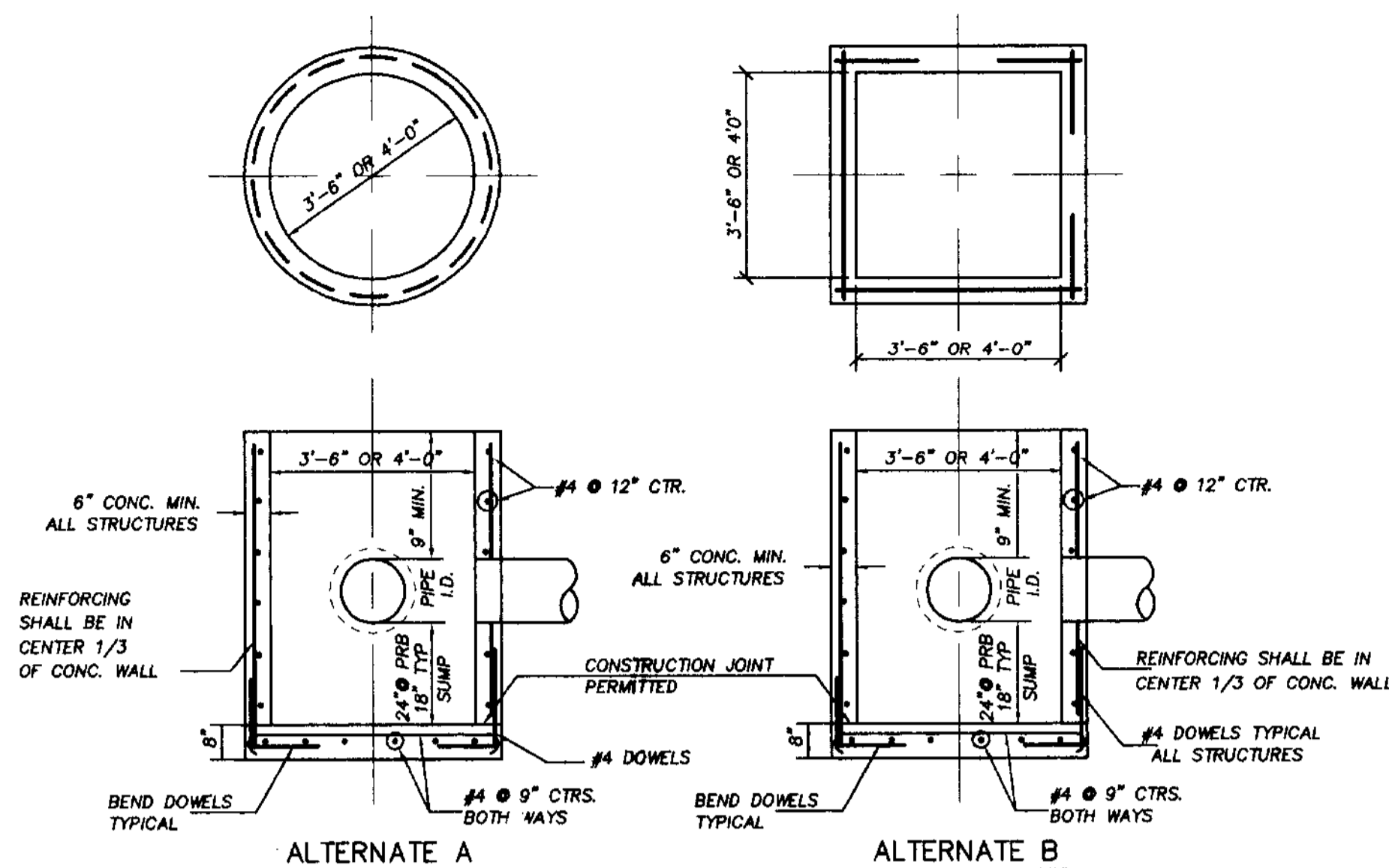
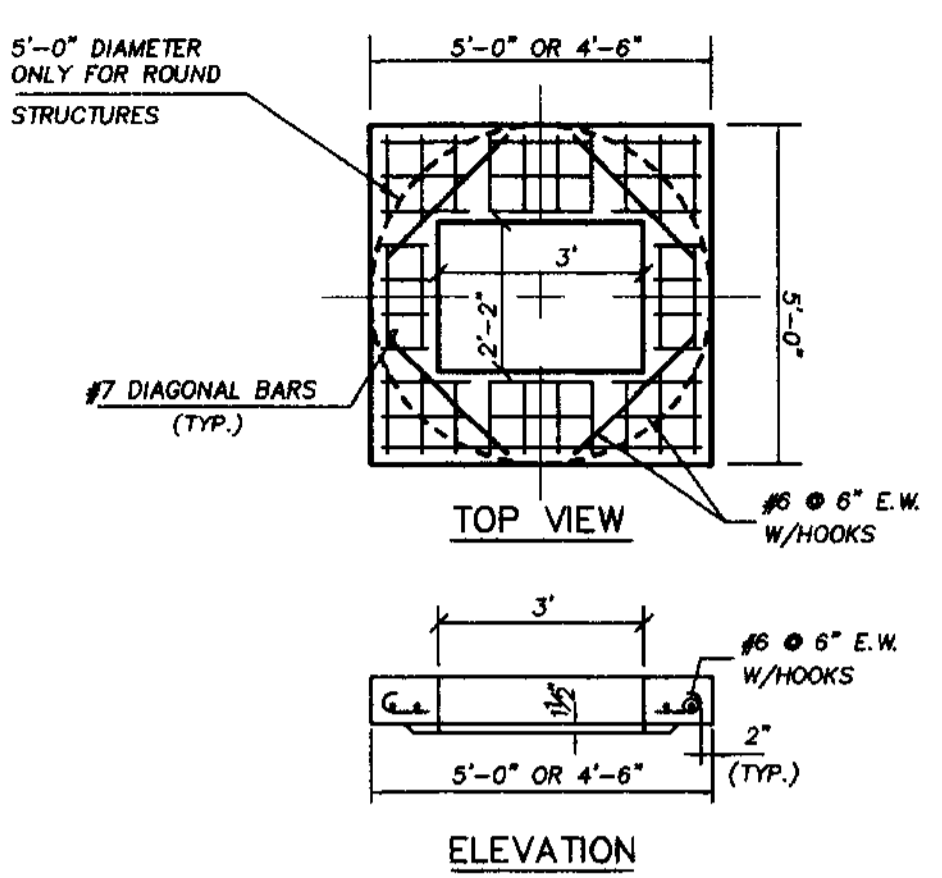


**GENERAL DRAINAGE STRUCTURES NOTES:**

- WALL OF CIRCULAR STRUCTURES [ALTERNATE "A"] OR RECTANGULAR STRUCTURES [ALTERNATE "B"] SHALL BE CONSTRUCTED OF CONCRETE ONLY. THE CONCRETE MAY BE CAST-IN-PLACE OR PRECAST.
- WALL REINFORCEMENT AND THICKNESS ARE FOR EITHER CAST-IN-PLACE OR PRECAST CONCRETE UNITS EXCEPT THAT THE MANUFACTURER MAY FURNISH PRECAST CIRCULAR UNITS IN ACCORDANCE WITH A.S.T.M. SPECIFICATION C-478 UP TO 96" IN DIA. OR PRECAST RECTANGULAR UNITS A.S.T.M. SPECIFICATION C-76, TABLE III, FOR "B" WALL CONCRETE PIPE WITH 6" MINIMUM WALL THICKNESS. TOP AND FLOOR SLAB THICKNESS AND REINFORCEMENT ARE FOR ALL TYPES OF CONSTRUCTION.
- ELLIPTICAL STEEL A.S.T.M. SPECIFICATION C-76 TABLE III, "B" WALL IS MODIFIED TO USE A CIRCULAR CAGE OF STEEL AREA EQUAL TO THAT OF THE ELLIPTICAL CAGE AND PLACED IN THE CENTER ONE-THIRD OF THE WALL. THIS MODIFICATION IS FOR PRECAST CIRCULAR UNITS PRODUCED IN ACCORDANCE WITH A.S.T.M. C-76.
- RECTANGULAR STRUCTURES MAY BE ROTATED AS DIRECTED BY THE ENGINEER IN ORDER TO FACILITATE CONNECTIONS BETWEEN THE STRUCTURE WALLS AND THE STORM SEWER PIPES.
- EMBEDMENT HOOKS IN THE TOP AND BOTTOM SLABS MAY BE REPLACED WITH STRAIGHT EMBEDMENTS.
- ALL STEEL BARS SHALL HAVE 2" MINIMUM COVER UNLESS OTHERWISE SHOWN. HORIZONTAL STEEL IN RECTANGULAR STRUCTURES SHALL BE LAPPED A MINIMUM OF 24 BAR DIAMETERS AT CORNERS.
- THE CORNER FILLETS SHOWN FOR RECTANGULAR STRUCTURES ARE NECESSARY ONLY WHEN STRUCTURES ARE USED IN CONJUNCTION WITH CIRCULAR INLET THROATS [TYPES 1, 2, 3 AND 4] OR WHEN USED ON SKEW WITH RECTANGULAR INLET THROATS [TYPE 5 AND 6].
- INLET THROATS, RISERS OR MANHOLE TOPS SHALL BE SECURED TO STRUCTURES WITH A MINIMUM OF 6 - NO. 4 BARS 12" LONG OR KEYS.
- LARGER THAN SPECIFIED STANDARD UNITS MAY BE SUBSTITUTED AT THE CONTRACTOR'S OPTION WHEN THESE UNITS WILL NOT CAUSE OR INCREASE THE SEVERITY OF UTILITY CONFLICTS. SUCH LARGER UNITS SHALL BE FURNISHED AT NO ADDITIONAL COST TO THE OWNER. LARGER ALTERNATE "A" UNITS CANNOT REPLACE ALTERNATE "B" UNITS WITHOUT APPROVAL OF THE ENGINEER AND B.C.E.D. FOR COUNTY RIGHT-OF-WAY.
- GRATE AND FRAME FOR MANHOLES AND CATCH BASINS SHALL BE TRAFFIC BEARING DESIGN, WITH A MINIMUM COMBINED WEIGHT OF 410 POUNDS. MINIMUM LID WEIGHT OF 165 POUNDS.

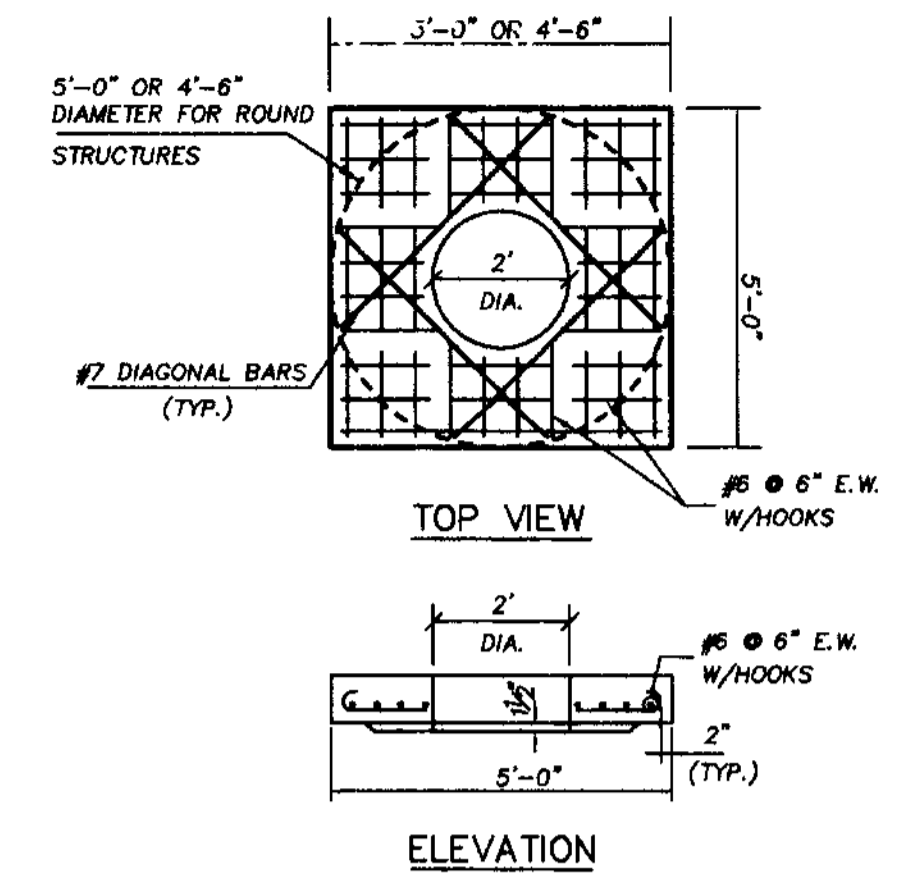


**FDOT TYPE "P" STRUCTURE**



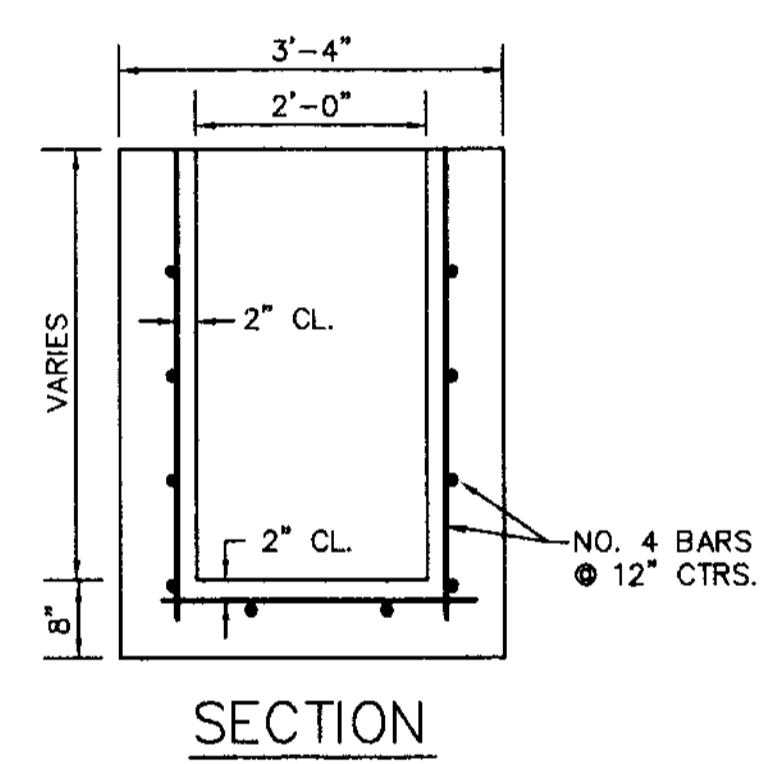
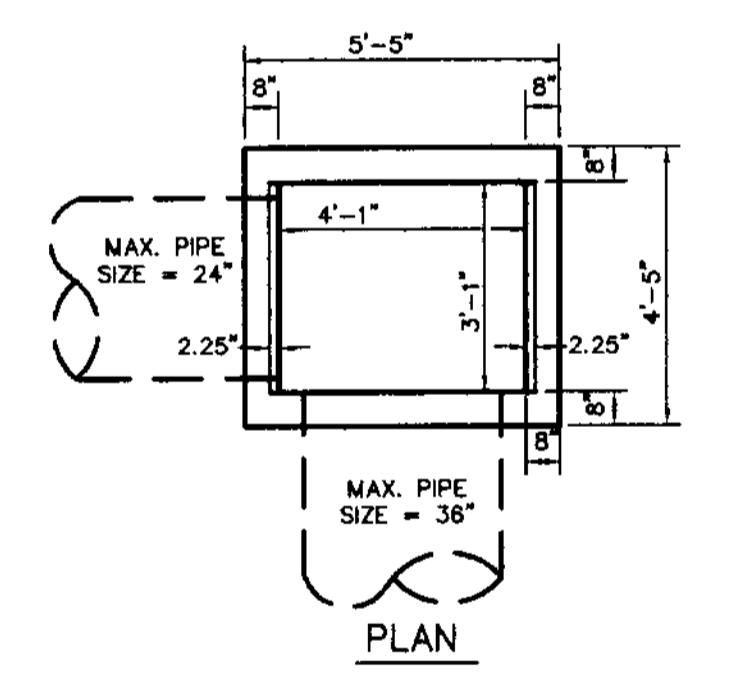
**"P" INLET TOP SLAB**

INLET FRAME AND GRATE - U.S. FOUNDRY SERIES 4155-6209 OR EQUAL



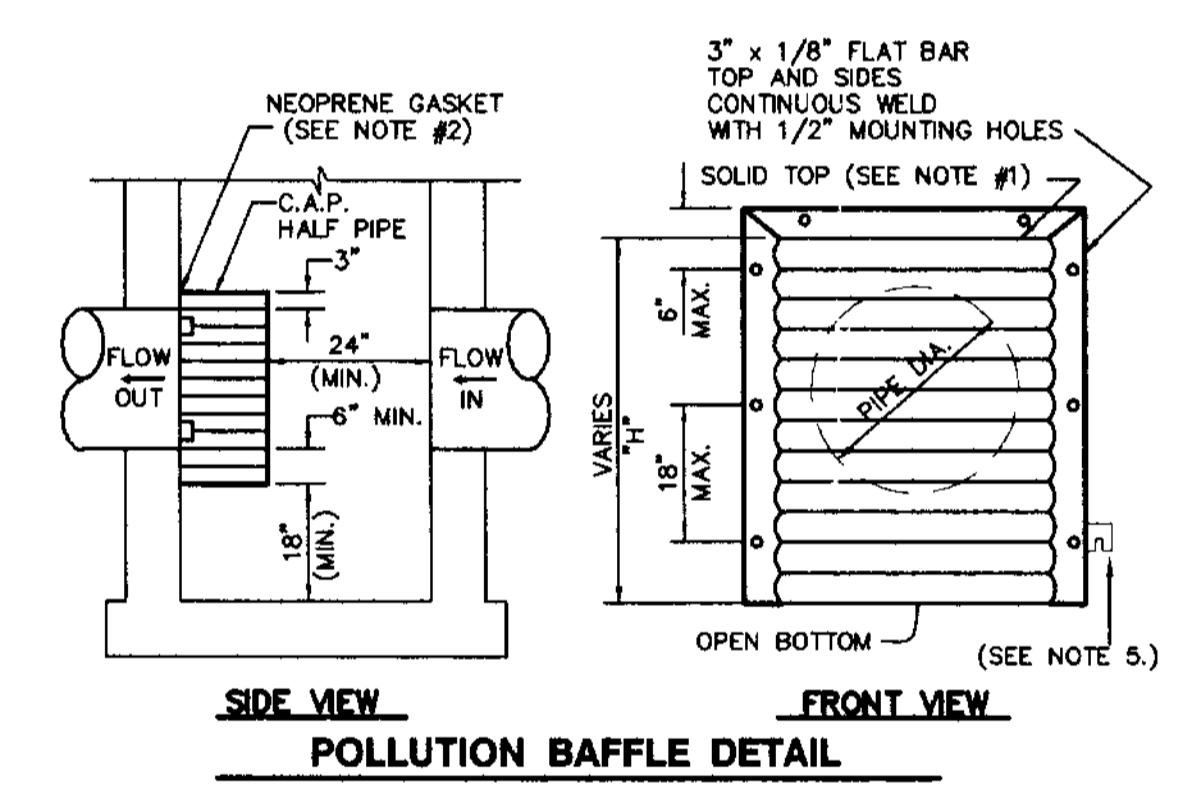
**"P" MANHOLE TOP SLAB**

INLET FRAME AND GRATE - U.S. FOUNDRY SERIES 420 OR EQUAL



**INLET TYPE "C"**

U.S. FOUNDRY #4155 FRAME AND GRATE OR EQUAL

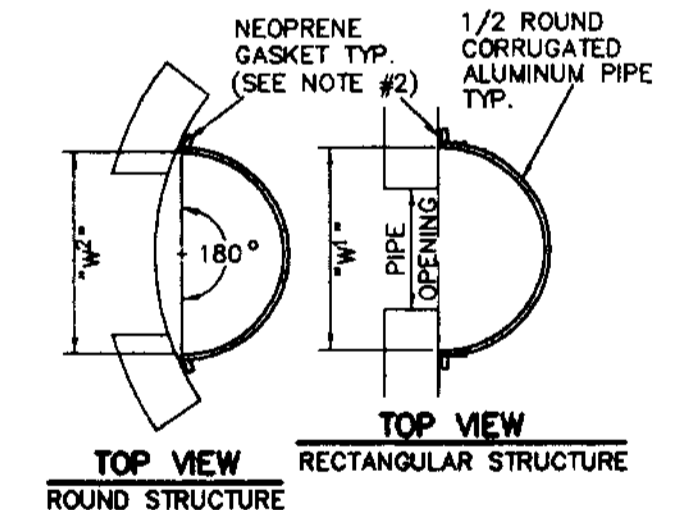


**POLLUTION BAFFLE DETAIL**

PIPE DIA.	W <sup>1</sup> (IN)	W <sup>2</sup> (IN)	T (GAUGE)	H (IN)
15"	21"	21"	16	VARIES
18"	24"	24"	16	VARIES
21"	30"	30"	16	VARIES
24"	30"	36"	16	VARIES
30"	36"	42"	14	VARIES
36"	42"	48"	14	VARIES
42"	48"	54"	14	VARIES
48"	54"	60"	14	VARIES
54"	60"	66"	14	VARIES

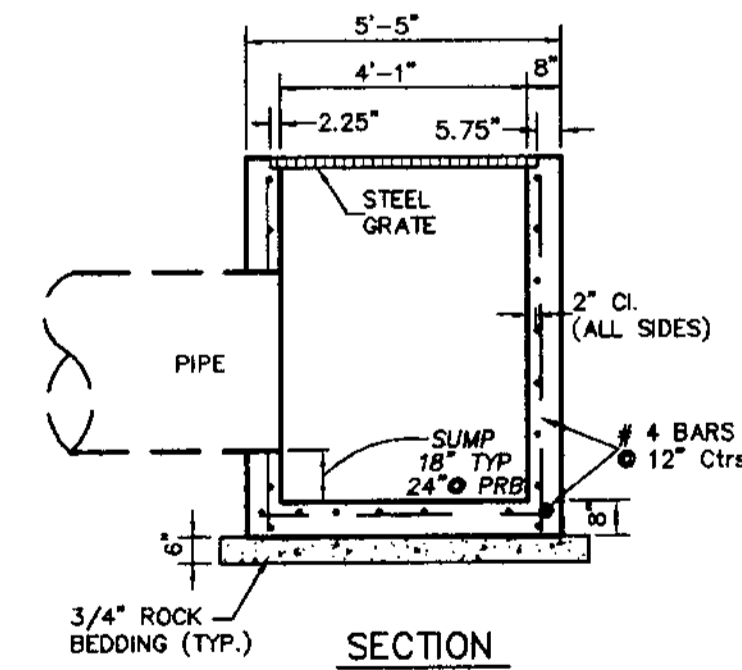
**NOTES:**

- ALUMINUM SHEET OF SAME THICKNESS (GAUGE) AS PIPE SHALL BE WELDED TO CLOSE OPENING AT THE TOP OR BOTTOM.
- NEOPRENE ADHESIVE BACKED GASKET, OR APPROVED EQUAL (1" x 2") SHALL BE INSTALLED ON THE SIDES AND TOP OF ALL BAFFLES.
- POLLUTION RETARDANT BAFFLE TO BE FASTENED IN PLACE WITH 3/8"x4" STAINLESS STEEL "RED HEADS", OR APPROVED EQUAL.
- FIBERGLASS BAFFLES ARE NOT PERMITTED.
- MOUNTING BRACKETS MAY BE ADDED TO FLAT BARS TO EASE INSTALLATION IN ROUND STRUCTURES. SPACING TO MATCH HOLES IN FLAT BARS.



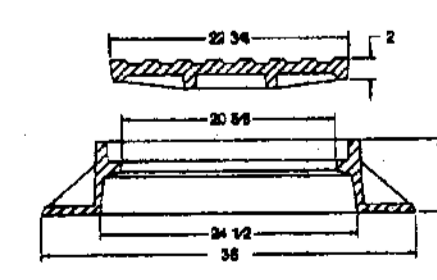
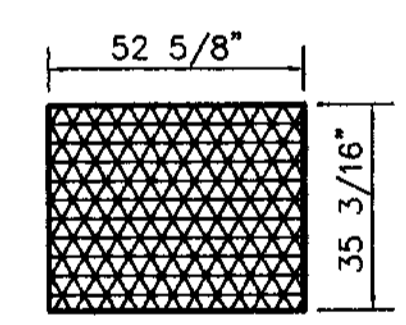
**POLLUTION RETARDANT BAFFLE DETAILS**

N.T.S.

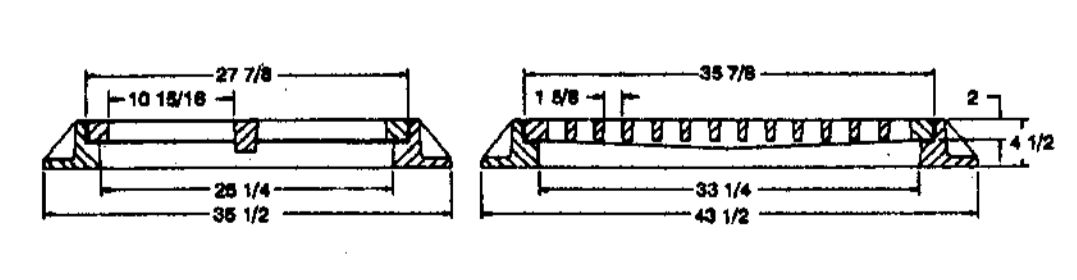


**TYPE "D" STEEL INLET GRATE**

USF 6626 OR APPROVED EQUAL



**USF 420-C MANHOLE COVER DETAIL**



**USF 4155 FRAME & GRATE DETAIL**

DESIGNED BY	JWR	8/04			
DRAWN BY	41903-COV	8/04			
CHECKED BY	JWR	8/04			
APPROVED BY		8/04	REV PER CITY COMMENTS	1	9/23/04 JWR
NAME	DATE	REVISIONS	NO.	DATE	BY



**JOSEPH ROLES AND ASSOC., INC.**  
**CONSULTING ENGINEERS**  
 7501 N.W. 4th STREET, SUITE 101  
 PLANTATION, FLORIDA 33317  
 PHONE (954) 681-1945  
 CERTIFICATE OF AUTHORIZATION NO. 3948

**RETAIL CENTER AT WINSTON PARK**  
 LYONS ROAD AND WINSTON PARK BLVD.  
 COCONUT CREEK, FLORIDA  
**DRAINAGE DETAILS**

DATE:	AUGUST, 2004
SCALE:	1" = 40'
PROJECT NO.	102-419-03
SHEET NO.	7 OF 10