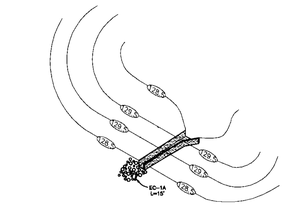
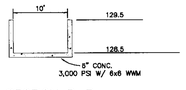
STORMWATER MANAGEMENT BASIN

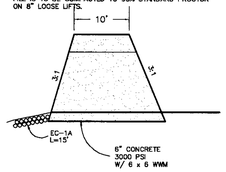


WEIR DESIGN
PERSPECTIVE VIEW
N.T.S.

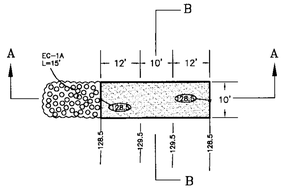


SECTION B-B
VERTICAL WEIR DETAIL

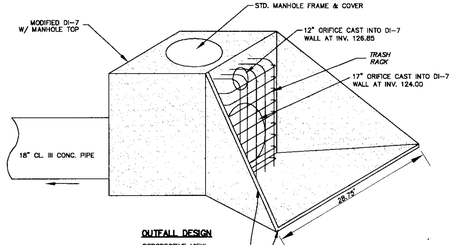
NOTE:
MATERIAL FOR EMBANKMENT IS TO BE HOMOGENEOUS FILL CONSTRUCTED OF UNIFIED SOIL CLASSIFICATION TYPE CL. FILL IS TO BE COMPACTED TO 95% STANDARD PROCTOR ON 8" LOOSE LIFTS.



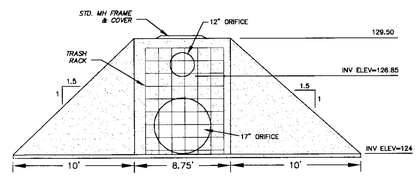
WEIR DESIGN
FRONT VIEW
SECTION A-A
N.T.S.



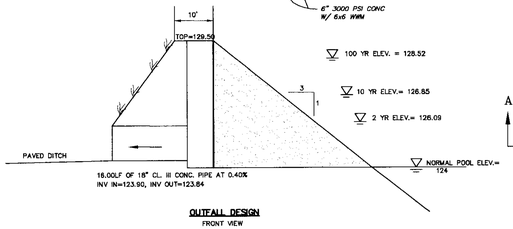
WEIR DESIGN
PLAN VIEW
N.T.S.



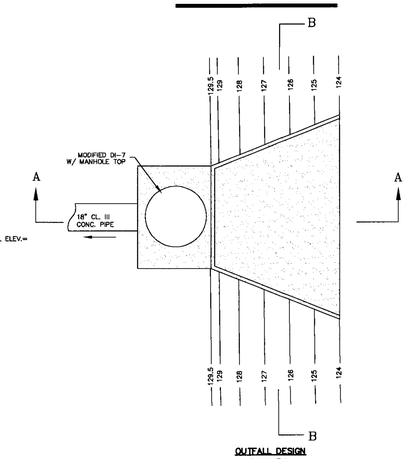
OUTFALL DESIGN
PERSPECTIVE VIEW
N.T.S.



SECTION B-B
OUTFALL DETAIL



OUTFALL DESIGN
FRONT VIEW
SECTION A-A
N.T.S.

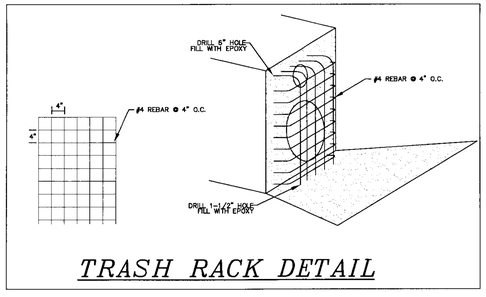


OUTFALL DESIGN
PLAN VIEW
N.T.S.

SEDIMENT BASIN CONVERSION NARRATIVE

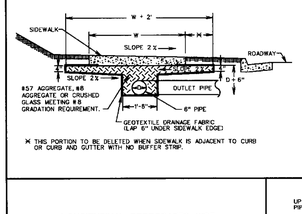
AFTER STABILIZATION OF UPSTREM AREAS, THE SEDIMENT BASIN IS TO BE CONVERTED TO THE PERMPERMANENT BMP FOLLOWING THE BELOW ITEMS:

1. EXCAVATE BOTTOM OF BASIN TO ELEVATION 121 AS SHOWN ON SHEET C2.0
2. EXPAND BASIN LIMITS TO INCLUDE DITCHES ALONG THE REAR OF LOTS 27-34 TO GRADES AS DESIGNED ON SHEETS C2.0 AND C2.1
3. REMOVE CMP OUTLET RISER AND PIPE FROM BASIN
4. INSTALL PERMANENT BASIN OUTLET STRUCTURE PER DETAILS ON SHEET C2.3



TRASH RACK DETAIL

UD-3



* THIS PORTION TO BE DELETED WHEN SIDEWALK IS ADJACENT TO CURB OR CURB AND GUTTER WITH NO BUFFER STRIP.

NOTES:

1. WHEN THE LONGITUDINAL PIPE CONNECTS DIRECTLY INTO A DRAINAGE STRUCTURE (DROP INLET, MANHOLE, ECT.), NON-PERFORATED OUTLET PIPES ARE NOT REQUIRED.
2. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
3. ALL CONNECTIONS (E.BOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
4. OUTLET PIPE ARE TO BE INSTALLED ON 2.5 MIN. (3.5 DESIRABLE) GRADE.
5. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12OR OTHER DRAINAGE STRUCTURE.
6. SIDEWALK UNDERDRAIN IS TO BE USED WHEN THE SIDEWALK LONGITUDINAL GRADE IS 3.5% OR MORE AND WHEN THE UNDERLYING SOIL HAS 34% OR MORE PASSING THE NO.200 SIEVE, AND HAS A PI OF 15 OR LESS, AND THE AREA HAS A HISTORY OF SIDEWALK UNDERMINING.
7. SIDEWALK UNDERDRAINS SHOULD BE TIED INTO THE STORM SEWER SYSTEM AT LEAST EVERY 500 FEET OR EVERY 250 FEET IF BLOCK APART. UNDERDRAIN RUNS MUST NOT EXCEED 1,000 FEET IN LENGTH WITHOUT DISCHARGING INTO THE STORM DRAIN SYSTEM OR INTO AN OPEN DRAIN.
8. WITHIN THE LIMITS OF A COMMERCIAL ENTRANCE, NON-PERFORATED PIPE SHALL BE UTILIZED IN LIEU OF PERFORATED PIPE.

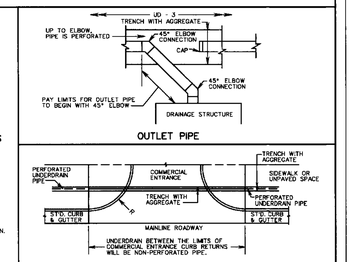
LONGITUDINAL PERFORATED PIPE

TYPE OF PIPE	CRUSHING STRENGTH
	* W, T 8" NOMINAL DIAMETER
SMOOTH WALL PVC	0.153
CORRUGATED PE	AASHTO M-252

NON-PERFORATED PIPE FOR USE UNDER COMMERCIAL ENTRANCES AND FOR OUTLETS

TYPE OF PIPE	CRUSHING STRENGTH
	* W, T 8" NOMINAL DIAMETER
SMOOTH WALL PVC	0.153
SMOOTH WALL PE	70 PSI **

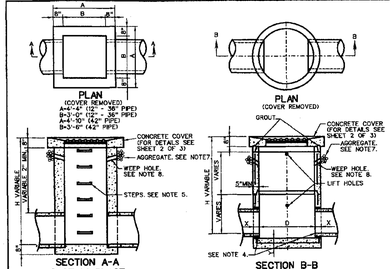
* WALL THICKNESS (MIN) - INCHES
** TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.



SPECIFICATION REFERENCE
232
501
701

STANDARD SIDEWALK UNDERDRAIN
VIRGINIA DEPARTMENT OF TRANSPORTATION

REV. 8/07
108.03



RECOMMENDED MINIMUM HEIGHT CHART		
PIPE SIZE	H DIMENSION CONC.	H DIMENSION CORR. METAL
12"	2'-6"	2'-5"
15"	2'-9¼"	2'-8"
18"	3'-0½"	2'-11"
21"	3'-3¾"	3'-2"
24"	3'-7"	3'-5"
27"	3'-10¼"	3'-8"
30"	4'-1½"	3'-11"
33"	4'-4¾"	4'-2"
36"	4'-8"	4'-5"
42"	5'-3½"	4'-11"

NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS.
2. THE "H" DIMENSION SHOWN ON THE STANDARDS MEASURED FROM THE BOTTOM OF THE STRUCTURE TO THE BOTTOM OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE, ONLY FOR ESTIMATING PURPOSES, AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS. MAXIMUM DEPTH (H) TO BE 12'-0.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD (S-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICEN FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUT/FALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PROVIDE DRAINAGE OR FORMING OF MASONRY OR CONCRETE STRUCTURE TO PROVIDE DRAINAGE AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. REINFORCED CONCRETE FOOTING MAY BE PRECAST OR CAST-IN-PLACE. TWO LIFTING HOOKS OF FABRICATORS DESIGN TO BE PROVIDED IN PRECAST FOOTING
7. 4" DEPTH AGGREGATE #68,#78, OR #8 X 8" WIDTH.
8. 3" DIAMETER WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH (¼" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.035" NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. THE TYPE OF INLET (PRECAST OR CAST IN PLACED, DETAILED HEREON, TO BE CONSTRUCTED, WILL BE AT THE OPTION OF THE CONTRACTOR.
10. FOR DETAILS OF CONCRETE COVER, COLLAR AND GRATE AND THE METHOD OF PLACING APPROACH GUTTER SEE SHEET 2 OF 3.
11. CAST-IN PLACE CONCRETE IS TO BE CLASS A3 3,000 PSI. PRECAST CONCRETE IS TO BE 4000 PSI.
12. CONCRETE QUANTITIES SHOWN ARE FOR INDICATED DEPTH (H) WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES. FOR INLETS OF DIFFERENT DEPTHS AND OR SUBTRACT THE APPROPRIATE CUBIC YARDS OF CONCRETE FOR EACH FOOT OF DEPTH.
13. PAVED DITCHES ARE TO BE TRANSITIONED TO MEET INLET GUTTER AS SHOWN IN STANDARD PG-2A.
14. PROVIDE SAFETY SLABS WHEN SPECIFIED ON THE PLANS.
15. DI-7--------NO GUTTER
    DI-7A-------SINGLE GUTTER WHEN DROP INLET IS ON A GRADE.
    DI-7B------- DOUBLE GUTTER WHEN DROP INLET IS IN A SAG BETWEEN TWO GRADES.
16. FOR DETAILS OF PRECAST DI-7 MOT SHOWN HEREON SEE PRECAST UNIT ASSEMBLY DIAGRAM, PAGE 103.02. FOR PRECAST GENERAL NOTES, PAGE 103.02 AND FOR APPLICABLE PRECAST BASE, RISER AND TOP DETAILS, PAGES 103.07 THRU 103.12.
17. GRATE BARS TO BE PARALLEL TO DITCH FLOW.

PIPE SIZE	12"	15"	18"	24"	30"	36"	42"
MINIMUM DEPTH H	2'-0"	2'-3¼"	2'-6½"	3'-1"	3'-7½"	4'-2"	4'-8½"
CONCRETE CUBIC YARDS	.947	1.045	1.143	1.339	1.535	1.731	1.927

INCREMENT PER FOOT OF ADDITIONAL DEPTH (H) $\frac{1}{3}$ = 0.362 CU.YDS. (12" - 36" PIPE)
$\frac{1}{3}$ = 0.450 CU. YDS. (42" PIPE)

SPECIFICATION REFERENCE
241
503

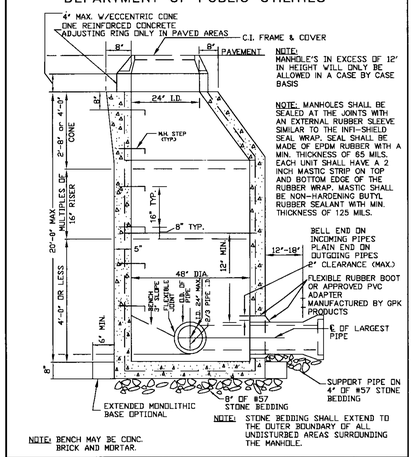
STANDARD MEDIAN DROP INLET
12" TO 42" PIPE
VIRGINIA DEPARTMENT OF TRANSPORTATION

D1-7,7A,7B

SHEET 1 OF 3

104.22

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTE: MANHOLE'S IN EXCESS OF 12' IN HEIGHT WILL ONLY BE ALLOWED IN A CASE BY CASE BASIS

NOTE: MANHOLES SHALL BE SEALED AT THE JOINTS WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI-SHIELD SEAL WRAP. SEAL SHALL BE MADE OF EPDM RUBBER WITH A MIN. THICKNESS OF 65 MILS. EACH UNIT SHALL HAVE A 2 INCH MASTIC STRIP ON TOP AND BOTTOM EDGE OF THE RUBBER WRAP. MASTIC SHALL BE NON-HARDENING BUTYL RUBBER SEALANT WITH MIN. THICKNESS OF 125 MILS.

NOTE: BENCH MAY BE CONC. BRICK AND MORTAR.

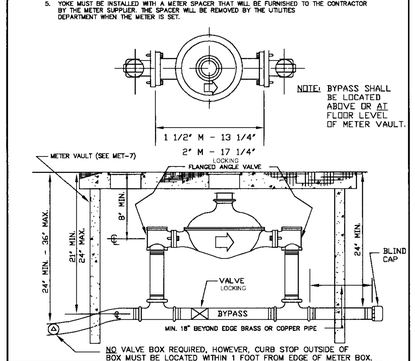
NOTE: STONE BEDDING SHALL EXTEND TO THE OUTER BOUNDARY OF ALL UNDISTURBED AREAS SURROUNDING THE MANHOLE.

DATE	STANDARD PRECAST CONCRETE MANHOLE SEWERS 8" TO 24" LOCATED IN PAVED AREAS	DRWG. NO.
JAN. 2008		MAN-2
REVISIONS		

PRINCE GEORGE COUNTY
DEPARTMENT OF PUBLIC UTILITIES

NOTES:

1. SADDLES SHALL BE USED FOR ALL 1 1/2" AND 2" TAPS.
2. WATER SERVICE LATERALS FOR 1-1/2" AND 2" SERVICES WILL BE TYPE-K HARD COPPER. CONNECTIONS FOR 1 1/2" AND 2" SERVICES WILL BE APPROVED COMPRESSION FITTINGS. ALL CONNECTIONS AT CORPORATION STOPS WILL BE APPROVED COMPRESSION FITTINGS.
3. TAPS SHOULD BE MADE AT THE SPRING LINE OF THE MAIN LINE.
4. FOR DETAIL OF VAULT, SEE MET-7.
5. YOKE MUST BE INSTALLED WITH A METER SPACER THAT WILL BE FURNISHED TO THE CONTRACTOR BY THE METER SUPPLIER. THE SPACER WILL BE REMOVED BY THE UTILITIES DEPARTMENT WHEN THE METER IS SET.

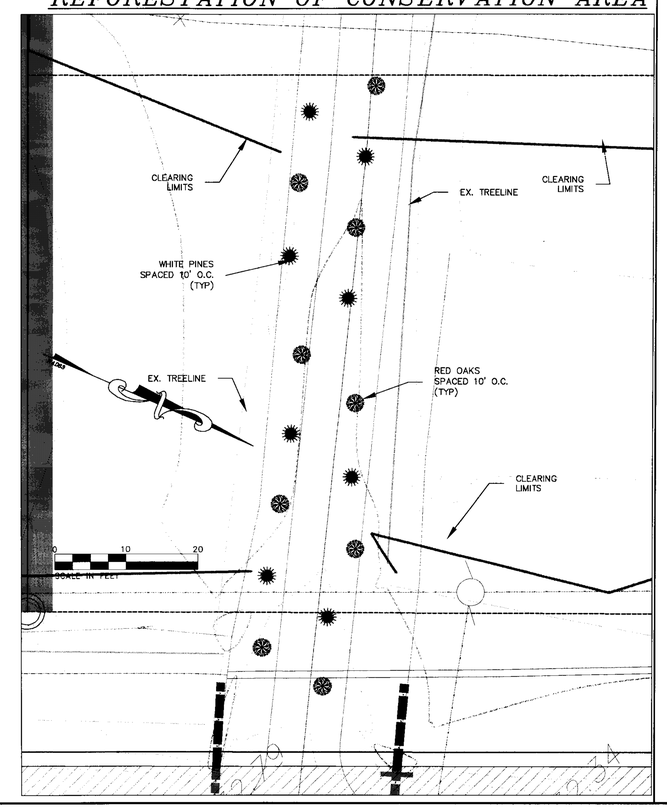


NOTE: BYPASS SHALL BE LOCATED ABOVE OR AT FLOOR LEVEL OF METER VAULT.

NO VALVE BOX REQUIRED, HOWEVER, CURB STOP OUTSIDE OF BOX MUST BE LOCATED WITHIN 1 FOOT FROM EDGE OF METER BOX.

DATE	1 1/2" OR 2" DISC METER SETTINGS	DRWG. NO.
JAN. 2008		MET-4
REVISIONS		

REFORESTATION OF CONSERVATION AREA



COMMONWEALTH OF VIRGINIA
DERRICK A. JOHNSON
Lic. No. 24761
10-16-09
PROFESSIONAL ENGINEER

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DATE	REVISION DESCRIPTION
8-30-05	COUNTY & VDOT COMMENTS
11-07-05	COUNTY & VDOT COMMENTS
1-12-06	COUNTY & VDOT COMMENTS
10-15-09	UTILITY COMMENTS

TIMMONS GROUP

TOOMBS SUBDIVISION
BLAND DISTRICT * PRINCE GEORGE COUNTY, VIRGINIA
STORMWATER MANAGEMENT BASIN DETAILS

DATE	6-20-05
DRAWN BY	K.HALPAUS
DESIGNED BY	K.HALPAUS
CHECKED BY	D. JOHNSON
SCALE	NONE
JOB NO.	22247
SHEET NO.	C2.3

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