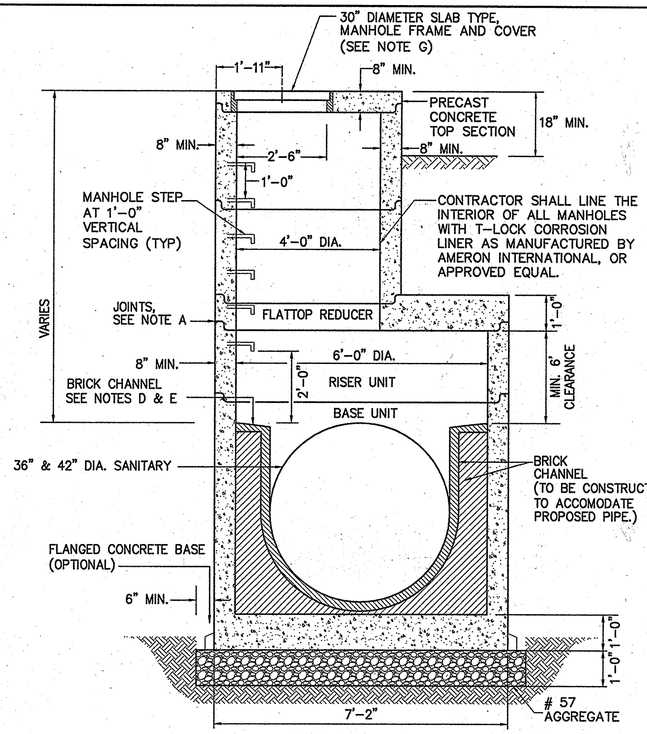
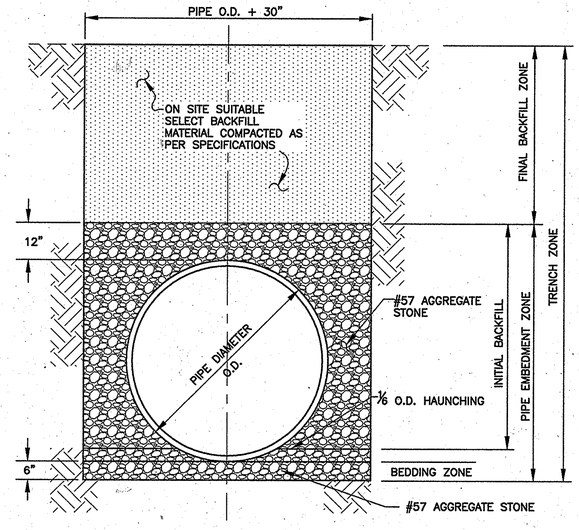


72" PRE-CAST SANITARY MANHOLE

SCALE: N.T.S.



TRENCH DETAIL (UNPAVED)

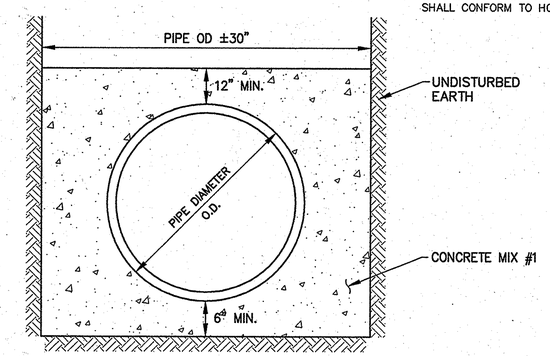
SCALE: N.T.S.

TRENCH NOTES:

1.) STEEL PLATE TO BE PLACED OVER OPEN TRENCH UNTIL PIPE HAS BEEN INSTALLED AND BACKFILLED.

PROPOSED MITERED PIPE BENDS					
BEND #	LOCATION	ANGLE	R	L	NO. OF MITERS
1	15' WEST OF MH 207A	76°-36'-40"	8.75'	6.91'	6
2	15' SOUTH OF MH 208A	88°-47'-41"	8.75'	8.72'	6
3	15' WEST OF MH 215	67°-00'-02"	8.75'	5.79'	5

NOTE:
1. MITER ANGLES SHALL NOT EXCEED 15 DEGREES.
2. CONTRACTOR SHALL CONFIRM REQUIRED DIMENSIONS OF MITERED BENDS WITH MANUFACTURER PRIOR TO CONSTRUCTION. MINIMUM LENGTH OF RADII SHALL CONFORM TO HOWARD COUNTY DESIGN REQUIREMENTS.



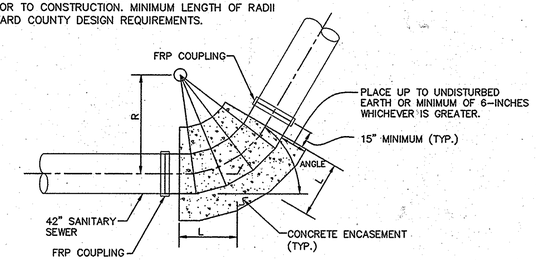
CONCRETE ENCASEMENT DETAIL

SCALE: N.T.S.

NOTES:

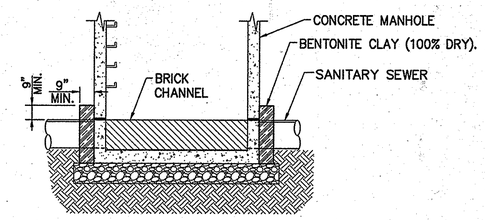
1.) POUR CONCRETE AGAINST UNDISTURBED EARTH. REMOVE TRENCH SHEETING BEFORE POURING CONCRETE.

2.) CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAYS.



TYPICAL MITER BEND DETAIL

SCALE: N.T.S.



BENTONITE CLAY PLACEMENT FOR EX. MANHOLES & STRUCTURES DETAILS

SCALE: N.T.S.

NOTE:

1.) CLAY RING APPLIES TO EX. MANHOLES AND EX. STRUCTURES AS SHOWN ON THE DRAWING OR IN THE SPECIFICATIONS.

72" PRE-CAST SANITARY MANHOLE NOTES:

A.) SEE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G-5.11.

B.) MANHOLE DESIGN SPECIFICATIONS SHALL CONFORM TO "PRECAST REINFORCED CONCRETE MANHOLE SECTION A.S.T.M. DESIGNATION C-478, LATEST REVISIONS.

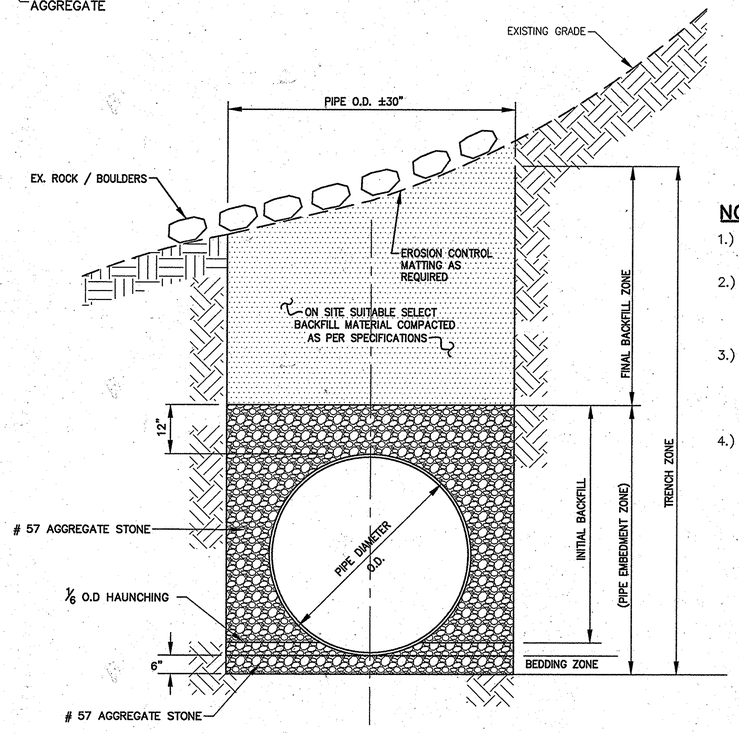
C.) THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATER TIGHT USING "O" RING RUBBER GASKETS MEETING A.S.T.M. C-443 AND C-361 OR APPROVED EQUAL. ANY EXCESSIVE OPENINGS WITHIN THE JOINTS SHALL BE FILLED USING A NON-SHRINK GROUT FILLER.

D.) BENCH AND CHANNEL TO BE CONSTRUCTED OF ONE COURSE OF BRICK ON EDGE. BENCH TO SLOPE A MINIMUM OF 1 INCH PER FOOT TOWARDS CHANNEL.

E.) BENCH HEIGHT ABOVE PIPE INVERT TO BE EQUAL TO DIAMETER OF THE OUTGOING PIPE OR AS DIRECTED BY THE ENGINEER.

F.) CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING MINIMUM REQUIREMENT FOR REINFORCING. REINFORCING SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MARYLAND. REINFORCING SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO MANUFACTURE OF MANHOLES.

G.) MANHOLE FRAME AND COVER SHALL BE PER MODEL B-6077 SOLID LID, FURNISHED BOLTED DOWN AND WATERTIGHT, AS MANUFACTURED BY BARRY PATTERN AND FOUNDRY OR APPROVED EQUAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE FRAME AND COVER FOR APPROVAL.



TRENCH DETAIL (W/ SLOPE STABILIZATION)

SCALE: N.T.S.

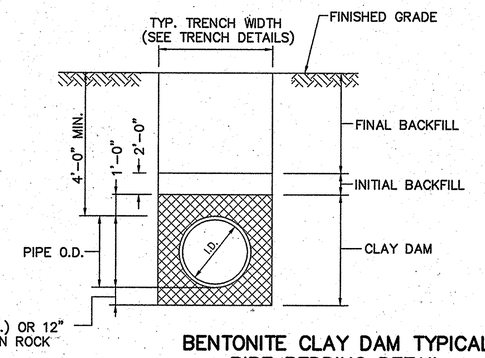
NOTES:

1.) GRADE SHALL BE RETURNED TO EXISTING CONDITION AFTER CONSTRUCTION.

2.) ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL MATTING (LANDLOK 450 OR APPROVED EQUAL). SEE SHEET 22 FOR ANCHORING REQUIREMENTS.

3.) ROCK REMOVED DURING PIPE INSTALLATION SHALL BE PLACED AND SPREAD OVER THE DISTURBED AREA TO MIMIC EXISTING CONDITIONS. ROCK SHALL BE PLACED OVER EROSION CONTROL MATTING.

4.) AREA SHALL BE SEEDED AND MULCHED AS PER SHEET 21.



BENTONITE CLAY DAM TYPICAL PIPE BEDDING DETAIL

SCALE: N.T.S.

CLAY DAM NOTES

1.) CLAY DAM SHALL BE INSTALLED AT INTERVALS NO GREATER THAN 1,000 FEET AND AS SHOWN ON WETLAND RESTORATION PLAN.

2.) CLAY DAM LENGTH SHALL BE 2 FEET ALONG THE PIPE AXIS, AND SHALL BE PLACED FROM UNDERCUT SUBGRADE OR TRENCH SUBGRADE UP TO 12" ABOVE THE CROWN OF THE PIPE.

3.) PLACE CLAY DAM IN 6" LIFTS, USING CLAY MEETING THE REQUIREMENTS OF AASHTO M145 SOIL GROUPS A-6 OR A-7 AND COMPACT TO MIN. 92%

4.) INITIAL AND FINAL BACKFILL SHALL BE PLACED FROM THE PIPE SPRINGLINE UP TO FINISH SUBGRADE. SEE TRENCH DETAIL.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 8146 EXPIRATION DATE: 10/8/11

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF, BUREAU OF ENGINEERING — DATE 12/12/08
CHIEF, BUREAU OF UTILITIES — DATE 12/12/08 — CHIEF, UTILITY DESIGN DIVISION — DATE 12/11/08

Patton Harris Rust & Associates, Inc.
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DES: C.H.
DRN: K.L.B.
CHK: G.C.L.
DECEMBER, 2008

BY	NO.	REVISION	DATE
R.J.C.		AS-BUILT	12/10

MISCELLANEOUS DETAILS

600' SCALE MAP 47 — BLOCK 10, 16, 17 ,& 18

LITTLE PATUXENT
PARALLEL INTERCEPTOR SEWER
CAPITAL PROJECT S-6175
CONTRACT NO. 20-4532
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 9 OF 27

"J:\proj\ch\1479-11-01\Eng\Plans\Contract 2\AS-BUILT\09-AS-BUILT-Miscellaneous Details.dwg, 7/18/2011 3:29:25 PM, TDS600.pc3"