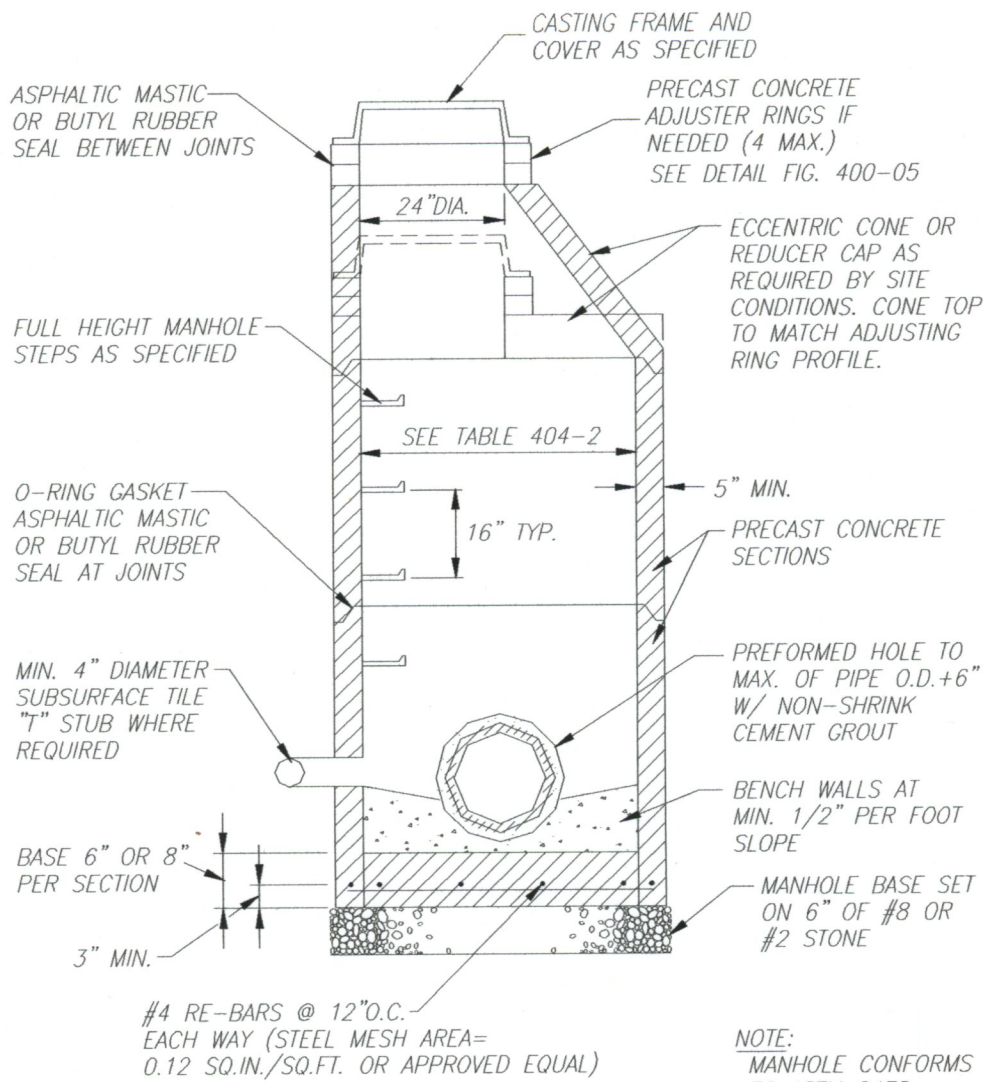


# **Appendix VIII**

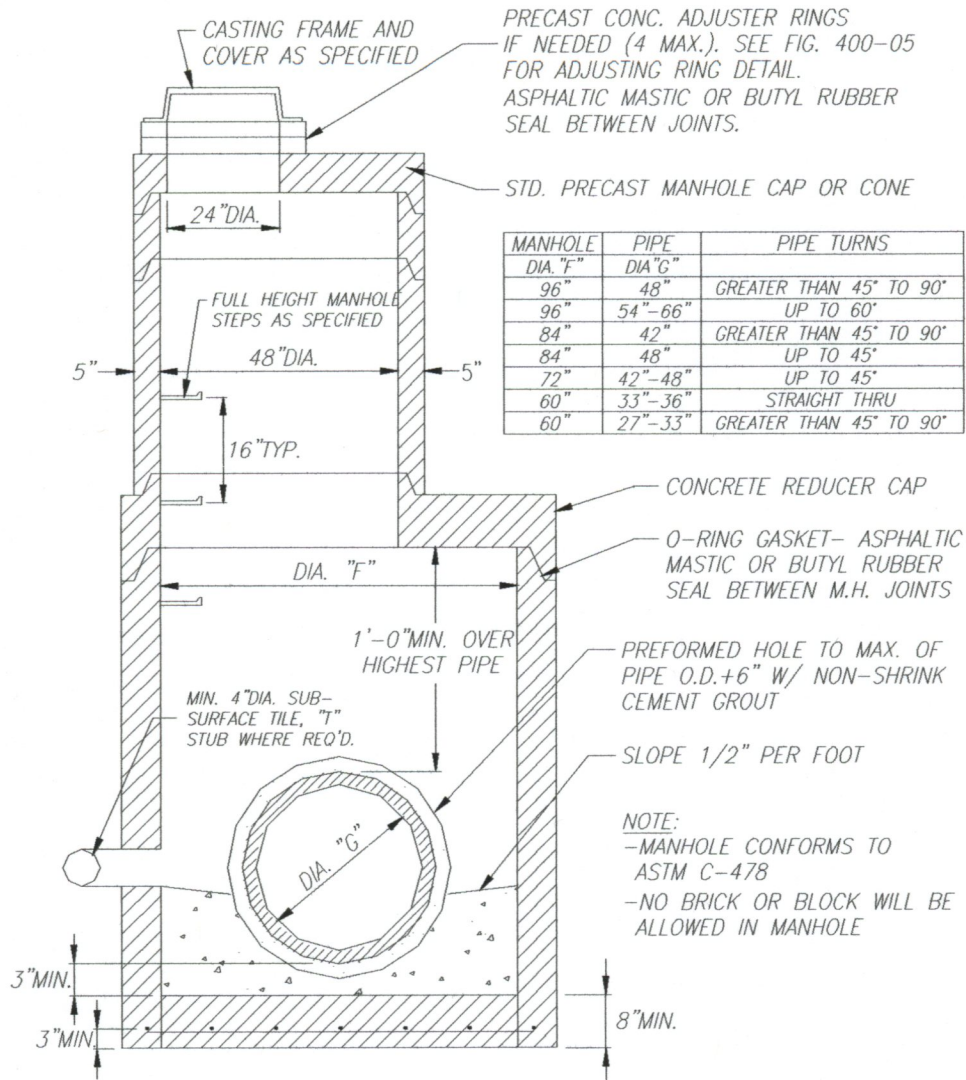
## **Standard Details**



## STANDARD MANHOLE FOR PIPE SIZES 12" thru 24"

NO SCALE

**Figure 8-01**

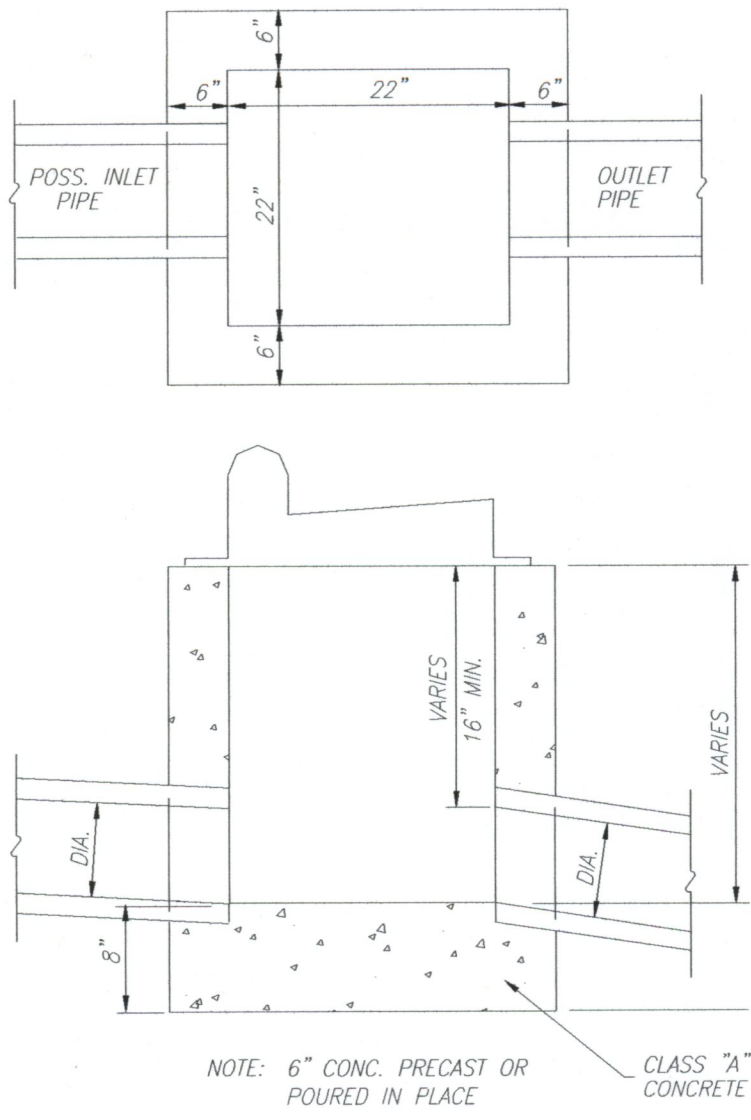


ONE COMPLETE UNIT OF PRECAST CONCRETE MANHOLE BASE & RISER OR APPROVED ALTERNATIVE. SEPARATE BASE & RISER SECTION IS OPTIONAL.

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

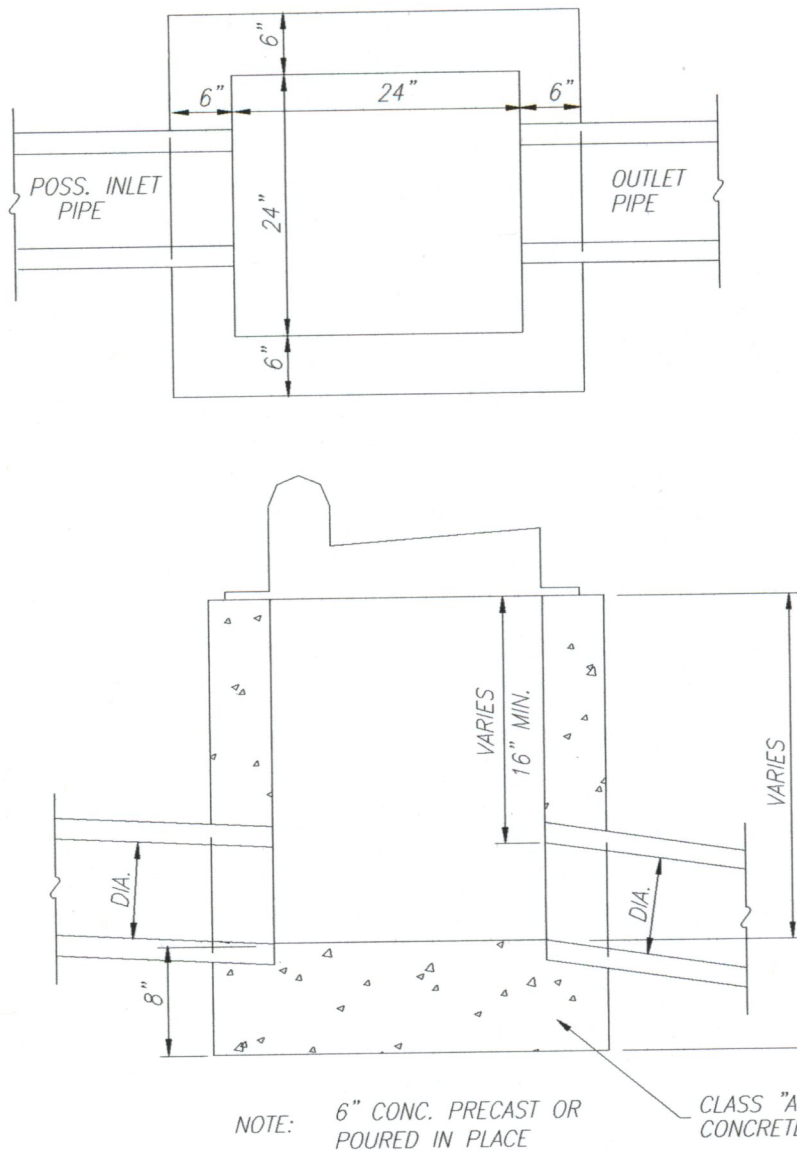
Figure 8-02





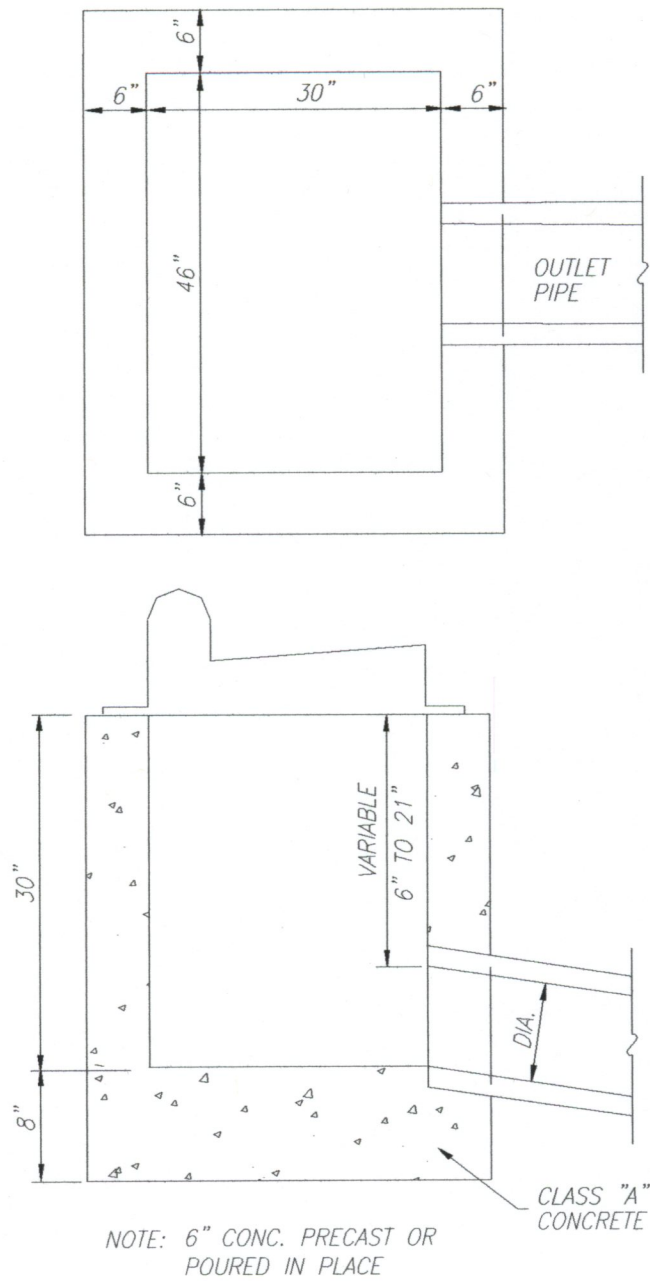
INLET TYPE "A" (TYPICAL)  
 (12" TO 15" PIPES)  
 NO SCALE

**Figure 8-04**



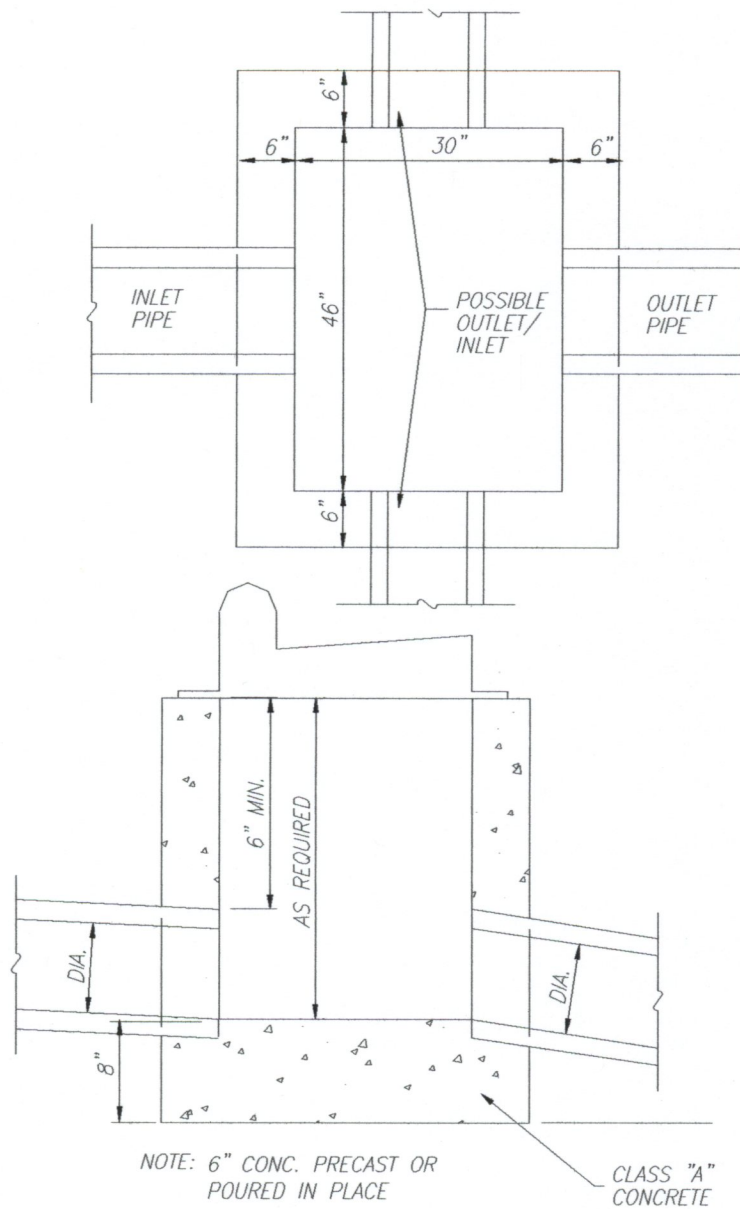
INLET TYPE "A" (MODIFIED)  
 (12" TO 18" PIPES)  
 NO SCALE

**Figure 8-05**



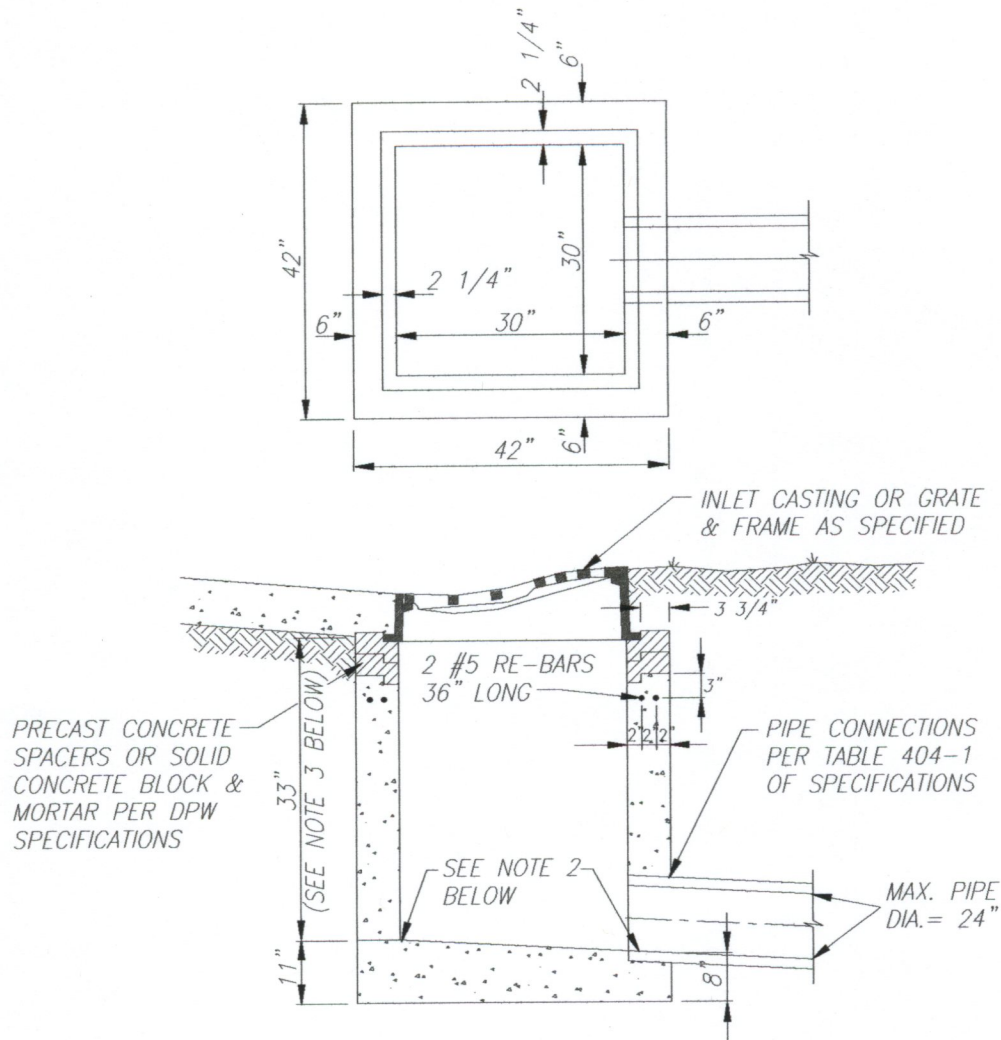
*INLET TYPE "B"*  
NO SCALE

**Figure 8-06**



INLET TYPE "C"  
NO SCALE

**Figure 8-07**



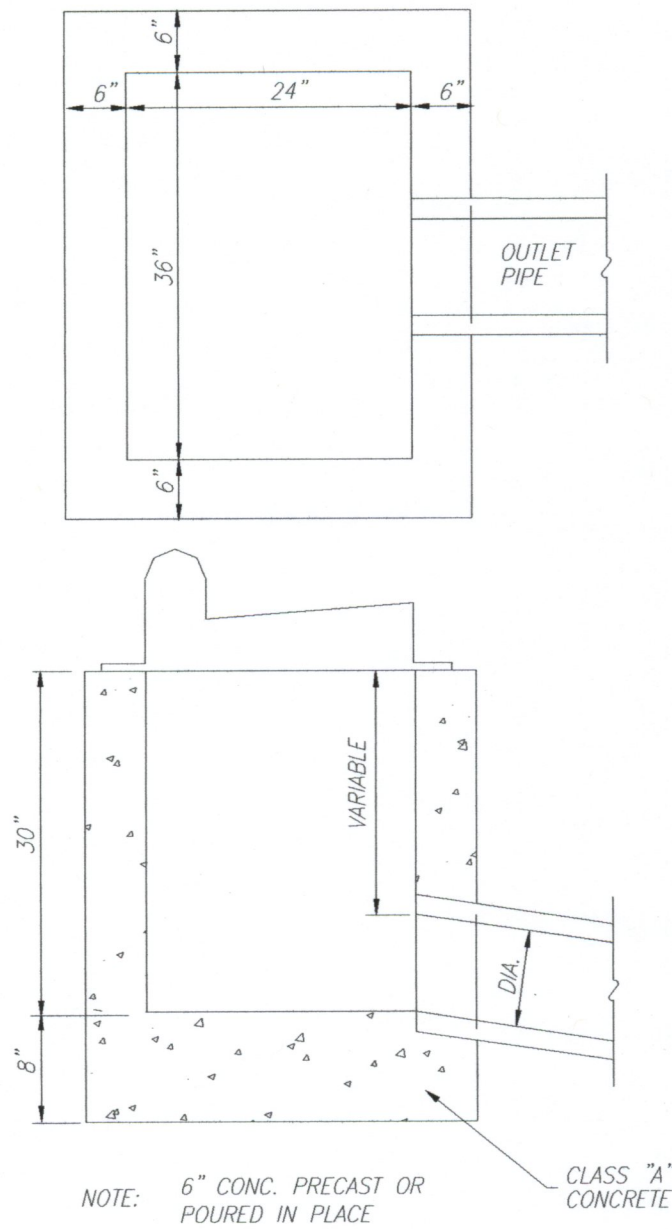
NOTES:

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

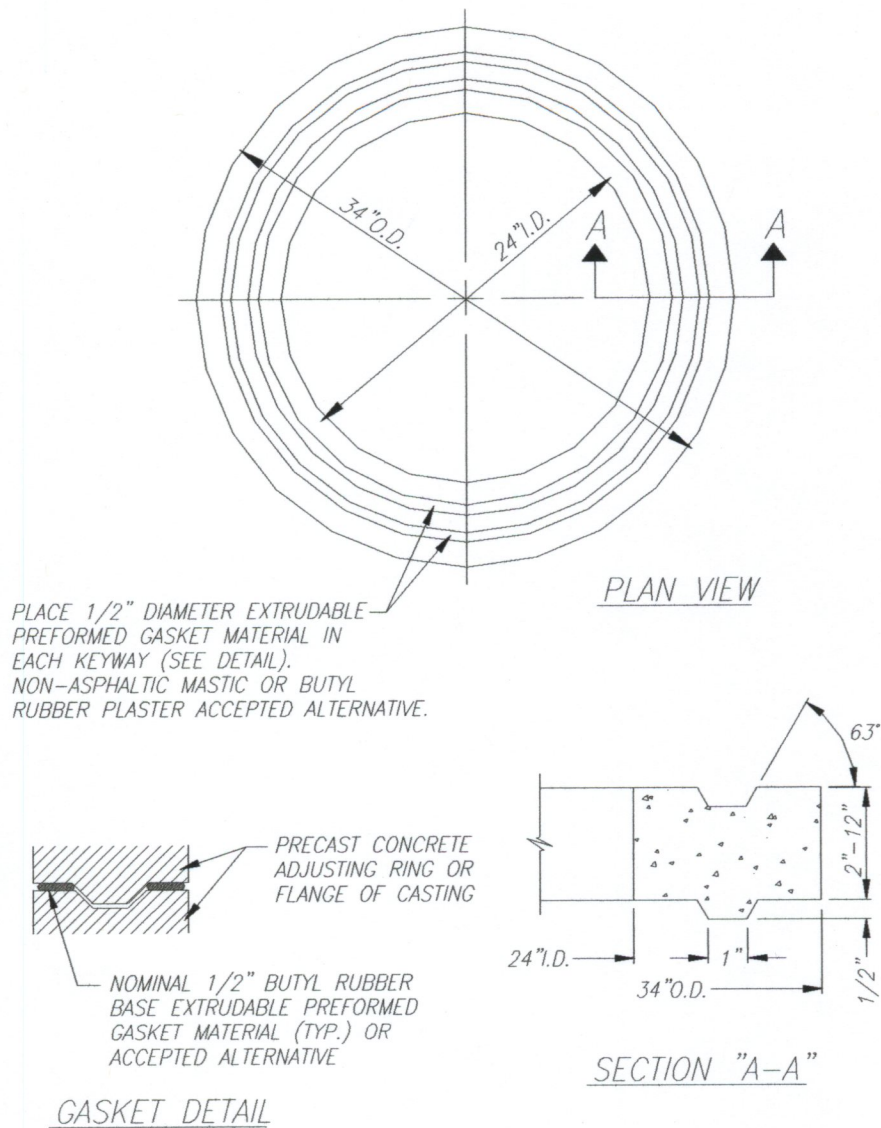
NO SCALE

**Figure 8-08**



INLET TYPE "J"  
NO SCALE

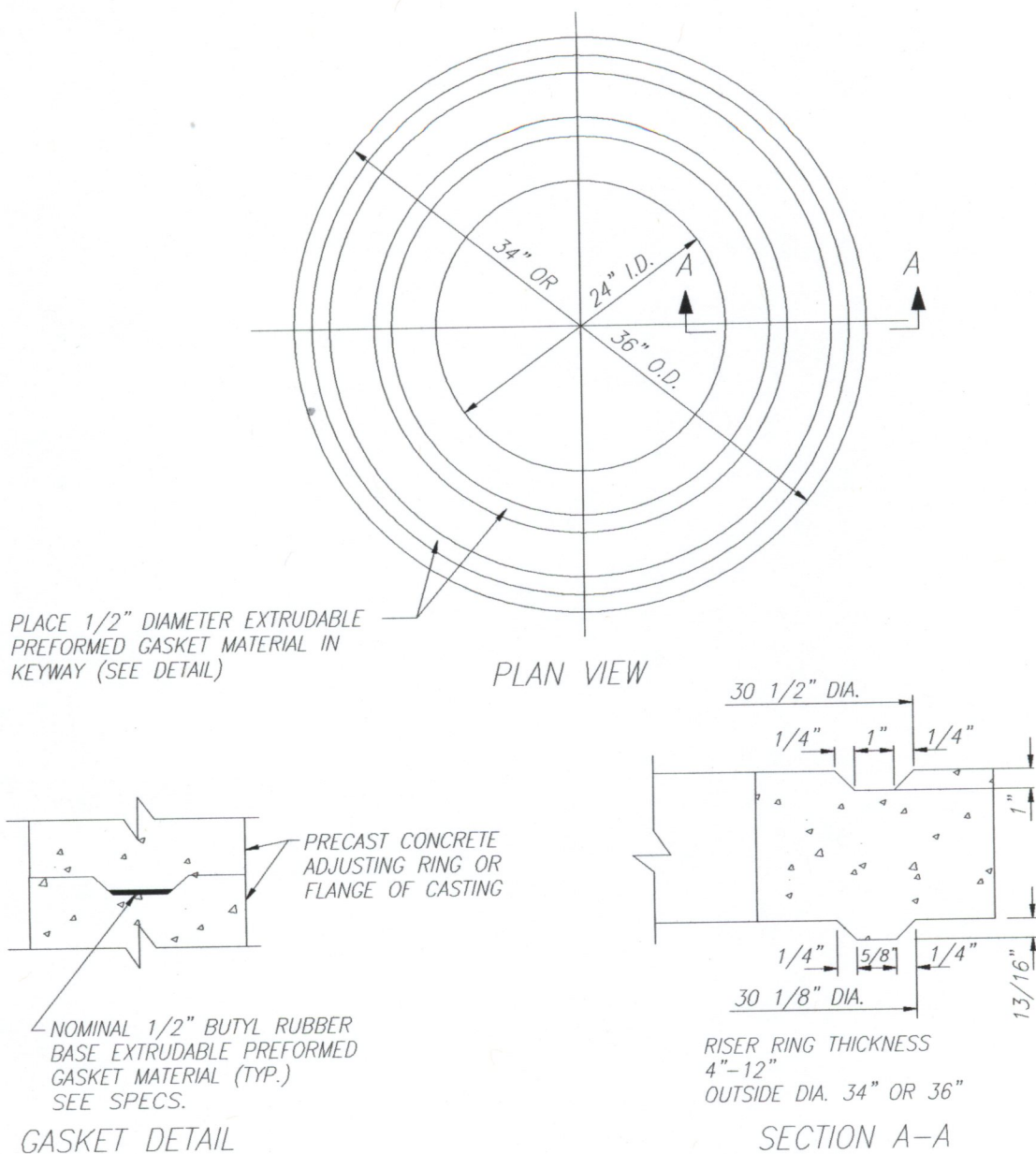
**Figure 8-09**



## PRECAST CONCRETE ADJUSTING RING DETAIL

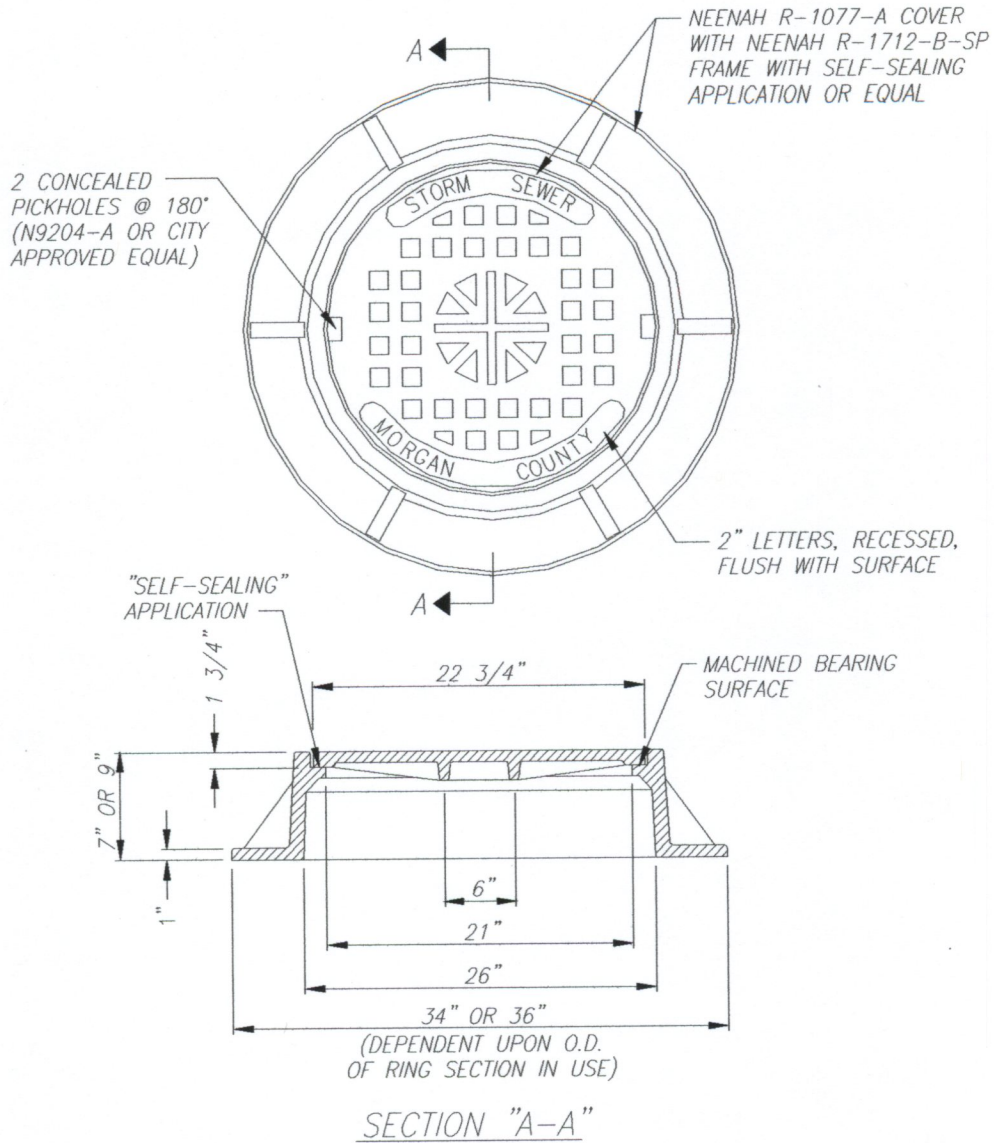
NO SCALE

**Figure 8-10**



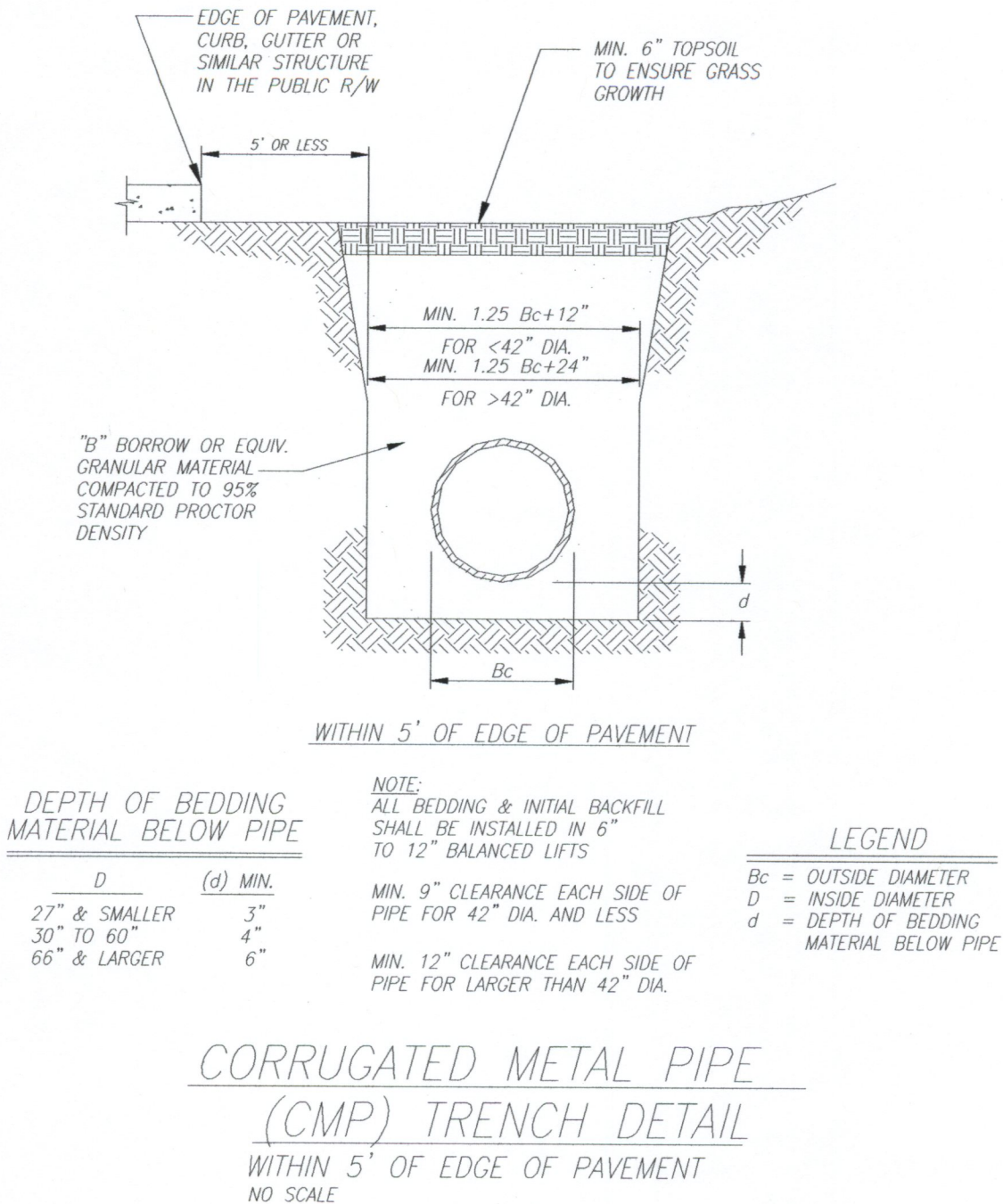
# ADJUSTING RING - B NO SCALE

**Figure 8-11**

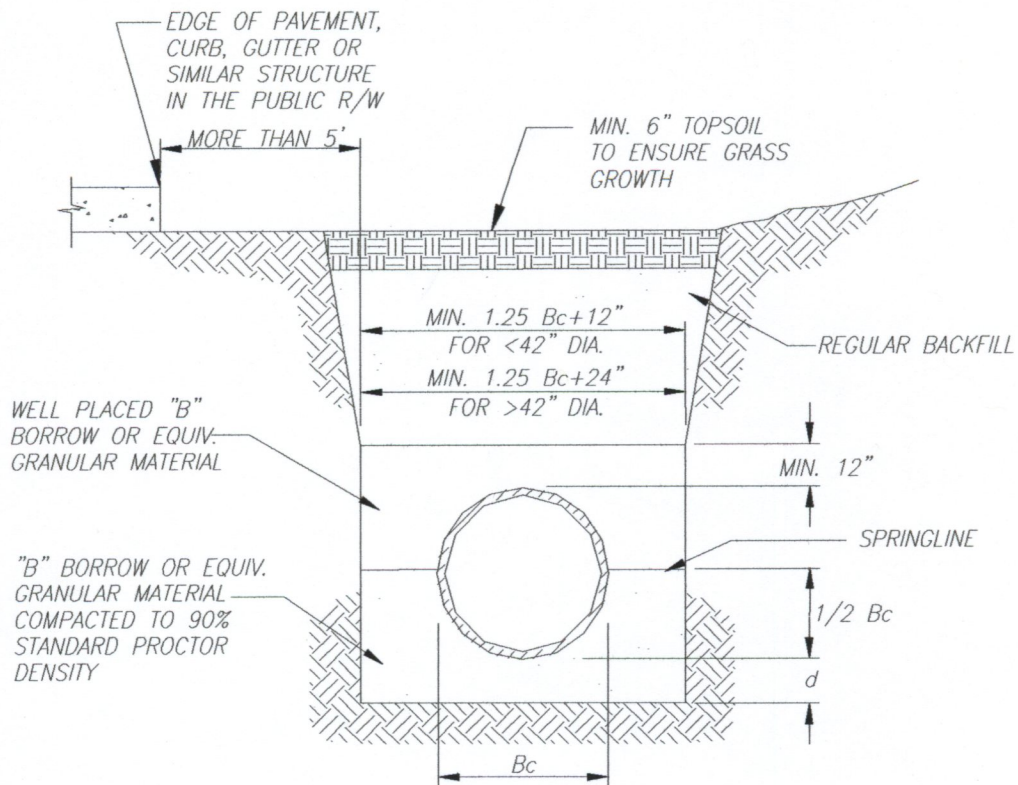


STORM SEWER MANHOLE FRAME & COVER  
(FOR STANDARD MANHOLE)  
NO SCALE

**Figure 8-12**



**Figure 8-13**



GREATER THAN 5' FROM EDGE OF PAVEMENT

### DEPTH OF BEDDING MATERIAL BELOW PIPE

| $D$           | $(d)$ 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" 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 |

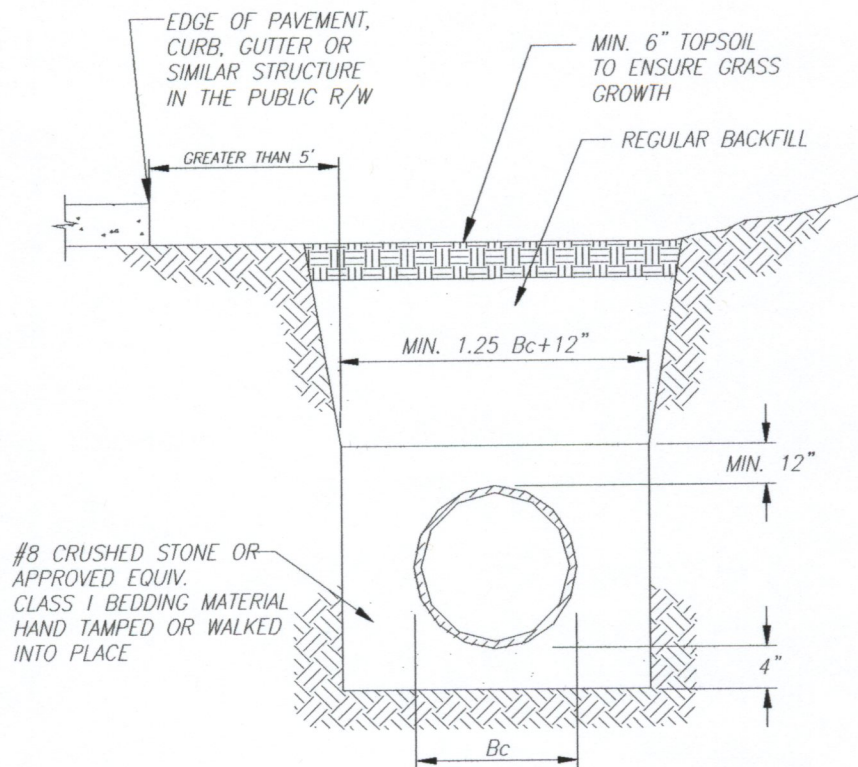
## CORRUGATED METAL PIPE

### (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

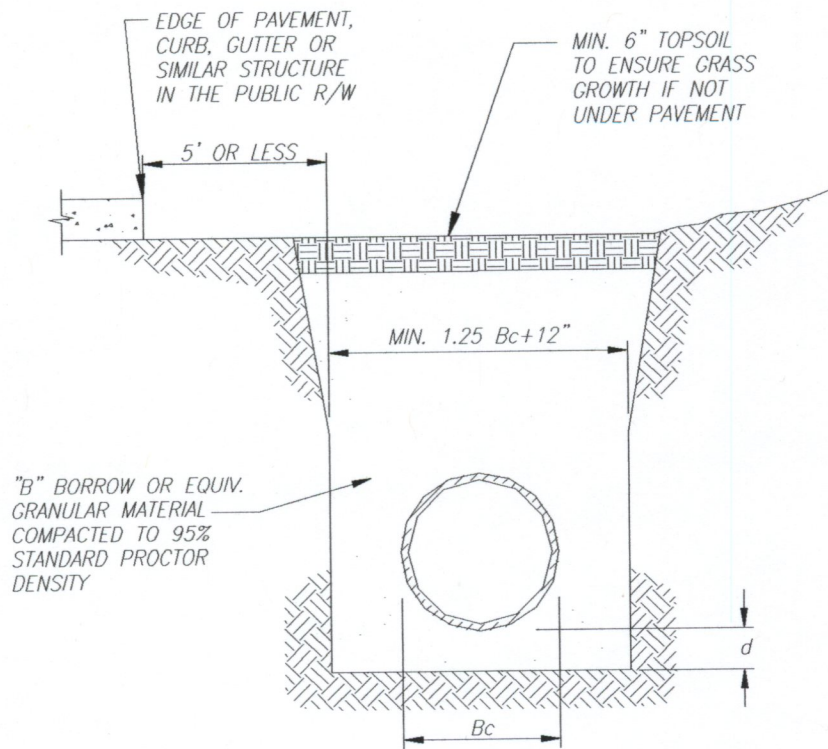
A MINIMUM 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

LEGEND

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

PLASTIC PIPE (PVC & HDPE) TRENCH DETAIL  
 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

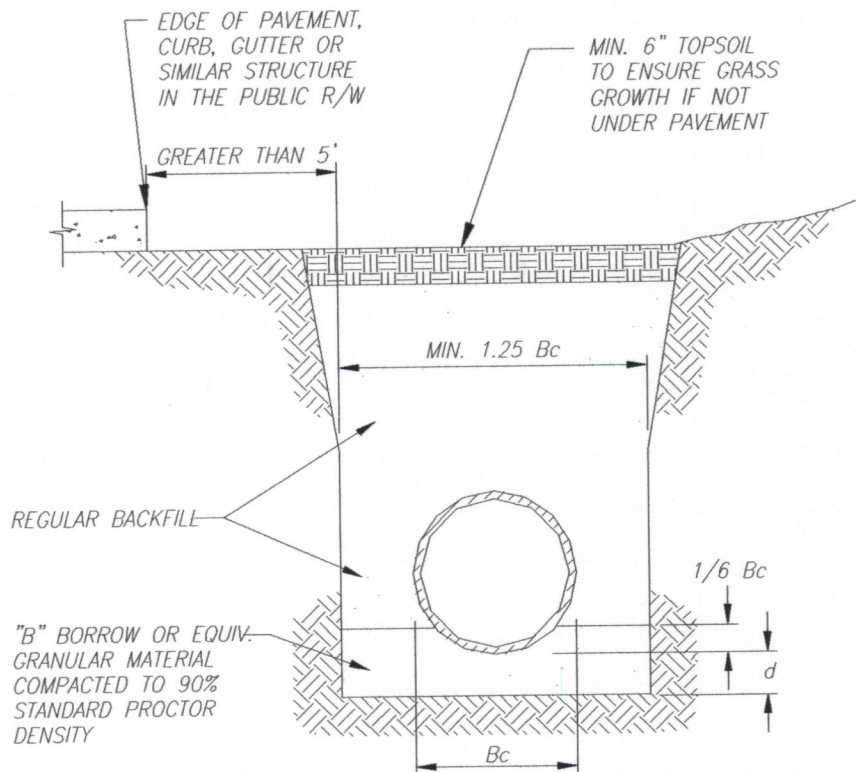
LEGEND

|       |                                           |
|-------|-------------------------------------------|
| $B_c$ | = OUTSIDE DIAMETER                        |
| $D$   | = INSIDE DIAMETER                         |
| $d$   | = DEPTH OF BEDDING<br>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

| D             | (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

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

REINFORCED CONCRETE PIPE

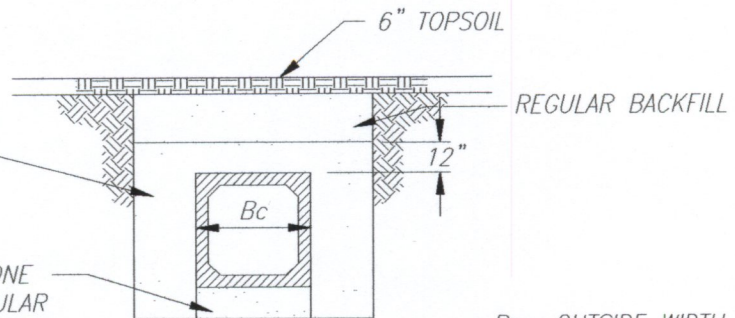
(RCP) TRENCH DETAIL

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 I GRANULAR BEDDING MATERIAL COMPACTED TO 90% STANDARD PROCTOR DENSITY

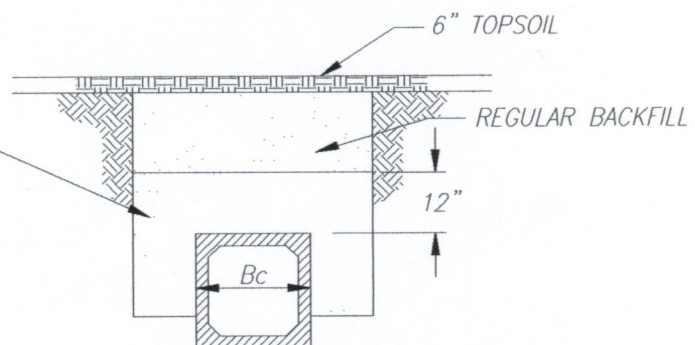


$B_c$  = OUTSIDE WIDTH

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

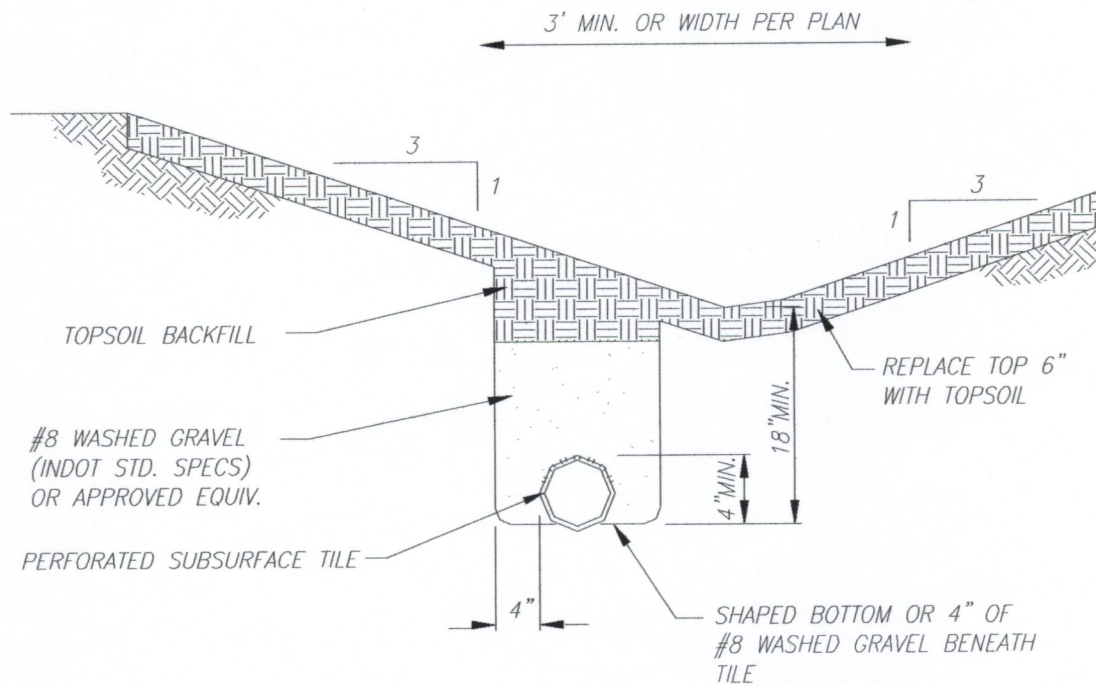


NOTE: REINFORCED CONCRETE BOX SECTIONS IN CONFORMANCE WITH ASTM C789 AND C850.  
SOIL BEARING CAPACITY TO BE TESTED FOR CONFORMANCE WITH MINIMUM MANUFACTURER'S RECOMMENDATIONS.

## REINFORCED CONCRETE BOX SECTION BEDDING DETAIL

NO SCALE

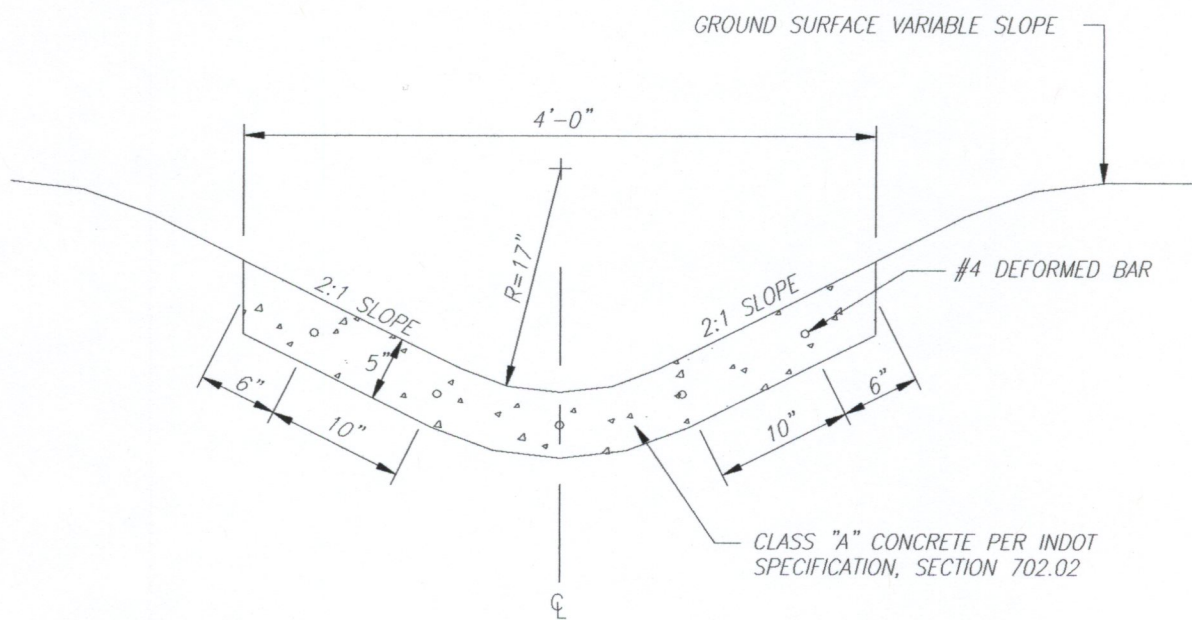
Figure 8-16



## SWALE UNDERDRAIN DETAIL

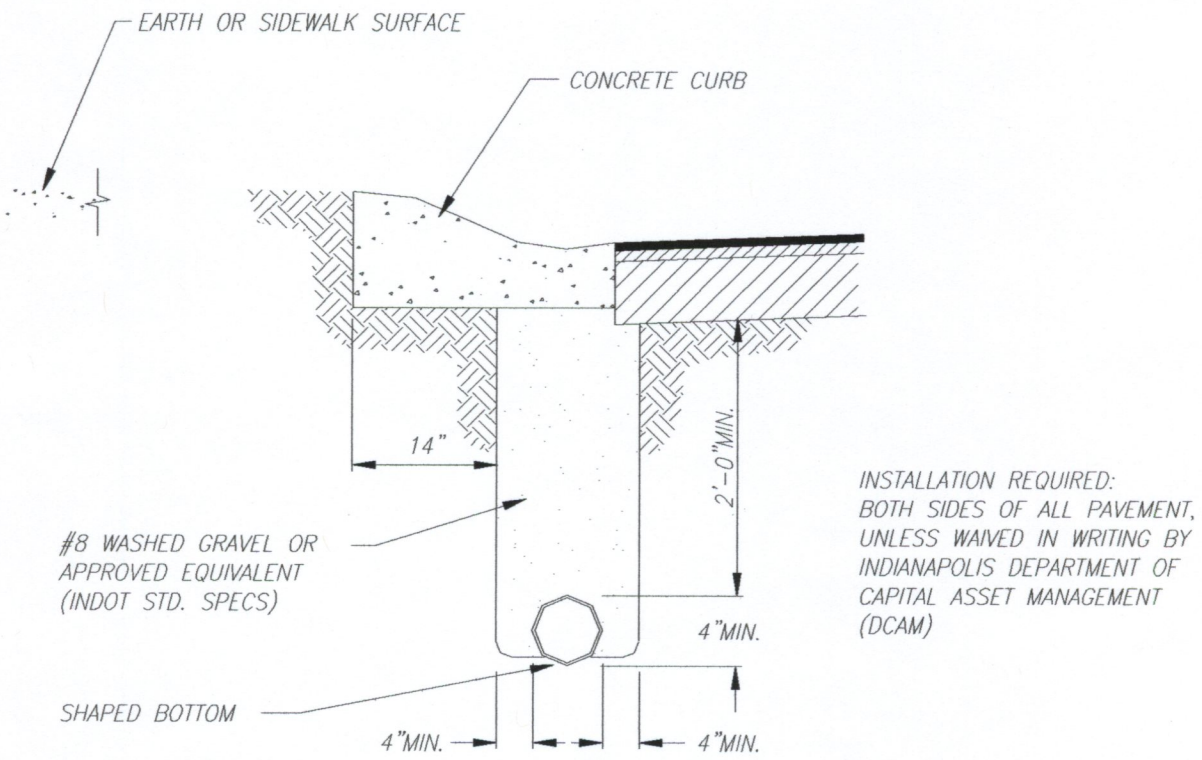
NO SCALE

**Figure 8-17**



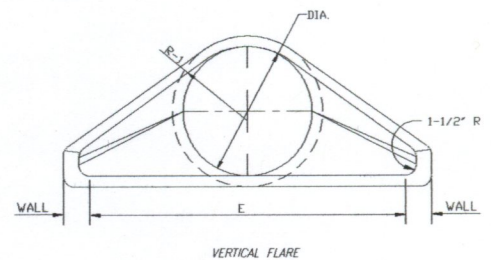
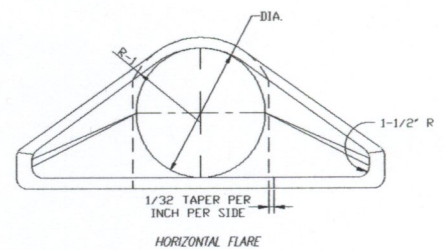
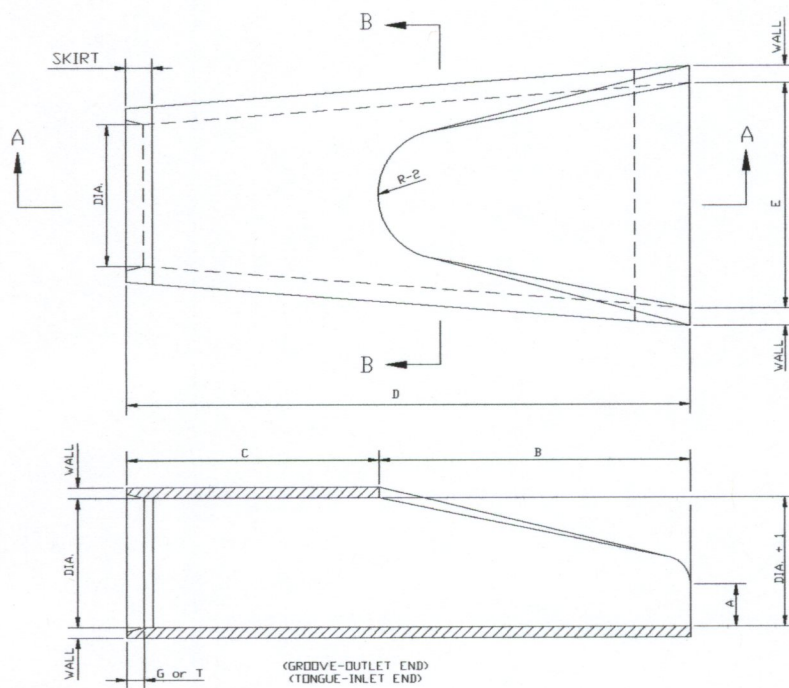
PAVED SIDE DITCH TYPE "B"  
NOT TO SCALE

**Figure 8-18**



CURB UNDERDRAIN DETAIL  
NO SCALE

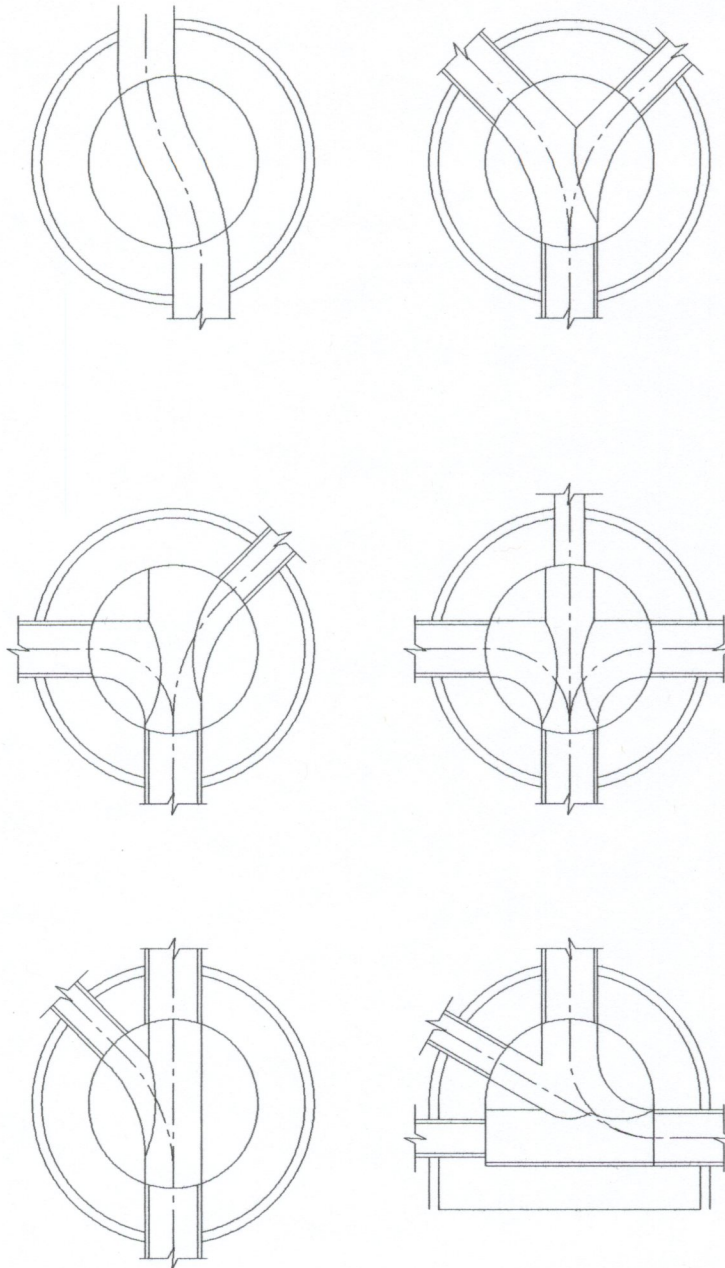
**Figure 8-19**



## PRECAST CONCRETE FLARED HEADWALLS

NO SCALE

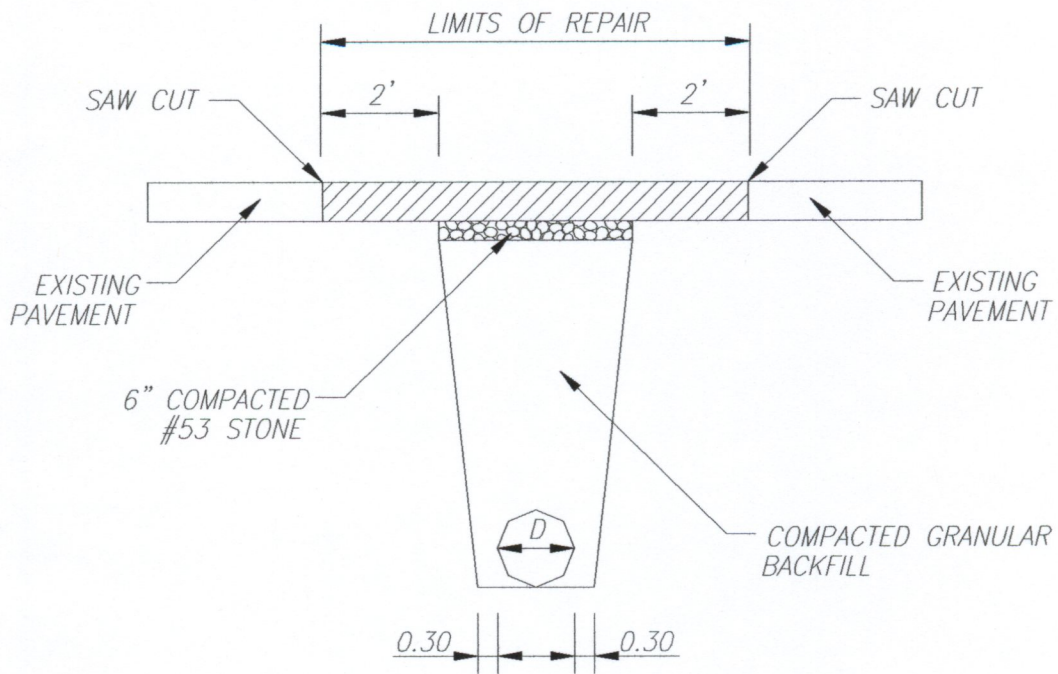
**Figure 8-20**



## STANDARD MANHOLE BENCHES

NO SCALE

**Figure 8-21**



## REPAIR OF STREET CUTS

NO SCALE

**Figure 8-22**