

**TOWNSHIP OF UNION**  
**CONSTRUCTION STANDARDS**

**Prepared By**

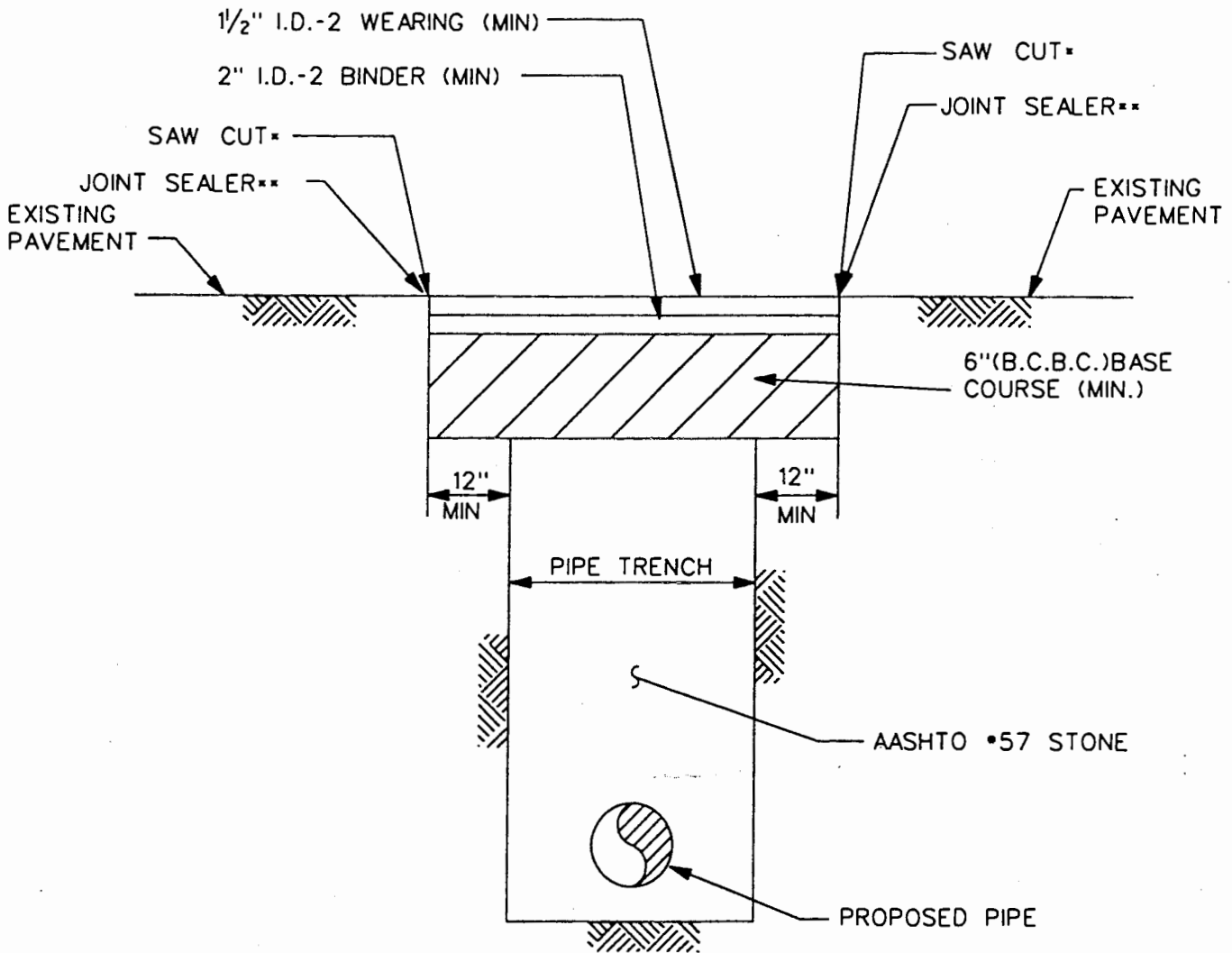
**FERRERO AND ASSOCIATES**  
**1440 Candlewood Drive**  
**Pittsburgh, PA 15241**

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**SEPTEMBER, 1997**

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- 2 SEPARATE SAW CUTS  
ONE CUT BEFORE CONSTRUCTION  
ONE CUT BEFORE FINAL PAVING
- \*\* AS PER PENNDOT 408 SPECIFICATIONS, SECTION 401

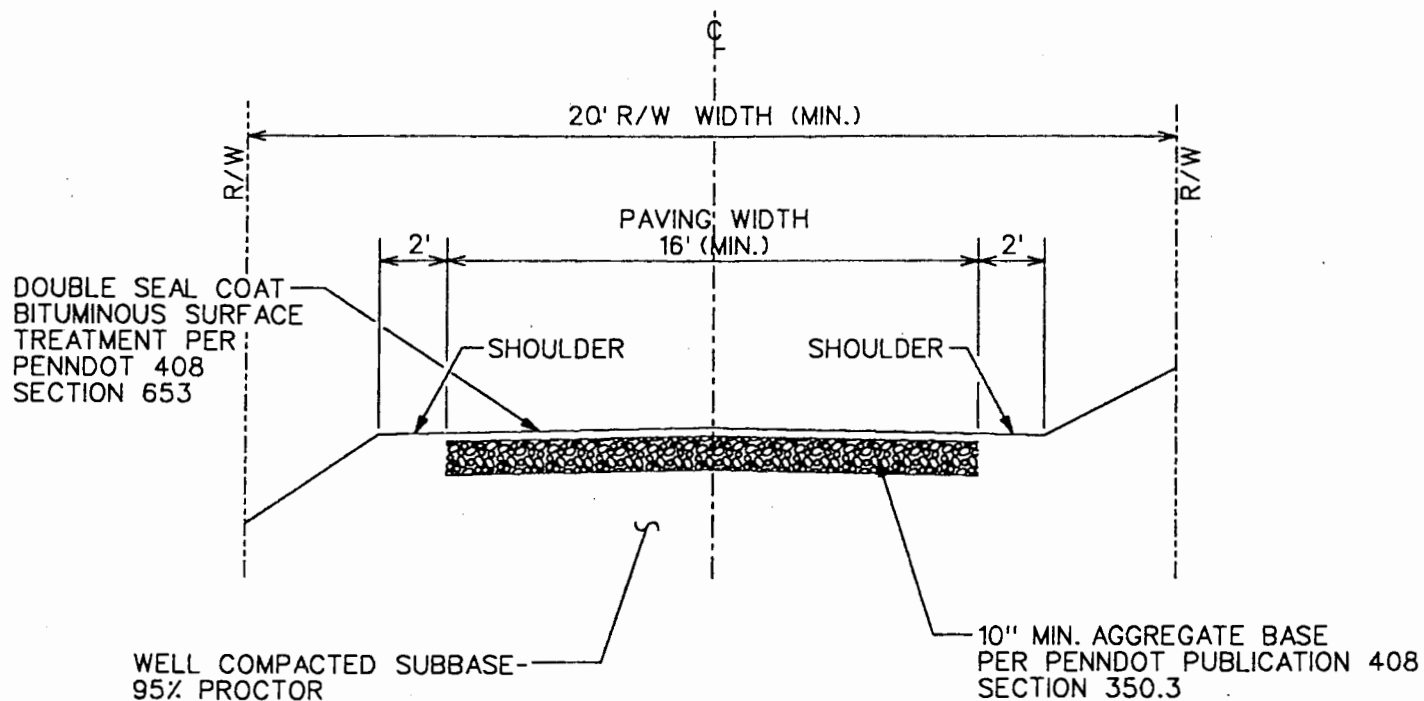


WEARING COURSE SHALL BE AS THICK AS EXISTING OR 1 1/2" MINIMUM (AFTER COMPACTION), WHICHEVER IS GREATER.

BINDER COURSE SHALL BE AS THICK AS EXISTING OR 2" MINIMUM (AFTER COMPACTION), WHICHEVER IS GREATER.

BASE COURSE SHALL BE AS THICK AS EXISTING OR 6" MINIMUM, WHICHEVER IS GREATER.

REVISIONS	PAVEMENT REPLACEMENT		SCALE	NONE
	UNION TOWNSHIP      WASHINGTON COUNTY, PA		DATE	JULY 1997
	PREPARED BY      FERRERO AND ASSOCIATES, INC 412-851-4438		TYPICAL DETAIL NO.	1

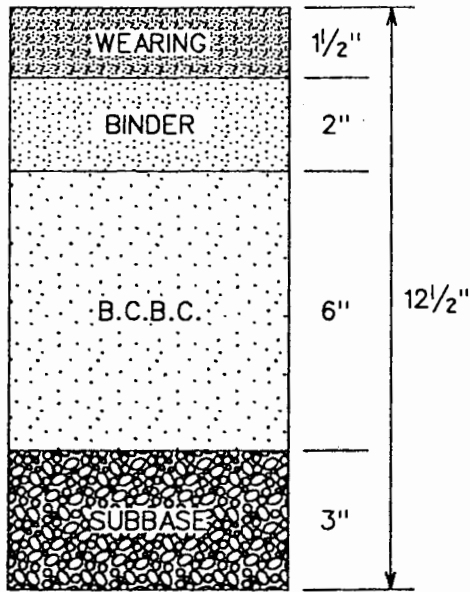


OTHER SPECIFICATIONS:

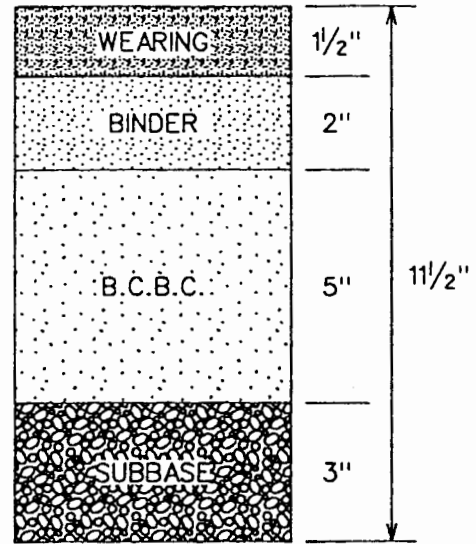
- MAXIMUM GRADE - 12%
- MINIMUM ANGLE FOR INTERSECTIONS - 70%
- MINIMUM CURB RADIUS - 5 FEET
- GRADES FOR 25' BEFORE INTERSECTION - 3%
- HORIZONTAL ALIGNMENT (MIN. RADIUS OF C) - 100 FEET
- VERTICAL CURVES (MIN. SITE DISTANCE) - 100 FEET

PROVIDE STORM SEWERS, CULVERTS, CROSS DRAINS & DRAINAGE STRUCTURES AS REQUIRED.

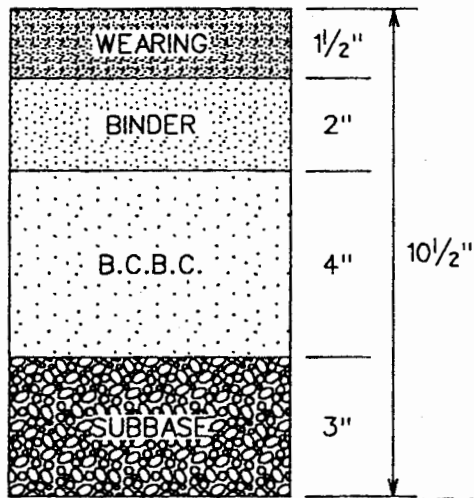
REVISIONS	PRIVATE STREET OR ALLEY	SCALE NONE
	UNION TOWNSHIP      WASHINGTON COUNTY, PA	DATE JULY 1997
	PREPARED BY FERRERO AND ASSOCIATES, INC 412-851-4438	TYPICAL DETAIL NO. 2



ARTERIAL STREETS



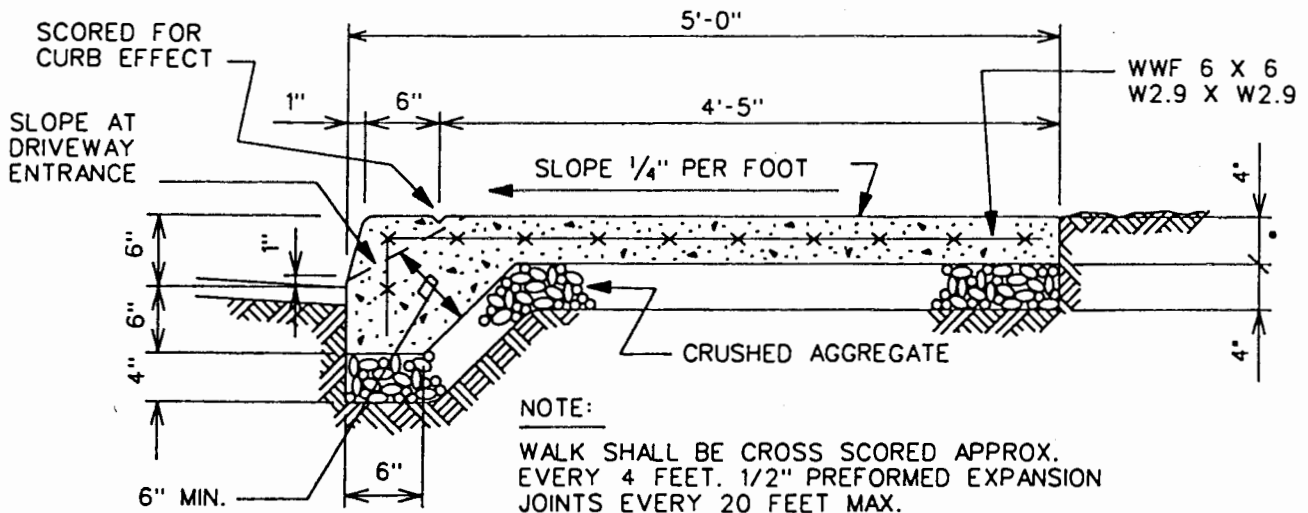
COLLECTOR STREETS



LOCAL STREETS

ALL MATERIALS SHALL CONFORM TO PENNDOT SPECIFICATIONS PUB. 408

REVISIONS	PAVING DEPTHS - PUBLIC STREETS	SCALE NONE
	UNION TOWNSHIP WASHINGTON COUNTY, PA	DATE JULY 1997
	PREPARED BY FERRERO AND ASSOCIATES, INC 412-851-4438	TYPICAL DETAIL NO. 3

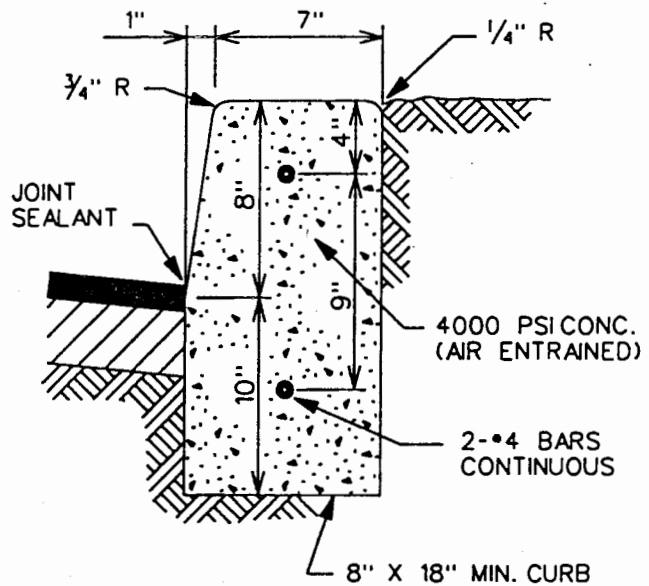
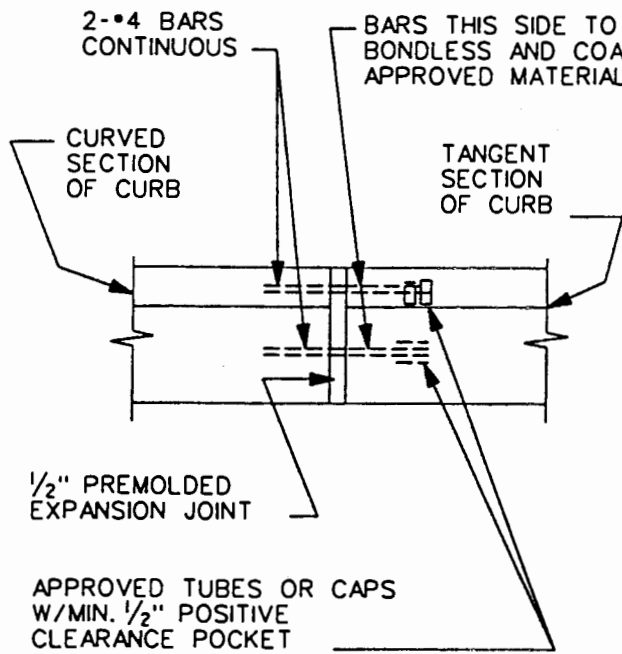


**NOTE:**

WALK SHALL BE CROSS SCORED APPROX. EVERY 4 FEET. 1/2" PREFORMED EXPANSION JOINTS EVERY 20 FEET MAX. 4000 PSI CONC. (AIR ENTRAINED)

- PROVIDE MINIMUM 6 INCH THICKNESS FOR APRONS, AND SIDEWALKS CROSSING DRIVEWAYS, ROADWAYS, AND AREAS SUBJECT TO VEHICULAR TRAFFIC.

TYPICAL CURB AND SIDEWALK DETAIL



SECTION

EXPANSION JOINTS LOCATED ON 23'-3" CENTERS MAX (4'-0" MIN. FOR CLOSURES ON CURVE)

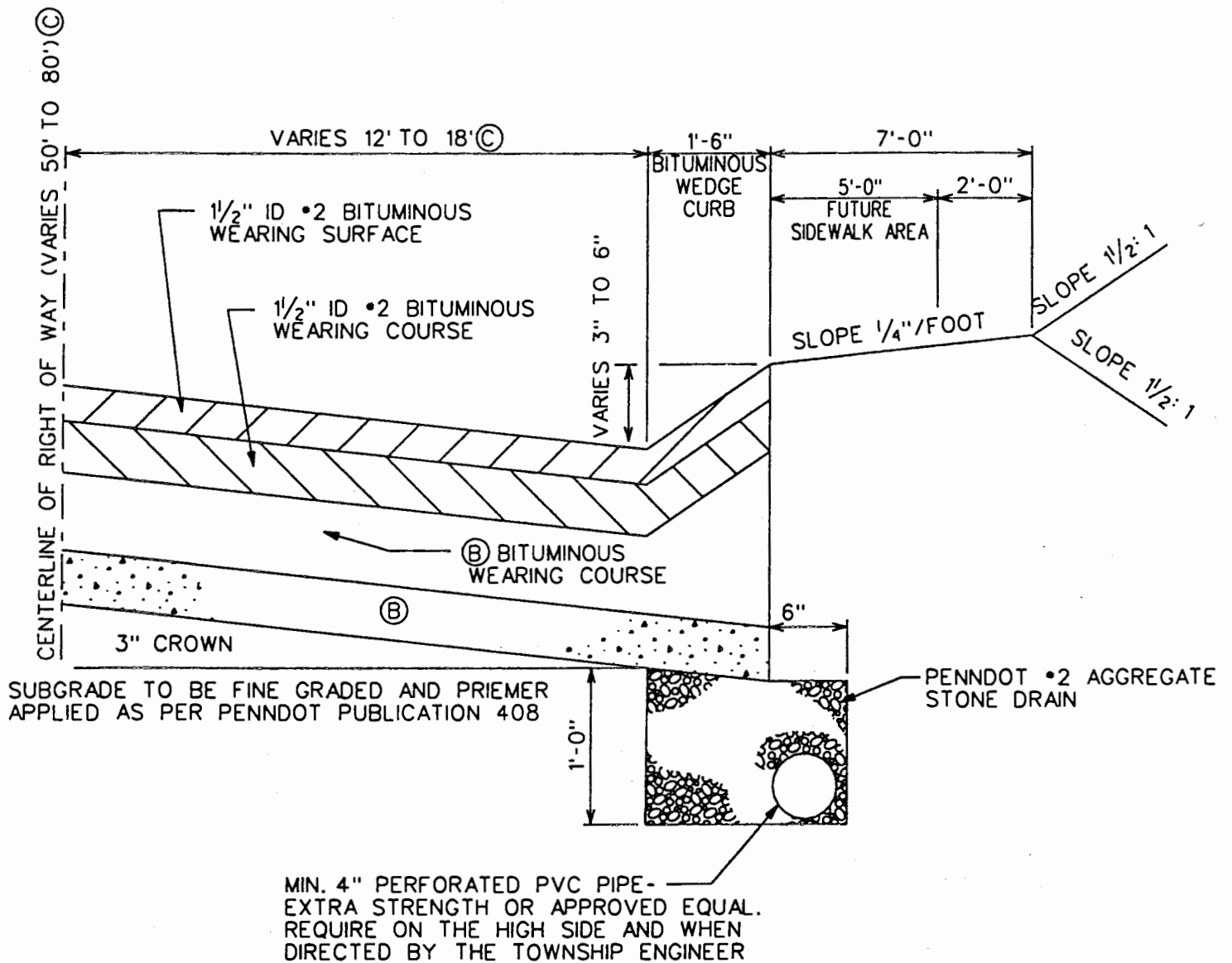
POINTS OF CURVATURE

TYPICAL CURB DETAILS

NOTE:

SLOPE TERMINAL ENDS OF CURBS 45° TO MEET EXISTING GRADES

PROVISIONS	<b>CONCRETE CURB AND SIDEWALK DETAIL</b>		SCALE	NONE
	UNION TOWNSHIP	WASHINGTON COUNTY, PA	DATE	JULY 1997
	PREPARED BY	FERRERO AND ASSOCIATES, INC 412-851-4438	TYPICAL DETAIL NO.	4

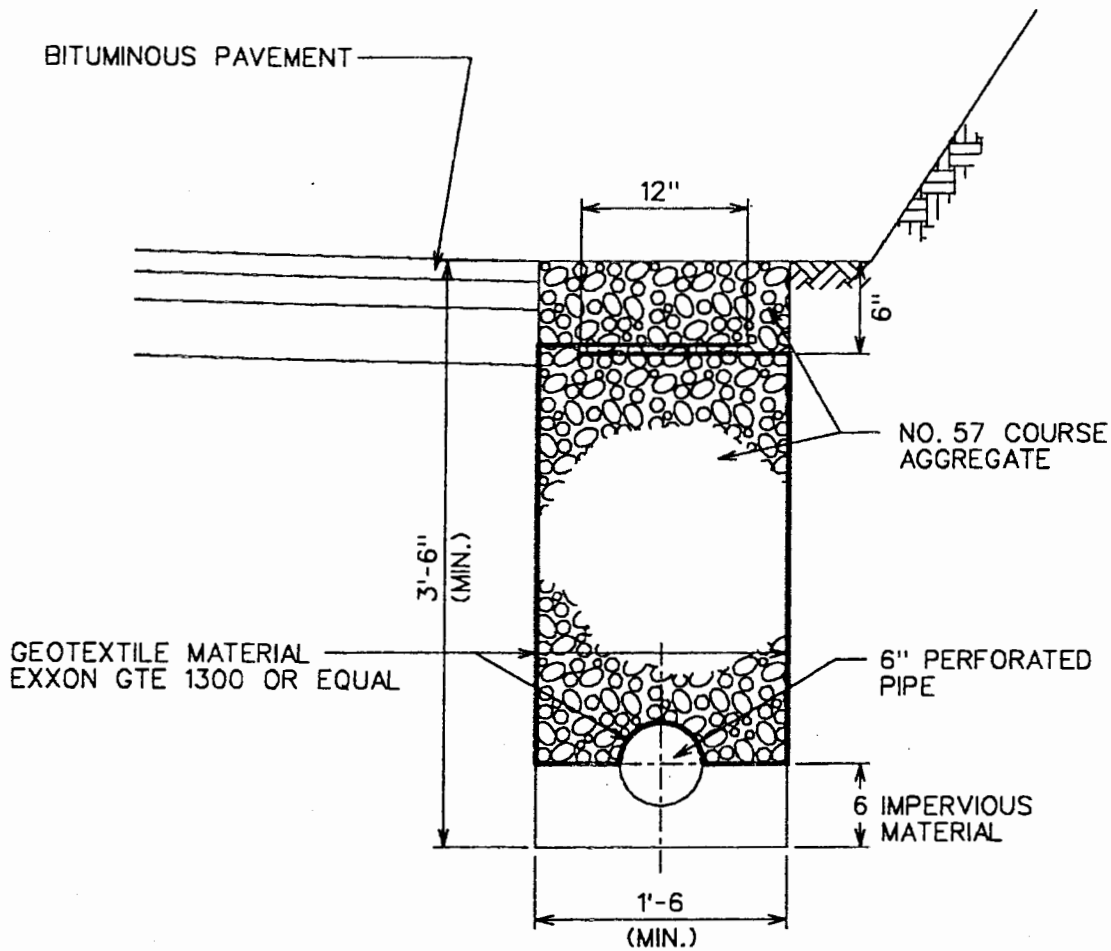


NOTES:

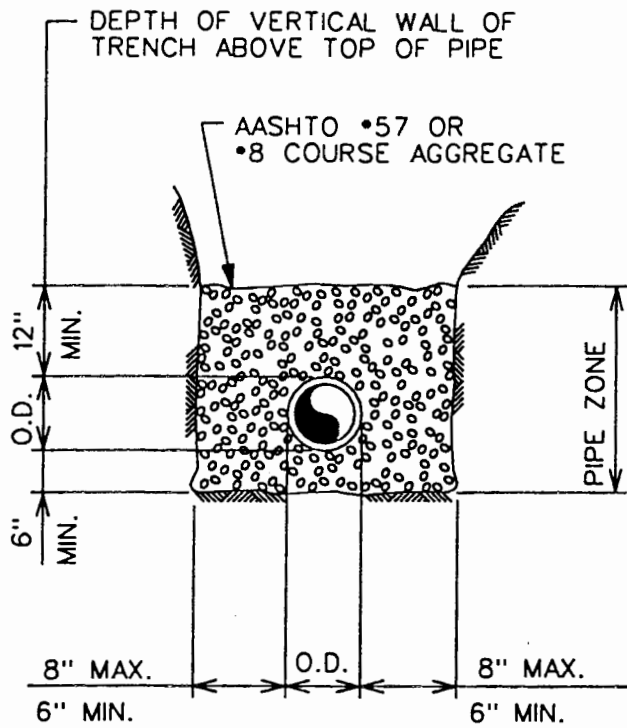
- (A) FINAL 1/2" ID #2 BITUMINOUS WEARING SURFACE IS NOT TO BE INSTALLED UNTIL 80% BUILD OUT OF NEW DEVELOPMENT OR AS SPECIFIED IN DEVELOPERS AGREEMENT
- (B) SEE TYPICAL DETAIL #2
- (C) SEE APPENDIX II, PAGE 100

NOTE:  
ALL WORK SHALL BE DONE IN ACCORDANCE WITHIN THE APPROPRIATE SECTION OF PENNDOT PUBLICATION 408, 1994 OR AS REVISED

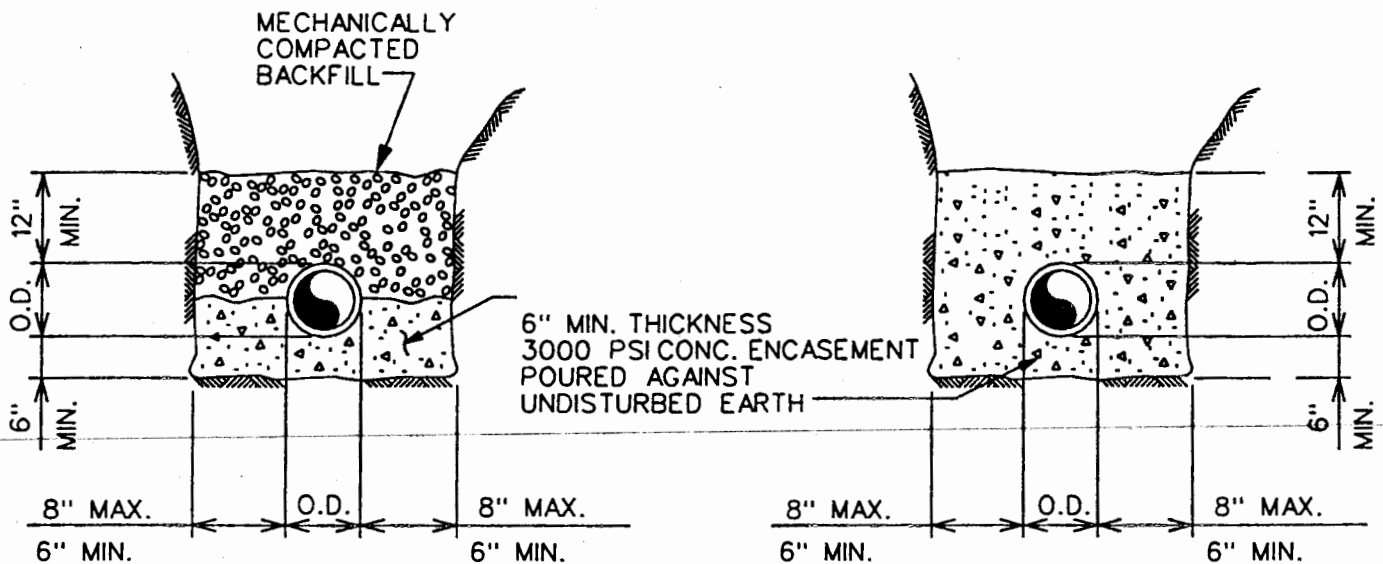
REVISIONS	<b>ROADWAY CROSS SECTION</b>		SCALE
			NONE
	UNION TOWNSHIP WASHINGTON COUNTY, PA		DATE
PREPARED BY	FERRERO AND ASSOCIATES, INC		JULY 1997
	412-851-4438		TYPICAL DETAIL NO.
			5



REVISIONS	SHOULDER DRAIN DETAIL		SCALE	NONE
	UNION TOWNSHIP	WASHINGTON COUNTY, PA	DATE	JULY 1997
	PREPARED BY	FERRERO AND ASSOCIATES, INC 412-851-9438	TYPICAL DETAIL NO.	6



TYPICAL BEDDING AND PIPE ZONE



TYPICAL CONCRETE CRADLE

TYPICAL CONCRETE ENCASEMENT

REVISIONS

SEWER BEDDING AND BACKFILL

SCALE

NONE

UNION TOWNSHIP

WASHINGTON COUNTY, PA

DATE

JULY 1997

PREPARED BY

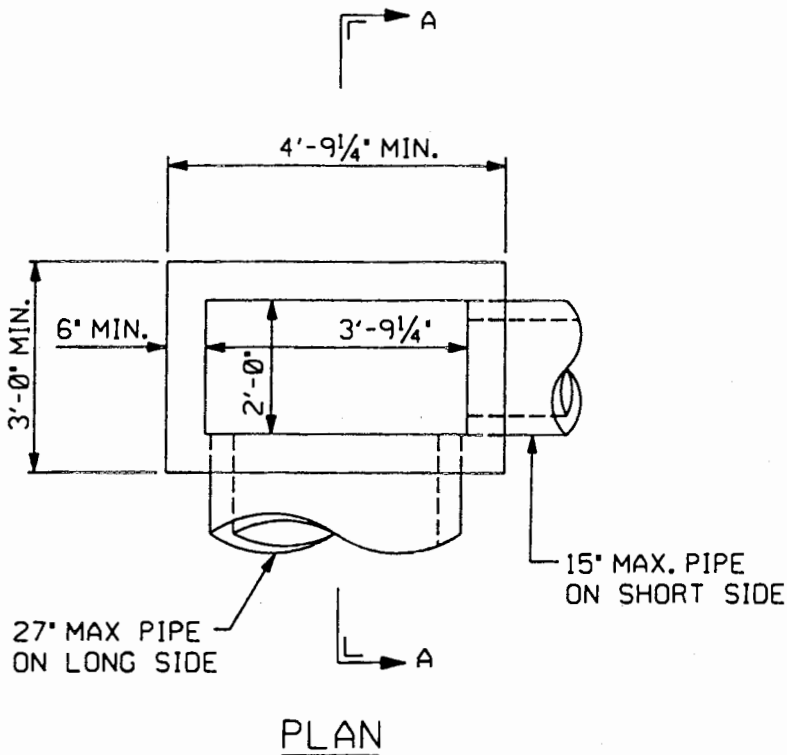
FERRERO AND ASSOCIATES, INC  
412-851-4438

TYPICAL DETAIL NO.

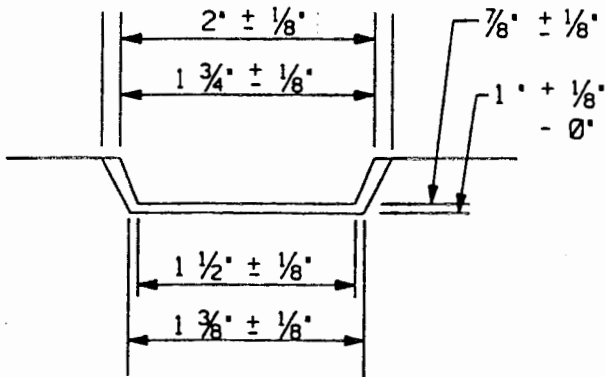
7

NOTES:

- 1) PIPE OR PIPES SHALL BE LOCATED AS INDICATED.
- 2) WEEP HOLES AS REQUIRED SHALL BE PLACED AT APPROPRIATE ELEVATIONS TO COMPLETELY DRAIN THE SUBGRADE PRIOR TO PLACING THE SUBBASE, BASE COURSE, OR PAVEMENT.
- 3) INLETS THAT EXCEED THE MAXIMUM DEPTH OR INSIDE DIMENSIONS OF THE BOX AS SHOWN SHALL REQUIRE A SPECIAL DESIGN.
- 4) A POURED CONCRETE BASE SLAB (REINFORCED WITH #4 BARS @ 12" E.W.) MAY BE USED IN LIEU OF PRECAST SLAB BASE.
- 5) ALL CONCRETE SHALL BE 4000 P.S.I. AIR ENTRAINED CONCRETE.
- 6) PROVIDE LADDER BARS FOR STRUCTURE THAT EXCEEDS 5 FEET IN HEIGHT.
- 7) DO NOT EXTEND PIPE BLOCKOUTS INTO THE BASE WHEN BASE IS NOT MONOLITHIC WITH THE INLET WALLS.
- 8) ALL PRECAST SECTIONS, UNITS, AND/OR SLABS SHALL CONFORM TO ASTM-C890, LATEST REV.
- 9) CATCH BASIN WALLS MUST BE 8" THICK MIN., SEE STD 2-68.
- 10) INLET WALLS MUST BE 6" THICK MIN., AS SHOWN.
- 11) SEE DETAIL NO. 9 FOR FRAMES AND GRATES.
- 12) SEE DETAIL NO. 10 FOR BASE DETAIL.

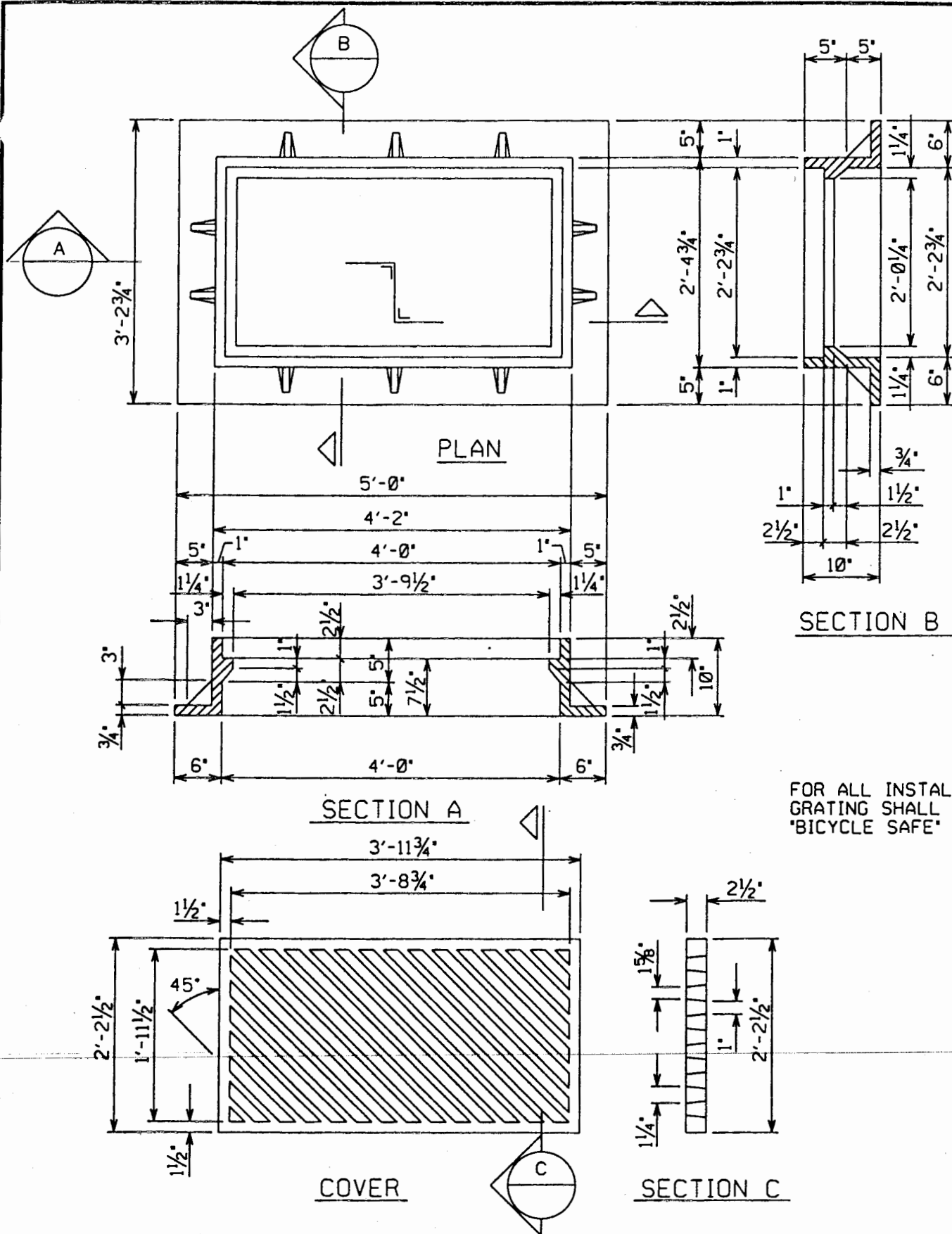


PLAN



TYPICAL TONGUE & GROOVE JOINT

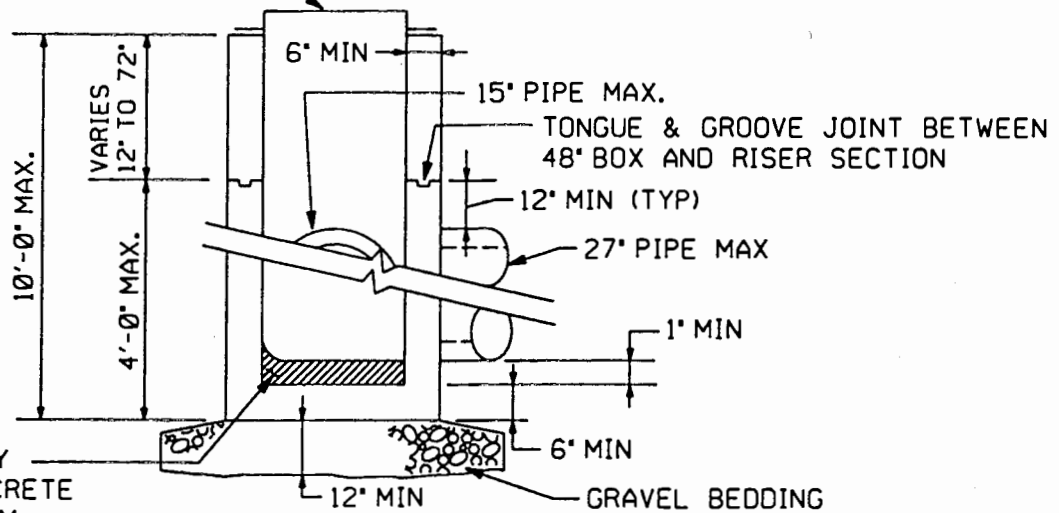
DIMENSIONS	<b>PRECAST STORM SEWER INLET</b>		SCALE NONE
	UNION TOWNSHIP	WASHINGTON COUNTY, PA	DATE JULY 1997
	PREPARED BY FERRERO AND ASSOCIATES, INC 412-851-4438		TYPICAL DETAIL NO. 8



FOR ALL INSTALLATIONS,  
GRATING SHALL BE  
'BICYCLE SAFE'

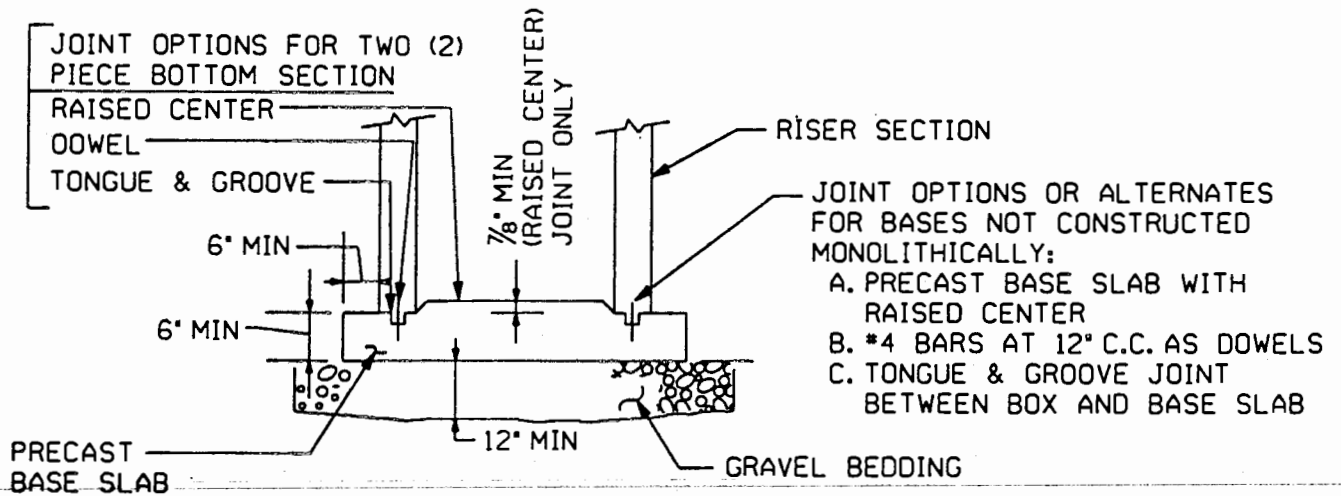
REVISIONS	<b>INLET FRAME AND GRATING</b>		SCALE NONE
	UNION TOWNSHIP      WASHINGTON COUNTY, PA		DATE JULY 1997
	PREPARED BY      FERRERO AND ASSOCIATES, INC 412-851-4438		TYPICAL DETAIL NO. 9

INLET FRAME AND GRATING OR  
 PRECAST CONCRETE TOP UNIT.  
 AS SPECIFIED



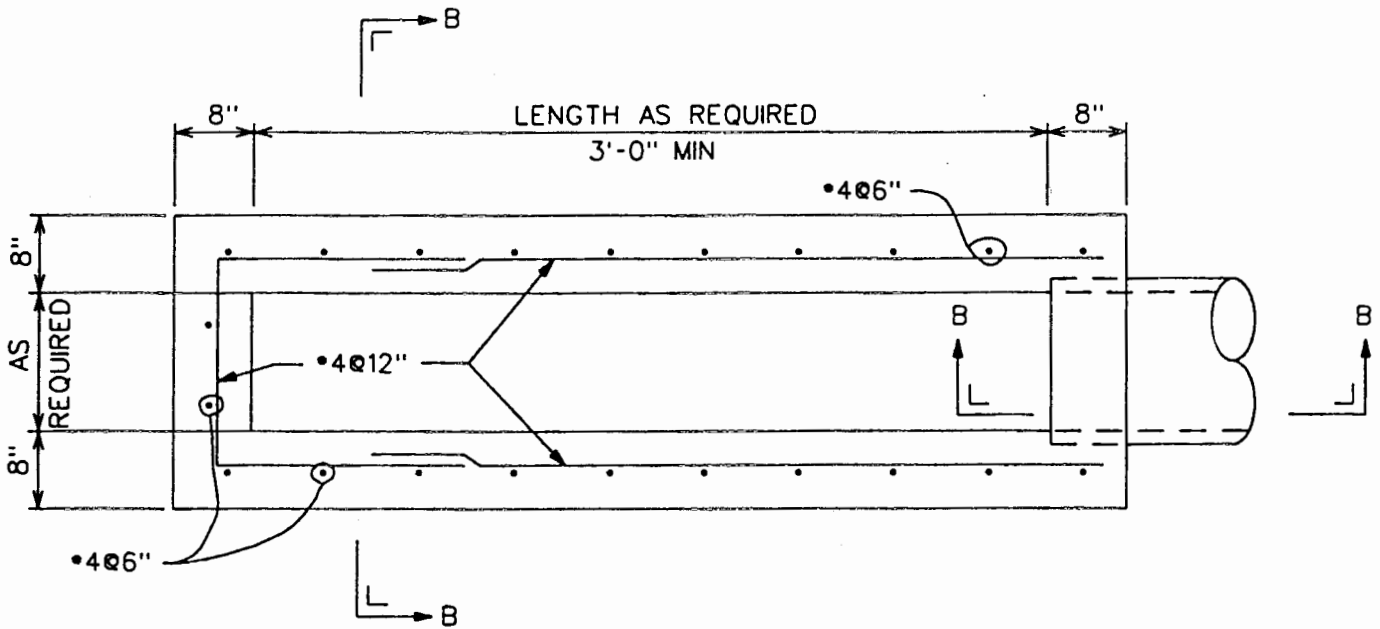
FOR INLETS ONLY  
 ADDITIONAL CONCRETE  
 TO SLOPE BOTTOM  
 AS REQUIRED. SEE  
 STD 2-68 FOR C.B.  
 REQUIREMENTS

**SECTION A-A**  
 MONOLITHIC BASE

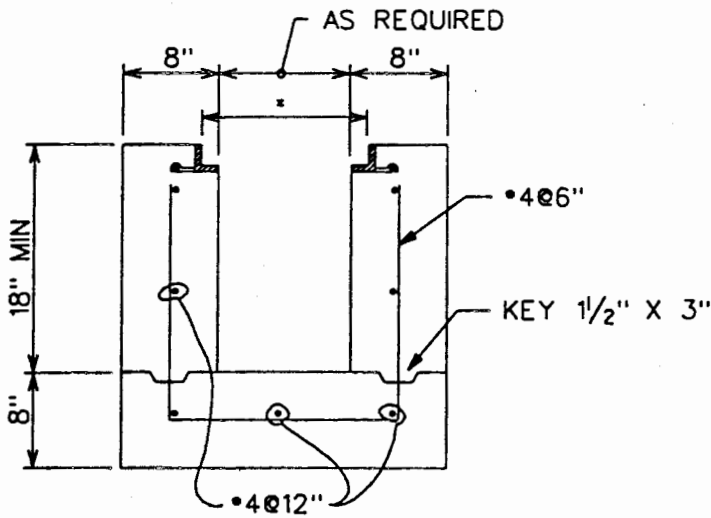


**ALTERNATE SECTION A-A**  
 PRECAST SLAB BASE

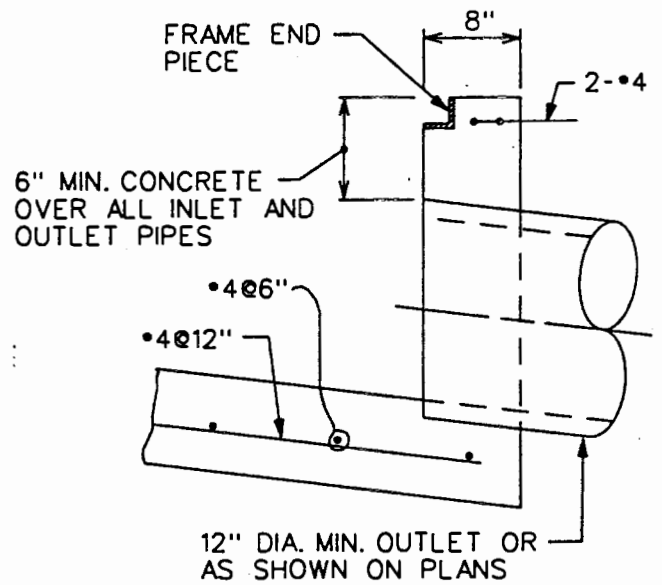
REVISIONS	<b>INLET BASE DETAIL</b>		SCALE
			NONE
	UNION TOWNSHIP      WASHINGTON COUNTY, PA		DATE
	PREPARED BY      FERRERO AND ASSOCIATES, INC		JULY 1997
	412-851-4438		TYPICAL DETAIL NO.
			10



PLAN



SECTION A-A



SECTION B-B

\*FRAME WIDTH  
AS SPECIFIED

NOTE:

ALL CONCRETE SHALL BE  
4000 PSI AIR  
ENTRAINED CONCRETE

REVISIONS	<b>TRENCH DRAIN</b>		SCALE NONE
	UNION TOWNSHIP      WASHINGTON COUNTY, PA		DATE JULY 1997
	PREPARED BY FERRERO AND ASSOCIATES, INC 412-851-9438		TYPICAL DETAIL NO. 11