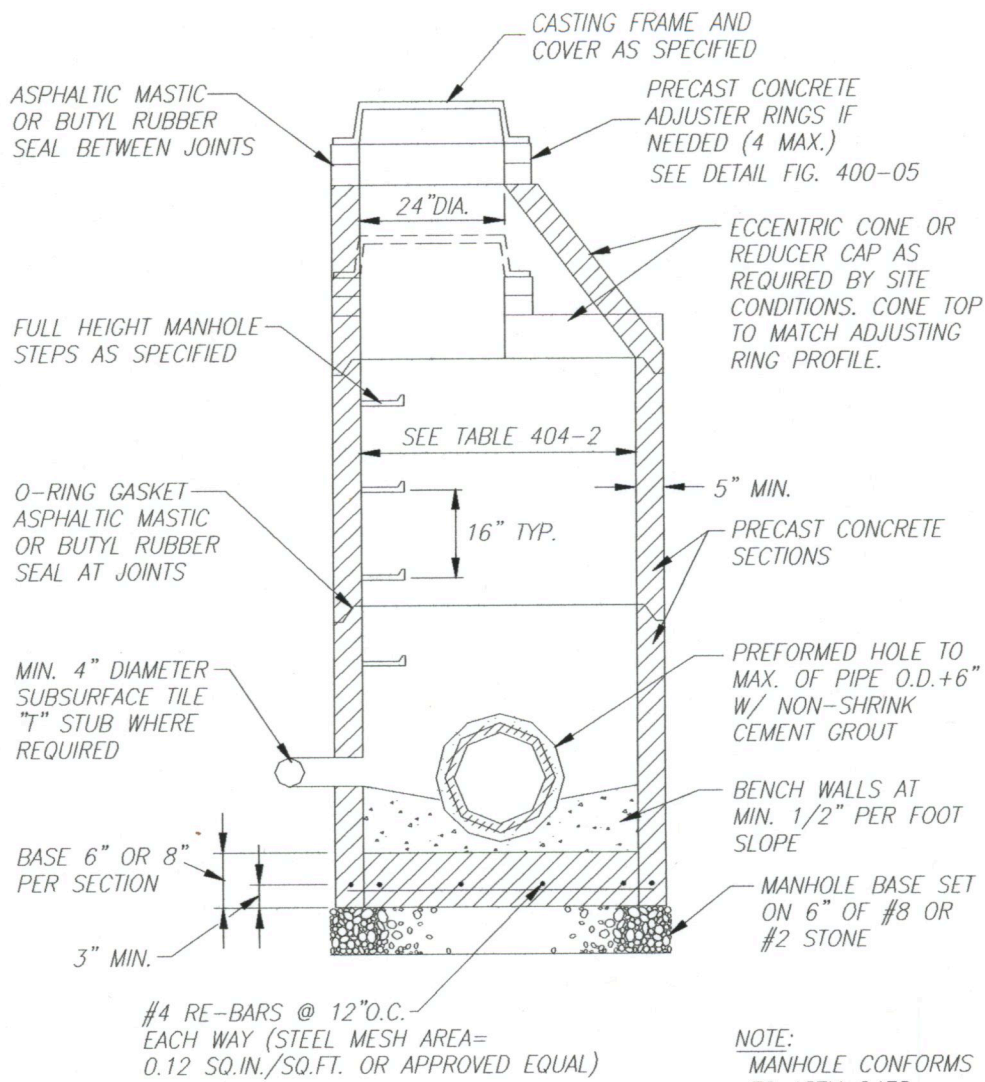


# **Appendix VIII**

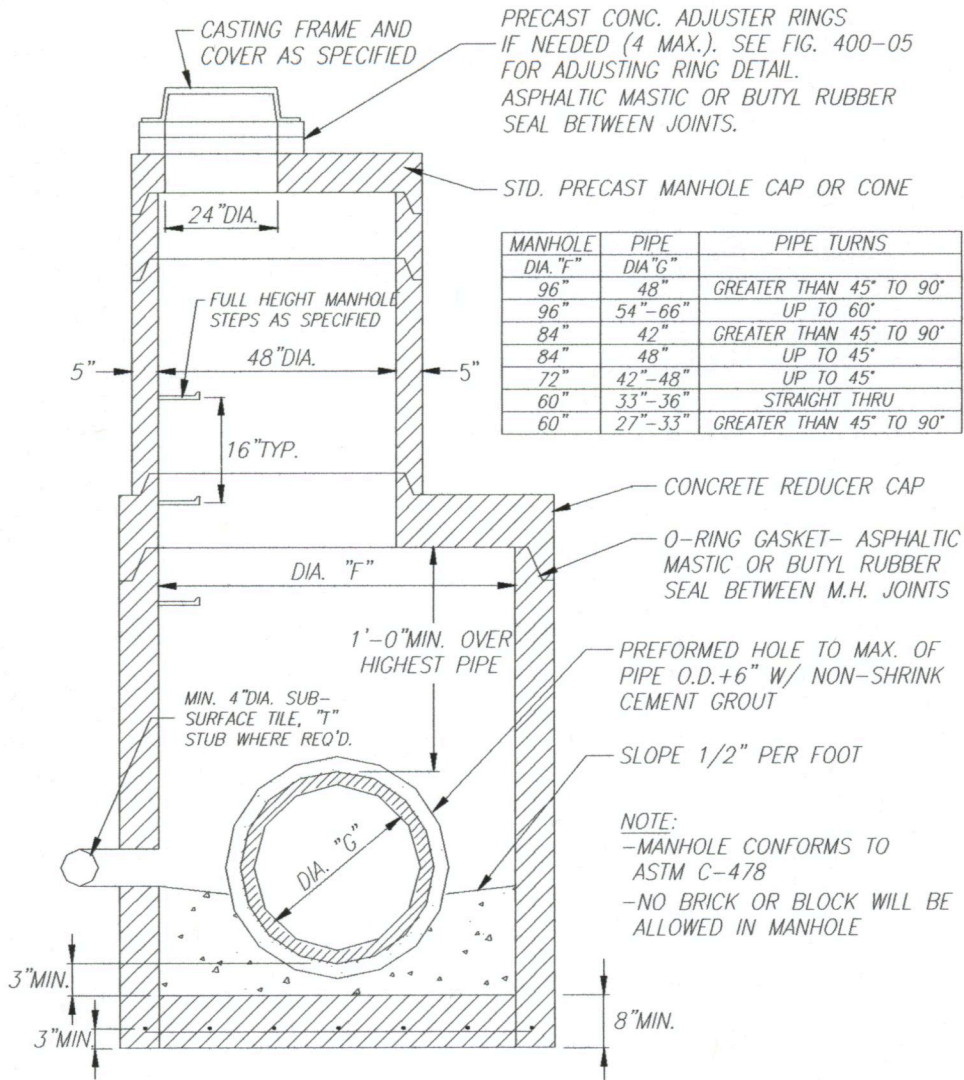
## **Standard Details**



STANDARD MANHOLE FOR PIPE SIZES 12" thru 24"

NO SCALE

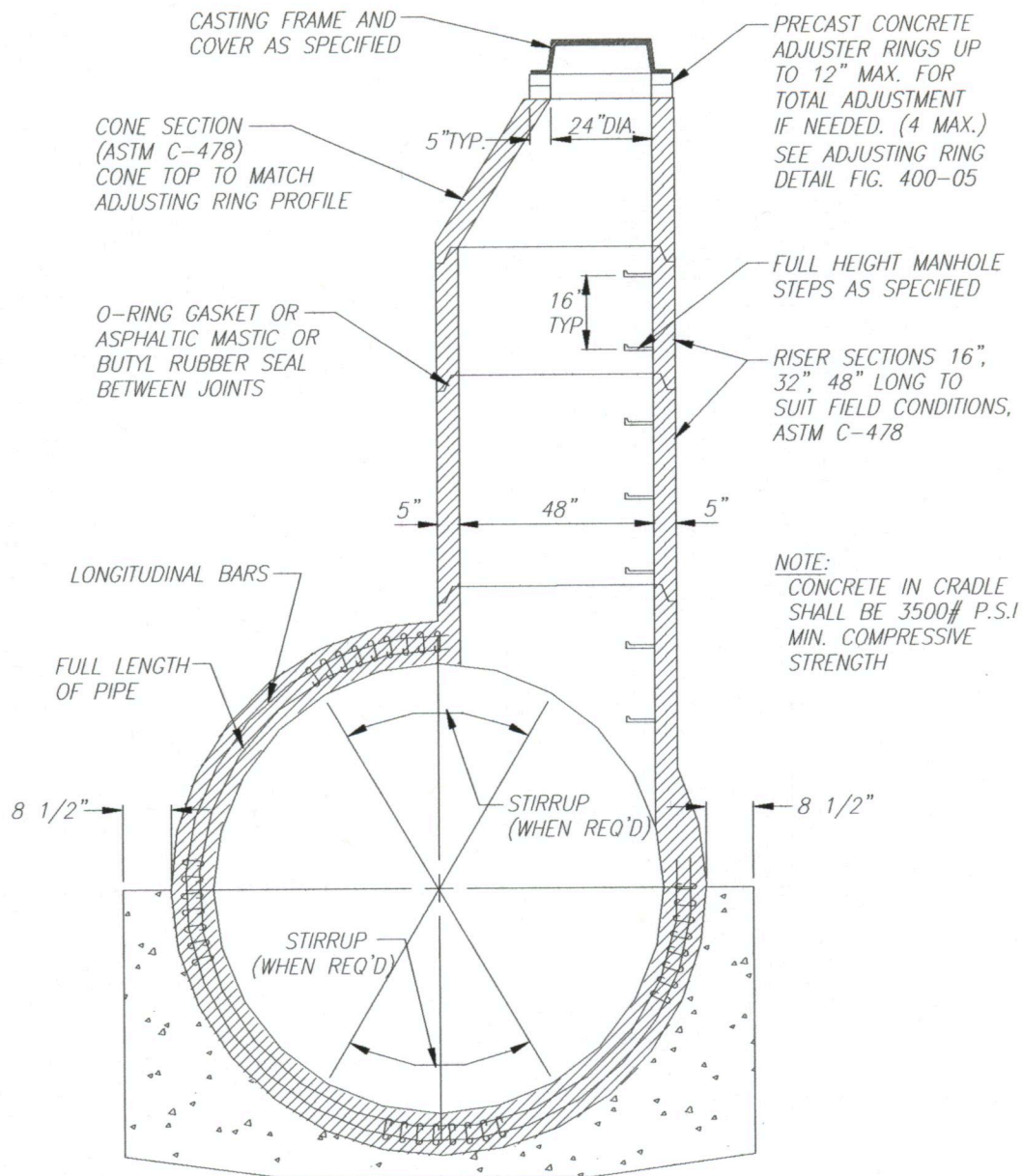
Figure 8-01



ONE COMPLETE UNIT OF PRECAST CONCRETE MANHOLE BASE & RISER OR APPROVED ALTERNATIVE. SEPARATE BASE & RISER SECTION IS OPTIONAL.

MANHOLE BASE, RISER & REDUCER  
CAP FOR PIPES 27" thru 48"  
NO SCALE

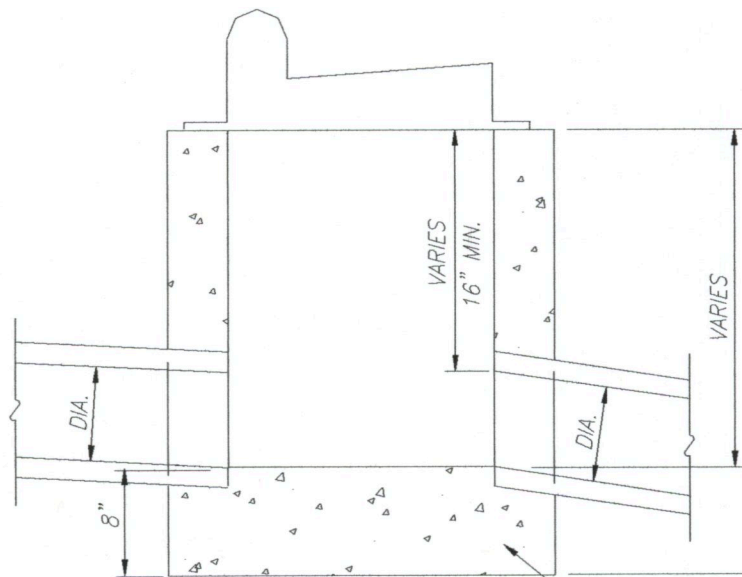
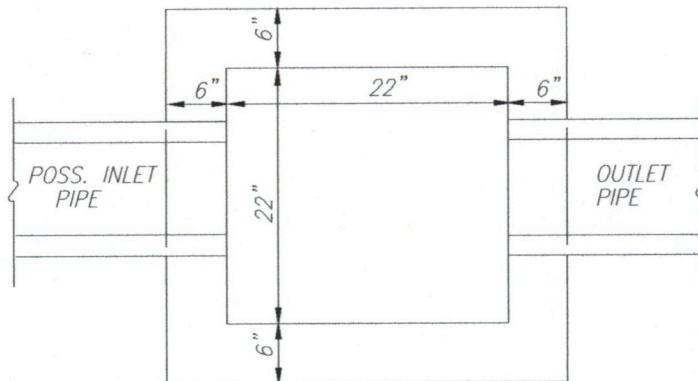
**Figure 8-02**



SPECIAL MANHOLE - 54" thru 144" SEWERS  
 MEETING CLASS III, IV OR V ASTM SPECS.  
 NO SCALE

**Figure 8-03**





NOTE: 6" CONC. PRECAST OR  
POURED IN PLACE

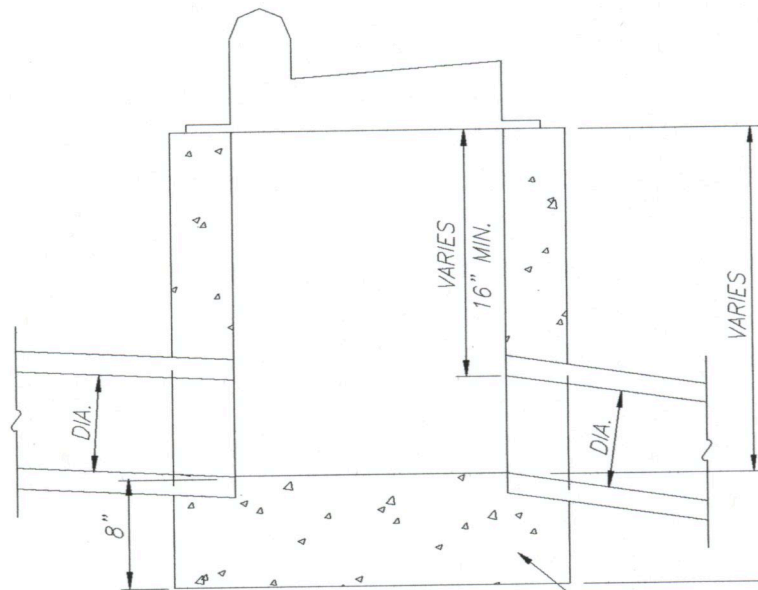
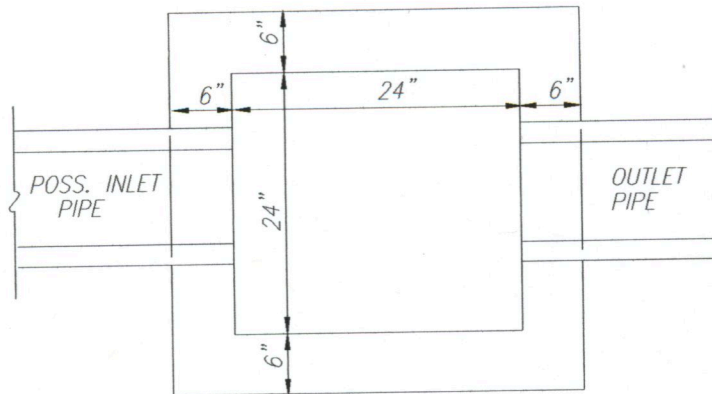
CLASS "A"  
CONCRETE

INLET TYPE "A" (TYPICAL)

(12" TO 15" PIPES)

NO SCALE

**Figure 8-04**



NOTE: 6" CONC. PRECAST OR  
POURED IN PLACE

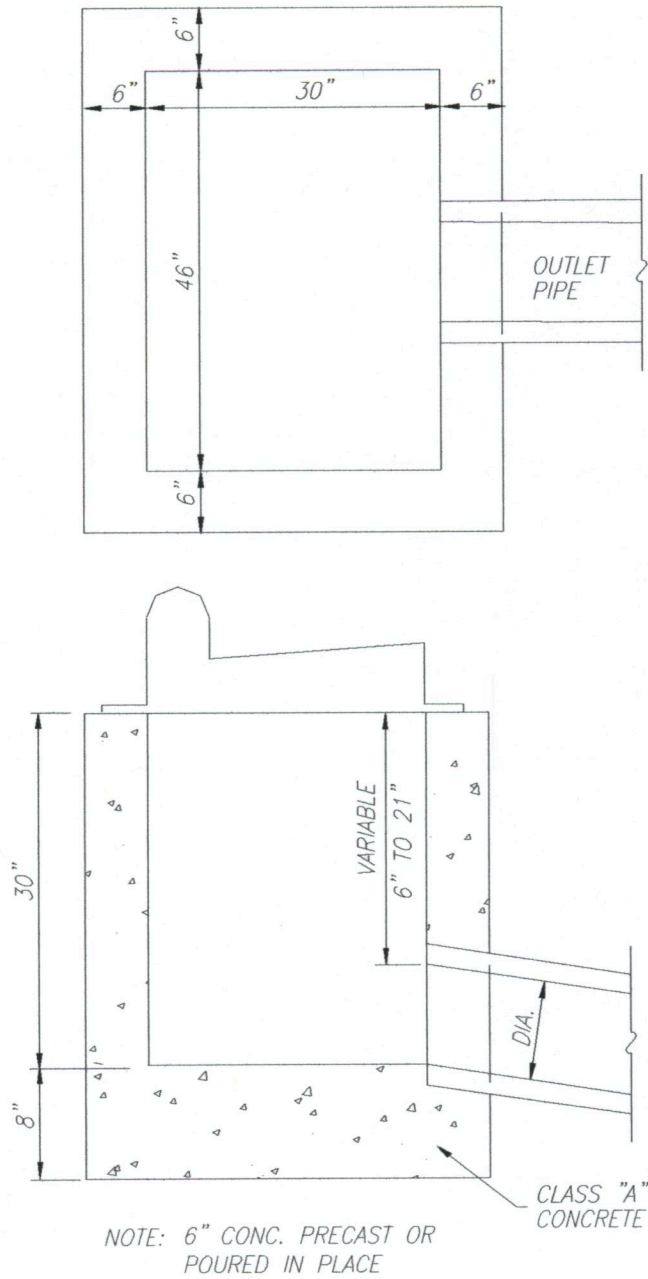
CLASS "A"  
CONCRETE

INLET TYPE "A" (MODIFIED)

(12" TO 18" PIPES)

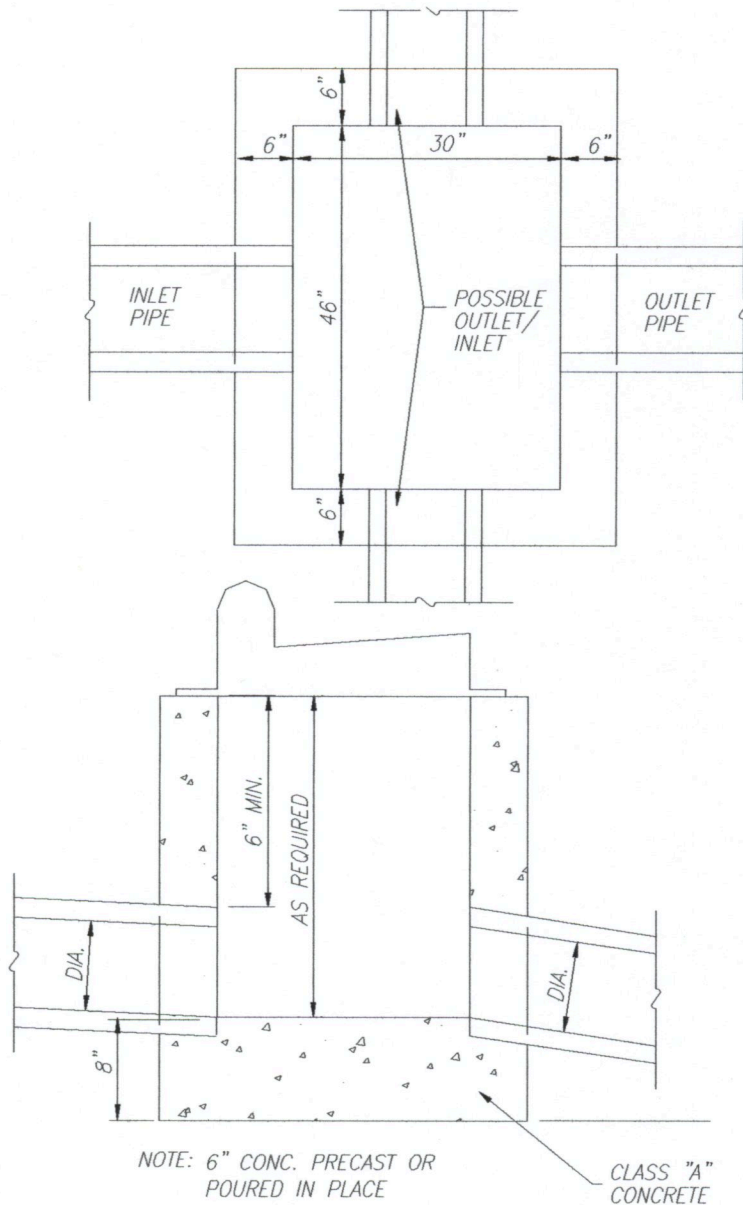
NO SCALE

**Figure 8-05**



*INLET TYPE "B"*  
 NO SCALE

**Figure 8-06**



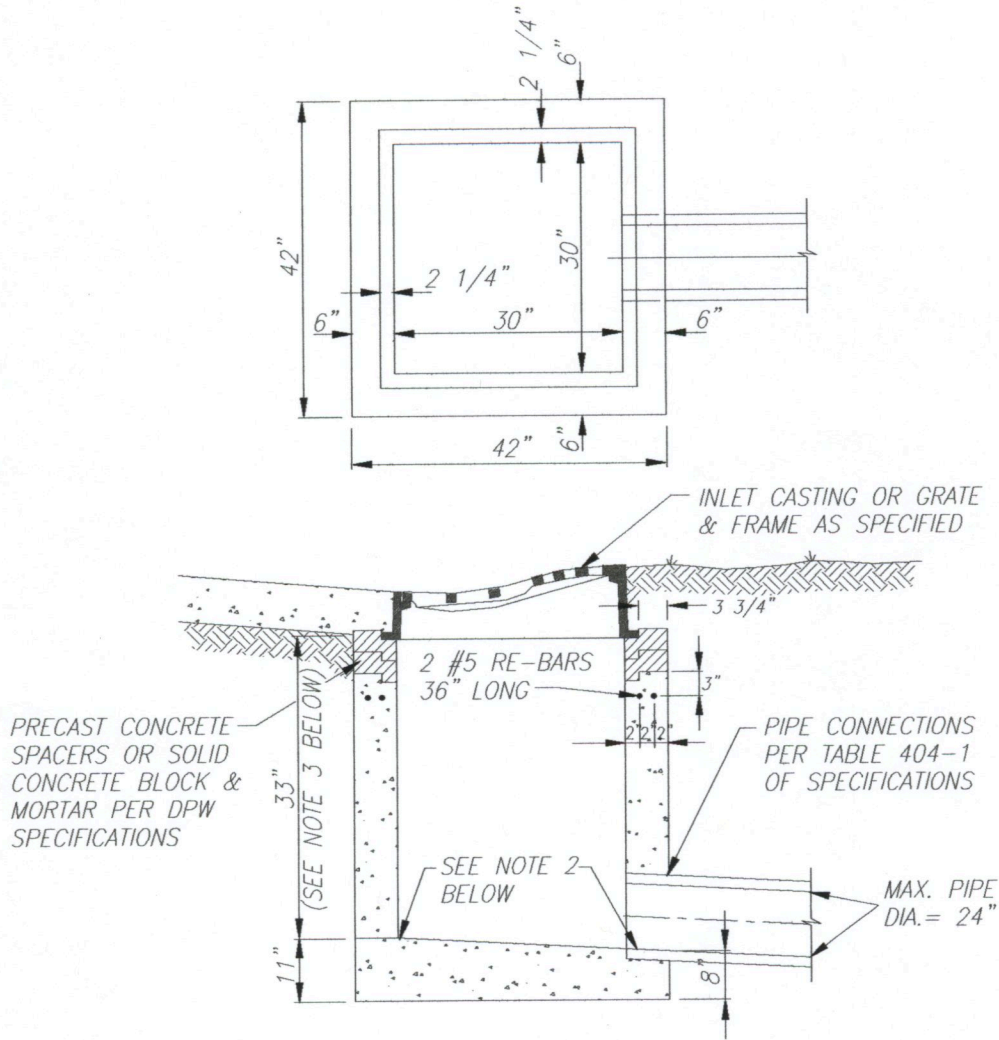
NOTE: 6" CONC. PRECAST OR  
POURED IN PLACE

CLASS "A"  
CONCRETE

INLET TYPE "C"  
NO SCALE

**Figure 8-07**





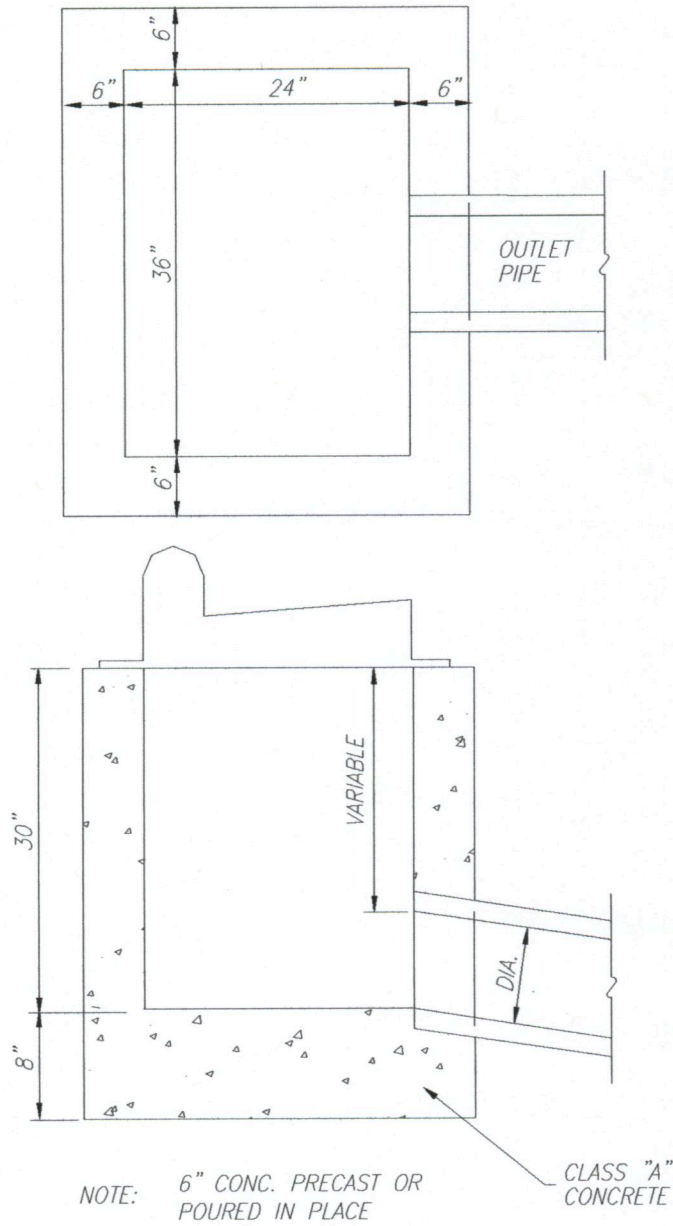
NOTES:

1. DIMENSIONS SHOWN IN CONFORMANCE WITH INDIANA DEPT. OF TRANSPORTATION (INDOT) SPECIFICATIONS.
2. POURED BENCHWALL AND PIPE CONNECTION VARY WITH BOX TYPE SPECIFIED.
3. HEIGHT DIMENSION MAY VARY AS REQUIRED BY SITE CONDITIONS.

PRECAST CONCRETE BOX INLET TYPE E  
WITH ROLL CURB CASTING AND FRAME

NO SCALE

**Figure 8-08**

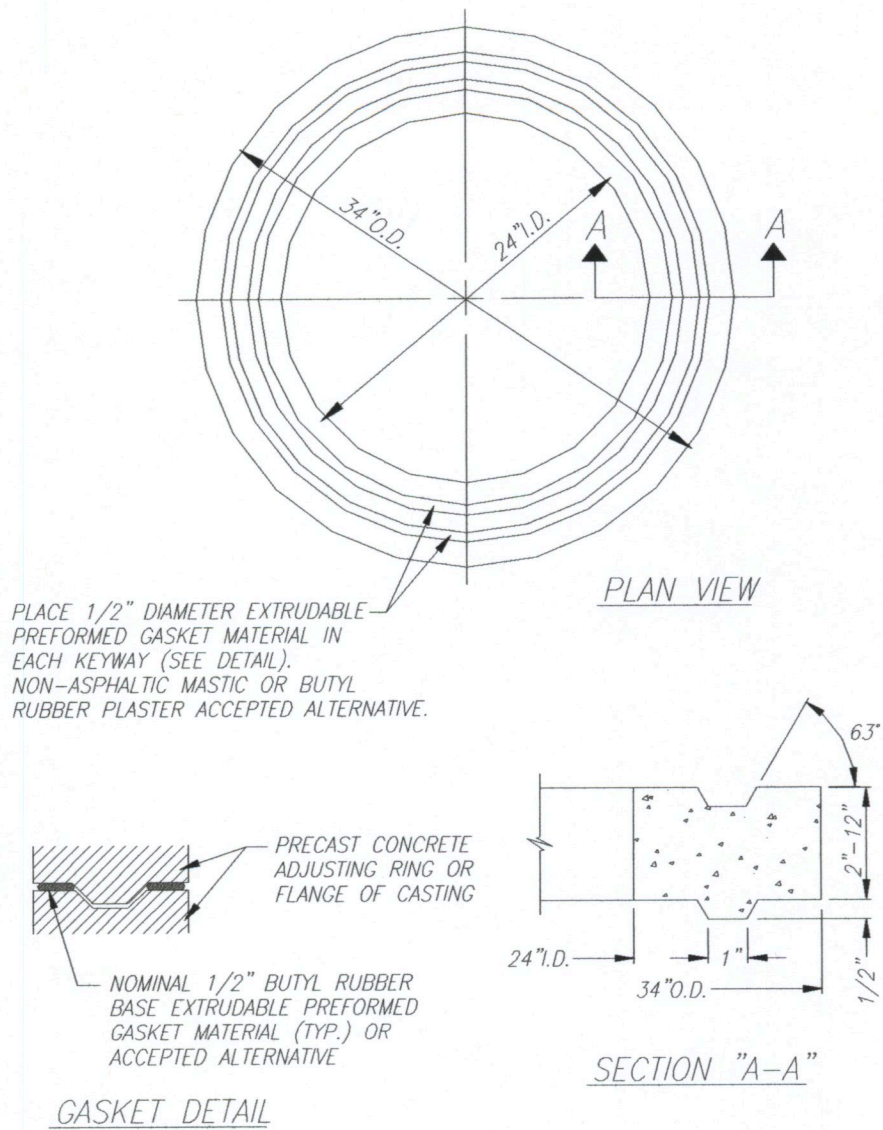


NOTE: 6" CONC. PRECAST OR Poured IN PLACE

CLASS "A" CONCRETE

INLET TYPE "J"  
NO SCALE

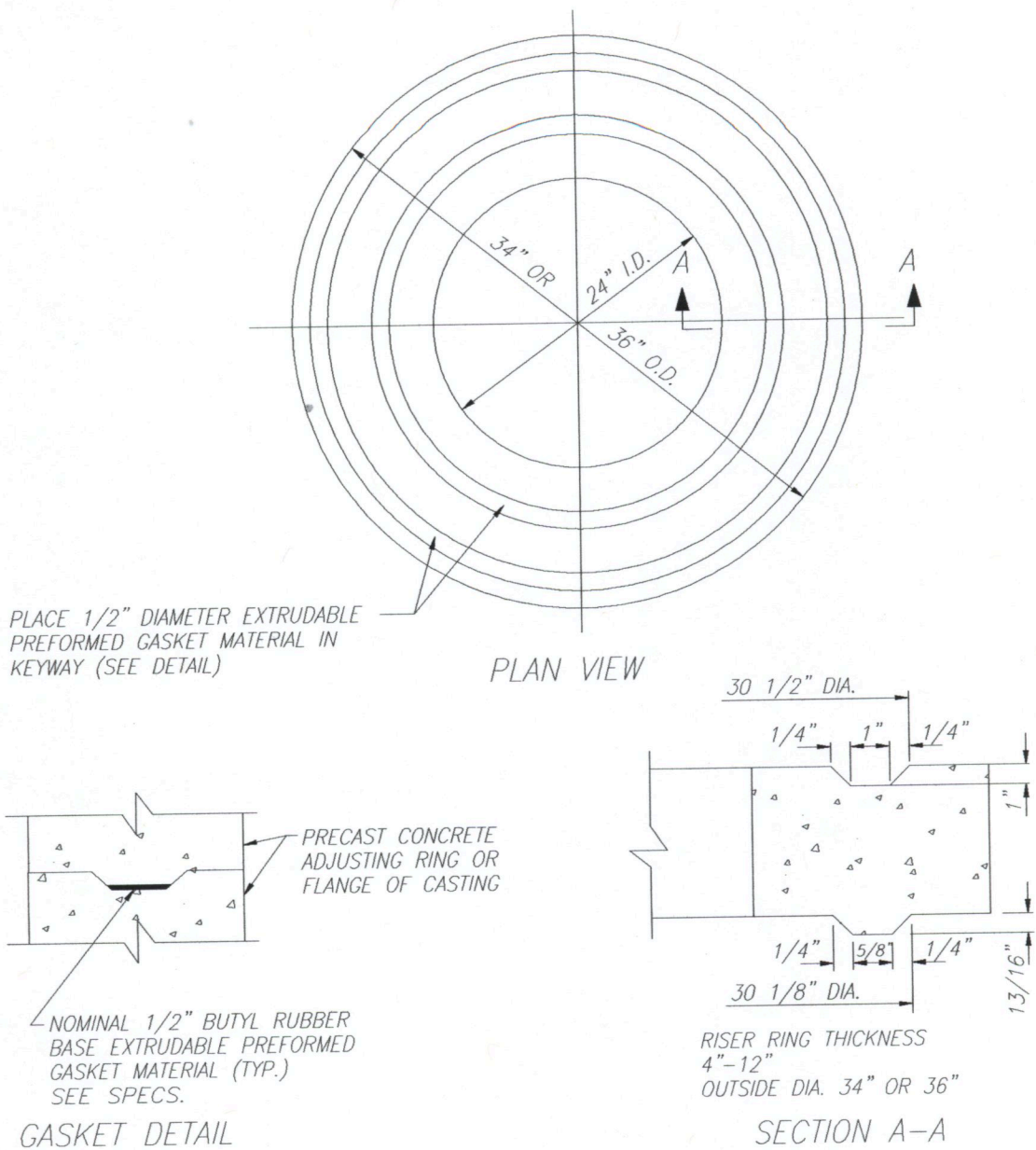
**Figure 8-09**



PRECAST CONCRETE ADJUSTING RING DETAIL  
 NO SCALE

**Figure 8-10**

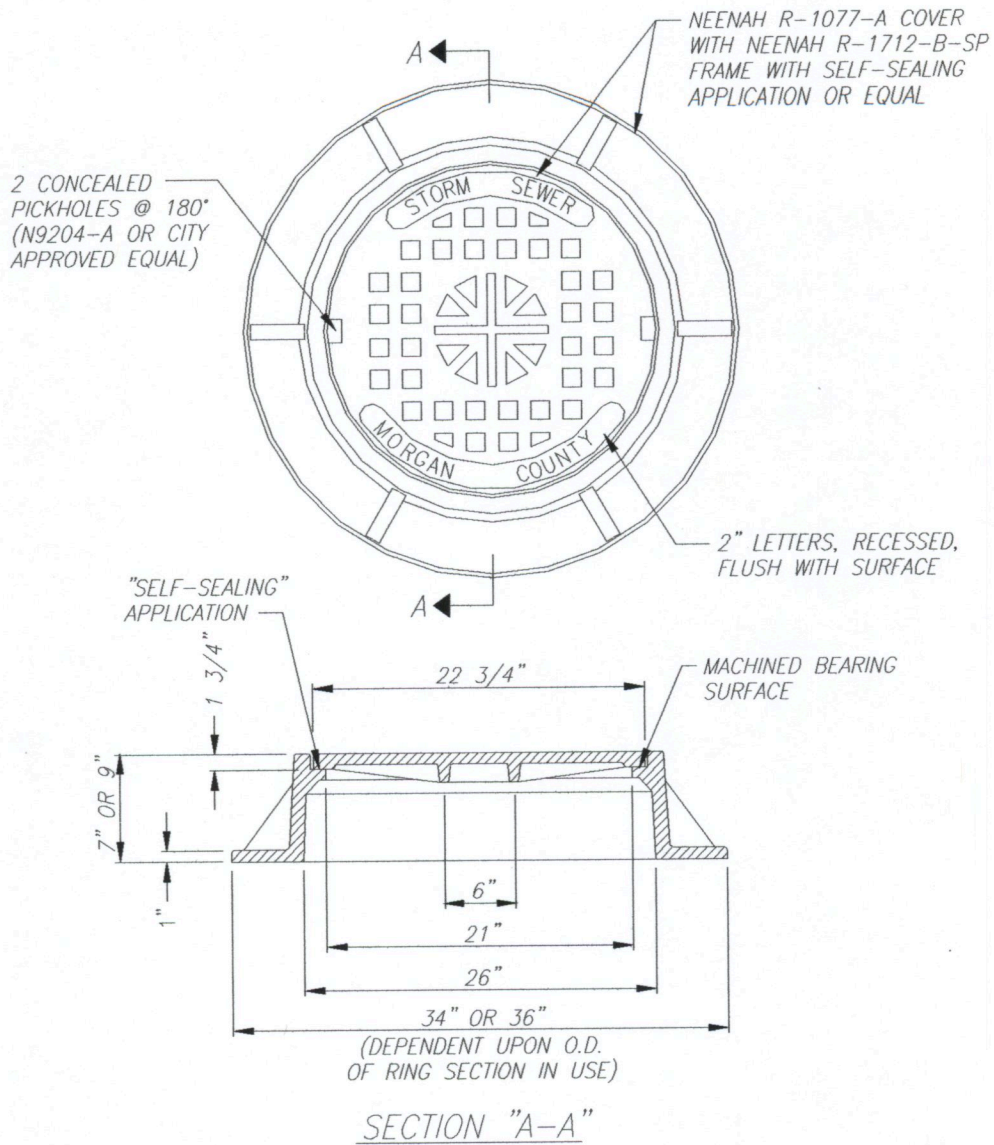




ADJUSTING RING - B  
NO SCALE

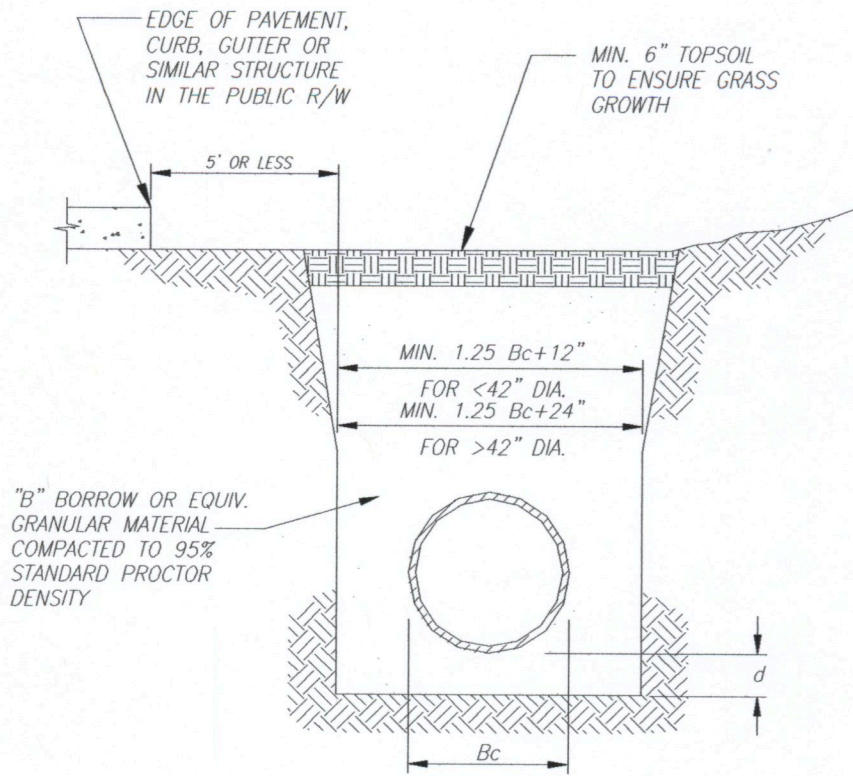
**Figure 8-11**





STORM SEWER MANHOLE FRAME & COVER  
(FOR STANDARD MANHOLE)  
NO SCALE

**Figure 8-12**



WITHIN 5' OF EDGE OF PAVEMENT

DEPTH OF BEDDING MATERIAL BELOW PIPE

| <u>D</u>      | <u>(d) MIN.</u> |
|---------------|-----------------|
| 27" & SMALLER | 3"              |
| 30" TO 60"    | 4"              |
| 66" & LARGER  | 6"              |

NOTE:

ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS

MIN. 9" CLEARANCE EACH SIDE OF PIPE FOR 42" DIA. AND LESS

MIN. 12" CLEARANCE EACH SIDE OF PIPE FOR LARGER THAN 42" DIA.

LEGEND

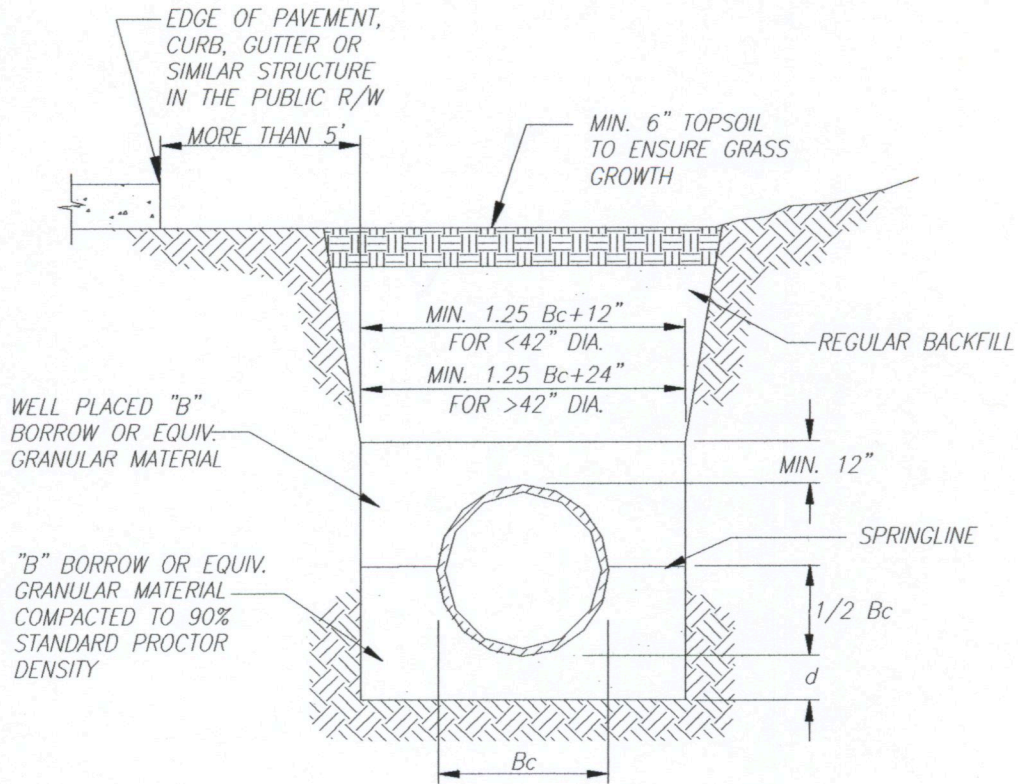
$B_c$  = OUTSIDE DIAMETER  
 $D$  = INSIDE DIAMETER  
 $d$  = DEPTH OF BEDDING MATERIAL BELOW PIPE

CORRUGATED METAL PIPE  
(CMP) TRENCH DETAIL

WITHIN 5' OF EDGE OF PAVEMENT  
 NO SCALE

**Figure 8-13**





GREATER THAN 5' FROM EDGE OF PAVEMENT

DEPTH OF BEDDING MATERIAL BELOW PIPE

| <u>D</u>      | <u>(d) MIN.</u> |
|---------------|-----------------|
| 27" & SMALLER | 3"              |
| 30" TO 60"    | 4"              |
| 66" & LARGER  | 6"              |

NOTE:

ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS

MIN. 9" CLEARANCE EACH SIDE OF PIPE FOR 42" DIA. AND LESS

MIN. 12" CLEARANCE EACH SIDE OF PIPE FOR LARGER THAN 42" DIA.

LEGEND

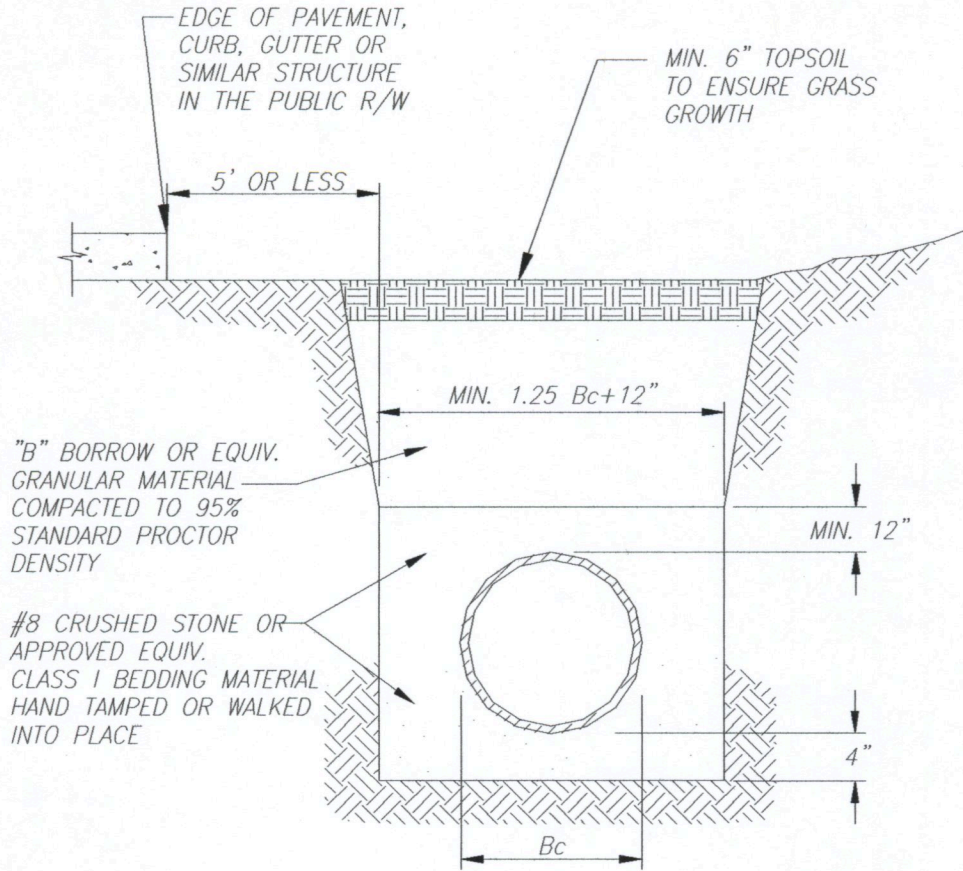
|       |  |
|-------|--|
| $B_c$ | = OUTSIDE DIAMETER                     |
| $D$   | = INSIDE DIAMETER                      |
| $d$   | = DEPTH OF BEDDING MATERIAL BELOW PIPE |

CORRUGATED METAL PIPE

(CMP) TRENCH DETAIL

GREATER THAN 5' FROM EDGE OF PAVEMENT  
NO SCALE

**Figure 8-13A**



WITHIN 5" OF EDGE OF PAVEMENT

NOTE:

ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS

A MINIMUM 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

LEGEND

$B_c$  = OUTSIDE DIAMETER  
 $D$  = INSIDE DIAMETER  
 $d$  = DEPTH OF BEDDING MATERIAL BELOW PIPE

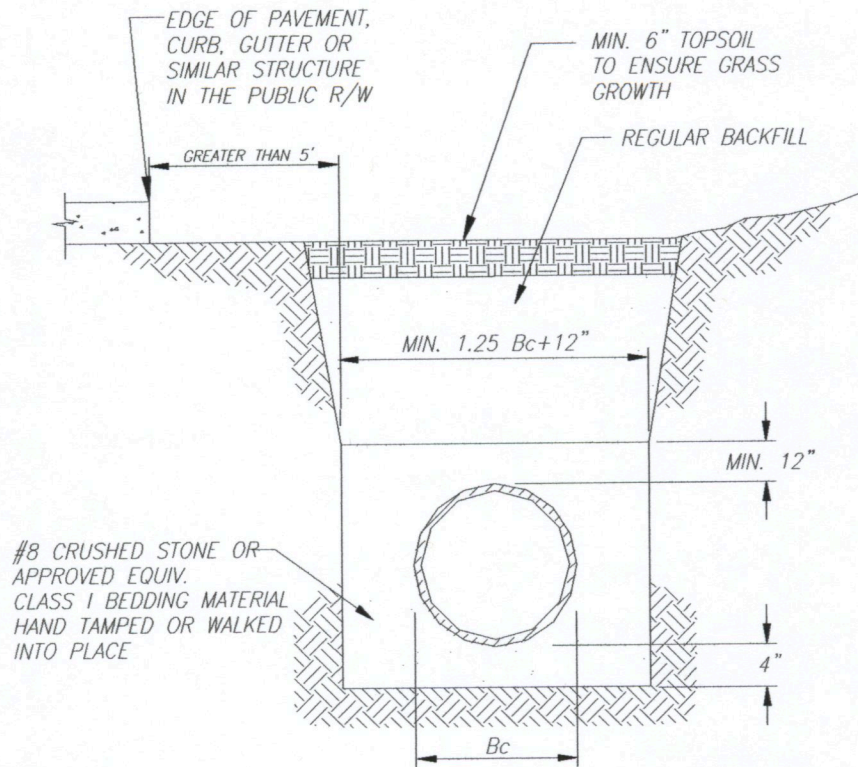
PLASTIC PIPE (PVC & HDPE) TRENCH DETAIL

WITHIN 5' OF EDGE OF PAVEMENT

NO SCALE

**Figure 8-14**





WITHIN 5' OF EDGE OF PAVEMENT

NOTE:

ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS

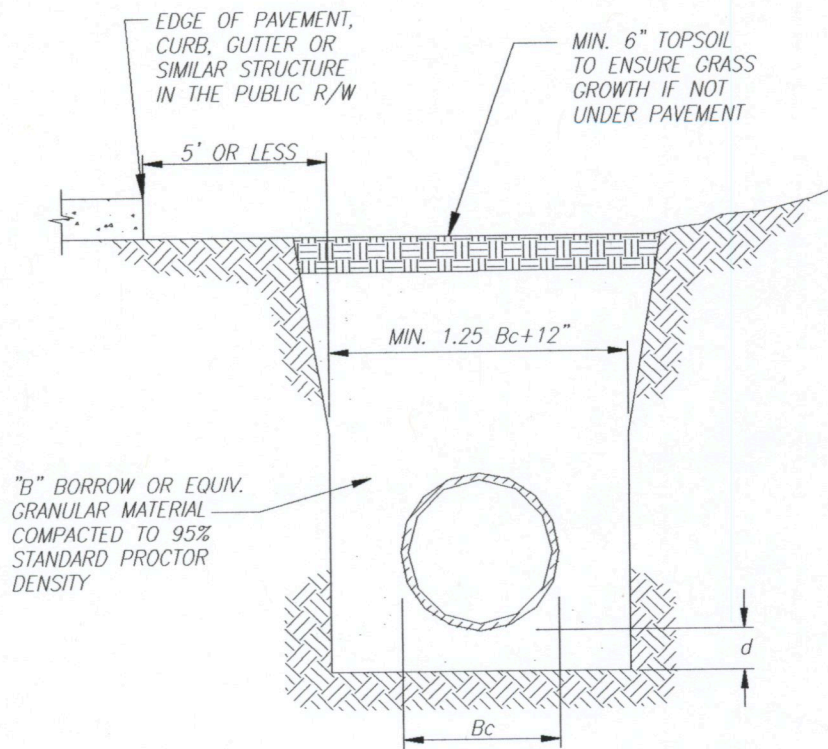
A MINIMUM 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

LEGEND

$B_c$  = OUTSIDE DIAMETER  
 $D$  = INSIDE DIAMETER  
 $d$  = DEPTH OF BEDDING MATERIAL BELOW PIPE

PLASTIC PIPE (PVC & HDPE) TRENCH DETAIL  
GREATER THAN 5' FROM EDGE OF PAVEMENT  
 NO SCALE

**Figure 8-14A**



WITHIN 5' OF EDGE OF PAVEMENT

DEPTH OF BEDDING MATERIAL BELOW PIPE

|               | (d) MIN. |
|---------------|----------|
| 27" & SMALLER | 3"       |
| 30" TO 60"    | 4"       |
| 66" & LARGER  | 6"       |

NOTE:  
ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS

MIN. 9" OF CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

LEGEND

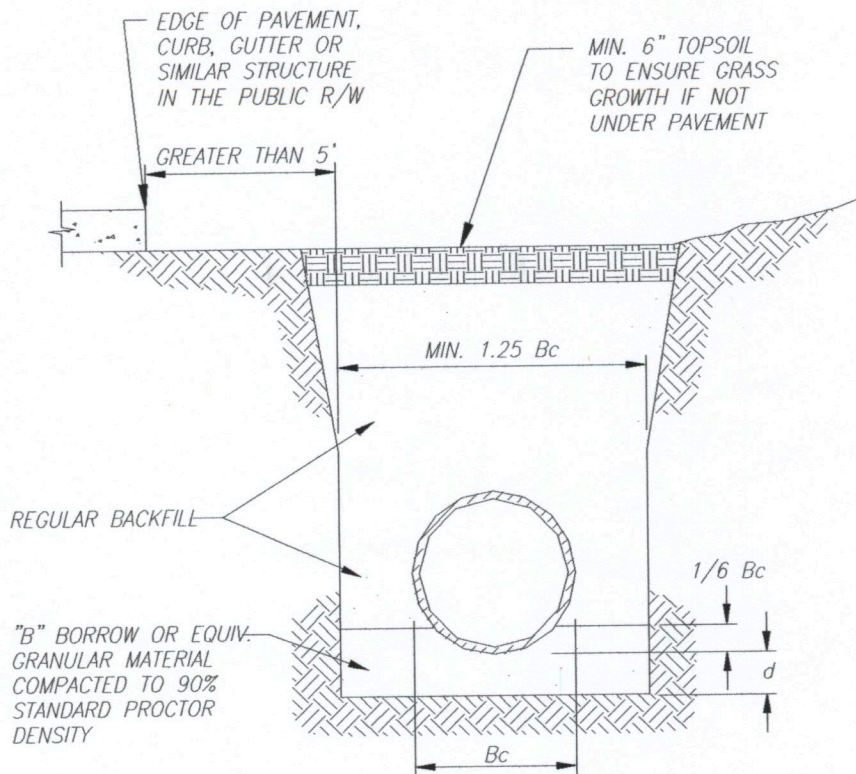
$B_c$  = OUTSIDE DIAMETER  
 $D$  = INSIDE DIAMETER  
 $d$  = DEPTH OF BEDDING MATERIAL BELOW PIPE

REINFORCED CONCRETE PIPE (RCP) TRENCH DETAIL

WITHIN 5' OF EDGE OF PAVEMENT  
 NO SCALE

**Figure 8-15**





GREATER THAN 5' FROM EDGE OF PAVEMENT

DEPTH OF BEDDING MATERIAL BELOW PIPE

| <u>D</u>      | <u>(d) MIN.</u> |
|---------------|-----------------|
| 27" & SMALLER | 3"              |
| 30" TO 60"    | 4"              |
| 66" & LARGER  | 6"              |

NOTE:

ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS

MIN. 9" OF CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

LEGEND

$B_c$  = OUTSIDE DIAMETER  
 $D$  = INSIDE DIAMETER  
 $d$  = DEPTH OF BEDDING MATERIAL BELOW PIPE

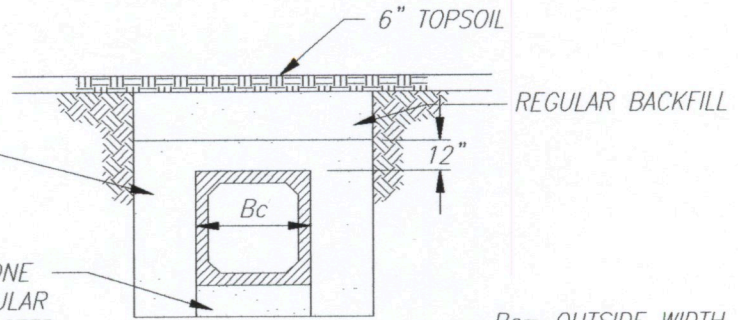
REINFORCED CONCRETE PIPE

(RCP) TRENCH DETAIL

GREATER THAN 5' FROM EDGE OF PAVEMENT  
 NO SCALE

**Figure 8-15A**

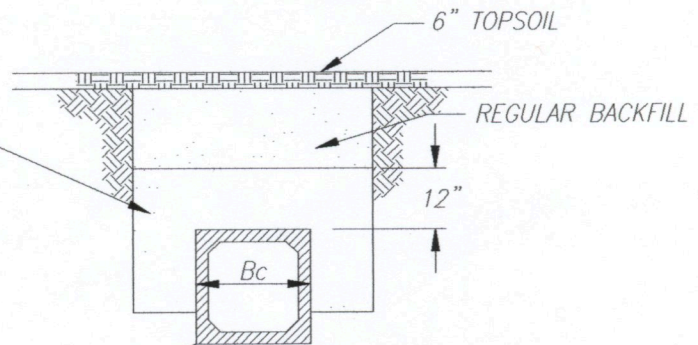
GRANULAR BACKFILL COMPACTED TO 85% STANDARD PROCTOR DENSITY. IF PIPE IS WITHIN PAVEMENT ZONE, ALL BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.



6" MIN. #8 CRUSHED STONE OR EQUIV. CLASS 1 GRANULAR BEDDING MATERIAL COMPACTED TO 90% STANDARD PROCTOR DENSITY

$B_c$  = OUTSIDE WIDTH

GRANULAR BACKFILL COMPACTED TO 85% STANDARD PROCTOR DENSITY. IF PIPE IS WITHIN PAVEMENT ZONE, ALL BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.



SHAPED TO FIT  
DEPTH=  $0.3 B_c$

ALTERNATE METHOD

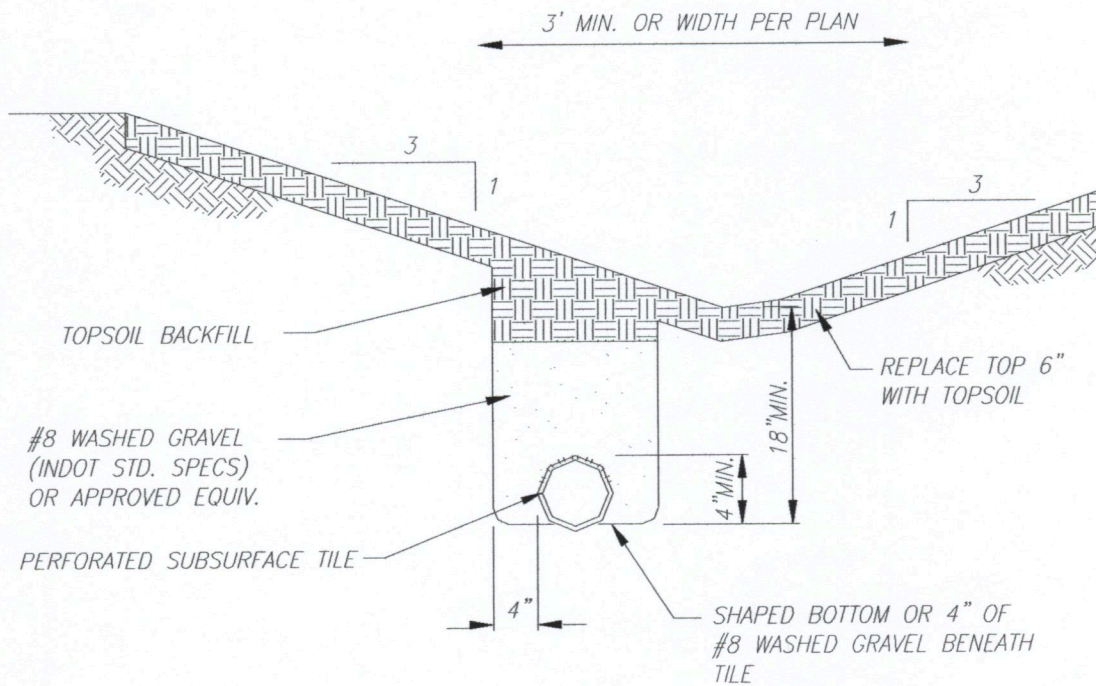
NOTE: REINFORCED CONCRETE BOX SECTIONS IN CONFORMANCE WITH ASTM C789 AND C850. SOIL BEARING CAPACITY TO BE TESTED FOR CONFORMANCE WITH MINIMUM MANUFACTURER'S RECOMMENDATIONS.

## REINFORCED CONCRETE BOX SECTION BEDDING DETAIL

NO SCALE

**Figure 8-16**

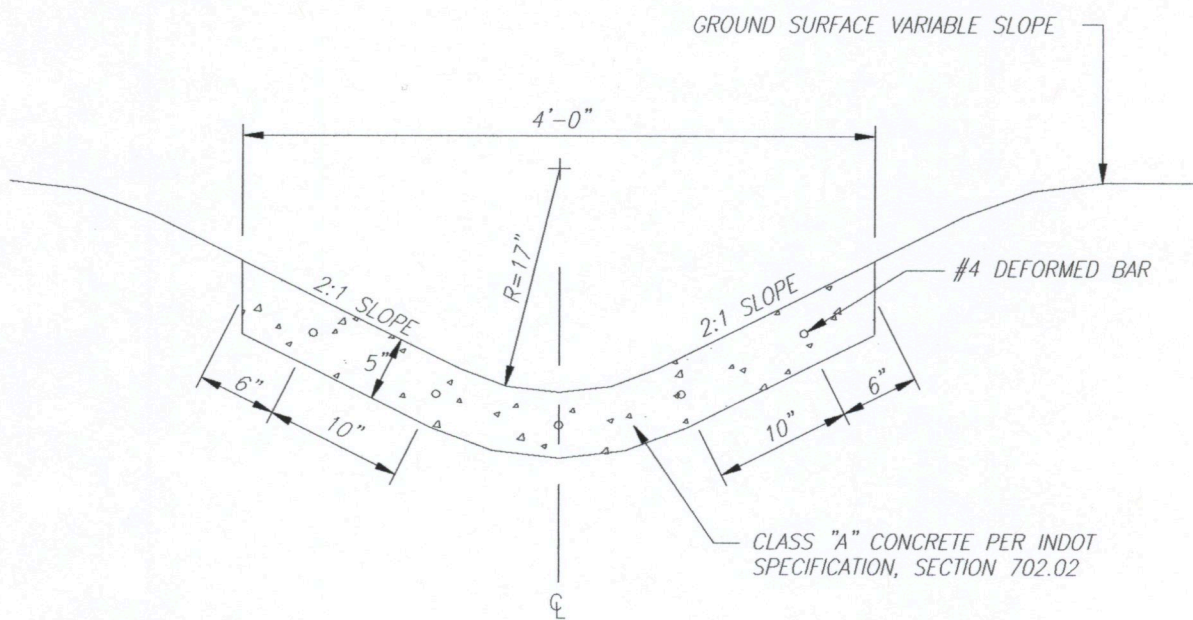




## SWALE UNDERDRAIN DETAIL

NO SCALE

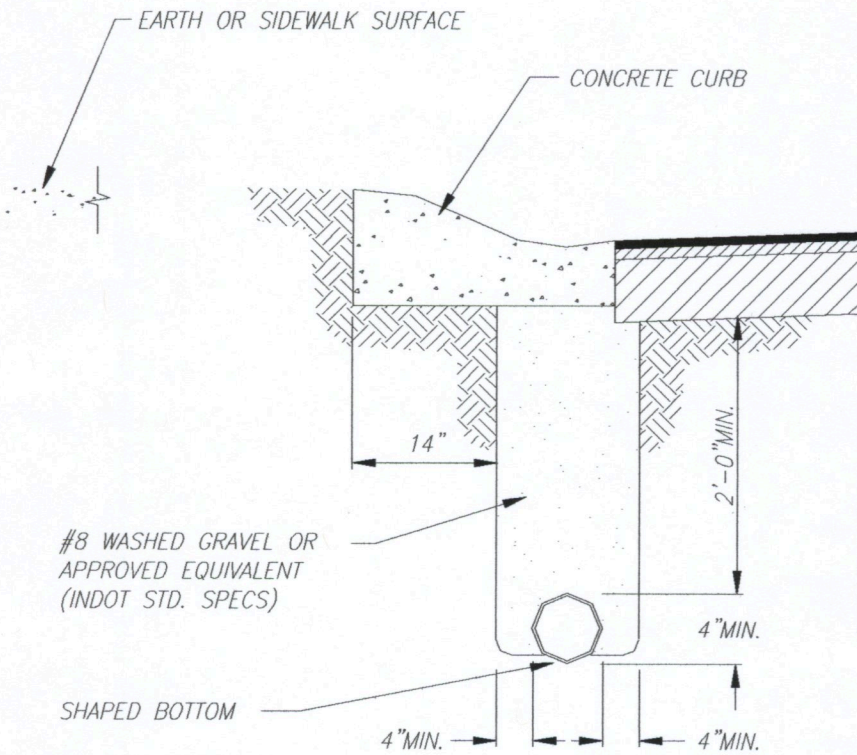
Figure 8-17



PAVED SIDE DITCH TYPE "B"  
NOT TO SCALE

**Figure 8-18**



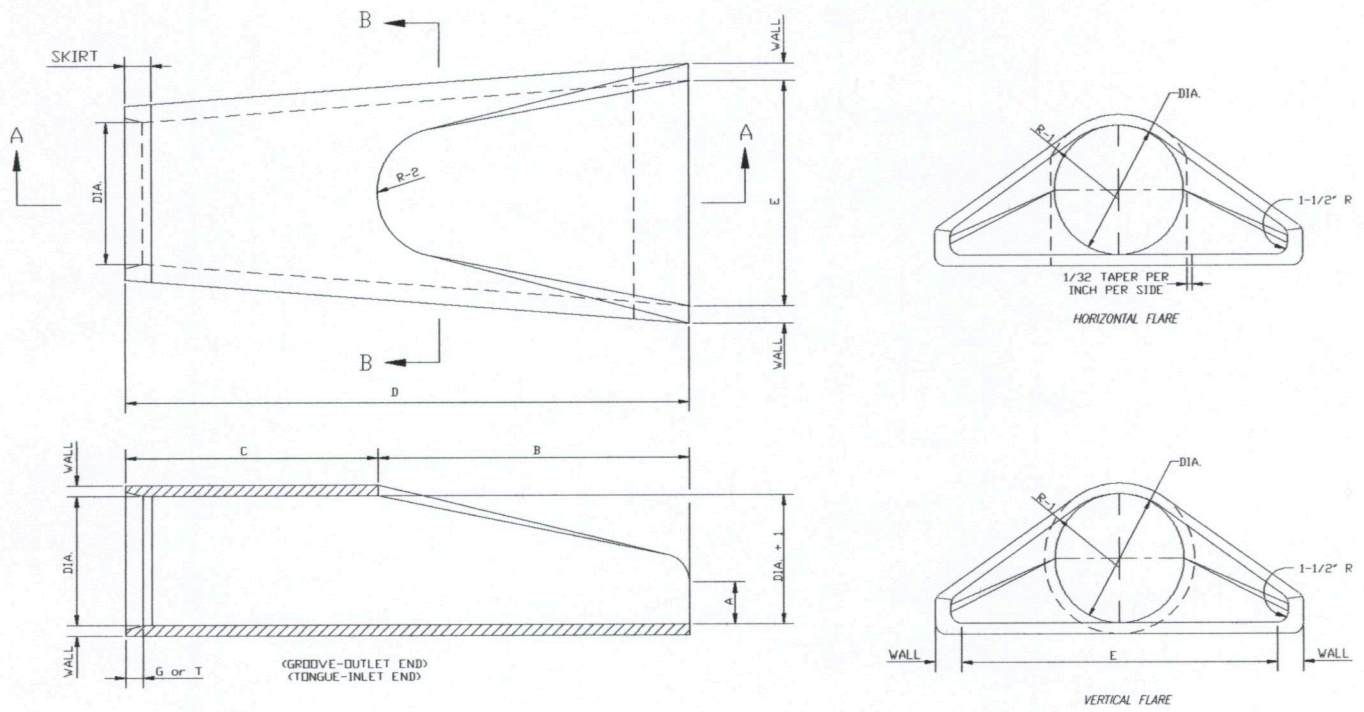


INSTALLATION REQUIRED:  
 BOTH SIDES OF ALL PAVEMENT,  
 UNLESS WAIVED IN WRITING BY  
 INDIANAPOLIS DEPARTMENT OF  
 CAPITAL ASSET MANAGEMENT  
 (DCAM)

## CURB UNDERDRAIN DETAIL

NO SCALE

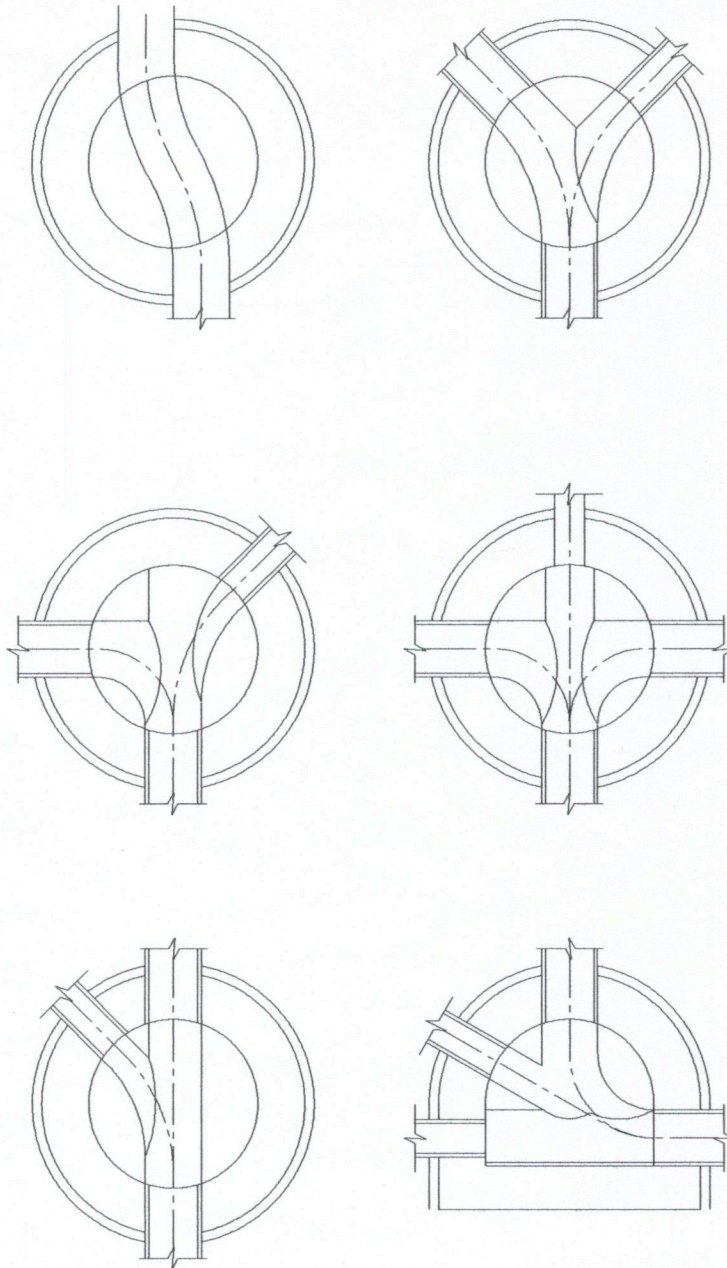
**Figure 8-19**



PRECAST CONCRETE FLARED HEADWALLS  
NO SCALE

**Figure 8-20**

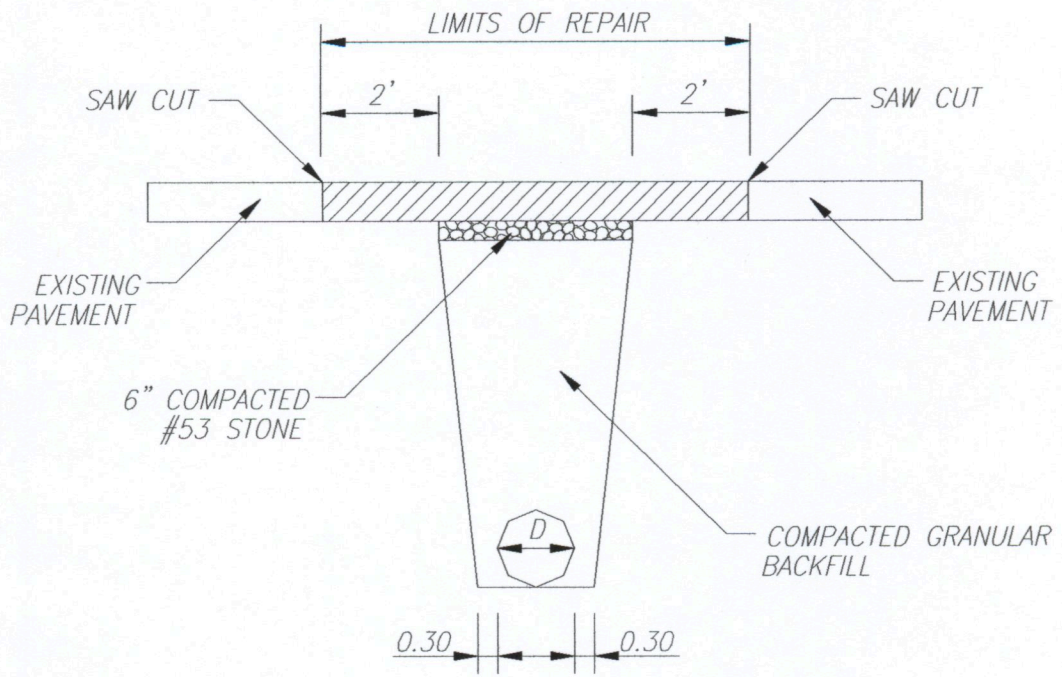




*STANDARD MANHOLE BENCHES*

*NO SCALE*

**Figure 8-21**



REPAIR OF STREET CUTS  
 NO SCALE

**Figure 8-22**