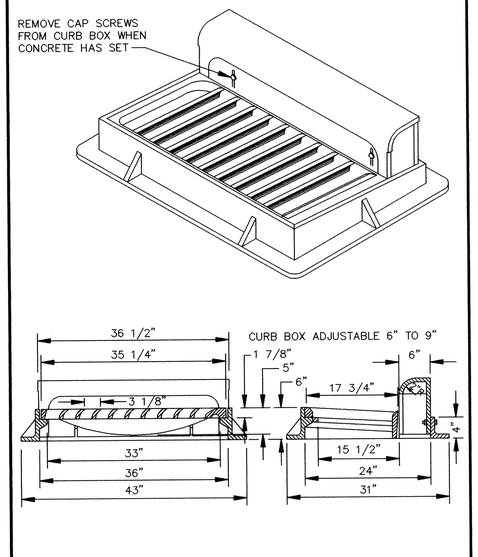
NOTE:
1. HOLES SHALL BE CAST-IN OR DRILLED 16" FROM OUTSIDE EDGE OF JOINT.
2. NUTS AND WASHERS ARE NOT REQUIRED ON INSIDE OF PIPE WITH 27" DIAMETER OR LESS.
3. TIES ARE NOT REQUIRED FOR BELL PIPE 24" AND SMALLER. ON OTHER SIZES, TIE MAY BE INSERTED FROM INSIDE.
4. CUT THREADS MAY BE USED IF WASHER AND NUT ARE USED.
5. PIPE SIZES LISTED ARE INSIDE DIAMETER OF ROUND PIPE OR EQUIVALENT DIAMETER OF PIPE ARCH.

CONCRETE PIPE JOINT TIES



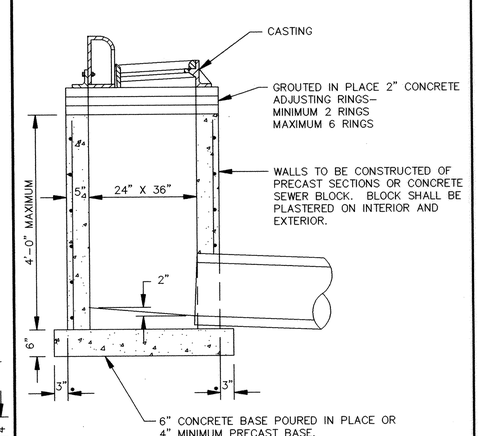
CASTINGS SHALL BE NEENAH R-2561A OR EQUAL

BEEHIVE CASTING



CASTINGS SHALL BE NEENAH R-3067-V OR EQUAL

STANDARD INLET CASTING



NOTE:
REINFORCING SHALL CONSIST OF A SINGLE LINE OF STEEL WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.17 SQ. IN. PER FOOT OF HEIGHT.

RECORD PLAN NOV,1993

SHALLOW CATCH BASIN

ER164-D4

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 11/7/93 REG.NO. 19135

CONSULTING ENGINEERS
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1959 SLOAN PLACE (612) 774-6021 ST. PAUL, MINNESOTA 55117
9800 SHELARD PARKWAY (612) 546-0432 MINNEAPOLIS, MINNESOTA 55441

REVISIONS	DATE	DESCRIPTION

DESIGNED SJM
CHECKED TJM
DRAWN CLS
GRAPHIC SCALE
0 HORIZ.
0 VERT.

CITY OF ELK RIVER
MISSISSIPPI OAKS, PHASE I
STORM SEWER DETAILS

DATE JUNE 1993 | SHEET 16 OF 16 SHEETS | PROJECT NO. 230-164

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