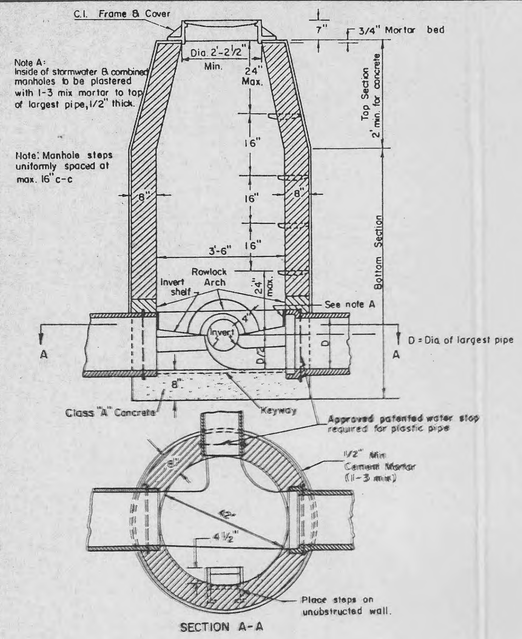
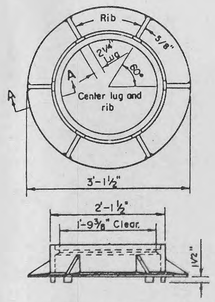
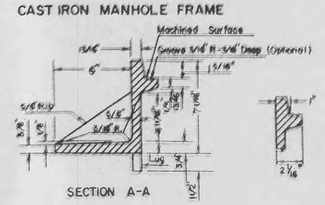


SECTION A-A

MANHOLE DETAIL
N.T.S.



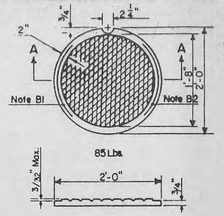
CAST IRON MANHOLE FRAME



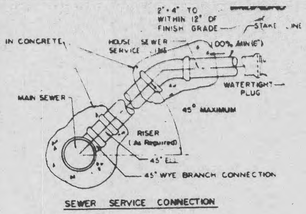
SECTION A-A

(240 lbs.)

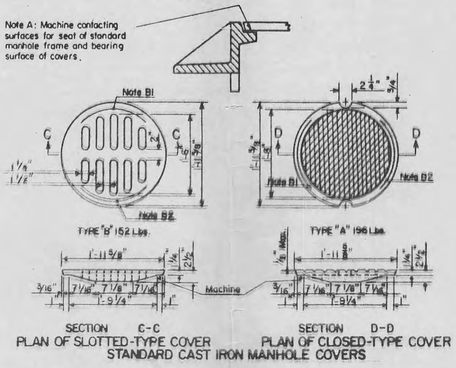
CAST IRON MANHOLE FRAME
CLAY & BAILEY — NO. 2008
NEENAH — R-1736
DEETEE — No. 1315
OR APP. EQUAL



SECTION A-A
STANDARD CAST IRON INLET COVER



SEWER SERVICE CONNECTION

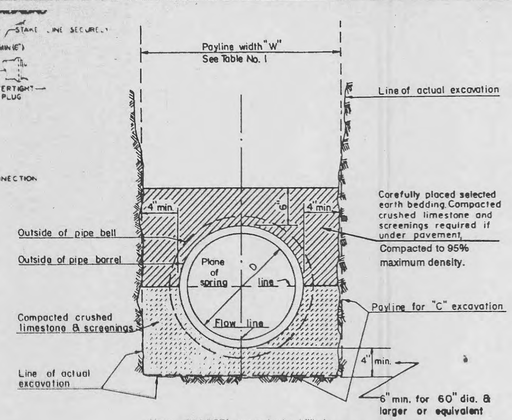


SECTION C-C
PLAN OF SLOTTED-TYPE COVER

SECTION D-D
PLAN OF CLOSED-TYPE COVER

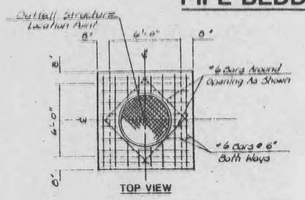
STANDARD CAST IRON MANHOLE COVERS

CAST IRON COVERS MANHOLES AND INLETS
N.T.S.

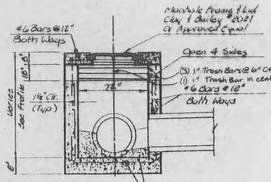


Note: 72" CSP's are to be backfilled with 1" clean limestone compacted. Except where noted.

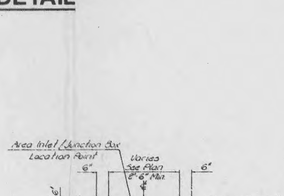
PIPE BEDDING DETAIL

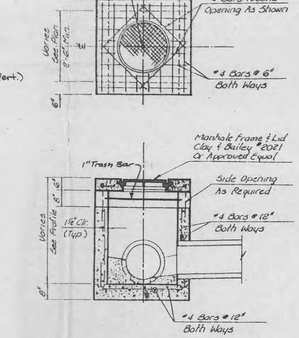


TOP VIEW



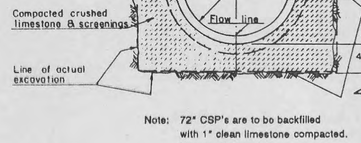
OUTFALL STRUCTURE DETAIL



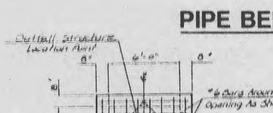


AREA INLET / JUNCTION BOX DETAIL

PLAN VIEW



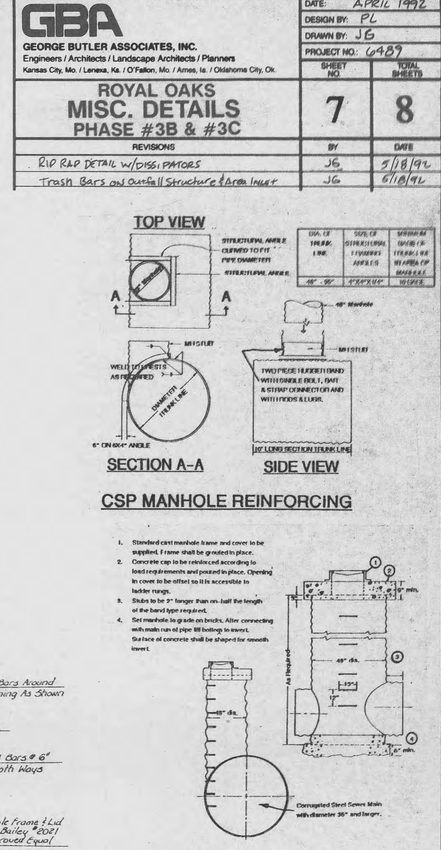
SECTION A-A



END VIEW

Note: To be used at intake and discharge end of pipe, grade of rock blanket to be adjusted accordingly rock blanket required.

FLAIRED END SECTION DETAIL
N.T.S.



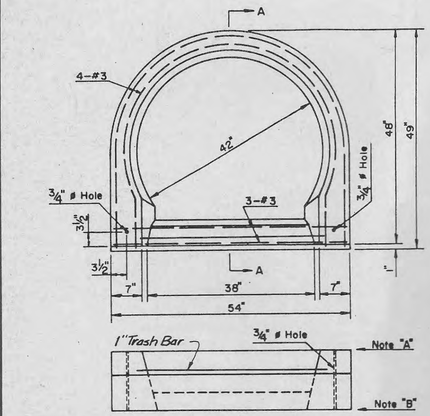
SECTION A-A

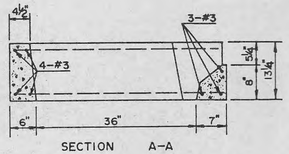
SIDE VIEW

CSP MANHOLE REINFORCING

1. Standard cast manhole frame and cover to be supplied. Frame shall be grouted in place.
2. Concrete cap to be reinforced according to load requirements and poured in place. Opening in cover to be offset so it is accessible to ladder rungs.
3. Stubs to be 9" longer than on-half the length of the bend type required.
4. Set manhole to grade on bricks. Alter connecting with main run of pipe 18 bottogs in invert. Surface of concrete shall be shaped for smooth invert.

MANHOLE DETAIL
CSP 36" AND LARGER

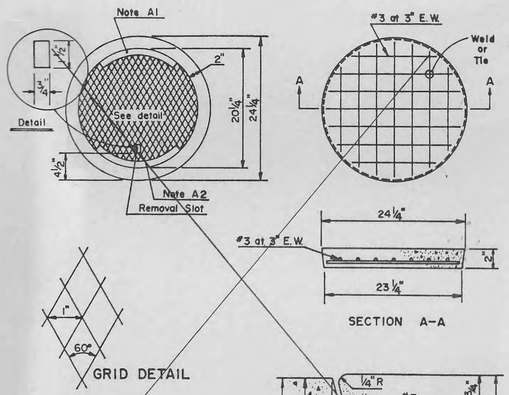




SECTION A-A

NOTES
A. Set standard inlet stone in 3/4" mortar bed and dowel with 5/8" ø 1'-0" long pins and grout.
B. Raise to final grade with courses of brick and 3/4" mortar bed.
C. This unit to be used with, 42" I.D., poured in place concrete or brick base.
D. 4000 P.S.I. concrete required.

PRE-CAST CONCRETE UNIT FOR SINGLE CURB INLET
N.T.S.



Note: Riprap material to be min 12" depth, well graded riprap with 80% of the rock 6" diam and greater. The riprap shall be placed over Mirafi 140-S. Place smaller stones on the bottom.

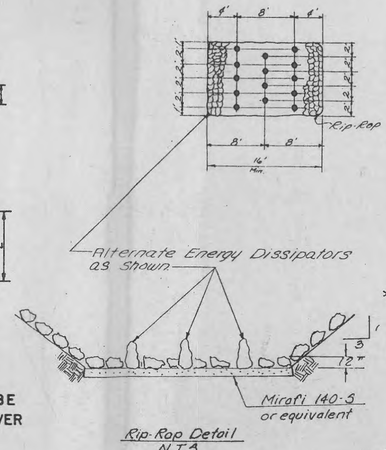
GRID DETAIL

SECTION A-A

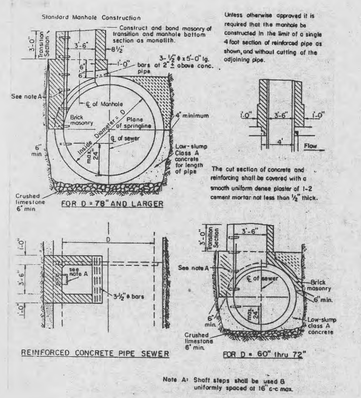
Note: Provide 1/8" raised lettering approximately 3/4" to 1" high.
A1: METRO ST. LOUIS
A2: SEWER DIST SOUTHERN
4000 P.S.I. concrete required.

STANDARD INLET STONE MUST BE MODIFIED TO RECEIVE CONC. COVER

PRE-CAST CONCRETE INLET COVER
N.T.S.



Rip-Rap Detail
N.T.S.



Note A: Shaft steps shall be used & uniformly spaced at 16" c-c max.

TYPICAL MH BASE
RCP SEWERS 60" & LARGER

GBA	DATE: APRIL 1992
GEORGE BUTLER ASSOCIATES, INC. Engineers / Architects / Landscape Architects / Planners Kansas City, Mo. / Lenexa, Ks. / O'Fallon, Mo. / Ames, Ia. / Oklahoma City, Ok.	DESIGN BY: PL DRAWN BY: JG PROJECT NO.: 6489

ROYAL OAKS MISC. DETAILS PHASE #3B & #3C	SHEET NO. 7	TOTAL SHEETS 8

REVISIONS	BY	DATE
RIP RAP DETAIL w/DISSIPATORS	JG	5/18/92
Trash Bars on Outfall Structure & Area Inlet	JG	6/18/92

530912