

### GRANULAR FOUNDATION

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(MIN.)
27" & SMALLER	4"
30" TO 60"	4"
66" & LARGER	6"

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

**NOTE:**

FOR ROCK OR OTHER NON-COMPRESSABLE MATERIAL:  
 THE TRENCH SHOULD BE OVER-EXCAVATED A MIN.  
 OF 6" & REFILLED WITH GRANULAR MATERIAL.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

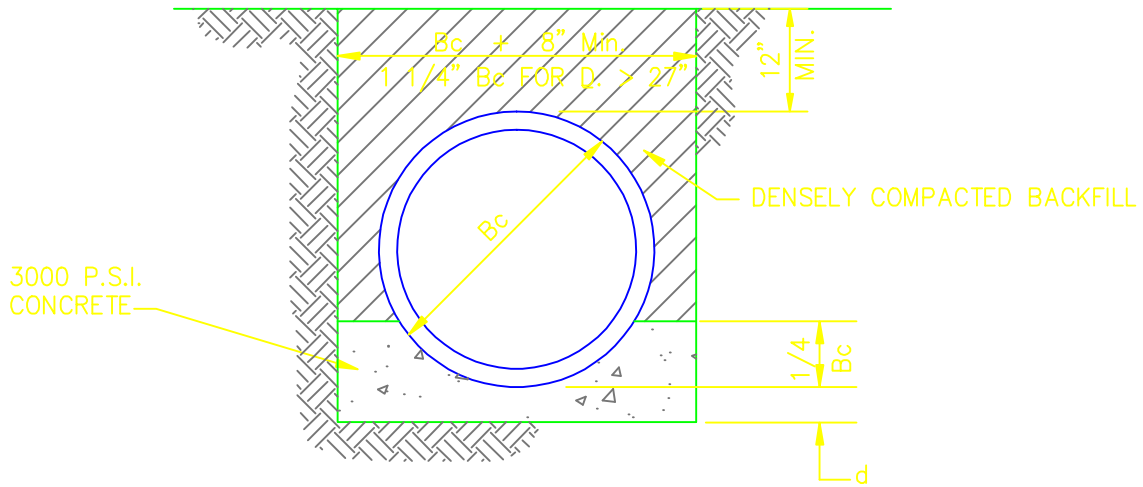
### BEDDING & BACKFILL DETAILS

FLEXIBLE SEWER PIPE BEDDING DETAIL (CLASS I & II)

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. BB-1



CONCRETE CRADLE

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(MIN.)
27" & SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

LEGEND

- Bc = OUTSIDE DIAMETER
- D = INSIDE DIAMETER
- d = DEPTH OF CONCRETE CRADLE BELOW PIPE BELL

NOTE:

FOR ROCK OR OTHER NON-COMPRESSIBLE MATERIAL:  
THE TRENCH SHOULD BE OVER-EXCAVATED A MIN.  
OF 6" & REFILLED WITH GRANULAR MATERIAL.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

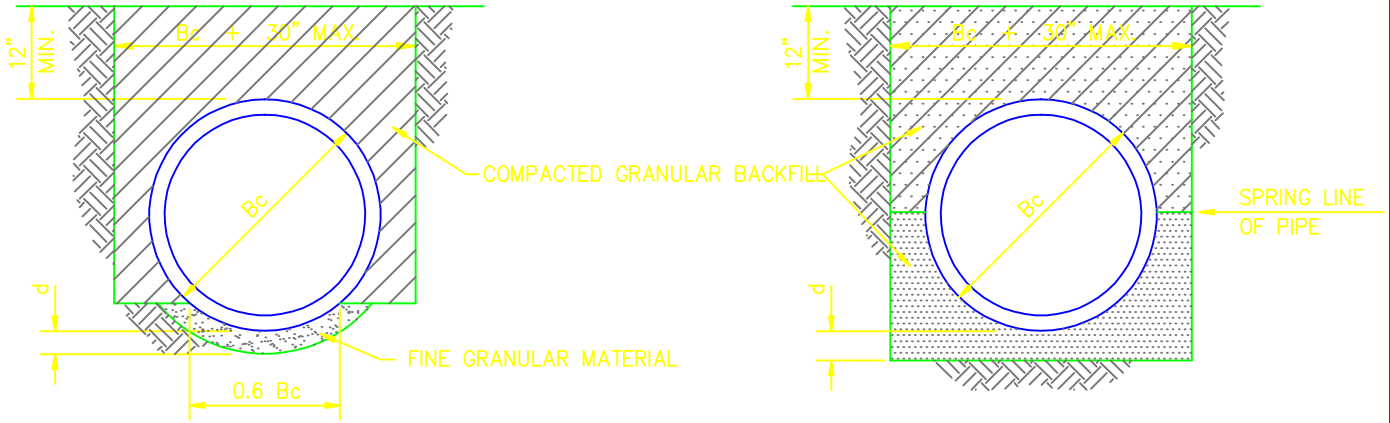
BEDDING & BACKFILL DETAILS

RIGID PIPE BEDDING DETAIL (CLASS "A")

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. BB-2



SHAPED SUBGRADE WITH GRANULAR FOUNDATION

GRANULAR FOUNDATION

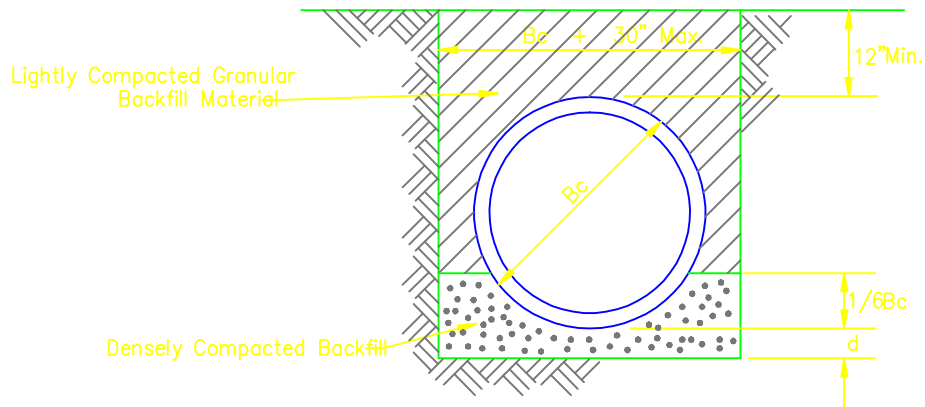
DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(MIN.)
27" & SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

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

NOTE:  
 FOR ROCK OR OTHER NON-COMPRESSIBLE MATERIAL:  
 THE TRENCH SHOULD BE OVER-EXCAVATED A MIN.  
 OF 6" & REFILLED WITH GRANULAR MATERIAL.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

BEDDING & BACKFILL DETAILS		
RIGID PIPE BEDDING DETAIL (CLASS "B")		
SCALE: NONE	DATE: JAN. 2005	DWG. NO. BB-3



### GRANULAR FOUNDATION

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(MIN.)
27" & SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

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

NOTE:

For Rock or Other Non-Compressable Material:  
 The Trench should be over-excavated a min.  
 of 6" & refilled with Granular Material.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

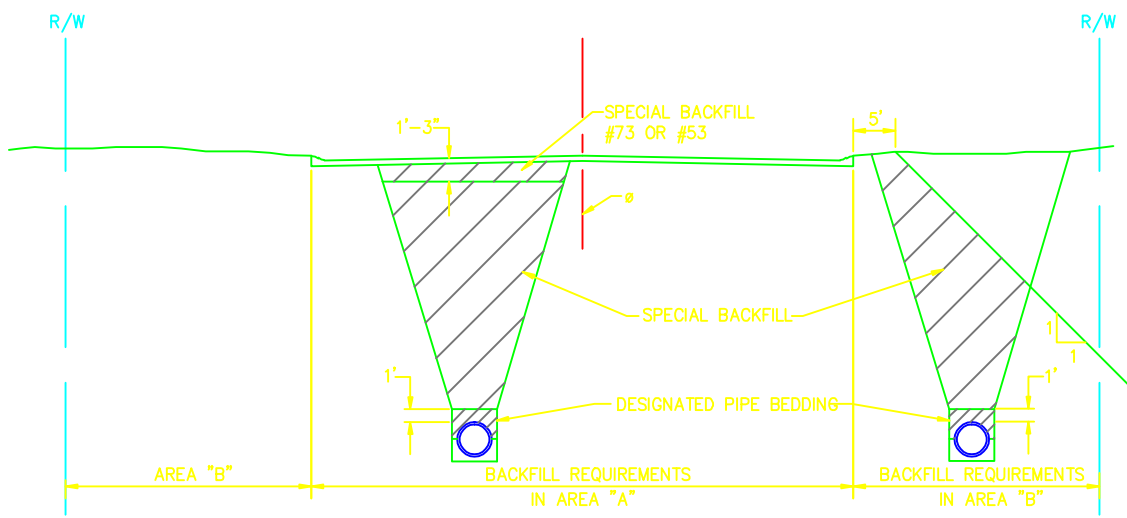
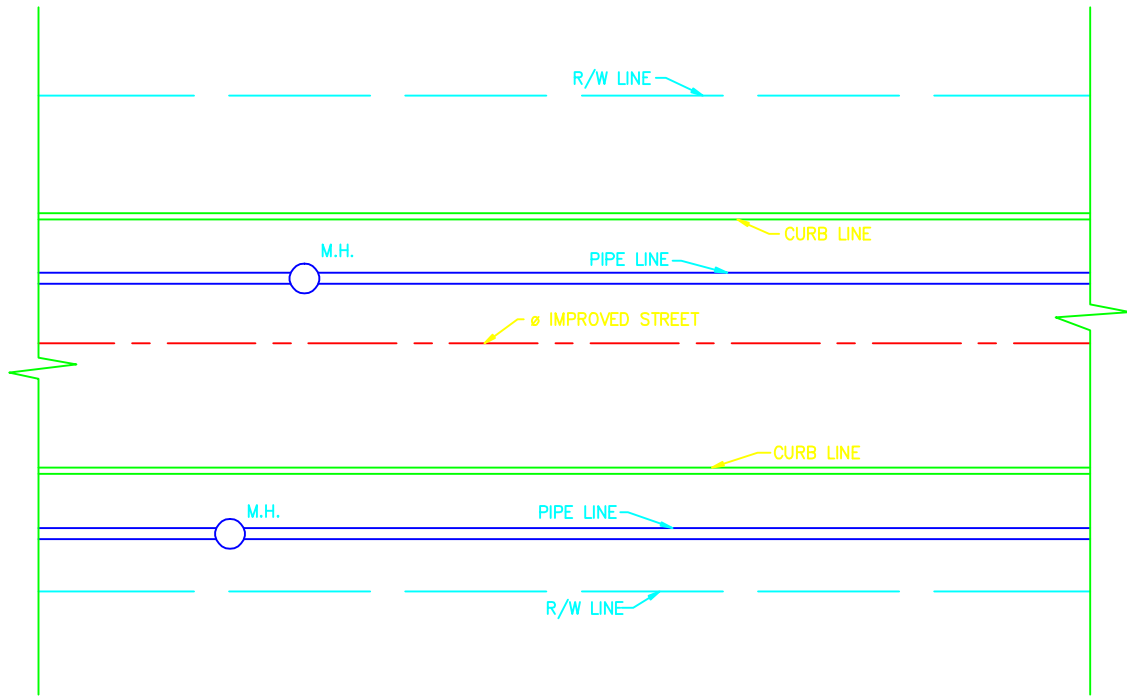
BEDDING & BACKFILL DETAILS

RIGID PIPE BEDDING DETAIL (CLASS "C")

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. BB-4



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

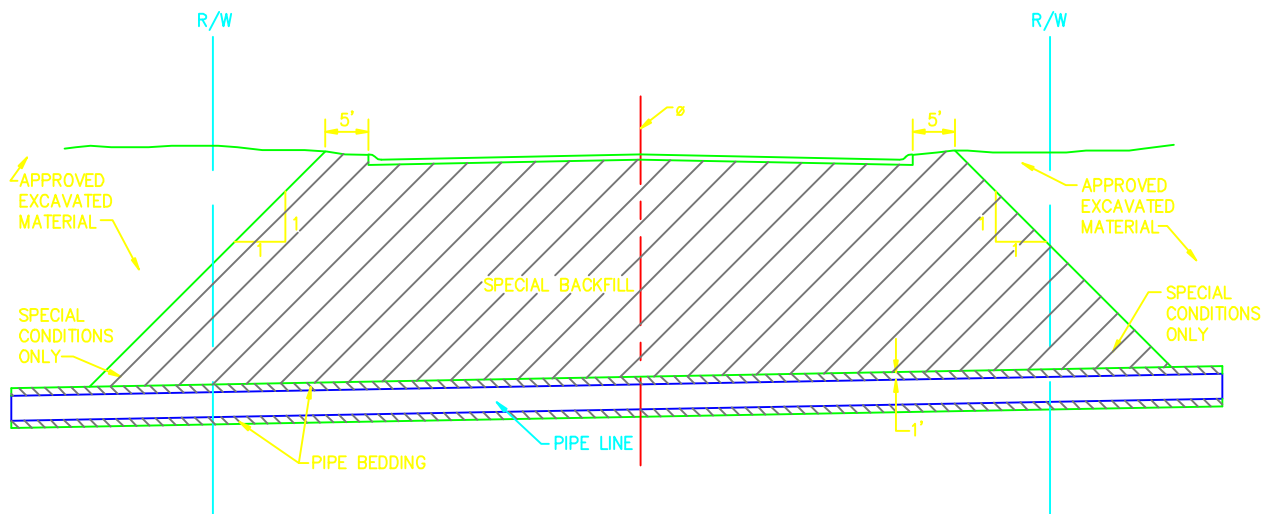
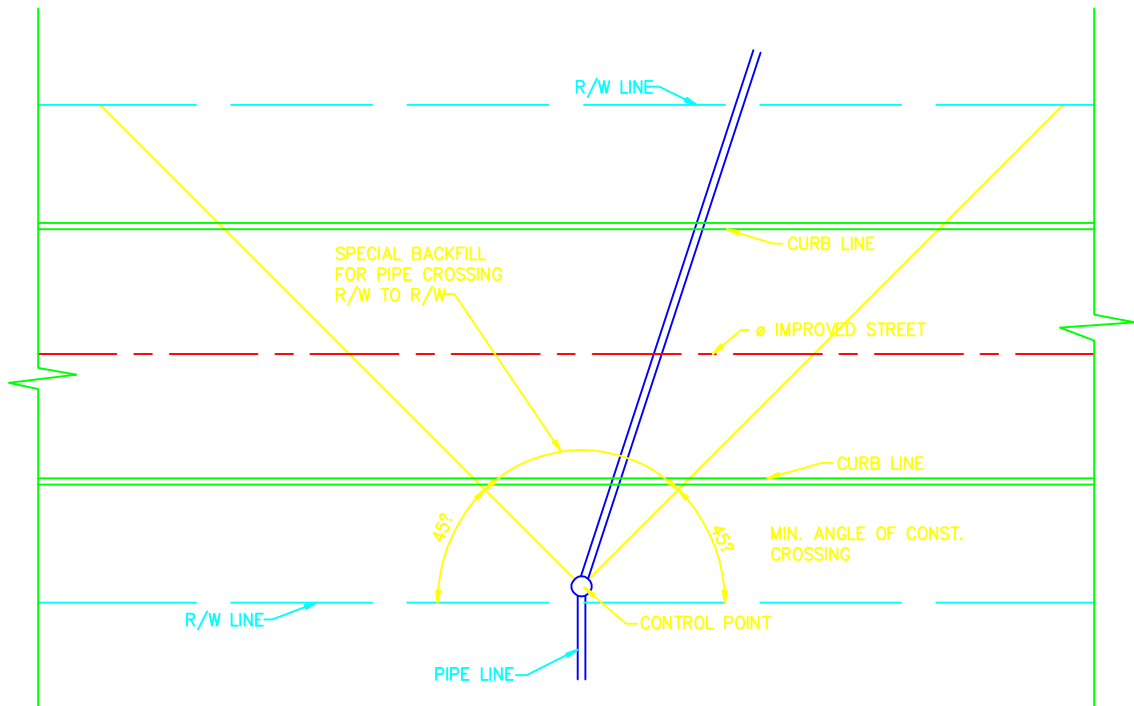
BEDDING & BACKFILL DETAILS

BACKFILL REQUIREMENTS (WITHIN R/W)

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. BB-5



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

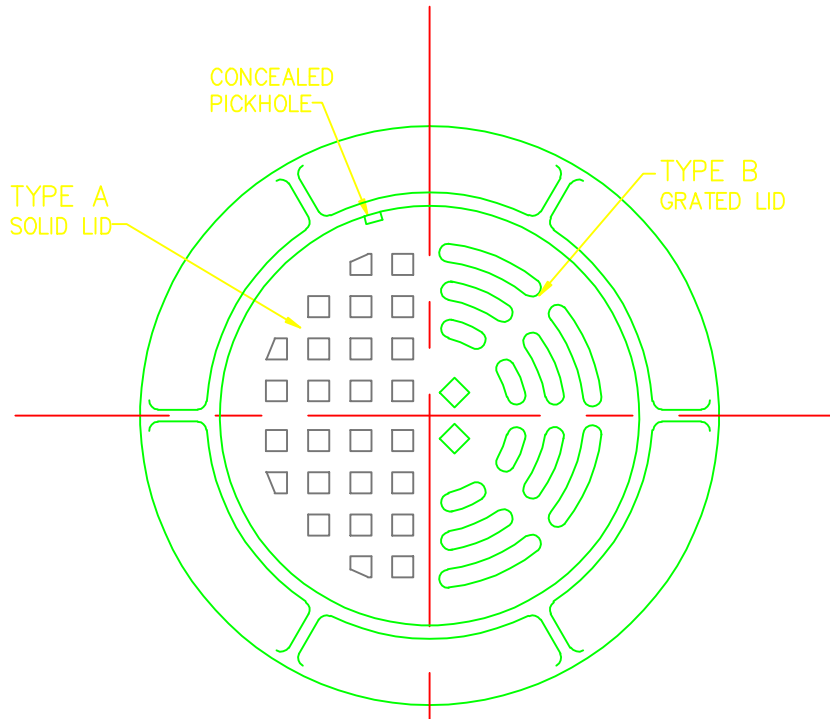
BEDDING & BACKFILL DETAILS

BACKFILL REQUIREMENTS (CROSSING R/W)

SCALE:  
NONE

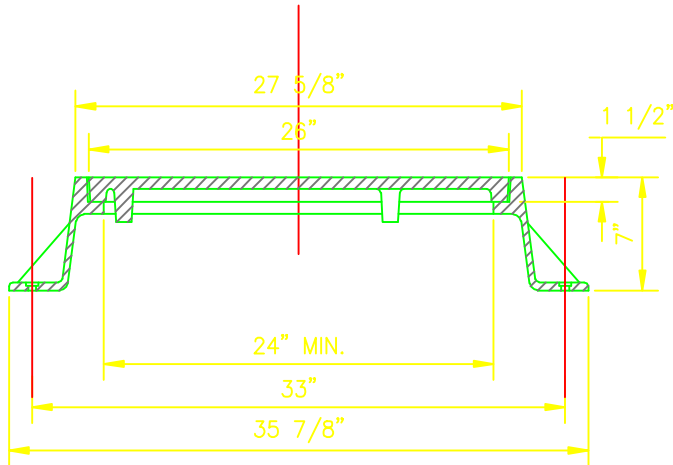
DATE: JAN. 2005

DWG. NO. BB-6



TYPE A CASTING  
 NEENAH R-1642 OR  
 EAST JORDAN 1045  
 LID SHALL BE HEAVY  
 DUTY WITH SELF SEALING GASKETS

TYPE B CASTING  
 NEENAH R-2371 OR  
 EAST JORDAN 1045  
 WITH M1 GRATE



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

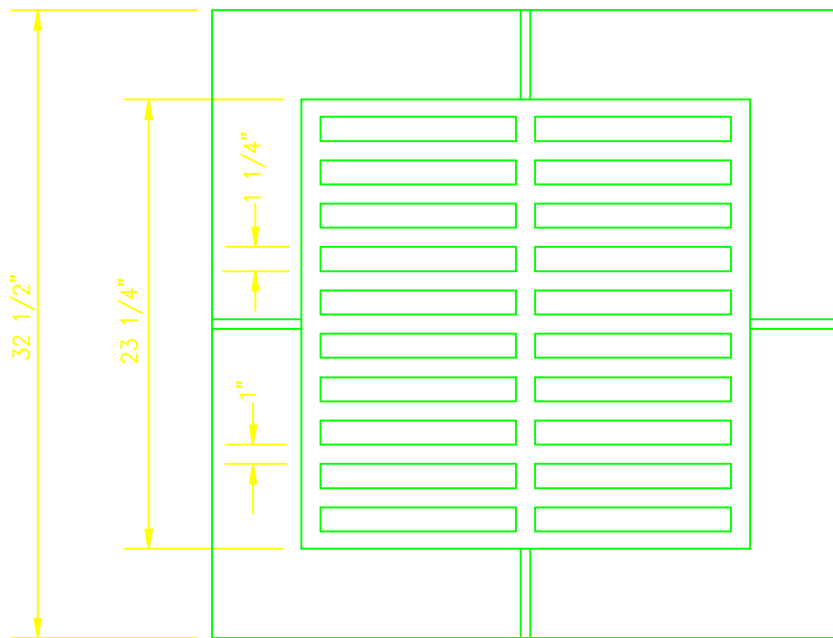
CASTING DETAILS

TYPE A OR B CASTING DETAIL

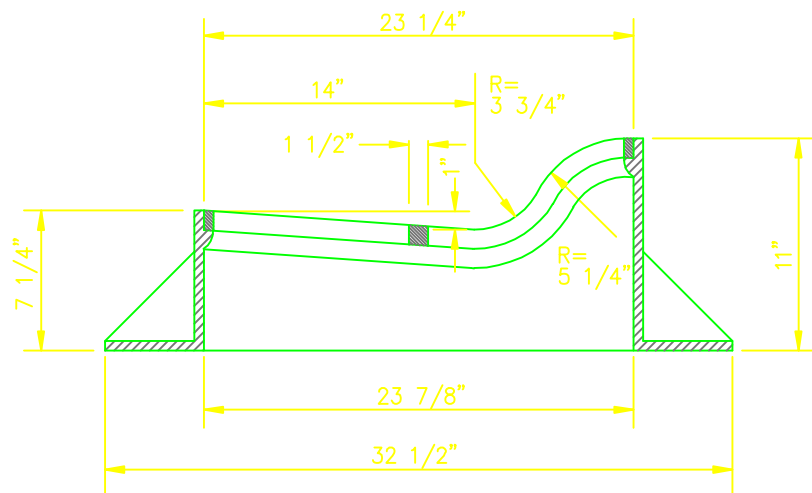
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. C - 1



TYPE D CASTING  
 SHALL BE NEENAH  
 R-3501-N OR EAST  
 JORDAN 7490



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

### CASTING DETAILS

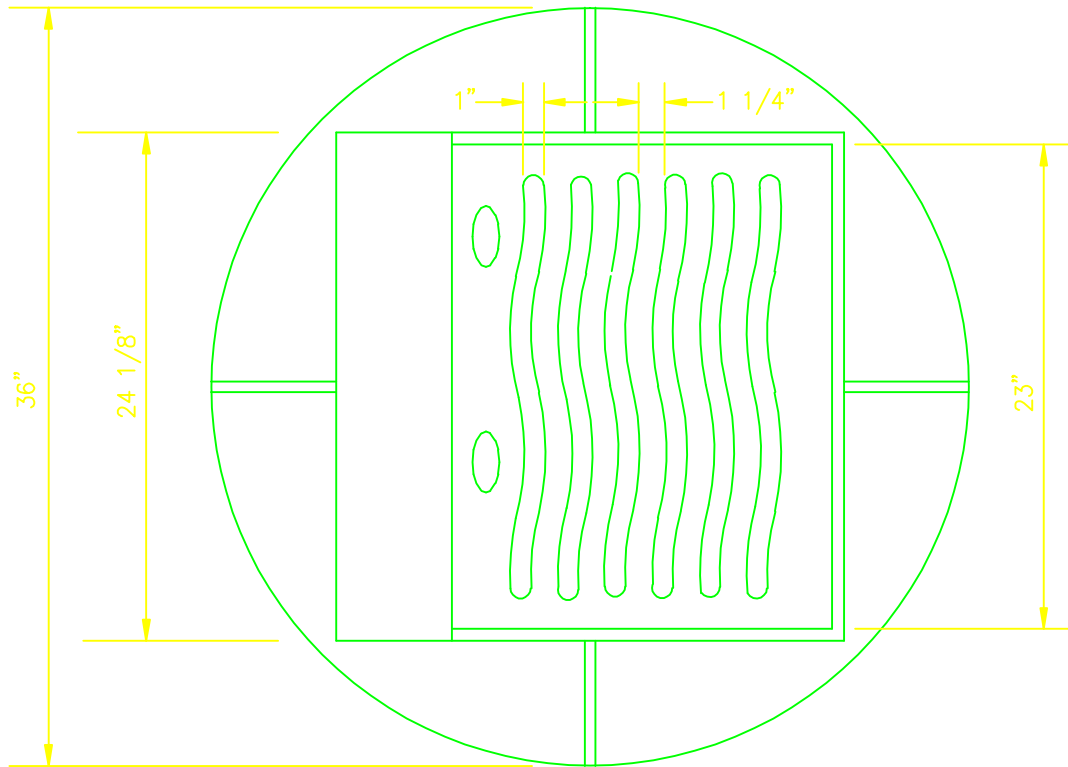
STANDARD CASTING DETAIL – ROLLED CURB TYPE D

SCALE:  
 NONE

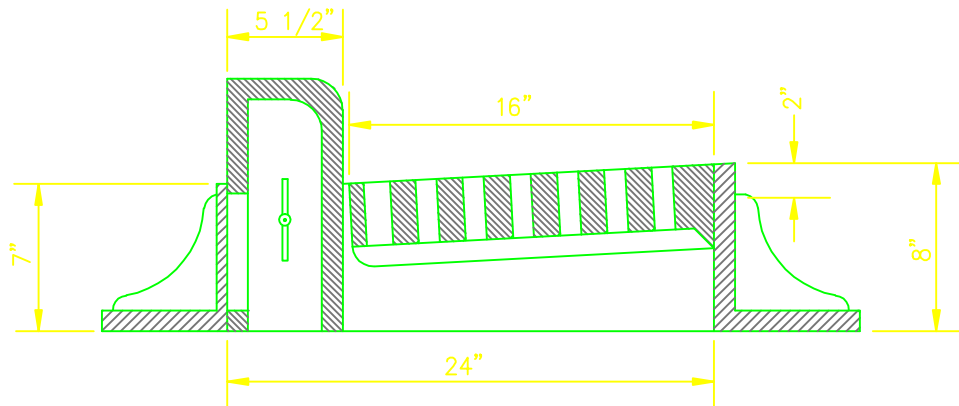
DATE: JAN. 2005

DWG. NO. C – 2





TYPE E CASTING  
 NEENAH R-3010 OR  
 EAST JORDAN 7010



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

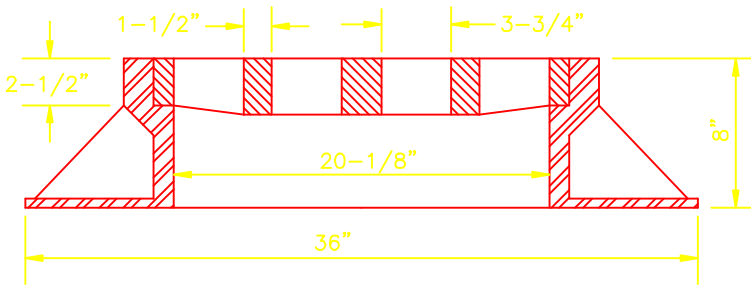
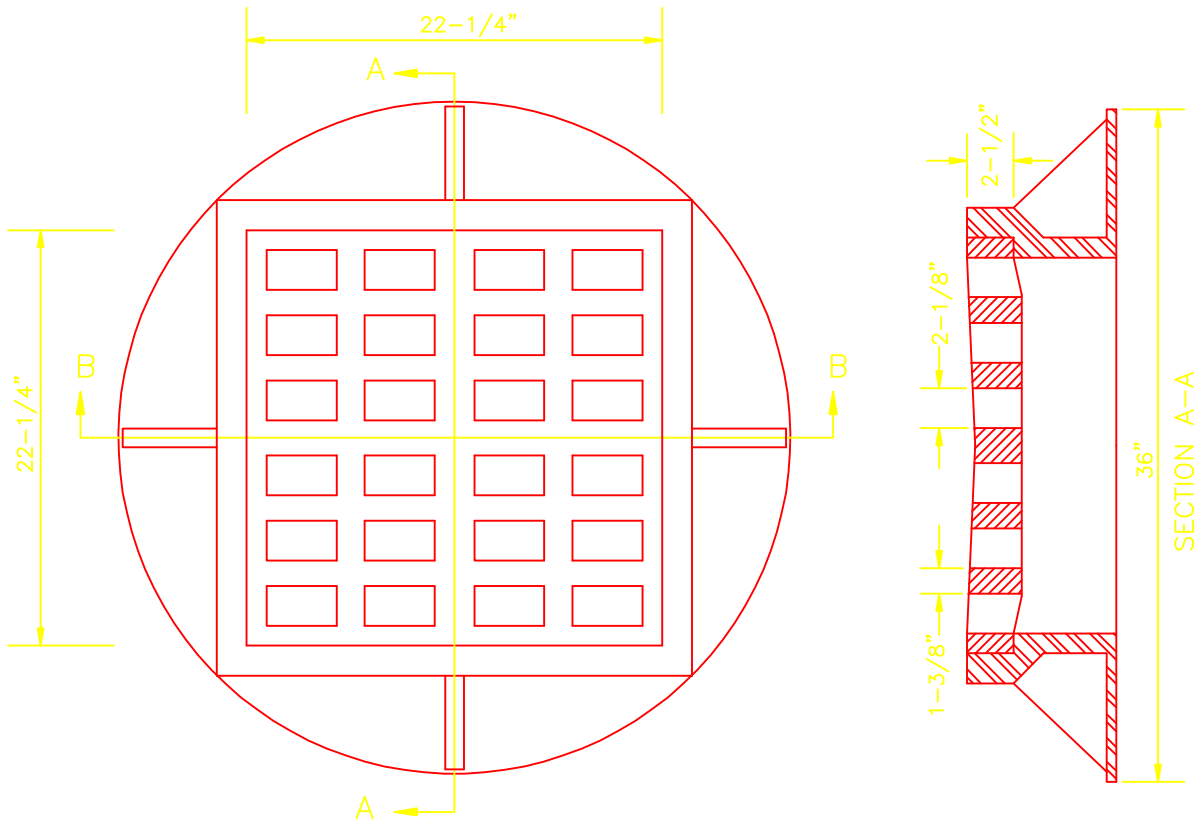
CASTING DETAILS

CURB CASTING DETAIL TYPE E

SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. C - 3



TYPE F CASTING  
 NEENAH R-3347 OR  
 EAST JORDAN 5100

SECTION B-B

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

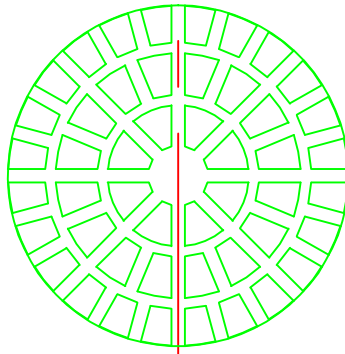
CASTING DETAILS

INVERTED CROWN CASTING DETAIL TYPE F

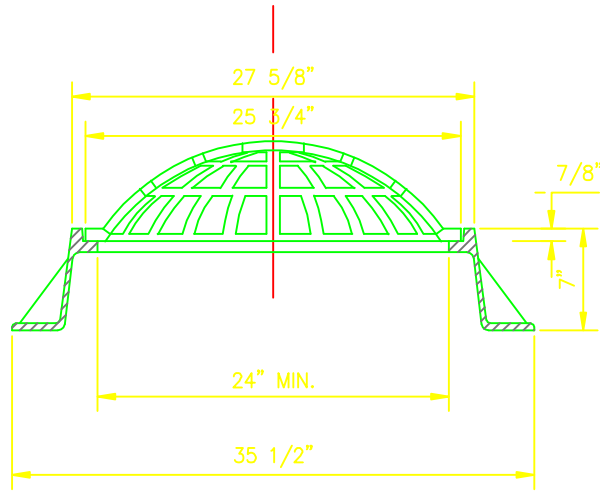
SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. C - 4



TYPE G CASTING  
 NEENAH R-2560-E1 OR  
 EAST JORDAN 1045  
 WITH O2 GATE



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

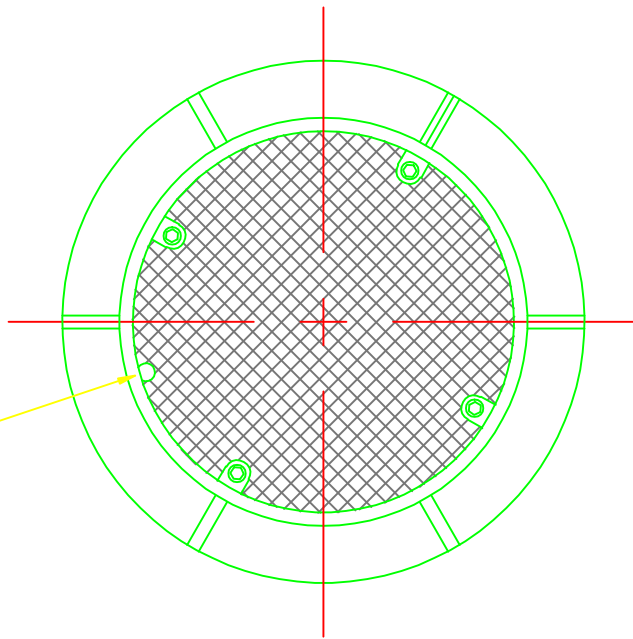
CASTING DETAILS

TYPE G CASTING DETAIL

SCALE:  
 NONE

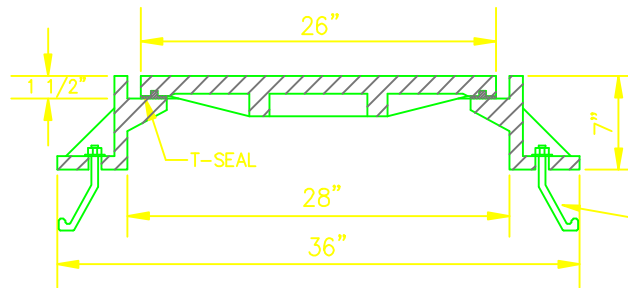
DATE: JAN. 2005

DWG. NO. C - 5



TYPE J CASTING  
NEENAH R-1916-F  
OR EAST JORDAN  
1045 WT

CONCEALED  
PICKHOLE



ANCHOR BOLT  
(FASTENED TO M.H.)

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

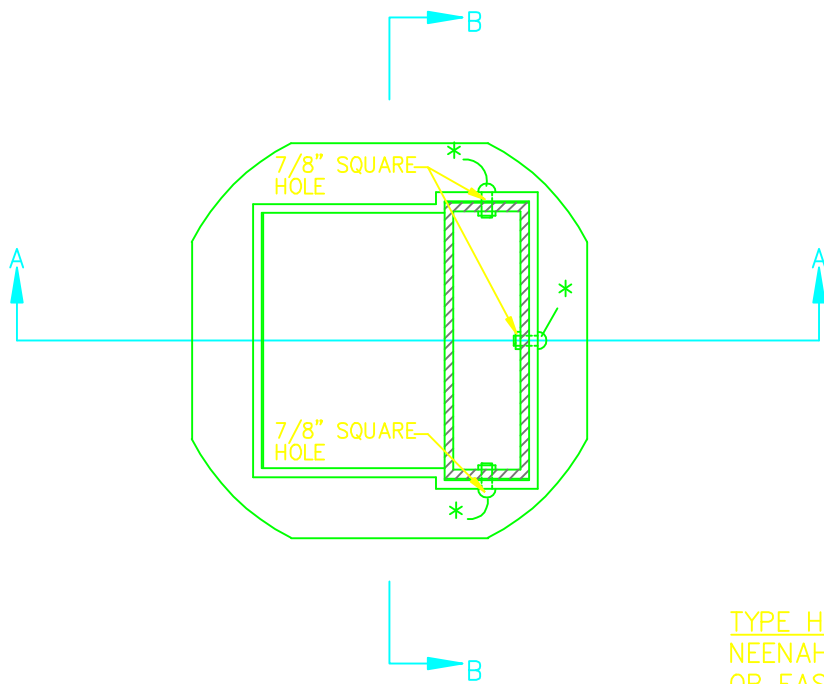
### CASTING DETAILS

TYPE J WATERPROOF MANHOLE FRAME W/BOLTED LID

SCALE:  
NONE

DATE: JAN. 2005

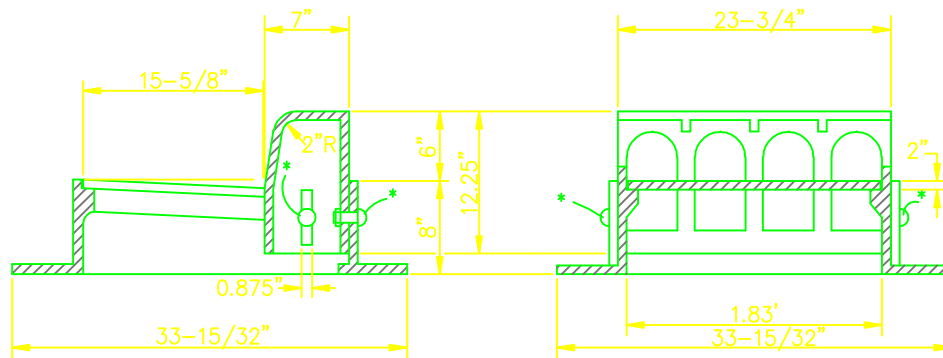
DWG. NO. C - 6



\* GALVANIZED OR STAINLESS STEEL 3/4"-10 UNC X 3 1/2" ROUND HEAD, SQUARE SHOULDERS BOLTS WITH 1 FLAT WASHER, 1 LOCK WASHER AND 1 NUT EACH.

TYPE H CASTING  
 NEENAH R-3286-8V  
 OR EAST JORDAN  
 7520-T1

PLAN



SECTION A-A

SECTION B-B

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

CASTING DETAILS

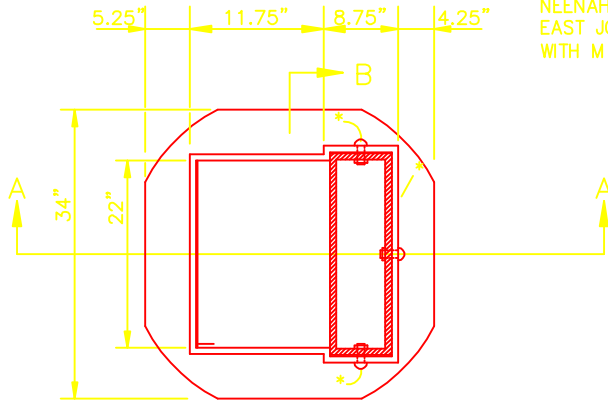
TYPE H CASTING

SCALE:  
NONE

DATE: JAN. 2005

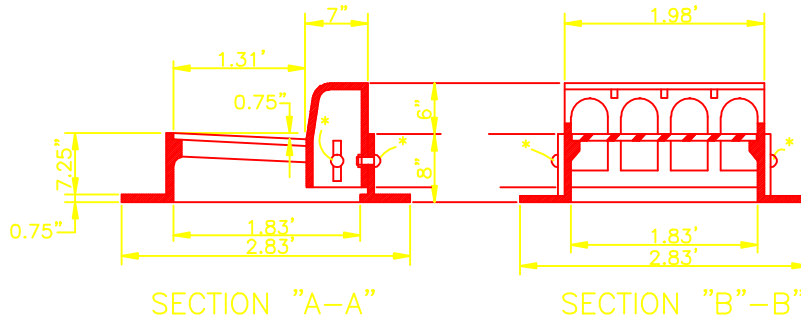
DWG. NO. C - 7A

TYPE H CASTING  
 NEENAH R-3286-8V OR  
 EAST JORDAN 7520 T1  
 WITH M GRATE



PLAN

\*Galvanized or stainless steel 3/4"-10  
 UNC x 3 1/2" round head, Square  
 shouldered bolts with 1 flat washer,  
 1 lock washer and 1 nut each.



FIN DETAIL

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

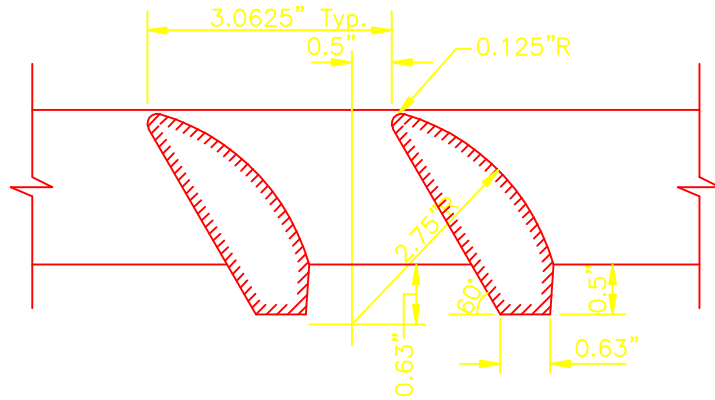
CASTING DETAILS

TYPE H CASTING

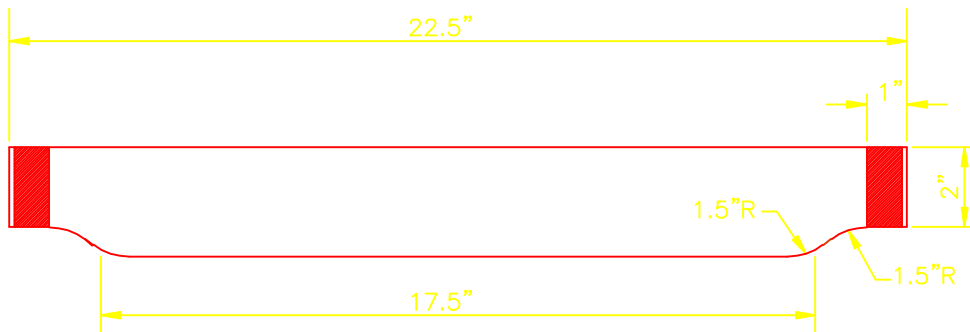
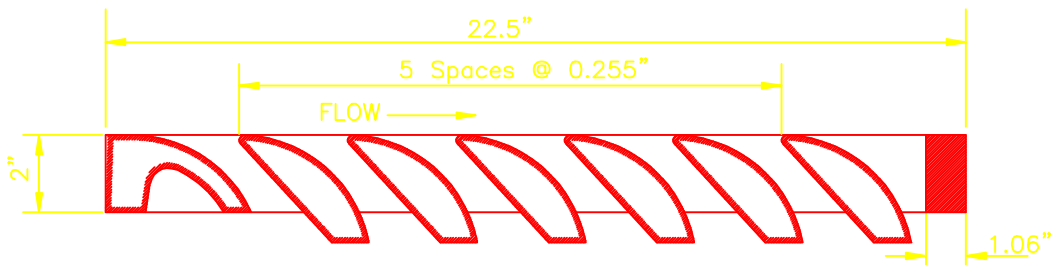
SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. C - 7



TYPE L CASTING  
 NEENAH R-3287-15 OR  
 EAST JORDAN 7565 TI



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

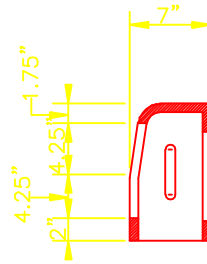
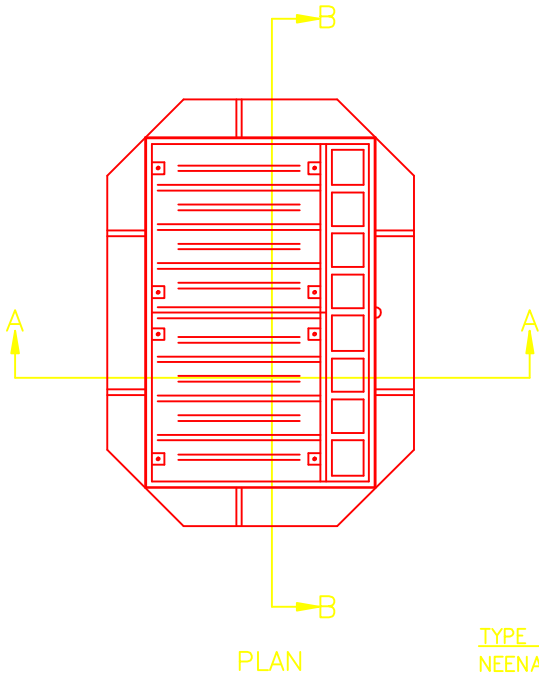
CASTING DETAILS

FIN DETAIL FOR TYPE L CASTING

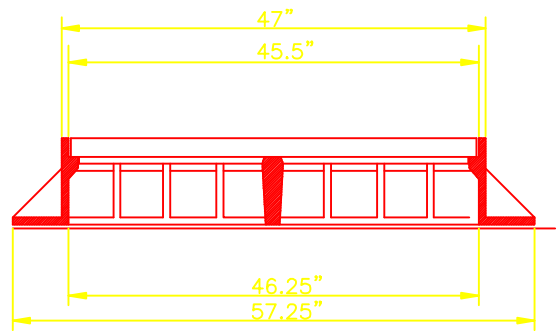
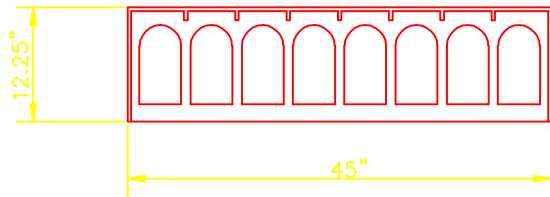
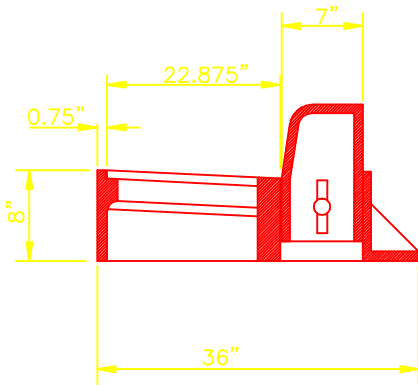
SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. C - 8A



TYPE L CASTING  
 NEENAH R-3287-15 OR  
 EAST JORDAN 7565 TI



TO BE USED WITH TYPE II INLET

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

CASTING DETAILS

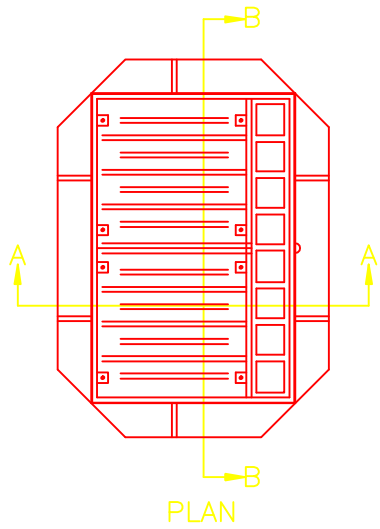
TYPE L CASTING

SCALE:  
 NONE

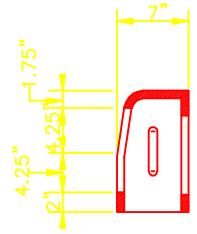
DATE: JAN. 2005

DWG. NO. C - 8

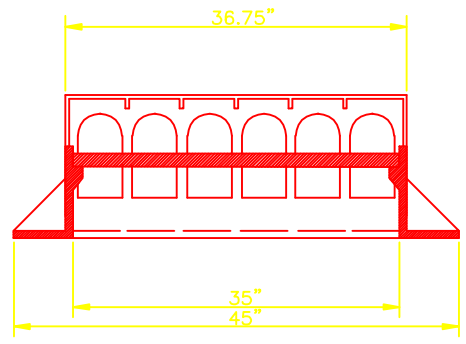
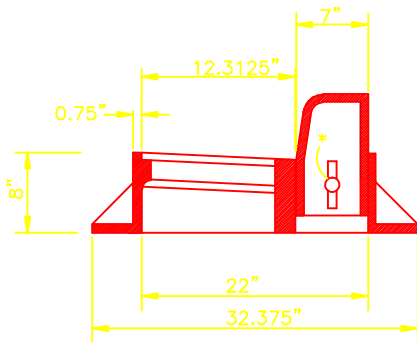




TYPE M CASTING  
 NEENAH R-3287-10V  
 EAST JORDAN 7505 MI & T2



\* Galvanized or stainless steel 3/4"-10  
 UNC x 3 1/2" round head, Square  
 shouldered bolts with 1 flat washer,  
 1 lock washer and 1 nut each.



TO BE USED WITH TYPE III INLET

# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

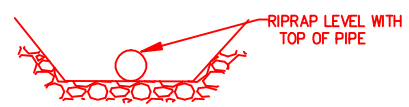
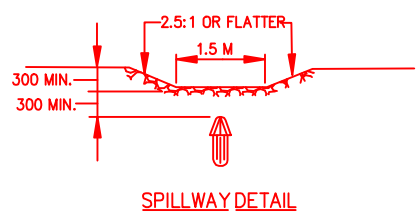
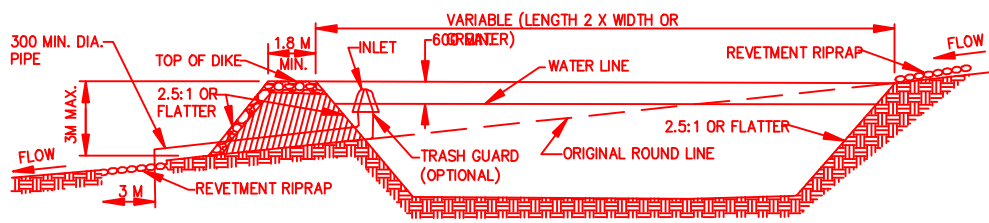
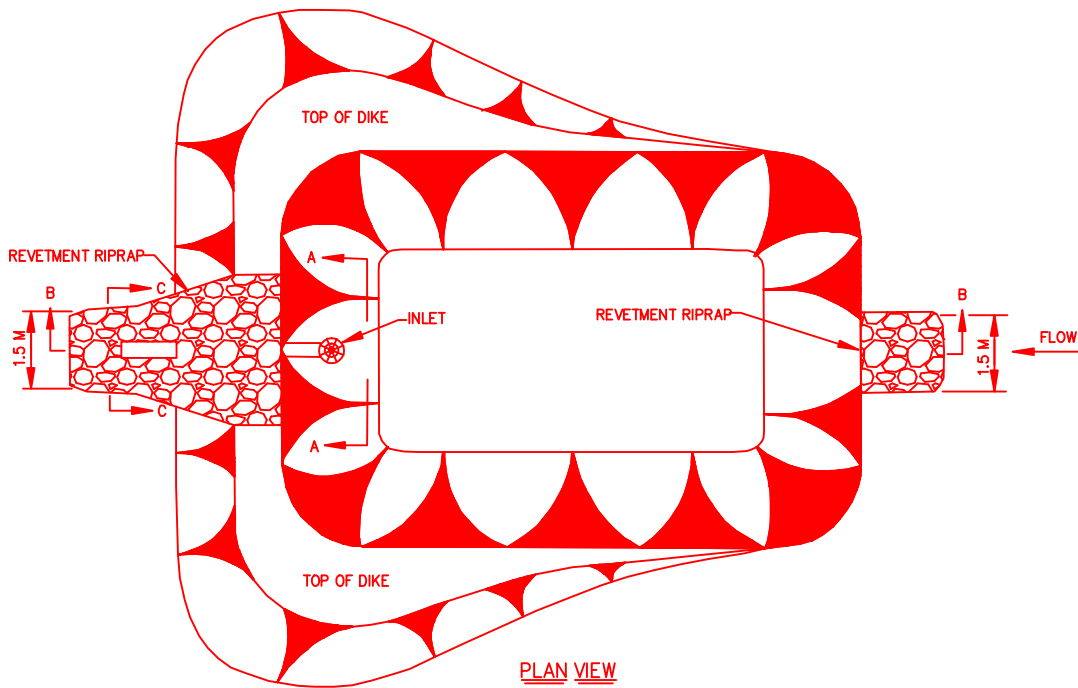
CASTING DETAILS

TYPE M CASTING

SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. C - 9



# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

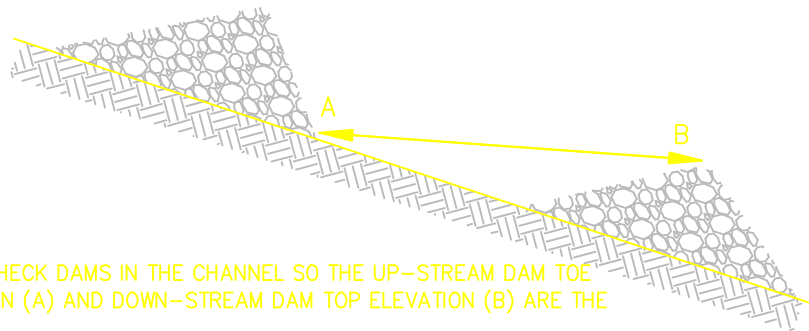
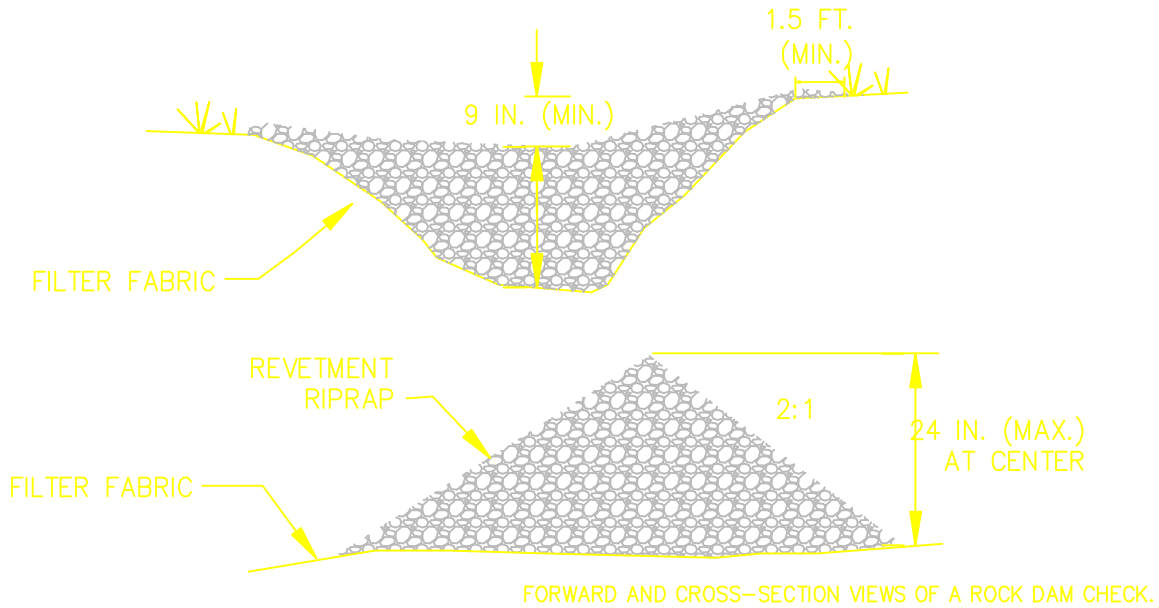
EROSION AND SEDIMENT CONTROL DETAILS

TEMPORARY SEDIMENT BASIN

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-1



SPACE CHECK DAMS IN THE CHANNEL SO THE UP-STREAM DAM TOE ELEVATION (A) AND DOWN-STREAM DAM TOP ELEVATION (B) ARE THE SAME.

REQUIREMENTS

- CONTRIBUTING DRAINAGE AREA: 2 ACRES MAXIMUM
- DAM CENTER: 2' MAXIMUM HEIGHT BUT AT LEAST 9" LOWER THAN THE OUTER EDGES AT NATURAL GROUND ELEVATION.
- DAM SIDE SLOPE: 2:1 OR FLATTER.
- DISTANCE BETWEEN DAMS: SPACED SO THE TOE OF THE UPSTREM DAM IS THE SAME AS THE TOP OF THE DOWNSTREAM DAM.
- OVERFLOW AREAS ALONG CHANNEL: STABILIZED TO RESIST EROSION.
- ROCK SIZE: INDOT REVTMENT RIPRAP.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

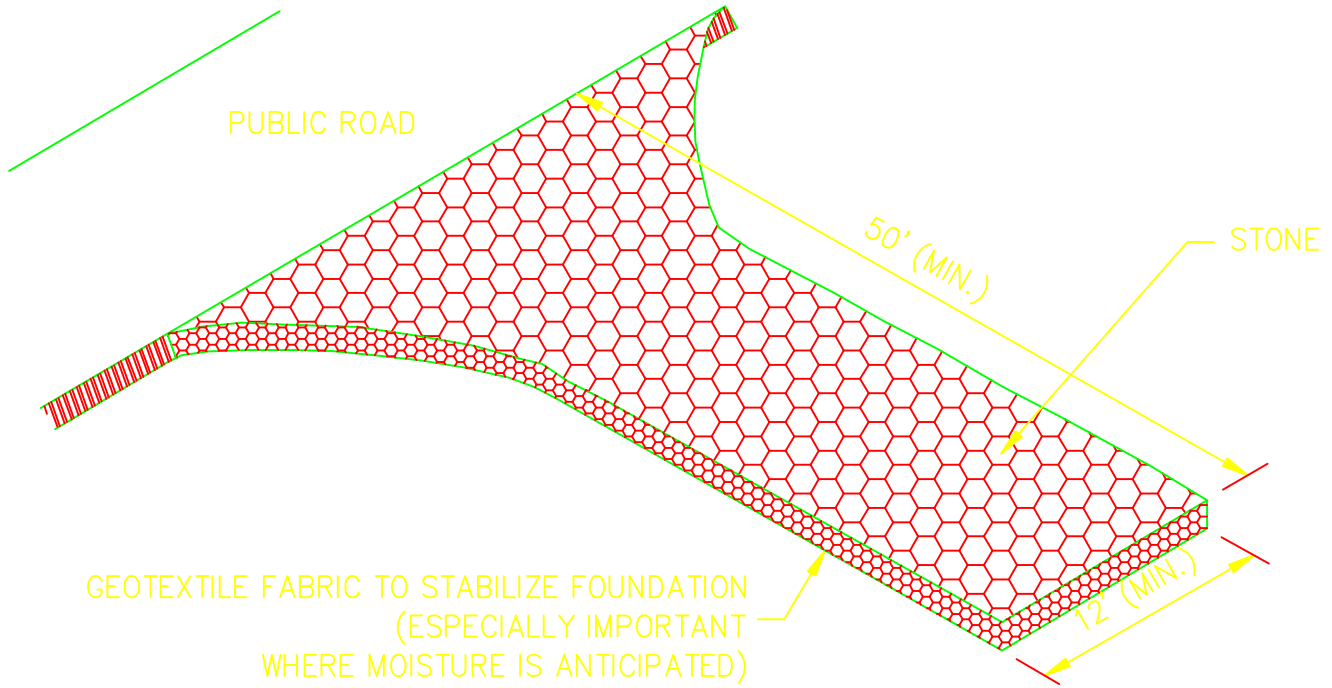
EROSION AND SEDIMENT CONTROL DETAILS

ROCK DAM CHECK

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-2



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

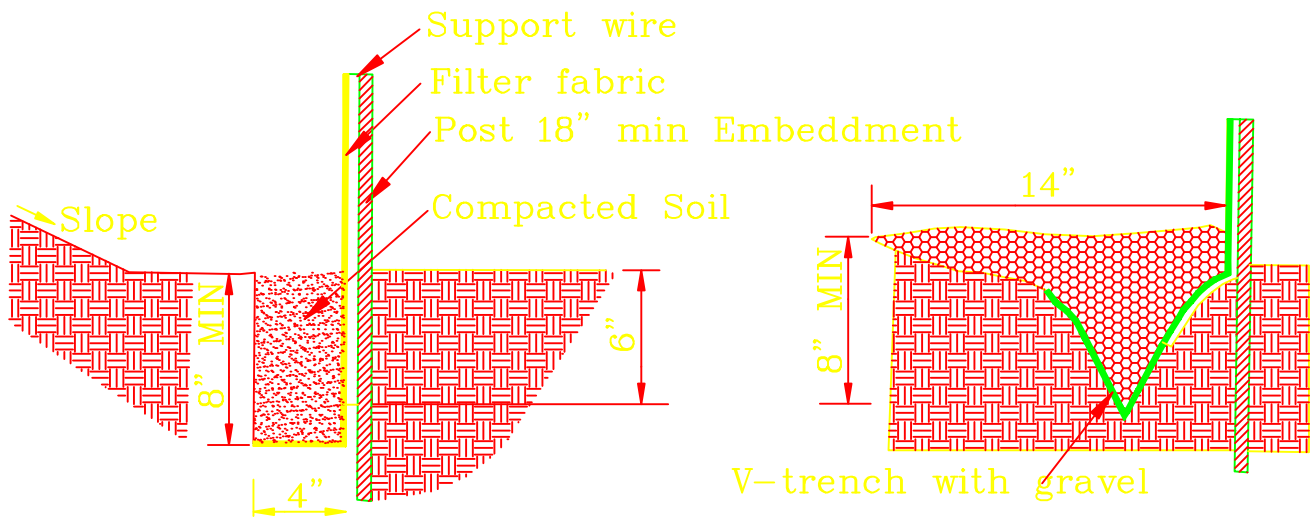
EROSION AND SEDIMENT CONTROL DETAILS

TEMPORARY STONE CONSTRUCTION ENTRANCE

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-3



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

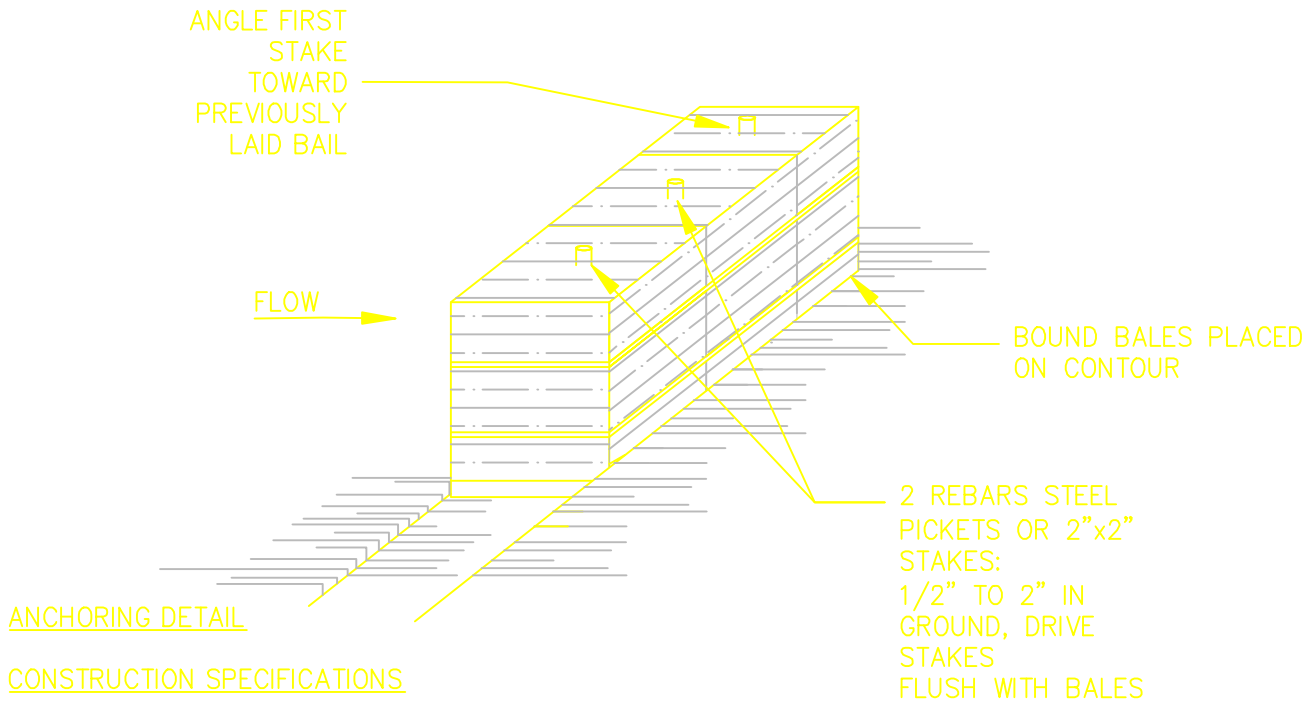
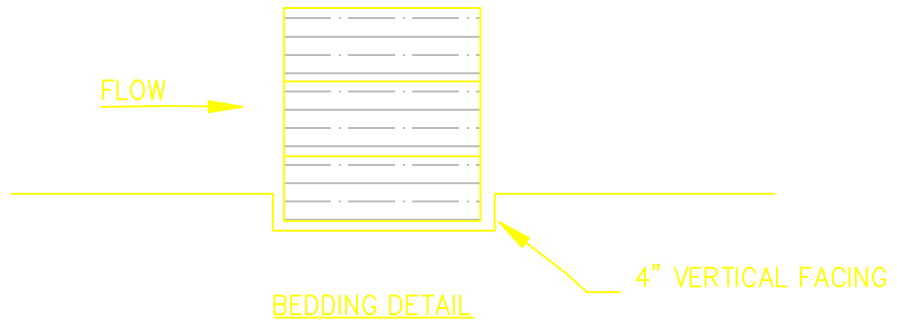
EROSION AND SEDIMENT CONTROL DETAILS

SILT FENCE DETAIL

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-4



CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW THAT ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES AND PLACED SO BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCR THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALES.
4. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

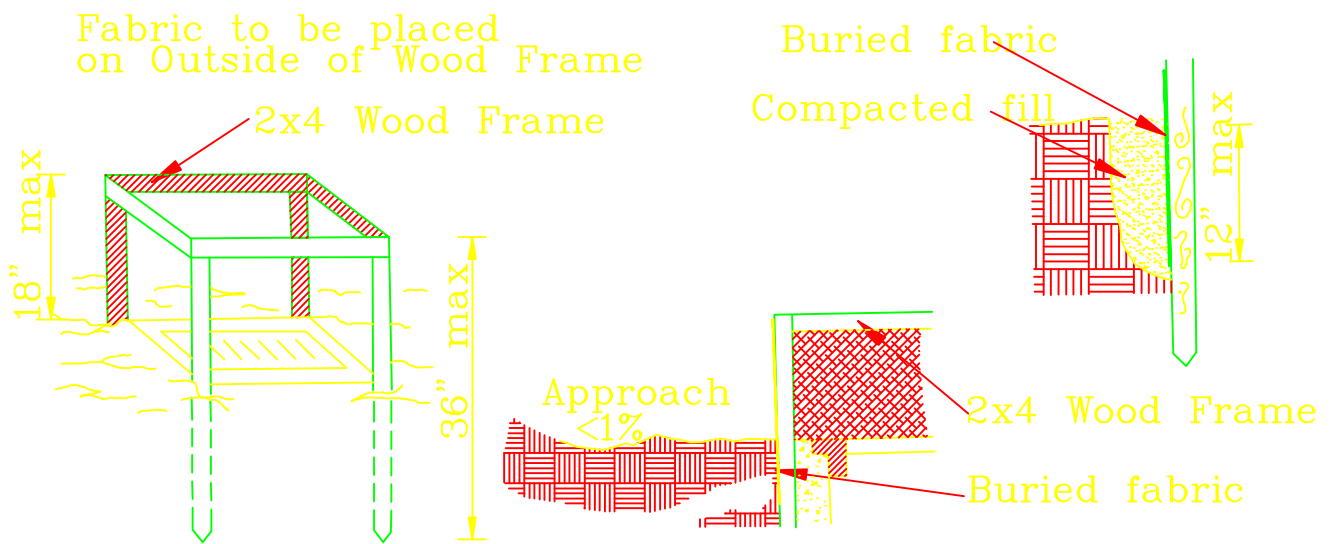
EROSION AND SEDIMENT CONTROL DETAILS

STRAW DAM

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-5



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

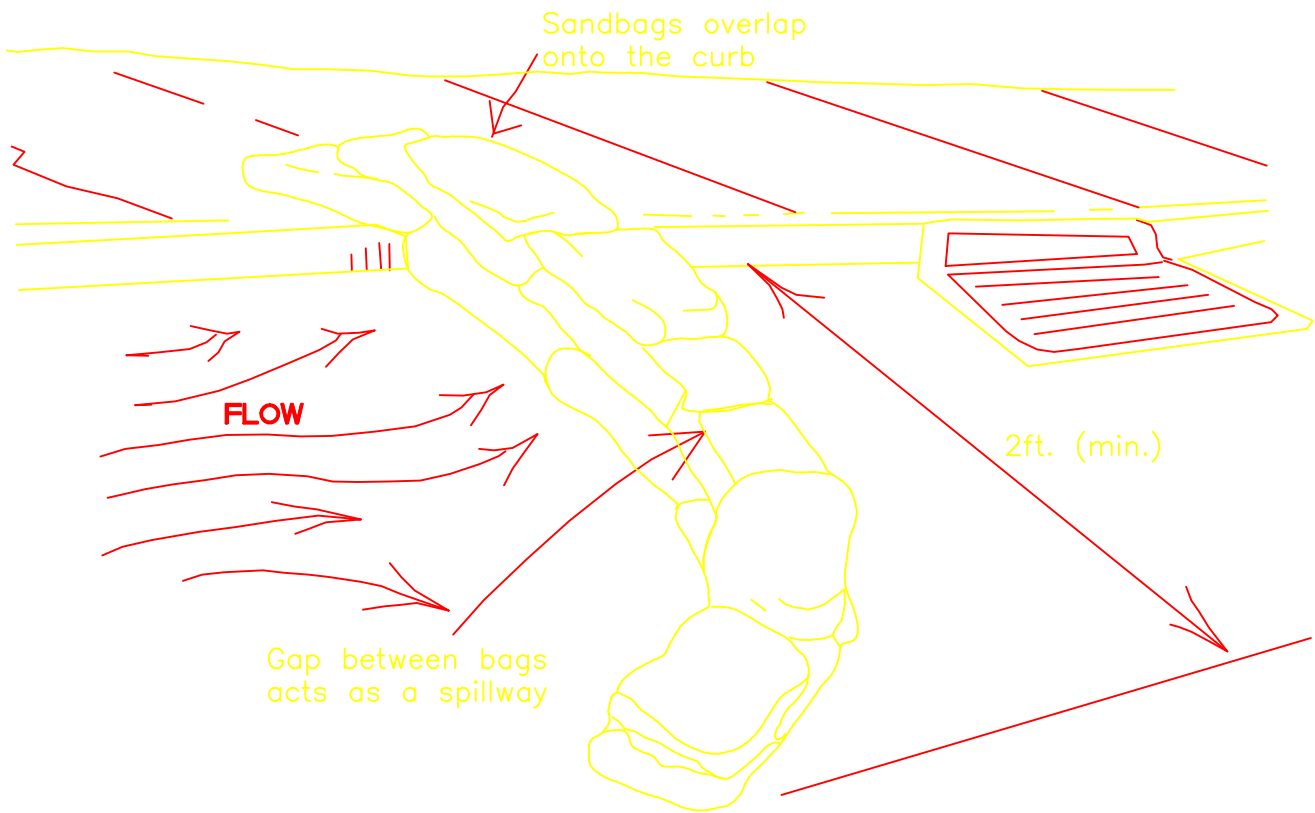
EROSION AND SEDIMENT CONTROL DETAILS

FABRIC DROP INLET PROTECTION DETAIL

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-6



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

EROSION AND SEDIMENT CONTROL DETAILS

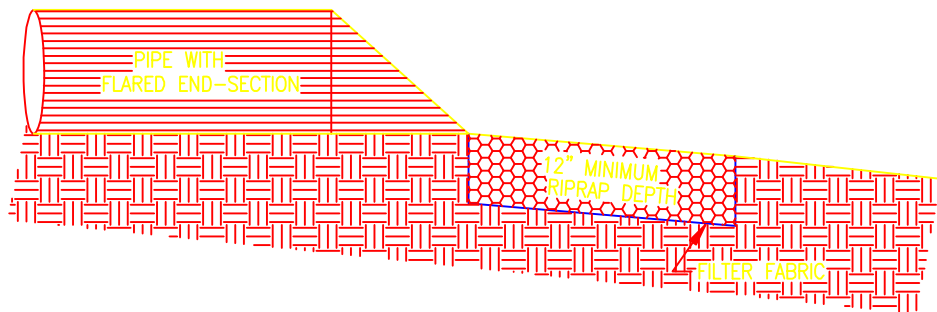
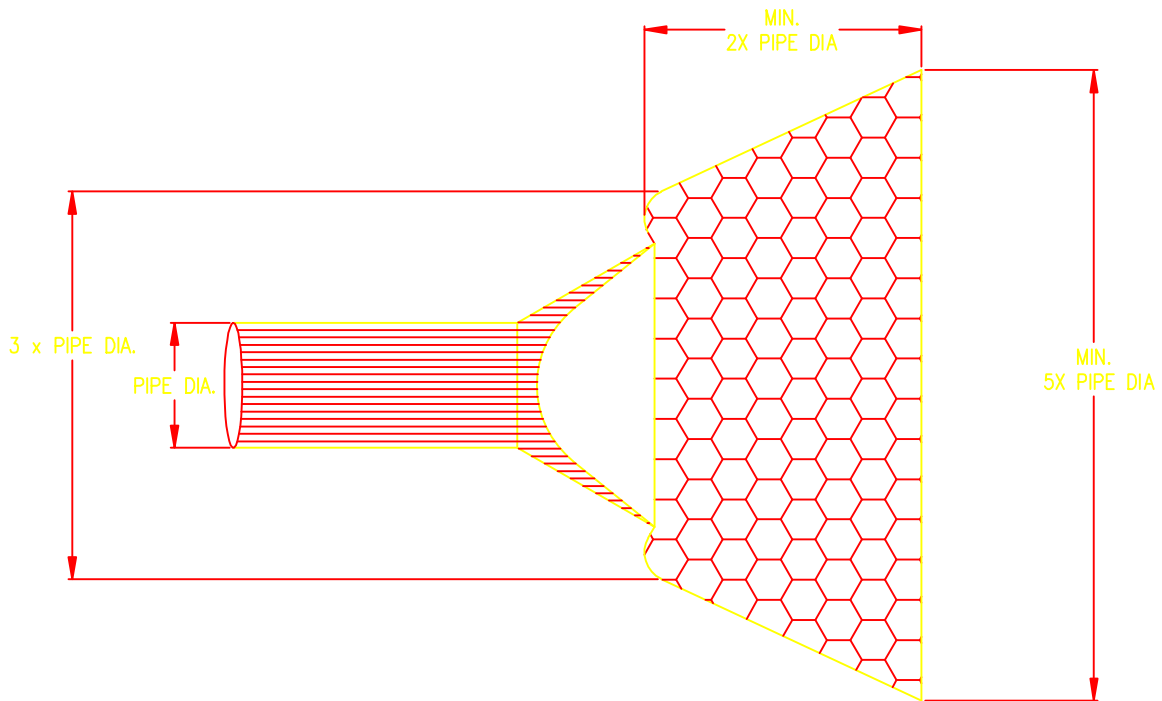
SANDBAG CURB INLET PROTECTION DETAIL

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. EC-7





NOTE: DIMENSIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY.  
ALTER DIMENSIONS AS SITE CONDITIONS DICTATE.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

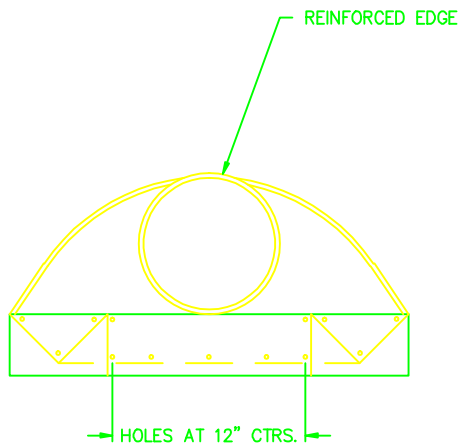
EROSION AND SEDIMENT CONTROL DETAILS

RIPRAP CHUTE DETAIL

SCALE:  
NONE

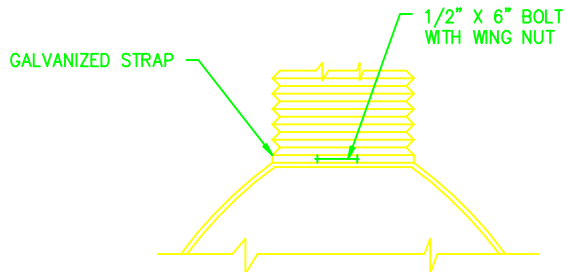
DATE: JAN. 2005

DWG. NO. EC-8

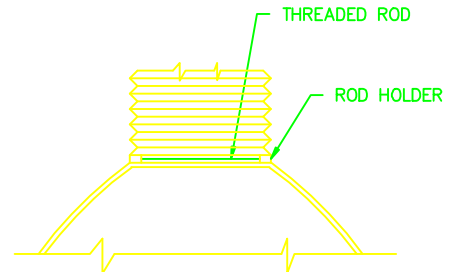


NOTE: FOR PIPE DIAMETER  
 <30" USE 16 GAUGE GALVANIZED  
 STEEL. FOR 30" AND LARGER  
 USE 14 GAUGE GALVANIZED.

TYPE 1



TYPE 2



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

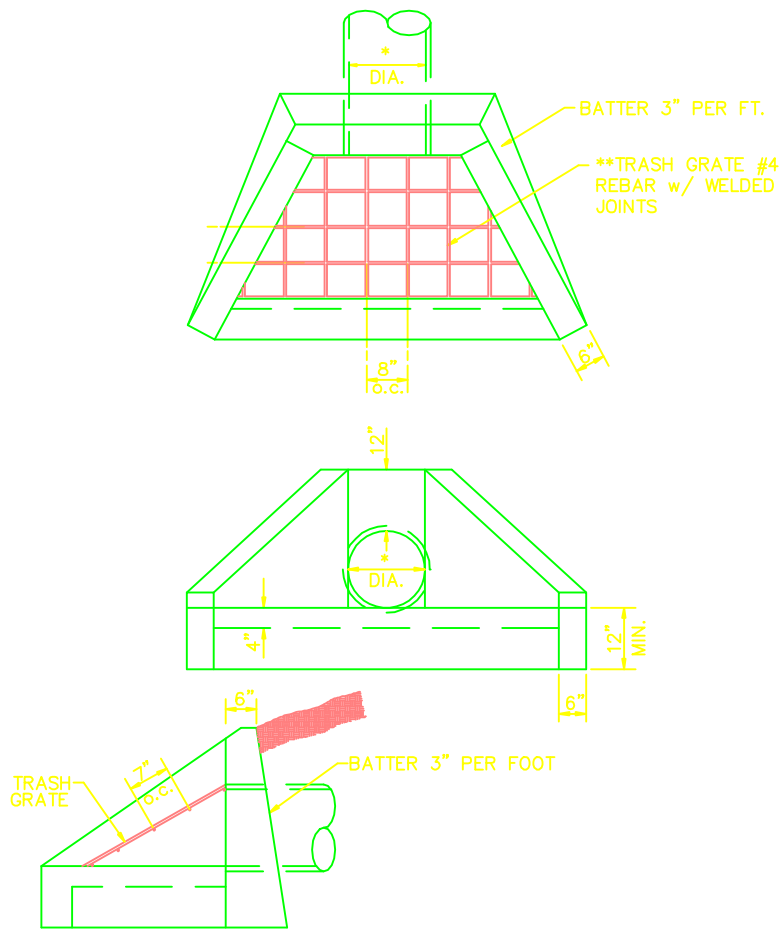
STORM WATER DETAILS

METAL FLARED END SECTION

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. M-1



PREMANUFACTURED CONCRETE FLARED  
END SECTION CONCRETE SHALL BE  
3,000 P.S.I. (MINIMUM) EXACT  
DIMENSIONS PER THE MANUFACTURE

NOTE: PLACE FASTENERS INTO CONC. END  
SECTION AND BOLT TRASH GRATE MUST BE  
ABLE TO BE REMOVED FOR CLEANING AND  
MAINTENANCE.

\*SEE PROFILES FOR PIPE SIZE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

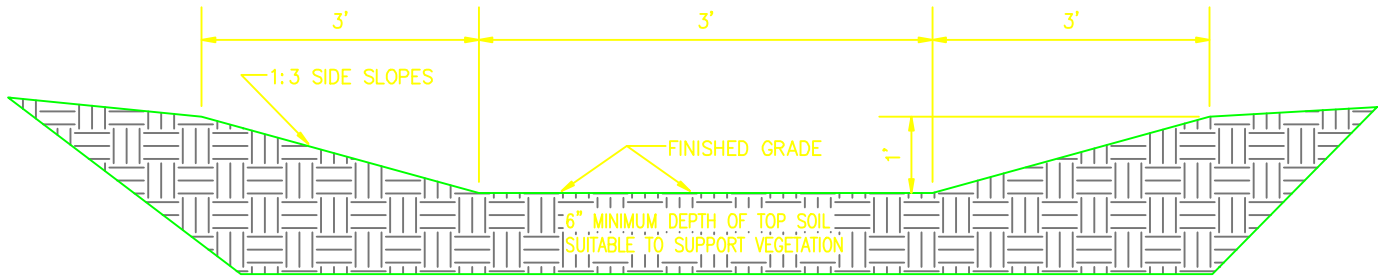
STORM WATER DETAILS

CONCRETE FLARED END SECTION

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. M-2



NOTES: 1. PLACE PERMANENT SEEDING IMMEDIATELY AFTER FINISHED GRADING IS COMPLETE.

THE SEED MIXTURE FOR THIS PROJECT SHALL BE SEED AS FOLLOWS:

SEED DESCRIPTION	PERCENT (BY WEIGHT)
KENTUCKY BLUE GRASS	40 TO 50
CREEPING RED FESCUE	40 TO 45
PERENNIAL RYE	5 TO 10

IT SHALL BE APPLIED AT A RATE OF 218 POUNDS PER ACRE (5 POUNDS PER 1,000 SQUARE FEET.) SEED MIXTURE SHALL NOT CONTAIN MORE THAN 5% INERT MATTER AND CONTAIN NO OBJECTIONAL WEEDS.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

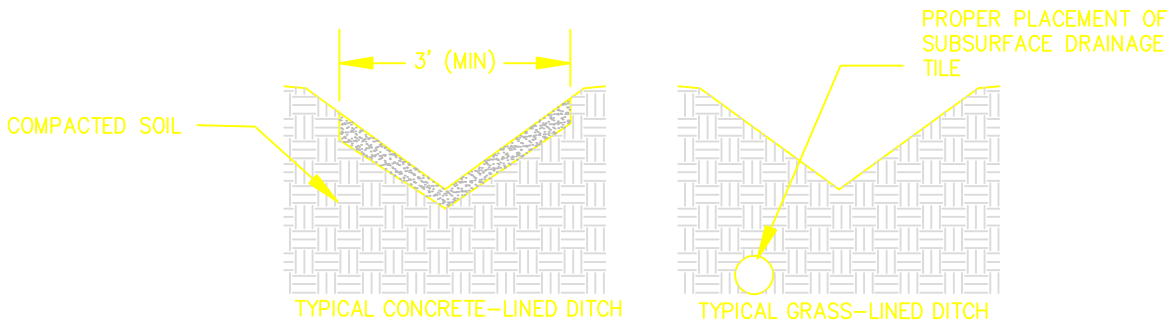
STORM WATER DETAILS

GRASS SWALE

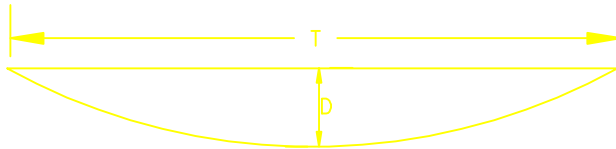
SCALE:  
NONE

DATE: JAN. 2005

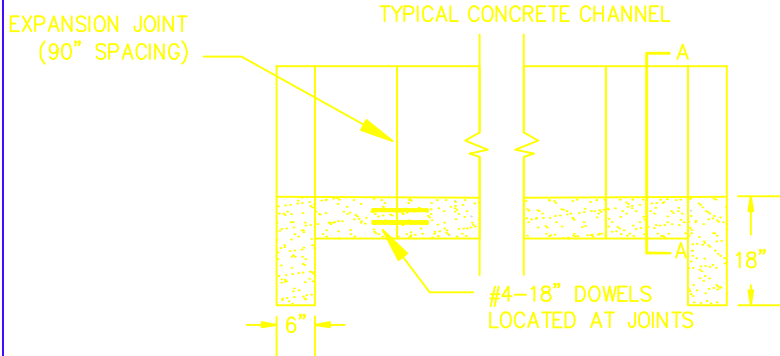
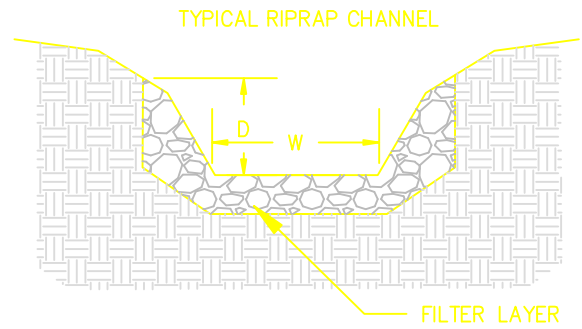
DWG. NO. M-3



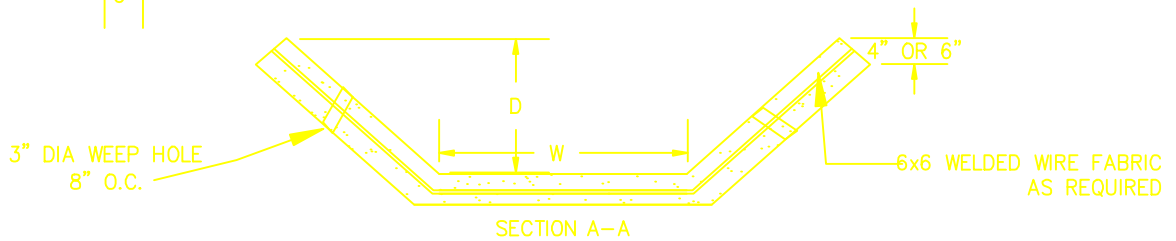
TYPICAL VEE CROSS-SECTIONS



PARABOLIC WATERWAY CROSS-SECTION



TRAPEZOIDAL WATERWAY CROSS-SECTIONS



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

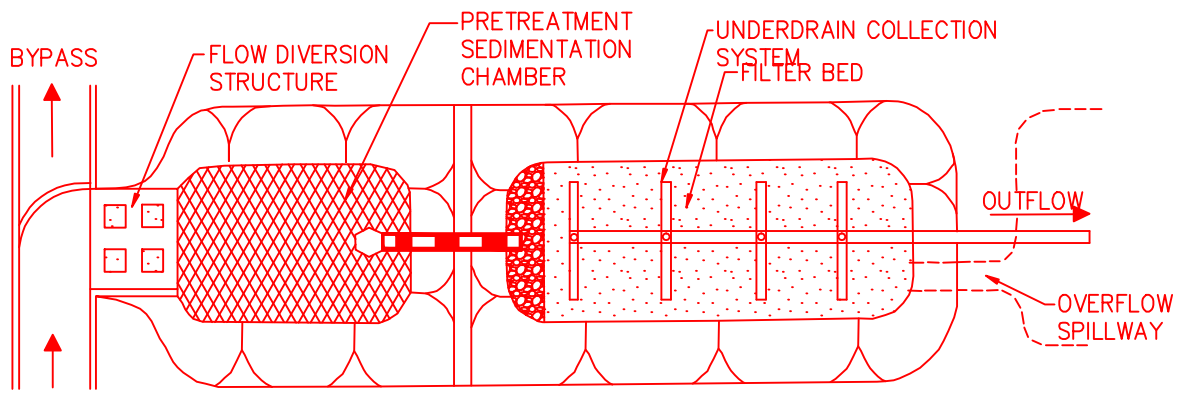
OPEN CHANNEL DETAIL

TYPICAL OPEN CHANNEL CROSS-SECTION

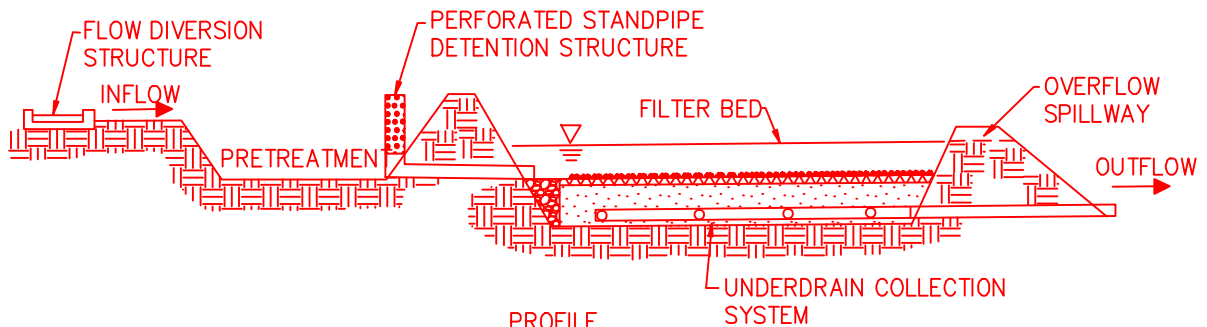
SCALE:  
NONE

DATE: JAN. 2005

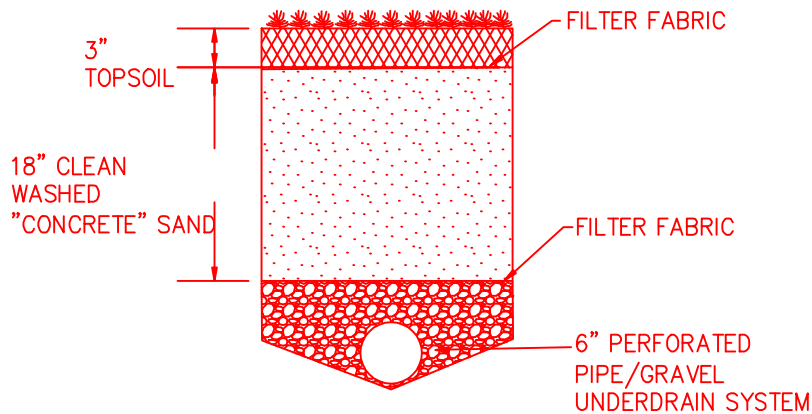
DWG. NO. 0-1



PLAN



PROFILE



CROSS SECTION

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

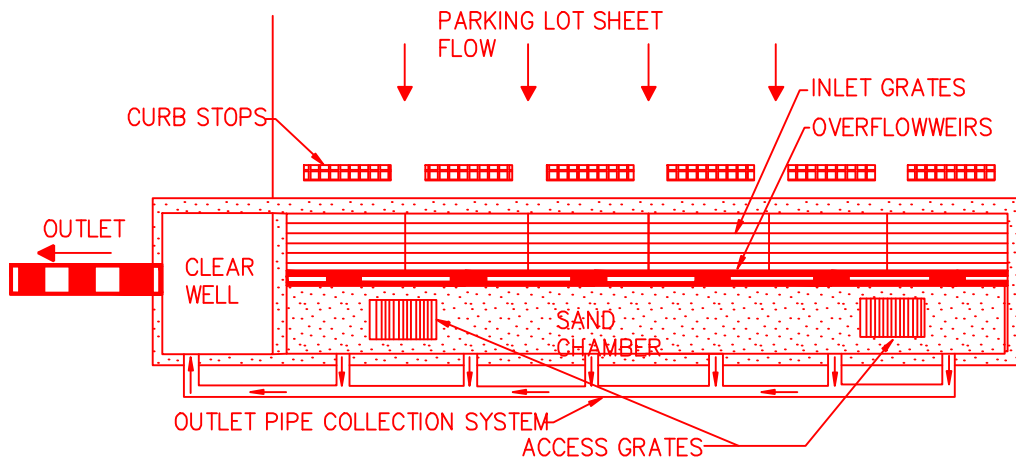
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

SURFACE SAND FILTER

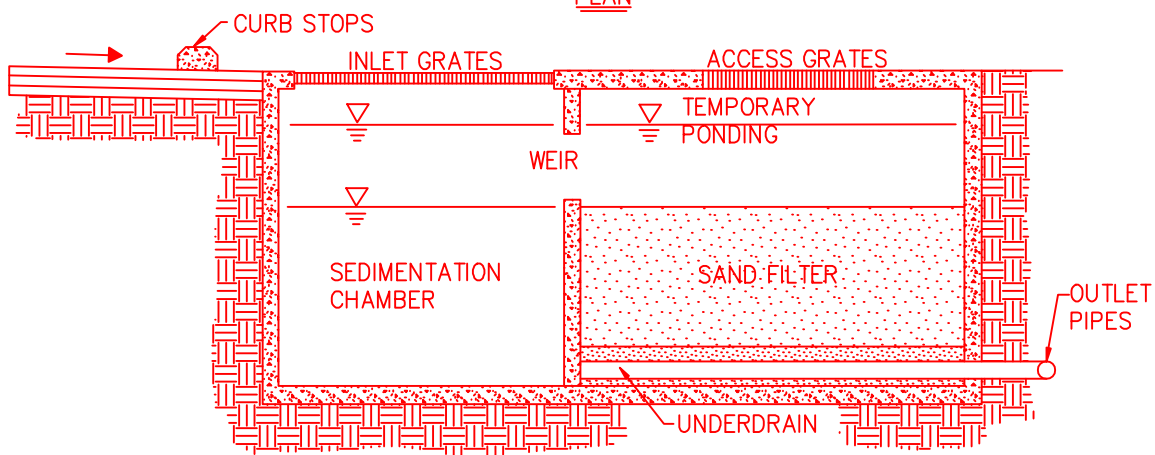
SCALE:  
NONE

DATE: JAN. 2005

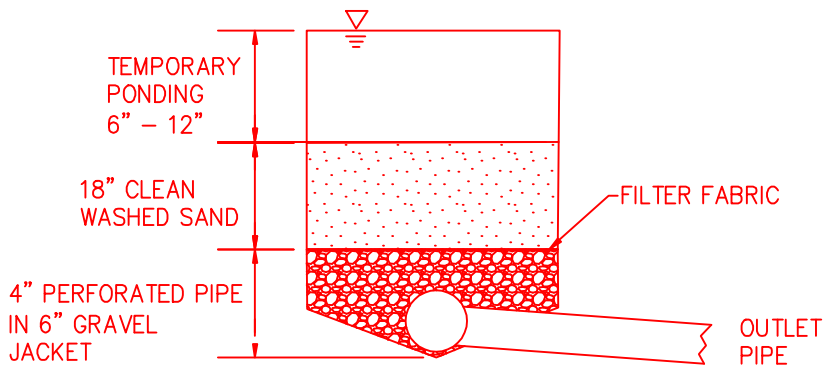
DWG. NO. PC-10



PLAN



PROFILE



CROSS SECTION

# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

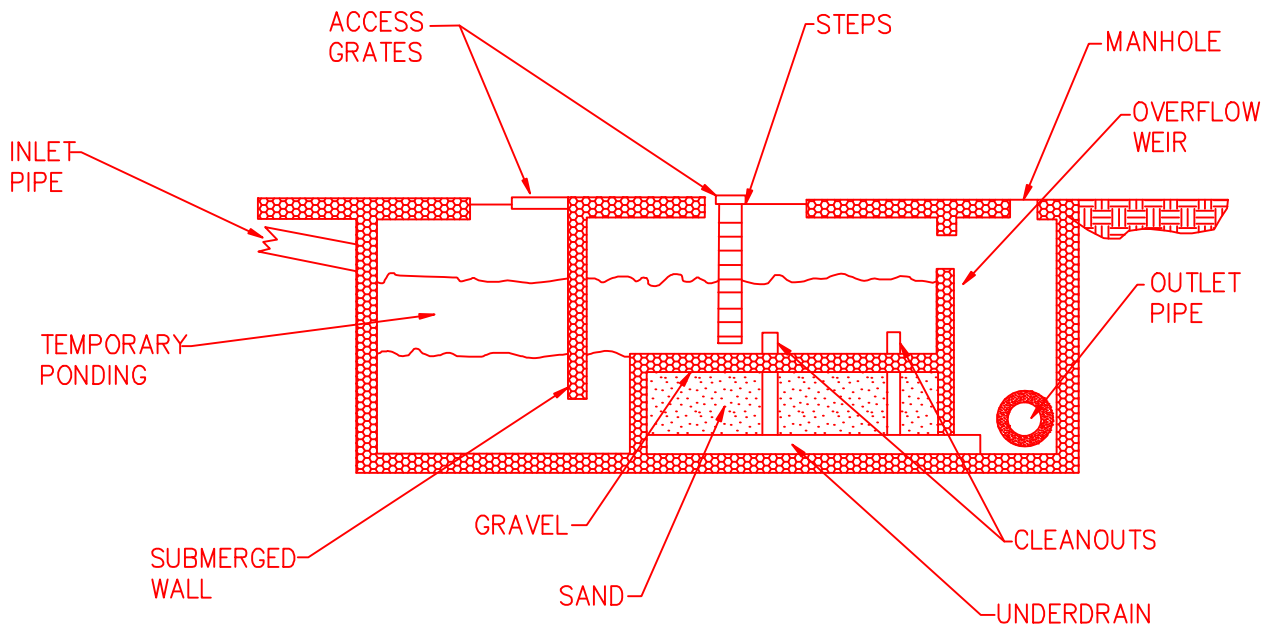
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

PERIMETER SAND FILTER

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-11



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

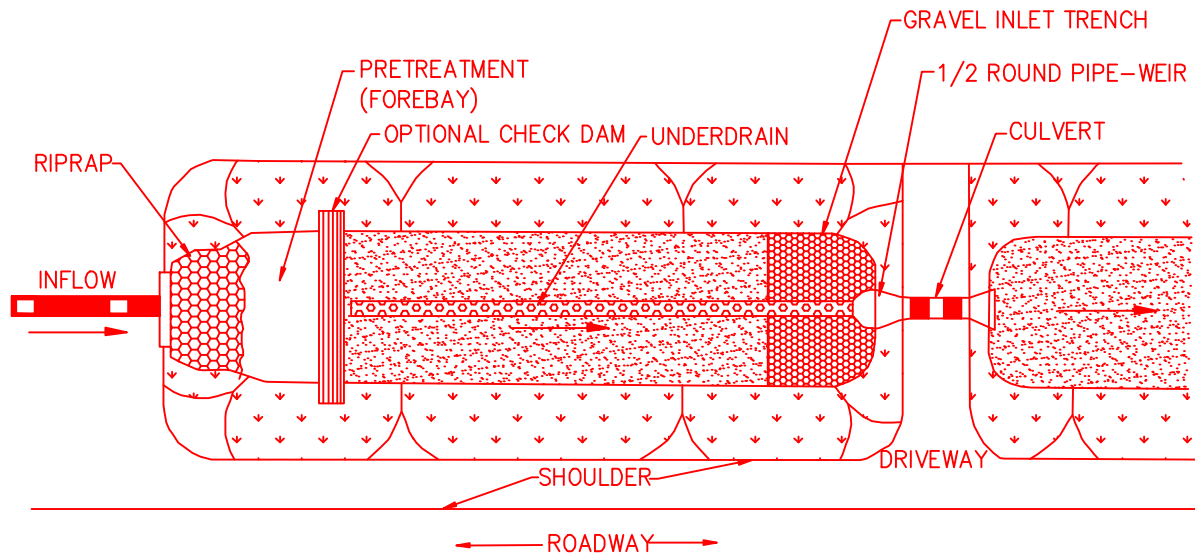
UNDERGROUND SAND FILTER

SCALE:  
NONE

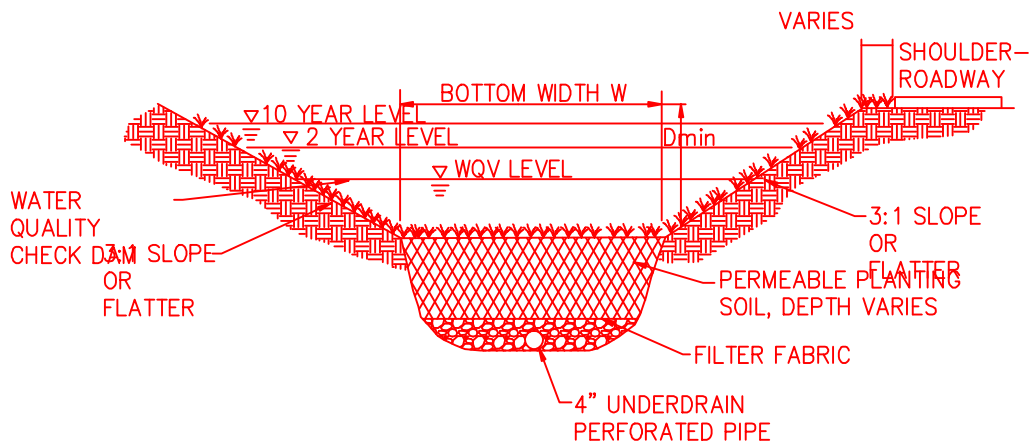
DATE: JAN. 2005

DWG. NO. PC-12





PLAN



CROSS SECTION

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

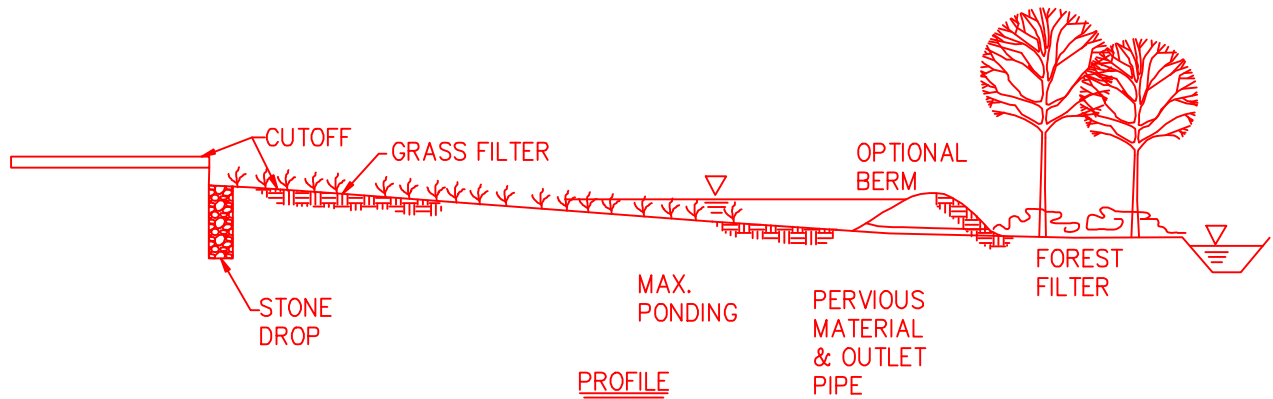
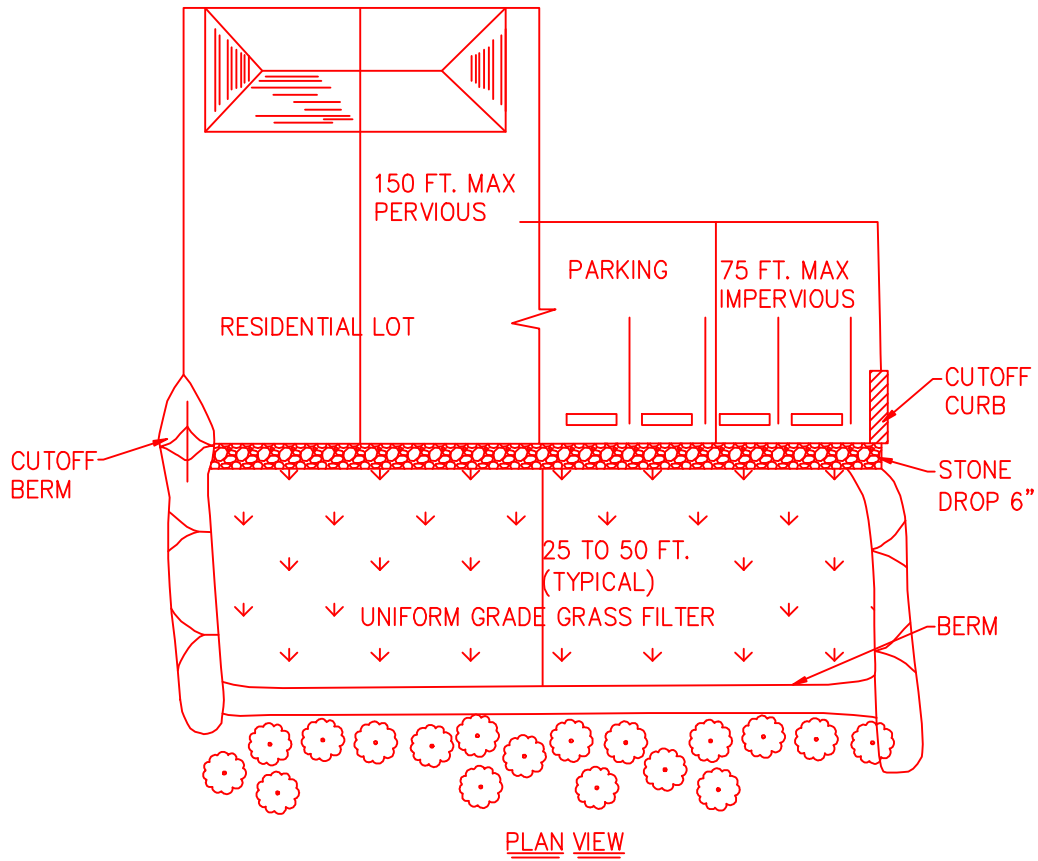
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

DRY WATER QUALITY SWALE

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-13



# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

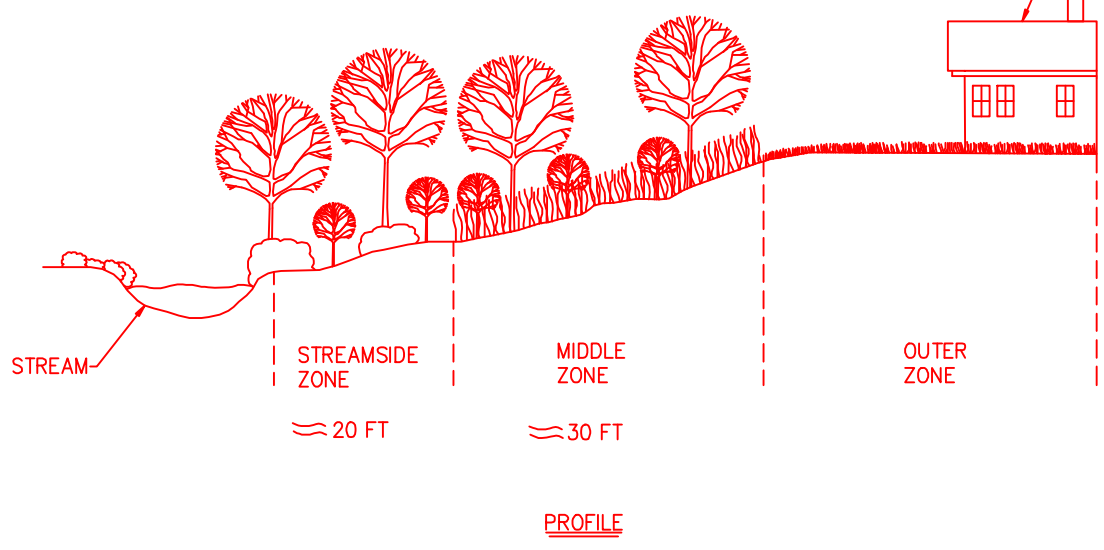
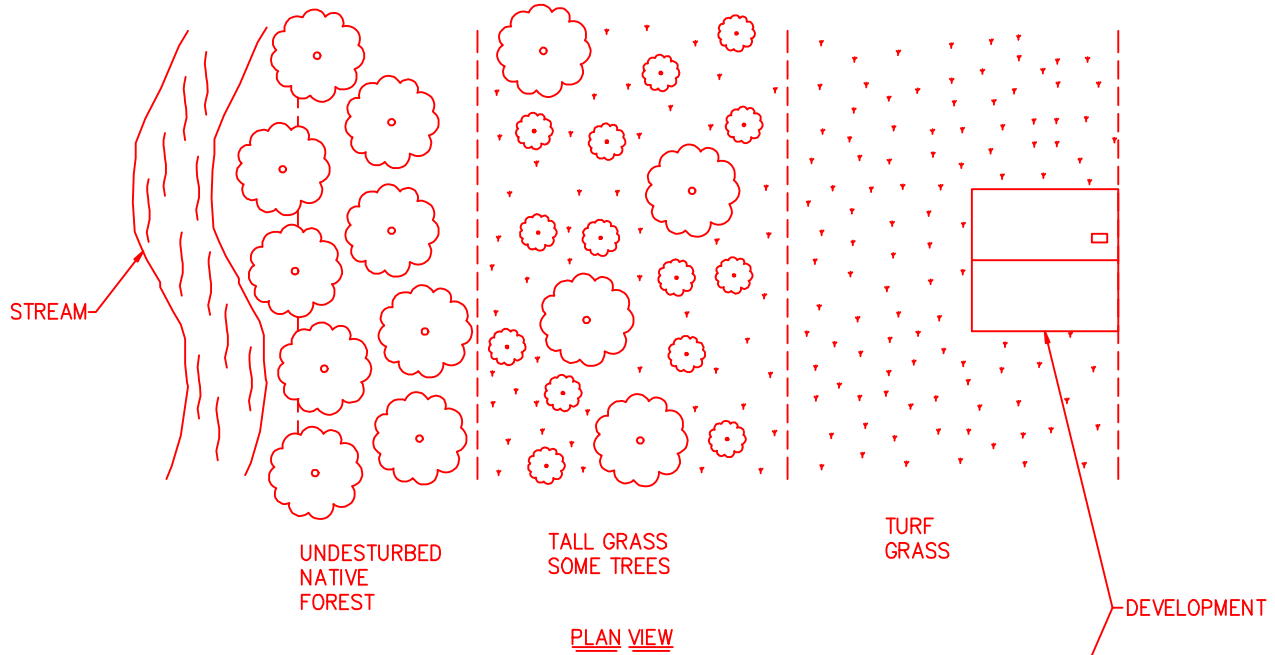
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

FILTER STRIP

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-14



# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

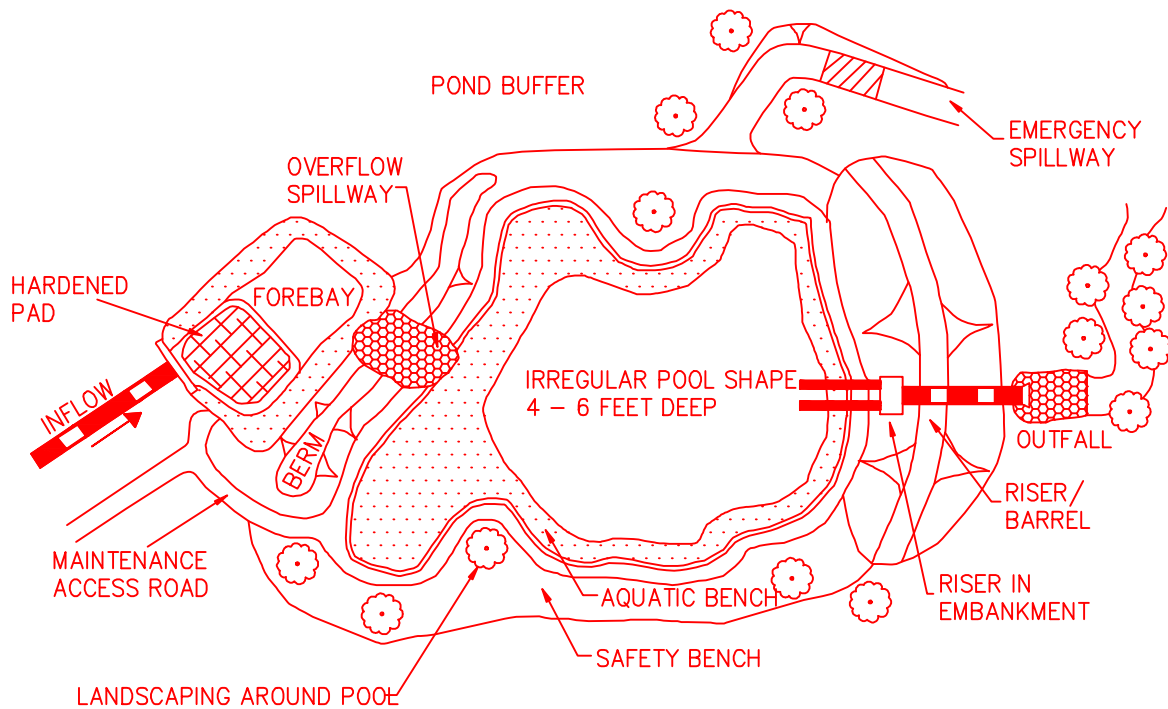
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

RIPARIAN BUFFER ZONE

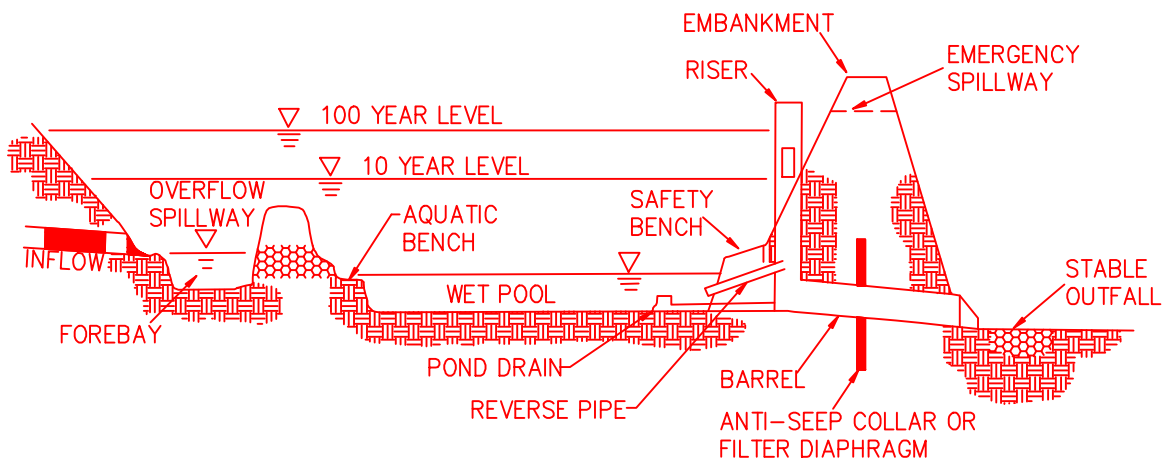
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-15



PLAN VIEW



PROFILE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

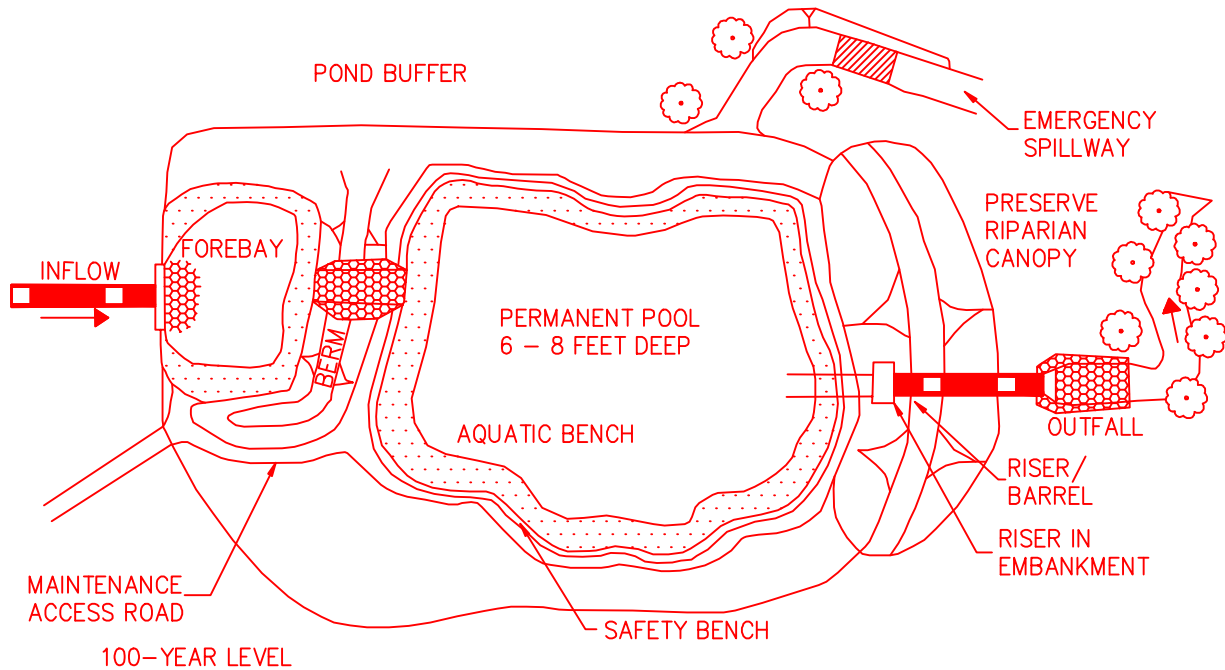
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

WET POND

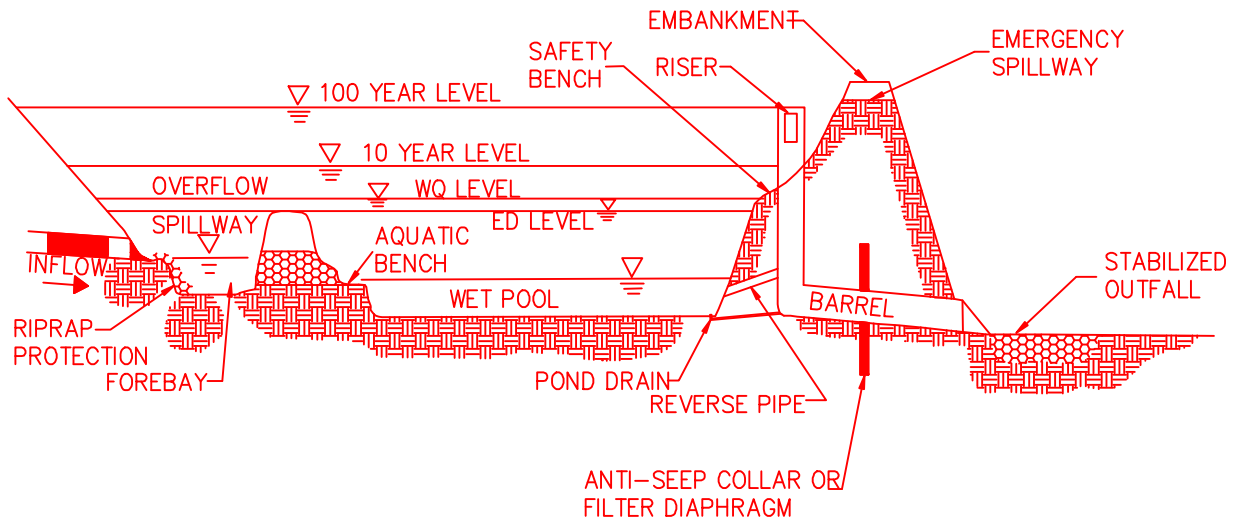
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-1



PLAN VIEW



PROFILE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

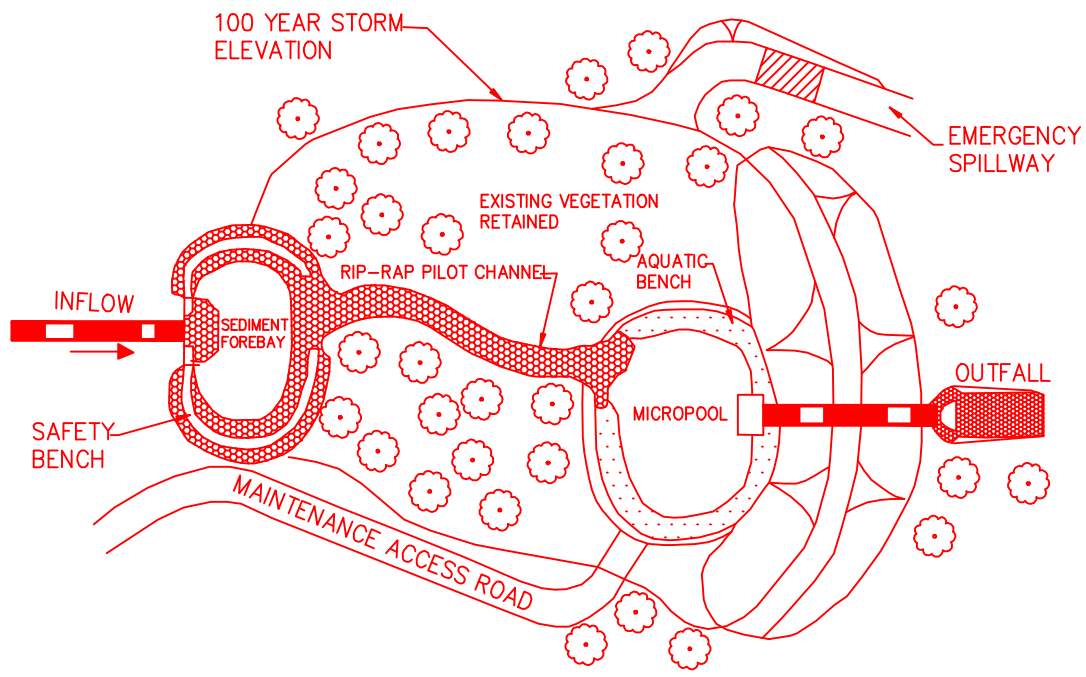
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

WET EXTENDED DETENTION POND

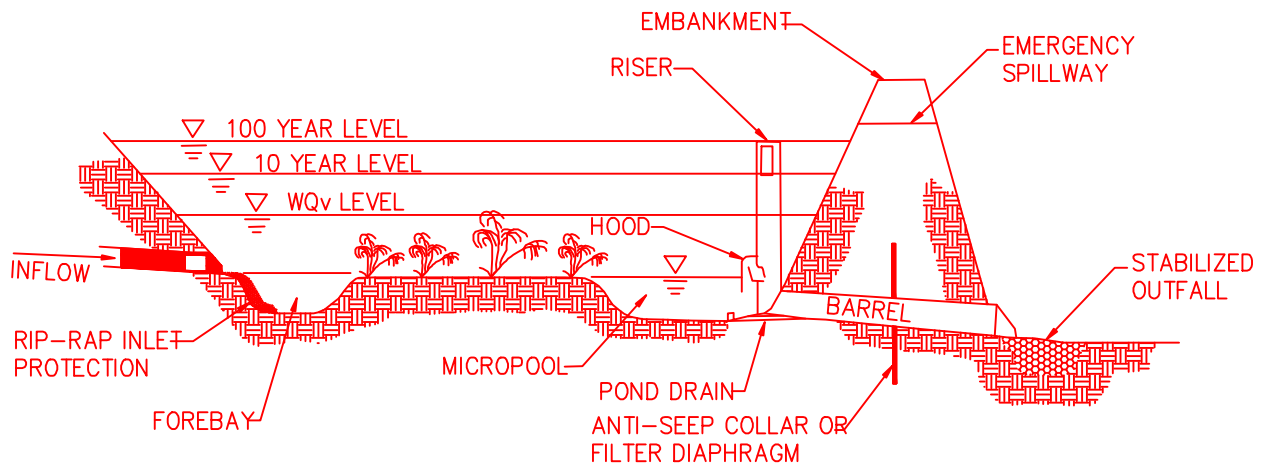
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-2



PLAN VIEW



PROFILE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

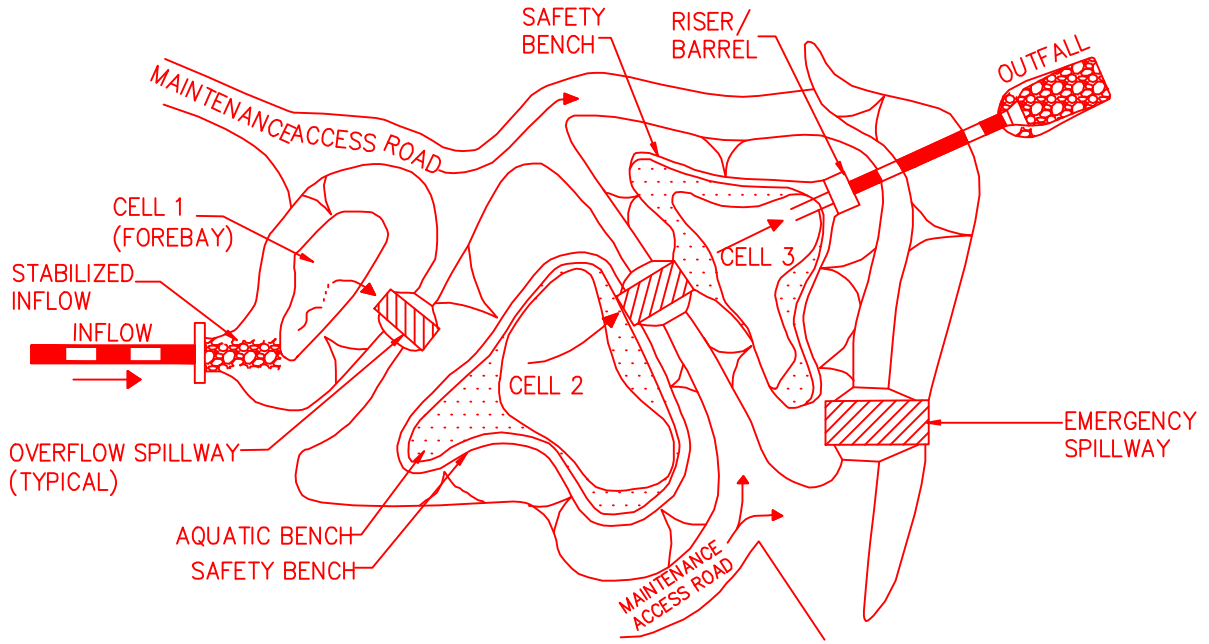
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

MICROPOOL EXTENDED DETENTION POND

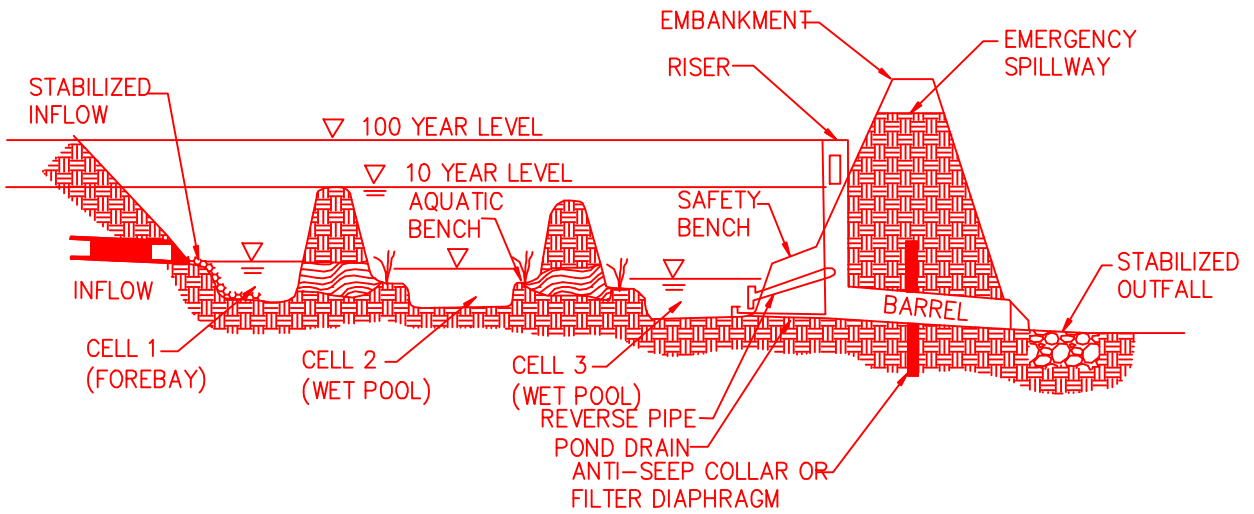
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-3



PLAN VIEW



PROFILE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

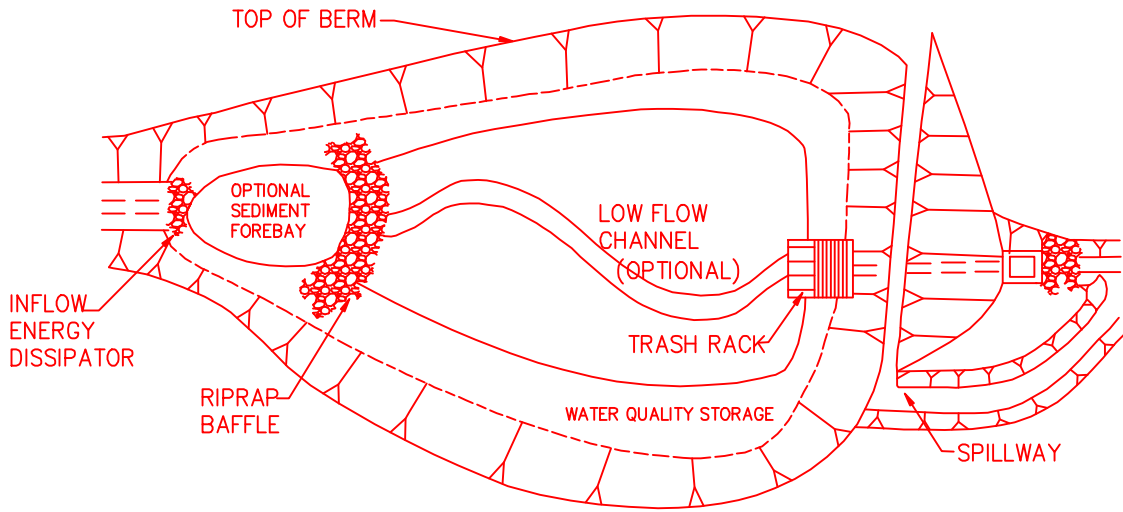
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

MULTIPLE POND SYSTEM

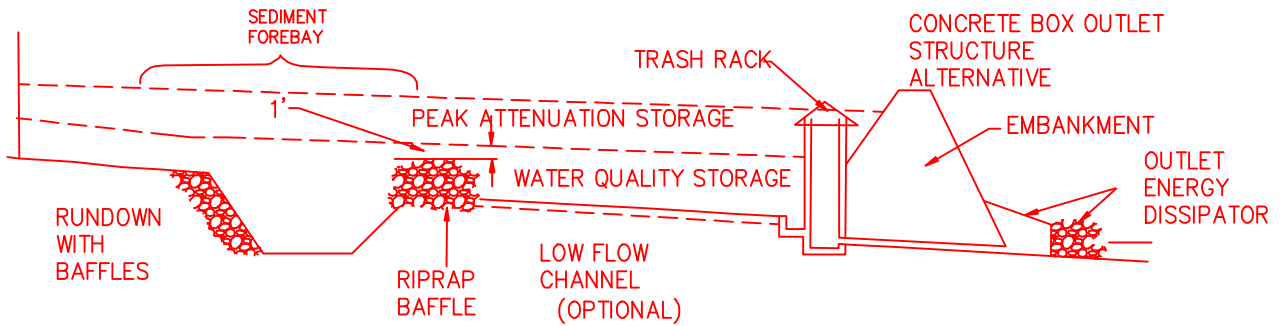
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-4



PLAN VIEW



PROFILE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

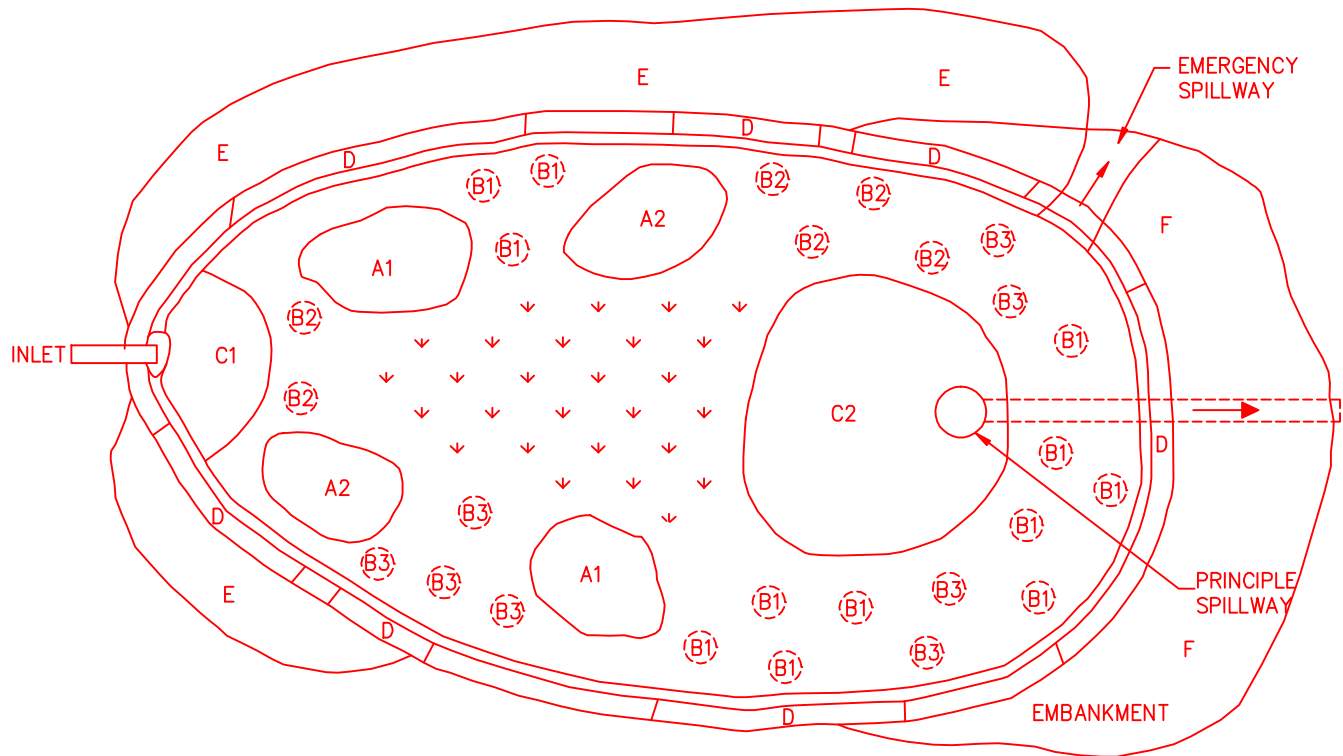
EXTENDED DETENTION BASIN COMPONENTS

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-5





PLAN VIEW

LEGEND

A1: RAPID COLONIZER WETLAND SPECIES	
A2: RAPID COLONIZER WETLAND SPECIES	CONSISTS OF 65% OF THE POOL AREA.
B1: SLOW COLONIZER WETLAND SPECIES	0 TO 1 FT. DEEP. WETLAND SPECIES
B2: SLOW COLONIZER WETLAND SPECIES	TO BE SELECTED BY WETLAND SPECIALIST.
B3: SLOW COLONIZER WETLAND SPECIES	
C1: FOREBAY—NO VEGETATION 3 TO 6 FT. DEEP—20% OF THE POOL AREA.	
C2: OPEN WATER AREAS—NO VEGETATION 2 TO 3 FT. DEEP—15% OF THE POOL AREA	
D: SHORELINE FRINGE OF SWITCHGRASS: 50% OF SAFETY BENCH.	
E: WILDLIFE TREES AND SHRUBS IN BUFFER.	
F: MAINTAIN GRASS COVER ON EMBANKMENT (NO TREES).	

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

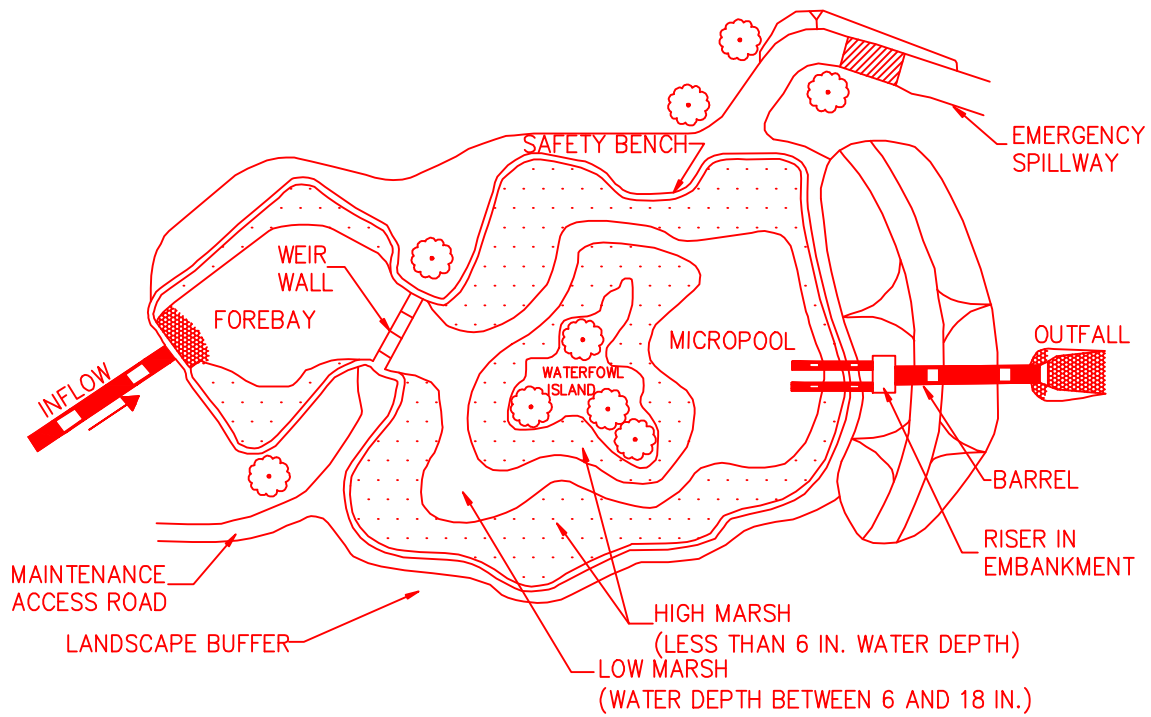
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

STORMWATER WETLANDS

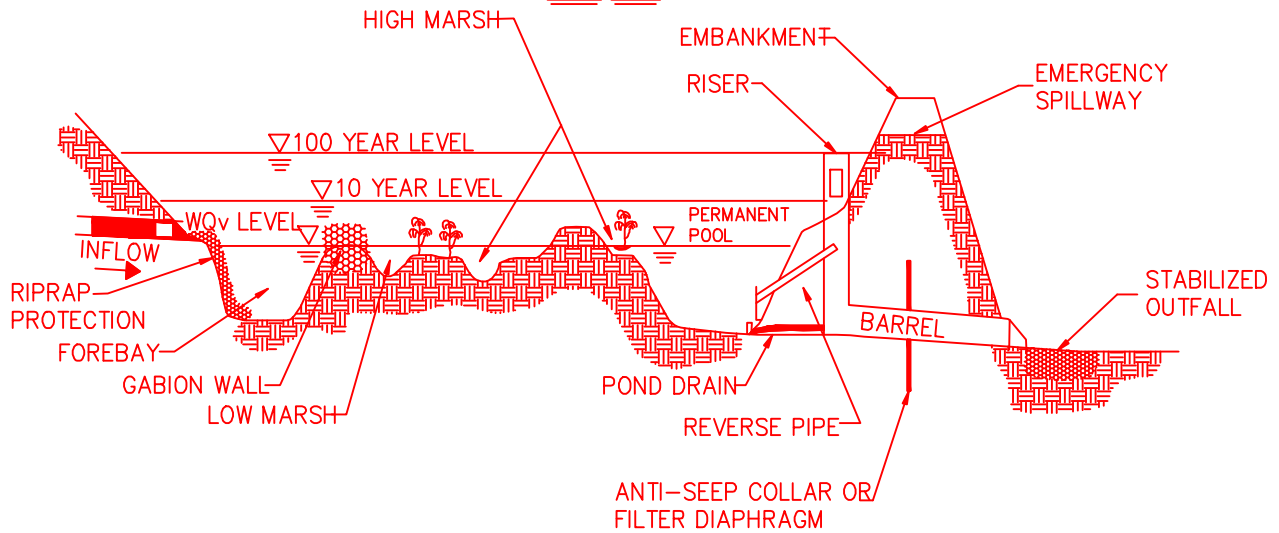
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-6



PLAN VIEW



PROFILE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

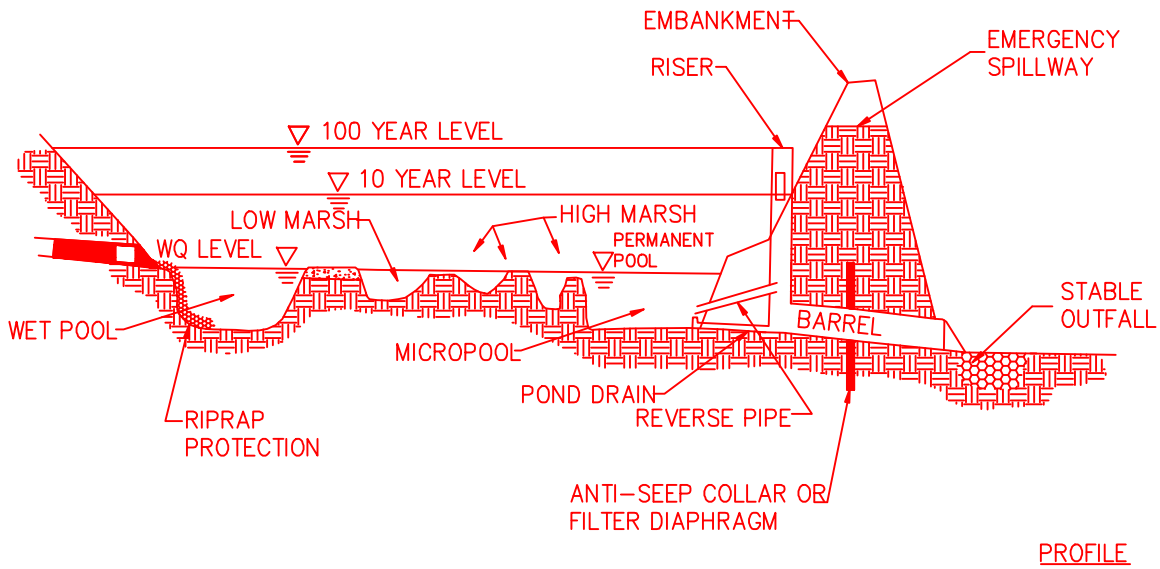
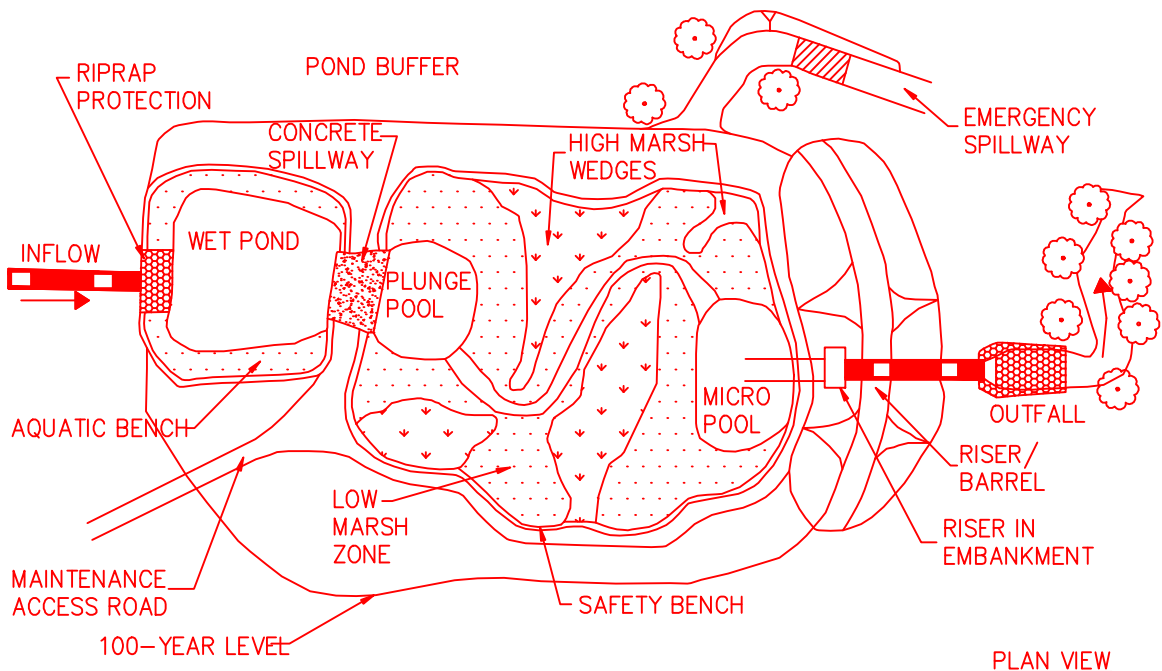
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

SHALLOW WETLAND

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-7



## RICHMOND STORMWATER UTILITY DEVELOPMENT MANUAL

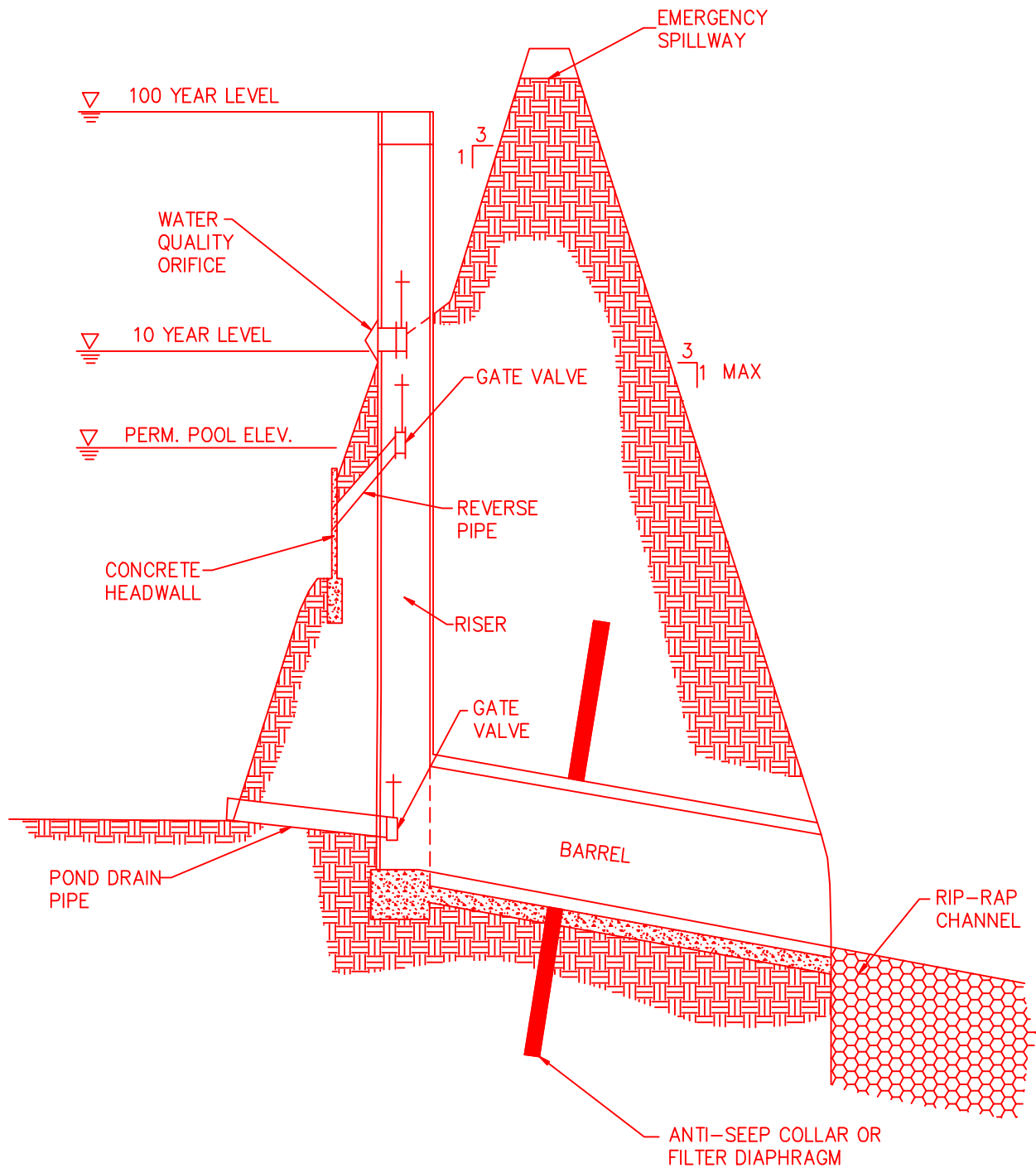
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

SCHEMATIC FOR A POND/WETLAND SYSTEM

SCALE:  
NONE

DATE: DEC. 2004

DWG. NO. PC-8



## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

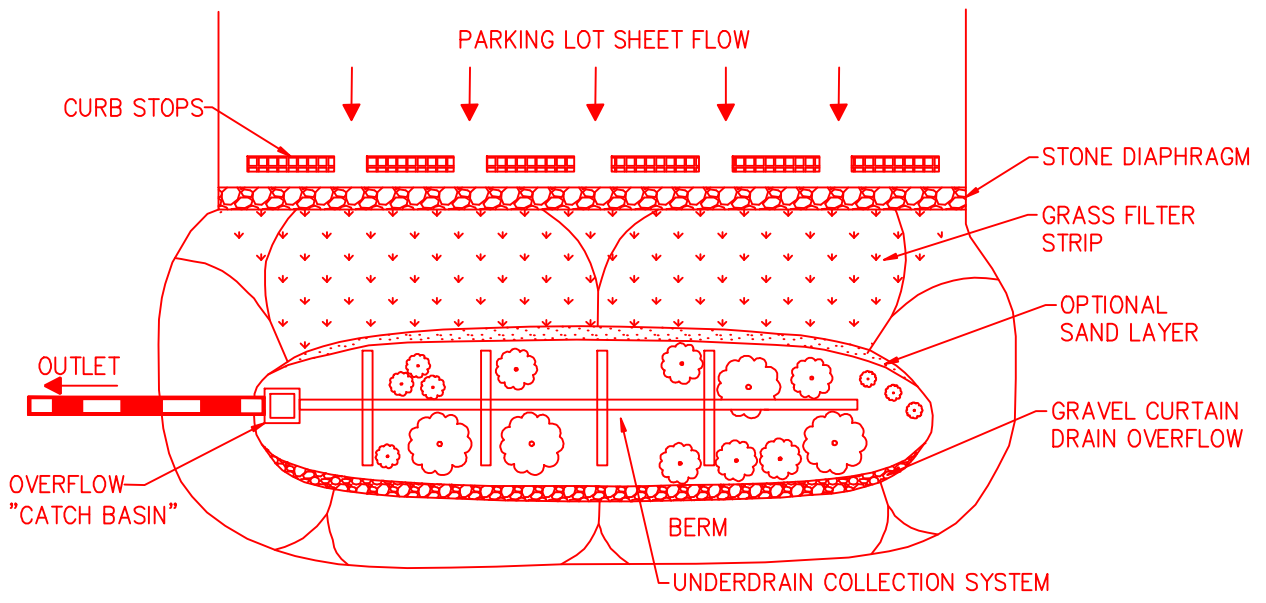
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

SCHEMATIC OF AN OUTLET SYSTEM

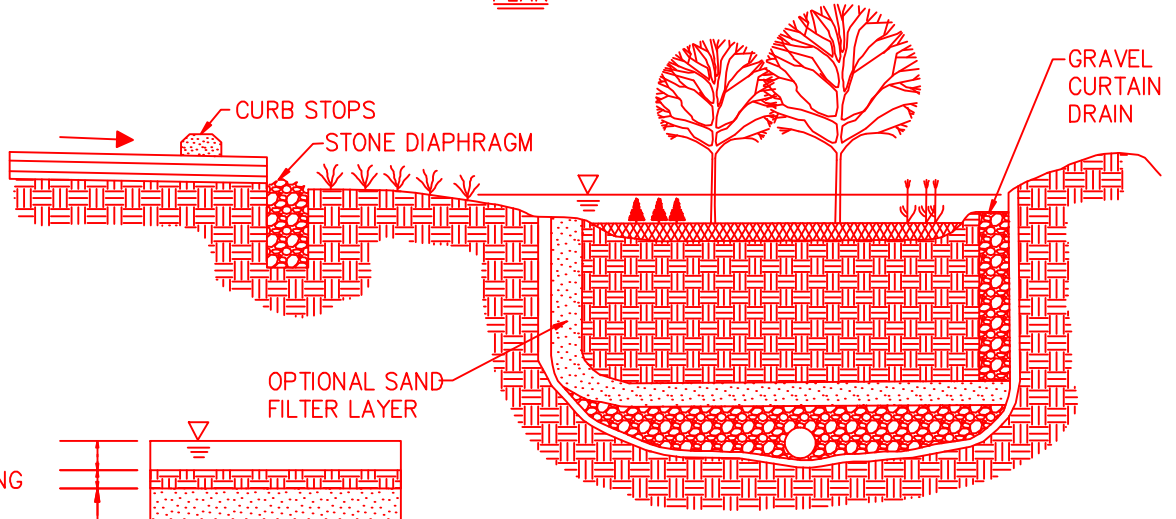
SCALE:  
NONE

DATE: JAN. 2005

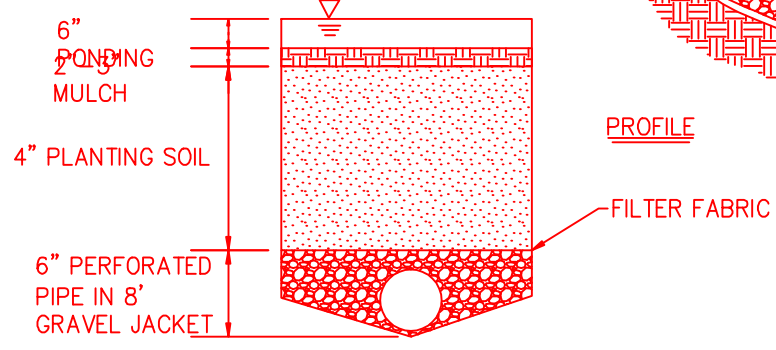
DWG. NO. PC-8



PLAN



PROFILE



CROSS SECTION

# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

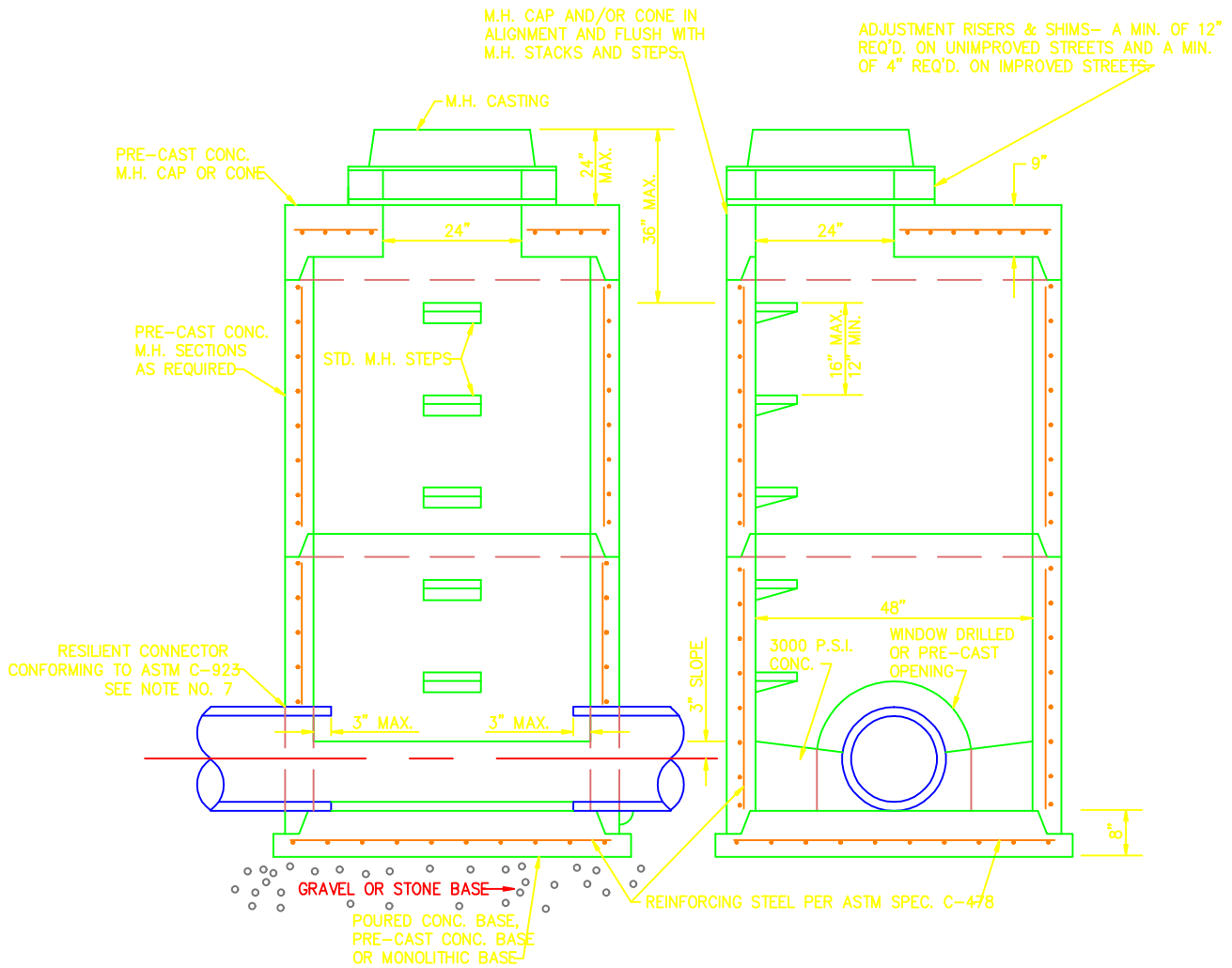
POST CONSTRUCTION STORMWATER  
RUN OFF CONTROL DETAILS

BIORETENTION AREA

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. PC-9



**GENERAL CONSTRUCTION REQUIREMENTS**

- 1) MANHOLE MADE IN ACCORDANCE WITH ASTM C-478.
- 2) ALL PIPES SHALL HAVE A SMOOTH FINISH.
- 3) MANHOLE JOINTS SHIP-LAP WITH GASKET IN ACCORDANCE WITH ASTM C-443.
- 4) THE BASE SHALL BE PLACED ON 4" MINIMUM COMPACTED GRAVEL OR STONE.
- 5) BASE DIAMETER 48"
- 6) PIPE DIAMETER: 6" TO 33" STRAIGHT THRU TO 45; 6" TO 24" 135° TO 90°
- 7) CONTRACTOR MAY SELECT A BOOT TYPE (AS MANUFACTURED BY PRESS SEAL GASKET OR APPROVED EQUAL) OR A COMPRESSION TYPE CONNECTOR (AS MANUFACTURED BY A-LOK PRODUCTS INC. OR EQUAL)

# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

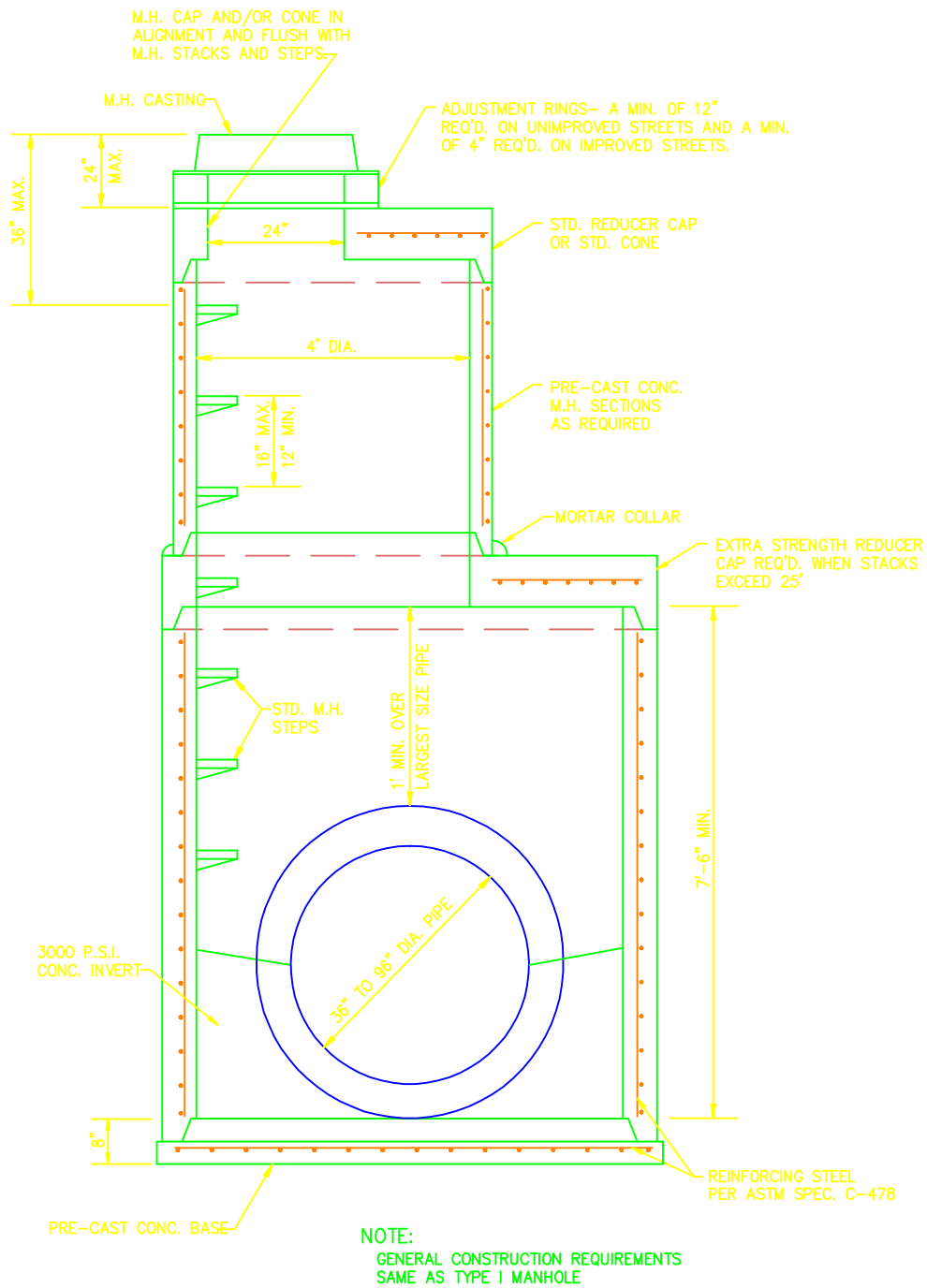
STRUCTURE DETAILS

TYPE I MANHOLE

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 1



# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

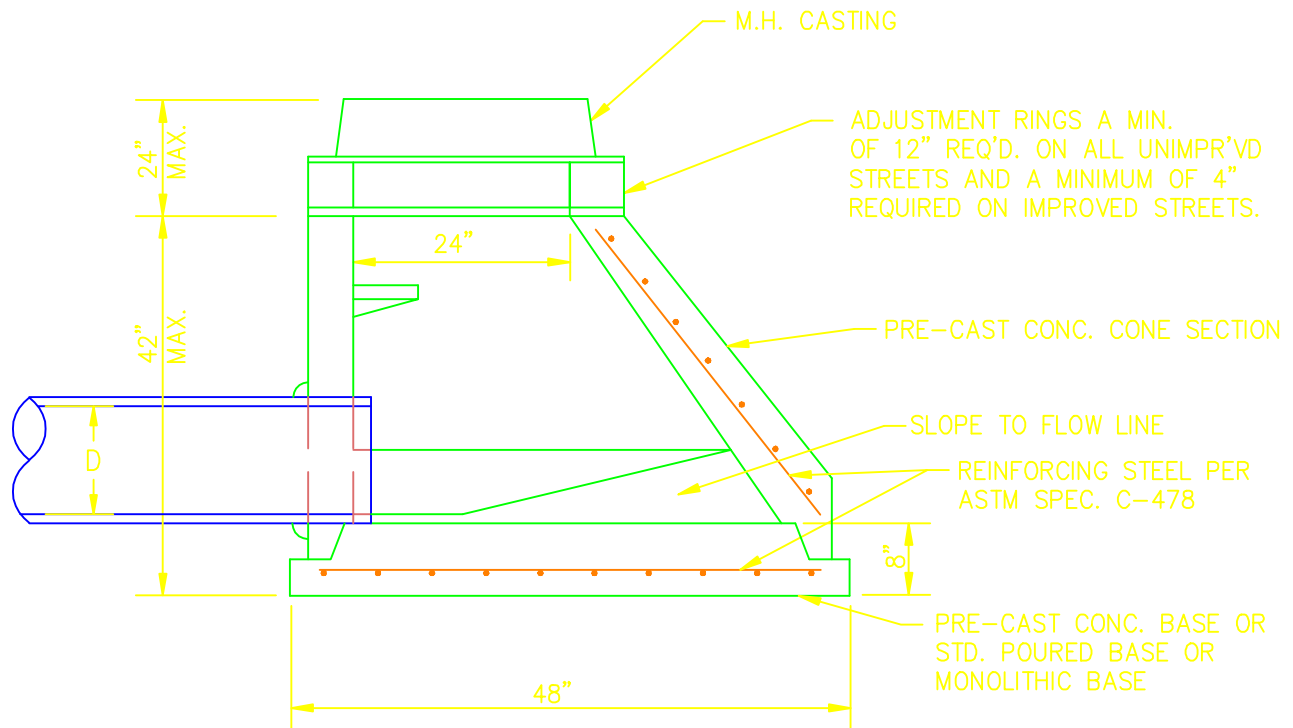
STRUCTURE DETAILS

TYPE II MANHOLE

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 2



NOTE:  
 GENERAL CONSTRUCTION REQUIREMENTS  
 SAME AS TYPE I MANHOLE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

STRUCTURE DETAILS

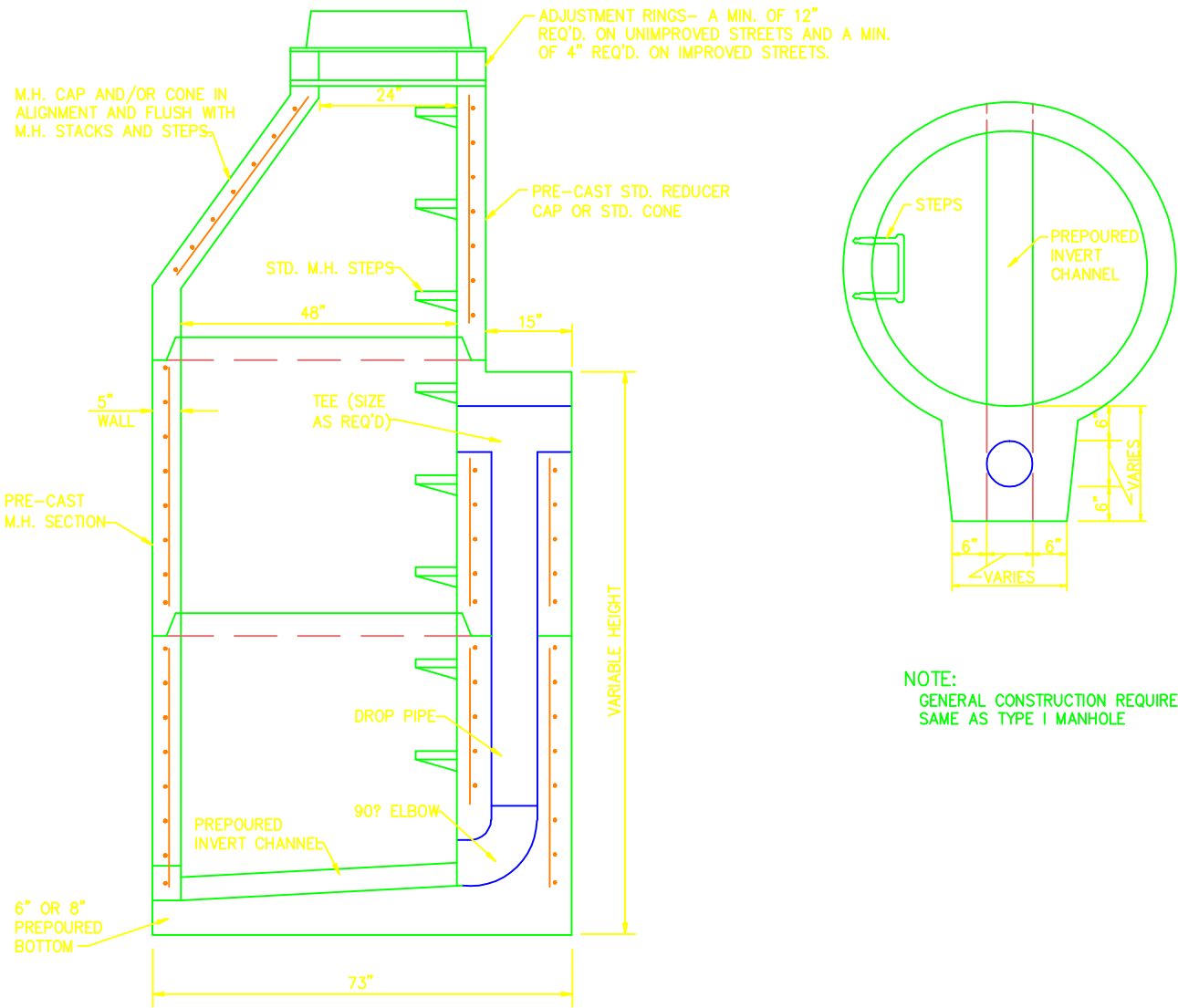
TYPE IV MANHOLE

SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. S - 3

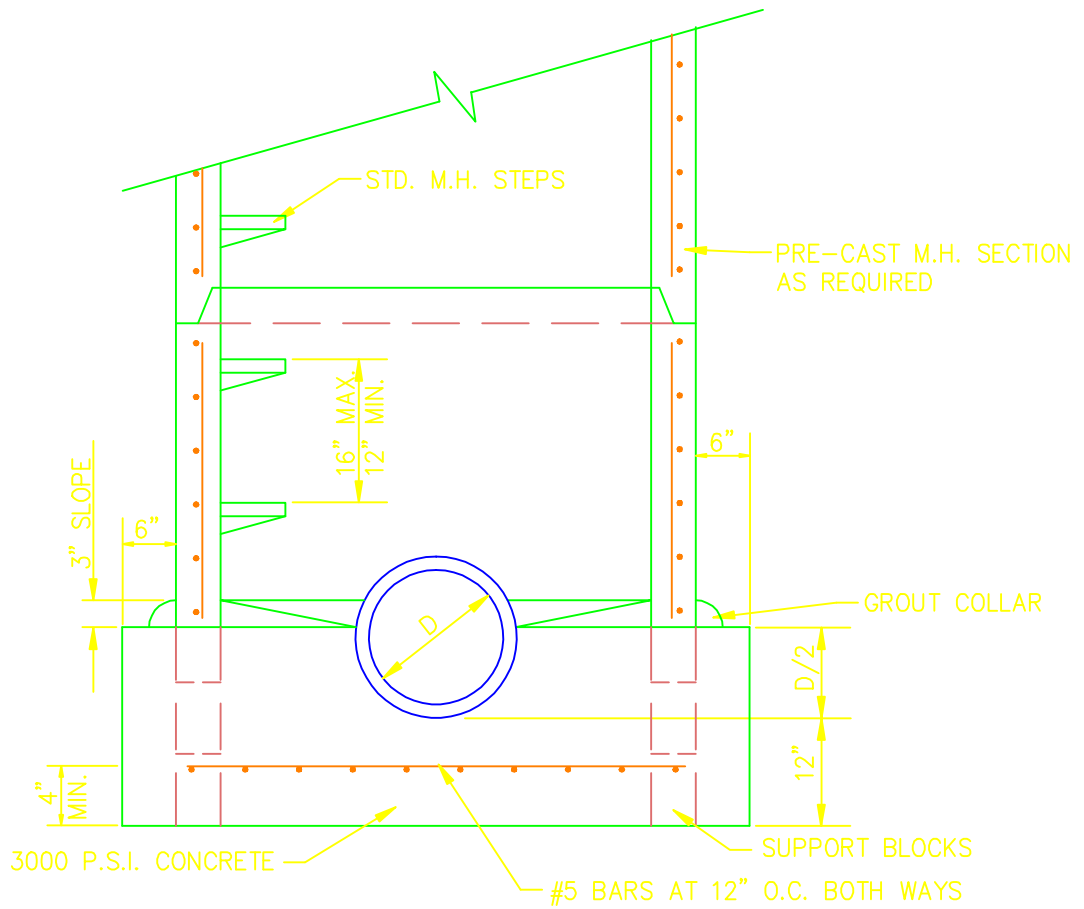




NOTE:  
GENERAL CONSTRUCTION REQUIREMENTS  
SAME AS TYPE I MANHOLE

# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

STRUCTURE DETAILS		
TYPE VI MANHOLE (DROP MANHOLE)		
SCALE: NONE	DATE: JAN. 2005	DWG. NO. S - 4



**NOTE:**

GENERAL CONSTRUCTION REQUIREMENTS SAME AS TYPE 1 MANHOLE.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

STRUCTURE DETAILS

INVERT FOR CAST IN PLACE PIPE & BASE

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 5

Xref \\Ftwnas\Standards\CADDetails\BONAR\_CORP\SEWER\INV\_S

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

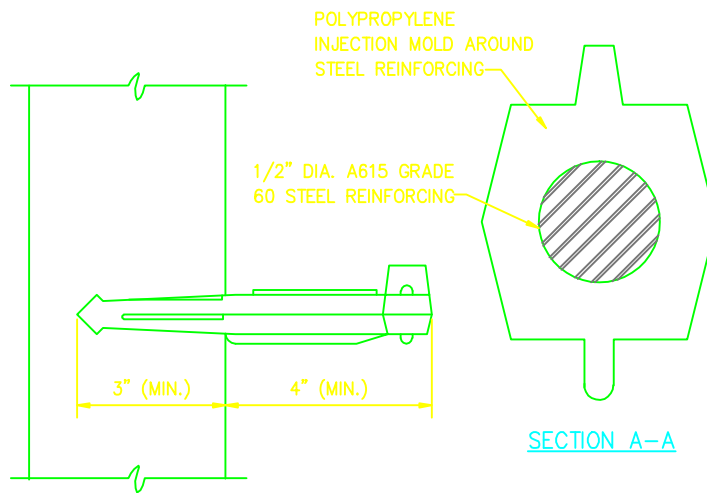
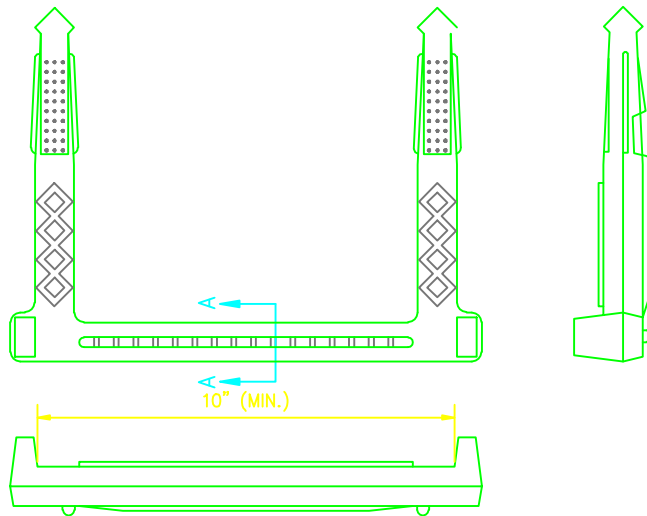
STRUCTURE DETAILS

INVERT SHAPES

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 6



NOTES:

- 1) STEPS SHALL BE PLACED INTO WET CONCRETE WALL DURING MANUFACTURE OR MORTARED INTO HOLES AFTER CONCRETE HAS SET.
- 2) DESIGN OF STEP SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST EDITION.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

CASTING DETAILS

REINFORCED PLASTIC MANHOLE STEP

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 7

Xref \\Ftwnas\Standards\CADDetails\BONAR\_CORP\SE

# HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

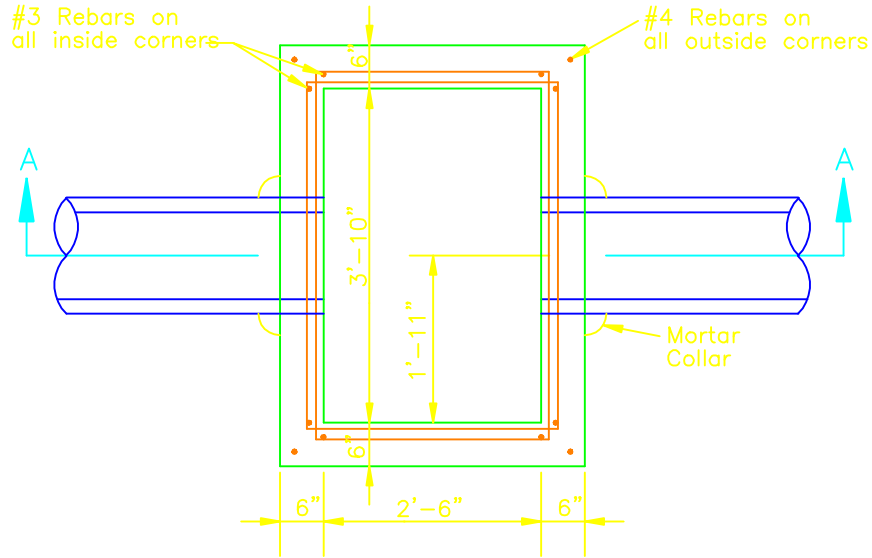
STRUCTURE DETAILS

TYPE I INLET

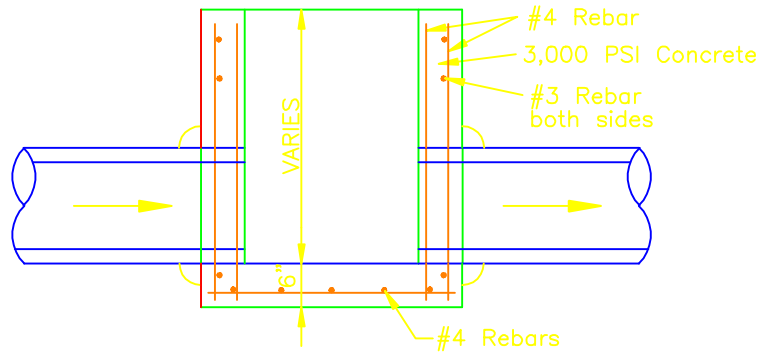
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 8



PLAN VIEW



SECTION A-A

NOTES:

- 1) All pipe shall have smooth finish.
- 2) Reinforcing Steel Per ASTM C478.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

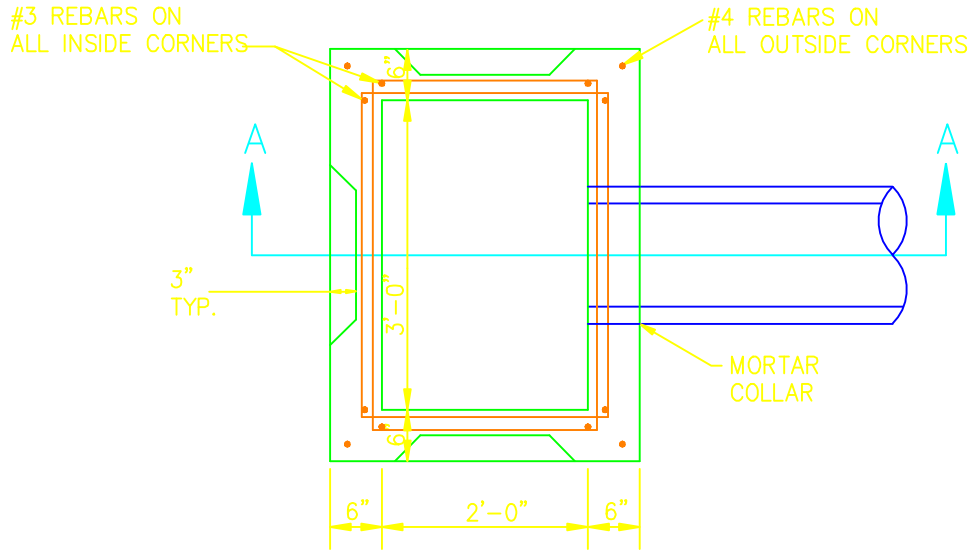
STRUCTURE DETAILS

TYPE II INLET

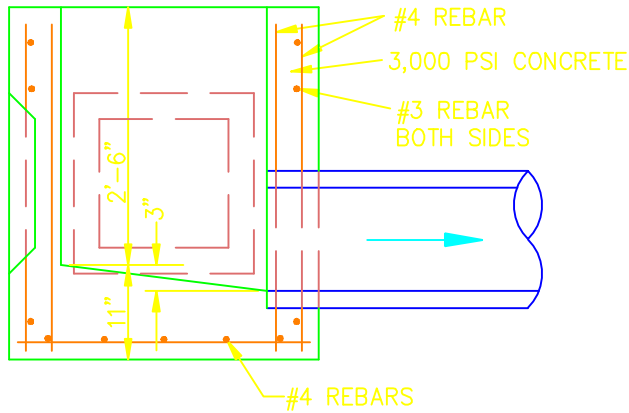
SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 9



PLAN VIEW



SECTION A-A

NOTES:

- 1) ALL PIPE SHALL HAVE SMOOTH FINISH.
- 2) REINFORCING STEEL PER ASTM C478.

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

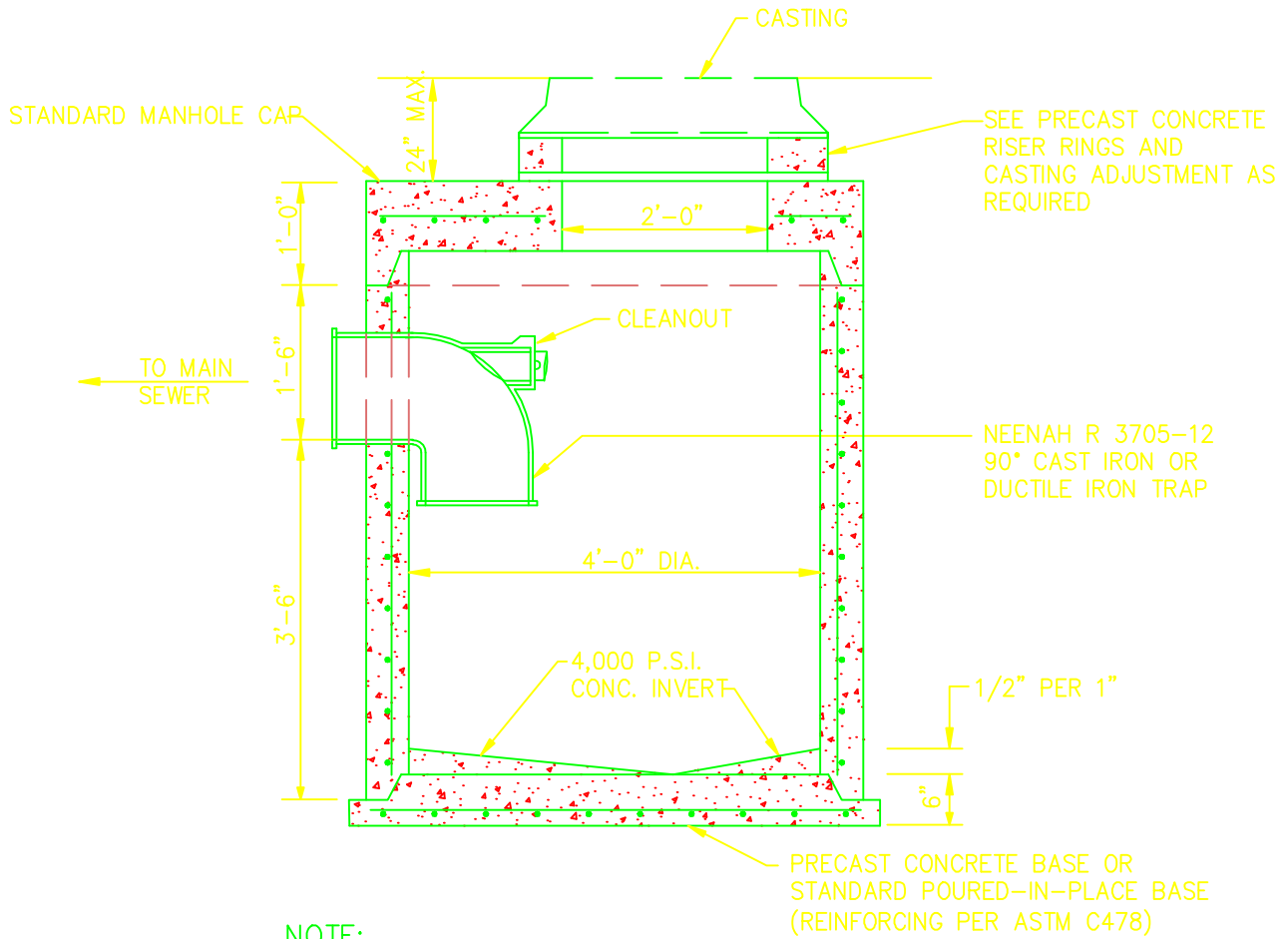
STRUCTURE DETAILS

TYPE III INLET

SCALE:  
NONE

DATE: JAN. 2005

DWG. NO. S - 10



**NOTE:**  
 GENERAL CONSTRUCTION REQUIREMENTS SAME AS TYPE I MANHOLE  
 STRUCTURE BASE ALTERNATIVES SAME AS TYPE I MANHOLE

## HUNTINGTON STORMWATER UTILITY DEVELOPMENT MANUAL

STRUCTURE DETAILS

STANDARD CATCH BASIN

SCALE:  
 NONE

DATE: JAN. 2005

DWG. NO. S - 11