

SEE SHEET 2 FOR AS-BUILT TRAVERSE TABLE

Table with 5 columns: POINT, NORTHING, EASTING, ELEV., DESCRIPTION. Lists survey points 101 through 257 with their coordinates and descriptions like REBAR & CAP, MAG HUB, MAG NAIL.

SURVEY CONTROL

B.M. #1 HOWARD CO. CONTROL PT. 0024 BRASS DISC NAD 83 (Adj 1991): N 565,065.4901 E 1,395,212.0564 NAVD 88: EL. 26.936

B.M. #2 HOWARD CO. CONTROL PT. 388B BRASS DISC NAD 83 (Adj 1991): N 564,007.6797 E 1,393,649.8349 NAVD 88: EL. 63.652

SEWER STAKEOUT TABLE

Table with 3 columns: ITEM, NORTHING, EASTING. Lists manholes #286A through #4 with their coordinates.

TEST PIT TABLE

Table with 4 columns: TH# (1-8), NORTHING, EASTING, UTILITY. Lists utility types like 6" STEEL GAS, 8" CAST IRON WATER, 2" PLASTIC GAS.

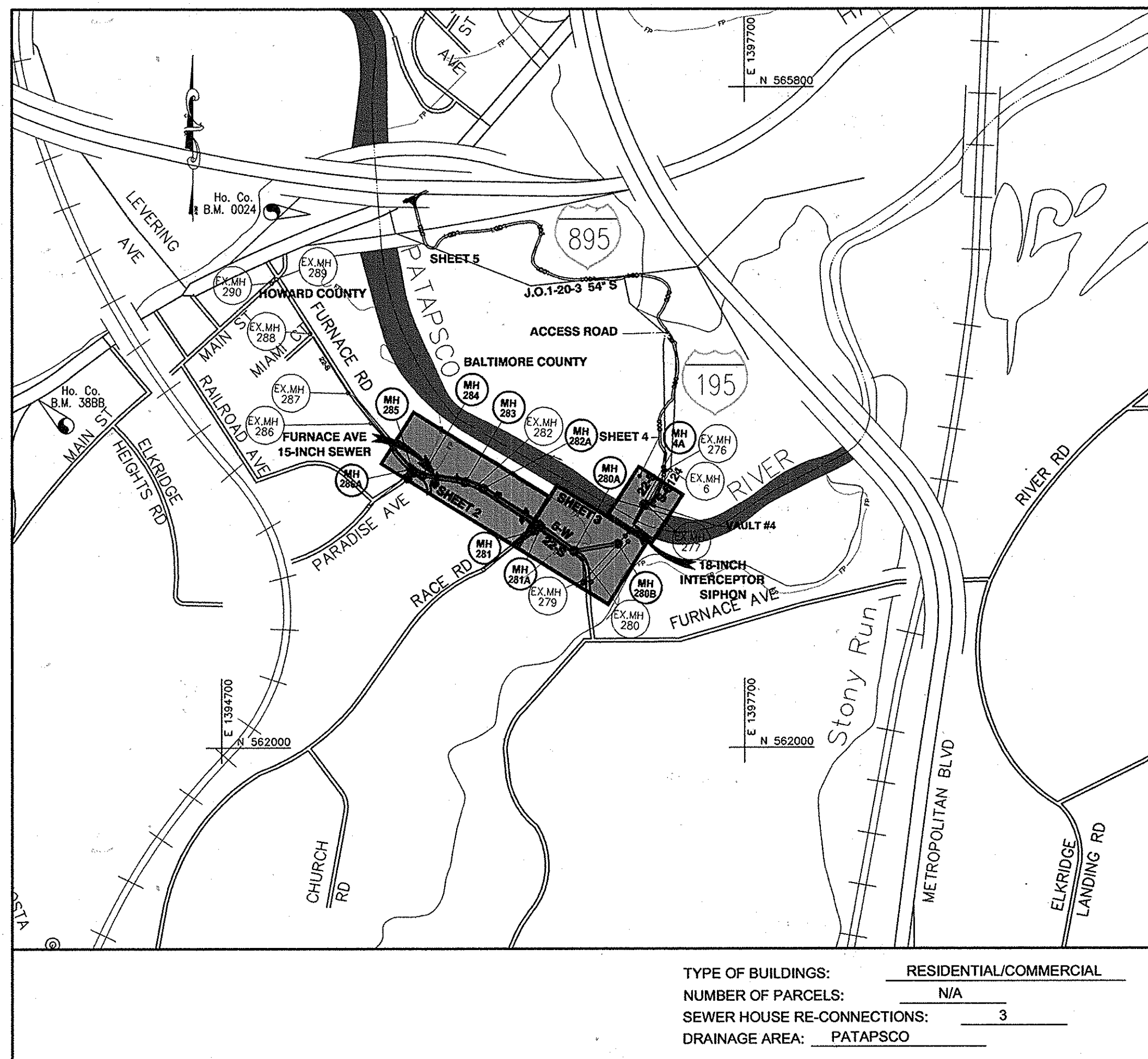
QUANTITIES

Table with 5 columns: ITEM, UNIT, ESTIMATE, AS-BUILT, SUPPLIER. Lists materials like PVC SDR 26 SEWER MAIN, 18" DIP CLASS 54 SEWER MAIN, etc.

LEGEND

Legend symbols for TRAVERSE, PROPERTY LINE, DECIDUOUS TREE, EVERGREEN TREE, EX. CONTOUR, EX. SAN. MANHOLE, EX. SAN. SEWER MAIN, EX. WATER MAIN, PROP. SAN. MANHOLE, PROP. SAN. SEWER, DEWATERING BASIN, SOIL BORING, TREELINE, RIPRAP, LIMITS OF DISTURBANCE, SUPER SILT FENCE, SILT FENCE, ACCESS ROAD, 100 YEAR FLOODPLAIN, 25 FT WETLAND BUFFER, NON-TIDAL WETLAND BOUNDARY, SANDBAG / STONE DIVERSION.

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS ELLICOTT CITY, MARYLAND 21043



VICINITY MAP SCALE: 1" = 600'

GENERAL NOTES

- 1. Approximate locations of existing utilities are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted service.
2. Topographic field surveys were performed in September 2010 by Mercado.
3. Horizontal and Vertical Survey Controls: The coordinates shown on the drawings are based on Maryland State Reference System NAD 83/91 and NAVD 88 as projected by Howard County Geodetic Control Stations Howard Co. B.M. 0024 and B.M. 388B.
...
12. The Contractor shall provide all necessary lines, grades and elevations, and cut sheets shall be prepared based on the lines and grades shown on the Contract drawings.

SEWER MAIN NOTES

- 1. 20" sewer main shall be Class 54 DIP. 18" siphon main shall be Class 54 DIP TR Flex or equal. 18" Piggings access pipe will be Tyton Joint with restrained fittings. All 15" sewer mains shall be PVC SDR 26.
2. Distances shown for the sewer main are along the centerline of the pipe from manhole to manhole.
3. Elevations shown are to the invert of the sewer main.
4. All manholes shall be 4'-0" inside diameter unless otherwise noted.
5. Manholes designated as W.T. in Plan and Profile shall have water tight frames and covers, Standard Detail G5.52.
6. Use caution when excavating under power lines.
7. See Sewage Bypass Pumping in the Special Provisions.

FURNACE AVE SEWER AND DEEP RUN INVERTED SIPHON IMPROVEMENTS

CAPITAL PROJECT NO. S-6271 CONTRACT NO. 10-4727

INDEX OF SHEETS

Table with 2 columns: SHEET NO., DESCRIPTION. Lists sheets 1 through 14 including Title Sheet, Sanitary Sewer Plan & Profile, Siphon Improvement, etc.

OWNER'S/DEVELOPER'S CERTIFICATION:

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

Signature of Wes Daub, Project Manager, dated Oct 4, 2013.

CONSULTANT'S CERTIFICATION:

I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT AND THE CURRENT STATE OF MARYLAND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

Signature of Thomas N. DallaPalma, dated 10/2/2013, MD License Number 10966.

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT APPROVED FOR SEDIMENT CONTROL 10-17-13 DATE

Signature of Sara C. Durlina, District Official, dated 10/2/13.

Baltimore County Department of Environmental Protection and Sustainability, Approved for Grading 9/21/14, dated 9/21/14.

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. 10966 EXPIRATION DATE: MAY 12, 2014

Signature of Thomas N. DallaPalma, dated 10/2/2013.

HOWARD COUNTY

BY THE OWNER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

Signature of Wes Daub, dated Oct 4, 2013.

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Thomas N. DallaPalma, dated 10/2/2013.

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Signature of John P. Reardon, dated 10/16/13.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Director of Public Works, Chief of Engineering, Chief of Utility Design Division. Signatures and dates.

Dewberry Dewberry Consultants LLC 3166 LORD BALTIMORE DRIVE SUITE #110 BALTIMORE, MARYLAND 21244 PHONE: 410.265.9500 FAX: 410.265.8875



Table for Revisions with columns: DES, DRN, CHK, DATE, BY, NO., REVISIONS, DATE.

TITLE SHEET

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN INVERTED SIPHON IMPROVEMENTS CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1

HOWARD COUNTY, MARYLAND

SCALE: SHOWN

SHEET 1 OF 14

AS-BUILTS SEP 29 2015

BC-1 OF 7

AS-BUILT TRAVERSE TABLE			
POINT	NORTHING	EASTING	ELEV.
101	563122.54	1396698.95	20.86
102	563023.61	1396808.62	17.45
200	563318.47	1396497.72	29.87
201	563538.98	1396124.06	31.84
202	563570.07	1395797.76	30.08
249	563655.30	1395855.78	29.70
250	563571.77	1395929.54	30.13
252	563382.41	1396151.37	24.28
253	563394.36	1396310.06	30.33
254	563353.49	1396623.12	29.97
255	562994.56	1396963.34	49.39
256	563168.26	1396973.46	24.87
257	563284.30	1397064.98	46.69
1000	563215.59	1397015.81	20.66
1001	563181.48	1396989.55	22.80
1002	563139.67	1396712.16	21.92
1003	563270.28	1396534.17	28.62
1004	563266.94	1396524.15	28.96
1005	563492.92	1396204.76	31.28
1006	563529.15	1396101.95	30.90
1007	563563.91	1395854.05	30.32
1008	563588.81	1395797.43	30.57
1009	563600.91	1395786.22	30.78
1010	563655.31	1395855.73	29.68

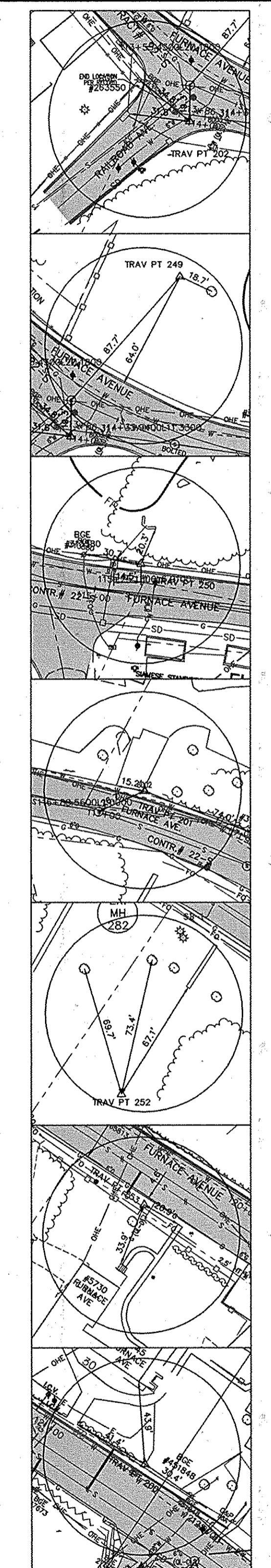
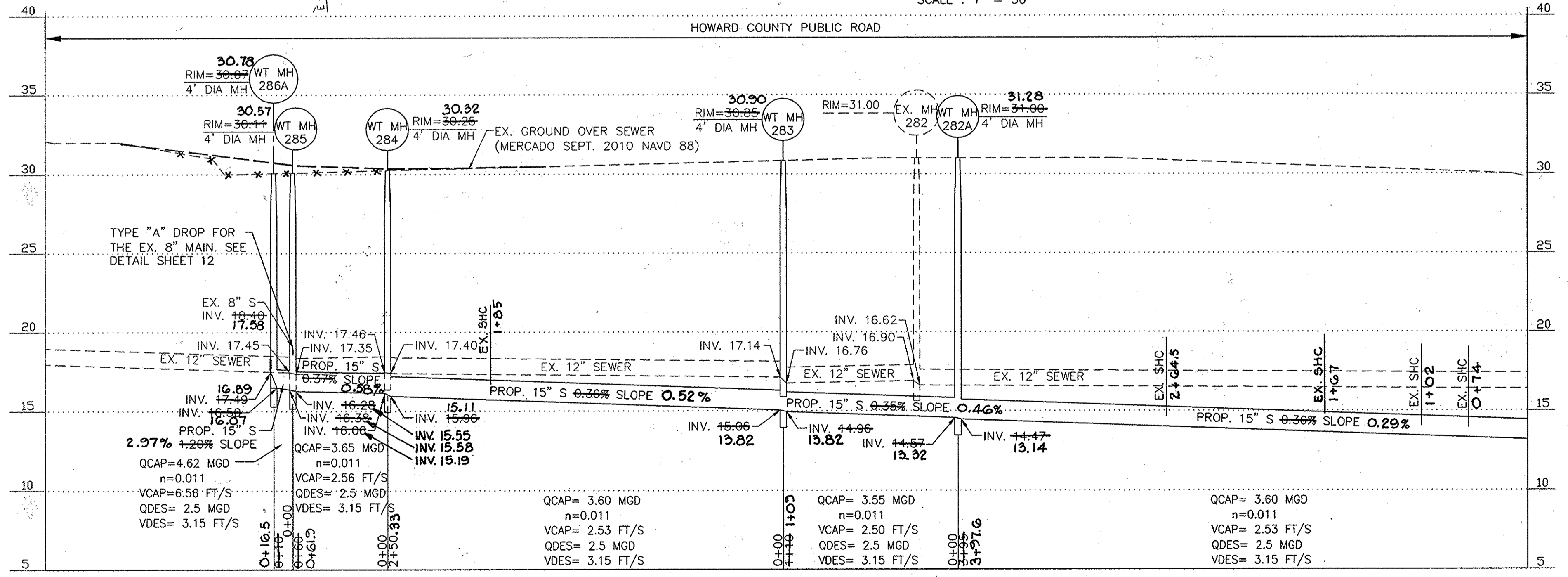
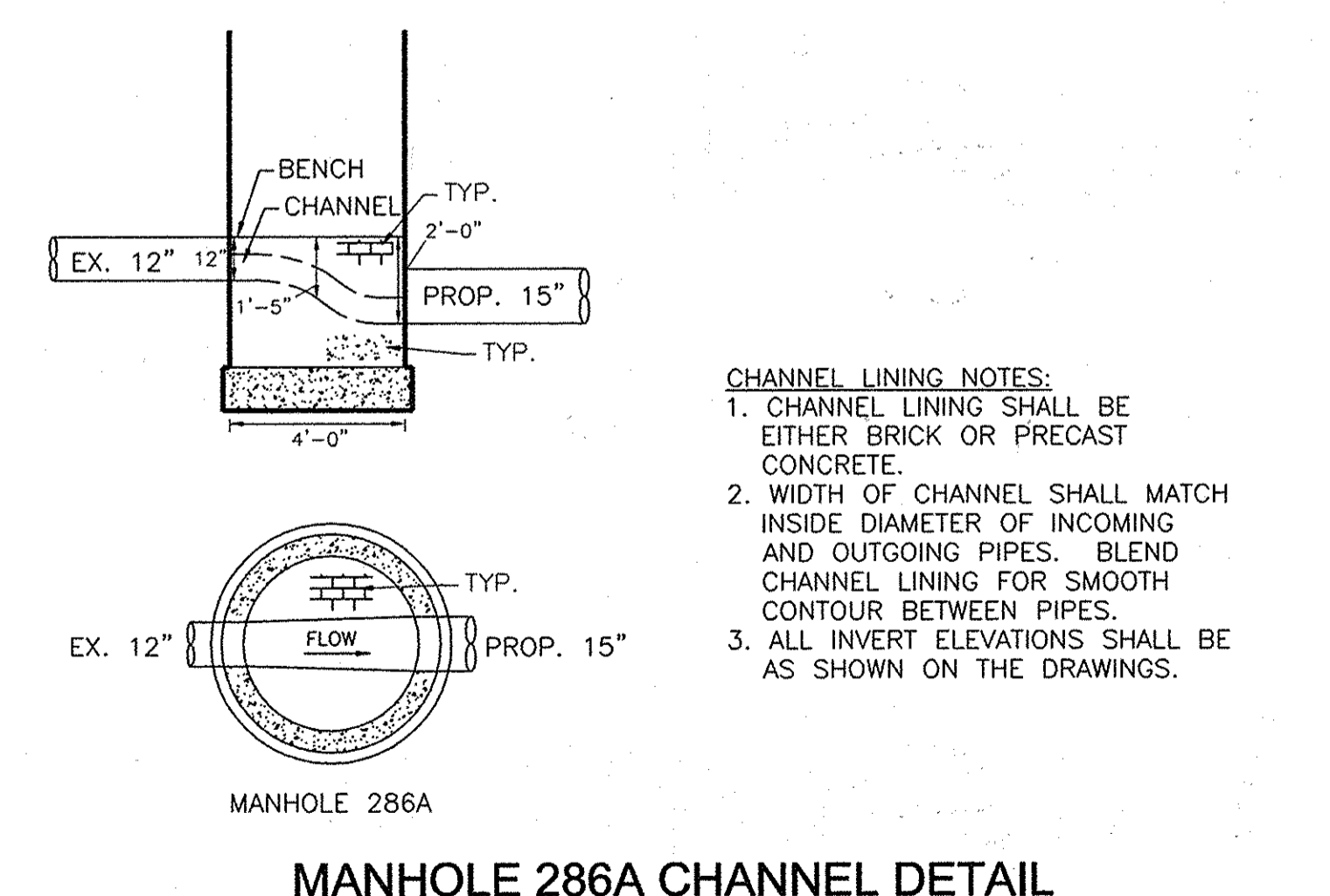
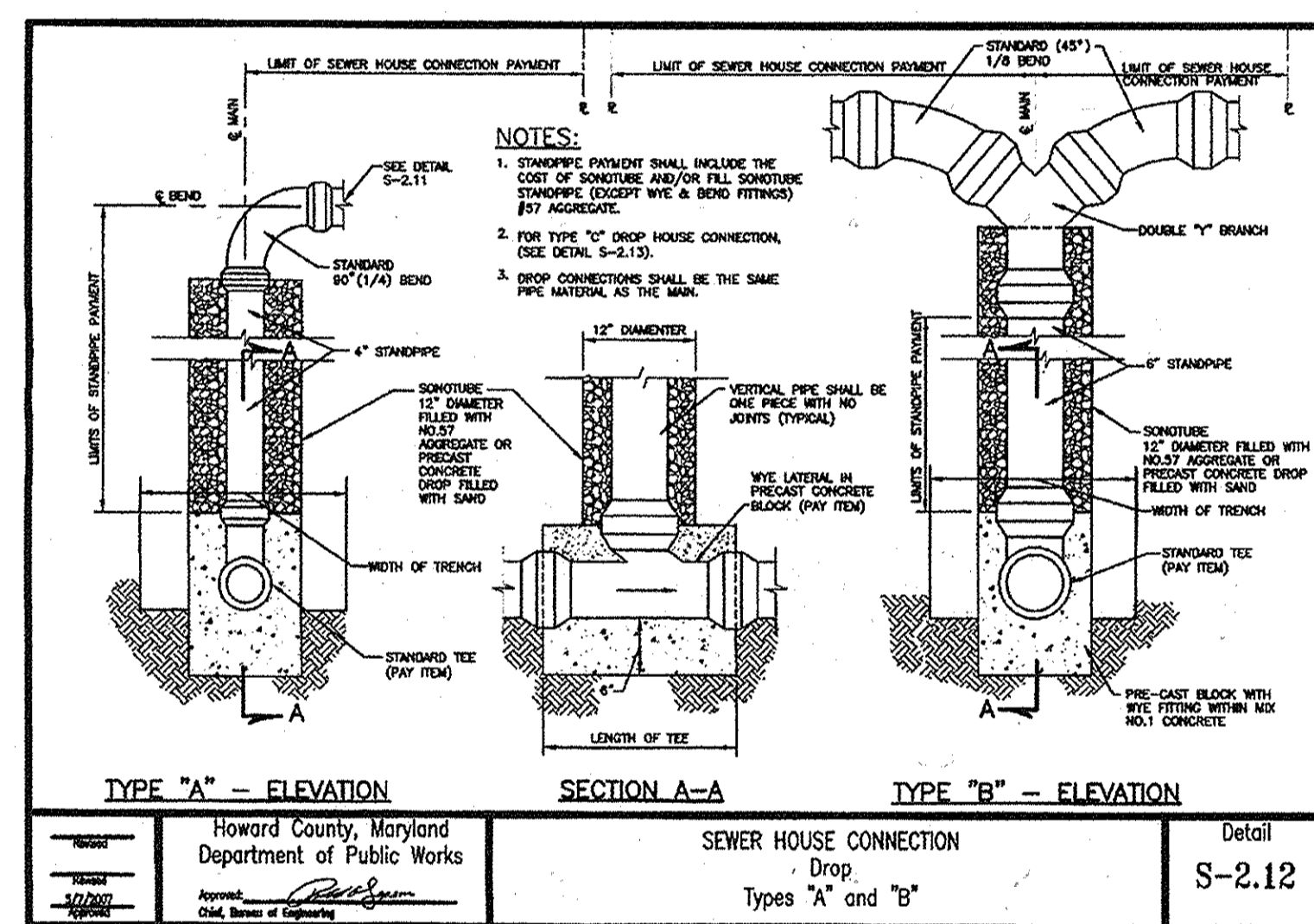
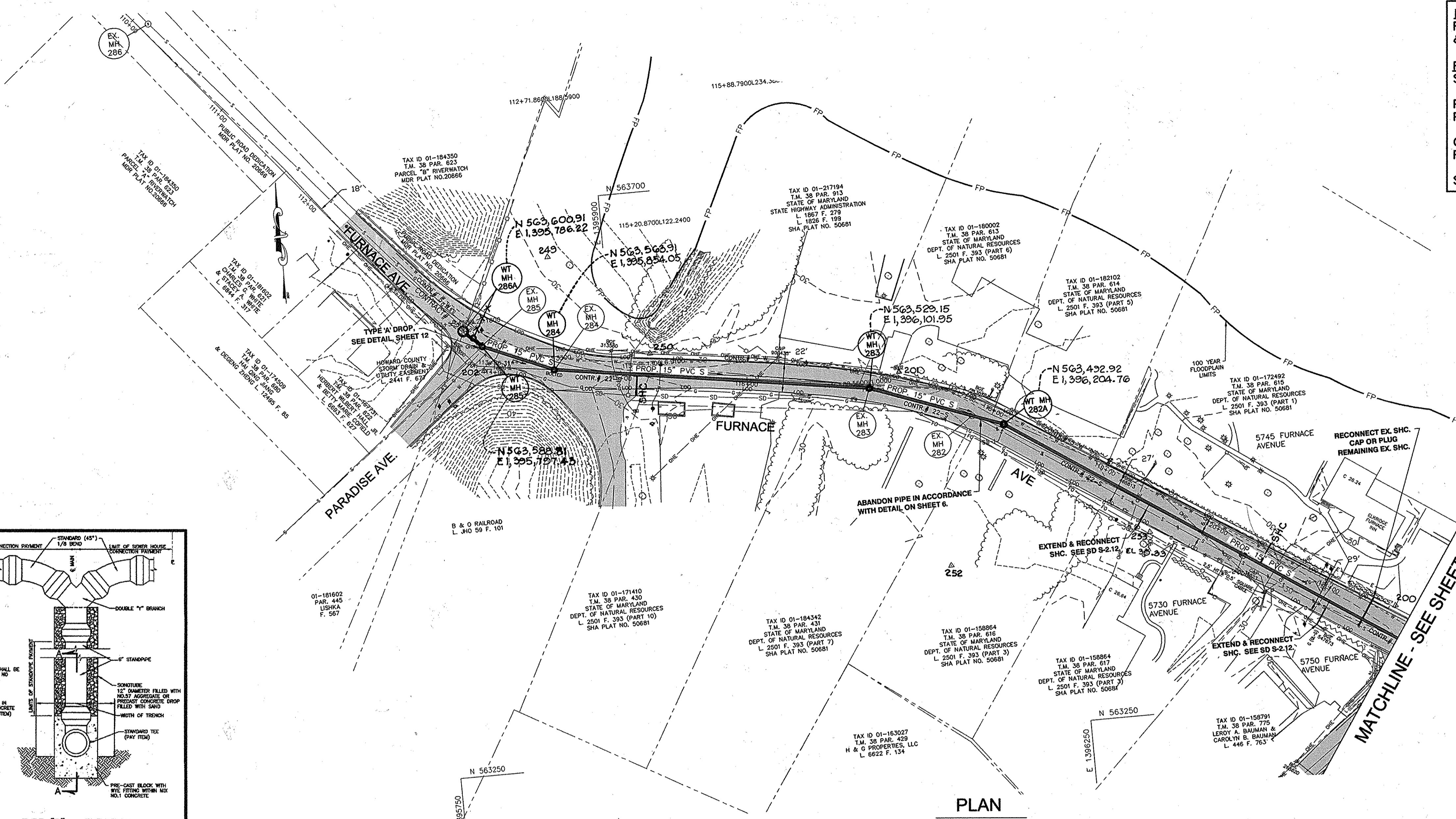
EXTEND & RECONNECTION TO EXISTING SHC
REMOVE SECTION OF EXISTING MAINLINE SEWER & CAP OR PLUG.

FOR RECONNECTION TO ALL SHC's, SEE STANDARD DETAIL S-2.12A ON THIS SHEET.

PROVIDE FULL TRENCH COMPACTION ALL PORTIONS OF 15-INCH SEWER CONSTRUCTION.

CONTRACTOR TO PROVIDE SEWER BYPASS PLAN FOR MANHOLES 286A THROUGH 282 A.

SEE SHEET 14 FOR TRAFFIC DETOUR PLAN.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 10/13/13
Date: 10/13/13

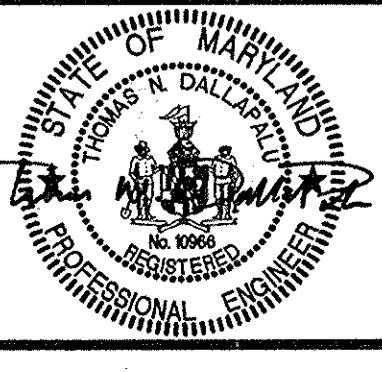
Chief, Bureau of Engineering: *[Signature]* 10/13/13
Date: 10/13/13

Chief, Bureau of Utilities: *[Signature]* 10/13/13
Date: 10/13/13

Chief, Utility Design Division: *[Signature]* 10/13/13
Date: 10/13/13

Dewberry
Dewberry Consultants LLC

3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8500
FAX: 410.265.8875



DES: LAL	BY NO.	REVISIONS	DATE
DRN: RLI			
CHK: TND			
DATE: 10/2013			

SANITARY SEWER PLAN & PROFILE

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN INVERTED SIPHON IMPROVEMENTS

CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE: SHOWN

SHEET 2 OF 14

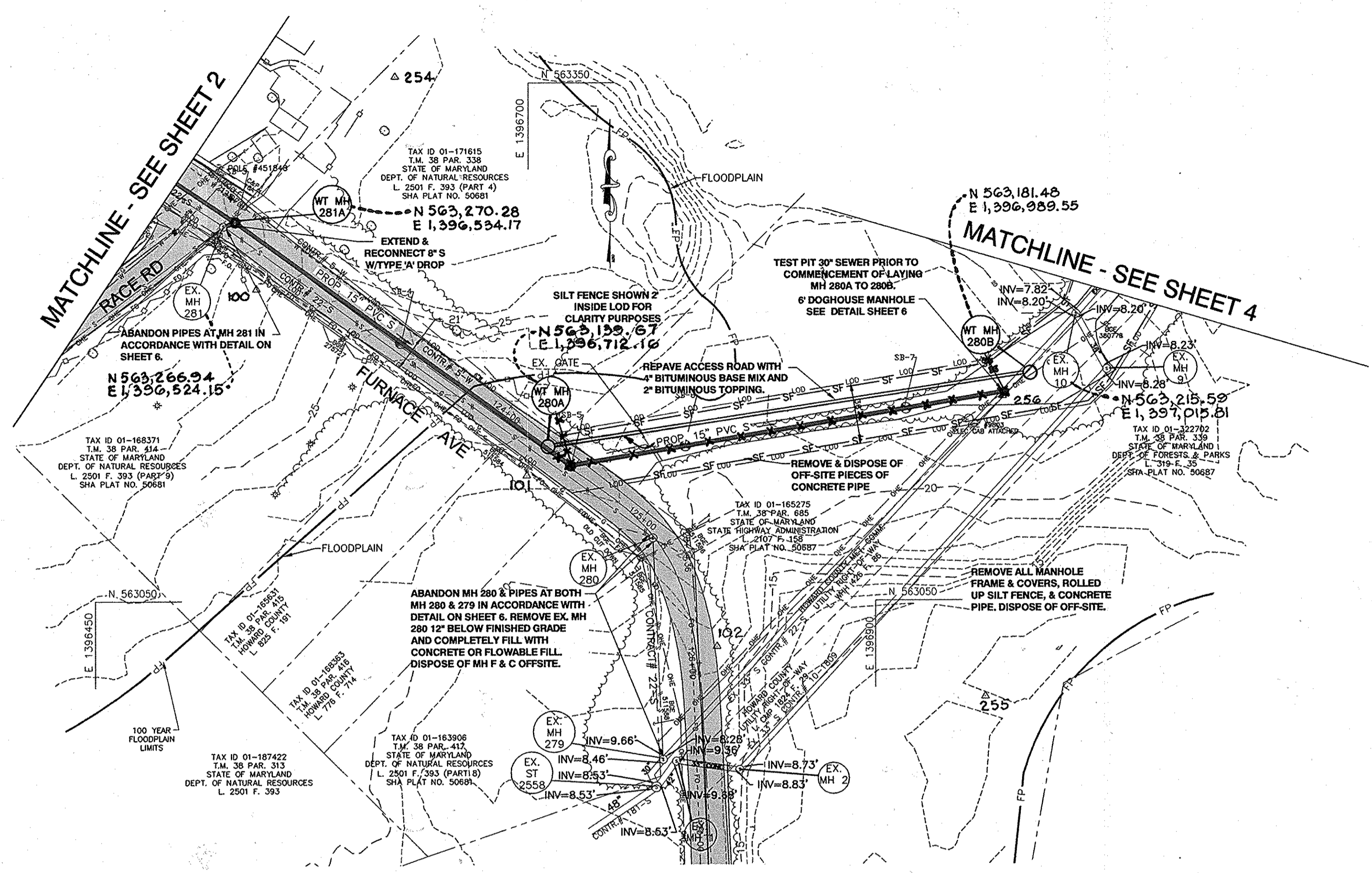
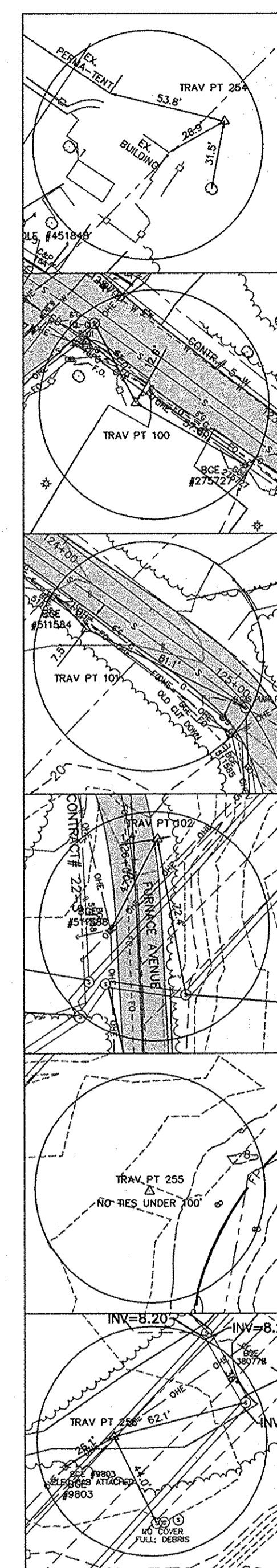
AS-BUILTS
SEP 29 2015

PRIOR TO ABANDONMENT OF PIPES & MANHOLE, CONFIRM THAT LINES TO BE ABANDONED ARE FREE OF WASTEWATER. IF WASTEWATER IS PRESENT, CONTACT ENGINEER IMMEDIATELY.

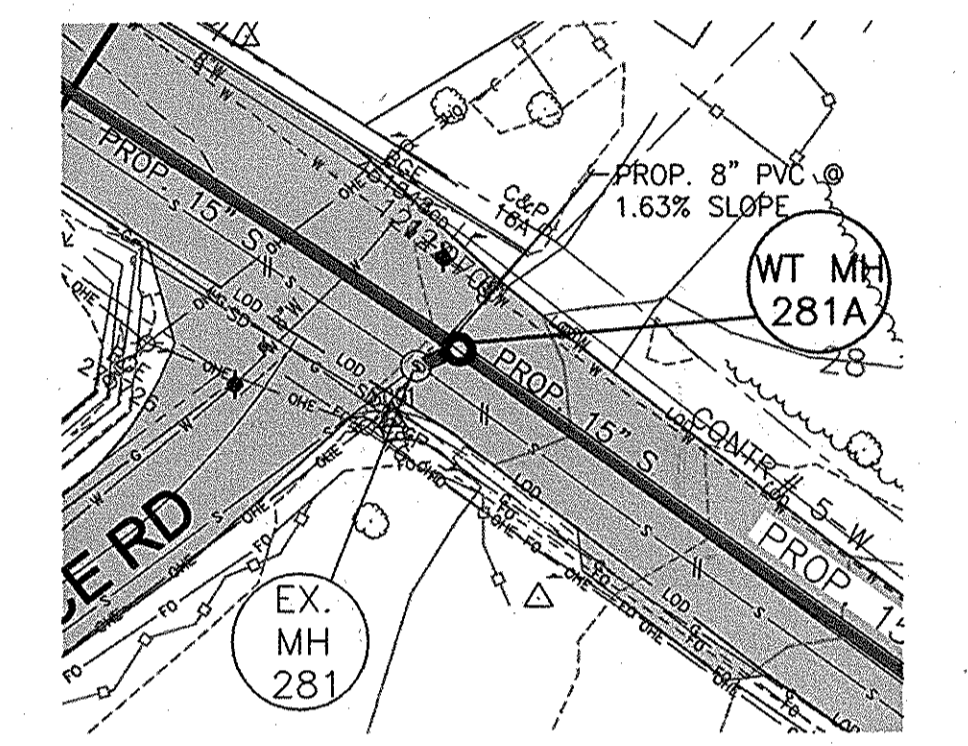
PROVIDE FULL TRENCH COMPACTION ALL PORTIONS OF 15-INCH CONSTRUCTION.

CONTRACTOR TO PROVIDE SEWER BYPASS PLAN FOR MANHOLE 280B.

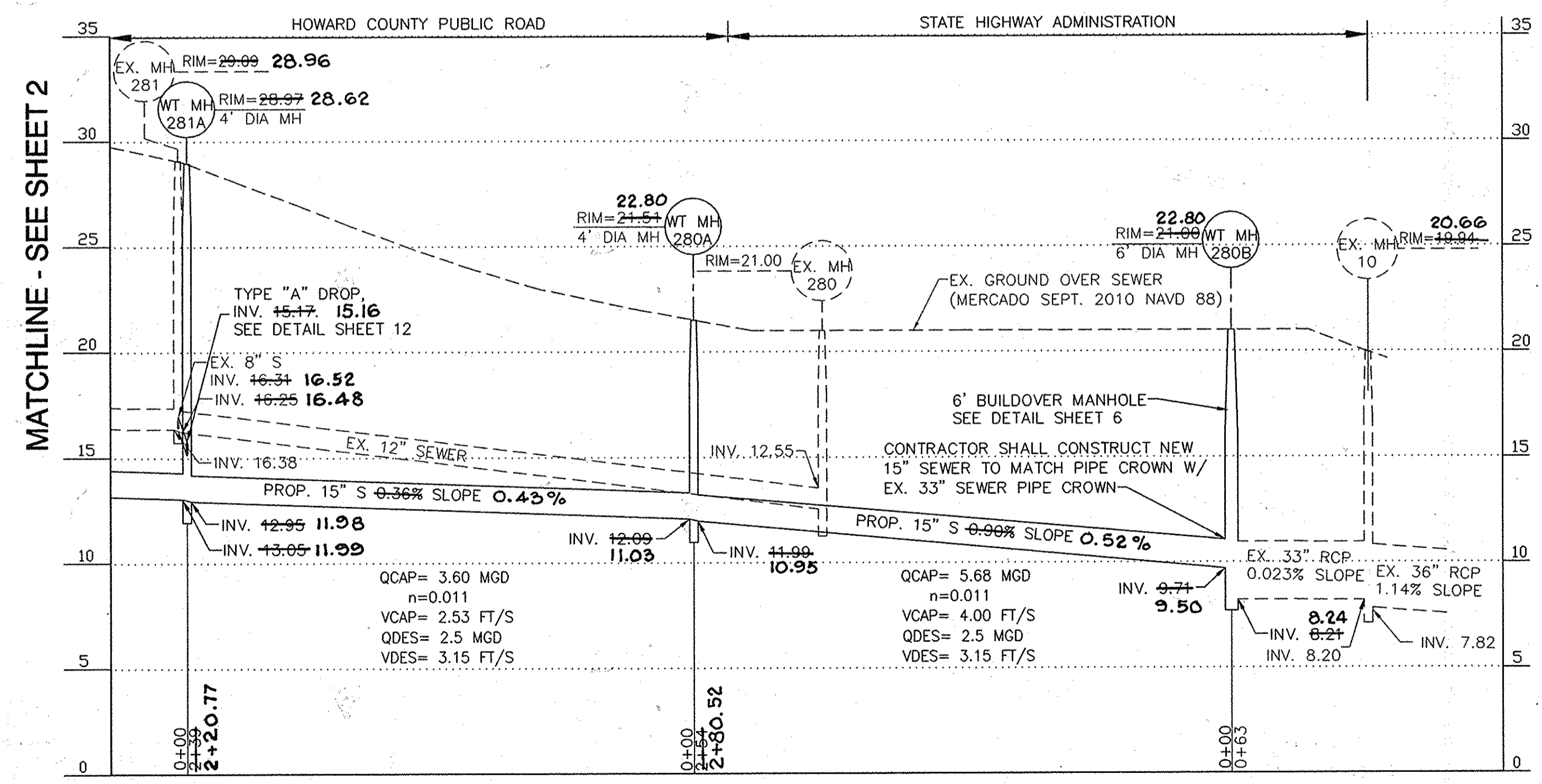
SEE SHEET 14 FOR TRAFFIC DETOUR PLAN.



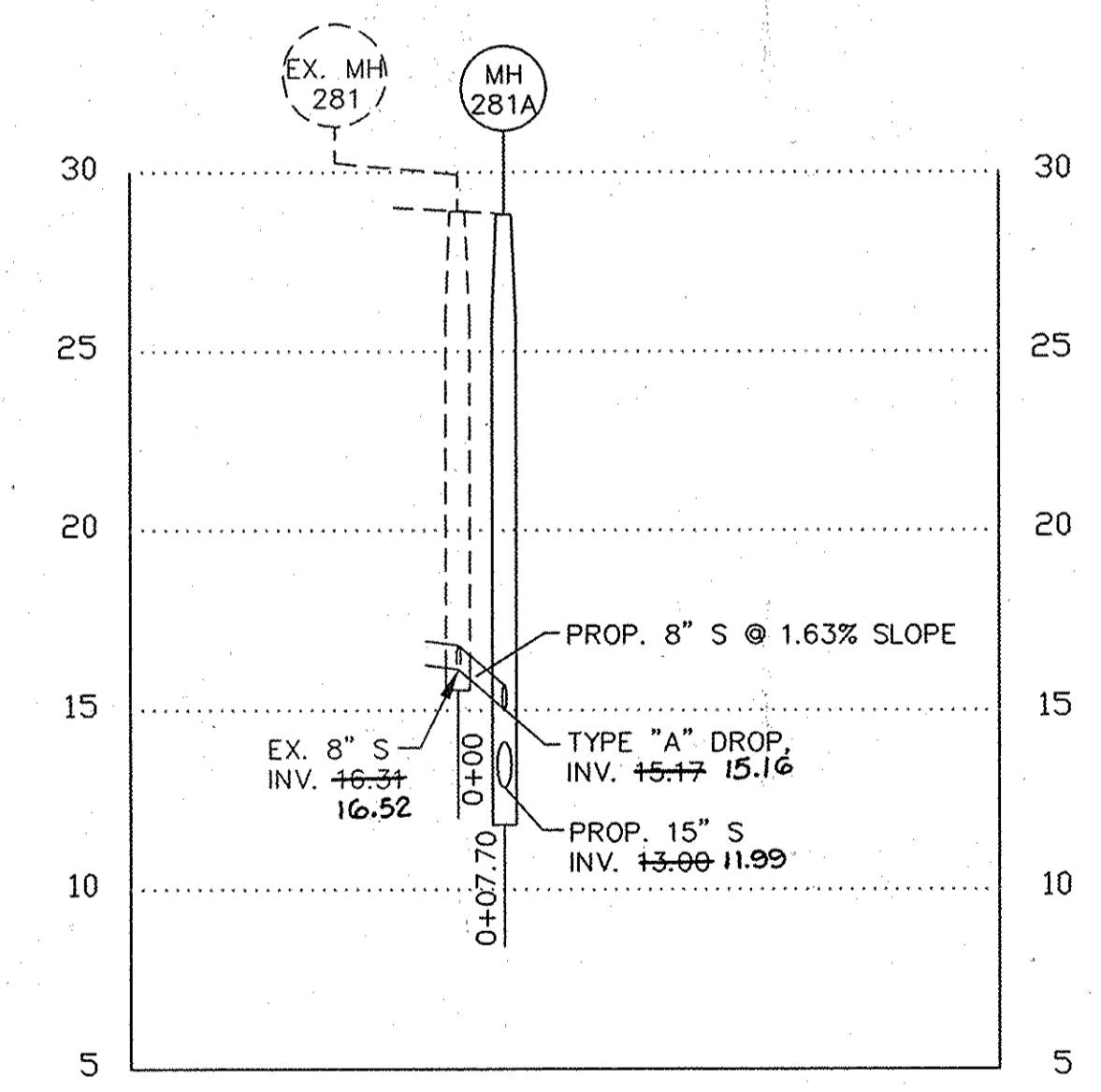
PLAN
SCALE : 1" = 50'



EX. MH 281 TO PROP. MH 281A PLAN
SCALE : 1" = 30'



PROFILE
SCALE : HORIZ. 1" = 50'
VERT. 1" = 5'



PROFILE
SCALE : HORIZ. 1" = 30'
VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *John J. ...* 10/15/13
 Chief, Bureau of Engineering: *Thomas J. ...* 10/21/13
 Chief, Bureau of Utilities: *...* 10/21/13
 Chief, Utility Design Division: *...* 10/21/13

Dewberry
 Dewberry Consultants LLC
 3106 LORD BALTIMORE DRIVE
 SUITE #110
 BALTIMORE, MARYLAND 21244
 PHONE: 410.265.9500
 FAX: 410.265.8875



DES: LAL					
DRN: RLJ					
CHK: TND					
DATE: 10/2013	BY NO.	REVISIONS	DATE	600' SCALE MAP NO. 38	BLOCK NO. 5

SANITARY SEWER PLAN & PROFILE

FURNACE AVE SEWER AND DEEP RUN
 INVERTED SIPHON IMPROVEMENTS
 CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

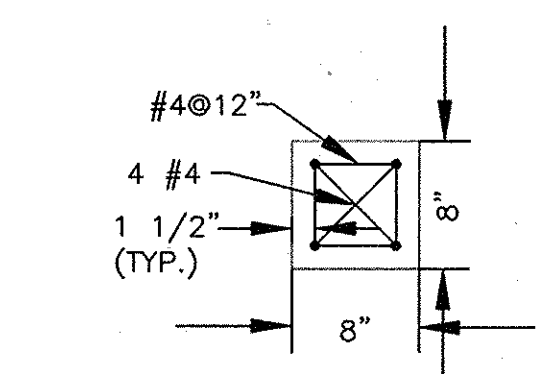
ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE:
 SHOWN

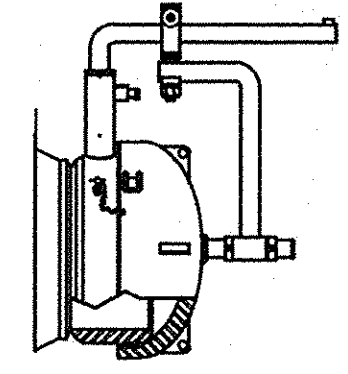
SHEET
 3 OF 14

AS-BUILTS
 SEP 29 2015

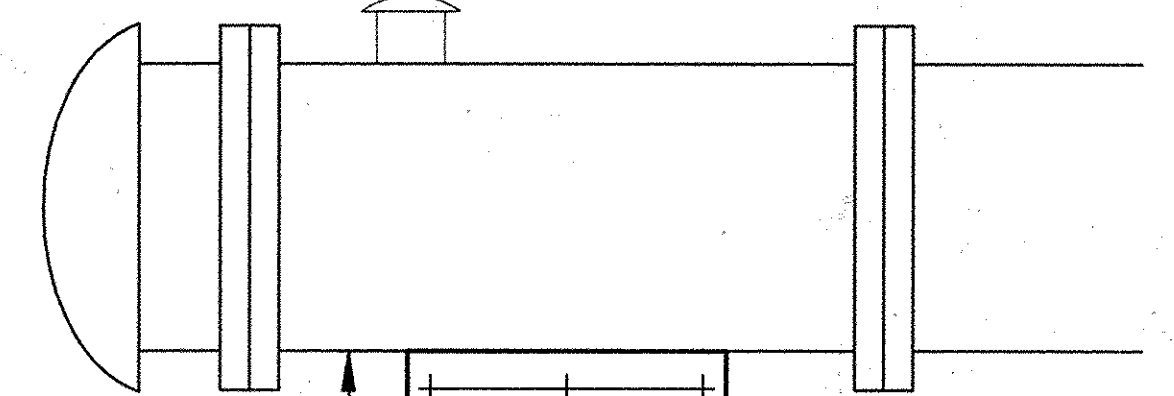
- NOTES:
- LOCATE EXISTING SIPHONS PRIOR TO PIPE LAYING OPERATIONS.
 - CONTRACTOR TO PROVIDE SANDBAG/STONE DIVERSION SIZED ACCORDINGLY & SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.
 - BUILD OUT RIVER BANK TO 2:1 SLOPE PRIOR TO PLACEMENT OF STREAM BANK PROTECTION.
 - SEE SEWAGE BYPASS PUMPING IN THE SPECIAL PROVISIONS.



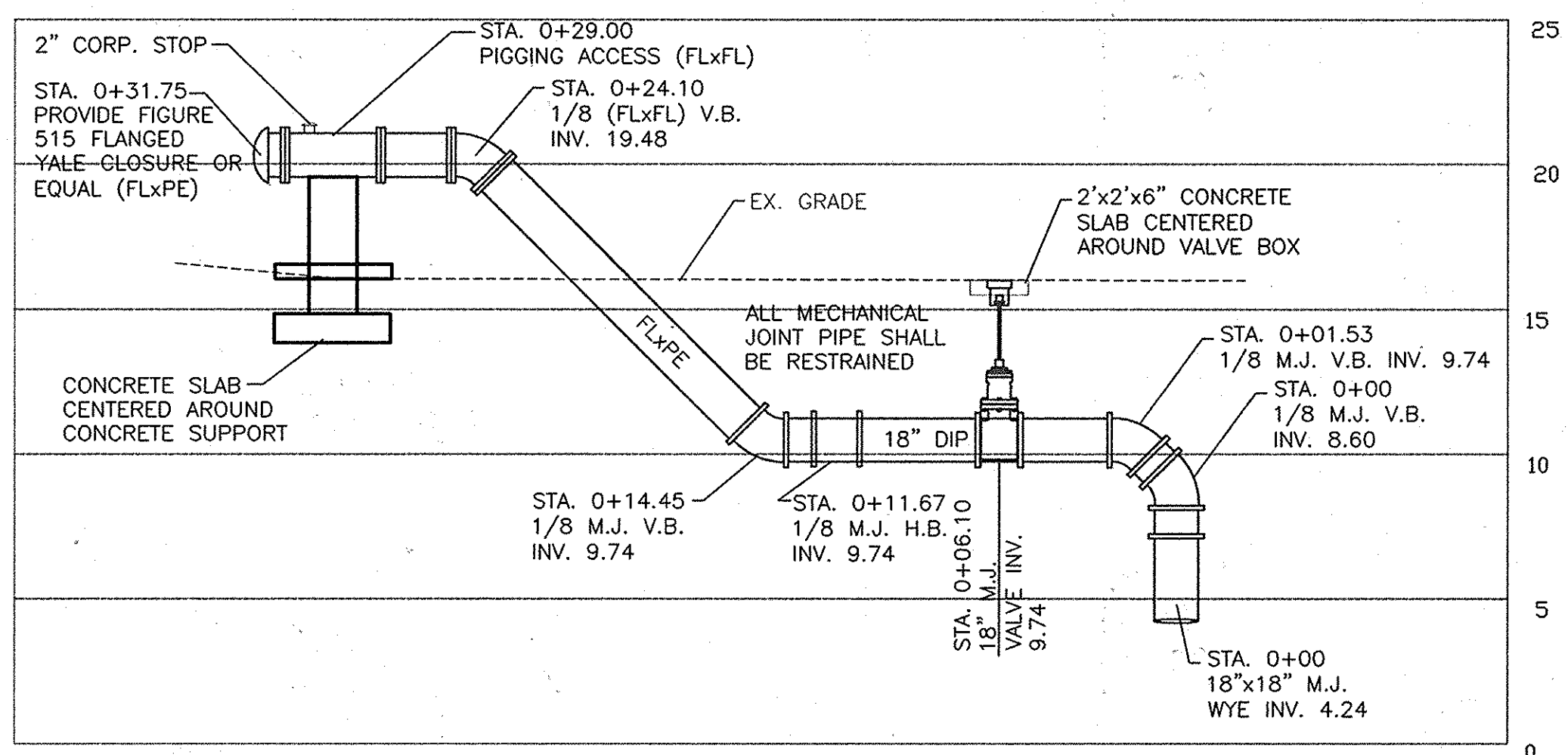
**CONCRETE SUPPORT
A-A DETAIL**
SCALE : 1" = 1'



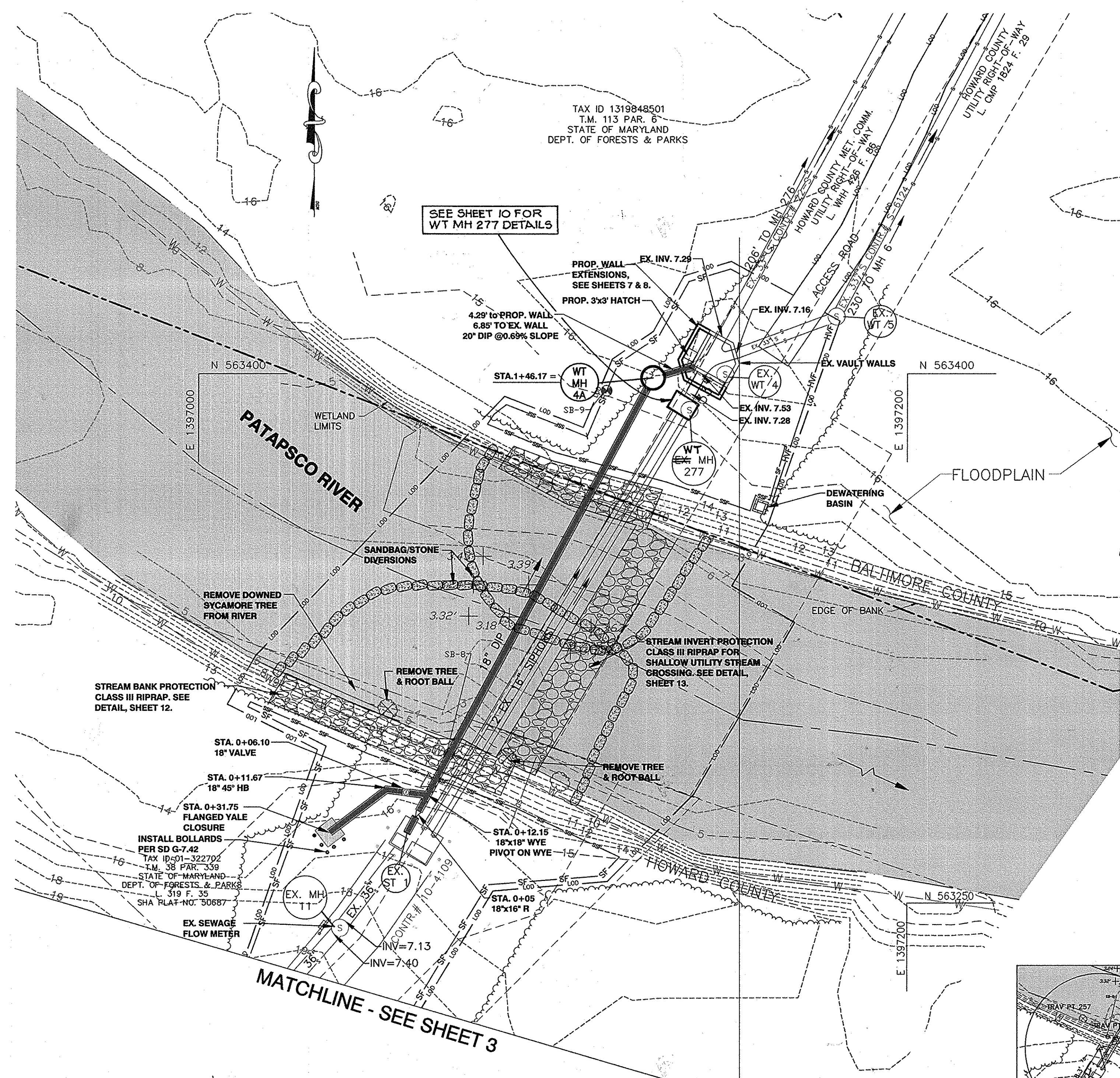
**FIGURE 515 FLANGED
YALE CLOSURE**
SCALE : NTS



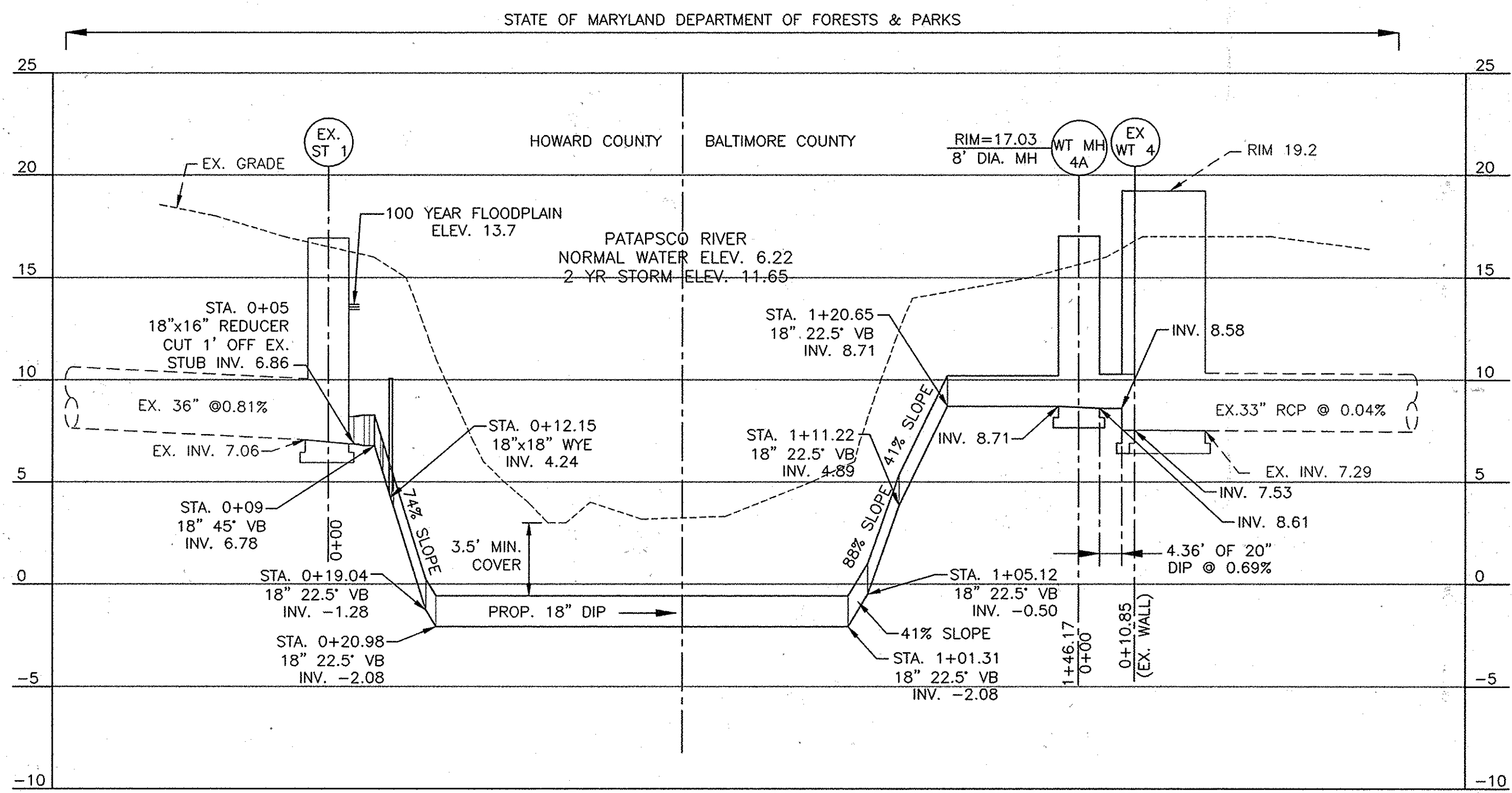
CONCRETE SUPPORT DETAIL
SCALE : 1" = 1'



PIGGING ACCESS PROFILE
SCALE : 1" = 5'



PLAN
SCALE : 1" = 20'



PROFILE
SCALE : HORIZ. 1" = 20'
VERT. 1" = 5'

NOTE: CONTRACTOR TO REMOVE THE TEMPORARY BRICK BULKHEAD IN THE SIPHON CHAMBER, ST-1, AT THE TIME OF SUBSTANTIAL COMPLETION OF THIS CONTRACT WHEN ALL STRUCTURES AND PIPE ARE READY TO RECEIVE FLOW.

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT
APPROVED FOR SEDIMENT CONTROL
Jeffrey P. West 10-17-13
DATE

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

James P. ... 10/17/13
DIRECTOR OF PUBLIC WORKS DATE

Thomas P. ... 10/17/13
CHIEF, BUREAU OF UTILITIES DATE

... .. 10/17/13
CHIEF, BUREAU OF ENGINEERING DATE

... .. 10/17/13
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.285.9500
FAX: 410.285.9875



DES: LAL					
DRN: RLJ					
CHK: TND					
DATE: 10/2013	BY NO.	REVISIONS	DATE	600' SCALE MAP NO. 38	BLOCK NO. 5

18" SIPHON IMPROVEMENT

**FURNACE AVE SEWER AND DEEP RUN
INVERTED SIPHON IMPROVEMENTS**
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

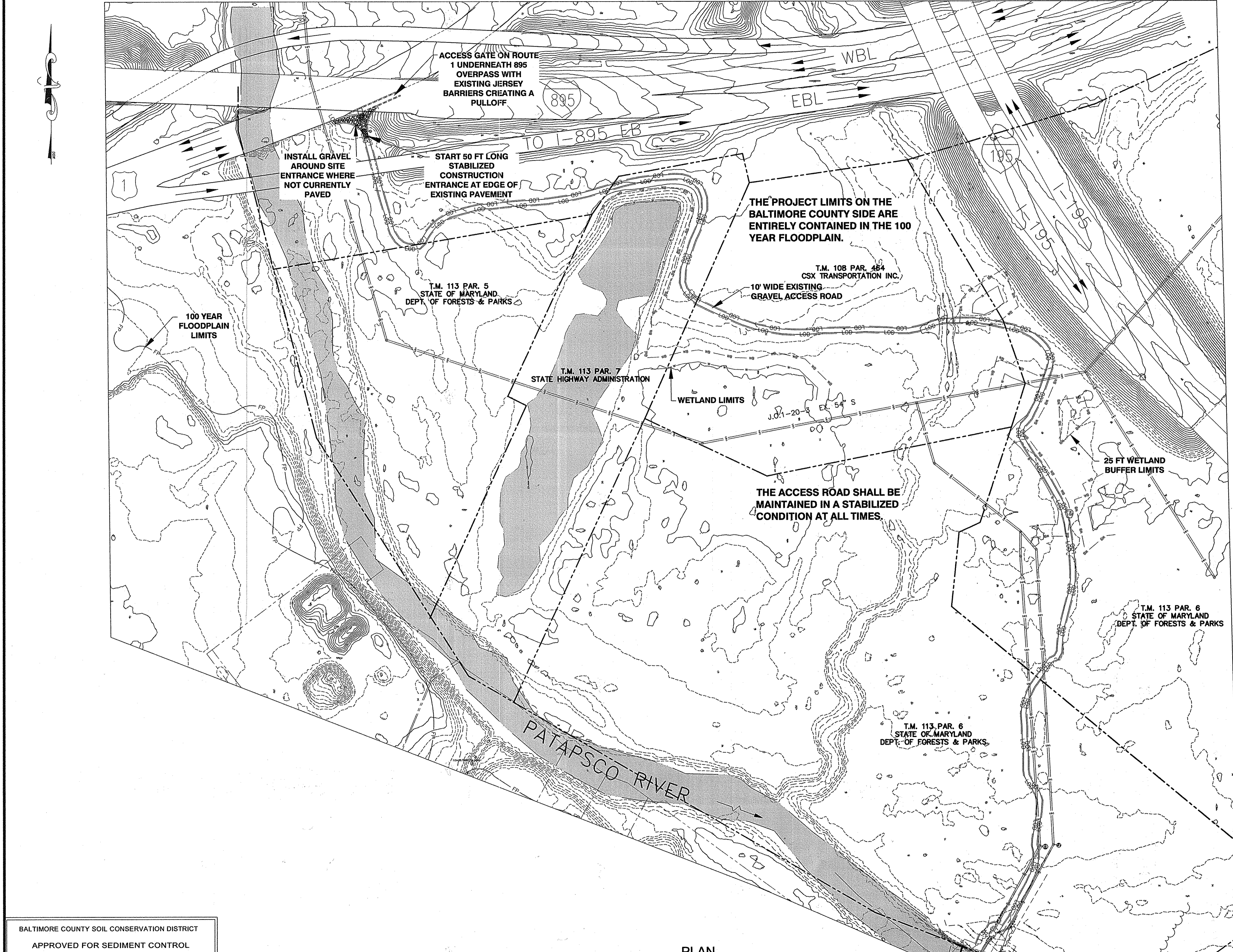
ELECTION DISTRICT NO. 1
HOWARD COUNTY, MARYLAND

SCALE:
SHOWN

SHEET
4 OF 14

AS-BUILTS
SEP 29 2015

Printed by (User) on Plot Date: Oct 01, 2013 4:30pm
 Path: \\s:\proj\proj\2013\10-01-10\proj\2013\10-01-10.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg
 User: J. West
 Job: Sediment Control
 Job Date: Sep 30, 2013 3:00pm
 Job Path: \\s:\proj\proj\2013\10-01-10\proj\2013\10-01-10.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg - Deep Run Siphon\CAO\WETLANDS.dwg



PLAN

SCALE : 1" = 100'

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT
 APPROVED FOR SEDIMENT CONTROL
Jeffery R. West 10-17-13
 DATE

AS-BUILTS
 SEP 29 2015
 BC-3 OF 7

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

J. West 10/15/13
 DIRECTOR OF PUBLIC WORKS DATE

Thomas & Suttler 10/7/13
 CHIEF, BUREAU OF ENGINEERING DATE

John 10/15/13
 CHIEF, BUREAU OF UTILITIES DATE

John 10/17/13
 CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
 Dewberry Consultants LLC
 3106 LORD BALTIMORE DRIVE
 SUITE #110
 BALTIMORE, MARYLAND 21244
 PHONE: 410.235.9500
 FAX: 410.265.8875



DES: LAL					
DRN: RLJ					
CHK: TND					
DATE: 10/2013	BY	NO.	REVISIONS	DATE	

BALTIMORE COUNTY ACCESS ROAD

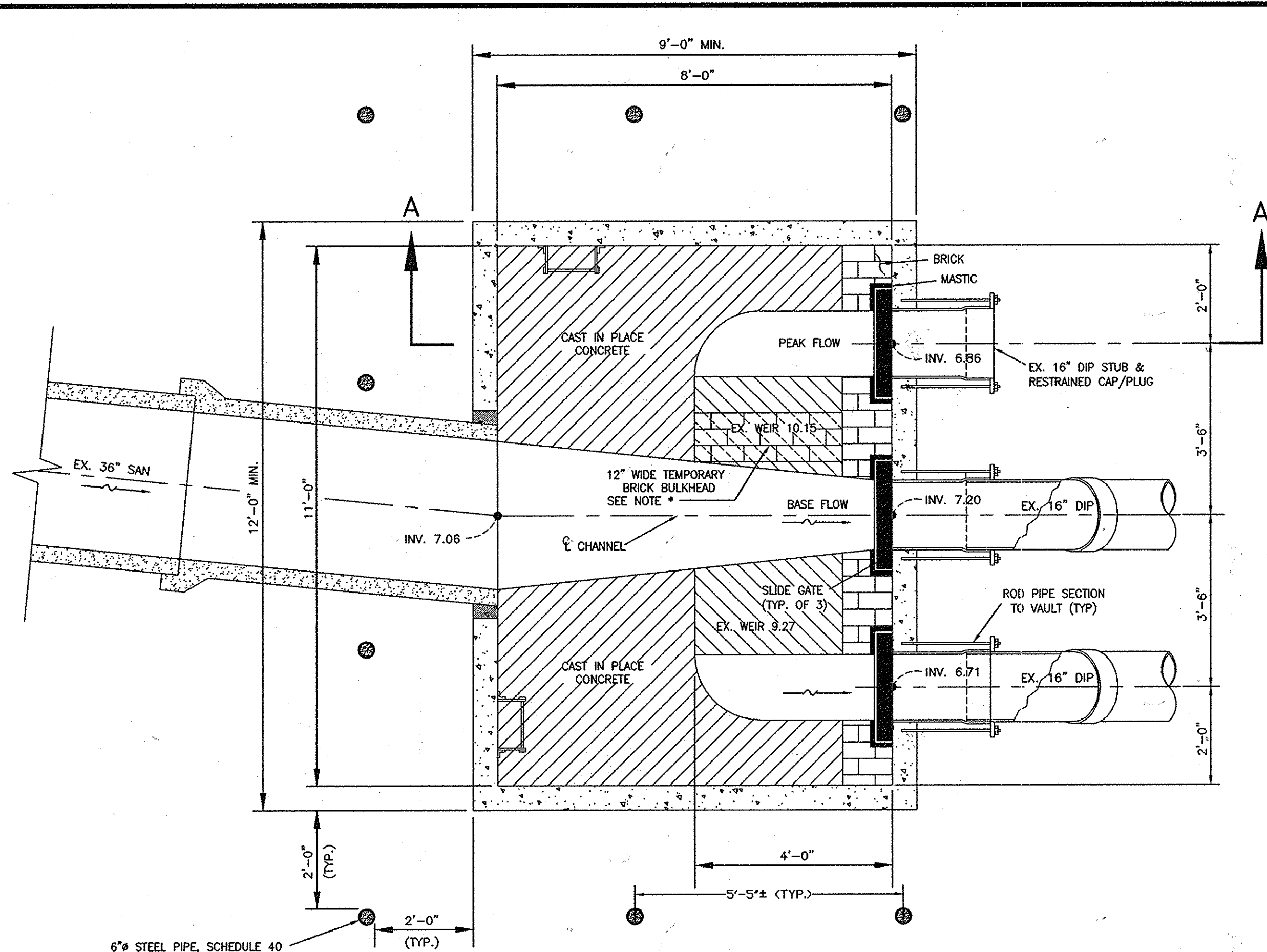
600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN
 INVERTED SIPHON IMPROVEMENTS
 CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1
 HOWARD COUNTY, MARYLAND

SCALE:
 SHOWN

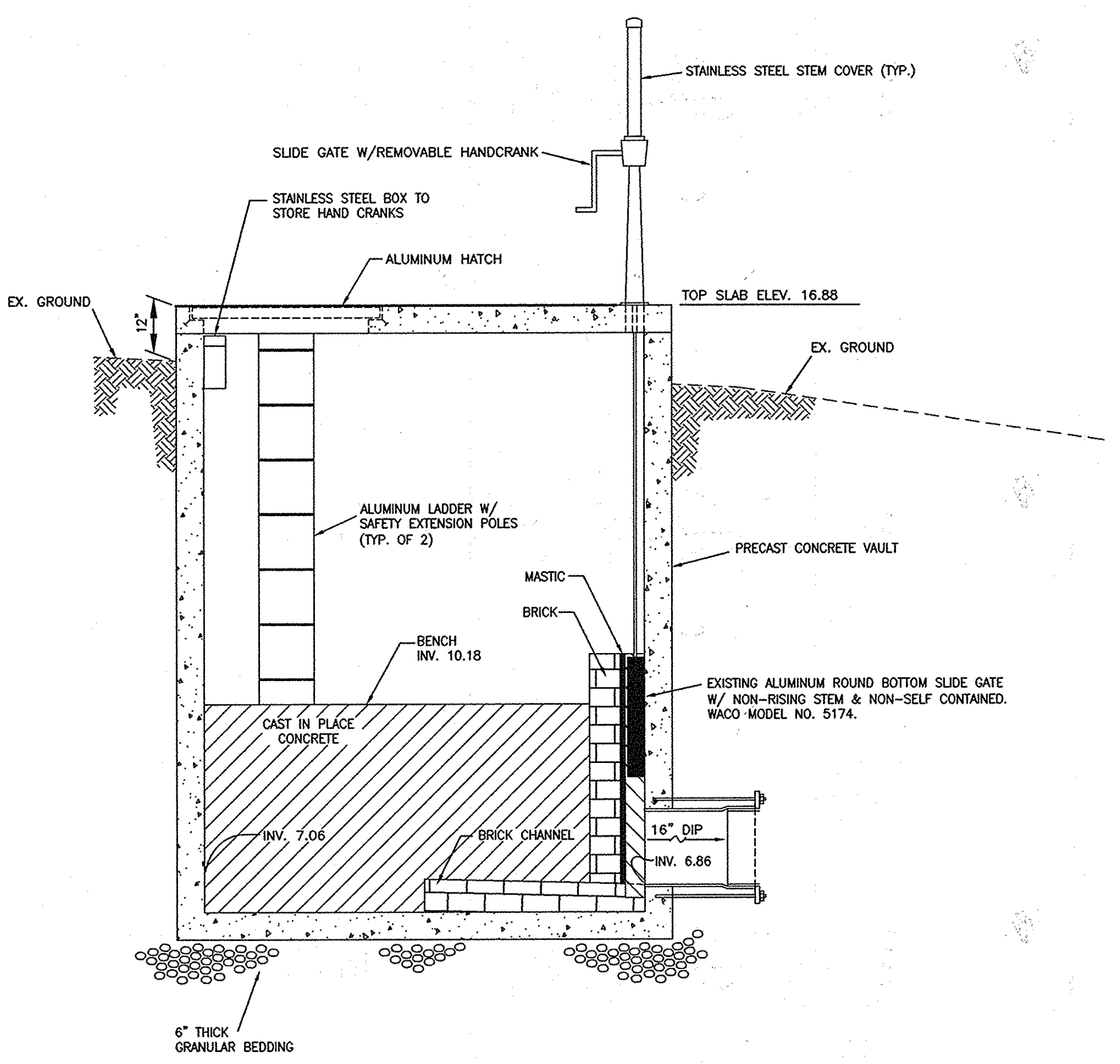
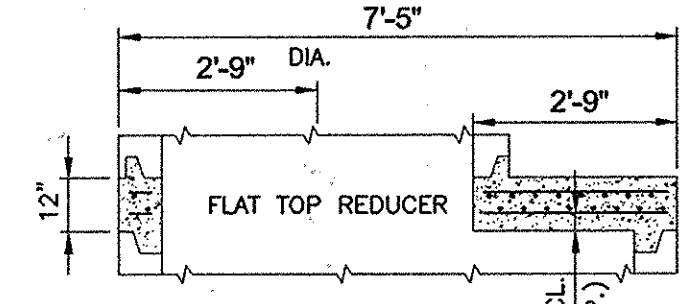
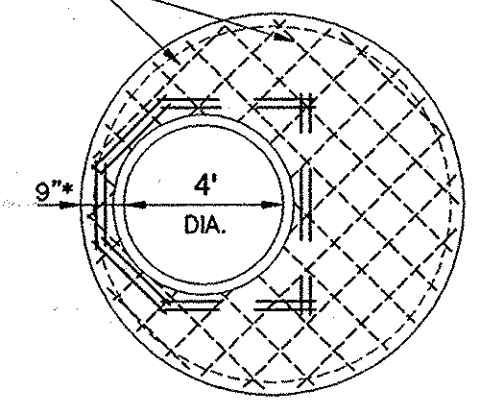
SHEET
 5 OF 14



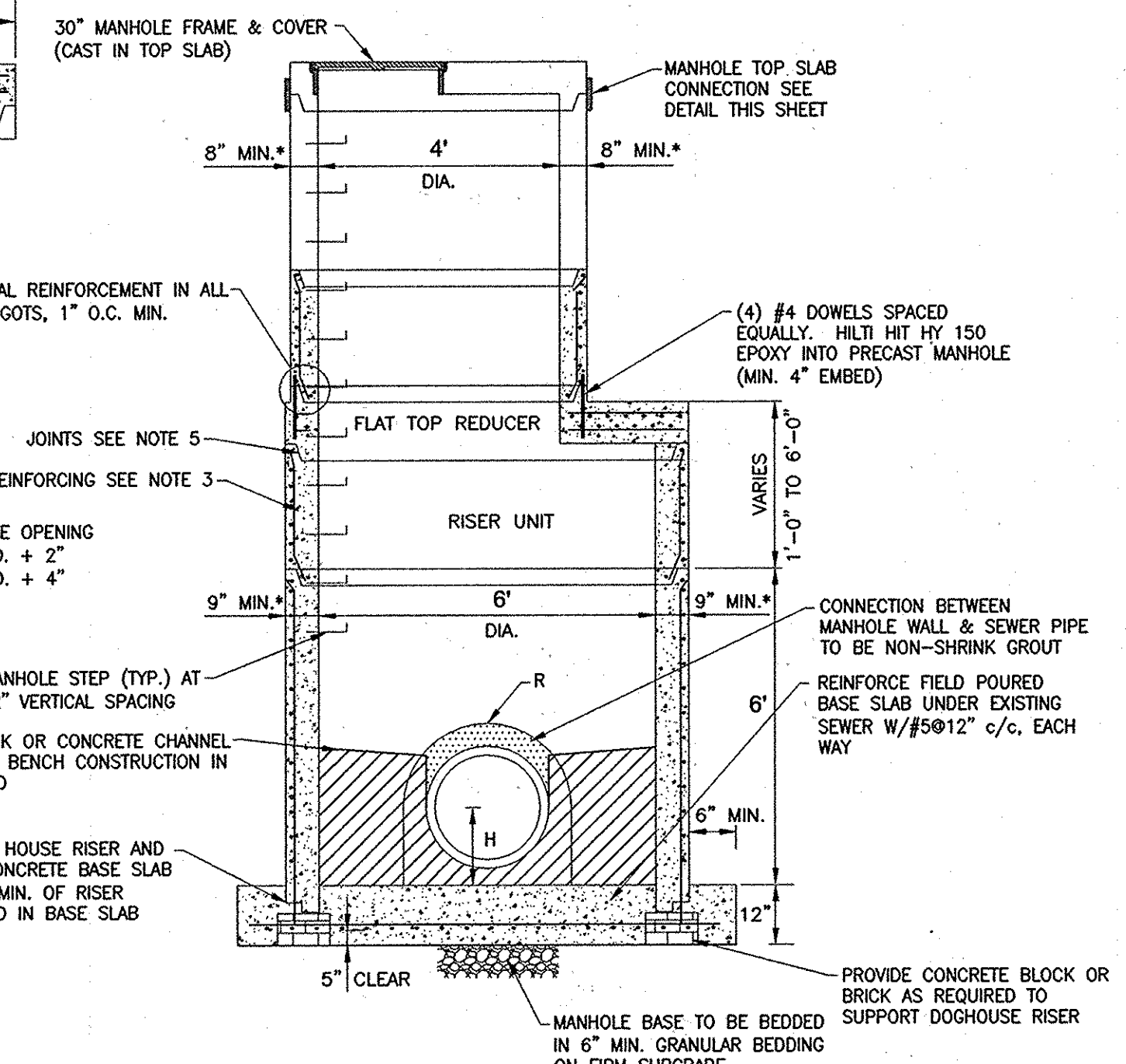
PLAN OF EXISTING STRUCTURE 1
SCALE: 1/2" = 1'-0"

* CONTRACTOR TO REMOVE TEMPORARY BRICK BULKHEAD AT THE END OF THE PROJECT, AFTER THE NEW SIPHON AND STRUCTURES ARE IN PLACE, INSPECTED AND READY FOR SERVICE.

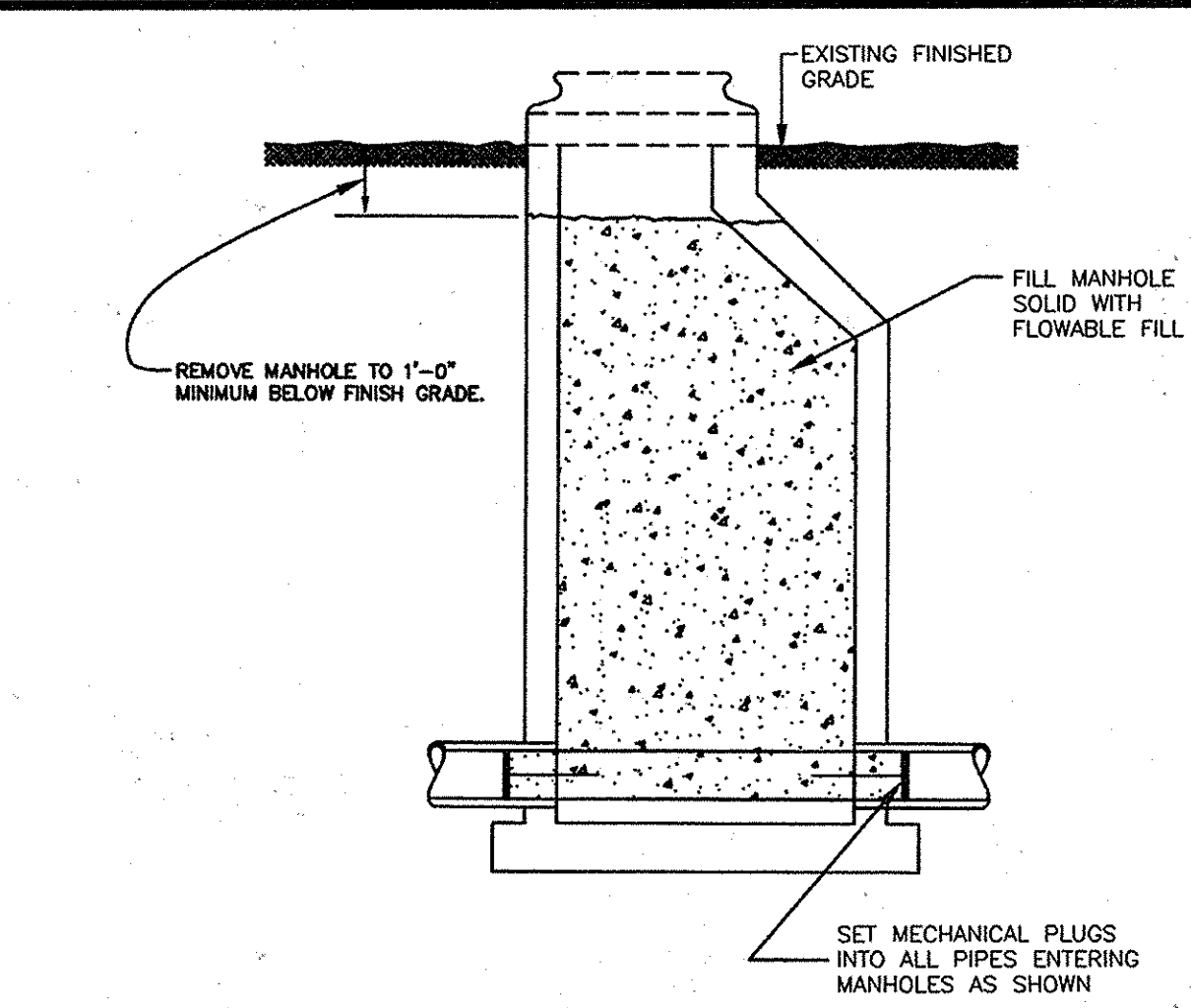
NO. 6 BARS 6" C/C 2 WAYS, BOTTOM NO. 6 C/C 2 WAYS



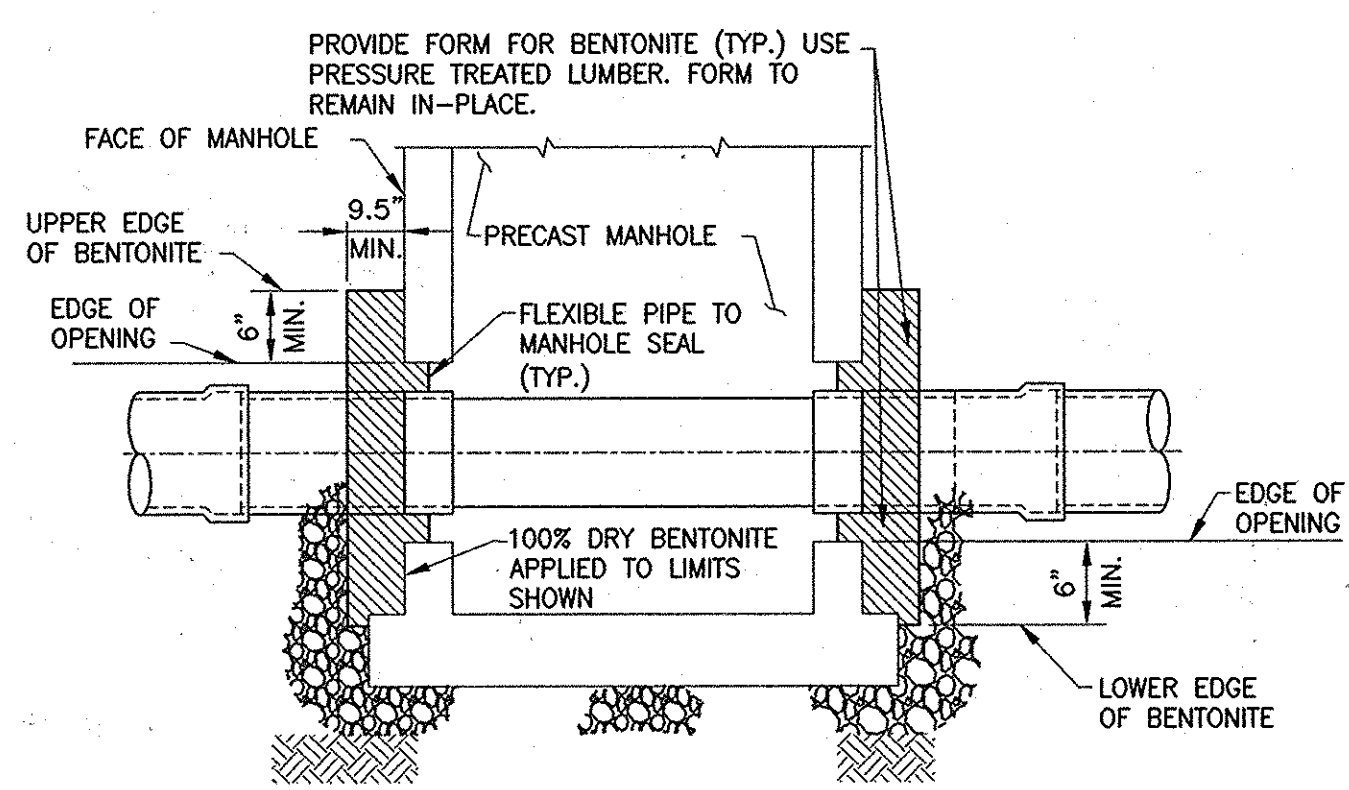
SECTION A-A
SCALE: 1/2" = 1'-0"



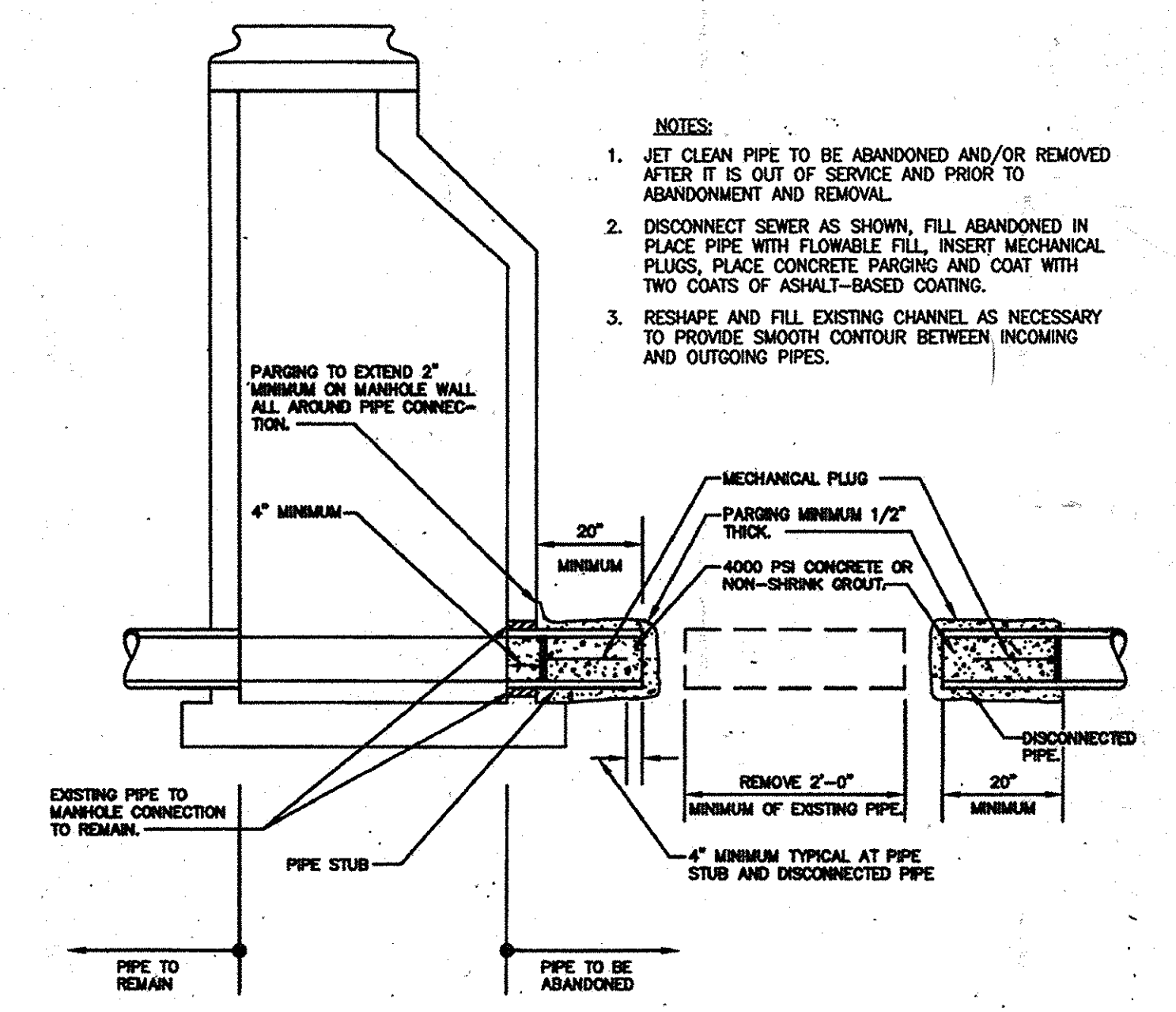
6'-0" DIA. DOGHOUSE PRECAST MANHOLE
SCALE: NTS



COMPLETE MANHOLE ABANDONMENT AT EX. MANHOLE 280
NOT TO SCALE

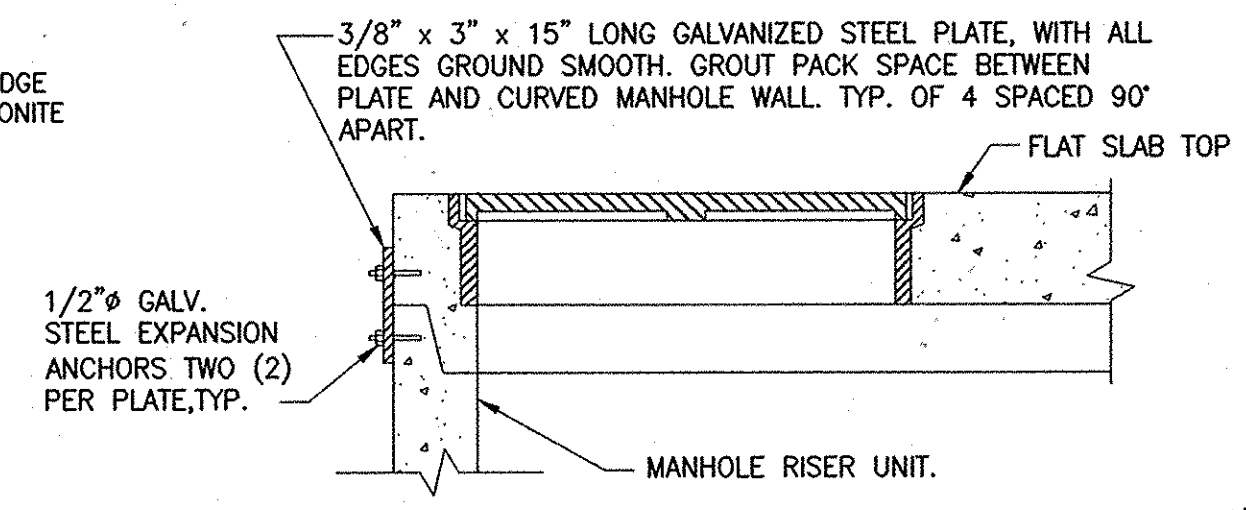


PIPE TO MANHOLE CONNECTIONS
NOT TO SCALE

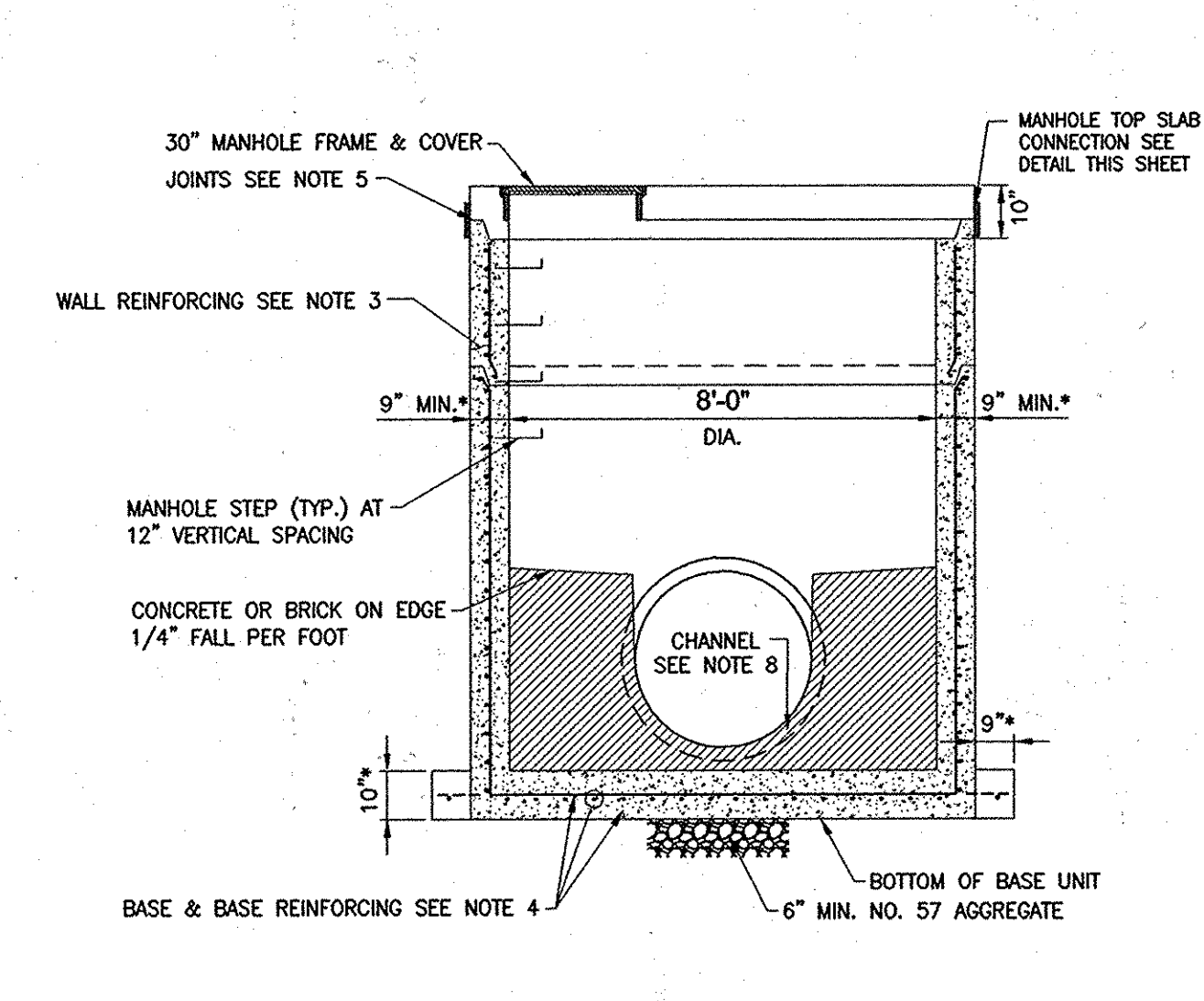
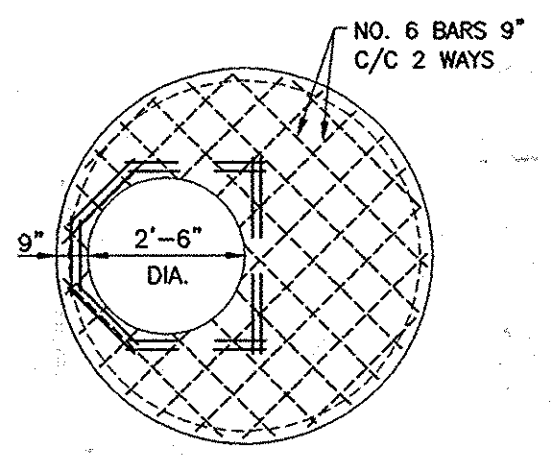


ABANDONMENT OF PIPE AT EX. MANHOLES 279, 280, & 281 AND LEFT IN PLACE
NOT TO SCALE

- NOTES:**
- JET CLEAN PIPE TO BE ABANDONED AND/OR REMOVED AFTER IT IS OUT OF SERVICE AND PRIOR TO ABANDONMENT AND REMOVAL.
 - DISCONNECT SEWER AS SHOWN, FILL ABANDONED IN PLACE PIPE WITH FLOWABLE FILL, INSERT MECHANICAL PLUGS, PLACE CONCRETE PARGING AND COAT WITH TWO COATS OF ASHALT-BASED COATING.
 - RESHAPE AND FILL EXISTING CHANNEL AS NECESSARY TO PROVIDE SMOOTH CONTOUR BETWEEN INCOMING AND OUTGOING PIPES.



MANHOLE TOP SLAB CONNECTION
NOT TO SCALE



6'-0" DIA. DOGHOUSE PRECAST MANHOLE
SCALE: NTS

- 6'-0" & 8'-0" DIAMETER MANHOLE NOTES:**
- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 AND THE GENERAL NOTES APPLICABLE TO PRECAST MANHOLES ON STANDARD DETAIL 0-5.11.
 - CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
 - WALL REINFORCEMENT FOR BASE AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.37 IN²/FT. FOR THE 96" DIAMETER MANHOLE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND A-82. REINFORCEMENT BARS SHALL MEET ASTM A-615, GRADE 60.
 - BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.37 IN²/FT. FOR THE 96" DIAMETER MANHOLE. THE BASE SHALL BE MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
 - 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 RUBBER O-RING GASKETS ASTM A-361 & C-443.
 - MINIMUM DISTANCE BETWEEN PIPE OPENINGS IN MANHOLE WALL SHALL BE 12 INCHES FROM THE EDGE OF ONE OPENING TO THE EDGE OF THE NEXT.
 - LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
 - MIX NO. 6 PRECAST CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED AND SHALL SLOPE TOWARD OUTLET AS DIRECTED BY THE ENGINEER.
 - MANHOLE INTERIOR LINER REQUIRED. REFER TO "SANITARY SEWER MANHOLES" SECTION OF THE SPECIAL PROVISIONS.

* DIMENSIONS TO BE CONFIRMED BY THE MANUFACTURER.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John J. ... 10/26/13
DIRECTOR OF PUBLIC WORKS DATE

Marcus S. Butler 10/26/13
CHIEF, BUREAU OF ENGINEERING DATE

... 10/17/13
CHIEF, BUREAU OF UTILITIES DATE

... 10/17/13
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry Consultants LLC

3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.255.9500
FAX: 410.255.9875



DES: LAL					
DRN: RLJ					
CHK: TND					
DATE: 10/2013	BY	NO.	REVISIONS	DATE	

EXISTING HOWARD COUNTY SIPHON STRUCTURE, MANHOLE 4, & MISCELLANEOUS DETAILS

600' SCALE MAP NO. 38 BLOCK NO. 5

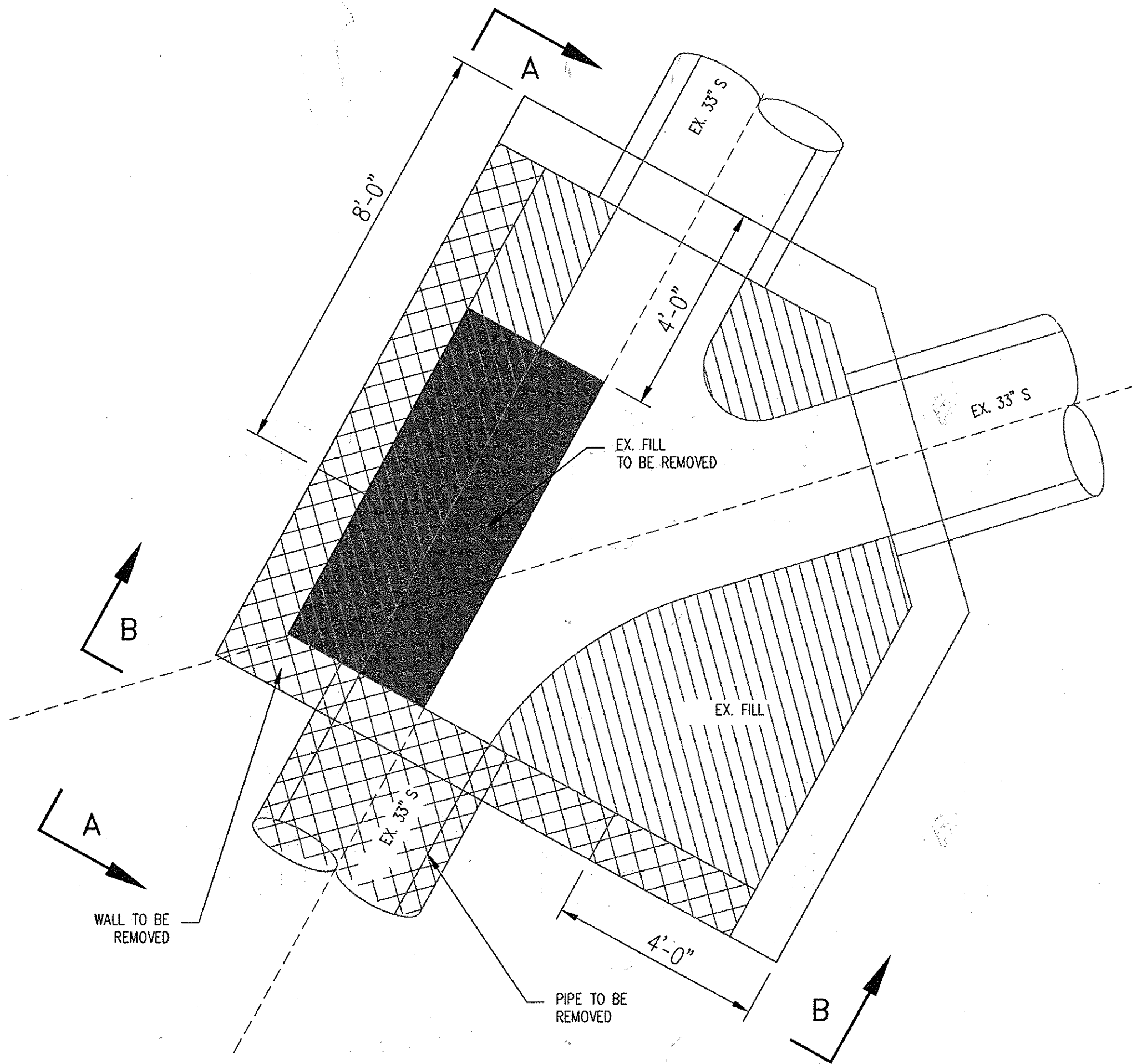
FURNACE AVE SEWER AND DEEP RUN INVERTED SIPHON IMPROVEMENTS
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

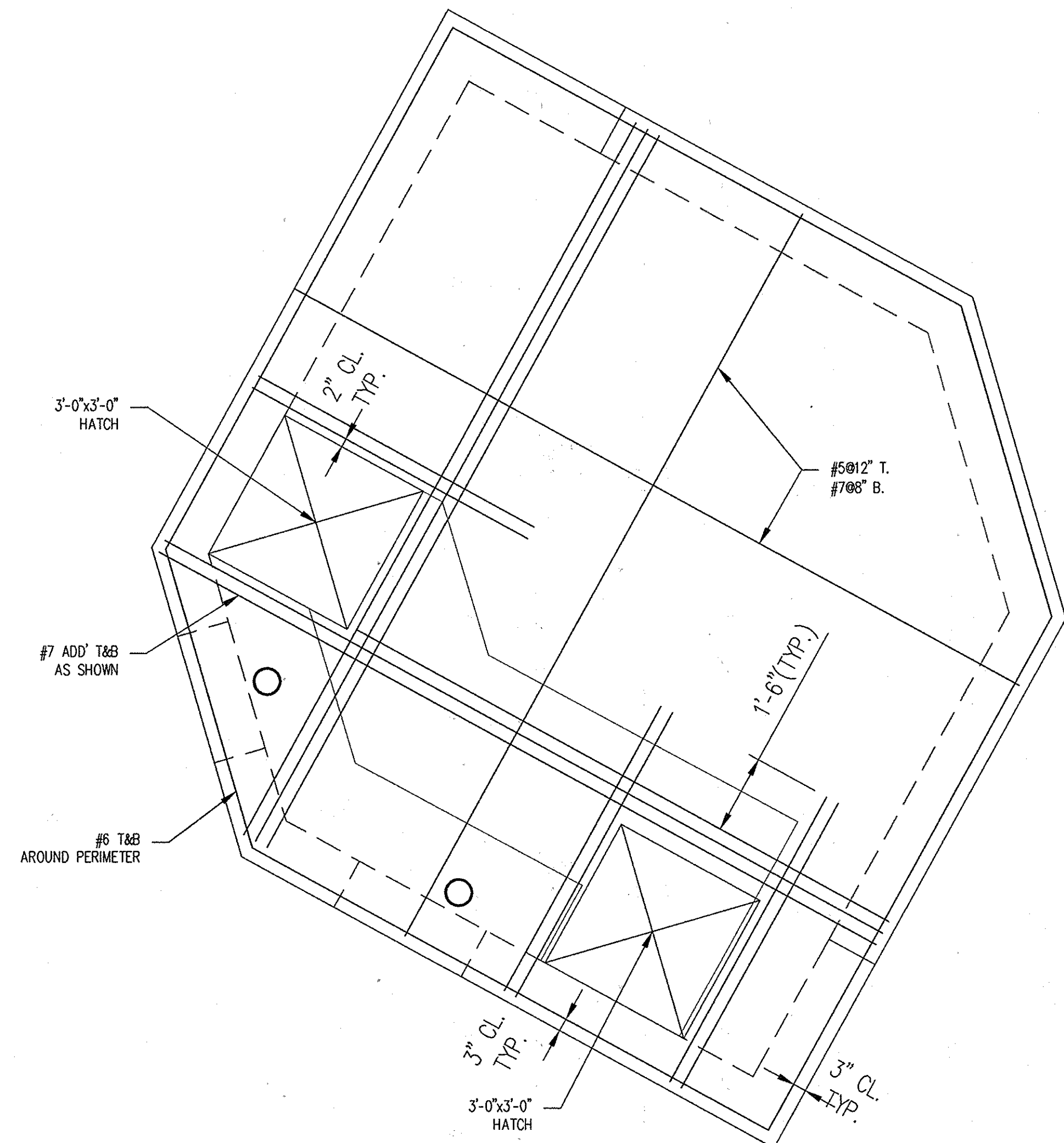
SCALE: SHOWN

SHEET 6 OF 14

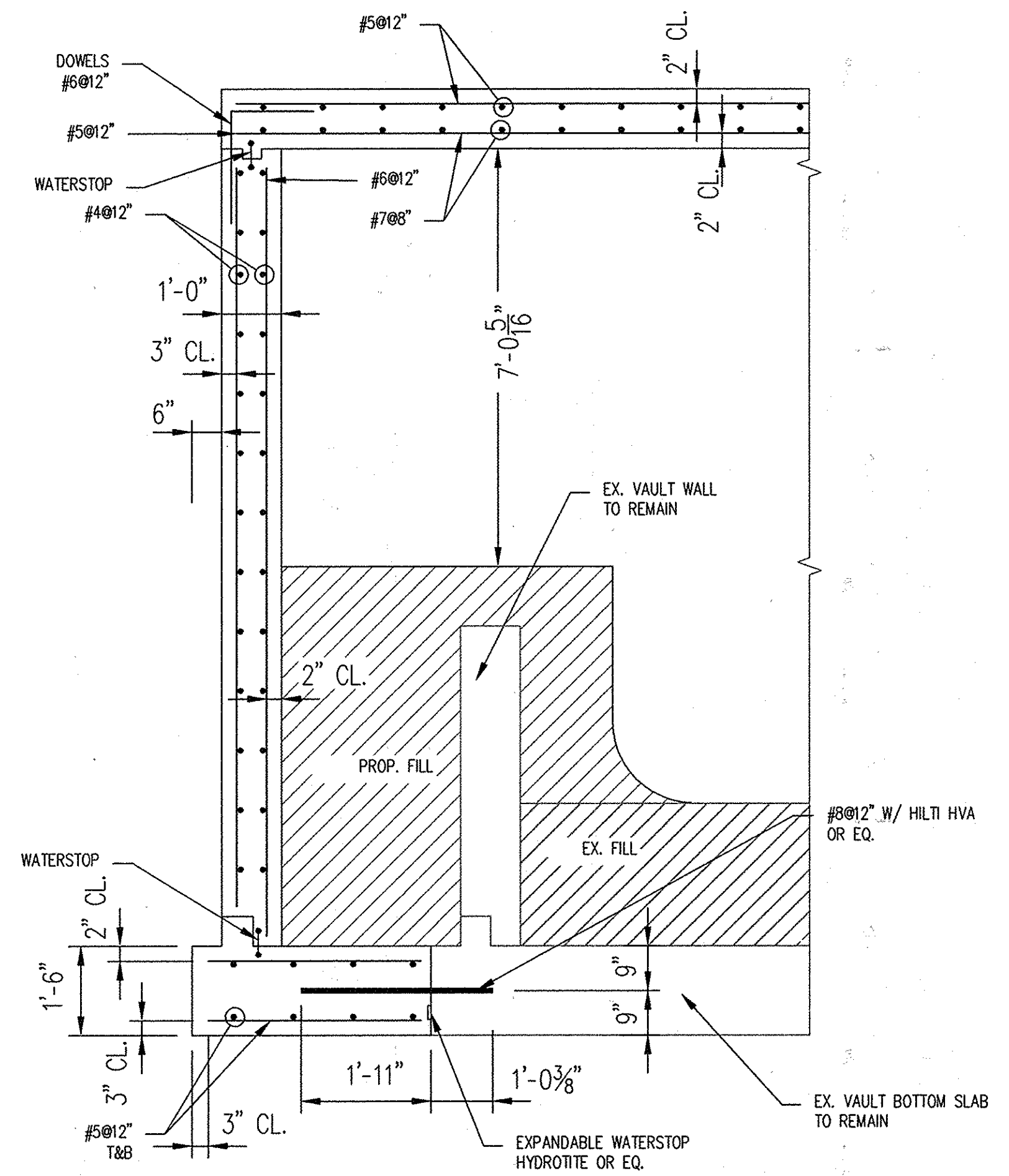
AS-BUILTS
SEP 29 2015



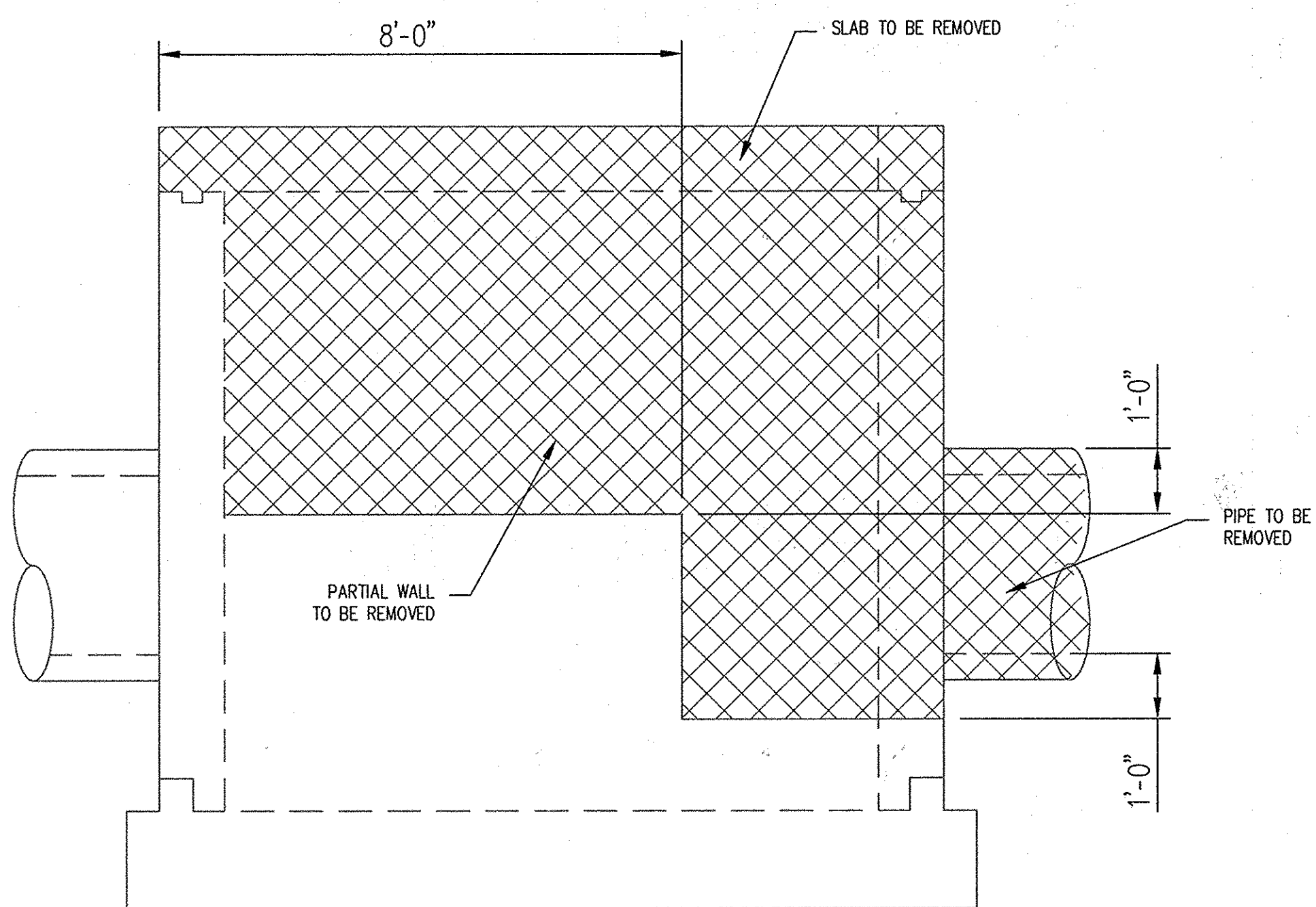
WALL DEMOLITION PLAN
SCALE : 1/2" = 1'-0"



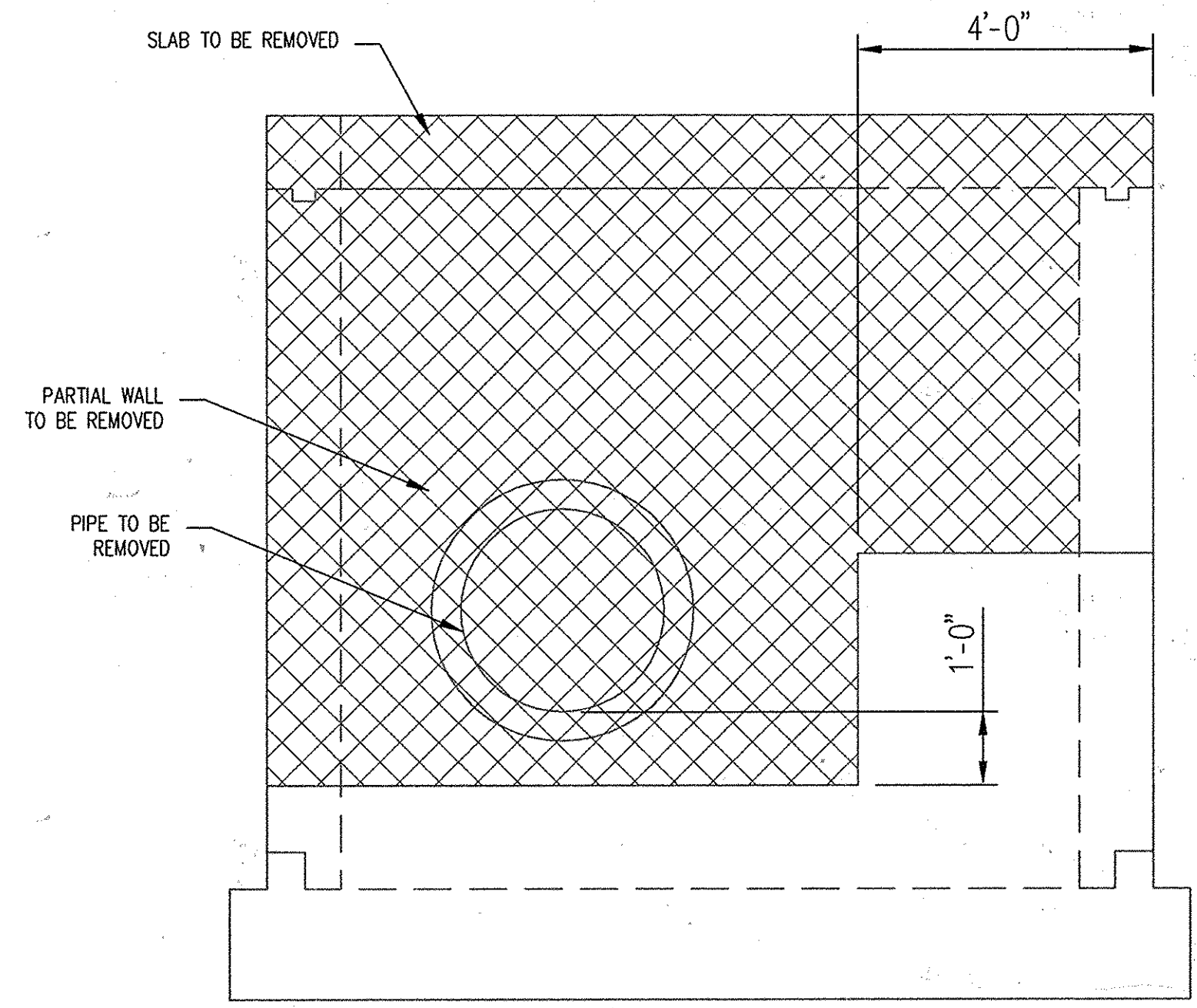
TOP SLAB REINFORCEMENT
SCALE : 1/2" = 1'-0"



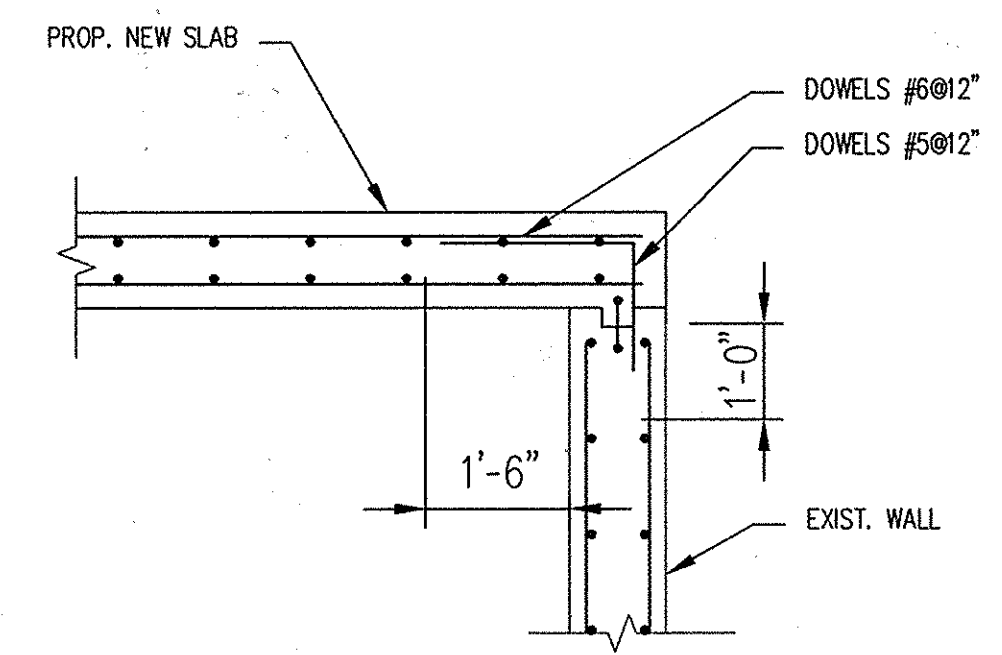
SECTION E-E (SHEET 8)
SCALE : 1/2" = 1'-0"



SECTION A-A
SCALE : 1/2" = 1'-0"



SECTION B-B
SCALE : 1/2" = 1'-0"



TOP SLAB TO EXISTING WALL CONNECTION DETAIL
SCALE : 1/2" = 1'-0"

NOTE: CONTRACTOR SHALL CAREFULLY DEMOLISH AND REMOVE TOP SLAB AWAY FROM EXISTING TOP OF SIDE WALLS WITH THE INTENTION TO RETAIN THE EXISTING KEY AND #5 DOWELS. IF NOT POSSIBLE, THE CONTRACTOR SHALL NEATLY SAW CUT AWAY PORTIONS OF JAGGED CONCRETE WALL AT THE DIRECTION OF THE ENGINEER.

SEE GENERAL NOTES ON SHEET 8.

AS-BUILTS
SEP 29 2015

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 10/15/13
 Date: *[Signature]* 10/15/13
 Chief, Bureau of Utilities: *[Signature]* 10/15/13
 Date: *[Signature]* 10/15/13

Dewberry
Dewberry Consultants LLC

3106 LORD BALTIMORE DRIVE
 SUITE #110
 BALTIMORE, MARYLAND 21244
 PHONE: 410.265.9500
 FAX: 410.265.1875



DES: LAL
 DRN: RLJ
 CHK: TND
 DATE: 10/2013

BY	NO.	REVISIONS	DATE

VAULT 4 EXTENSION

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN
 INVERTED SIPHON IMPROVEMENTS
 CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1

HOWARD COUNTY, MARYLAND

SCALE:
 SHOWN
 SHEET
 7 OF 14

GENERAL NOTES

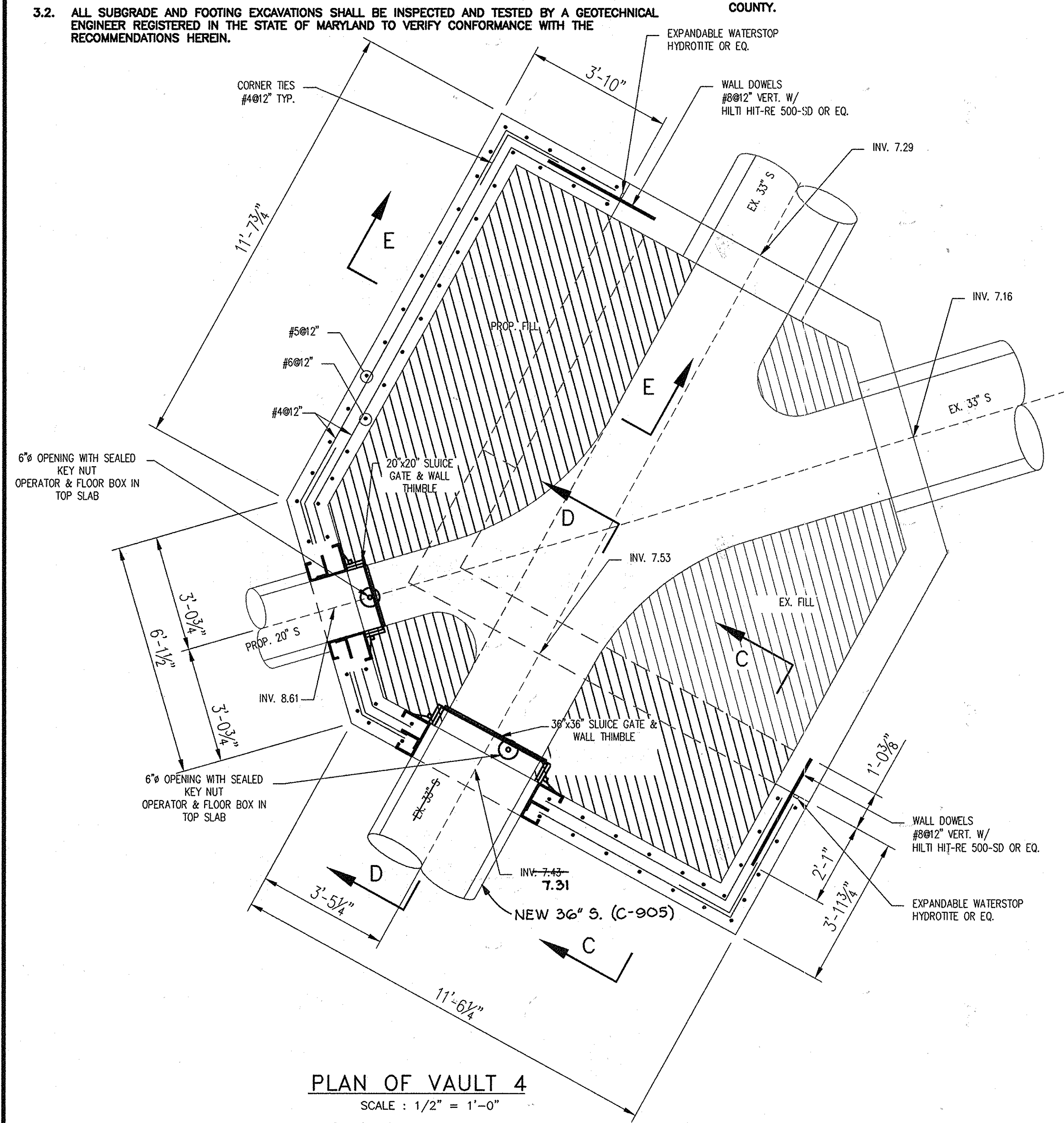
- CONSTRUCTION REQUIREMENTS AT EXISTING STRUCTURE:
 - THE CONTRACTOR SHALL FIELD VERIFY EXISTING FOUNDATION CONDITIONS ADJACENT TO VAULT EXTENSION. IF CONDITIONS DIFFER FROM THOSE SHOWN, NOTIFY ENGINEER IMMEDIATELY.
 - SIZES, ELEVATIONS, AND DIMENSIONS OF EXISTING ELEMENTS ARE BASED ON EXISTING DRAWINGS AND ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ACTUAL CONDITIONS/MEASUREMENTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE STARTING WORK.
 - THE CONTRACTOR SHALL STAGE HIS CONSTRUCTION SEQUENCE SO AS NOT TO UNDERMINE THE EXISTING FOUNDATIONS OR VAULT EXTENSION DURING THE CONSTRUCTION PROCESS.
 - THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY AND ALL WORK NECESSARY FOR CONSTRUCTION SAFETY AND PROTECT EXISTING FACILITIES. EXCEPT AS SHOWN ON DEMOLITION PLAN, ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE OWNER.
- CAST IN PLACE CONCRETE:
 - CONCRETE SHALL ATTAIN MINIMUM 28 DAY STRENGTH OF 4500 PSI.
 - ALL REINFORCING STEEL FOR CONCRETE SHALL CONFORM TO ASTM SPECIFICATIONS A615, GRADE 60 FOR BARS.
 - SEE CAST-IN-PLACE CONCRETE IN THE TECHNICAL SPECIFICATIONS, SECTION 03300.
- FOUNDATIONS:
 - PROVIDE A MINIMUM NET ALLOWABLE BEARING CAPACITY OF 3,000 PSF
 - ALL SUBGRADE AND FOOTING EXCAVATIONS SHALL BE INSPECTED AND TESTED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MARYLAND TO VERIFY CONFORMANCE WITH THE RECOMMENDATIONS HEREIN.

SEQUENCE OF WORK

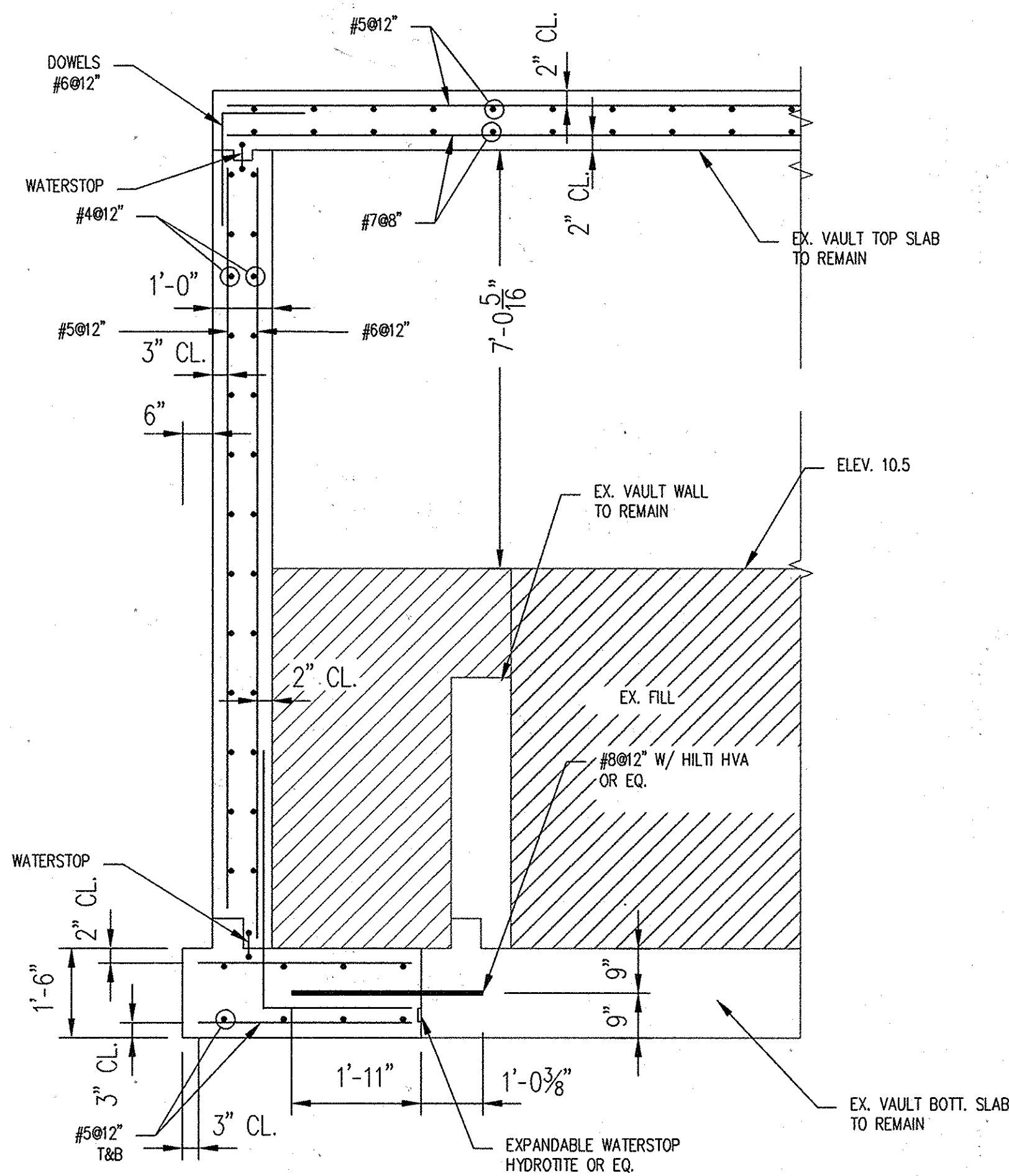
- REMOVE EXISTING WALLS, PIPE AND EXISTING BENCH AS INDICATED ON DESIGN PLAN.
- INSTALL DOWELS AS SHOWN ONTO EXISTING SLABS AND WALLS, FOLLOW MANUFACTURER'S INSTRUCTIONS.
- INSTALL EXPANDABLE WATER STOP AS SHOWN, FOLLOW MANUFACTURER'S INSTRUCTIONS.
- CONSTRUCT VAULT EXTENSION.
- SEE SEWAGE BYPASS PUMPING IN THE SPECIAL PROVISIONS.

NOTES:

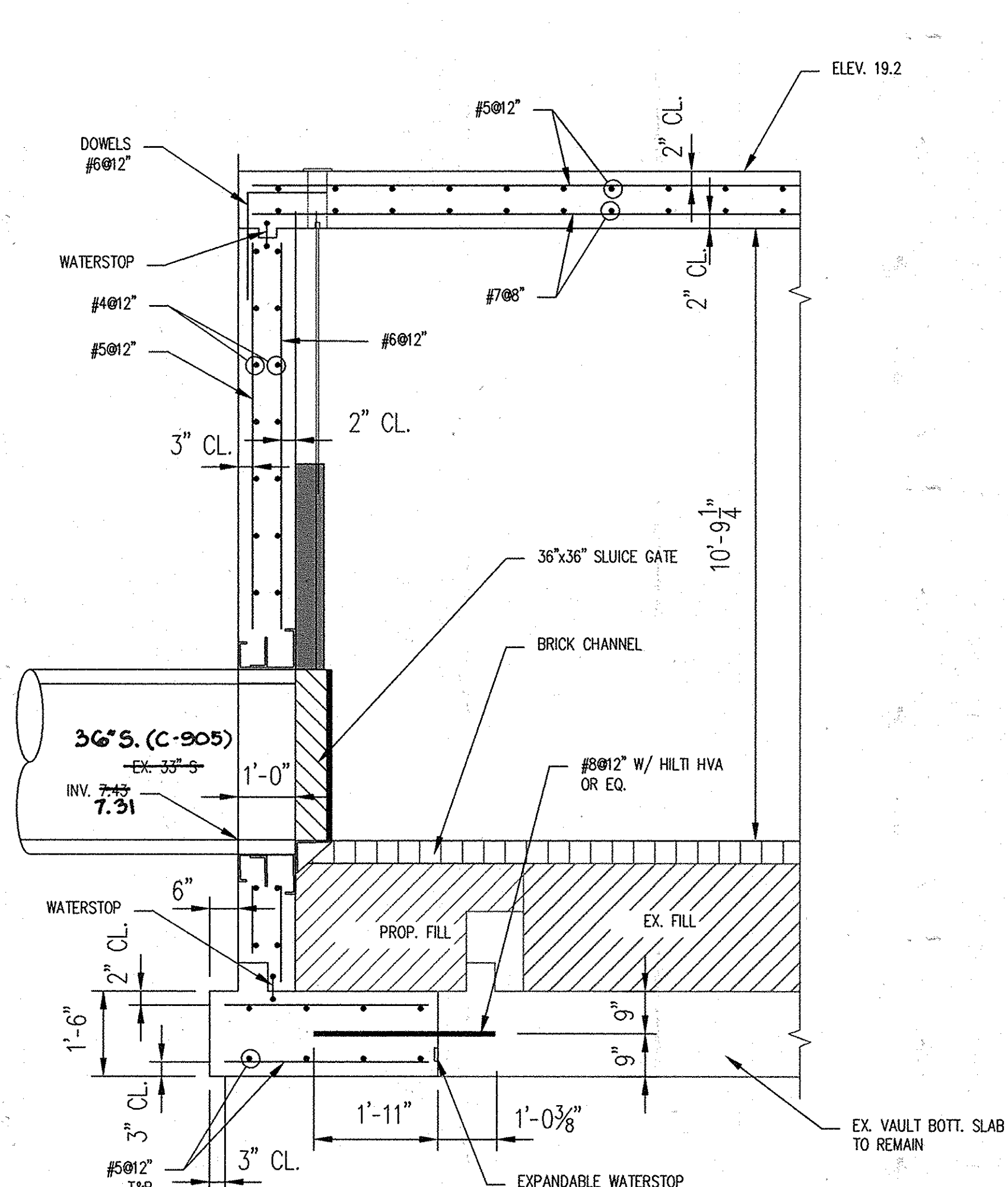
- SLUICE GATES SHALL BE FONTAINE SERIES 20 MODEL 202-WALL MOUNTED (COMPLETE WITH WALL THIMBLE) AND NON-RISING STEM (NRI), WHIPPS, OR APPROVED EQUAL, RIGHT TURN OPEN, LEFT TURN SHUT.
- A-LOK SINGLE CLAMP WATER STOPS SHALL BE USED AT PIPE ENTRY/EXIT POINTS OF THE DIVERSION STRUCTURE, AS INDICATED ON DRAWINGS.
- GROUND LEVEL POSITION INDICATOR SHALL BE A SEALED UNIT WITH A STAINLESS STEEL SEALED FLOOR BOX. KEY NUT OPERATOR AND POSITION INDICATOR SHALL BE GPI-S SERIES AS MANUFACTURED BY DYNATORQUE, INC. OR APPROVED EQUAL. DIRECTION INDICATOR SHALL SHOW RIGHT TURN OPEN, LEFT TURN SHUT.
- SEWAGE SHALL NOT, UNDER ANY CIRCUMSTANCES, BE DISCHARGED TO THE NEW SEWER UNTIL WRITTEN PERMISSION IS PROVIDED BY THE COUNTY.



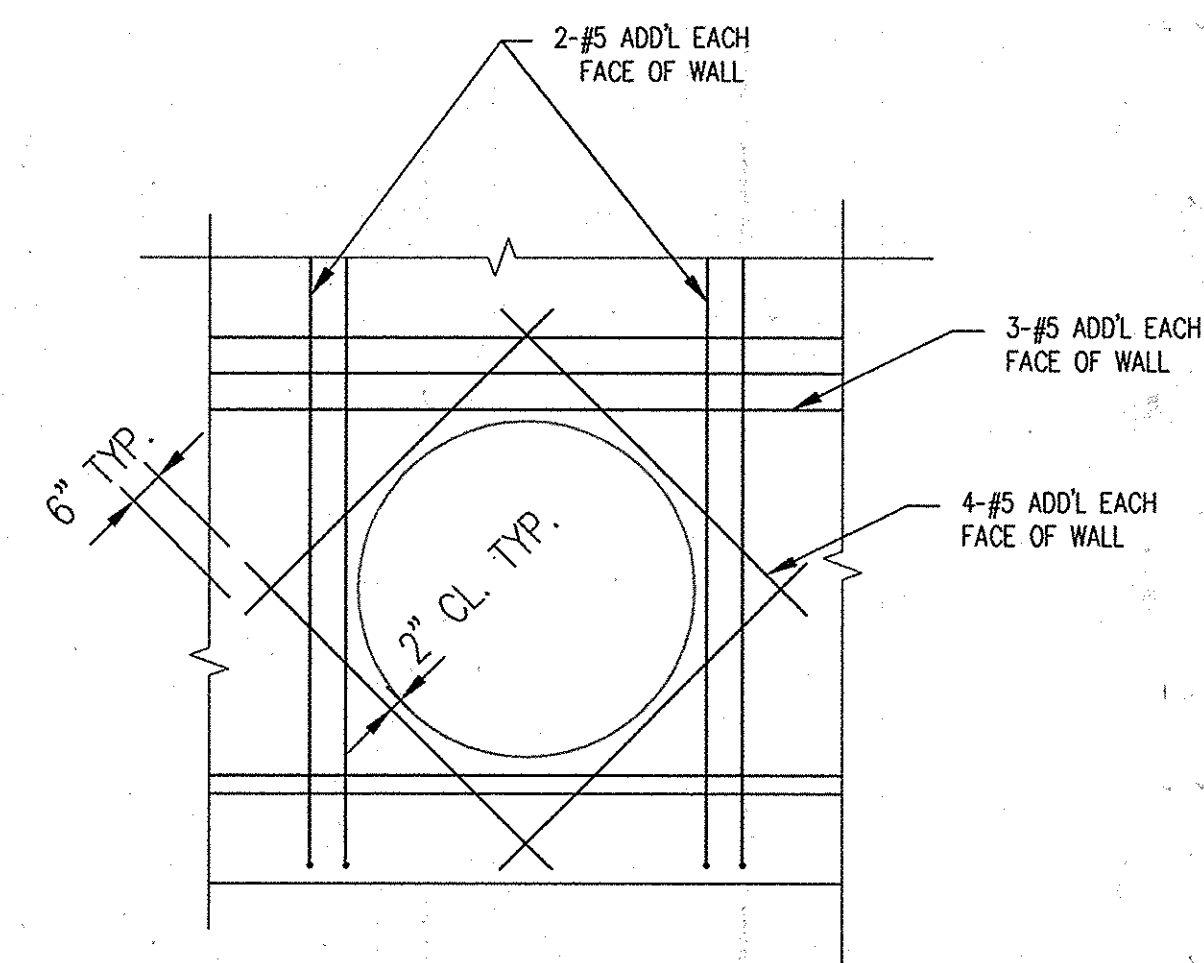
PLAN OF VAULT 4
SCALE : 1/2" = 1'-0"
SEE SHEET 10 FOR NEW MANHOLE 277 (2015)



SECTION C-C
SCALE : 1/2" = 1'-0"



SECTION D-D
SCALE : 1/2" = 1'-0"



ADDITIONAL REINFORCEMENT AT WALL OPENING
SCALE : 1/2" = 1'-0"

AS-BUILTS

SEP 29 2015

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. ... 10/15/13
DIRECTOR OF PUBLIC WORKS DATE

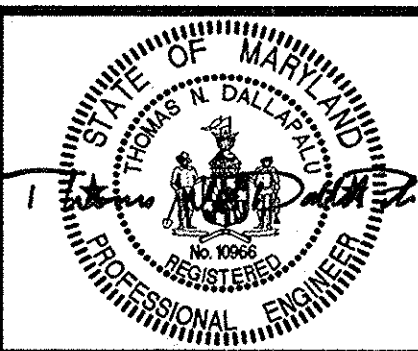
Thomas P. ... 10/17/13
CHIEF, BUREAU OF ENGINEERING DATE

... 10/16/13
CHIEF, BUREAU OF UTILITIES DATE

... 10/27/13
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry Consultants LLC

3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.255.9500
FAX: 410.255.9875



DES: LAL				
DRN: RLJ				
CHK: TND				
DATE: 10/2013				
BY	NO.	REVISIONS	DATE	

VAULT 4 EXTENSION & GENERAL NOTES

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN INVERTED SIPHON IMPROVEMENTS
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE: SHOWN

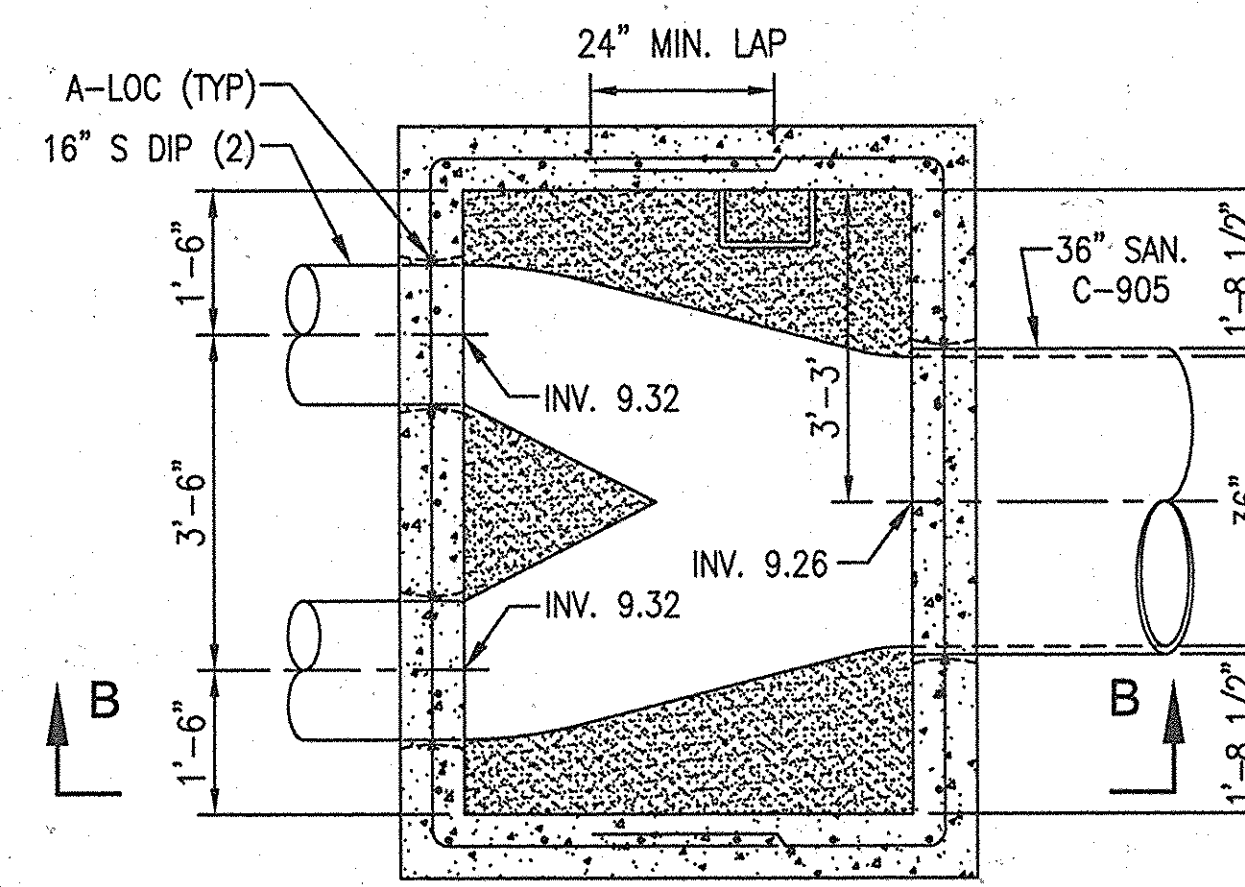
SHEET 8 OF 14

HOWARD COUNTY SEQUENCE OF OPERATION

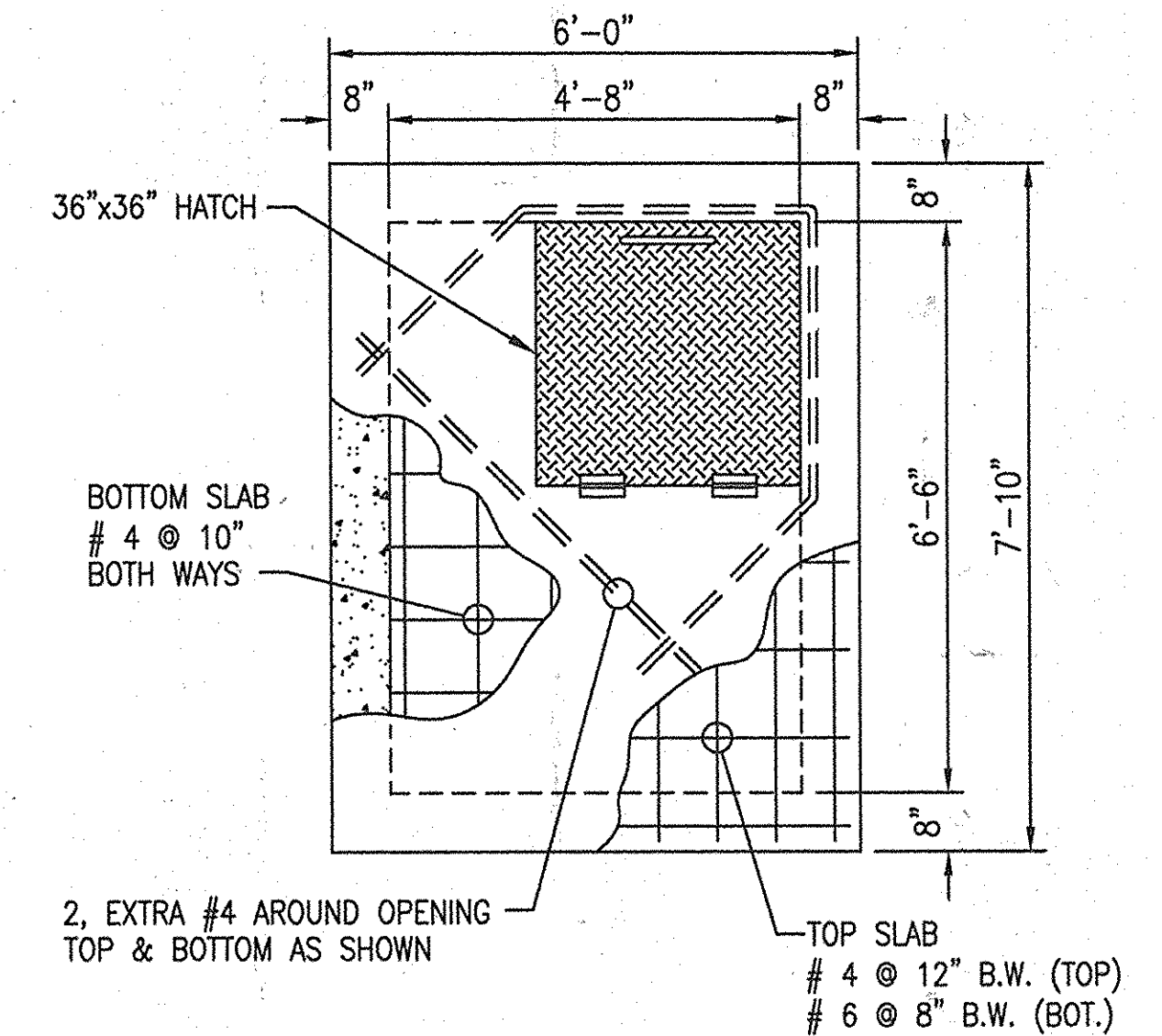
- PRE-CONSTRUCTION MEETING: NOTIFY THE HOWARD COUNTY CONSTRUCTION DIVISION (1-410-313-3800) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE COUNTY SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
- CONTRACTOR MUST LOCATE AND PROCURE ALL STAGING AND STOCKPILING AREAS WHICH MUST BE APPROVED BY THE PROJECT INSPECTOR.
- CLEAR AND GRUB THOSE AREAS FOR INSTALLATION OF SEDIMENT AND EROSION PERIMETER CONTROLS. REMOVE AND SALVAGE TOPSOIL.
- INSTALL SEDIMENT AND EROSION CONTROL MEASURES INCLUDING THE STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCE ALONG THE RIVER BANK.
- WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT AND EROSION CONTROL INSPECTOR, CLEAR AND GRUB THE REMAINDER OF THE SITE.
- PERFORM THE FOLLOWING SEQUENCE FOR EACH DAY OF UTILITY CONSTRUCTION OPERATIONS:
 - EXCAVATE AND INSTALL SANITARY SEWER AND APPURTENANCES. PLACE BACKFILL AND COMPACT.
 - PLACE TOPSOIL, FINE GRADE, SEED AND APPLY MULCH TO DISTURBED AREA.
 - FURNACE AVENUE IS TO BE SWEEPED FREE OF DIRT AND DEBRIS.
- DIRECT ALL WATER PUMPED DURING TRENCH DEWATERING OPERATIONS TO AN APPROVED PORTABLE SEDIMENT TANK. CLEAN OUT TANK WHEN ONE-THIRD (1/3) FILLED WITH SILT. HAUL SEDIMENT TO A COUNTY APPROVED SITE.
- NO EXCAVATED MATERIAL MUST BE PLACED IN THE DITCH ADJACENT TO THE EXISTING ROADWAY. THE CONTRACTOR MUST TAKE PRECAUTIONS TO PREVENT THE DISTURBANCE OF EXISTING VEGETATED AREAS TO THE EXTENT POSSIBLE. ANY EXISTING VEGETATED AREAS DISTURBED AS A RESULT OF THE CONTRACTOR'S WORK OPERATIONS MUST BE STABILIZED BY THE END OF THE WORK DAY.
- STABILIZE THE TOP OF ALL TRENCHES BY THE END OF EACH WORK DAY. ALL EXCESS STOCKPILED SOIL REMAINING AFTER REFILLING OF THE TRENCH(S) MUST BE REMOVED FROM THE SURFACE AND HAULED FROM THE SITE BY THE END OF THE WORKING DAY. THE CONTRACTOR MUST BE RESPONSIBLE FOR OBTAINING ALL PERMITS FOR HIS OFF-SITE STOCKPILE AREAS. THE CONTRACTOR MUST ALSO ADEQUATELY CLEAN ALL DIRT AND MUD OFF THE ROADWAYS BY THE END OF EACH WORKING DAY.
- STABILIZE ANY REMAINING DISTURBED AREAS AS REQUIRED.
- REMOVE ANY REMAINING SEDIMENT CONTROLS AFTER PRIOR APPROVAL FROM HOWARD COUNTY INSPECTIONS AND PERMITS DIVISION. FINE GRADE AND STABILIZE AREA FORMERLY OCCUPIED BY PERIMETER CONTROLS.
- ONE HALF OF THE RIVER MAY BE DIVERTED AT ONE TIME FOR THE PURPOSES OF PIPE INSTALLATION AND INVERT PROTECTION WITH A MINIMUM OPENING OF 45% OF THE RIVER FOR FLOW WIDTH. STREAM CONSTRUCTION MAY NOT EXCEED 2 WEEKS.

HOWARD COUNTY SEDIMENT CONTROL GENERAL NOTES

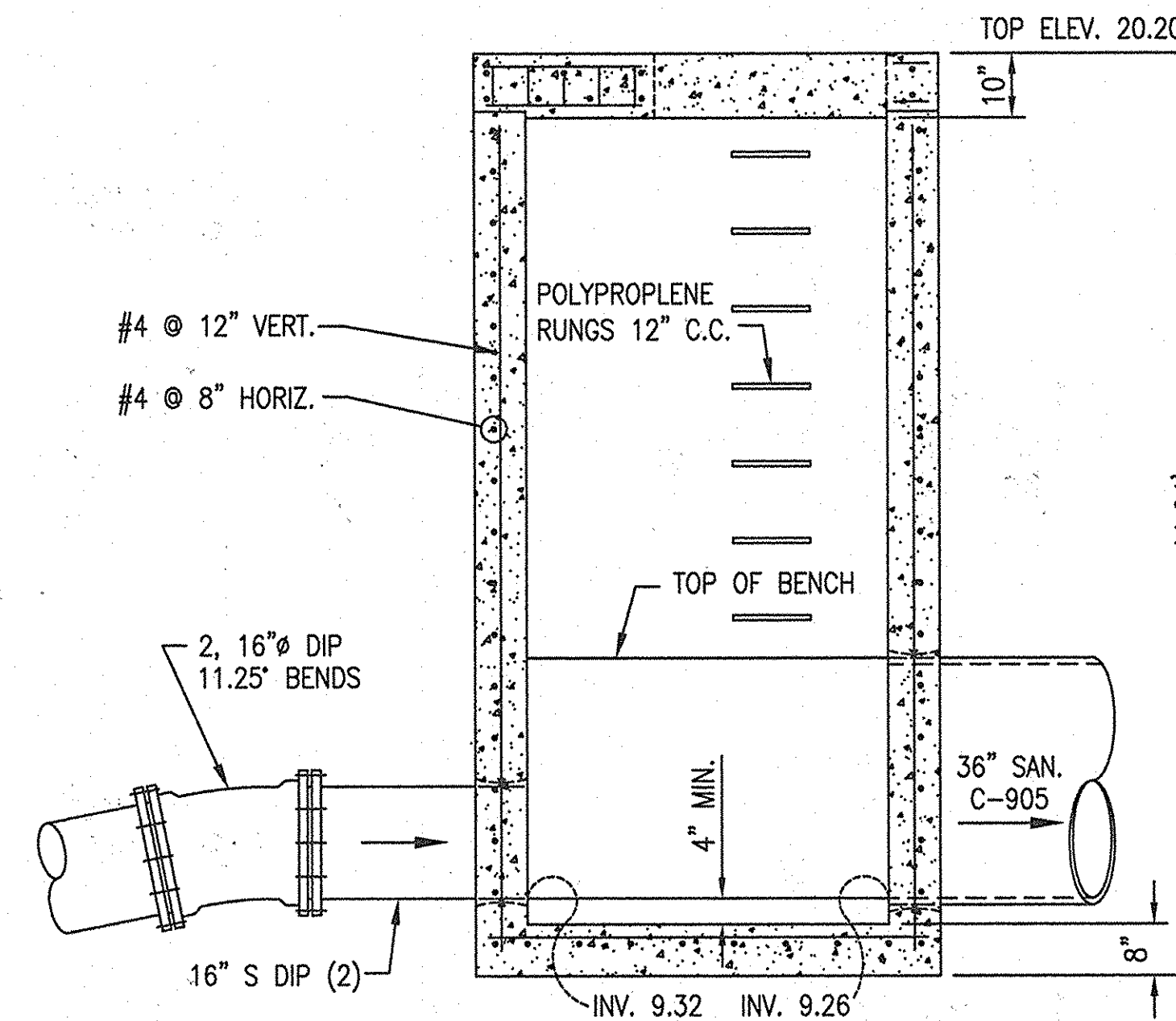
- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. 410-313-1855.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THE PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ANY SEDIMENT CONTROL PRACTICES WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY MUST BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH MUST BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS TO BE STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.



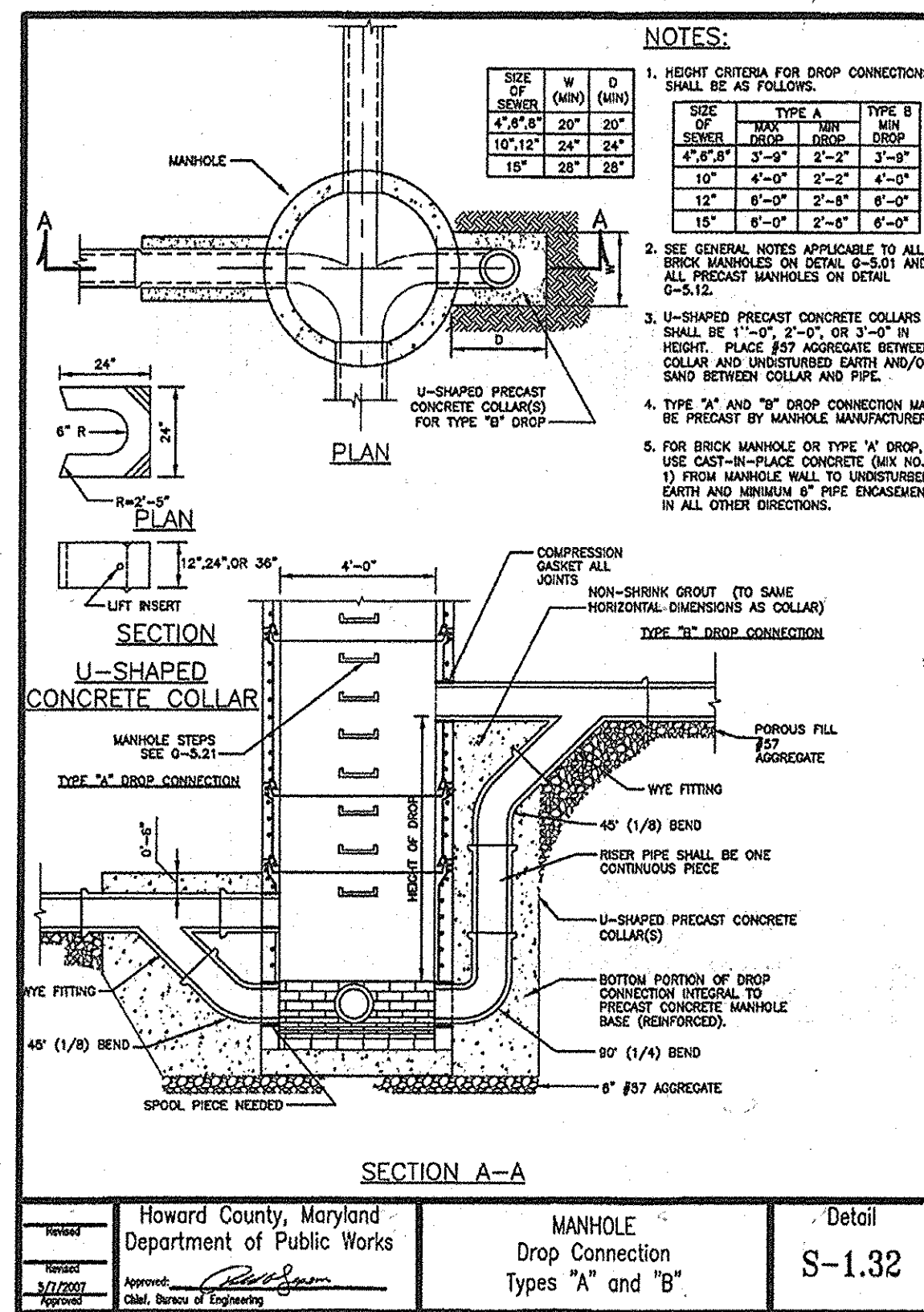
PLAN OF MH 277
SCALE: 1/2" = 1'-0"



TOP SLAB PLAN OF MH 277
SCALE: 1/2" = 1'-0"



SECTION \"/>



TYPE A MANHOLE DROP CONNECTION
NOT TO SCALE

AS-BUILTS Replacement Sheet
SEP 29 2015

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works DATE *11/16/15*
Chief, Bureau of Engineering DATE *11/16/15*
Chief, Bureau of Utilities DATE *11/16/15*
Chief, Utility Design Division DATE *11/16/15*

Dewberry
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875



DES: LAL					
DRN: RLJ					
CHK: TND					
DATE: 10/2013	BY	NO.	REVISIONS	DATE	

HOWARD COUNTY SEDIMENT & EROSION CONTROL NOTES & DETAILS

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN
INVERTED SIPHON IMPROVEMENTS
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1

HOWARD COUNTY, MARYLAND

SCALE:
SHOWN
SHEET
10 OF 14

BALTIMORE COUNTY SEQUENCE OF OPERATION

- NOTIFY BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS, SEDIMENT CONTROL, (410) 887-3226 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. Notify MDE Inspection and Compliance Program, (410) 537-3510 at least 5 days prior to beginning work.
- IF APPLICABLE, ORANGE HIGH VISIBILITY FENCE MUST BE MANUALLY INSTALLED ALONG THE LIMIT OF DISTURBANCE, WHERE THE LIMIT IS WITHIN 50 FEET OF THE FOREST BUFFER/CONSERVATION EASEMENT. THIS MUST BE COMPLETED BY AND INSPECTED AT THE PRE-CONSTRUCTION MEETING.
- CLEAR AND GRUB FOR SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY.
- INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES AND DEVICES.
- NOTIFY BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS, SEDIMENT CONTROL, UPON COMPLETION OF SAID INSTALLATION.
- WITH THE APPROVAL OF BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS, SEDIMENT CONTROL AND THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE.
- PROPOSED SEQUENCE OF CONSTRUCTION:
 - COMMENCE PIPE INSTALLATION FROM EXISTING STRUCTURE TO MH 4A.
 - MODIFICATIONS TO EXISTING STRUCTURE 4 MAY BE CONDUCTED CONCURRENTLY WITH THE AFORE MENTIONED.
 - PROVIDE SANDBAG/STONE DIVERSION FOR INSTALLATION OF THE PIPE AND PLACEMENT OF INVERT PROTECTION & BANK PROTECTION TO BE PERFORMED CONCURRENTLY AND IN A TIME PERIOD OF NO MORE THAN 2 WEEKS.
- DIRECT ALL WATER PUMPED DURING DEWATERING OPERATIONS TO AN APPROVED DEWATERING BASIN.
- THE CONTRACTOR MUST TAKE PRECAUTIONS TO PREVENT THE DISTURBANCE OF EXISTING VEGETATED AREAS TO THE EXTENT POSSIBLE. ANY EXISTING VEGETATED AREAS DISTURBED AS A RESULT OF THE CONTRACTOR'S WORK OPERATIONS MUST BE STABILIZED BY THE END OF THE WORK DAY. STABILIZATION SHALL BE PERMANENT SEED AND MULCH.
- STABILIZE THE TOP OF ALL TRENCHES BY THE END OF EACH WORK DAY. ALL EXCESS STOCKPILED SOIL REMAINING AFTER REFILLING OF THE TRENCH(S) MUST BE REMOVED FROM THE SURFACE AND HAULED FROM THE SITE BY THE END OF THE WORKING DAY. THE CONTRACTOR MUST BE RESPONSIBLE FOR OBTAINING ALL PERMITS FOR HIS OFF-SITE STOCKPILE AREAS. THE CONTRACTOR MUST ALSO ADEQUATELY CLEAN ALL DIRT AND MUD OFF THE ROADWAYS BY THE END OF EACH WORKING DAY.
- STABILIZE ANY REMAINING DISTURBED AREAS AS REQUIRED.
- UPON STABILIZATION OF SITE WITH ESTABLISHED VEGETATION AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS.

BALTIMORE COUNTY SEDIMENT CONTROL GENERAL NOTES

- REFER TO "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN.
- WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN AND WILL BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT. CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT.
- AT THE END OF EACH WORKING DAY, ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITION.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1), AND
 - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- ANY CHANGE TO THE GRADING PROPOSED ON THIS PLAN REQUIRES RE-SUBMISSION TO BALTIMORE COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL.
- DUST CONTROL WILL BE PROVIDED FOR ALL DISTURBED AREAS. REFER TO "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", PG. H.22, FOR ACCEPTABLE METHODS AND SPECIFICATIONS FOR DUST CONTROL.
- ANY VARIATIONS FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE BALTIMORE COUNTY SOIL CONSERVATION DISTRICT PRIOR TO THE INITIATION OF THE CHANGE.
- EXCESS CUT OR BORROW MATERIAL SHALL GO TO, OR COME FROM, RESPECTIVELY, A SITE WITH AN OPEN GRADING PERMIT AND APPROVED SEDIMENT CONTROL PLAN.
- ANY TEMPORARY STOCKPILE AREAS WILL BE LOCATED WITHIN THE LIMITS OF DISTURBANCE AND POSITIONED SUCH THAT ANY SEDIMENT FROM THE STOCKPILE FILL AREAS WILL BE CONTROLLED BY ONE OR MORE OF THE SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN. STOCKPILE SHALL BE LOCATED WHERE IT WILL NOT IMPEDE UPON OR IMPAIR THE FUNCTION OF ANY SEDIMENT CONTROL MEASURE IT IS UPSLOPE OF. STOCKPILE LOCATION NOT TO ALTER DRAINAGE DIVIDES.
- PUMPING SEDIMENT-LADEN WATER INTO WATERS OF THE STATE IS STRICTLY PROHIBITED. ANY PORTABLE DEWATERING DEVICE MUST BE LOCATED WITHIN THE LIMIT OF DISTURBANCE.
- CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SEDIMENT CONTROL MEASURES AND DEVICES AFTER EVERY STORM EVENT. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO THE REMOVAL OF ALL ACCUMULATED SEDIMENT. GEOTEXTILE FABRIC SHALL BE REPLACED AS NEEDED TO ENSURE PROPER FUNCTION.
- CONTRACTOR SHOULD ONLY OPEN THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) THE TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
- REFER TO "MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION" BY THE WATER MANAGEMENT ADMINISTRATION OF THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, REVISED NOVEMBER 2000, FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE HEREIN FOR WATERWAY CONSTRUCTION.

H-1 STANDARDS AND SPECIFICATIONS FOR MATERIALS

GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPPEP) AND CONFORM TO THE VALUES IN TABLES H.1.

PROPERTY	TEST METHOD	WOVEN SLIT-FILM GEOTEXTILE	WOVEN MONOFILAMENT GEOTEXTILE	NONWOVEN GEOTEXTILE			
		MD	CD	MD	CD		
MINIMUM AVERAGE ROLL VALUE ¹							
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size ²	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec ⁻¹		0.28 sec ⁻¹		1.1 sec ⁻¹	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

¹ All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

² Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPPEP) and conform to the values in Table H.1.

THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDEW RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES.

WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACES. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

BALTIMORE COUNTY

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT
APPROVED FOR SEDIMENT CONTROL

Jaffrey R. West 10-17-13
DATE

AS-BUILTS

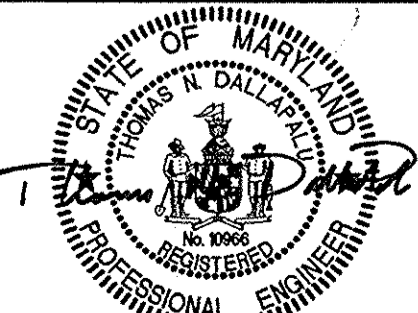
SEP 29 2015

BC-5 OF 7

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

John J. Chen 10/15/13
DATE
Marcus P. Suttler 10/17/13
DATE
Chris J. Cline 10/10/13
DATE
Cy D. ... 10/7/13
DATE

Dewberry
Dewberry Consultants LLC
3108 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875



DES: LAL	
DRN: RLI	
CHK: TND	
DATE: 10/20/13	
BY	NO.
REVISIONS	
DATE	

BALTIMORE COUNTY SEDIMENT & EROSION CONTROL NOTES & DETAILS

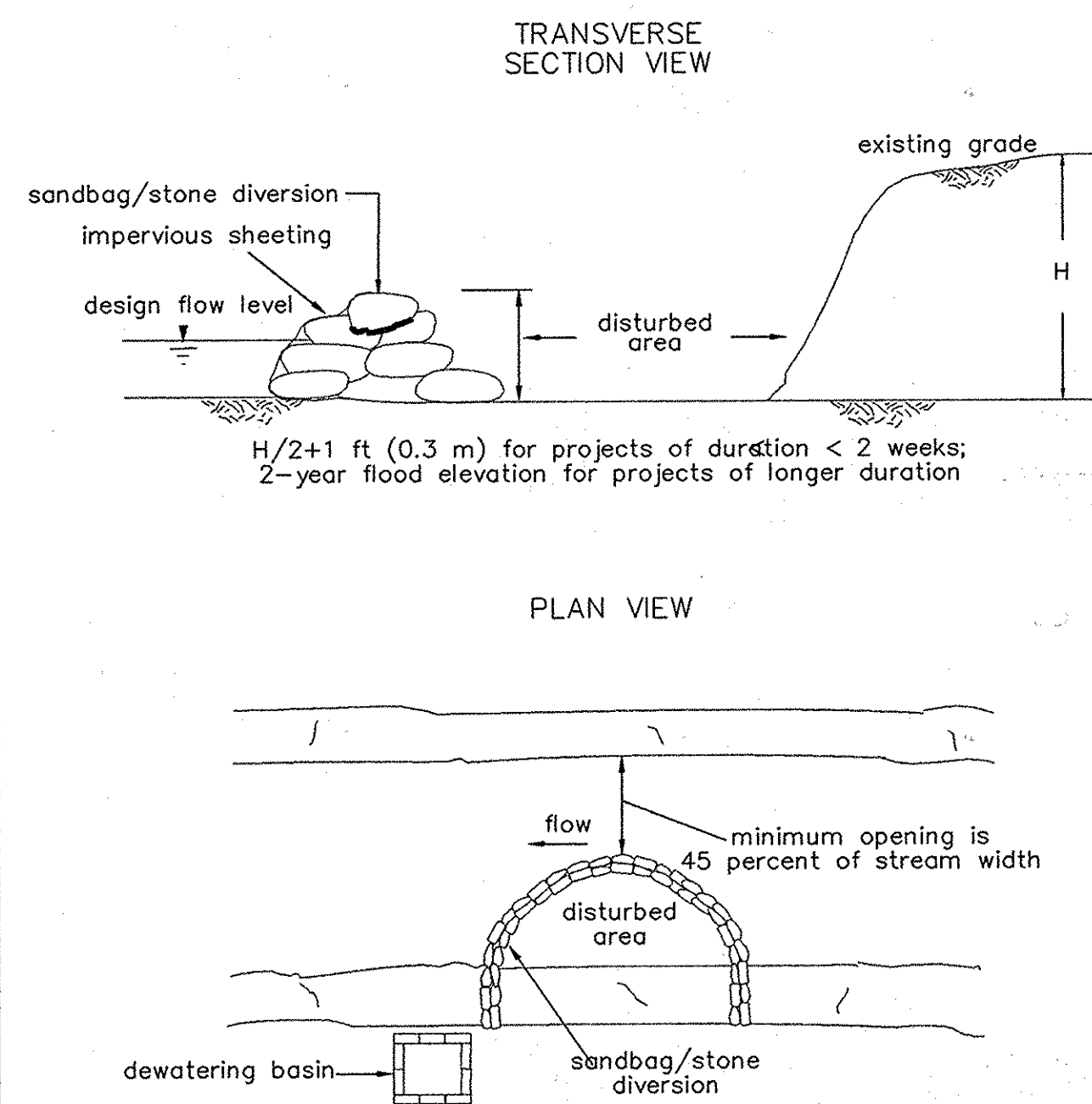
600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN
INVERTED SIPHON IMPROVEMENTS
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE: SHOWN
SHEET 11 OF 14

DETAIL 1.5: SANDBAG/STONE DIVERSION



MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION
The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS
Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS
Materials for sandbag and stone stream diversions should meet the following requirements:
• **Riprap:** Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
• **Sandbags:** Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing & puncture, and should be woven tightly enough to prevent leakage of fill material (i.e. sand, fine gravel, etc.)
• **Sheeting:** Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

MATERIAL SPECIFICATIONS
All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should be installed around the perimeter of the work area.

- The diversion structure should be installed from upstream to downstream.
- The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration of less than 2 weeks, the height of the diversion should be one half of the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
- All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
- Sediment-laden water from the construction area should be pumped to a dewatering basin.

TEMPORARY IN STREAM CONSTRUCTION MEASURES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES

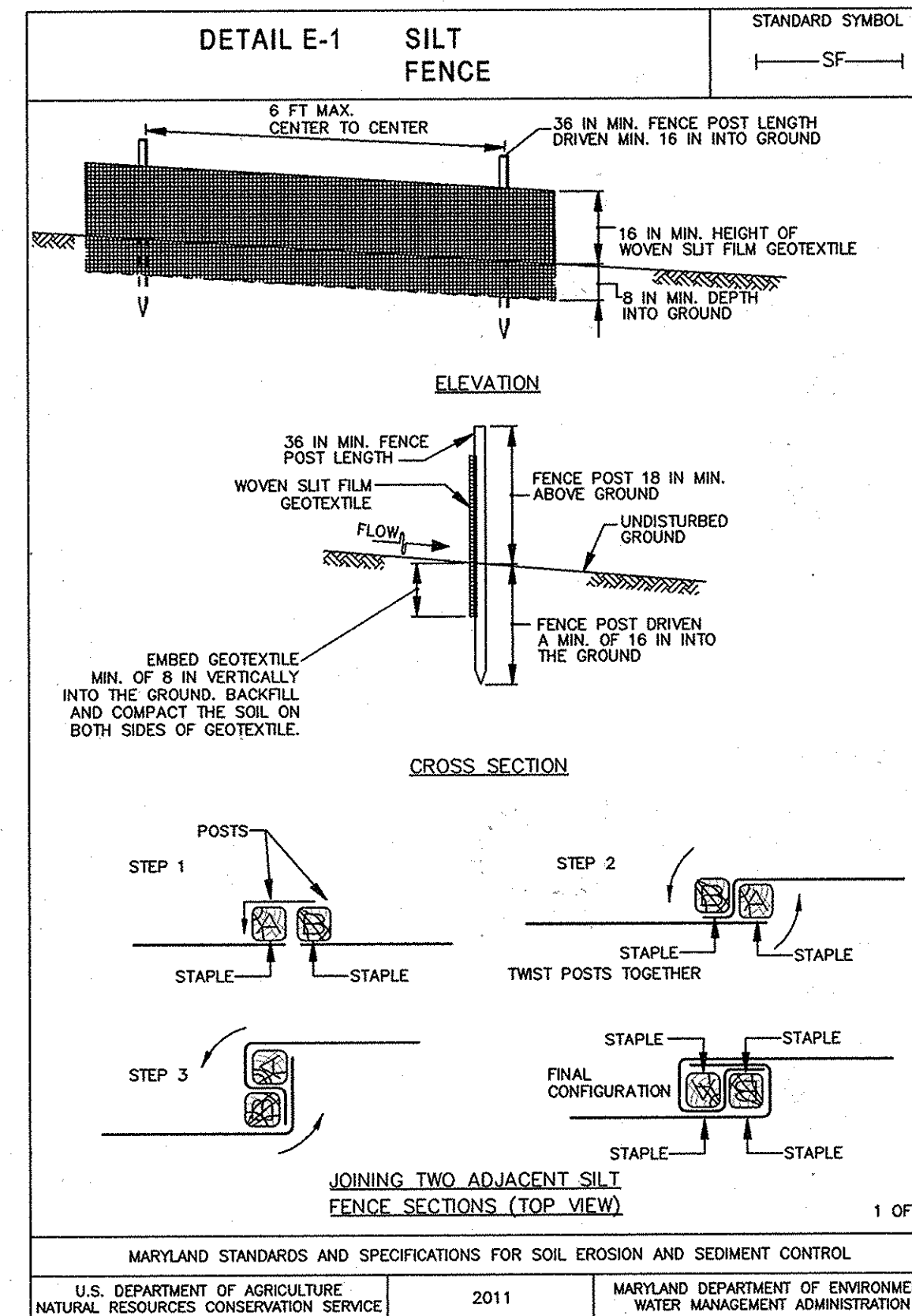
PAGE 1.5-1

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

- Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
- Sandbag or stone diversions should not obstruct more than 45 percent of the stream width. Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
- Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
- Sediment control devices are to remain in place until all disturbed areas stabilized in accordance with an approved sediment and control plan and the inspecting authority approves their removal.

TEMPORARY IN STREAM CONSTRUCTION MEASURES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES

PAGE 1.5-1



DETAIL E-1 SILT FENCE

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

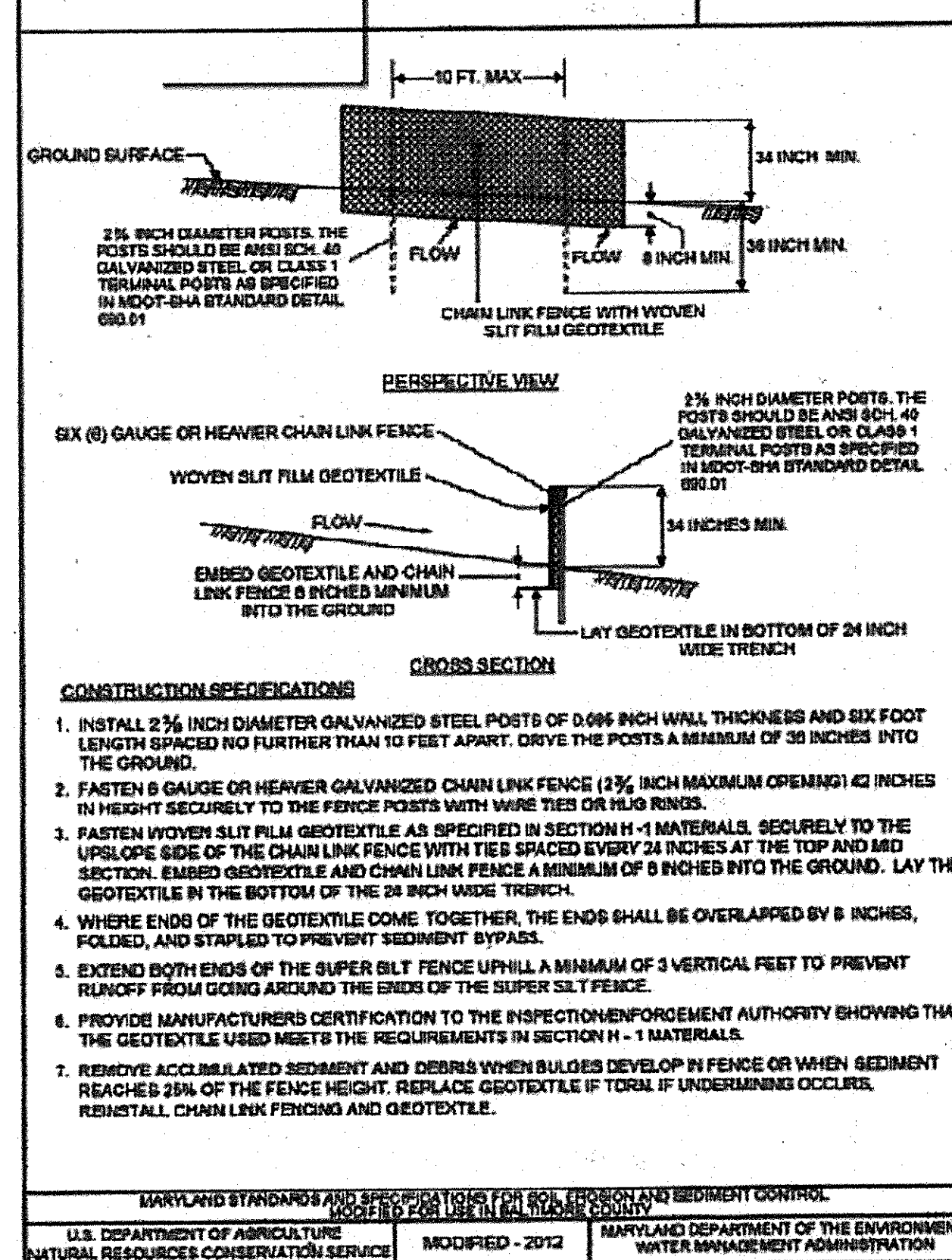
- USE WOOD POSTS 1 1/2 X 1 1/2 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 3/8 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25 PERCENT OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

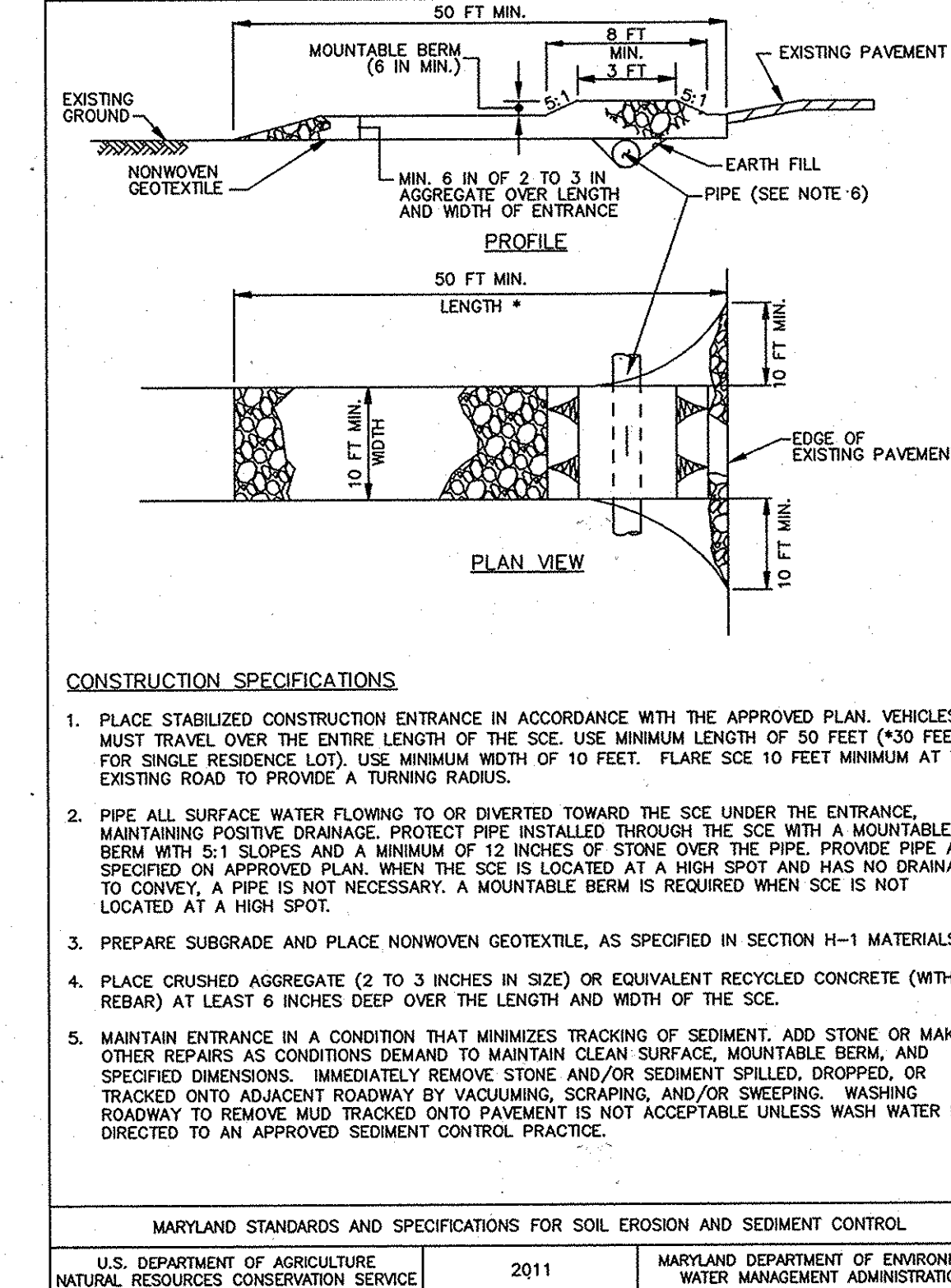
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

2 OF 2

DETAIL E-3 SUPER SILT FENCE



DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



BALTIMORE COUNTY SOIL CONSERVATION DISTRICT
APPROVED FOR SEDIMENT CONTROL

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Jeffrey P. West 10/17/13
DATE

Joe R. Robinson / J.S. 10/16/13
Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John J. ... 10/15/13
DIRECTOR OF PUBLIC WORKS DATE

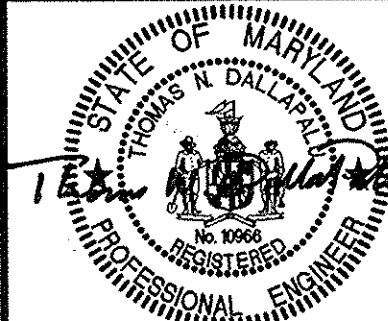
Marcia E. ... 10/13/13
CHIEF, BUREAU OF ENGINEERING DATE

Sally ... 10/16/13
CHIEF, BUREAU OF UTILITIES DATE

... .. 10/17/13
CHIEF UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry Consultants LLC

3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.285.9500
FAX: 410.285.8875



DES: LAL			
DRN: RLI			
CHK: TND			
DATE: 10/2013	BY NO.	REVISIONS	DATE

SEDIMENT & EROSION CONTROL
DETAILS

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN
INVERTED SIPHON IMPROVEMENTS
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

AS-BUILTS
SEP 29 2015

BC-6 OF 7

SCALE:
SHOWN

SHEET
12 OF 14

Maryland's Guidelines To Waterway Construction DETAIL 1.1: DEWATERING BASINS

MGWC 1.1: DEWATERING BASINS

Temporary measure for filtering
sediment-laden water

DESCRIPTION

The work should consist of installing dewatering basins jointly with channel diversion measures to filter sediment-laden water from in-stream construction sites before the water re-enters the downstream reach.

EFFECTIVE USES & LIMITATIONS

Undersized dewatering basins will not adequately filter sediment-laden water from the construction site.

MATERIAL SPECIFICATIONS

Materials for dewatering basins should meet the following requirements:

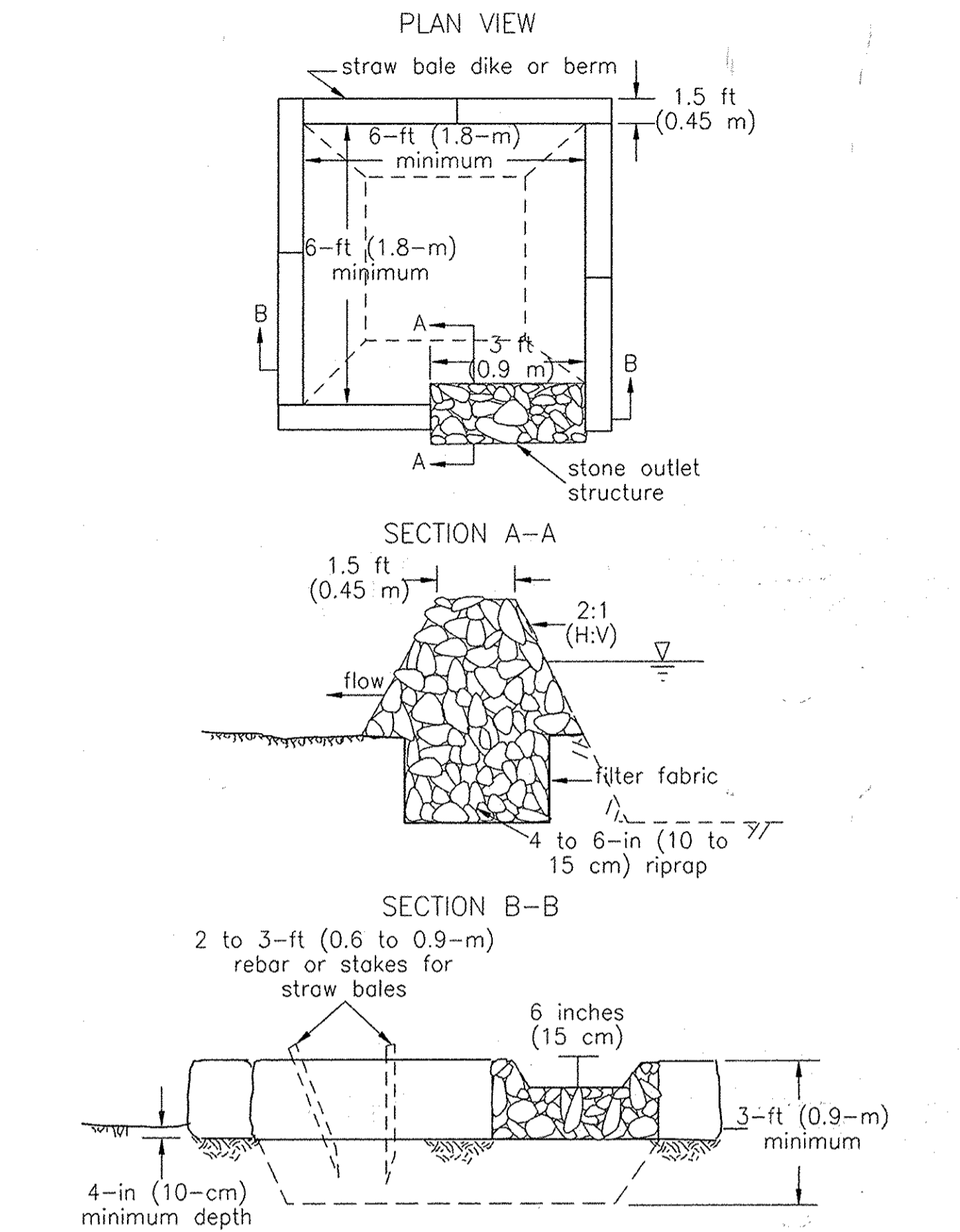
- Riprap:** Riprap should be washed and have a diameter ranging from 4 to 6 inches (10 to 15 centimeters).
- Filter Cloth:** Filter cloth should be a woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric should be inert to commonly encountered chemicals, hydro-carbons, ultraviolet light, and mildew and should be rot resistant.
- Straw Bales/Silt Fence:** Straw bales should meet the criteria as specified in the 1994 *Maryland Standards and Specifications for Soil Erosion and Sediment Control*.

INSTALLATION GUIDELINES

Due to the danger of overtopping by events greater than the design flow, dewatering basins require a vegetative buffer strip to filter sediment-laden overflow. A 50-foot (15-meter) minimum grass-covered buffer width is required for slopes less than 20 degrees (1:2.7) when right-of-way is not limited. For slopes greater than 20 degrees, basins should have a 100-foot (30-meter) minimum buffer width when practical.

All erosion and sediment control devices should be installed as the first order of business according to a plan approved by the Water Management Administration (WMA) or local authority. Dewatering basins should be constructed as follows (refer to Detail 1.1):

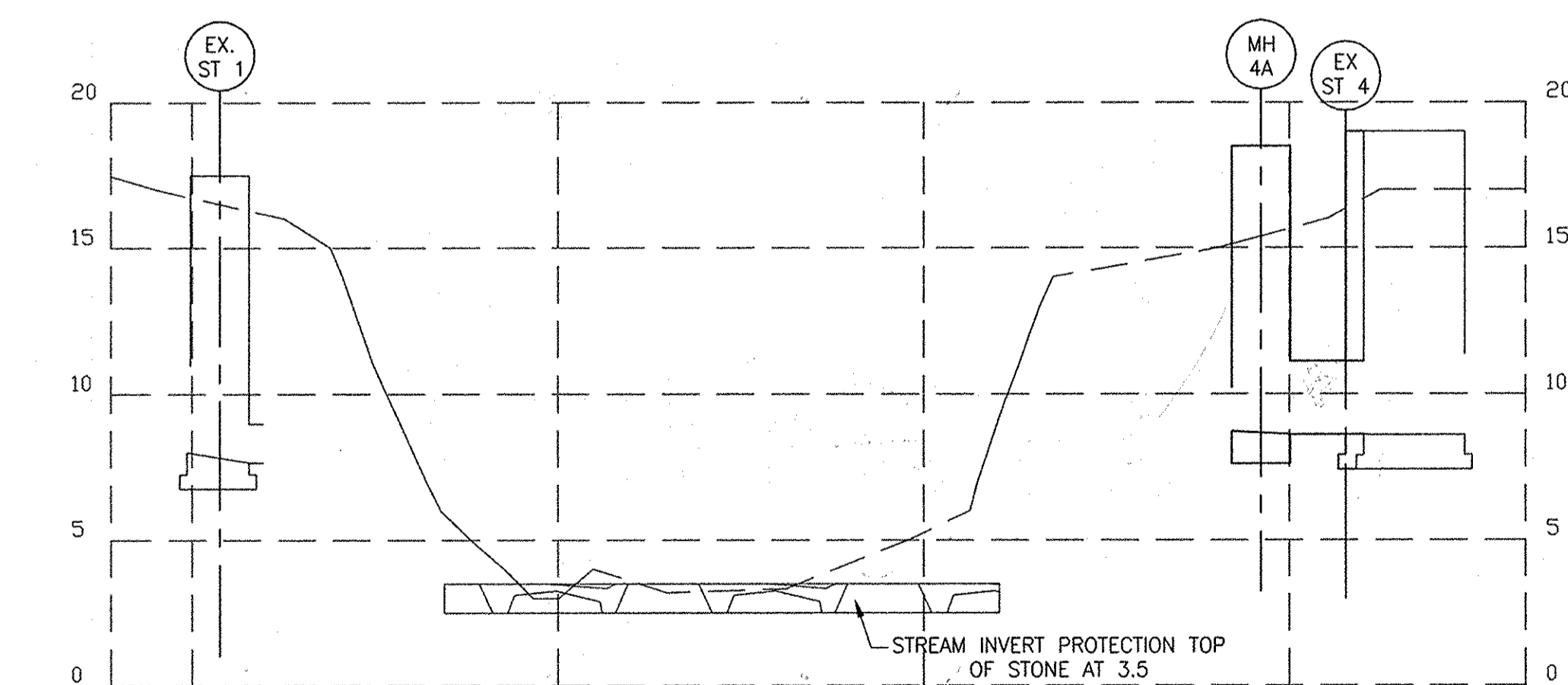
- Excavated subsoil and topsoil should be stored separately and replaced in their natural order. Additionally, the excavated sediments should be prevented from entering the waterway by using sediment perimeter controls or other measures.
- The dewatering basin should have a minimum depth of 3 feet (1 meter) where basin depth is measured from the top of the straw bales to the bottom of the excavation.
- Once the dewatering basin becomes filled to one-half of the excavated depth, accumulated sediment should be removed and disposed of in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
- Sediment control devices should remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All disturbed ground contours should be returned to their original condition unless otherwise approved by the WMA or local authority.



TEMPORARY INSTREAM CONSTRUCTION MEASURES
REVISED NOVEMBER 2000
PAGE 1.1 - 2
MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Site Analysis

Total Area of Site	2.18 Acres (Both Baltimore & Howard County)
Area Disturbed	0.10 Acres (Baltimore, Not including existing access road)
Existing Gravel Access Road	0.80 Acres (Baltimore)
Area Disturbed	1.18 Acres (Howard)
Area to be paved	0.00 Acres (Baltimore)
Area to be paved	0.80 Acres (Howard)
Area to be Vegetatively Stabilized	0.10 Acres (Baltimore)
Area to be Vegetatively Stabilized	0.28 Acres (Howard)
Total Cut	68 Cu. Yds.
Total Fill	0 Cu. Yds.
Offsite waste/borrow area location	To be determined by contractor.



STREAM INVERT PROTECTION DETAIL

NOT TO SCALE

BALTIMORE COUNTY SOIL CONSERVATION DISTRICT

APPROVED FOR SEDIMENT CONTROL

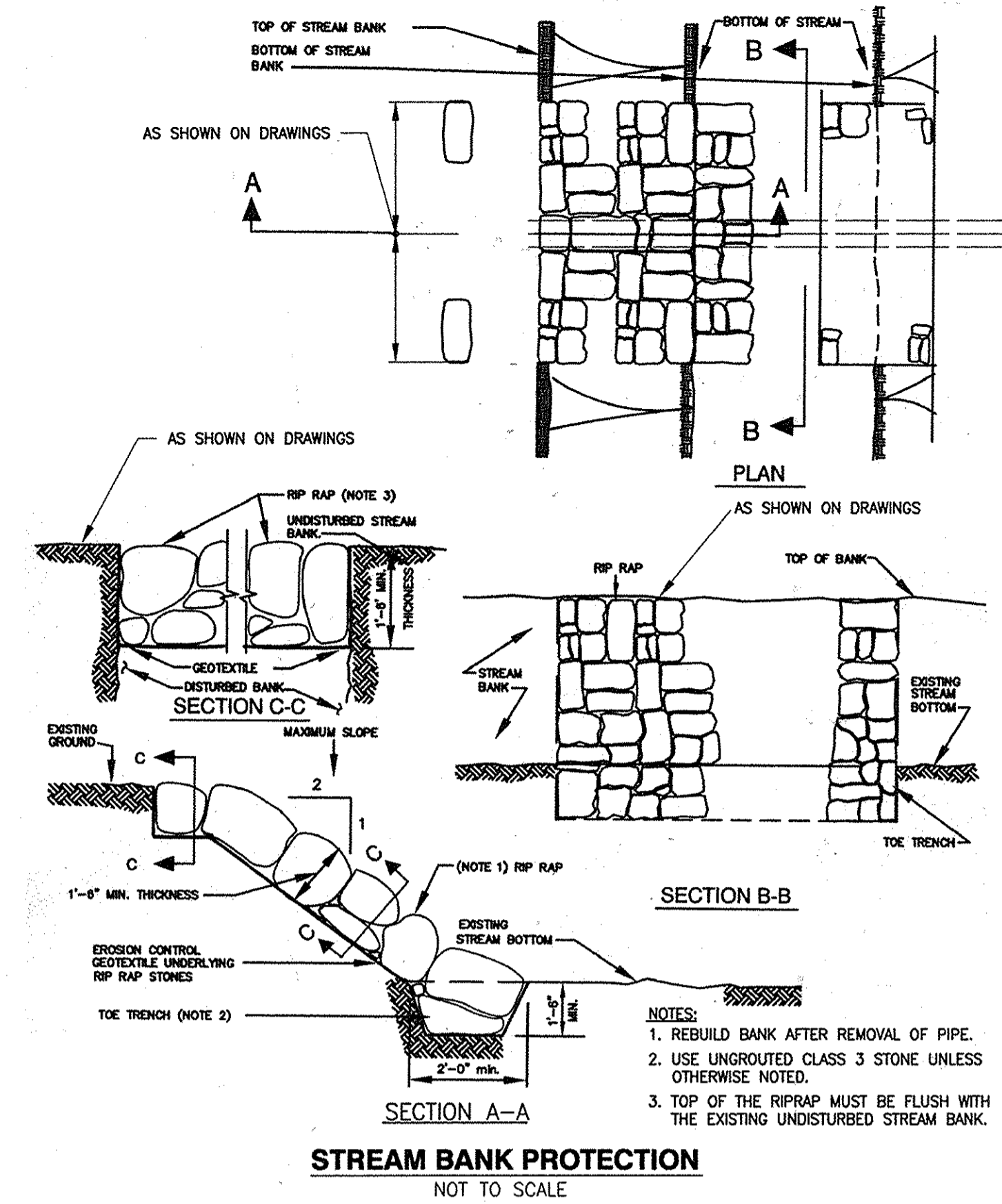
Jeffery P. West 10/17/13
DATE

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100 YEAR FLOODPLAIN

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS MUST BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF ANY WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100 YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100 YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100 YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER MUST CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (*LOLIUM MULTIFLORUM*), MILLET (*SETARIA ITALICA*), BARLEY (*HORDEUM SP.*), OATS (*UNIOLA SP.*), AND/OR RYE (*SECALE CEREALE*). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE MUST NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM. USE 1 WATERS: IN-STREAM WORK MUST NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES MUST BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS MUST BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

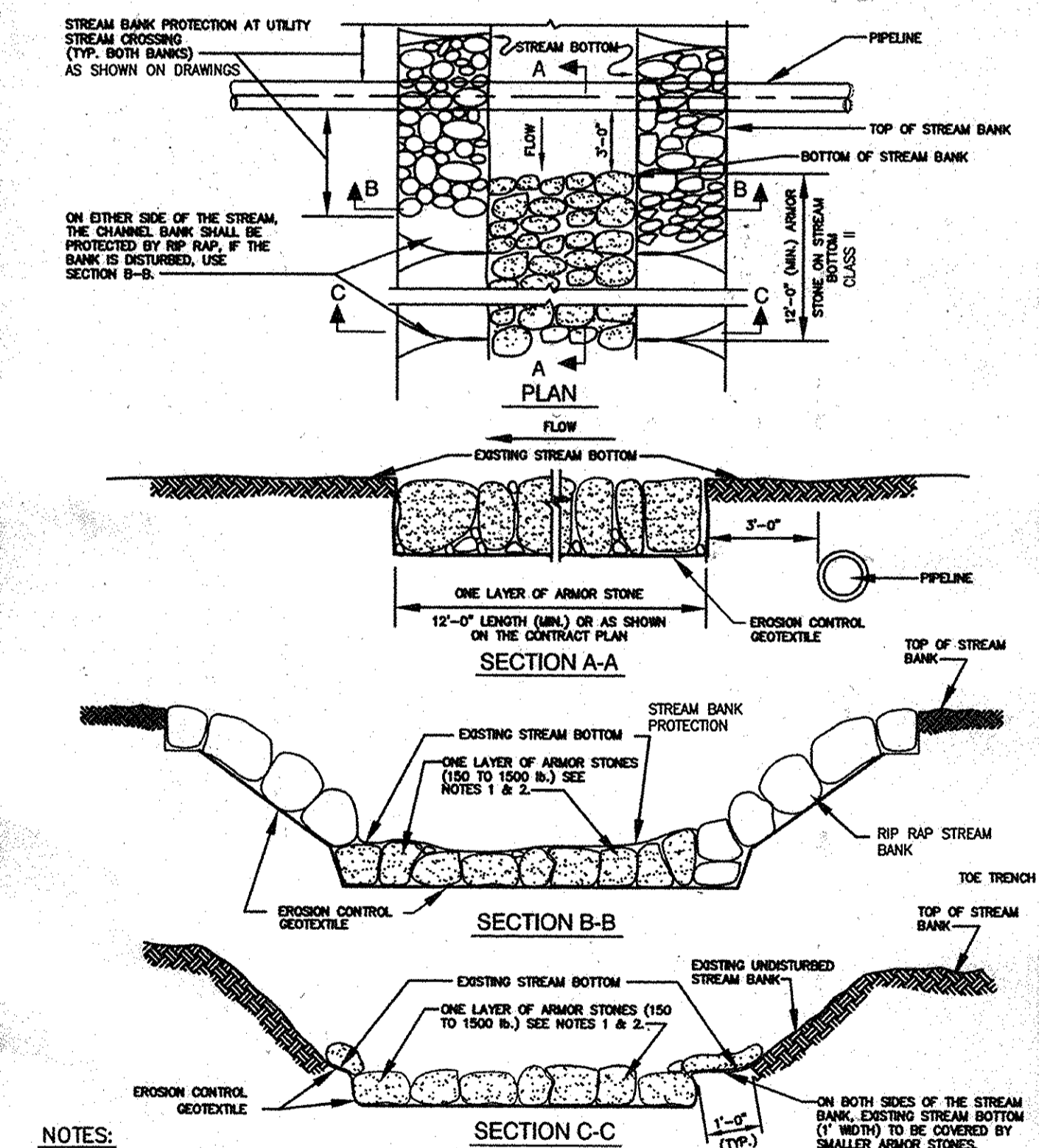
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John P. Robertson / ps. 10/16/13
Howard Soil Conservation District Date



STREAM BANK PROTECTION

NOT TO SCALE



- NOTES:
- ARMOR STONES SHALL BE PLACED IN A MANNER TO PROVIDE A RELATIVELY EVEN STREAM BOTTOM WITH THE TOP OF STONE AT OR BELOW THE ORIGINAL STREAM BOTTOM.
 - ARMOR STONE SHALL BE REASONABLY WELL-GRADED FROM THE SMALLEST TO THE LARGEST SIZE SPECIFIED.

STREAM INVERT PROTECTION FOR SHALLOW UTILITY STREAM CROSSING

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ray V. ... 10/6/13
DIRECTOR OF PUBLIC WORKS DATE
Sharon ... 10/10/13
CHIEF, BUREAU OF UTILITIES DATE
Monica ... 10/17/13
CHIEF, BUREAU OF ENGINEERING DATE
D. ... 10/17/13
CHIEF, UTILITY DESIGN DIVISION DATE

Dewberry
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE #110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.9875



DES: LAL			
DRN: RLI			
CHK: TND			
DATE: 10/2013	BY NO.	REVISIONS	DATE

SEDIMENT & EROSION CONTROL DETAILS

600' SCALE MAP NO. 38 BLOCK NO. 5

FURNACE AVE SEWER AND DEEP RUN
INVERTED SIPHON IMPROVEMENTS
CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727

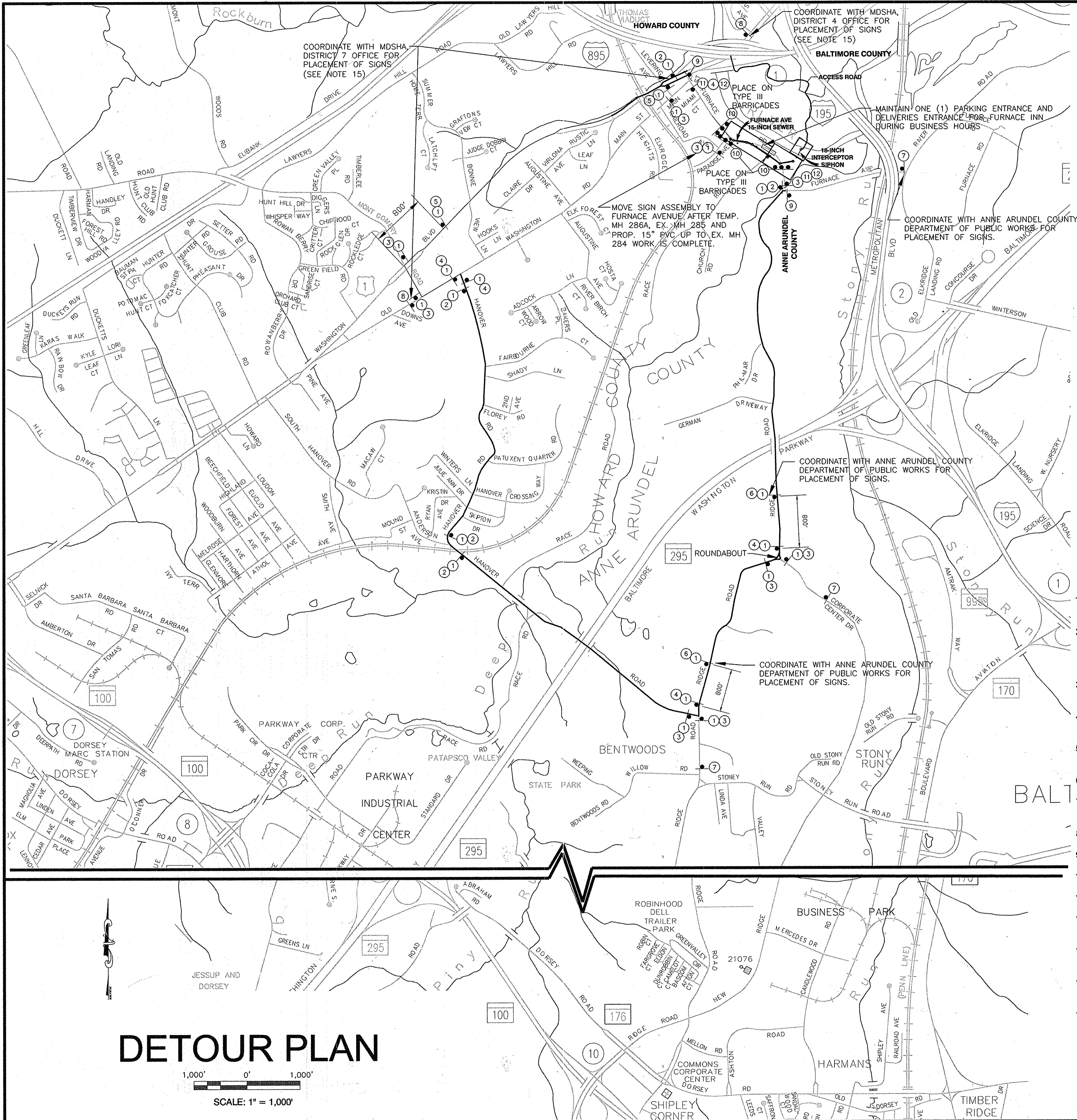
ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

BC-7 OF 7

SCALE:
SHOWN
SHEET
13 OF 14

AS-BUILTS
SEP 29 2015

Printed by: (ps) on 10/16/13 at 4:22pm
C:\Users\jpw\Documents\Projects\10-4727\Drawings\10-4727-SD-10-SEC-Detail1.dwg
Last saved: 10/16/13 at 4:15pm
C:\Users\jpw\Documents\Projects\10-4727\Drawings\10-4727-SD-10-SEC-Detail1.dwg



LEGEND

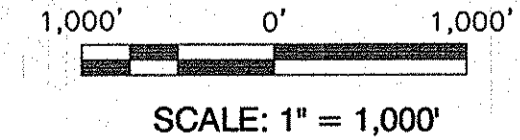
SIGN SUPPORT
 FACE OF SIGN
 TYPE III BARRICADE
 SIGN

M4-9(1) FURNACE AVENUE 30"	1	M5-1R DETOUR	6	R11-3a ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	11
M4-8 DETOUR	2	BLACK ON YELLOW BLACK ON WHITE BLACK ON ORANGE	7	5' MAX. NOTICE FURNACE AVENUE TO BE DETOURED ON OR ABOUT XX-XX FOR INFORMATION CALL XXX-XXX-XXXX	12
M4-9L DETOUR	3	BLACK ON YELLOW BLACK ON WHITE BLACK ON ORANGE	8	NOTE: INSTALL 2 WEEKS PRIOR TO CONSTRUCTION (REMOVE AFTER START OF CONSTRUCTION)	
M4-9R DETOUR	4				
M5-1L DETOUR	5				
		M4-8A END DETOUR	9		
		R11-2 ROAD CLOSED	10		

MAINTENANCE OF TRAFFIC NOTES:

1. THE DETOUR PLAN DEPICTS THE MINIMUM TRAFFIC CONTROLS REQUIRED DURING CONSTRUCTION TO MAINTAIN VEHICULAR TRAFFIC FLOW AND THE SAFETY OF VEHICLES, PEDESTRIANS, AND WORKERS. ADDITIONAL DEVICES OR ADJUSTMENT OF THE LOCATION OF DEVICES SHALL BE INCORPORATED AS NECESSARY.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION OF THE EXACT DATE THAT FIELD ACTIVITIES WILL BEGIN. THIS NOTIFICATION SHALL BE FOLLOWED UP IN WRITING TO THE DEPARTMENT OF TRANSPORTATION WITH A COPY TO THE ENGINEER AT THE DEPARTMENT OF PUBLIC WORKS. IF THE CONTRACTOR DECIDES THAT MODIFICATIONS TO THE APPROVED DETOUR PLAN IS REQUIRED, HE MUST NOTIFY THE DEPARTMENT OF TRANSPORTATION PRIOR TO THE START OF ANY FIELD ACTIVITY. NO FIELD ACTIVITIES WILL BE ALLOWED WITHOUT AN APPROVED PLAN.
3. THE CONTRACTOR MUST CONTACT MR. KRIS JAGARAPU OF THE TRAFFIC ENGINEERING DIVISION AT (410) 313-2430 TWO (2) WEEKS BEFORE CONSTRUCTION BEGINS AND ONE (1) WEEK PRIOR ANY CHANGES TO THE DETOUR PLAN.
4. ALL TRAFFIC CONTROL DEVICES AND PRACTICES SHALL CONFORM WITH THE GUIDELINES OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", MD MUTCD (LATEST EDITION) AND THE MDSA STANDARD SIGN BOOK.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY, INSTALL AND MAINTAIN ALL TRAFFIC CONTROL SIGNS AND EQUIPMENT FOR THE DURATION OF THIS CONTRACT.
6. ALL SIGNS SHALL BE COVERED WITH NON-TRANSPARENT COVERING WHENEVER THE DETOUR IS NOT IN USE.
7. ALL EXCAVATIONS AND TRENCHES ARE TO BE PLATED AT THE END OF THE EACH WORK DAY AND "STEEL PLATES AHEAD" WARNING SIGNS DISPLAYED IN ADVANCE.
8. THE CONTRACTOR SHALL MAINTAIN A MINIMUM FOUR FEET (4') WIDE PEDESTRIAN FOOTWAY OR IMPLEMENT AN APPROPRIATE PEDESTRIAN DETOUR.
9. CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING DRIVEWAY ENTRANCES.
10. CONTRACTOR SHALL ALLOW ACCESS TO EMERGENCY VEHICLES DURING CONSTRUCTION.
11. ALL TEMPORARY SIGNS FOR THIS PROJECT SHALL BE TYPE VII FLUORESCENT ORANGE SHEETING.
12. IF TEMPORARY PARKING RESTRICTIONS ARE REQUIRED, ALL AFFECTED RESIDENTS SHALL BE NOTIFIED FIVE (5) DAYS IN ADVANCE WITH SIGNING IN THE AREA OF PARKING RESTRICTION.
13. CONTRACTOR SHALL PROVIDE ACCURATE SKETCHES OF ALL EXISTING PAVEMENT MARKINGS TO BE DISTURBED DURING CONSTRUCTION PRIOR TO ANY CONSTRUCTION BEING DONE. SKETCHES TO BE APPROVED BY THE ENGINEER FOR RE-INSTALLATION OF DISTURBED PAVEMENT MARKINGS.
14. IMMEDIATELY UPON COMPLETION OF THE RELATED WORK, REMOVE THE TRAFFIC CONTROL DEVICES. COVER OR REMOVE ALL PERMANENT AND TEMPORARY SIGNS NOT IN USE.
15. FOR SIGNS ALONG US 1 (WASHINGTON BLVD.) CONTACT MDSA, DISTRICT 7, UTILITIES AT 1-800-635-5199 OR ERIN KUHN, ADE-TRAFFIC MDSA, DISTRICT 4 FOR APPROVAL OF SIGN LOCATIONS PRIOR TO INSTALLATION. FOR SIGNS ALONG HANOVER & RIDGE ROADS, CONNECT TRAFFIC ENGINEERING DIVISION IN ANNE ARUNDEL COUNTY AT 410-222-7331 FOR APPROVAL OF SIGN LOCATIONS PRIOR TO INSTALLATION. CONTACT HOWARD COUNTY TRAFFIC AT 410-313-2430 TO REVIEW THE LOCATIONS OF THE DETOUR SIGNS PRIOR TO INSTALLATION.

DETOUR PLAN



AS-BUILTS
SEP 29 2015

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 10/15/13 DATE: 10/7/13 DATE:		 Dewberry Dewberry Consultants LLC 3108 LORD BALTIMORE DRIVE SUITE #110 BALTIMORE, MARYLAND 21244 PHONE: 410.265.9500 FAX: 410.265.9875		 DES: LAL DRN: RLI CHK: TND DATE: 10/2013		MAINTENANCE OF TRAFFIC PLAN		FURNACE AVE SEWER AND DEEP RUN INVERTED SIPHON IMPROVEMENTS CAPITAL PROJECT NO. S-6271, CONTRACT NO. 10-4727		SCALE: SHOWN SHEET 14 OF 14	
DIRECTOR OF PUBLIC WORKS CHIEF, BUREAU OF UTILITIES		CHIEF, BUREAU OF ENGINEERING CHIEF, UTILITY DESIGN DIVISION		BY NO. REVISIONS DATE		600' SCALE MAP NO. 38 BLOCK NO. 5		ELECTION DISTRICT NO. 1		HOWARD COUNTY, MARYLAND	