

# HOWARD COUNTY

## DEPARTMENT OF PUBLIC WORKS

### ELLCOTT CITY, MARYLAND 21043

QUANTITIES				
ITEM	ESTIMATE	AS-BUILT	MATERIAL	SUPPLIER
16" SEWER	40 LF	40 L.F.	D.I.P.	
36" SEWER	105 LF	102 L.F.		
6" MANHOLE	1 EA.	1		
8" MANHOLE	1 EA.	1		
8" "DOGHOUSE" MANHOLE	1 EA.	1		
SIPHON VAULT	1 EA.	1		
SLIDE GATES	3 EA.	3		
FLOW METER	1 EA.	1		
NAME OF UTILITY CONTRACTOR : METRA INDUSTRIES				
CHECK BOX CHESTER DALLA TEZZA				
AS-BUILT DATE : March 14, 2007				

RESTORATION SCHEDULE				
STATION	TO STATION	DISTANCE	TYPE	
16" TIE-INS	SIPHON VAULT		SEED & MULCH	
SIPHON VAULT	PROP. MH 11 WT		SEED & MULCH	
PROP. MH 11 WT	PROP. MH 10 WT		SEED & MULCH	
PROP. MH 10 WT	PROP. MH 9 WT		3" CRUSHED STONE	
16" ABANDONMENT #1 & #2	N/A		SEED & MULCH	
EX. METER VAULT 'B' ABANDONMENT	N/A		3" CRUSHED STONE	
EX. MH 278 ABANDONMENT	N/A		3" CRUSHED STONE	
EX. MH WT-3 ABANDONMENT	N/A		3" CRUSHED STONE	
33" SEWER ABANDONMENT @ MH 9 WT	N/A		SEED & MULCH	

NOTE:  
THE CRUSHED STONE ACCESS ROAD AND PARKING AREA SHALL BE RESTORED WITH CRUSHED STONE.  
ALL OTHER AREAS SHALL BE RESTORED WITH SEED AND MULCH.

**ENGINEER'S CERTIFICATION**

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

*R. Joseph Burns, III* 8/2/05  
Signature of Engineer Date

R. JOSEPH BURNS, III  
Print Name

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

*Jim Meyer* 9-13-05  
USDA - Natural Resources Conservation Service Date

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

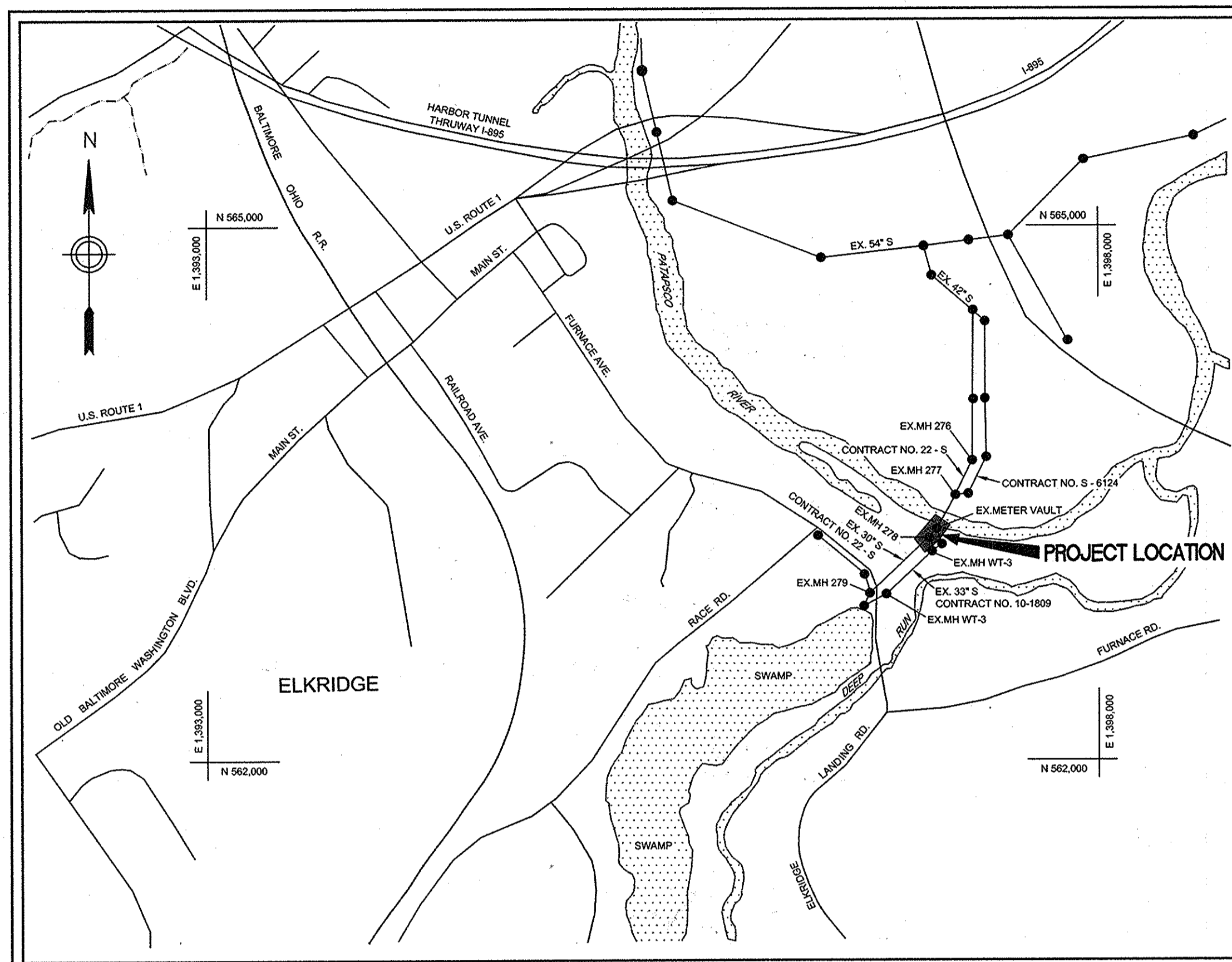
*John R. Robertson* 9-13-05  
Howard Soil Conservation District Date

**DEVELOPER'S CERTIFICATION**

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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Ronald G. Lepson* 8/9/05  
Signature of Developer Date

Ronald G. Lepson  
Print Name



TYPE OF BUILDINGS : N/A  
NUMBER OF PARCELS : N/A  
NUMBER OF SEWER HOUSE CONNECTIONS : N/A  
DRAINAGE AREA : PATAPSCO WWTP  
SEWER CODE (FOR COUNTY USE ONLY : 2000000)

VICINITY MAP  
SCALE : 1" = 600'

# DEEP RUN INTERCEPTOR SIPHON REHABILITATION

## CAPITAL PROJECT S-6240

### CONTRACT NO. 10-4109

#### INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN OF EXISTING CONDITIONS
3	PLAN OF IMPROVEMENTS
4	PROFILES & DETAILS
5	SIPHON VAULT DETAILS
6	SEDIMENT & EROSION CONTROL PLAN
7	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
8	ELECTRICAL

#### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE HOWARD COUNTY "STANDARD DETAILS AND SPECIFICATIONS", INCLUDING ALL ADDENDA, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE PROJECT SPECIFICATIONS.
- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- THE EXISTING UTILITIES SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND LOCATION BY FIELD SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE TEST PITTED/LOCATED AS NECESSARY AND IN ADVANCE OF THE PROPOSED CONSTRUCTION, IN ORDER TO PROPERLY MAKE ALL REQUIRED UTILITY CROSSINGS AND/OR CONNECTIONS. ANY DISCREPANCIES OR UTILITY CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83/91.
- ALL VERTICAL CONTROLS ARE BASED ON HOWARD COUNTY VERTICAL DATUM, NGVD 29.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [ ] AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO (2) WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS :
 

AT&T	410-865-3803
BGE - CONTRACTOR SERVICES	410-850-4620
BGE - UNDERGROUND DAMAGE CONTROL	410-787-8068
BUREAU OF UTILITIES (DPW)	410-313-4900
VERIZON	1-800-743-0033
	410-224-9210
COLONIAL PIPELINE CO.	410-795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.

#### SEWER NOTES

- ALL SEWER MAINS 30" DIAMETER AND LARGER SHALL BE D.I.P. CL 52 OR RCP CL IV UNLESS OTHERWISE NOTED. ALL SEWER MAINS LESS THAN 30" DIAMETER SHALL BE D.I.P. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE MINIMUM 6'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- THE CONTRACTOR SHALL MAKE THE NECESSARY CONNECTIONS TO EXISTING AND PROPOSED MANHOLES USING MECHANICALLY WEDGED-IN-PLACE TYPE CONNECTORS SUCH AS LINK-SEAL AS MANUFACTURED BY THUNDER LINE CORPORATION, Z-LOK SP AS MANUFACTURED BY A-LOK PRODUCTS, INC. OR KOR-N-SEAL AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. ALL METAL PARTS, I.E. BOLTS, STRAPS, ETC. SHALL BE STAINLESS STEEL.
- MANHOLE BASE SHALL BE BEDDED ON 6-INCH GRANULAR MATERIAL ON FIRM SUBGRADE.
- EXCAVATION BELOW PIPES SHALL BE BACKFILLED WITH GRANULAR OR SELECT MATERIAL 1/3 OF WAY TO TOP OF PIPE.
- MANHOLE STEPS SHALL BE SPECIFIED ON DETAIL G5.21. MANHOLE COVER SHALL BE AS SPECIFIED ON DETAIL G5.51
- MANHOLE CHANNELS SHALL BE FORMED TO PROVIDE A SMOOTH HYDRAULIC TRANSITION BETWEEN PIPES. BENCHES SHALL BE TO TOP OF PIPE AS SHOWN ON PLANS; MANHOLE CHANNELS AND BENCHES SHALL BE FORMED FROM SEWER BRICK, GRADE SM, ASTM C-32.
- MANHOLE SHALL BE IN ACCORDANCE WITH ASTM C-478 EXCEPT AS SHOWN.

AS-BUILT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>John R. Robertson</i> 8/10/05 DIRECTOR OF PUBLIC WORKS DATE <i>Ronald G. Lepson</i> 8-9-05 CHIEF, BUREAU OF UTILITIES DATE		Dewberry & Davis LLC 3120 Lord Baltimore Drive Baltimore, Maryland 21244 (410) 285-9500 FAX: (410) 285-8875 Architects Engineers Planners Surveyors 8/2/05		DES: DAV/AWC DRN: PWR CHK: RJB DATE:		TITLE SHEET CAPITAL PROJECT S-6240 CONTRACT NO. 10-4109 ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 1 OF 8	
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 600' SCALE MAP NO. 38 BLOCK NO. 5		AS-BUILT REVISIONS CD 2 BY NO.		DATE: 8/2/05		DATE: 8/2/05		DATE: 8/2/05	



**HOWARD COUNTY SURVEY CONTROL**

HORIZONTAL DATUM IS NAD 83/91 BY STATIC GPS FROM HOWARD COUNTY CONTROL STATIONS 0024 AND 388B.  
 VERTICAL DATUM IS NGVD 29 BY STATIC GPS SURVEY FROM HOWARD COUNTY CONTROL STATIONS 0024 AND 388B.

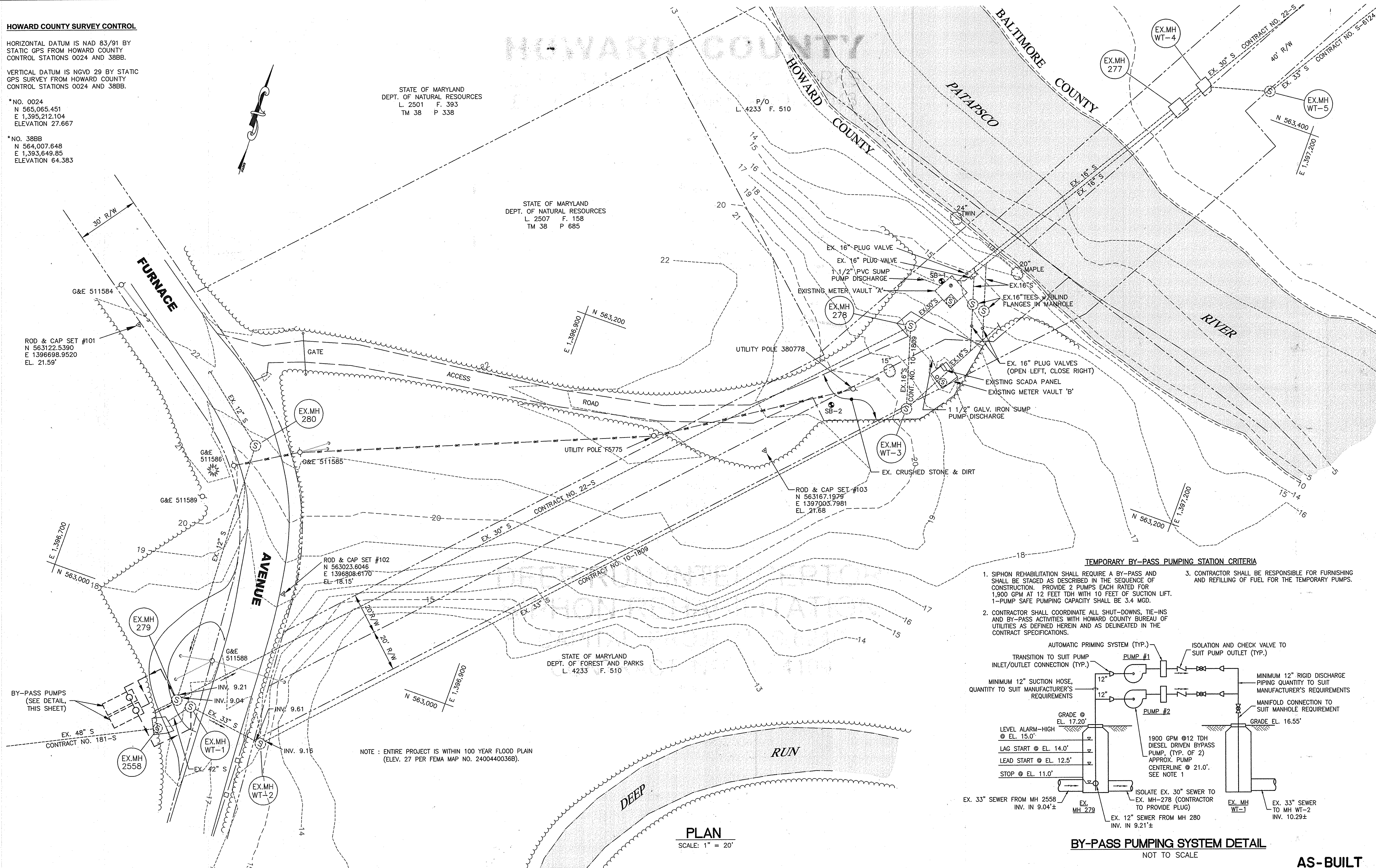
\*NO. 0024  
 N 565,065.451  
 E 1,395,212.104  
 ELEVATION 27.667

\*NO. 388B  
 N 564,007.648  
 E 1,393,649.85  
 ELEVATION 64.383

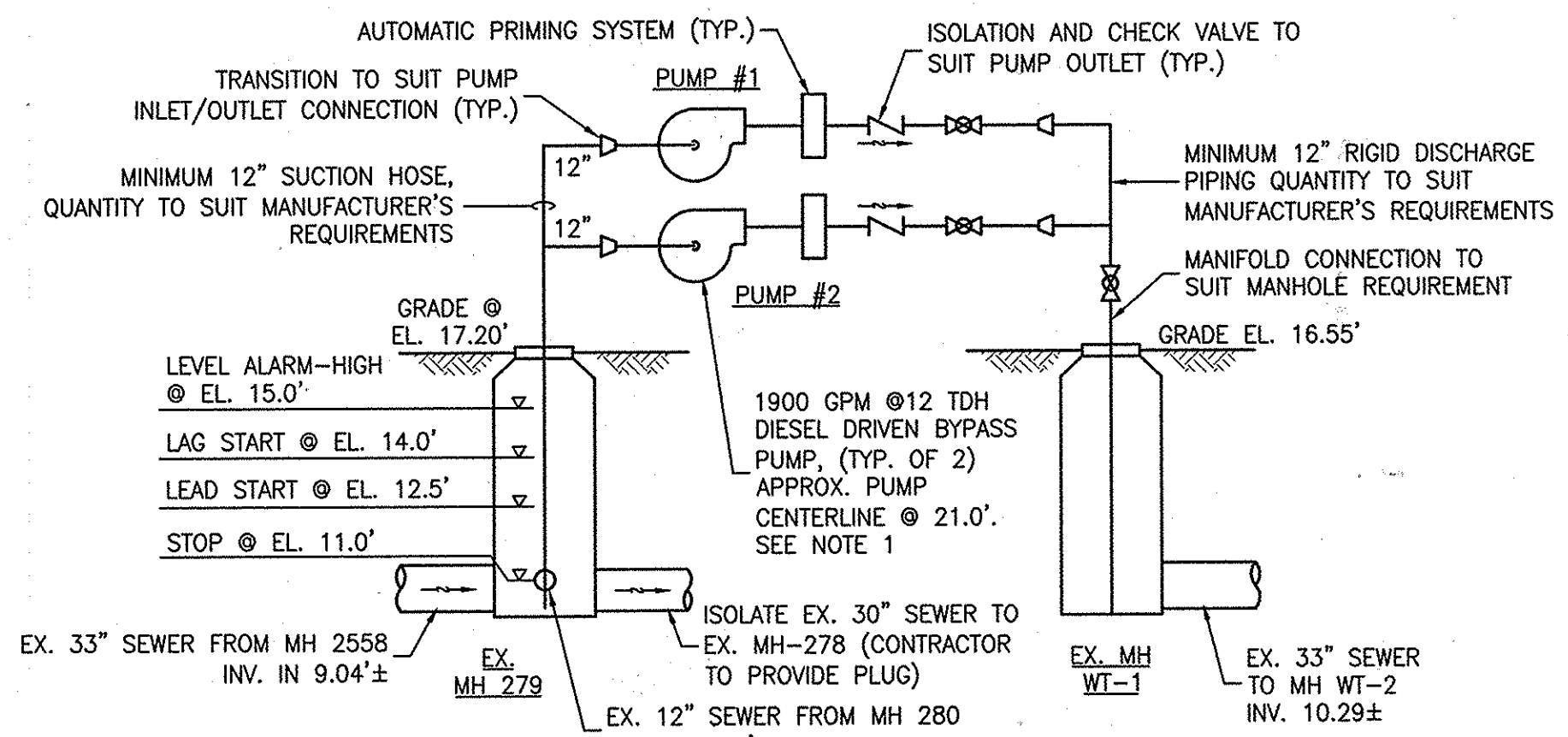
STATE OF MARYLAND  
 DEPT. OF NATURAL RESOURCES  
 L. 2501 F. 393  
 TM 38 P. 338

STATE OF MARYLAND  
 DEPT. OF NATURAL RESOURCES  
 L. 2507 F. 158  
 TM 38 P. 685

STATE OF MARYLAND  
 DEPT. OF FOREST AND PARKS  
 L. 4233 F. 510



- TEMPORARY BY-PASS PUMPING STATION CRITERIA**
- SIPHON REHABILITATION SHALL REQUIRE A BY-PASS AND SHALL BE STAGED AS DESCRIBED IN THE SEQUENCE OF CONSTRUCTION. PROVIDE 2 PUMPS EACH RATED FOR 1,900 GPM AT 12 FEET TDH WITH 10 FEET OF SUCTION LIFT. 1-PUMP SAFE PUMPING CAPACITY SHALL BE 3.4 MGD.
  - CONTRACTOR SHALL COORDINATE ALL SHUT-DOWNS, TIE-INS AND BY-PASS ACTIVITIES WITH HOWARD COUNTY BUREAU OF UTILITIES AS DEFINED HEREIN AND AS DELINEATED IN THE CONTRACT SPECIFICATIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND REFILLING OF FUEL FOR THE TEMPORARY PUMPS.



NOTE: ENTIRE PROJECT IS WITHIN 100 YEAR FLOOD PLAIN (ELEV. 27 PER FEMA MAP NO. 2400440036B).

**PLAN**  
 SCALE: 1" = 20'

**BY-PASS PUMPING SYSTEM DETAIL**  
 NOT TO SCALE

**AS-BUILT**

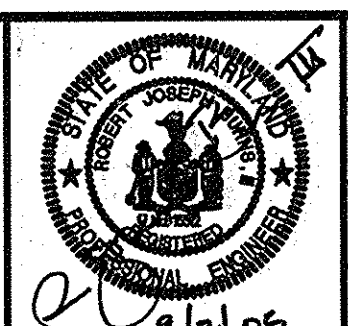
RY:\PROJ\B0113\Task2\0-DEMOL-SITE.dwg

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Jan 7 2005*  
 DIRECTOR OF PUBLIC WORKS  
 DATE: 8-9-05  
 CHIEF, BUREAU OF UTILITIES

*8/9/05*  
 CHIEF, BUREAU OF ENGINEERING  
 DATE: 8-9-05  
 CHIEF, UTILITY DESIGN DIVISION

**Dewberry & Davis LLC**  
 3120 Lord Baltimore Drive  
 Baltimore, Maryland 21244  
 (410) 285-9500 FAX: (410) 285-8876  
 Architects Engineers Planners Surveyors



DES:	DAV/AWC				
DRN:	PWR				
CHK:	RJB				
DATE:		BY:	NO.	REVISIONS	DATE

PLAN OF EXISTING CONDITIONS

600' SCALE MAP NO. 38 BLOCK NO. 5

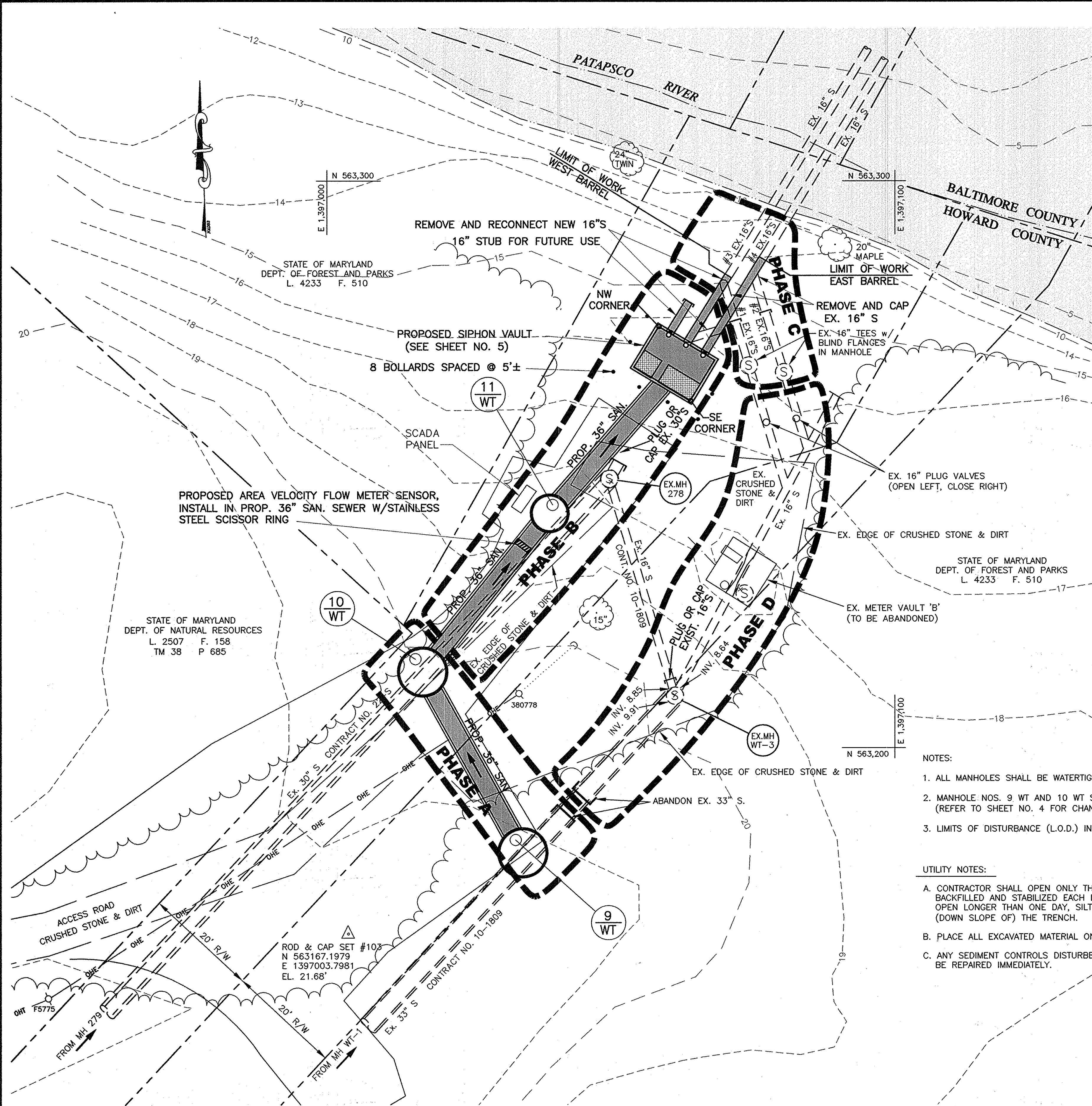
DEEP RUN INTERCEPTOR SIPHON REHABILITATION

CAPITAL PROJECT S-6240  
 CONTRACT NO. 10-4109

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 2 OF 8





ENLARGED PLAN  
SCALE: 1" = 10'

NOTE: ENTIRE PROJECT IS WITHIN 100 YEAR FLOOD PLAIN (ELEV. 27 PER FEMA MAP NO. 2400440036B).

**SUGGESTED SEQUENCE OF CONSTRUCTION**

PRIOR TO COMMENCING WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL TEST PIT TO VERIFY THE ELEVATION, SIZE, OUTSIDE DIAMETER AND MATERIAL OF THE EXISTING SEWERS AT THE CENTER OF PROPOSED MANHOLE NOS. 9 WT AND 10 WT. IN ADDITION, THE CONTRACTOR SHALL DETERMINE THE INVERT OF THE EXISTING 16" SIPHONS AND 30" SEWER AT EXISTING MANHOLE NO. 277. THIS DATA SHALL BE PROVIDED TO THE ENGINEER TO DETERMINE IF ADJUSTMENTS TO THE ELEVATIONS AND LOCATIONS OF PROPOSED MANHOLES AND VAULTS IS REQUIRED.

THE FOLLOWING FLOW DIVERSION ACTIVITIES SHALL BE PLANNED FOR A PERIOD OF FORECASTED DRY WEATHER TO MINIMIZE THE POTENTIAL FOR SEWER OVERFLOW.

- A. CONSTRUCTION OF MH 10 WT, MH 9 WT, AND 36" SEWER CONNECTION**
1. INITIATE TEMPORARY PUMP-AROUND FROM MH 279 TO MH WT-1 (SEE PLAN, SHEET 2). ALL TEMPORARY PUMPING SHALL BE MANNED 24 HOURS A DAY, SEVEN DAYS PER WEEK BY THE CONTRACTOR. CONTRACTOR SHALL PROVIDE THE BUREAU OF UTILITIES WITH 24-HOUR, SEVEN-DAY CONTACT NUMBERS WITH RESPONSE WITHIN 4 HOURS.
  2. PLUG 30" SEWER ON DOWNSTREAM (N) SIDE OF MH 279. PLUG 30" SEWER ON UPSTREAM (S) SIDE OF MH 278. DRAIN AND PUMP WASTEWATER FROM SEWER TO MH WT-3.
  3. REMOVE EX. 30" SEWER FROM PROP. MH 10 WT TO EX. MH 278.
  4. INSTALL MH 10 WT WITH 36" SEWER STUB (N).
  5. INSTALL "DOGHOUSE" MH 9 WT OVER EX. 33" SEWER.
  6. PLUG 16" SEWER ON DOWNSTREAM SIDE OF MH WT-3.
  7. INSTALL NEW 36" SEWER BETWEEN MH 10 WT AND MH 9 WT. CUT CHANNEL IN EX. 33" SEWER @ MH 9 WT.
  8. UNPLUG 30" SEWER ON DOWNSTREAM SIDE OF MH 279 (FLOW FROM 30" SEWER SHALL BE DIRECTED FROM MH 10 WT TO MH 9 WT AT THIS STAGE - TEMPORARY PUMPING SHALL BE EMPLOYED IF NECESSARY; ALL FLOW THROUGH #1 AND #2 16" S PIPES AT THIS STAGE).

- B. CONSTRUCTION OF 36" SEWER FROM MH 10 WT TO SIPHON VAULT**
1. CUT AND CAP #3 AND #4 16" SEWER AT APPROX. 5' NORTH OF EXISTING METER VAULT A TO PREVENT FLOW UPSTREAM.
  2. REMOVE EXISTING METER VAULT "A" AND REMOVE EXISTING 30" SEWER FROM EXISTING METER VAULT TO MH 278; CAP AND ABANDON 30" SEWER AT MH 278.
  3. CONSTRUCT PROPOSED SIPHON VAULT.
  4. INSTALL PROP. MH 11 WT AND INSTALL FLOW METER IN PROP. MH 11 WT.
  5. INSTALL 36" SEWER FROM SIPHON VAULT TO PROP. MH 11 WT (NEW METER VAULT).
  6. INSTALL 36" SEWER FROM MH 11 WT TO MH 10 WT.

- C. REMOVE AND REPLACE EXIST. #3 16" SIPHON PIPE SECTION.**
1. VALVE OFF #1 16" SEWER AT EXISTING VALVE (ALL FLOW SHALL BE DIRECTED THROUGH #2 AND #4 16" SEWER AT THIS STAGE). IF VALVE FAILS TO OPERATE, MECHANICAL PLUGGING MAY BE REQUIRED.
  2. REMOVE AND CAP END OF #1 16" SEWER.
  3. REMOVE #3 16" SEWER TO THE LIMITS OF WORK SHOWN.
  4. CONNECT NEW #3 16" SEWER TO SIPHON VAULT AND CONNECT TO EXISTING 16" S.

- D. REMOVE AND REPLACE EXIST. #4 16" SIPHON PIPE SECTION.**
1. CLOSE SLIDE GATE IN SIPHON VAULT TO #4 16" SIPHON PIPE.
  2. OPEN SLIDE GATE IN SIPHON VAULT TO #3 16" SIPHON PIPE.
  3. REMOVE PLUG FOR 36" SEWER DOWNSTREAM OF MH 10 WT.
  4. PLUG 33" SEWER DOWNSTREAM OF MH 9 WT.
  5. VALVE OFF #2 16" SEWER (ALL FLOW THROUGH SIPHON VAULT AND #3 16" SIPHON PIPE AT THIS STAGE). IF VALVE FAILS TO OPERATE, MECHANICAL PLUGGING MAY BE REQUIRED.
  6. REMOVE AND CAP #2 16" SEWER.
  7. REMOVE #4 16" SEWER.
  8. CONNECT NEW #4 16" SEWER TO SIPHON VAULT AND CONNECT TO EXISTING 16" S.
  9. OPEN SLIDE GATE IN SIPHON VAULT TO #4 16" SIPHON PIPE.

- E. TEST FLOW METER IN PROP. MH 11 WT**
1. TEST AV FLOW PROBE AND METER; UPON SUCCESSFUL CALIBRATION, SYSTEM SHALL BE FULLY OPERATIONAL.

- F. CONSTRUCT CHANNEL IN MH 9 WT**
1. INITIATE TEMPORARY PUMP-AROUND FROM MH WT-1 TO MH 279. ALL TEMPORARY PUMPING SHALL BE MANNED 24 HOURS A DAY.
  2. PROVIDE TEMPORARY PLUG IN 36" SEWER ON UPSTREAM (E) SIDE OF MH 10 WT.
  3. DEMOLISH TEMPORARY CHANNEL IN MH 9 WT.
  4. CONSTRUCT FINAL CHANNEL PER DETAIL, SHEET NO. 4.
  5. PLUG AND ABANDON 33" SEWER ON DOWNSTREAM (N) SIDE OF MH 9 WT PER ABANDONMENT DETAIL, SHEET NO. 4.

- G. ABANDON PARALLEL SYSTEM IN PLACE**
1. OLD VAULTS & MANHOLES: REMOVE FRAMES & COVERS AND / OR TOP SLAB, FILL WITH CR-6 STONE.
  2. OLD VALVES: REMOVE VALVES BOXES.
  3. ABANDON OLD PIPES.

MH = MANHOLE  
S = SANITARY SEWER  
(N), (S), (E), (W) = NORTH, SOUTH, EAST, WEST

- NOTES:**
1. ALL MANHOLES SHALL BE WATERTIGHT (W.T.)
  2. MANHOLE NOS. 9 WT AND 10 WT SHALL BE 8'-0" INSIDE DIAMETER (REFER TO SHEET NO. 4 FOR CHANNEL CONFIGURATIONS).
  3. LIMITS OF DISTURBANCE (L.O.D.) INDICATED ON SHEET NO. 6 OF 8.
- UTILITY NOTES:**
- A. CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF THE TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWN SLOPE OF) THE TRENCH.
  - B. PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH.
  - C. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

STAKEOUT TABLE		
DESCRIPTION	LOCATION	
MH 9 WT COVER	N 563,242.88	E 1,397,039.73
MH 10 WT COVER	N 563,215.70,	E 1,397,015.59
MH 11 WT COVER	N 563,183.76,	E 1,397,033.22
NW INSIDE CORNER SIPHON VAULT	N 563,274.31,	E 1,397,058.45
SE INSIDE CORNER SIPHON VAULT	N 563,261.31,	E 1,397,064.02

**AS-BUILT Replacement Sheet**  
March 14, 2007

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/10/07  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10-10-07  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 10-10-07  
CHIEF, UTILITY DESIGN DIVISION DATE

*[Signature]* 10/10/07  
BUREAU OF UTILITIES DATE

**Dewberry & Davis LLC**  
3120 Lord Baltimore Drive  
Baltimore, Maryland 21244  
(410) 285-9500 FAX: (410) 285-8876

Architects Engineers Planners Surveyors

*[Signature]* 3-19-07

DES: DAV/AWC  
DRN: PWR  
CHK: RJB  
DATE:

CD	2	AS - BUILT	3/14/07
BY	NO.	REVISIONS	DATE

PLAN OF IMPROVEMENTS

600' SCALE MAP NO. 38 BLOCK NO. 5

DEEP RUN INTERCEPTOR SIPHON REHABILITATION

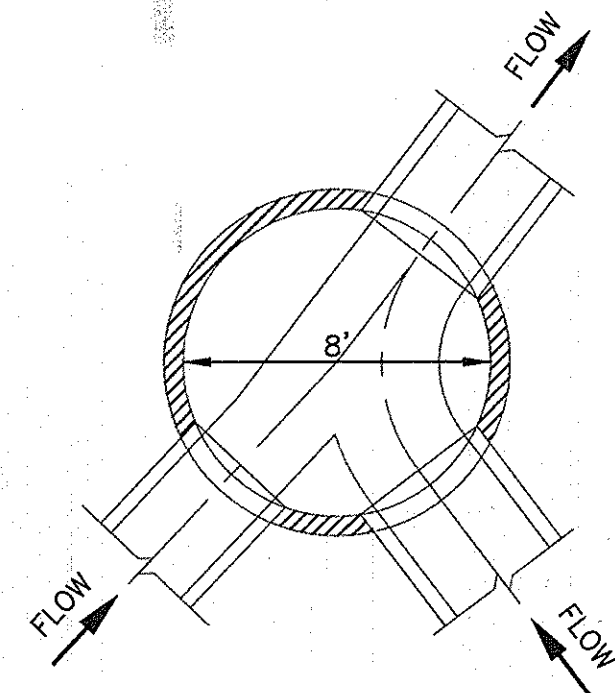
CAPITAL PROJECT S-6240  
CONTRACT NO. 10-4109

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

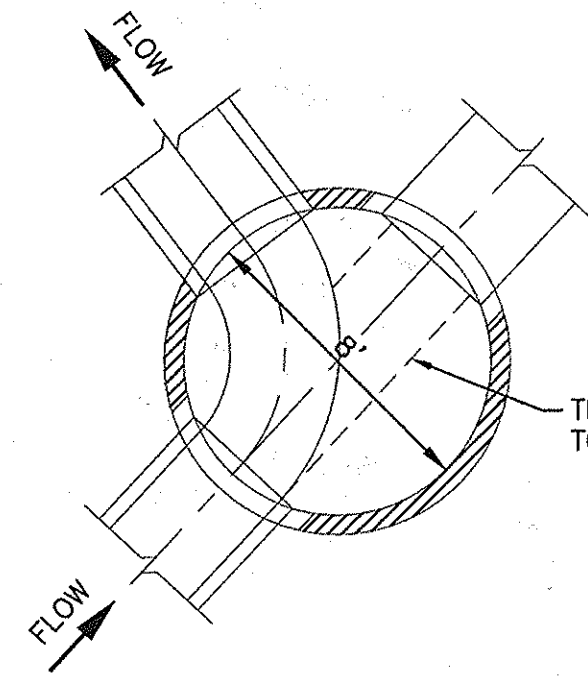
SCALE AS SHOWN

SHEET 3 OF 8





PLAN - MH 10 WT CHANNEL CONFIGURATION

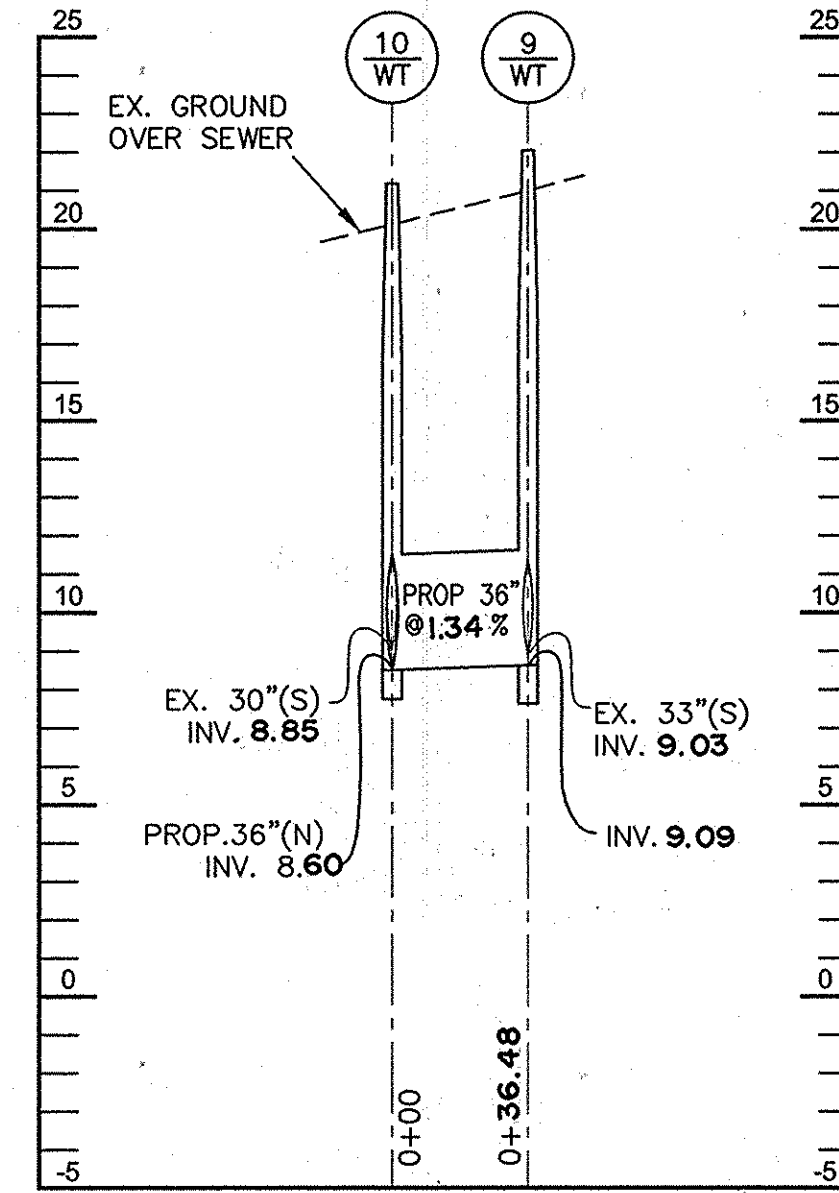


PLAN - MH 9 WT CHANNEL CONFIGURATION

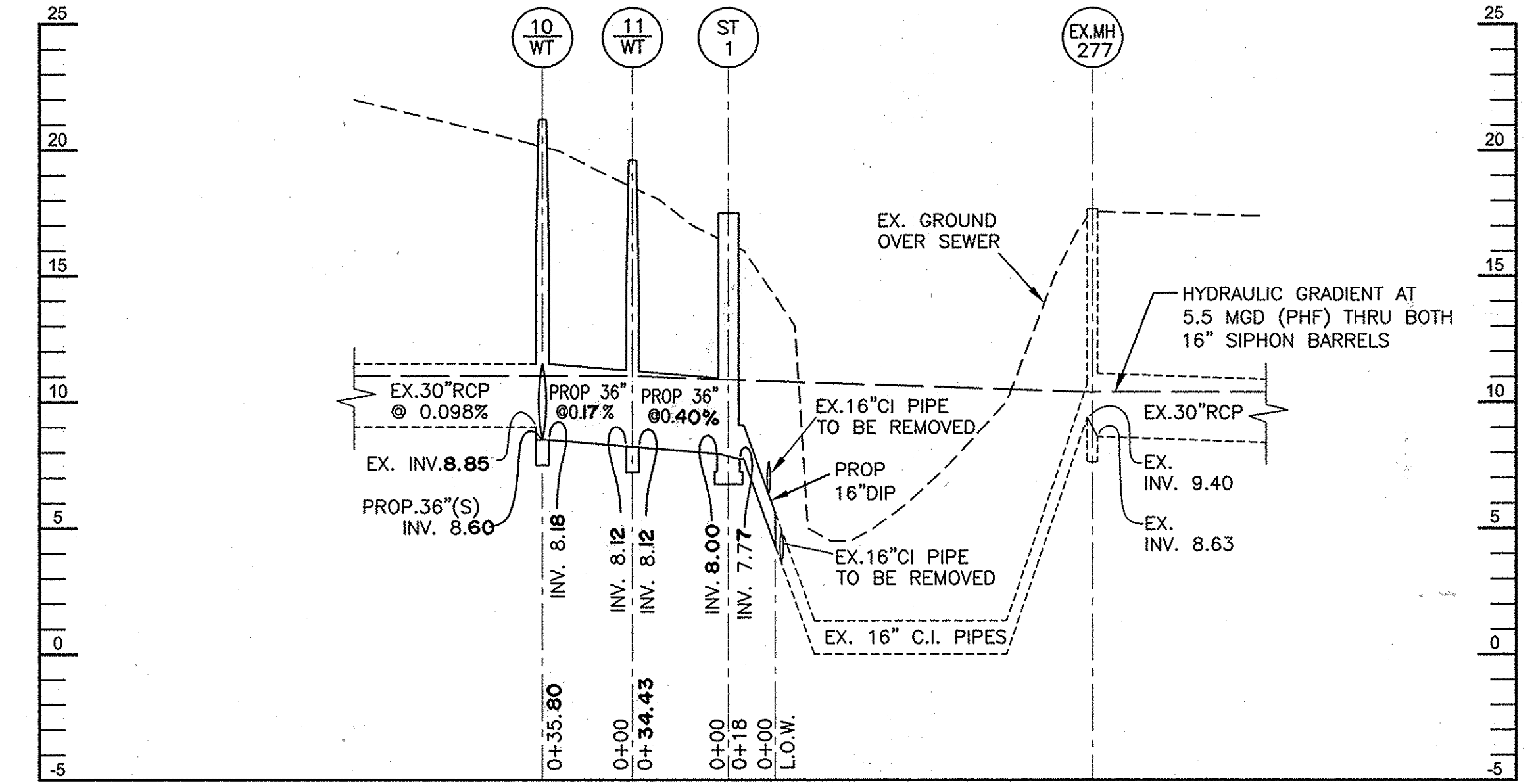
NOTE:  
THE CENTERLINE OF ALL PIPES ENTERING A MH SHALL INTERSECT WITHIN 1"± OF THE LONGITUDINAL AXIS OF THE MH BARREL (CENTER).

CHANNEL LINING NOTES:

1. CHANNEL LININGS SHALL BE FORMED USING SEWER BRICK (ASTM DESIGNATION C32-73 GRADE SM SIZE NO. 1).
2. CHANNEL SHALL PROVIDE SMOOTH HYDRAULIC TRANSITION BETWEEN PIPES.
3. MINIMUM CENTERLINE CHANNEL RADIUS SHALL BE 1.5 x OUTLET PIPE DIAMETER.



PROFILE

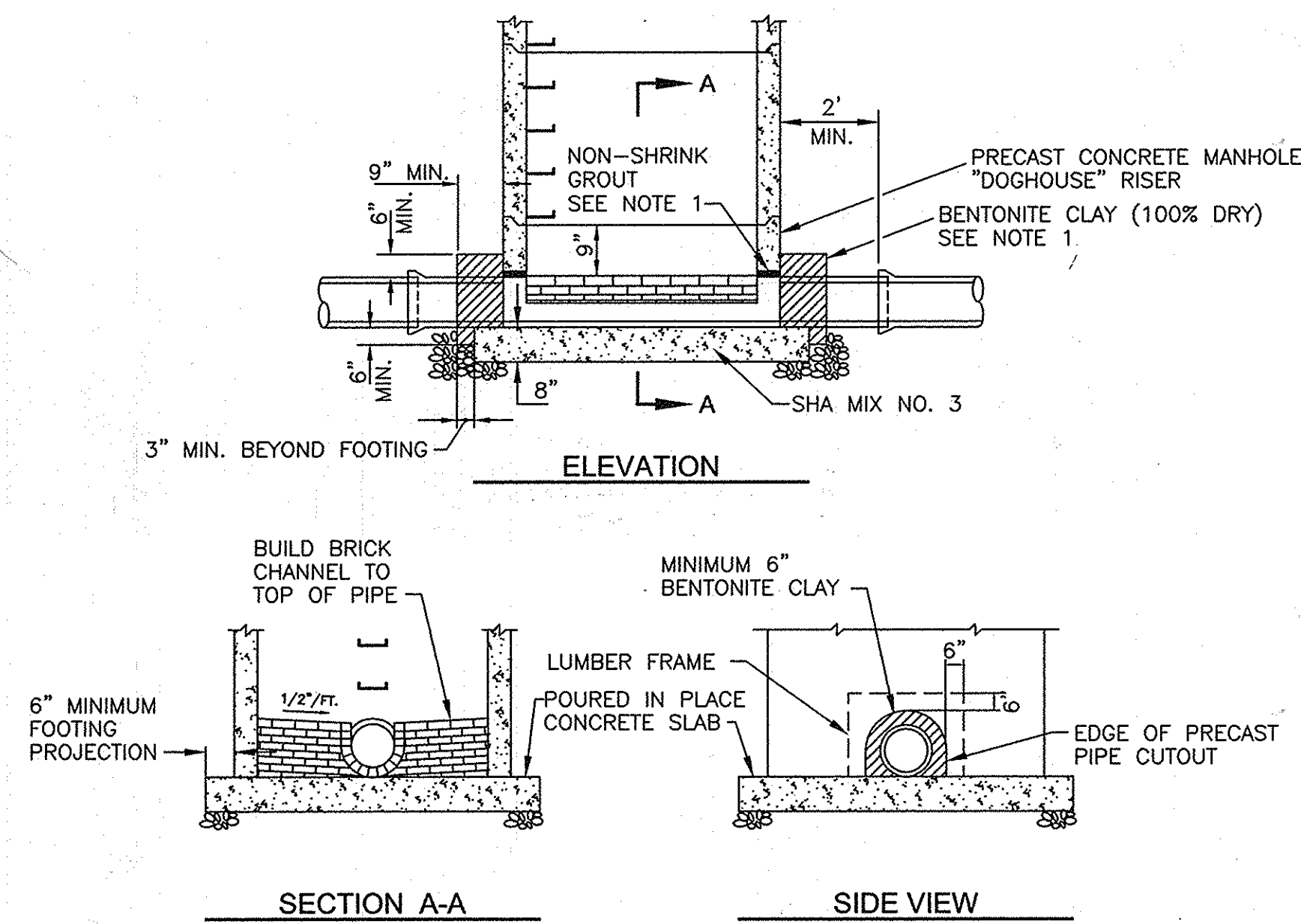


PROFILE

HYDRAULIC DATA:  
Q = 5.5 MGD  
V = 1.20 fps (36" DIA.)  
n = 0.013

UTILITY NOTES:

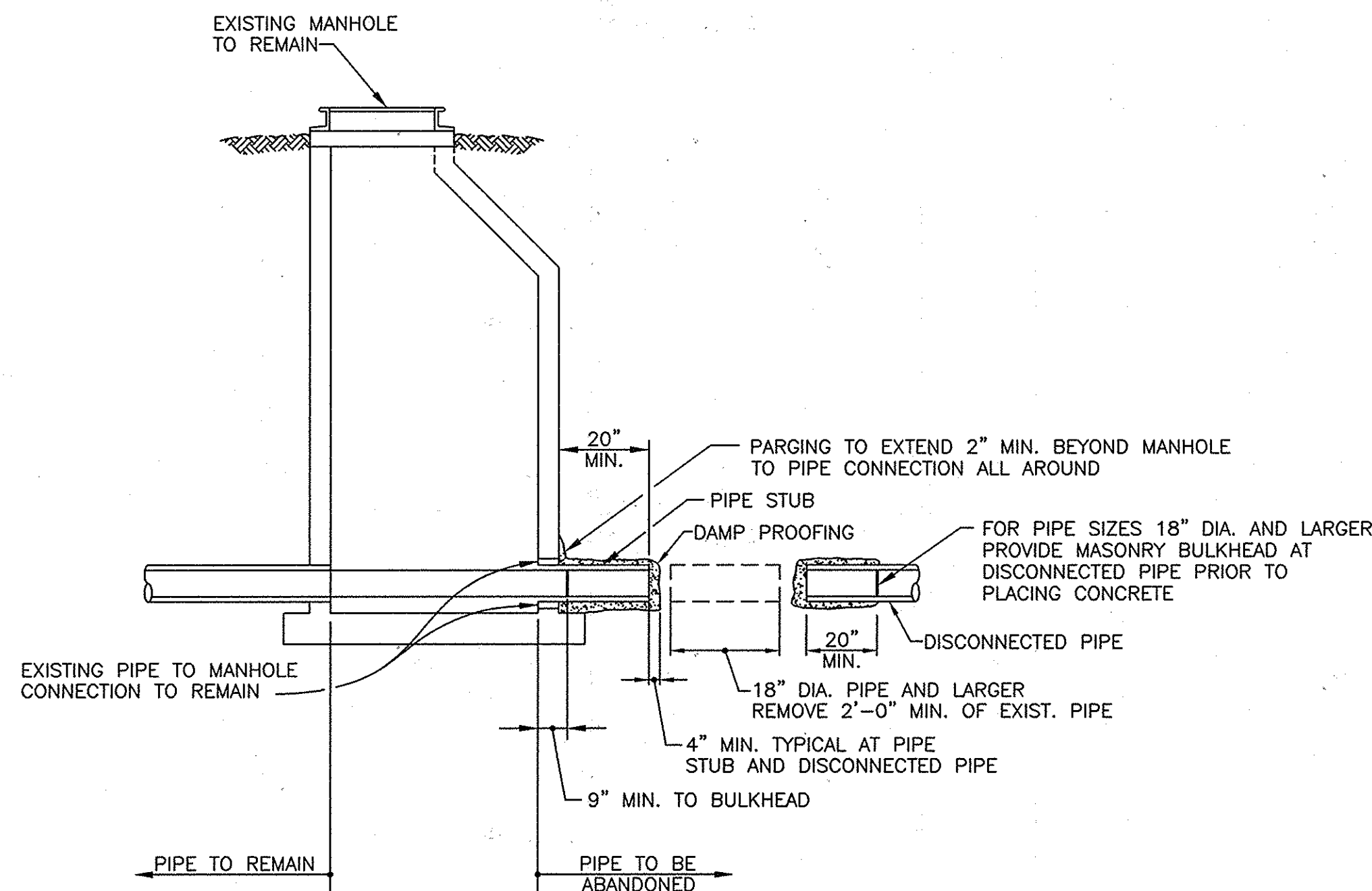
- a. CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF THE TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWN SLOPE OF) THE TRENCH.
- b. PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH.
- c. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.



NEW MANHOLE OVER EXISTING PIPE

NOTES:

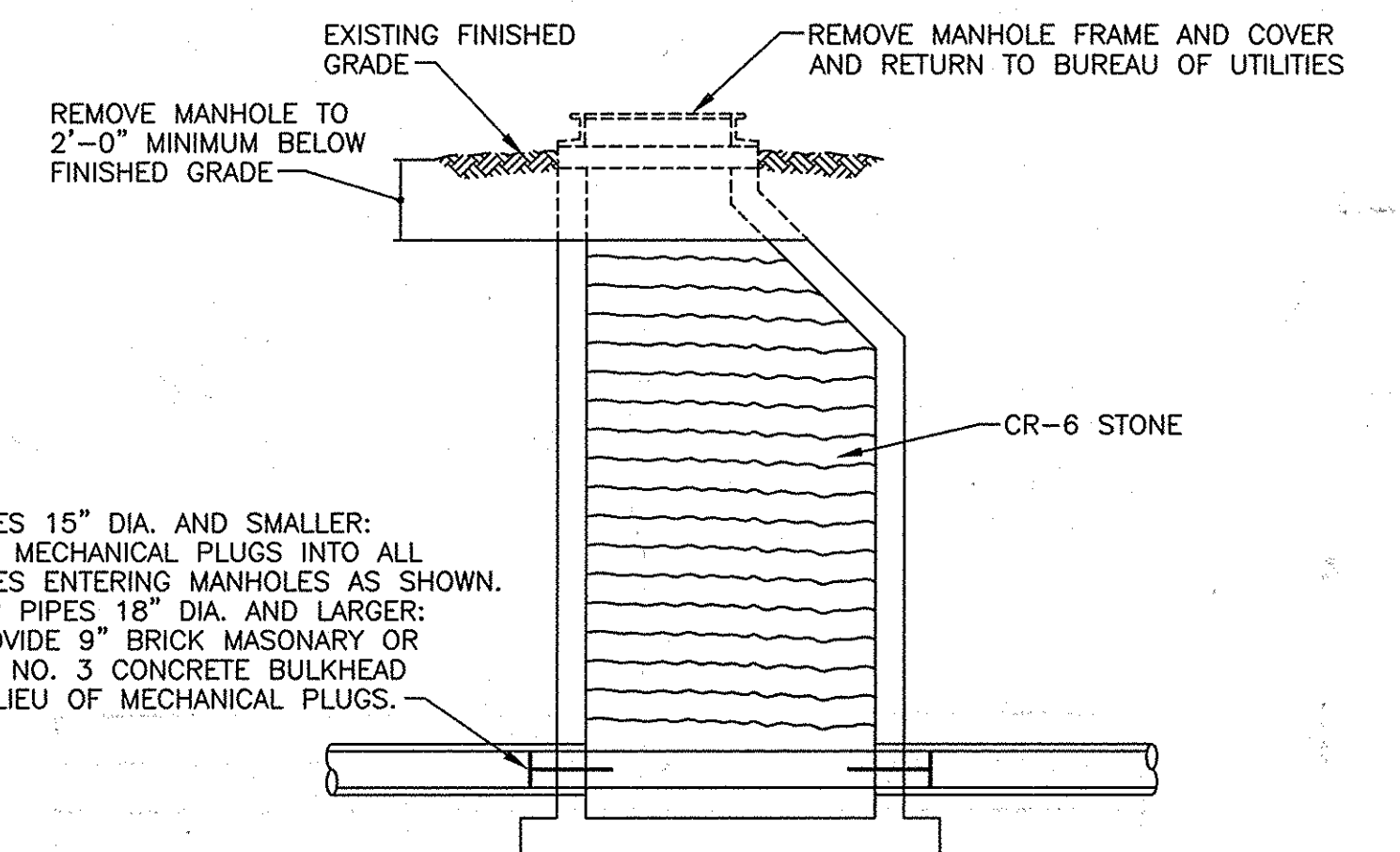
1. SPACE BETWEEN PIPE AND MANHOLE WALLS TO BE FILLED WITH NON-SHRINK GROUT AND COVERED WITH MINIMUM 6" BENTONITE CLAY. PRESSURE TREATED LUMBER FRAME TO BE PROVIDED TO ENSURE BENTONITE OVERLAP ONTO PRECAST MANHOLE UNIT AND REMAIN IN PLACE.
2. OUTSIDE EDGE OF MANHOLE SHALL NOT BE LESS THAN 2'-0" FROM ANY EXISTING PIPE JOINT.
3. PRECAST REINFORCED CONCRETE MANHOLE SHALL BE FURNISHED IN ACCORDANCE WITH A.S.T.M. DESIGNATION C 478.
4. MANHOLE BASE TO BE BEDDED IN AT LEAST 6" NO. 57 AGGREGATE BEDDING.
5. SEE GENERAL NOTES APPLICABLE TO PRECAST CONCRETE MANHOLES, STANDARD DETAIL G 5.01 AND STANDARD DETAIL G 5.11.



ABANDONMENT OF PIPE AT MANHOLE

NOTE:

1. 15" DIA. PIPE AND SMALLER TO BE ABANDONED: CONSTRUCT 9" BRICK MASONRY OR MIX NO. 3 CONCRETE PLUGS INTO PIPE STUB.
2. 18" DIA. PIPE AND LARGER:
  - A. BULKHEAD PIPE STUB AT MANHOLE AND DISCONNECTED PIPE TO THE LIMITS SHOWN.
  - B. PARGE BULKHEAD PIPE STUB AND DISCONNECTED PIPE TO THE LIMITS SHOWN. PARGING THICKNESS TO BE 1/2".
  - C. APPLY DAMP PROOFING TO PARGING TO EXTEND 2" MINIMUM BEYOND PARGING.



COMPLETE MANHOLE ABANDONMENT

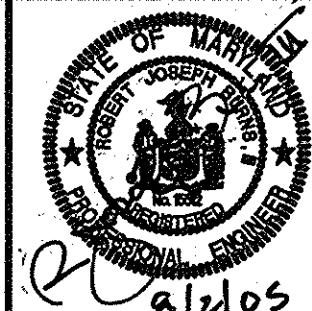
AS-BUILT

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works DATE 8/10/05  
Chief, Bureau of Engineering DATE 8/10/05  
Chief, Bureau of Utilities DATE 8-9-05  
Chief, Utility Design Division DATE 8-9-05

Dewberry & Davis LLC  
3120 Lord Baltimore Drive  
Baltimore, Maryland 21244  
(410) 285-9500 FAX: (410) 285-8875  
Architects Engineers Planners Surveyors



DES:	DAV/AWC				
DRN:	PWR				
CHK:	RJB				
DATE:	CD 2	AS BUILT	3/4/07		
	BY NO.	REVISIONS	DATE	600' SCALE MAP NO. 38	BLOCK NO. 5

PROFILES AND DETAILS

DEEP RUN INTERCEPTOR SIPHON REHABILITATION

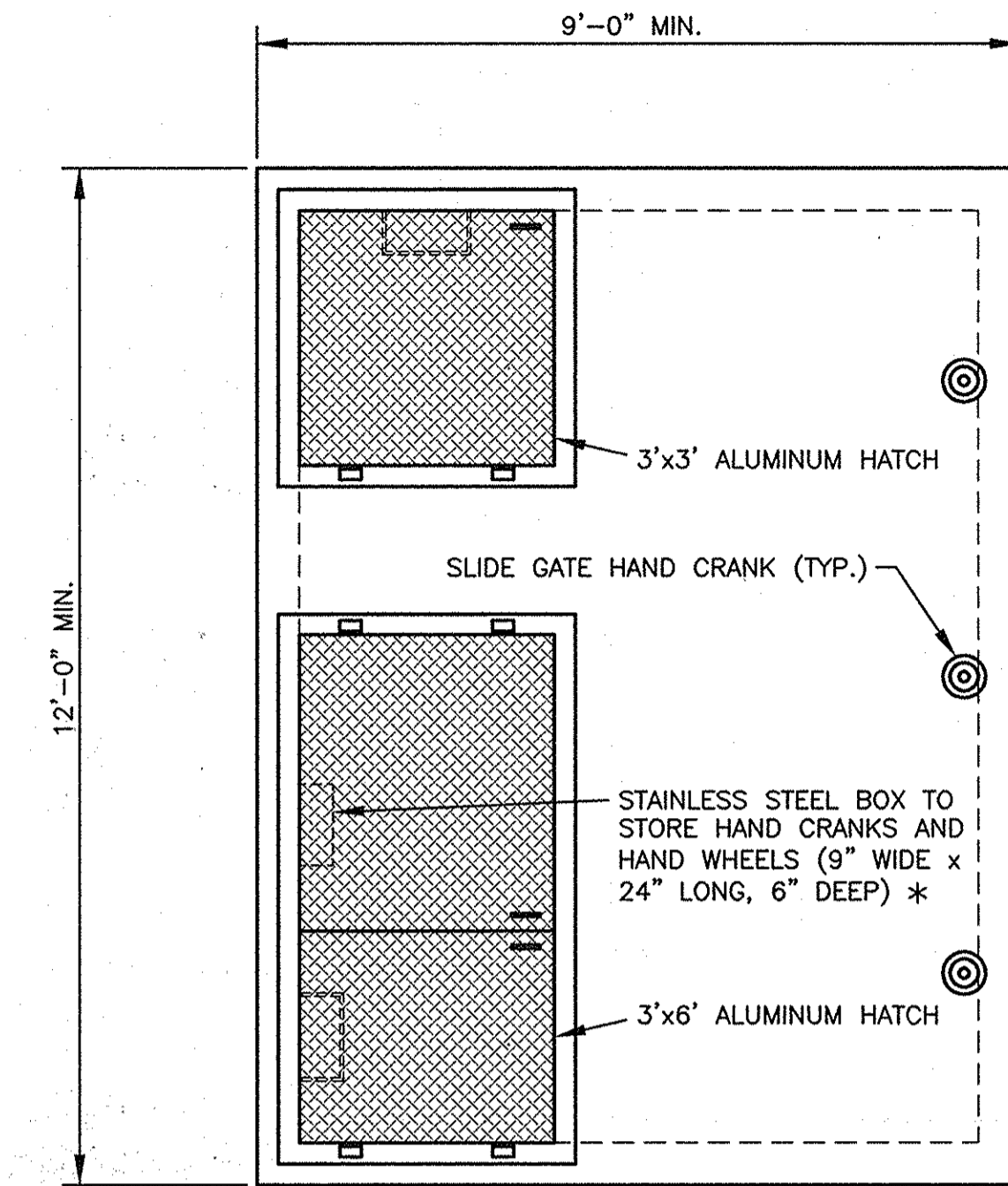
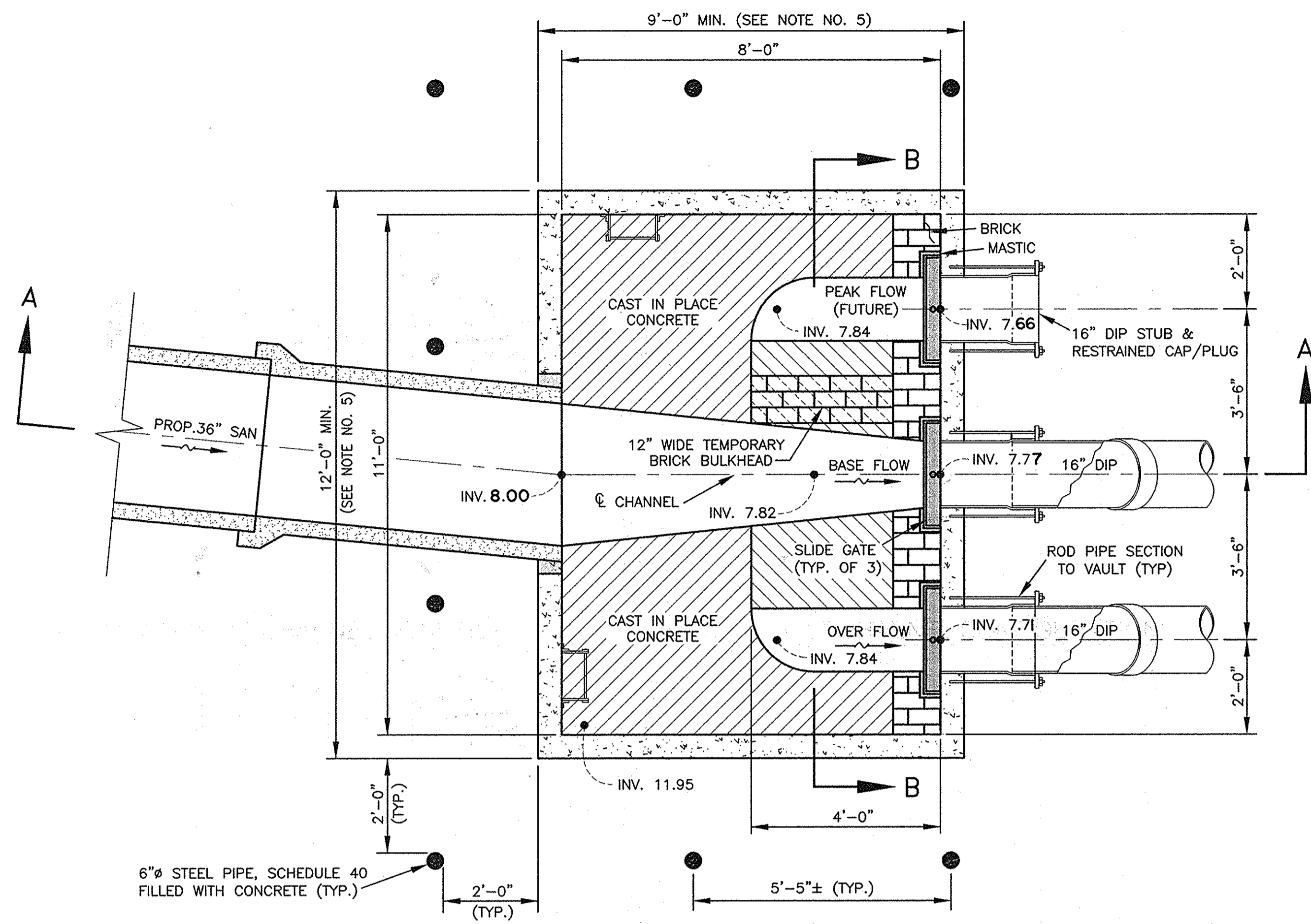
CAPITAL PROJECT S-6240  
CONTRACT NO. 10-4109

ELECTION DISTRICT NO. 1

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

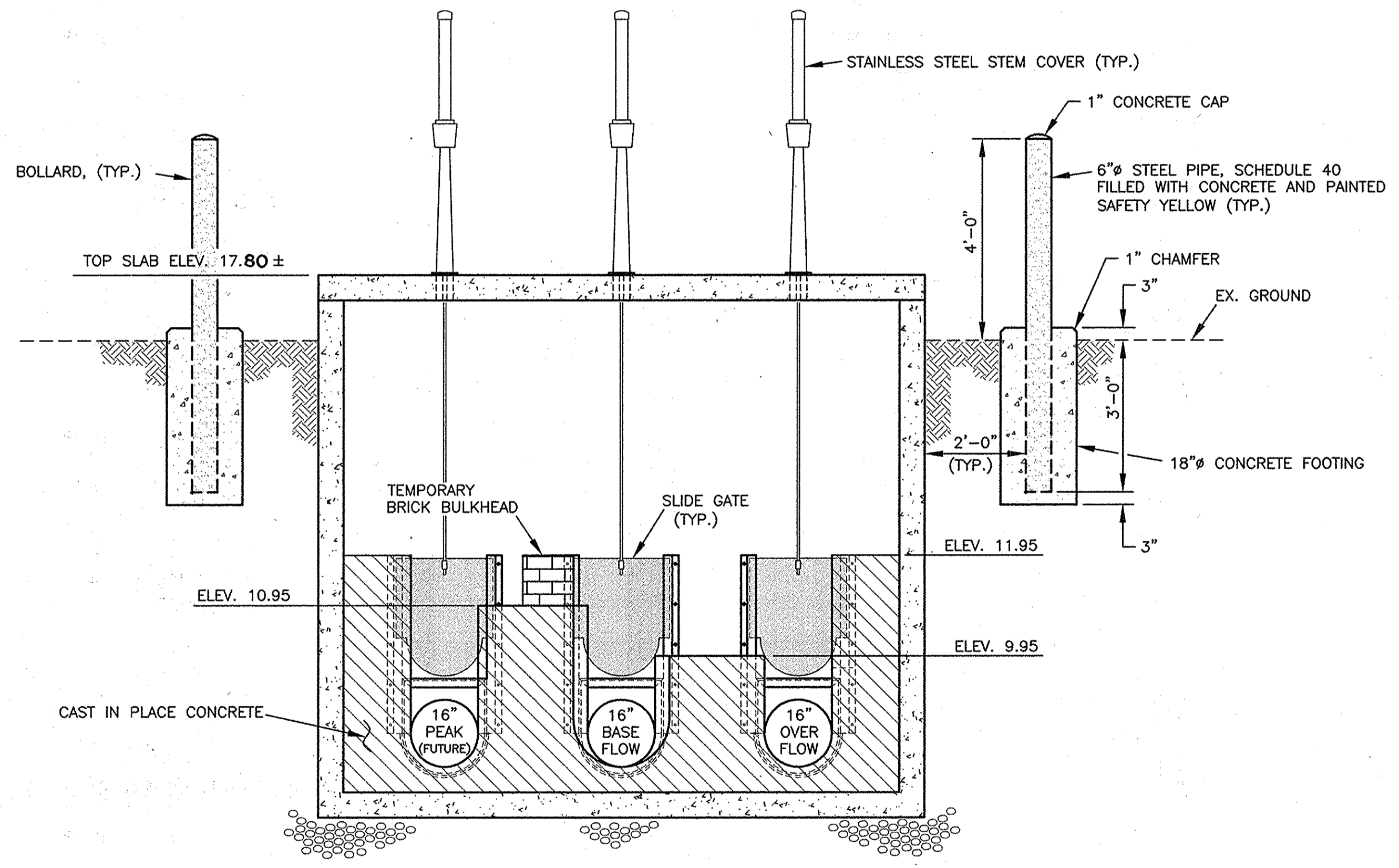
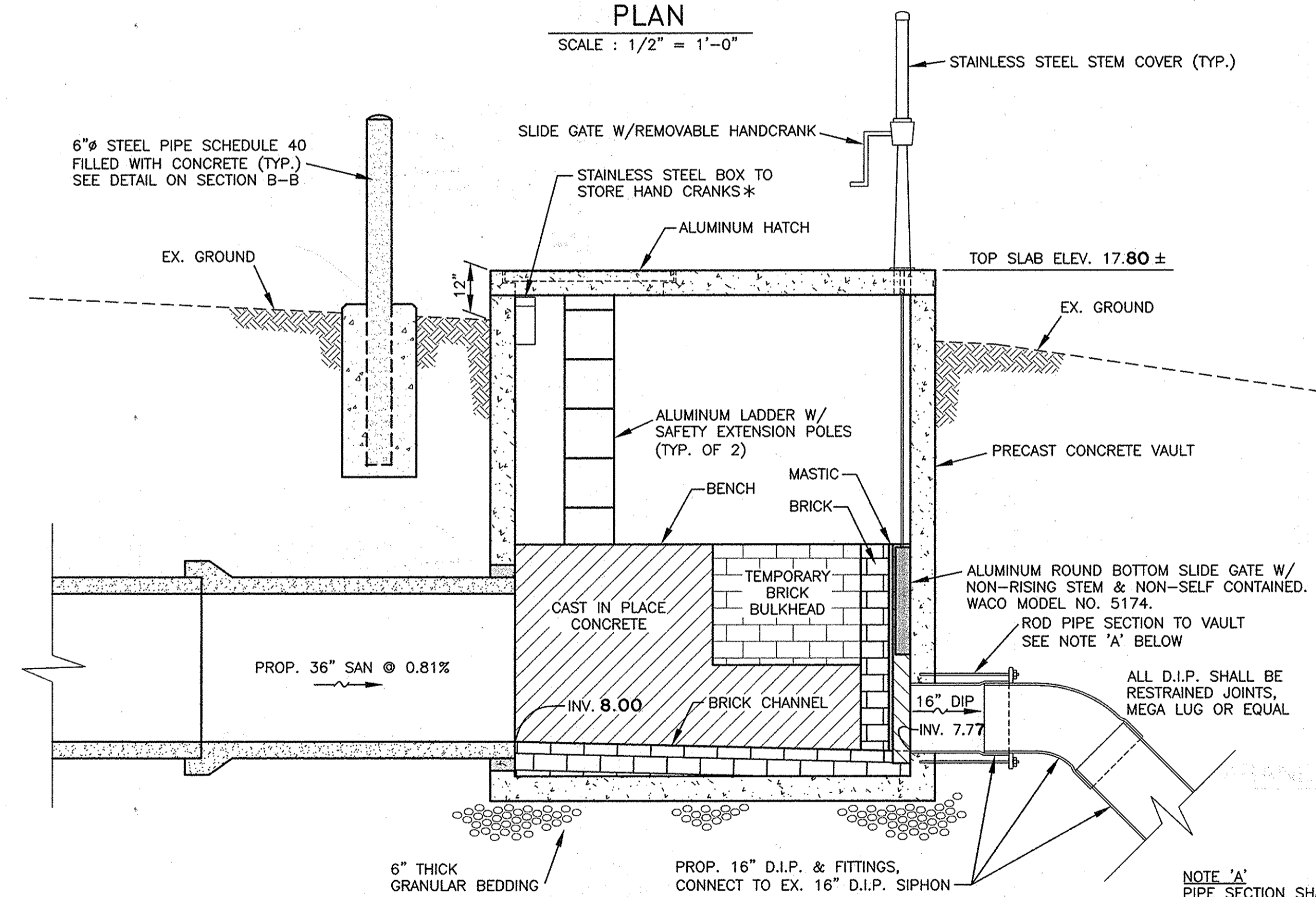
SHEET 4 OF 8



**NOTES:**

1. THE CONTRACTOR SHALL MAKE THE NECESSARY CONNECTIONS TO THE PROPOSED VAULT USING MECHANICALLY WEDGED-IN-PLACE TYPE CONNECTORS SUCH AS LINK-SEAL AS MANUFACTURED BY THUNDER LINE CORPORATION, Z-LOK SP AS MANUFACTURED BY A-LOK PRODUCTS, INC. OR KOR-N-SEAL AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. ALL METAL PARTS, I.E. BOLTS, STRAPS, ETC. SHALL BE STAINLESS STEEL.
2. ALL EQUIPMENT, LADDERS, HATCHES, SLIDE GATES, ETC. SHALL BE ALUMINUM CONSTRUCTION IN THE SIPHON VAULT UNLESS OTHERWISE SPECIFICALLY NOTED. ALL STEMS, ANCHORS, HARDWARE, ETC. IN THE SIPHON VAULT SHALL BE STAINLESS STEEL UNLESS OTHERWISE SPECIFICALLY NOTED.
3. ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL RECEIVE A MINIMUM OF TWO COATS OF BITUMINOUS PAINT PRIOR TO ERECTION OR EMBEDMENT.
4. PROVIDE DAMPPROOFING ON ALL BURIED EXTERIOR WALLS. DAMPPROOFING SHALL CONSIST OF TWO OR MORE COATS OF ABSORPTIVE TAR (PRIME COAT) AND ONE COAT OF TAR SEAL (SEAL COAT).
5. STRUCTURAL DESIGN FOR THE PRECAST CONCRETE SIPHON VAULT SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER FOR THE PRECAST CONCRETE MANUFACTURER. THE VAULT SHALL BE DESIGNED FOR THE FOLLOWING:
  - A. HS 20 LOAD DESIGNATION OR 300 POUNDS PER SQUARE FOOT LIVE LOAD.
  - B. DISTRIBUTION OF EARTH LOADING AND LIVE LOAD SHALL BE IN ACCORDANCE WITH ASTM C 857 OR ASTM C 890.
  - C. WALLS SHALL BE DESIGNED USING AN EQUIVALENT FLUID PRESSURE OF 83 POUNDS PER CUBIC FOOT AND A 2 FOOT SURCHARGE UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS. THE UNITS SHALL ALSO BE DESIGNED TO RESIST ALL STRESS ENCOUNTERED DURING CASTING, HANDLING, AND ERECTION.
  - D. STRUCTURE SHALL BE DESIGNED TO ACCOUNT FOR A WATER SURFACE ELEVATION OF 27.0. THE VAULT SHALL BE DESIGNED TO RESIST ALL STRESS ENCOUNTERED DURING CASTING, HANDLING AND ERECTION.
  - E. ALL JOINTS IN THE STRUCTURE SHALL BE WATERTIGHT.
  - F. STRUCTURE SHALL BE DESIGNED FOR A FACTOR OF SAFETY AGAINST BUOYANCY OF 1.3.

\* CONTRACTOR TO VERIFY THAT THE STAINLESS STEEL BOX CAN ACCOMMODATE HAND CRANKS AND HAND WHEELS FOR SLIDE GATES PROVIDED AND SIZE BOX ACCORDINGLY.



**NOTE 'A'**  
PIPE SECTION SHALL BE ANCHORED TO THE PRECAST VAULT WALL WITH "DUC LUGS" AND RODS (MIN. (3) 1/2" Ø S.S. RODS SPACED AT APPROX. 120"). THE CONTRACTOR IS TO COORDINATE METHOD OF INSTALLING THE WALL INSERTS WITH THE MANUFACTURER OF THE PRECAST VAULTS. THE CONTRACTOR SHALL SUBMIT A DETAILED SKETCH OF THE PROPOSED RODDING CONNECTION METHOD FOR THE ENGINEERS REVIEW AND APPROVAL. TYPICAL (3) PIPES.

**AS-BUILT**

R:\PROJ\B011370842\PROP\_SIPHON PLAN AND DETAILS.dwg

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 8/10/05 8-9-05 DIRECTOR OF PUBLIC WORKS CHIEF, BUREAU OF UTILITIES		Dewberry & Davis LLC 3120 Lord Baltimore Drive Baltimore, Maryland 21244 (410) 285-9500 FAX: (410) 285-8875 Architects Engineers Planners Surveyors		DES: DAV/AWC DRN: PWR CHK: RJB DATE: 8/10/05		SIPHON VAULT DETAILS 3-14-07 AS - BUILT REVISIONS		DEEP RUN INTERCEPTOR SIPHON REHABILITATION CAPITAL PROJECT 8-6240 CONTRACT NO. 10-4109 ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 5 OF 8
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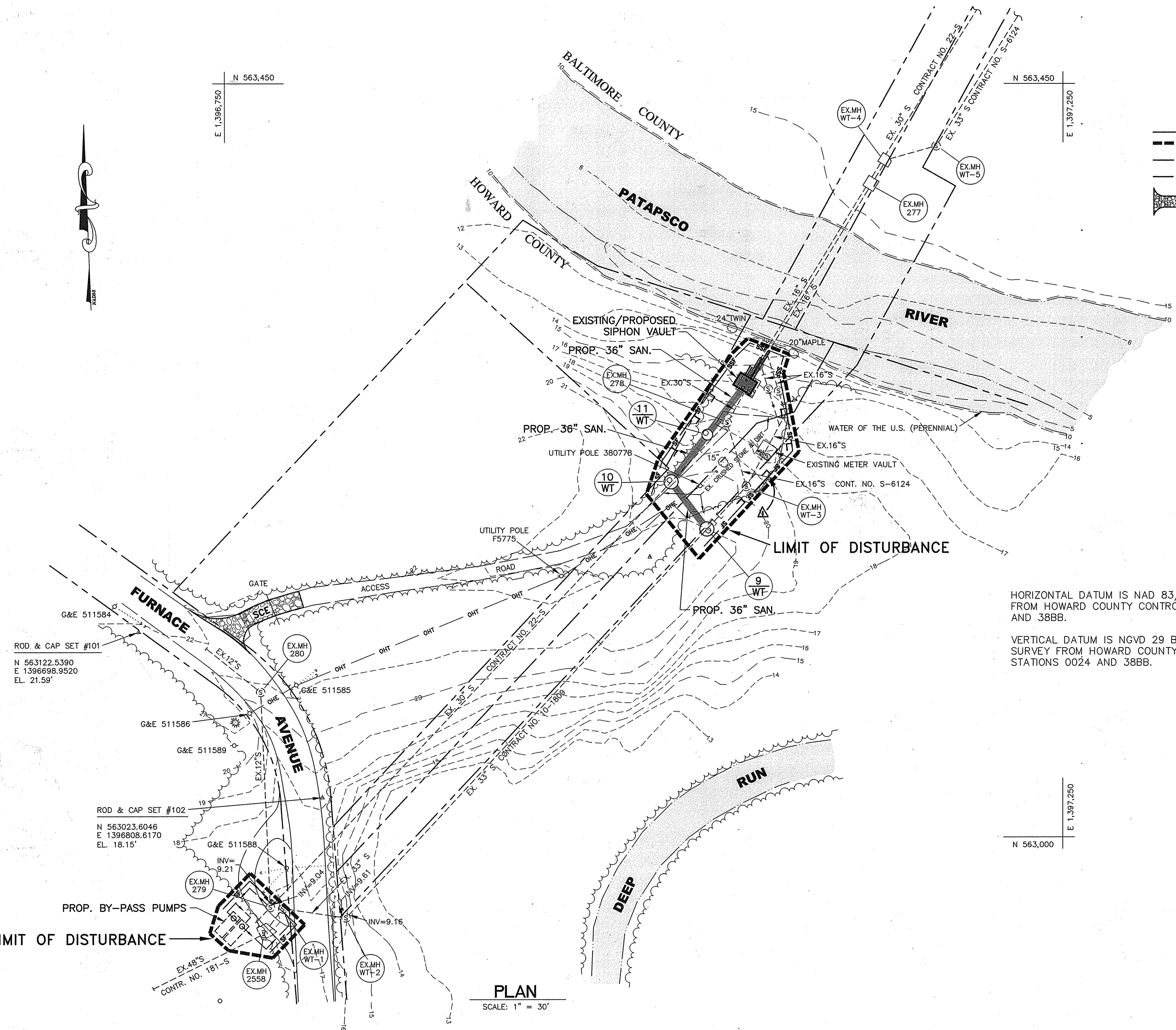


N 563,450  
E 1,396,750

N 563,450  
E 1,397,250

**LEGEND**

- LIMIT OF DISTURBANCE
- SILT FENCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE



HORIZONTAL DATUM IS NAD 83/91 BY STATIC GPS FROM HOWARD COUNTY CONTROL STATIONS 0024 AND 38BB.

VERTICAL DATUM IS NGVD 29 BY STATIC GPS SURVEY FROM HOWARD COUNTY CONTROL STATIONS 0024 AND 38BB.

N 563,000  
E 1,397,250

**PLAN**  
SCALE: 1" = 30'

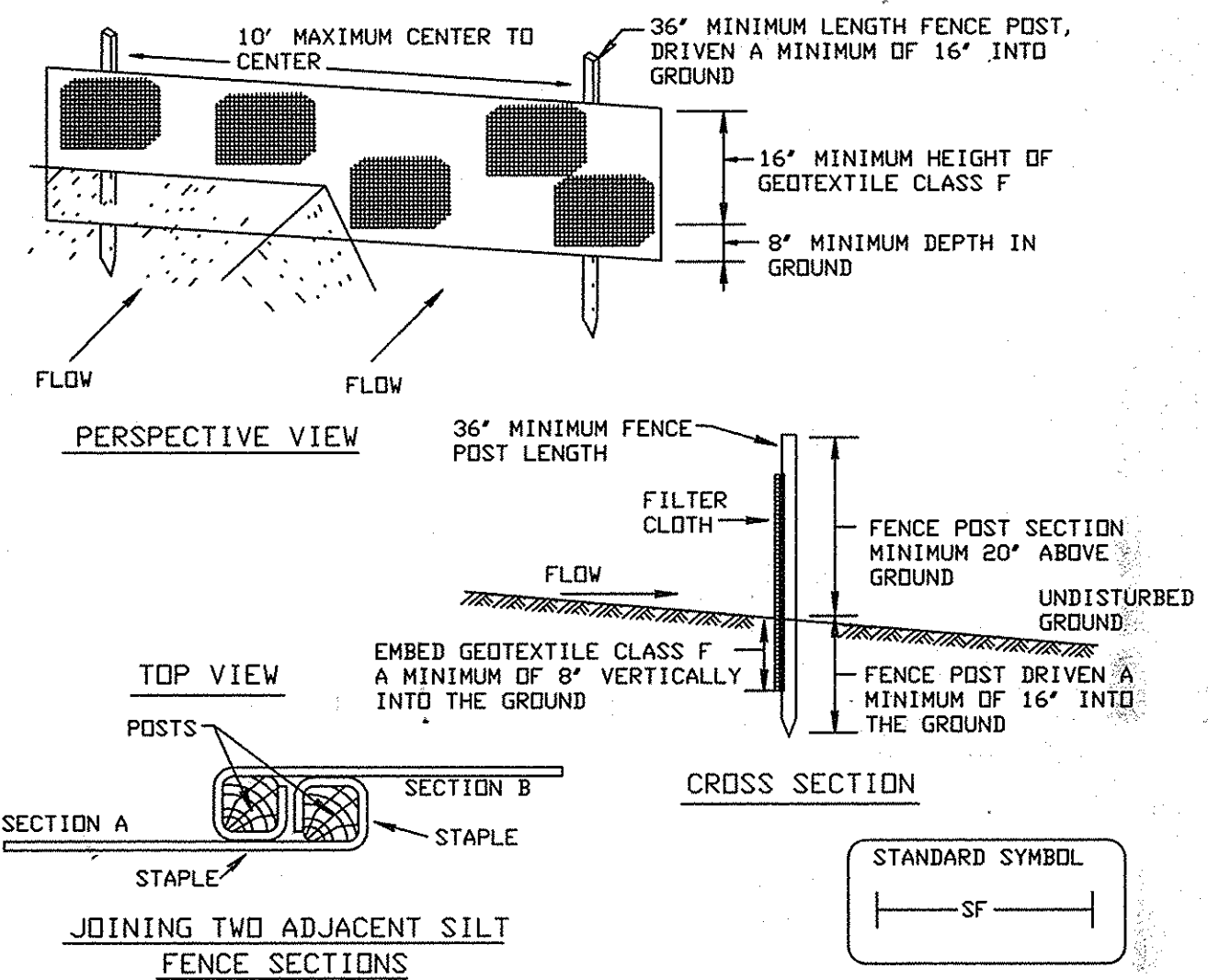
NOTE : ENTIRE PROJECT IS WITHIN 100 YEAR FLOOD PLAIN (ELEV. 27 PER FEMA MAP NO. 2400440036B).

R:\PROJ\B0113\Task2\0-SITE PLAN.dwg - SEC PLAN 1

**AS-BUILT**

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  DIRECTOR OF PUBLIC WORKS  CHIEF, BUREAU OF UTILITIES	DEWBERRY & DAVIS LLC 3120 Lord Baltimore Drive Baltimore, Maryland 21244 (410) 265-8500 FAX: (410) 265-8875 Architects Engineers Planners Surveyors		DES: DAV/AWC	DEC 1	ADD "J" TURNS TO SILT FENCE	9/12/05	SEDIMENT AND EROSION CONTROL PLAN	DEEP RUN INTERCEPTOR SIPHON REHABILITATION CAPITAL PROJECT S-6240 CONTRACT NO. 10-4109	SCALE AS SHOWN SHEET 6 OF 8
			DRN: PWR	CHK: RJB	DATE:	BY NO.			

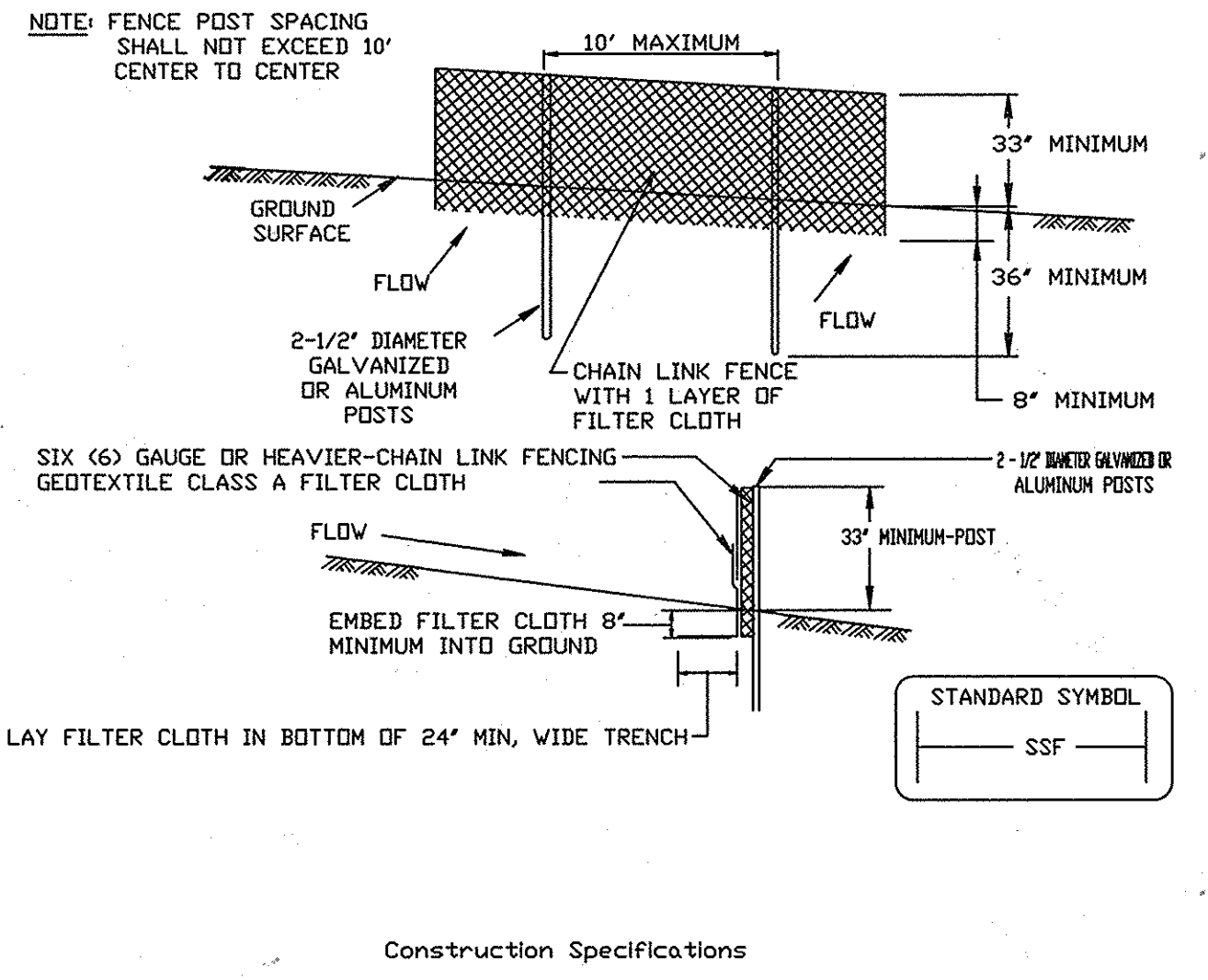




- Construction Specifications**
- Fence posts shall be a minimum of 36' long driven 16' minimum into the ground. Wood posts shall be 1-1/2" x 1-1/2" square (minimum) cut, or 1-3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
  - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

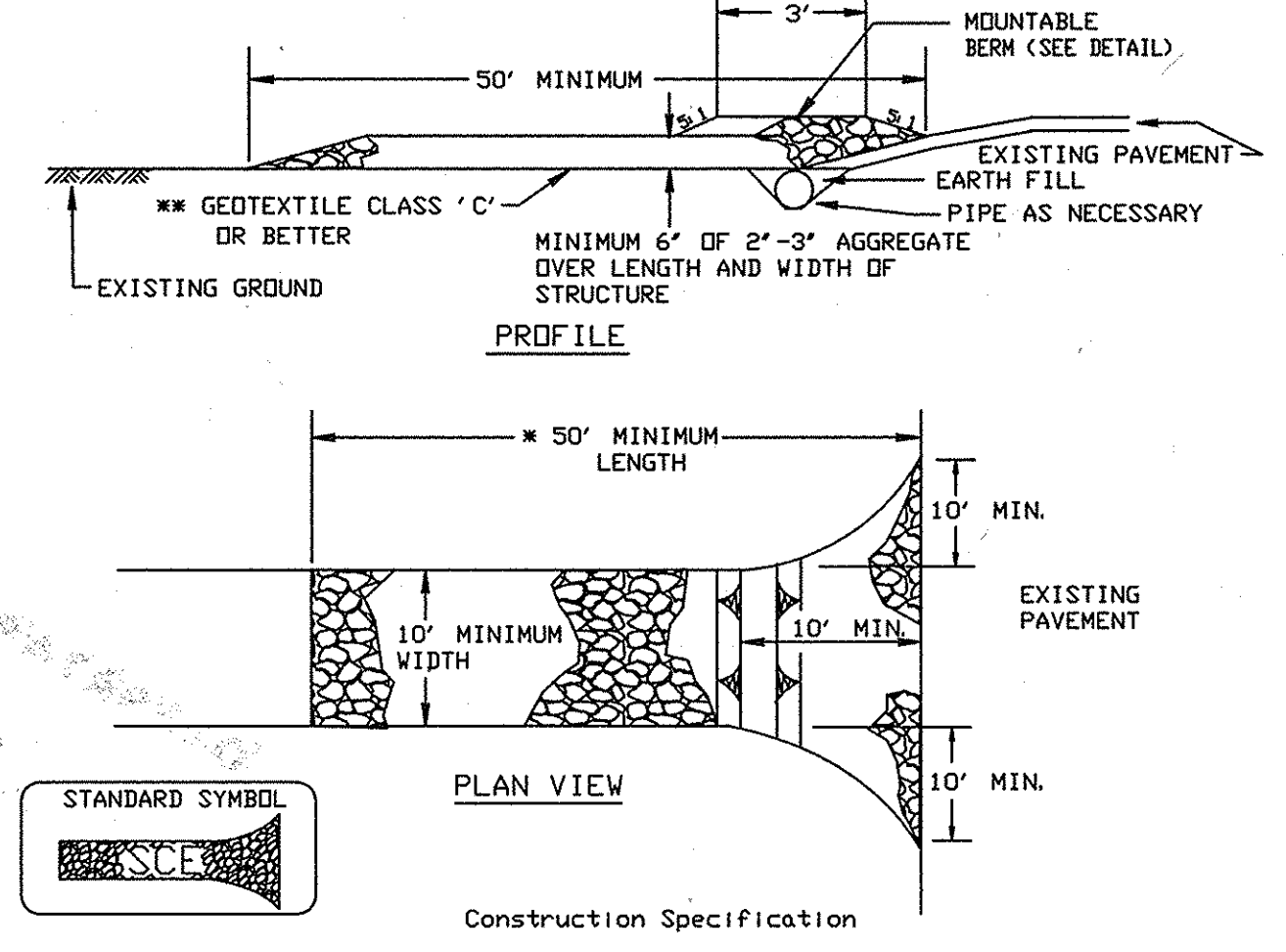
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
  - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
  - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

**SILT FENCE**



- Construction Specifications**
- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The SHA specifications for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.
  - The posts do not need to be set in concrete.
  - Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be (6) gauge or heavier.
  - Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
  - Filter cloth shall be embedded a minimum of 8" into the ground.
  - When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded.
  - Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height. This detail has been modified in accordance with SCD newsletter dated November, 1996.

**SUPER SILT FENCE**



- Construction Specifications**
- Length - minimum of 50' (\*30' for single residence lot).
  - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
  - Stone - crushed aggregate (2' to 3') or reclaimed or recycled concrete equivalent shall be placed at least 6' deep over the length and width of the entrance.
  - Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6' of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6' minimum will be required.
  - Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

**STABILIZED CONSTRUCTION ENTRANCE**

**STANDARD SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, 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 THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
  - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL 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.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE	= 0.24 ACRES (10,400 SF)
AREA DISTURBED	= 0.24 ACRES (10,400 SF)
AREA TO BE ROOFED OR PAVED	= 0.12 ACRES (5,400 SF EX. CRUSHED STONE)
AREA TO BE VEGETATIVELY STABILIZED	= 0.12 ACRES (5,000 SF)
TOTAL CUT	= 380 CU./YDS.
TOTAL FILL	= 260 CU./YDS. (LESS VAULT & PIPE)

 OFF SITE WASTE/BORROW AREA LOCATION: AS APPROVED BY ENGINEER
- ANY SEDIMENT CONTROL PRACTICE 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 SHALL 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 SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- SPOIL FROM THE TRENCHING OPERATION IS TO BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

**TEMPORARY SEEDING NOTES**

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION** - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS** - APPLY 60 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).
- SEEDING** - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
- MULCHING** - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.
- REFER TO THE "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR RATE AND METHODS NOT COVERED.

**PERMANENT SEEDING NOTES**

- APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION** - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS** - IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
- PREFERRED** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).
  - ACCEPTABLE** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ.-FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.
- SEEDING** - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, AS POSSIBLE IN THE SPRING, OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.
- MULCHING** - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCHING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.
- MAINTENANCE** - INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDING.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN A GRADING PERMIT. (1 WEEK)
- CONTACT HOWARD COUNTY BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION (410-313-1870) PRIOR TO STARTING DATE. (4 DAYS)
- INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOL. IV. (2 DAYS)
- EXCAVATE AND INSTALL PROPOSED 36" SANITARY SEWER FROM MH 10 WT TO MH 9 WT (10 DAYS)
- INSTALL 36" S. FROM MH 10 WT TO SIPHON VAULT (10 DAYS)
- CONSTRUCT SIPHON VAULT, (60 DAYS)
- ABANDON PARALLEL SYSTEM (5 DAYS)
- RESTORE TRENCHES TO THEIR ORIGINAL CONDITION AS PER HOWARD COUNTY STANDARDS. (2 DAYS)
- UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTION REMOVE SEDIMENT CONTROL DEVICES. (1 DAY)
- INSTALL PERMANENT RESTORATION OVER SITE. (1 DAY)

**AS-BUILT**

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

*John S. Stolos* 8/9/05  
DIRECTOR OF PUBLIC WORKS DATE

*Paul J. Ryan* 8-9-05  
CHIEF, BUREAU OF ENGINEERING DATE

*Robert J. ...* 8-9-05  
CHIEF, BUREAU OF UTILITIES DATE

*...* 8/21/05  
CHIEF, UTILITY DESIGN DIVISION DATE

**Dewberry & Davis LLC**  
3120 Lord Baltimore Drive  
Baltimore, Maryland 21244  
(410) 265-9500 FAX: (410) 265-8875

Architects Engineers Planners Surveyors

8/21/05

DES:	DAV/AWC				
DRN:	PWR				
CHK:	RJB				
DATE:		BY	NO.	REVISIONS	DATE

**SEDIMENT AND EROSION CONTROL**  
NOTES AND DETAILS

600' SCALE MAP NO. 38 BLOCK NO. 5

**DEEP RUN INTERCEPTOR SIPHON REHABILITATION**

CAPITAL PROJECT S-6240  
CONTRACT NO. 10-4109

ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 7 OF 8

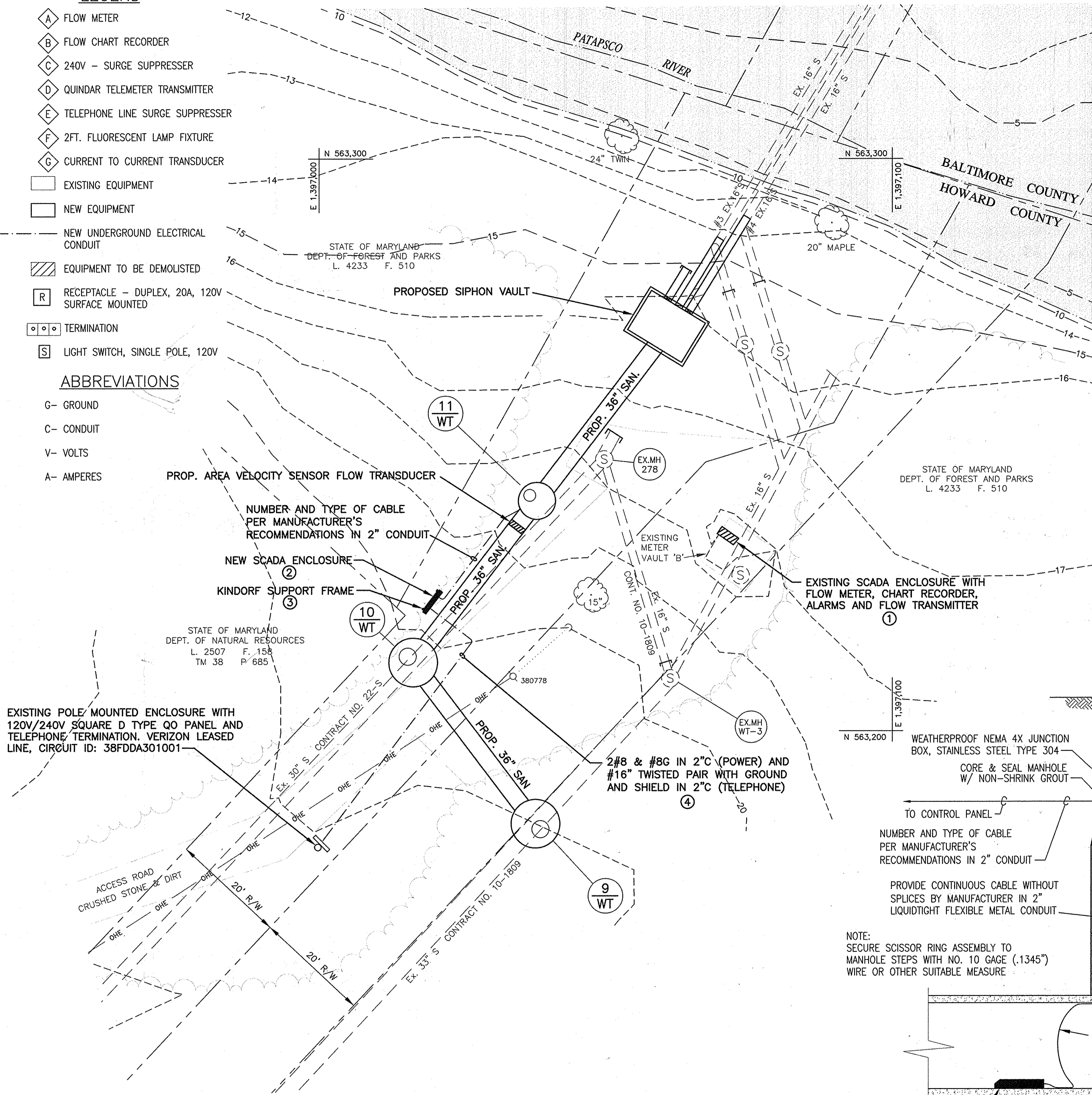


**LEGEND**

- FLOW METER
- FLOW CHART RECORDER
- 240V - SURGE SUPPRESSER
- QUINDAR TELEMETER TRANSMITTER
- TELEPHONE LINE SURGE SUPPRESSER
- 2FT. FLUORESCENT LAMP FIXTURE
- CURRENT TO CURRENT TRANSDUCER
- EXISTING EQUIPMENT
- NEW EQUIPMENT
- NEW UNDERGROUND ELECTRICAL CONDUIT
- EQUIPMENT TO BE DEMOLISHED
- RECEPTACLE - DUPLEX, 20A, 120V SURFACE MOUNTED
- TERMINATION
- LIGHT SWITCH, SINGLE POLE, 120V

**ABBREVIATIONS**

- G- GROUND
- C- CONDUIT
- V- VOLTS
- A- AMPERES

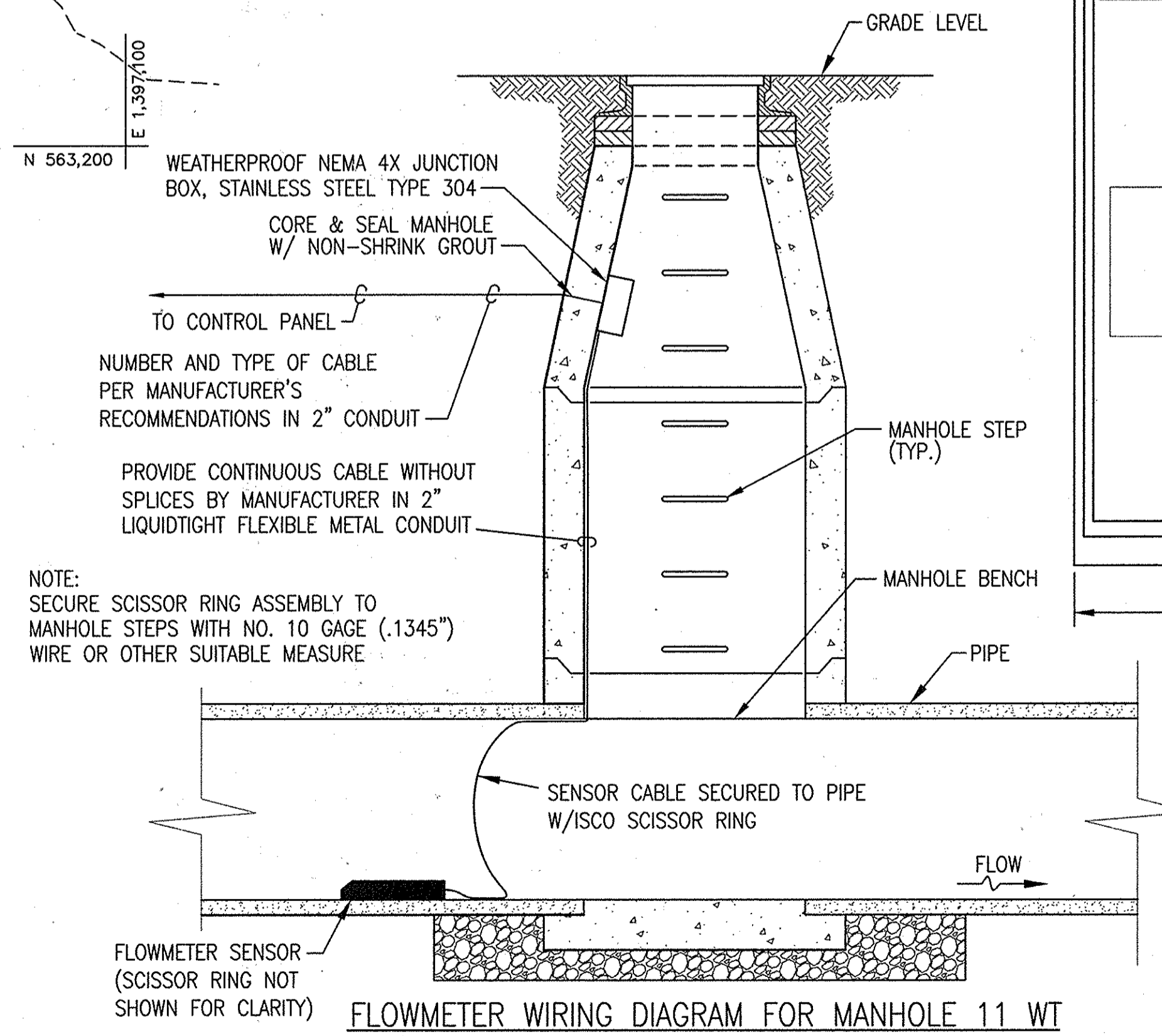


**ELECTRICAL PLAN**  
SCALE: 1" = 10'

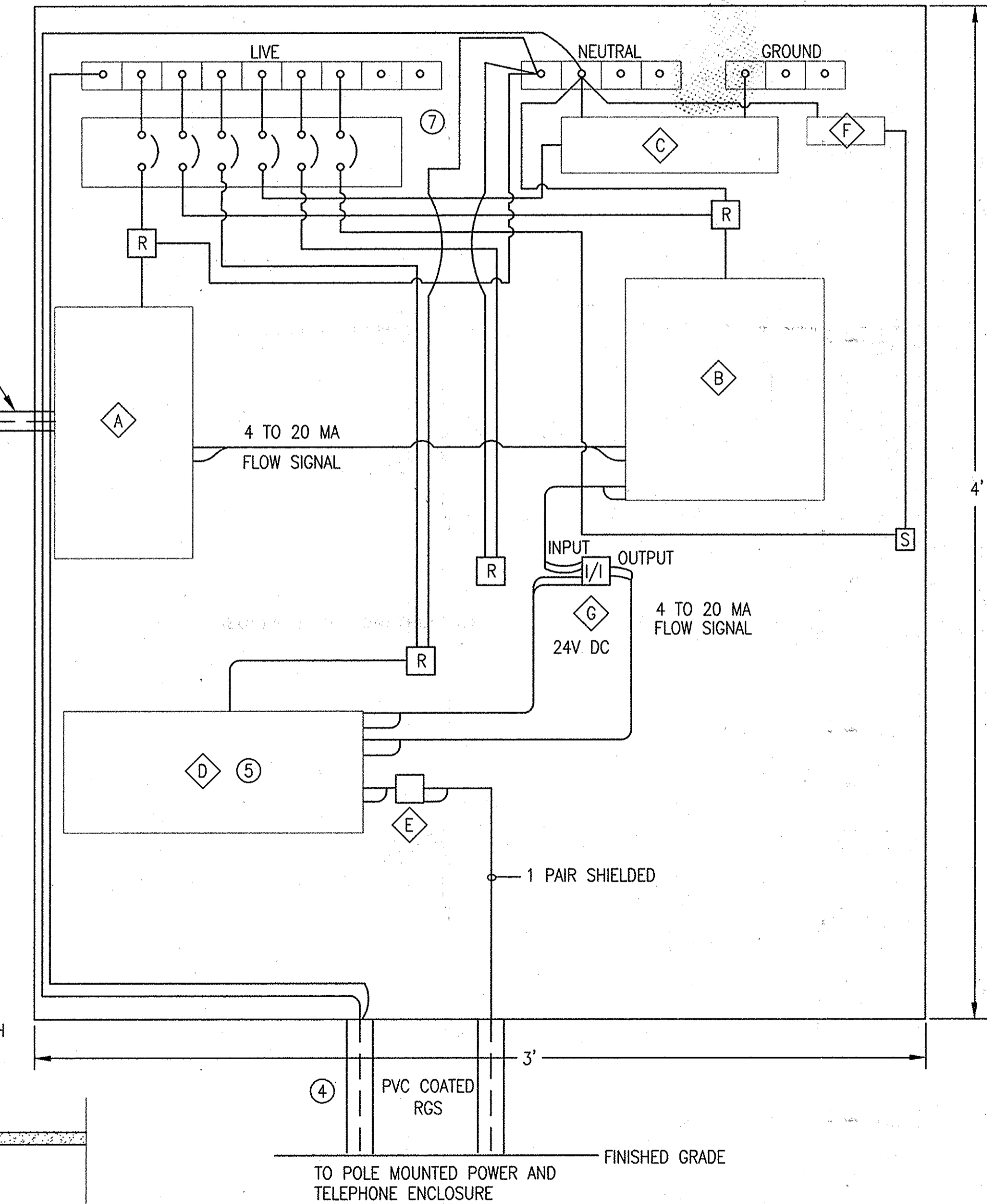
**DRAWING NOTES**

- 1 REMOVE AND DISPOSE OF THE EXISTING SCADA ENCLOSURE. RETURN THE FLOW METER, CHART RECORDER AND QEI TRANSMITTER TO THE OWNER. REMOVE AND DISPOSE OF ALL THE ASSOCIATED WIRING AND CONDUITS. FOR BURIED CONDUITS CONTRACTOR SHALL CUT OFF CONDUITS 6" BELOW GRADE AND ABANDON IN PLACE. REMOVE AND DEMOLISH THE EXISTING SUPPORT FRAME FOR THE ENCLOSURE. EXISTING BREAKERS IN THE PANEL FEEDING THE SCADA PANEL SHALL BE RETAINED FOR RE-USE.
- 2 PROVIDE AND INSTALL A STAINLESS STEEL (316) NEMA 4X SCADA ENCLOSURE. SCADA ENCLOSURE WILL HOUSE NEW FLOW METER, CHART RECORDER, QEI FLOW TRANSMITTER POWER SUPPLY FOR QEI TRANSMITTER AND RECEPTACLES.
- 3 PROVIDE AND INSTALL INDEPENDENT SUPPORT FRAME FOR SCADA ENCLOSURE.
- 4 PROVIDE AND INSTALL 2-2" PVC COATED RIGID GALVANIZED STEEL DIRECT BURIED CONDUITS FOR POWER AND TELEPHONE WIRING. CONNECT THE POWER CABLES (2#8, #8G) TO EXISTING SPARE BREAKERS IN THE POWER PANEL. CONNECT TELEPHONE WIRES (#16 TWISTED PAIR) TO TELEPHONE TERMINATION STRIP IN SCADA ENCLOSURE. CONTACT VERIZON TO VERIFY PROPER OPERATION OF TELEPHONE LINE AND COMPLETED INSTALLATION. CIRCUIT ID: 38FDDA301001.
- 5 MOUNT QEI TRANSMITTER ON AN ADJUSTABLE SIDE FLANGE SO THAT UNIT PROTRUDES OUT FOR CALIBRATION, ADJUSTMENT AND MAINTENANCE.
- 6 ALL EQUIPMENT METAL CASES SHALL BE GROUNDED PER NEC.
- 7 PROVIDE AND INSTALL 5A, 120V INDIVIDUAL CIRCUIT BREAKERS FOR CHART RECORDER, FLOW METER AND QEI UNIT. PROVIDE AND INSTALL 20A, 120V INDIVIDUAL CIRCUIT BREAKERS FOR LIGHT, GENERAL USE RECEPTACLE AND SURGE ARRESTER. USE 2#12 AND #12G FOR ALL POWER CIRCUITS. USE #16 TWISTED SHIELDED PAIR FOR 4 TO 20 MA SIGNALS AND COMMUNICATIONS.

TO FLOW TRANSDUCER USE 2" PVC COATED RGS CONDUIT. CABLE PER MANUFACTURER RECOMMENDATION



**FLOWMETER WIRING DIAGRAM FOR MANHOLE 11 WT**  
NOT TO SCALE



**SCADA PANEL - INTERIOR DETAILS**  
NOT TO SCALE

**AS-BUILT**

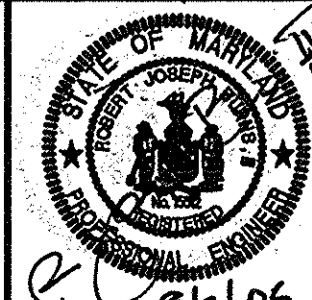
**SIDHU ASSOCIATES, INC.**  
Consulting Engineers  
EXECUTIVE PLAZA III, SUITE 1000  
11350 MCCORMICK ROAD  
HUNT VALLEY, MARYLAND 21031  
PHONE (410) 328-1115

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signatures]*  
DIRECTOR OF PUBLIC WORKS DATE 8/10/05  
CHIEF, BUREAU OF ENGINEERING DATE 8/9/05  
CHIEF, BUREAU OF UTILITIES DATE 8-9-05  
CHIEF, UTILITY DESIGN DIVISION DATE

**Dewberry & Davis LLC**  
3120 Lord Baltimore Drive  
Baltimore, Maryland 21244  
(410) 265-9500 FAX: (410) 265-8875  
Architects Engineers Planners Surveyors



DES:	BP				
DRN:	PWR				
CHK:	RJB				
DATE:		BY:	NO.:	REVISIONS:	DATE:

**ELECTRICAL**

600' SCALE MAP NO. 38 BLOCK NO. 5

**DEEP RUN INTERCEPTOR SIPHON REHABILITATION**

CAPITAL PROJECT 8-6240  
CONTRACT NO. 10-4109

ELECTION DISTRICT NO. 1

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 8 OF 8