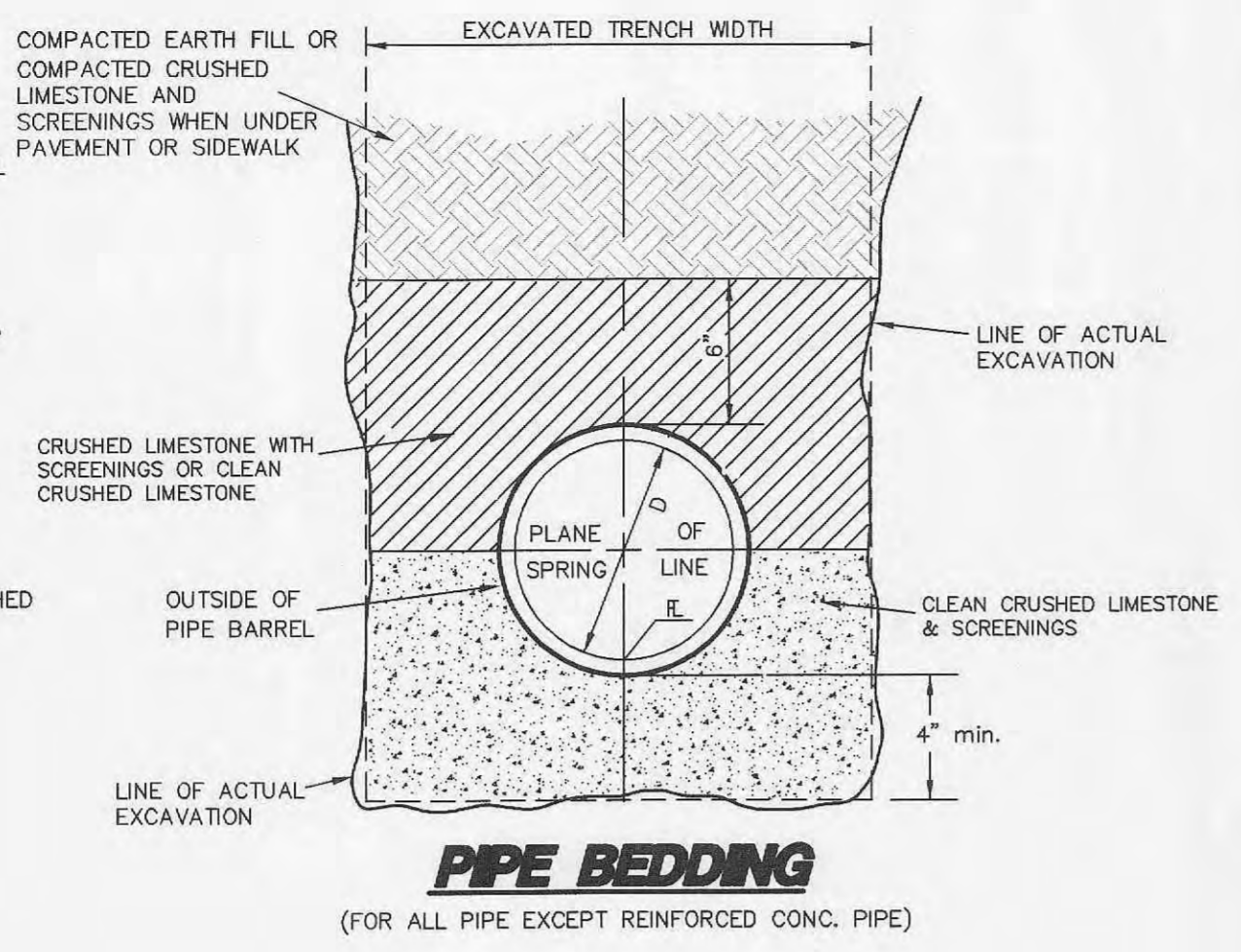
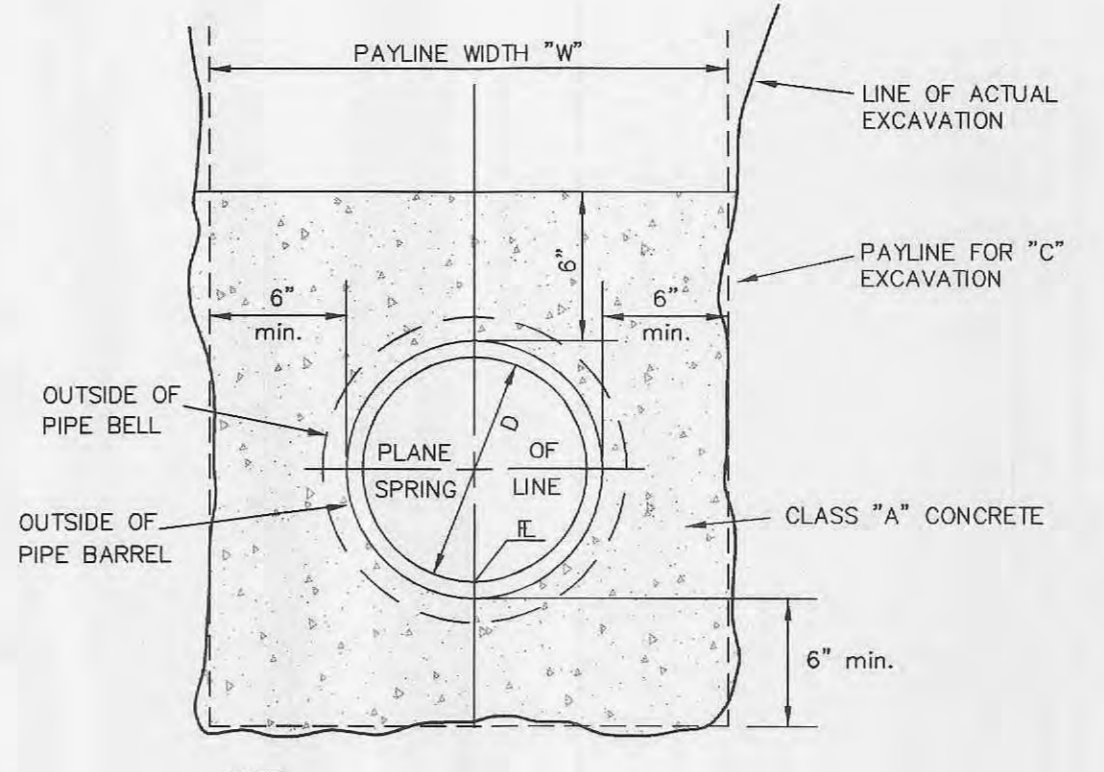


**PIPE BEDDING**  
(MODIFIED FOR REINFORCED)

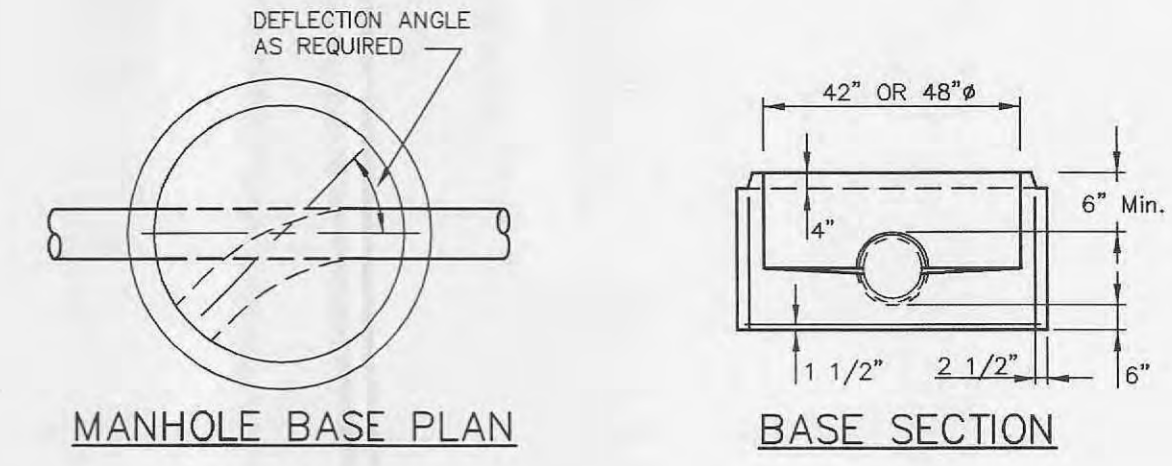


**PIPE BEDDING**  
(FOR ALL PIPE EXCEPT REINFORCED CONC. PIPE)



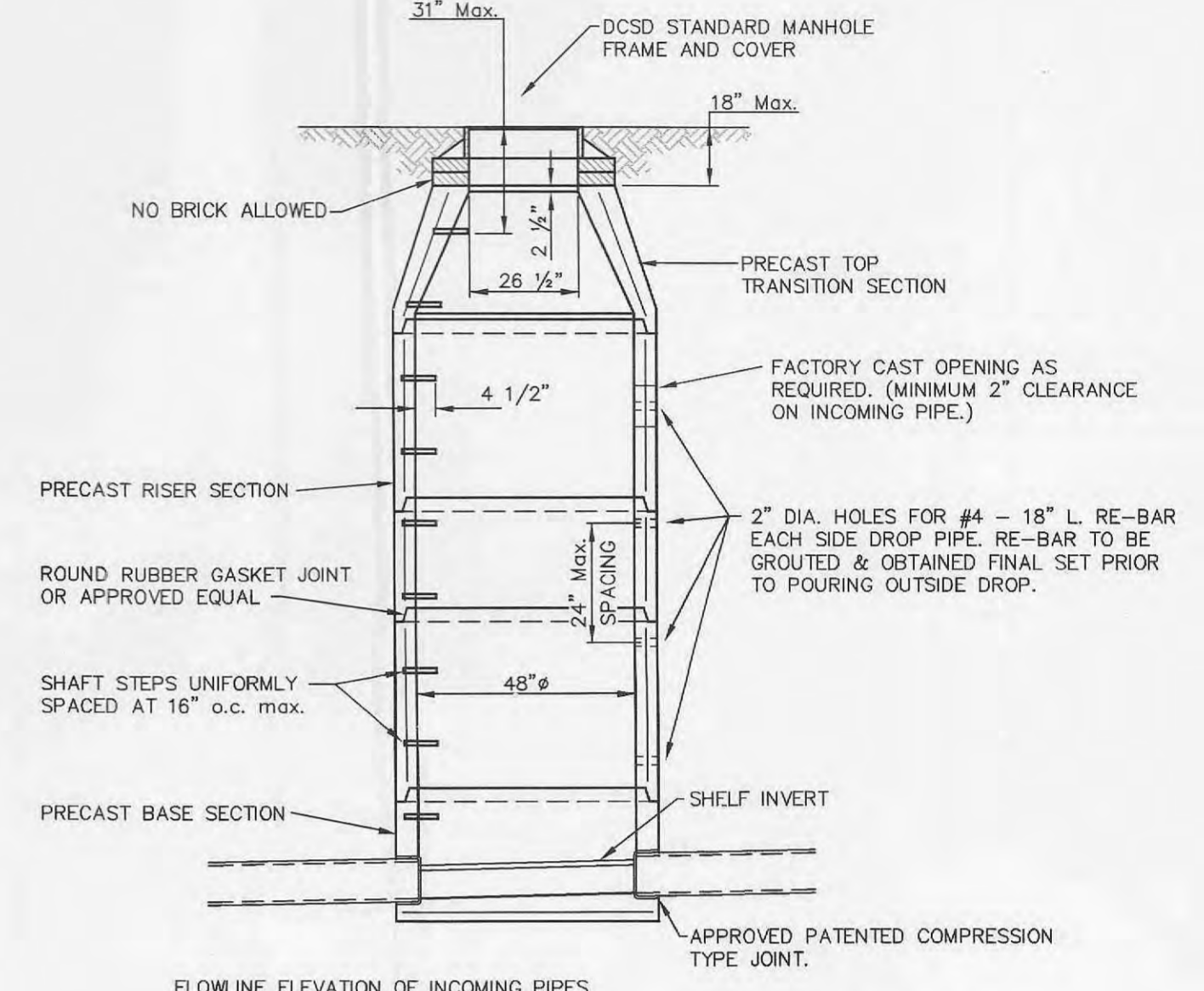
**CONCRETE ENCASEMENT DETAIL**  
(n.t.s.)

NOTE: SUPPORT PIPE TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.



**MANHOLE BASE PLAN**

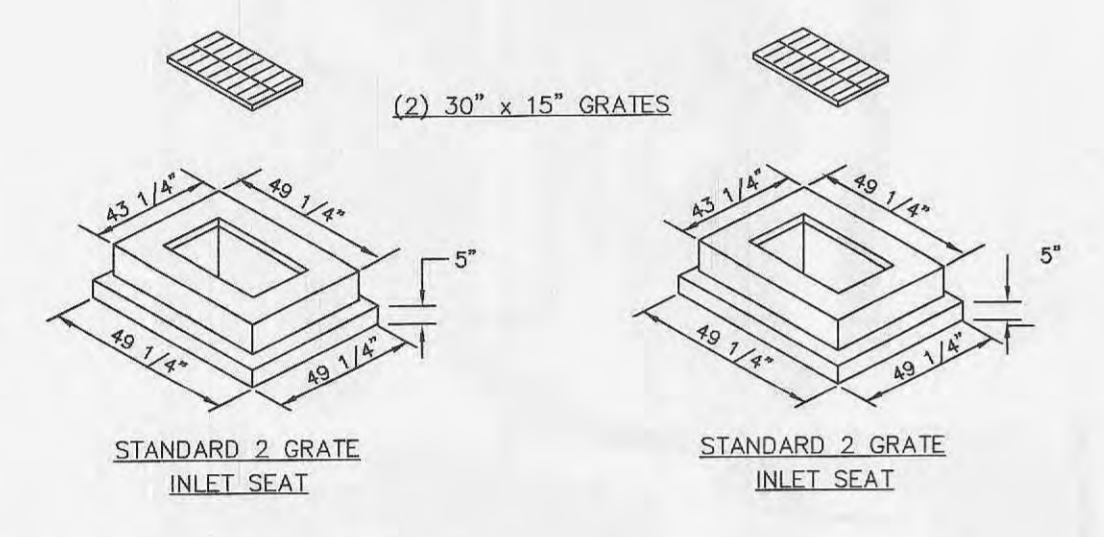
**BASE SECTION**



**PRECAST MANHOLE**

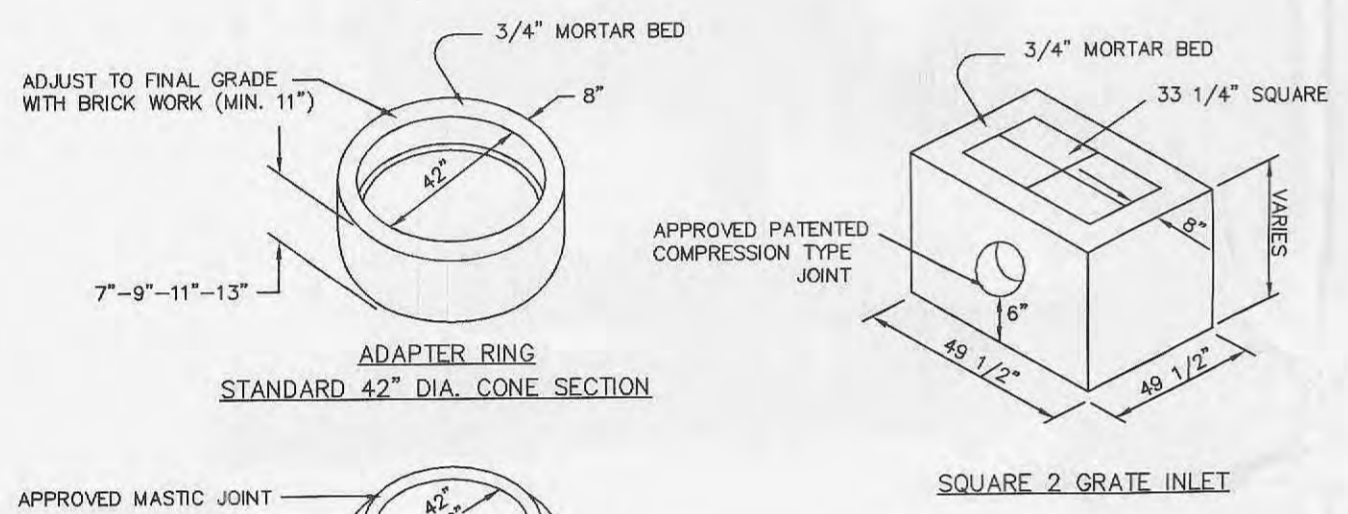
FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE TWO (2) TENTHS OF A FOOT HIGHER THAN THAT OF OUTGOING PIPE.

SEE A.S.T.M. C-478 FOR MIN. STEEL REQUIREMENTS.



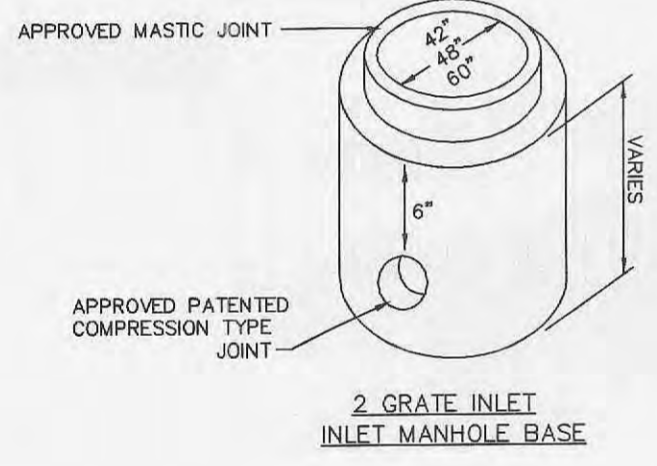
**STANDARD 2 GRATE INLET SEAT**

**STANDARD 2 GRATE INLET SEAT**



**ADAPTER RING**  
STANDARD 42" DIA. CONE SECTION

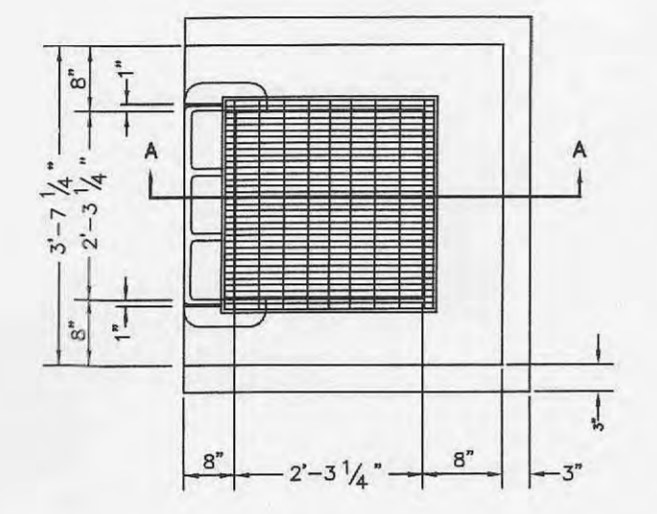
**SQUARE 2 GRATE INLET**



**2 GRATE INLET INLET MANHOLE BASE**

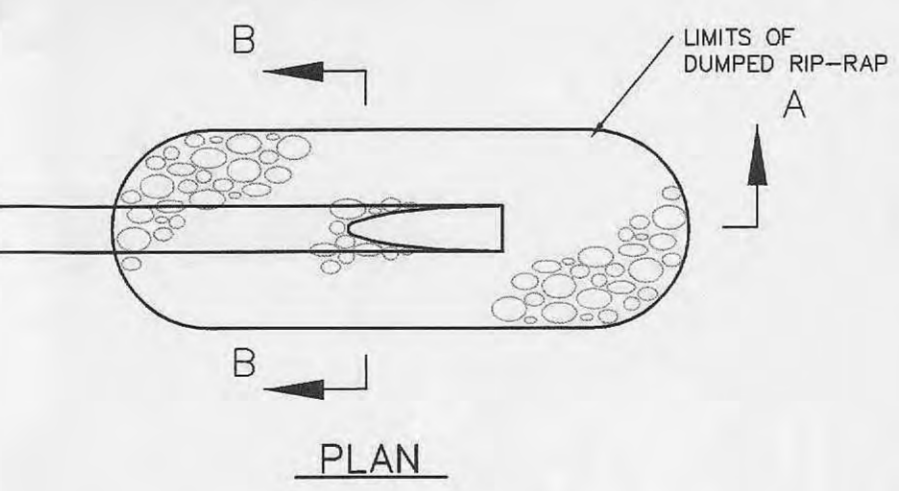
NOTE: INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED, IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.

**2 GRATE INLET DETAIL**  
(n.t.s.)

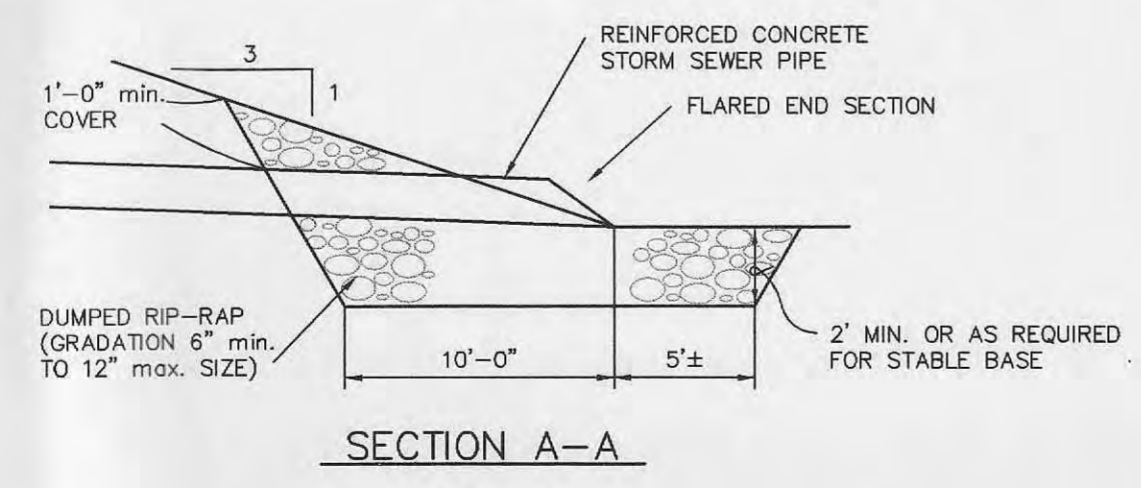


**SECTION 'A-A'**

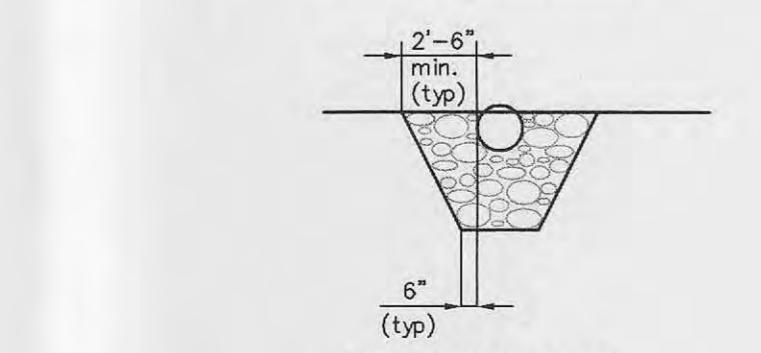
**2 GRATE INLET w/SIDE INTAKE DETAIL**  
(n.t.s.)



**PLAN**



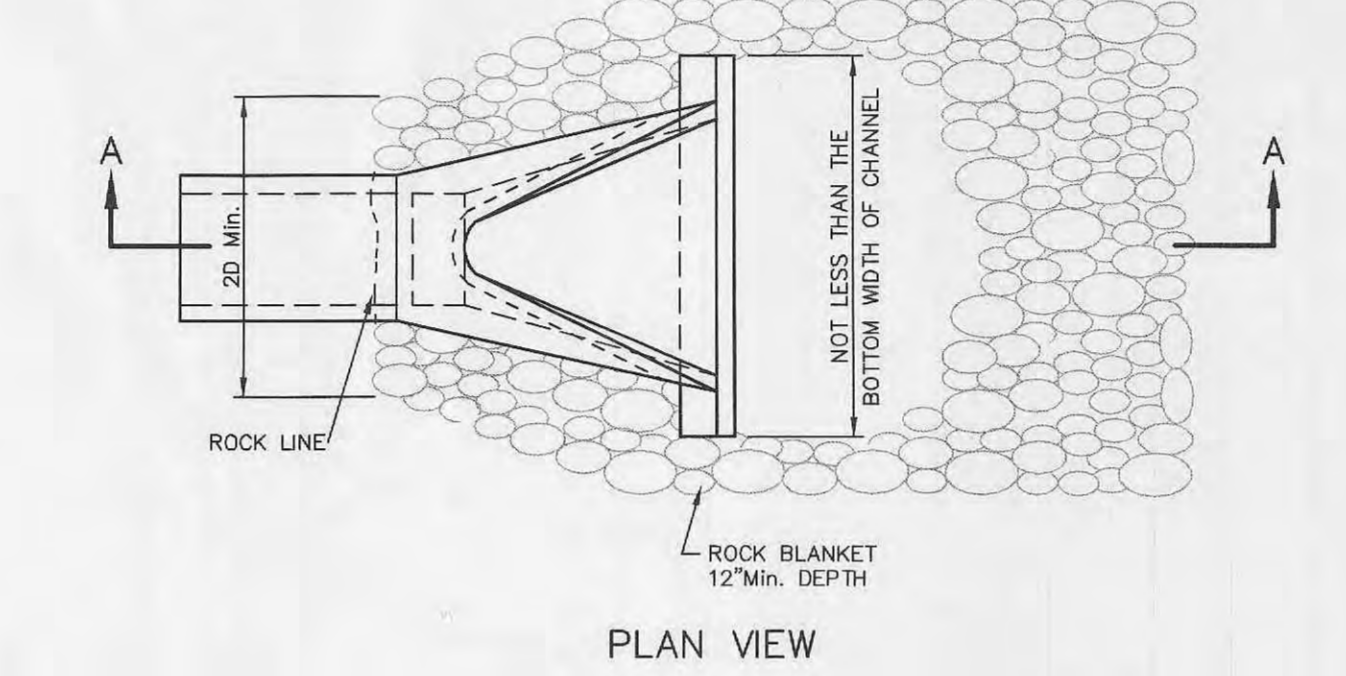
**SECTION A-A**



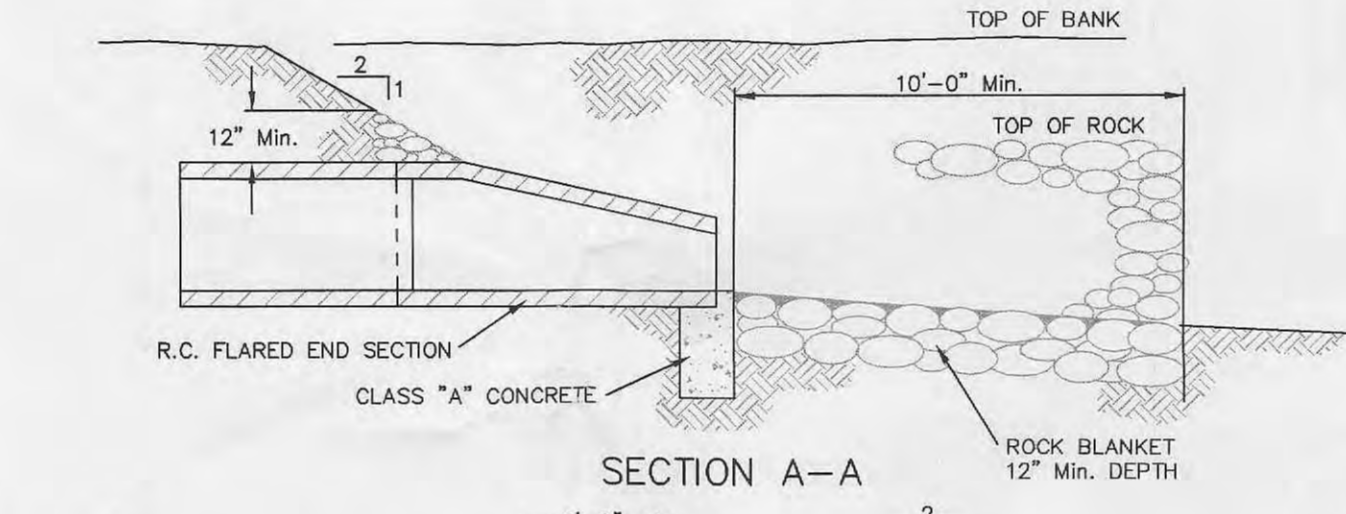
**SECTION B-B**

**RIP-RAP DETAIL**

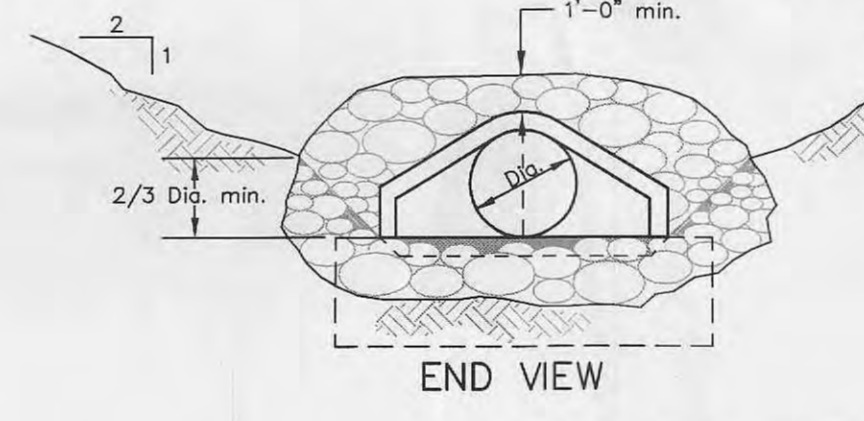
**PIPE DISCHARGE TO LAKE**  
(n.t.s.)



**PLAN VIEW**



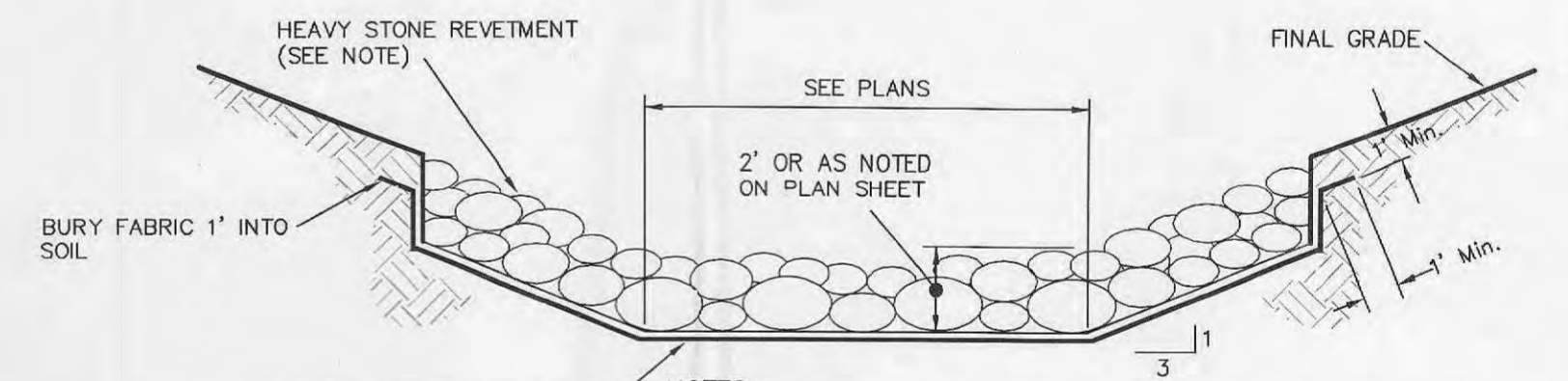
**SECTION A-A**



**END VIEW**

**FLARED END SECTION**

- NOTES:
1. TO BE USED AT INTAKE AND DISCHARGE END OF PIPE. GRADE OF ROCK BLANKET TO BE ADJUSTED ACCORDINGLY.
  2. ROCK BLANKET REQUIRED.



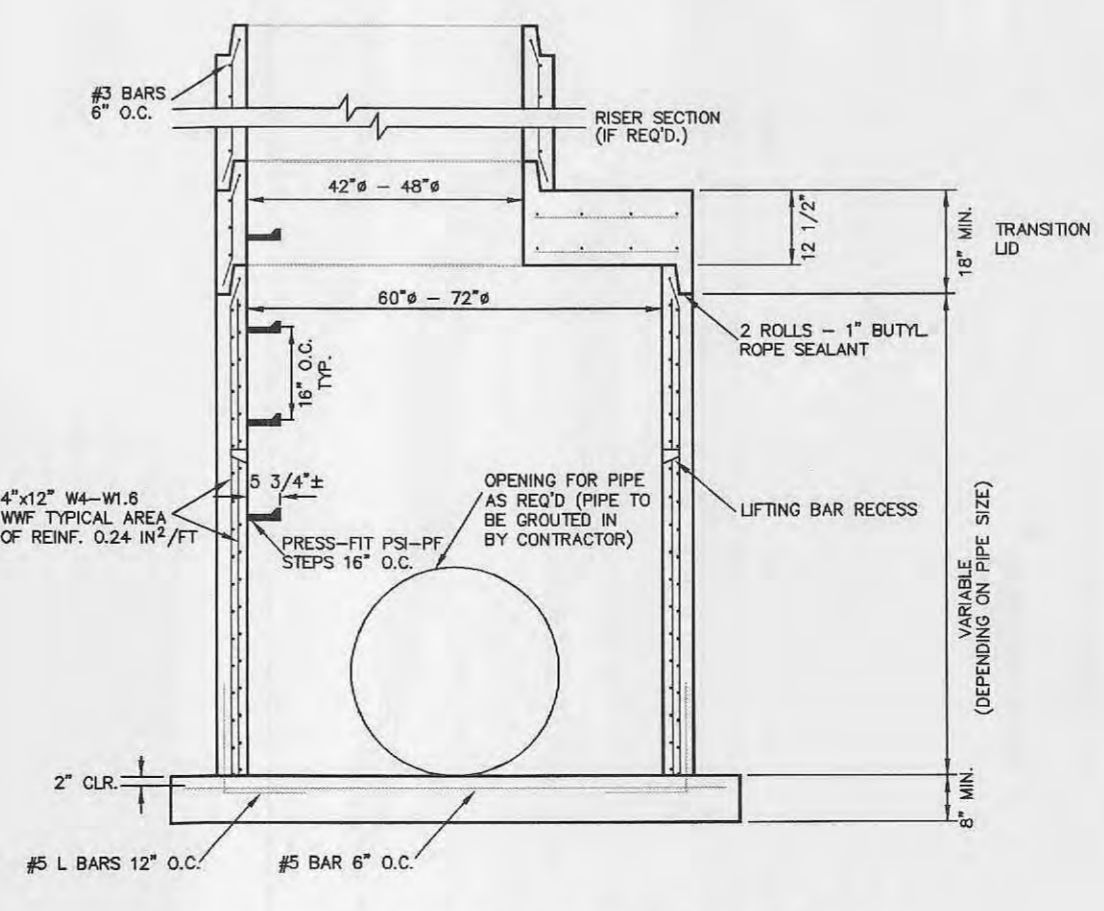
**HEAVY STONE REVETMENT DETAIL**

"MIRAFI" 600X GEOTEXTILE FABRIC OR EQUAL (UNDER REVETMENT ONLY) SEE SIGHT & GRADING PLAN FOR CONTINUATION OF EROSION CONTROL MEASURES BEYOND REVETMENT.

- NOTES:
1. STONE FOR HEAVY STONE REVETMENT SHALL BE SOUND, DURABLE, AND FREE FROM CRACKS AND OTHER STRUCTURAL DEFECTS THAT WOULD CAUSE IT TO DETERIORATE. IT SHALL NOT CONTAIN ANY SOAPSTONE, SHALE, OR OTHER MATERIAL EASILY DISINTEGRATED. THE STONE FOR HEAVY STONE REVETMENT SHALL BE AT LEAST 12 INCH TO 18 INCH DIAMETER, 4in 15 INCH.

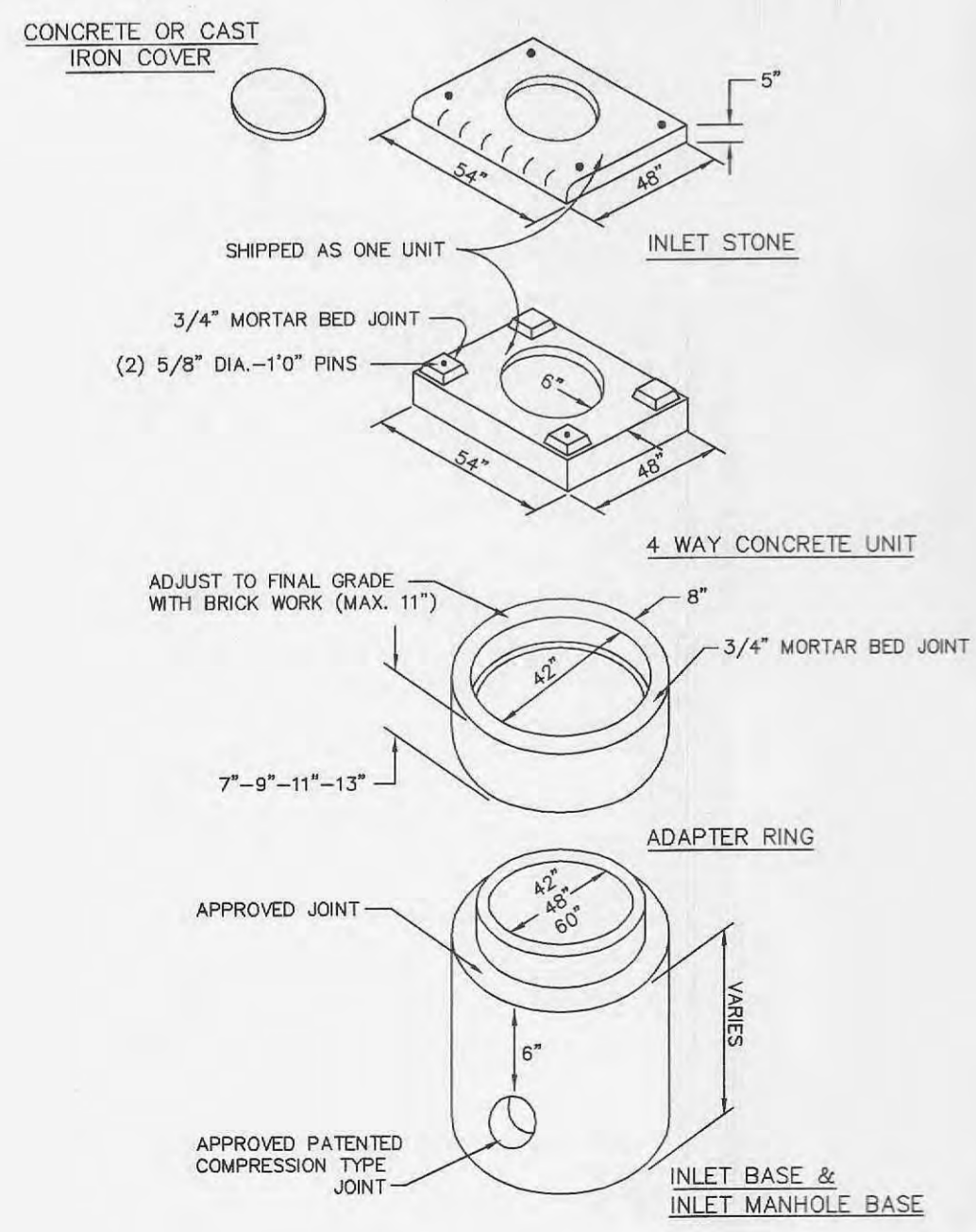
**HEAVY STONE REVETMENT DETAIL**

N.T.S.



**PRECAST STRUCTURE (LARGE)**

STORM STRUCTURE SHALL MEET OR EXCEED ASTM C-478 AND/OR ASTM C-27.3, AS MANUFACTURED BY KLIETTER BROS. CONCRETE PRODUCTS, INC. OR EQUAL.



**AREA INLET DETAIL**  
(n.t.s.)

- 5 - 03/02/05 REVISED PER CITY & COORDINATING COMMENTS  
4 - 02/02/05 REVISED PER CITY, DUCK CREEK AND MDDOT COMMENTS  
3 - 12/08/04 REVISED SANITARY SEWER ROUTE  
2 - 12/01/04 REVISED PER FIRE DISTRICT, SEWER DISTRICT AND CITY COMMENTS  
1 - 11/22/04 REVISED PER COORDINATION ISSUES

**PROGRESS WEST HEALTHCARE CENTER - UTILITY PACKAGE**

**STORM SEWER DETAILS**

**STOCK & ASSOCIATES**  
Consulting Engineers, Inc.

257 Chesterfield Business Parkway  
St. Louis, MO 63005  
PH. (636) 530-9100  
FAX (636) 530-9130  
e-mail: general@stockassoc.com  
Web: www.stockassoc.com

P & Z FILE NUMBER 99104.09.03

March 02, 2005

STATE OF MISSOURI REGISTERED PROFESSIONAL ENGINEER  
GEORGE MICHAEL STOCK  
NUMBER E-25116

DRWN BY: J.E.F.	DATE: 10/21/04	CHECKED BY: G.M.S.	DATE: 10/21/04	JOB NUMBER: 204-3224	SHEET: C19 of 22
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