
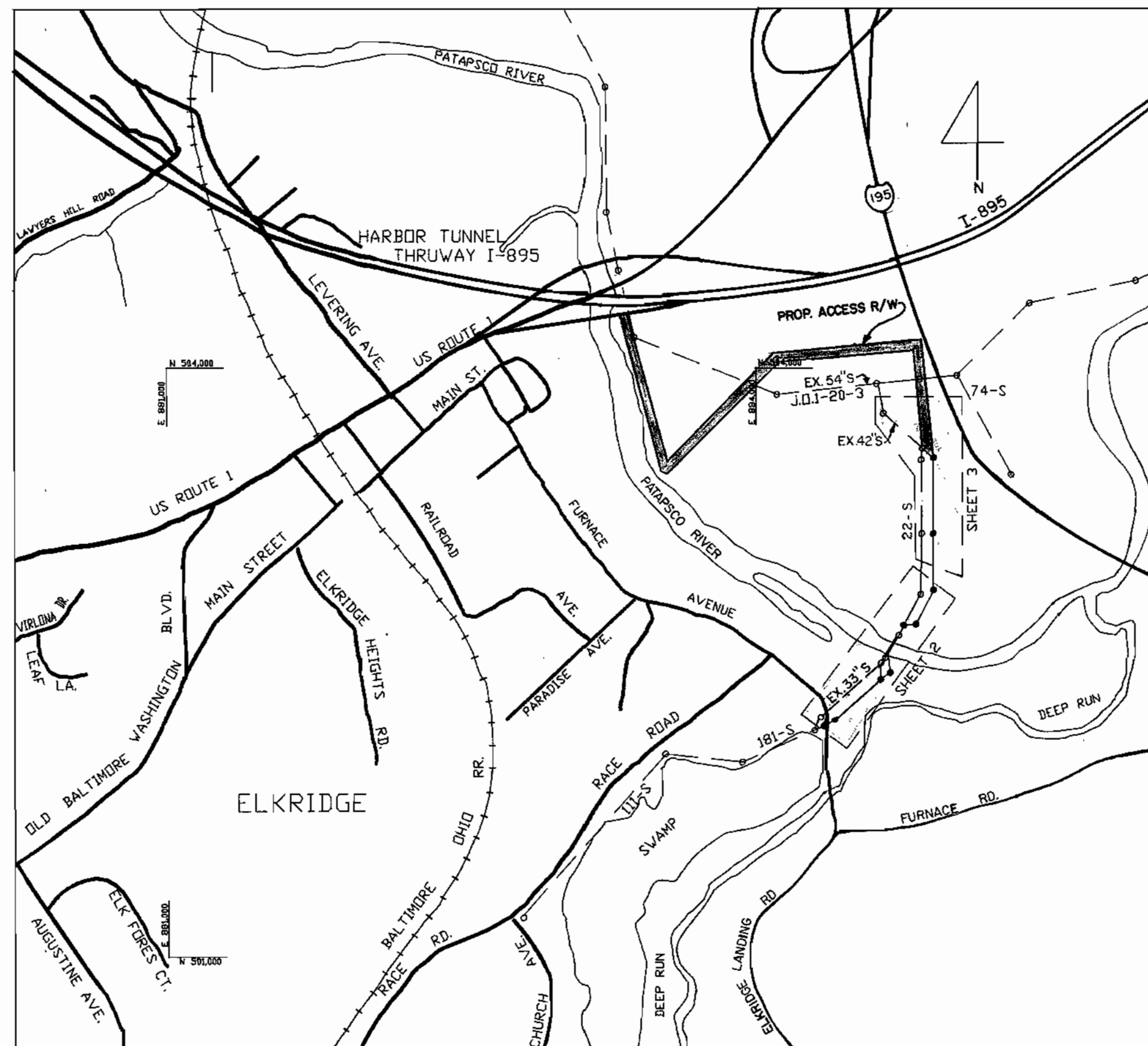


GENERAL NOTES

1. Approximate location of existing interceptors are shown. The Contractor shall take all necessary precaution to protect existing mains and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
2. All horizontal controls are based on Maryland State Coordinates.
3. All vertical controls are based on U.S.G.S. data.
4. All pipe elevations shown are invert elevations.
5. Clear all utilities by a minimum of 6".
6. 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. The Contractor shall have a copy of Volume IV on the job.
7. 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 result 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 to his own satisfaction. Any damage to existing facilities due to Contractor's negligence shall be repaired at the Contractor's expense.
8. Manholes designated W.T. in plan and profile shall have watertight frame and cover, Standard Detail G-5.52. Where watertight manhole frame and cover is used, set top of frame 1'-6" above finished grade only where noted on the drawings as per Standard Detail G.5.41
9. Manholes shown with 12" and 16" walls are brick manholes only.
10. Contractor shall notify the following utilities or agencies at least five working days before starting work shown on these plans:
 State Highway Administration - 531-5533
 Baltimore Gas & Electric Co. - Contractor Services 850-4620
 Baltimore Gas & Electric Co. - Under Ground Damage Control 859-9004
 Baltimore Gas & Electric Co. - Trouble Shooting 296-9001
 Miss Utility - 1-800-257-7777
 Colonial Pipeline Co. 795-1390 C&P Telephone 1-800-257-7777
 Bureau of Utilities, Howard County Depart. of Public Works - 992-2366
11. Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the Contractor.
12. 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.
13. Interceptor sewer main shall be D.I.P. or R.C.P. unless otherwise noted.
14. The Contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.
15. All manholes shall be 5'-0" inside diameter unless otherwise noted.
16. All vegetative and structural sediment control measure, are to be installed according to the provisions of Article 29 of the Howard County Design Manual and the MARYLAND Standards and Specifications for Soil Erosion and Sediment Control, dated 1983 or later revisions.
17. All buried fittings shall be buttressed in accordance with Howard County Standard Details.

LIST OF DRAWINGS

SHEET NO. 1	VICINITY MAP & GENERAL NOTES
SHEET NO. 2	PLAN AND PROFILE
SHEET NO. 3	PLAN AND PROFILE
SHEET NO. 4	DETAILS
SHEET NO. 5	ELECTRICAL DETAILS AND SEDIMENT CONTROL DETAILS



SEWER CODE FOR COUNTY
USE ONLY: NO. 2000000

TYPE OF BUILDINGS N/A
NUMBER OF PARCELS N/A
NO. OF SHC'S N/A
DRAINAGE AREA PATAPSCO

VICINITY MAP

SCALE: 1" = 600'

CAPITAL PROJECT NO. S-6124
 CONTRACT NO. 10-1809
 DEEP RUN PARALLEL INTERCEPTOR
 HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS

ITEM	QUANTITIES		MATERIAL/SUPPLIER
	ESTIMATE	AS-BUILT	
42" Sewer	13	13	
33" Sewer	1,353	1,323.1	
16" Sewer	180	160.88	
Manholes	8	8	
16" Plug Valves	3	3	
16" Knife Valve	1	1	
Meter Vault	1	1	

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. ... 10/25/89
DIRECTOR OF PUBLIC WORKS DATE
Robert ... 10/24/89
CHIEF, BUREAU OF UTILITIES DATE

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND 21122
301-647-6000

William L. ...

DES: S.E.S.			
DRN: E.CH.			
CHK: W.R.G.			
DATE:	BY	NO	REVISION

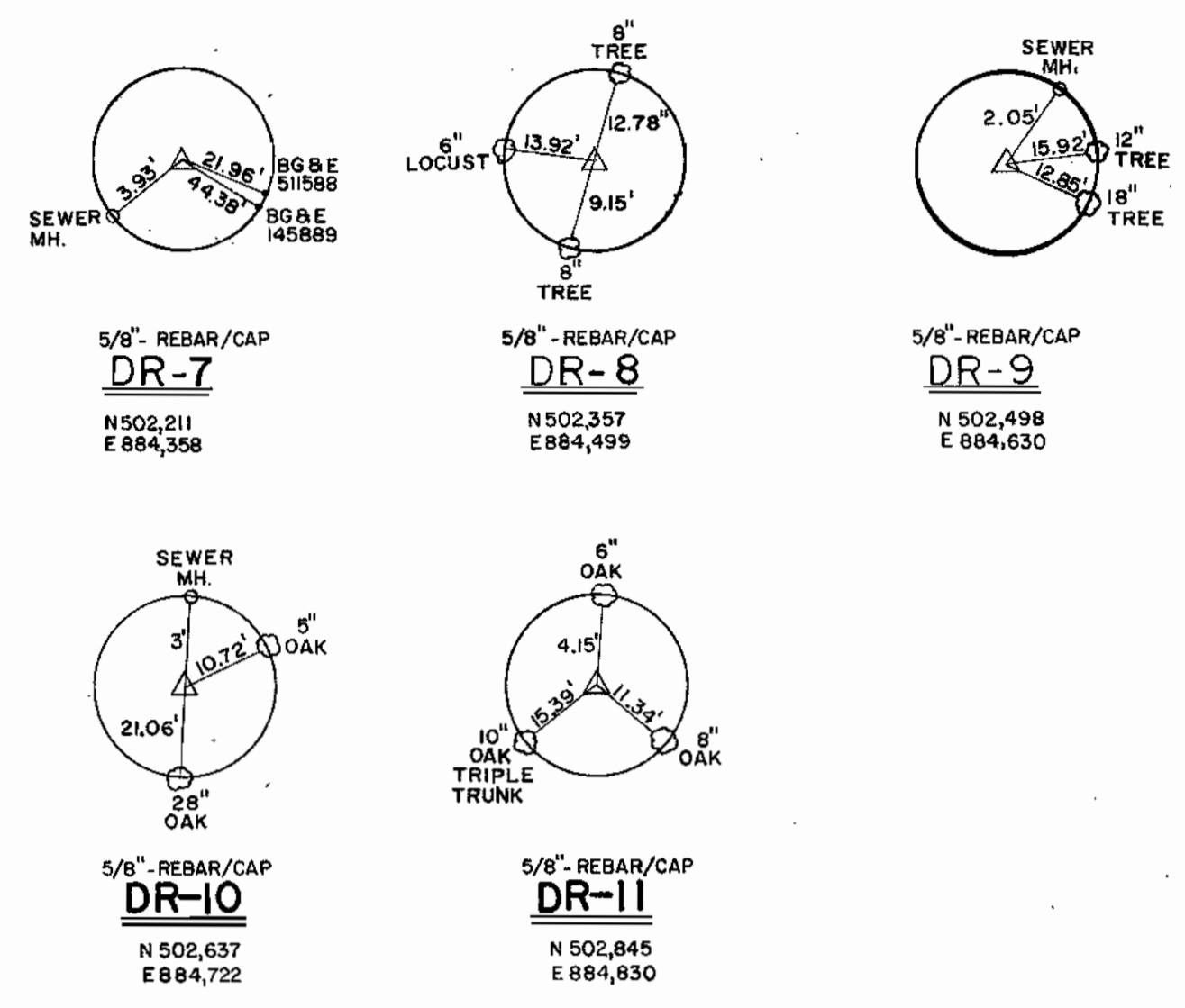
VICINITY MAP
AND
GENERAL NOTES

600' SCALE MAP NO. 38 BLOCK NO. 5

DEEP RUN PARALLEL INTERCEPTOR SEWER
CAPITAL PROJECT S-6124
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1809
ELECTION DISTRICT NO. 1

SCALE
AS
SHOWN

SHEET
1 OF 5



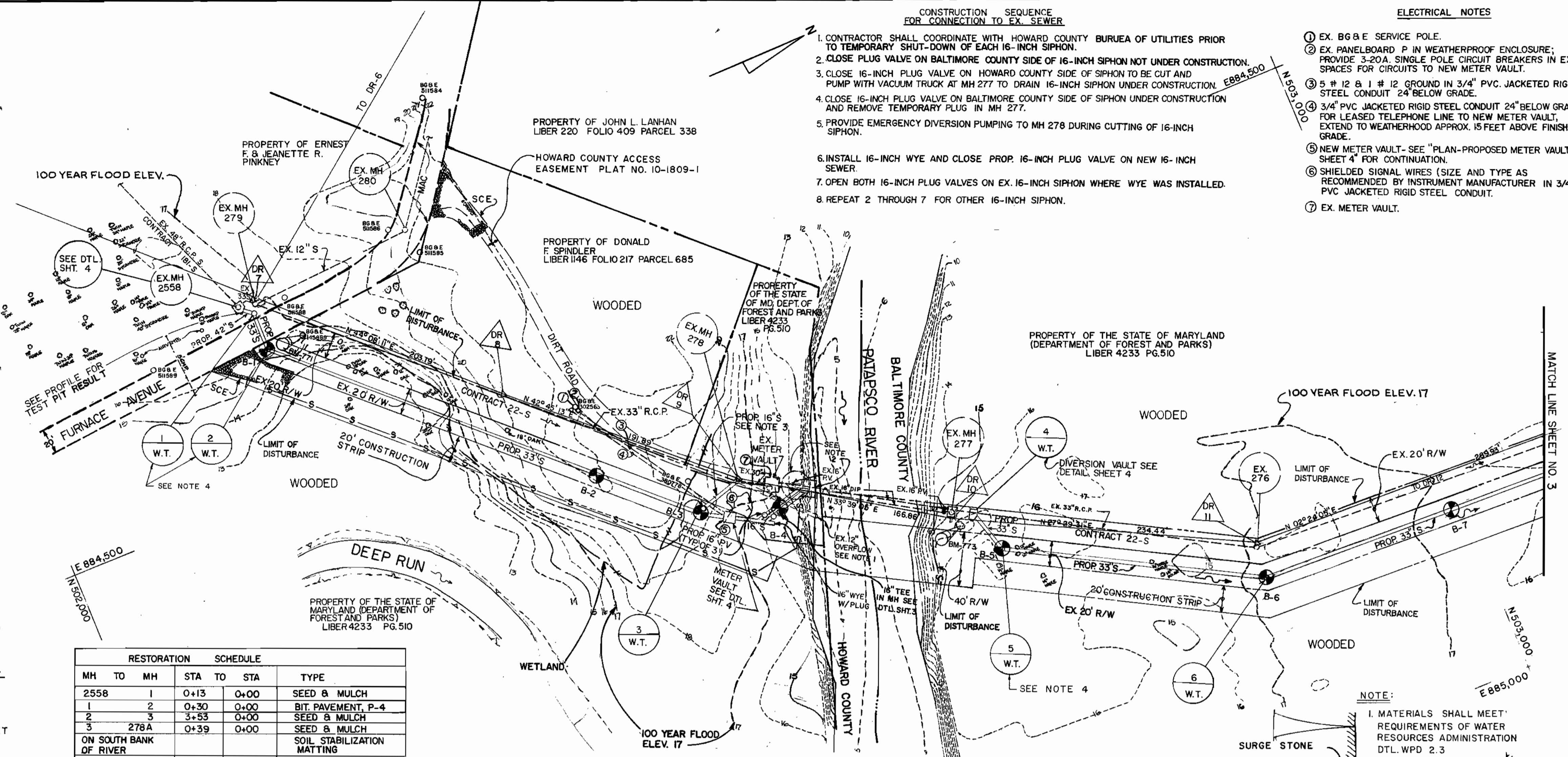
BENCH MARK 771 RR SPIKE IN POLE ELEV. 17.52
 BENCH MARK 773 RR SPIKE IN 12" OAK, ELEV. 18.70

- CONSTRUCTION NOTES:**
- REMOVE EX. 12" OVER FLOW & PLUG AT EX. MH 278 PRIOR TO CONN. TO EX. 16" SIPHONS.
 - SEE CONNECTION TO SIPHON PROFILE ON SHEET 3 AND RIVER DIVERSION DETAIL THIS SHEET.
 - CONTRACTOR SHALL CORE EX. MH 278 FOR PROP. 16" SEWER AND PROVIDE KOR-N-SEAL OR EQUAL CONNECTION.
 - MANHOLE SHALL BE 6'-0" DIAMETER. SEE DETAIL SHT. 3.
 - ABBREVIATION P.V. INDICATES PLUG VALVES.

MH	STATION	OFFSET
1	DR7 TOWARD DR8 3'	12'RT
2	DR7 TOWARD DR8 22'	34'RT
3	DR8 TOWARD DR9 192'	35'RT
4	DR10 TOWARD DR11 15'	5'LT
5	DR10 TOWARD DR11 40'	20'RT
6	DR10 TOWARD DR11 EXTENDED 9'	26'RT
METFR VAULT	DR9 TOWARD DR10 0'	30'RT

- SEQUENCE OF CONSTRUCTION FOR DIVERSION VAULT NO. 4**
- CONTRACTOR SHALL CONSTRUCT CONCRETE DIVERSION VAULT AROUND EX. 33'S.
 - EX. 12" OVERFLOW SHALL BE PLUGGED AT MH 278.
 - CONTRACTOR SHALL DIVERT FLOW BY PLUGGING 33" OUTLET AT MH 277 AND 33" INLET AT MH 276 AND PUMPING FROM MH 277 TO MH 276.
 - CONTRACTOR SHALL REMOVE EX. 33'S. WITHIN DIVERSION VAULT NO. 4 AND CONSTRUCT BRICK BENCH.

MH	TO MH	STA TO STA	TYPE
2558	1	0+13 0+00	SEED & MULCH
1	2	0+30 0+00	BIT PAVEMENT, P-4
2	3	3+53 0+00	SEED & MULCH
3	278A	0+39 0+00	SEED & MULCH
ON SOUTH BANK OF RIVER			
4	5	0+35 0+00	SEED & MULCH
5	6	2+03 0+00	SEED & MULCH



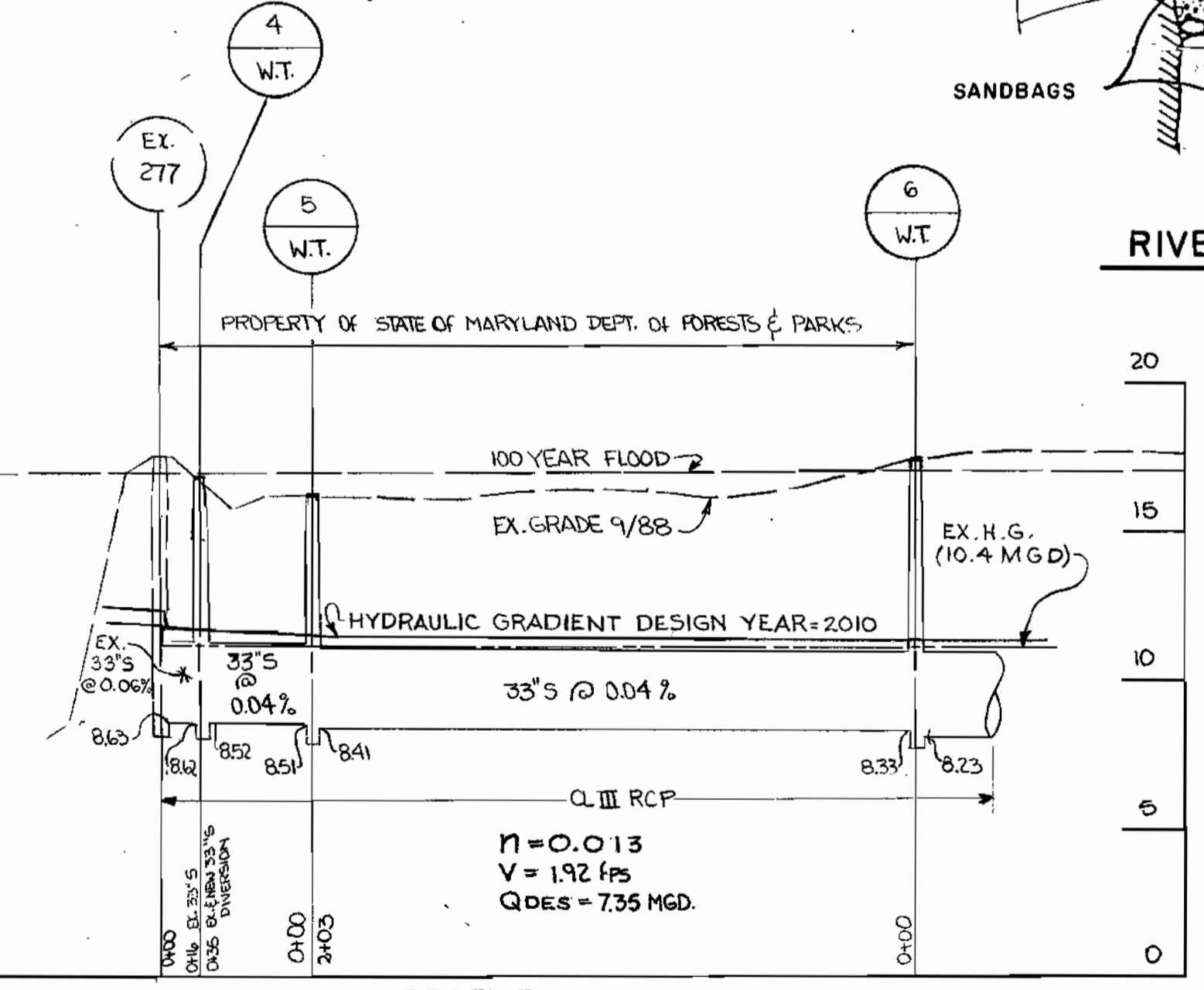
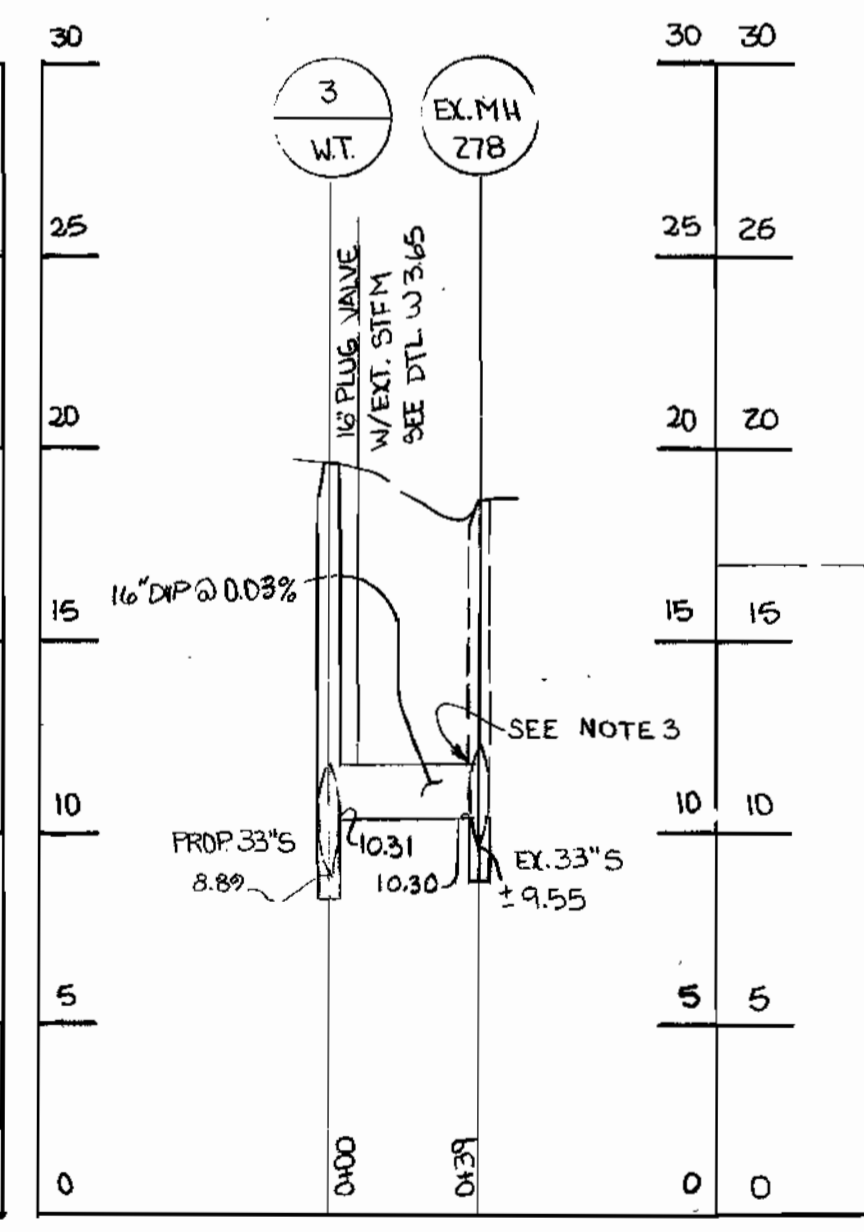
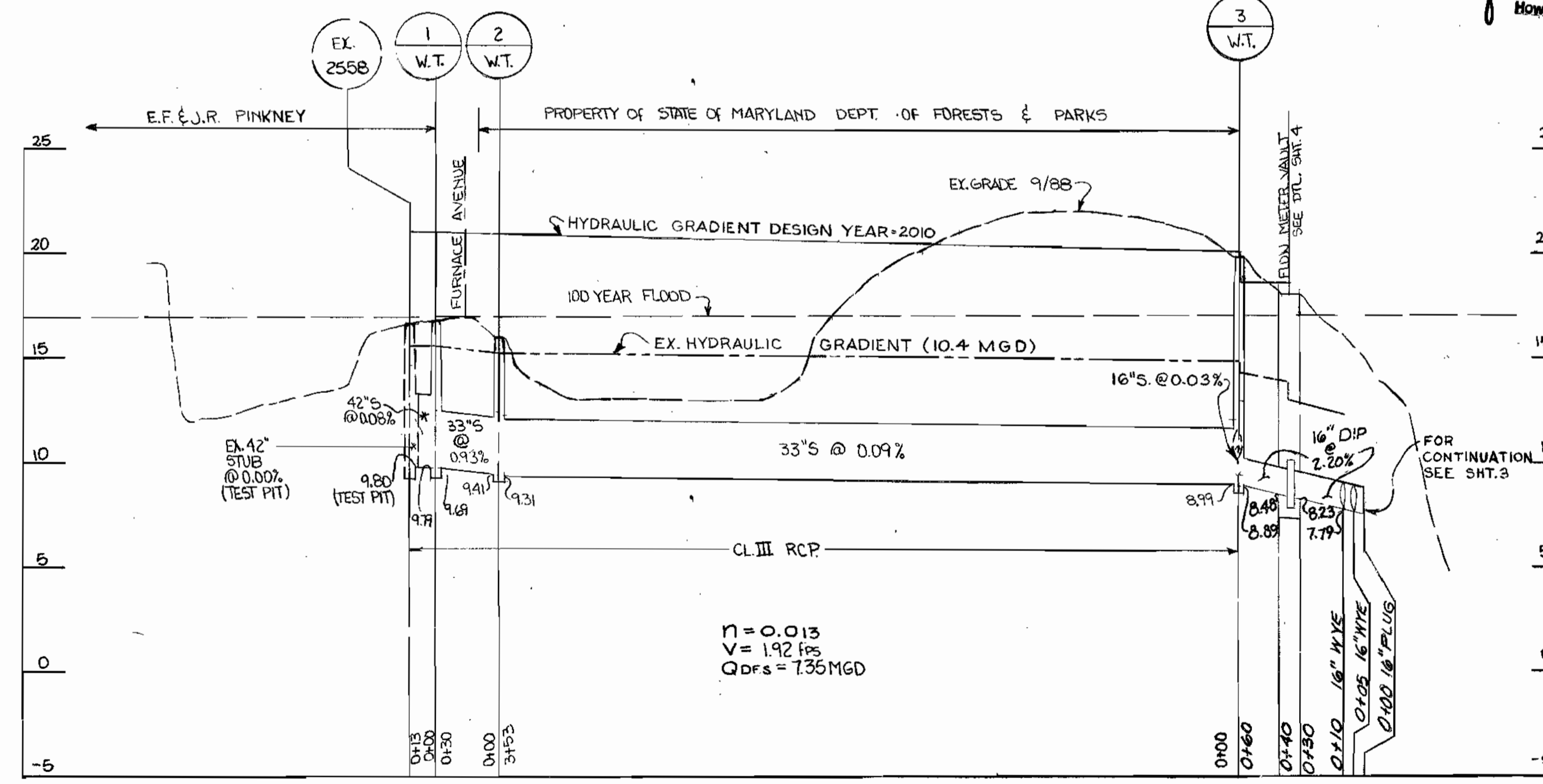
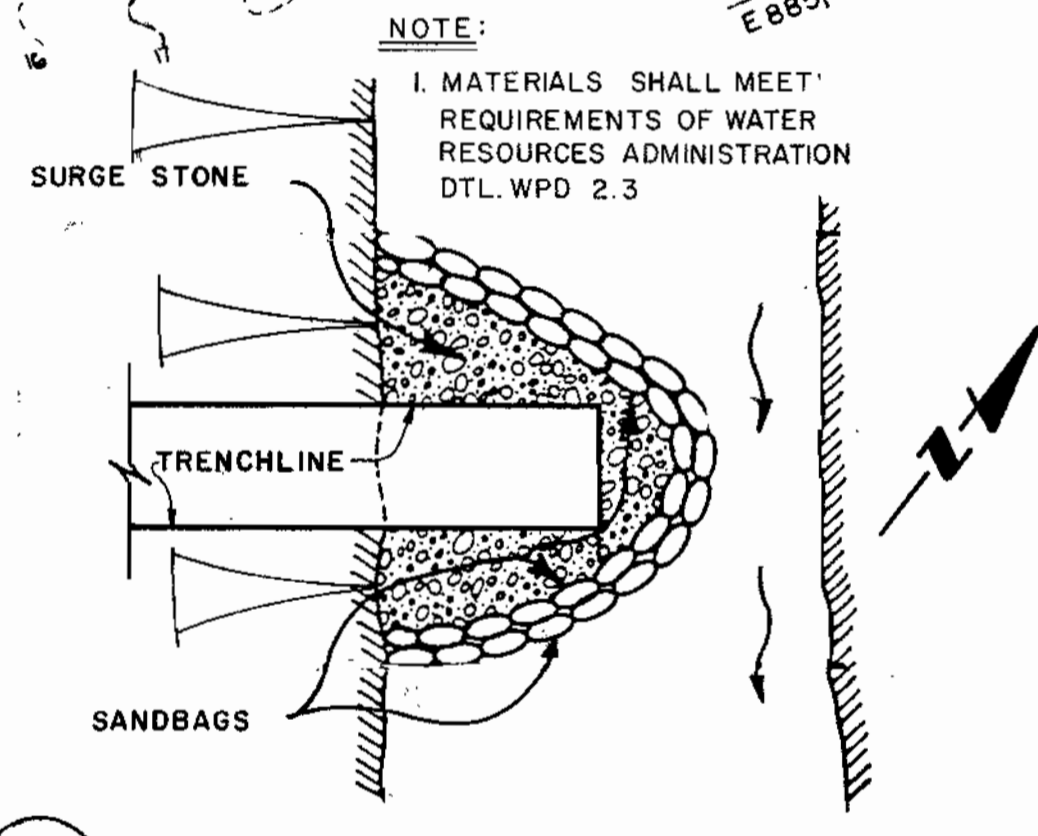
- CONSTRUCTION SEQUENCE FOR CONNECTION TO EX. SEWER**
- CONTRACTOR SHALL COORDINATE WITH HOWARD COUNTY BUREAU OF UTILITIES PRIOR TO TEMPORARY SHUT-DOWN OF EACH 16-INCH SIPHON.
 - CLOSE PLUG VALVE ON BALTIMORE COUNTY SIDE OF 16-INCH SIPHON NOT UNDER CONSTRUCTION.
 - CLOSE 16-INCH PLUG VALVE ON HOWARD COUNTY SIDE OF SIPHON TO BE CUT AND PUMP WITH VACUUM TRUCK AT MH 277 TO DRAIN 16-INCH SIPHON UNDER CONSTRUCTION. E884.500
 - CLOSE 16-INCH PLUG VALVE ON BALTIMORE COUNTY SIDE OF SIPHON UNDER CONSTRUCTION AND REMOVE TEMPORARY PLUG IN MH 277.
 - PROVIDE EMERGENCY DIVERSION PUMPING TO MH 278 DURING CUTTING OF 16-INCH SIPHON.
 - INSTALL 16-INCH WYE AND CLOSE PROP. 16-INCH PLUG VALVE ON NEW 16-INCH SEWER.
 - OPEN BOTH 16-INCH PLUG VALVES ON EX. 16-INCH SIPHON WHERE WYE WAS INSTALLED.
 - REPEAT 2 THROUGH 7 FOR OTHER 16-INCH SIPHON.

- ELECTRICAL NOTES**
- EX. 6G & E SERVICE POLE.
 - EX. PANELBOARD P IN WEATHERPROOF ENCLOSURE; PROVIDE 3-20A SINGLE POLE CIRCUIT BREAKERS IN EX. SPACES FOR CIRCUITS TO NEW METER VAULT.
 - 5 # 12 @ 1 # 12 GROUND IN 3/4" PVC JACKETED RIGID STEEL CONDUIT 24" BELOW GRADE.
 - 3/4" PVC JACKETED RIGID STEEL CONDUIT 24" BELOW GRADE FOR LEASED TELEPHONE LINE TO NEW METER VAULT. EXTEND TO WEATHERHOOD APPROX. 15 FEET ABOVE FINISHED GRADE.
 - NEW METER VAULT-SEE "PLAN-PROPOSED METER VAULT SHEET 4" FOR CONTINUATION.
 - SHIELDED SIGNAL WIRES (SIZE AND TYPE AS RECOMMENDED BY INSTRUMENT MANUFACTURER IN 3/4" PVC JACKETED RIGID STEEL CONDUIT.
 - EX. METER VAULT.

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

PLAN SCALE: 1" = 50'

Approved for **Howard** Home and meets Technical Requirements
 Signature: *[Signature]* Date: 2/22/90
 U.S. Soil Conservation Service

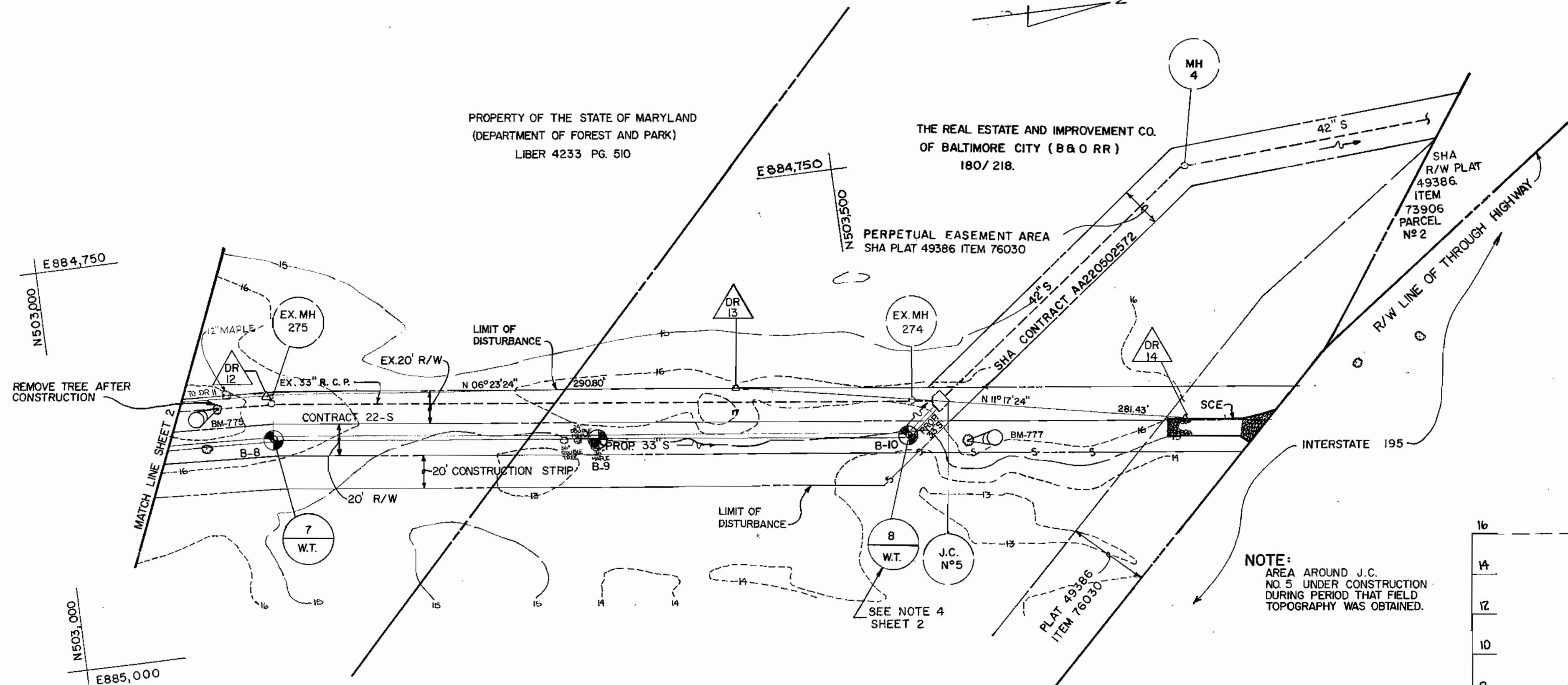


RIVER DIVERSION NOT TO SCALE

AS-BUILT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>James J. [Signature]</i> 10/25/89 DIRECTOR OF PUBLIC WORKS DATE <i>Robert [Signature]</i> 10-25-89 CHIEF, BUREAU OF UTILITIES DATE		JOHN E. HARMS, JR. & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND 21122 301-647-6000		DES: S.E.S. DRN: SLM, E.C. CHK: W.R.G. DATE: _____ BY NO. _____ REVISION _____ DATE _____		PLAN AND PROFILE 600' SCALE MAP NO. 38 BLOCK NO. 5		DEEP RUN PARALLEL INTERCEPTOR SEWER CAPITAL PROJECT S-6124 HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1809 ELECTION DISTRICT No. 1		SCALE AS SHOWN SHEET 2 OF 5	
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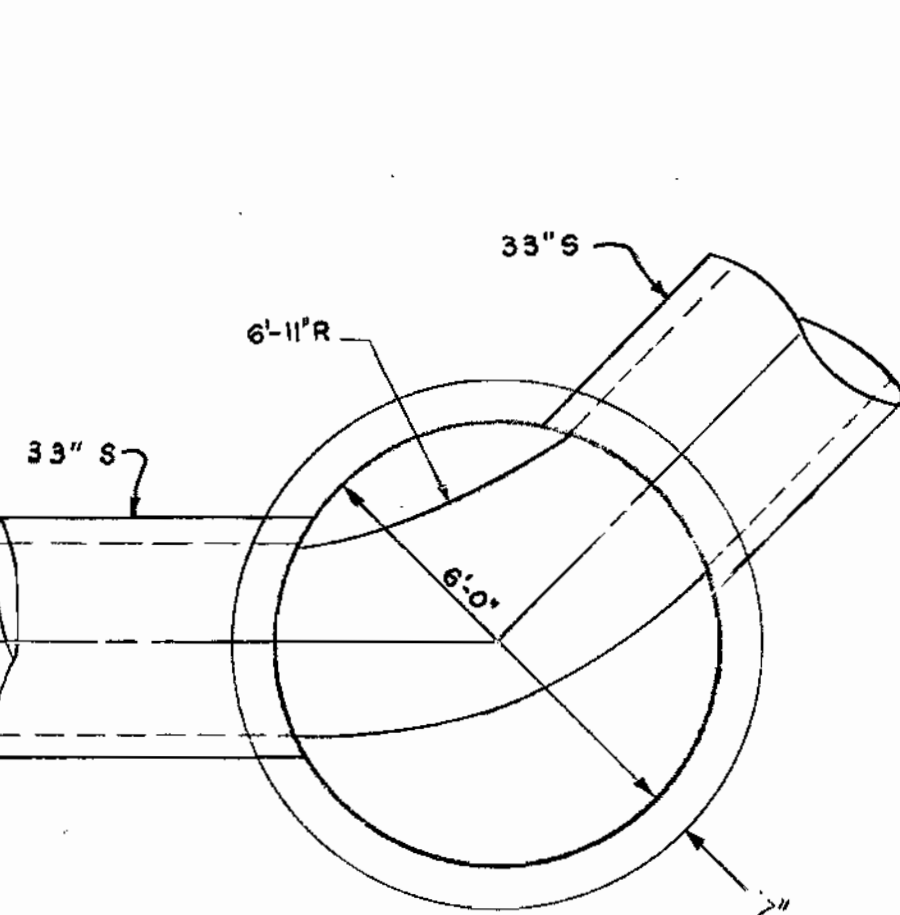
BENCH MARK 775 RR SPIKE IN 6" SWAMP OAK, ELEV. 17.90
 BENCH MARK 777 RR SPIKE IN 10" MAPLE, ELEV. 17.06



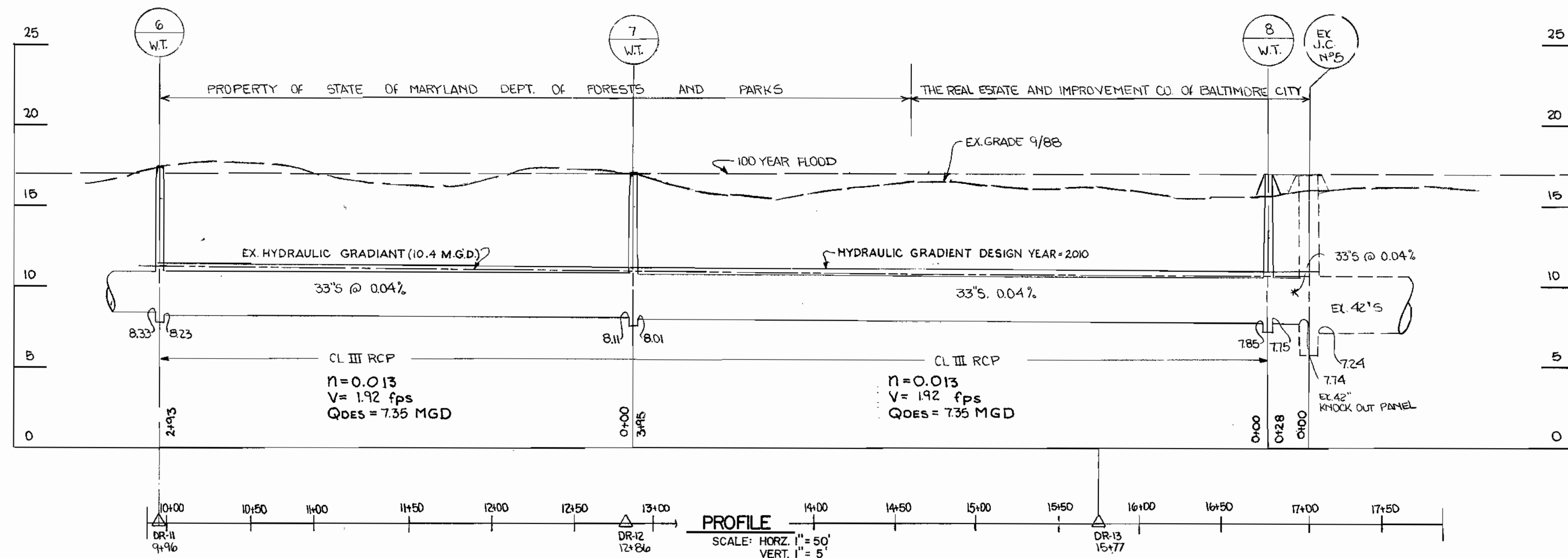
RESTORATION SCHEDULE			
MH TO MH	STA TO STA	TYPE	
6 7	2+93 0+00	SEED & MULCH	
7 8	3+93 0+00	SEED & MULCH	
8 J.C. NO. 5	0+28 0+00	SEED & MULCH	

PLAN
 SCALE: 1" = 50'

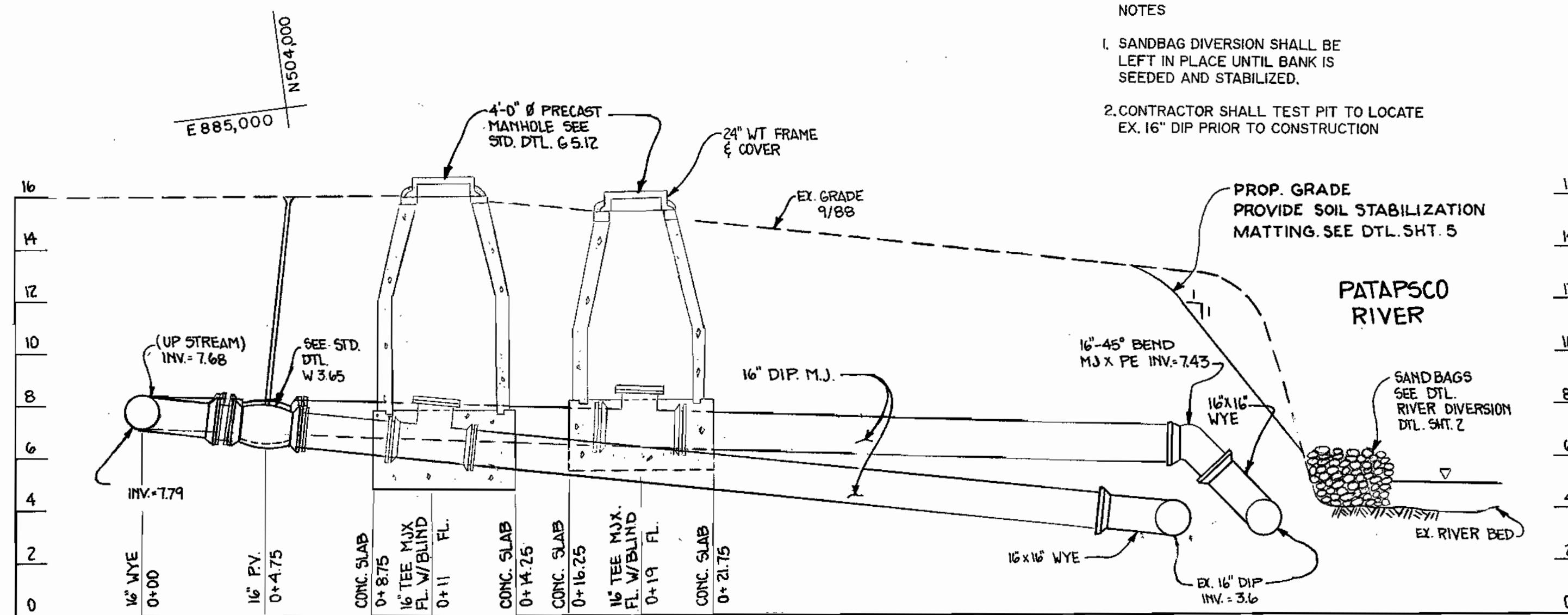
MH	STATION	OFFSET
7	DR12 TOWARD DR13	27'RT
8	DR13 TOWARD DR14	23'RT



6'-0" DIA. MANHOLE
 SCALE: 3/8" = 1'-0"



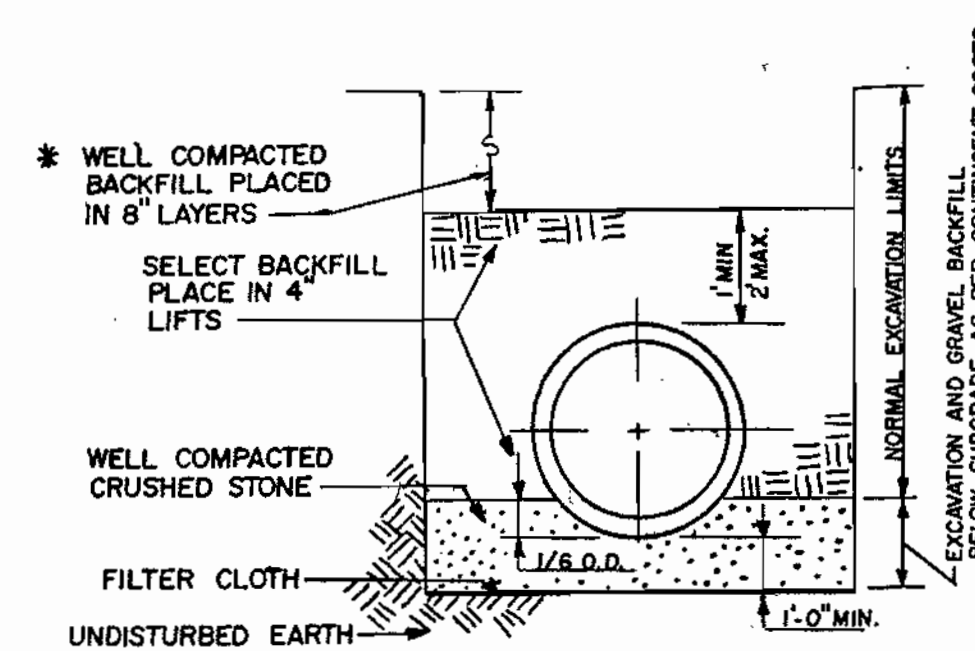
PROFILE
 SCALE: HORIZ. 1" = 50'
 VERT. 1" = 5'



CONNECTION TO SIPHON PROFILE

SCALE: 1/4" = 1'-0"

NOTES
 1. WITHIN ROAD RIGHT-OF-WAY, TRENCH COMPACTION DENSITY SHALL BE 95% AS DETERMINED BY AASHTO T-180-A



TRENCH BEDDING DETAIL
 NTS

* MIN. 1/4" TO 1-1/2 MAX. DIA.

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

JOHN E. HARMS, JR. & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 P.O. BOX 5
 PASADENA, MARYLAND 21122
 301-647-6000

DES: S.E.S.
 DRN: S.L.M., E.C.
 CHK: W.R.G.
 DATE:

PLAN AND PROFILE

DEEP RUN PARALLEL INTERCEPTOR SEWER
 CAPITAL PROJECT S-6124
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 10-1809
 ELECTION DISTRICT No. 1

SCALE AS SHOWN
 SHEET 3 OF 5

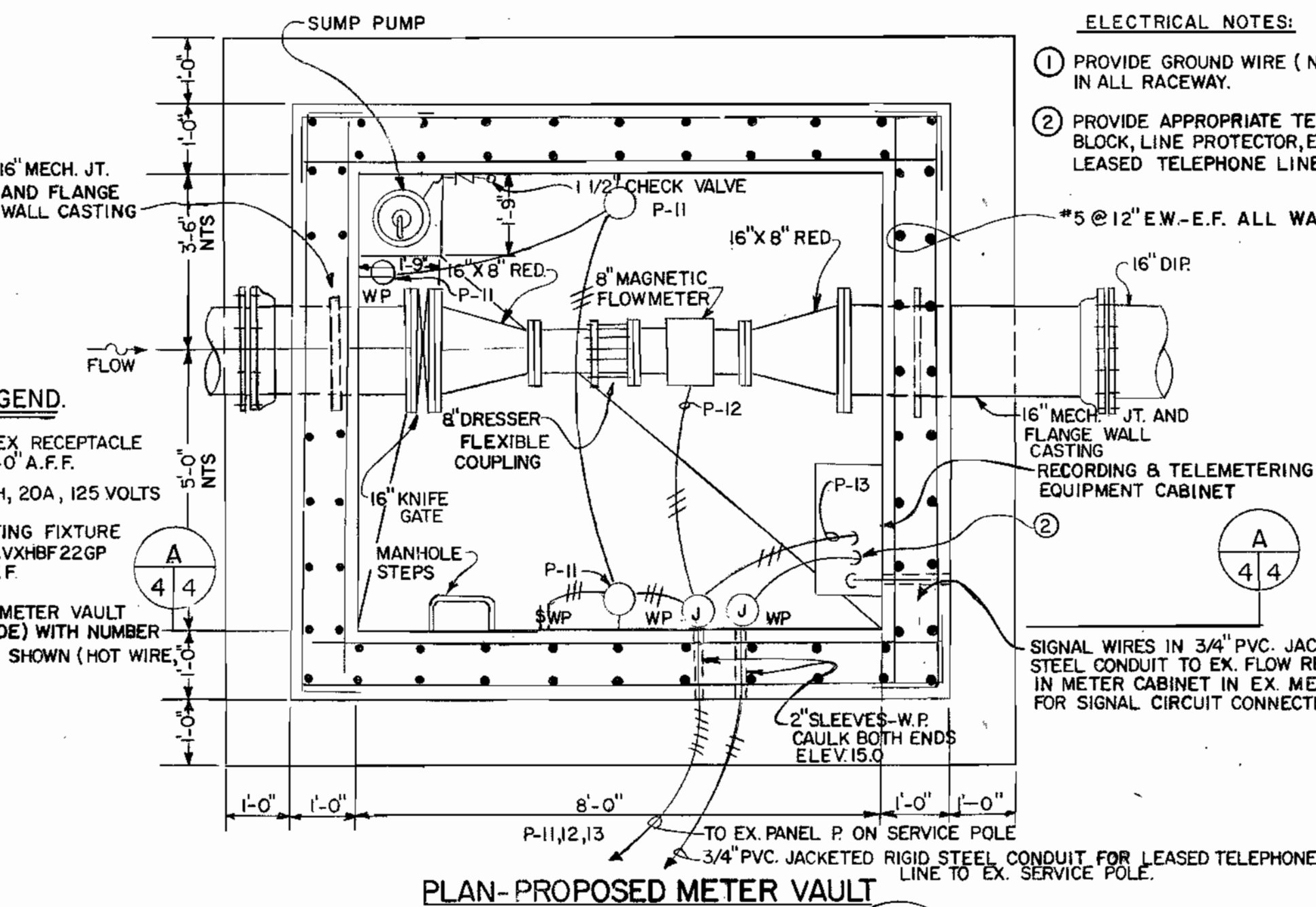
DRAWING 44-132-69150

ELECTRICAL LEGEND

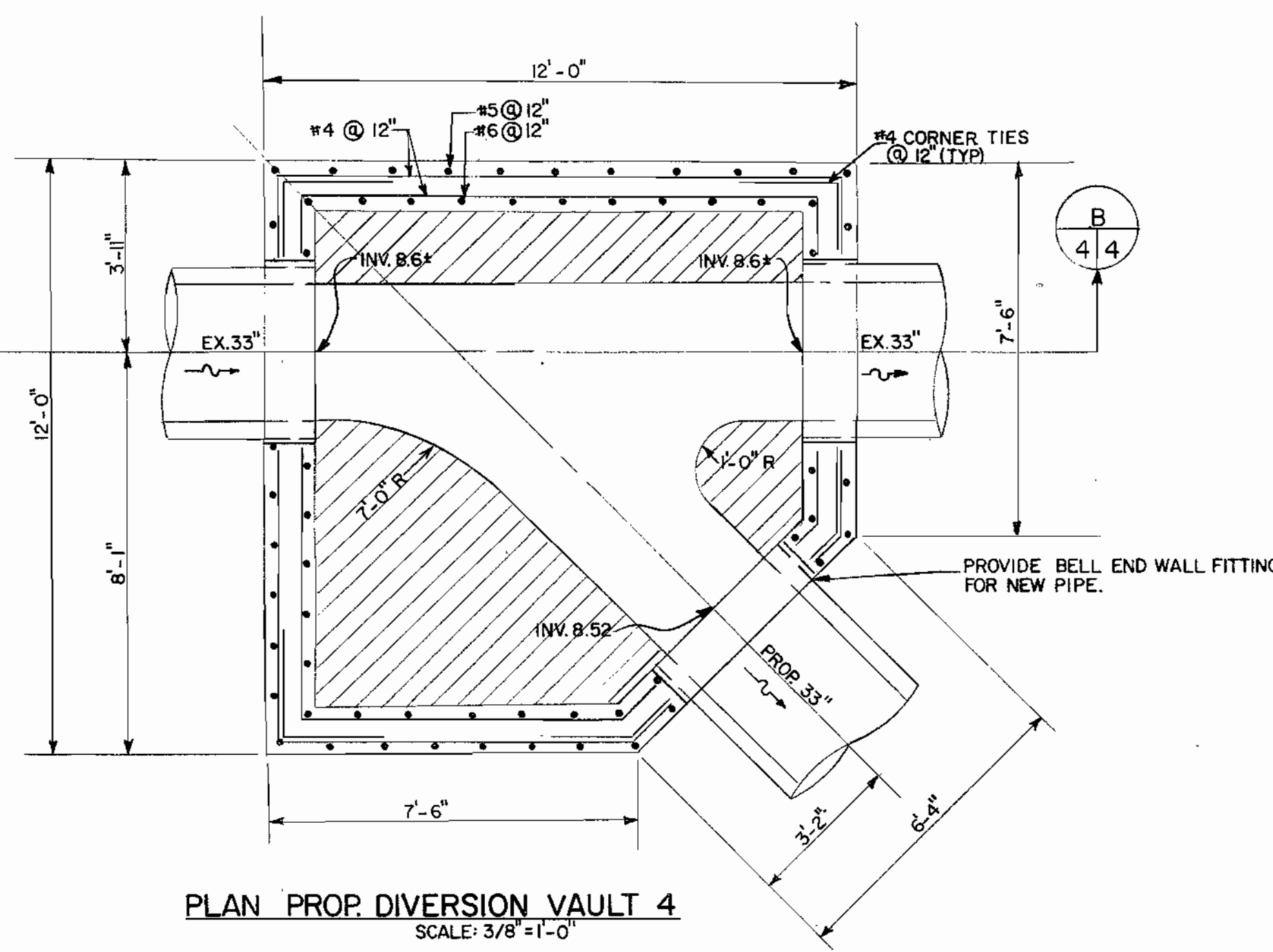
- ⊕ WEATHERPROOF DUPLEX RECEPTACLE NEMA 5-20R M.H. 2'-0" A.F.F.
- ⊕ WP WEATHERPROOF SWITCH, 20A, 125 VOLTS M.H. 8'-0" A.F.F.
- ⊕ WALL MOUNTED LIGHTING FIXTURE CROUSE HINDS CAT. NO. VXBHF22GP (200W) M.H. 8'-0" A.F.F.
- ## CONDUIT EXPOSED IN METER VAULT (UNDERGROUND OUTSIDE) WITH NUMBER OF NO. 12 CONDUCTORS SHOWN (HOT WIRE, NEUTRAL & GROUND.)
- WP WEATHERPROOF.

ELECTRICAL NOTES:

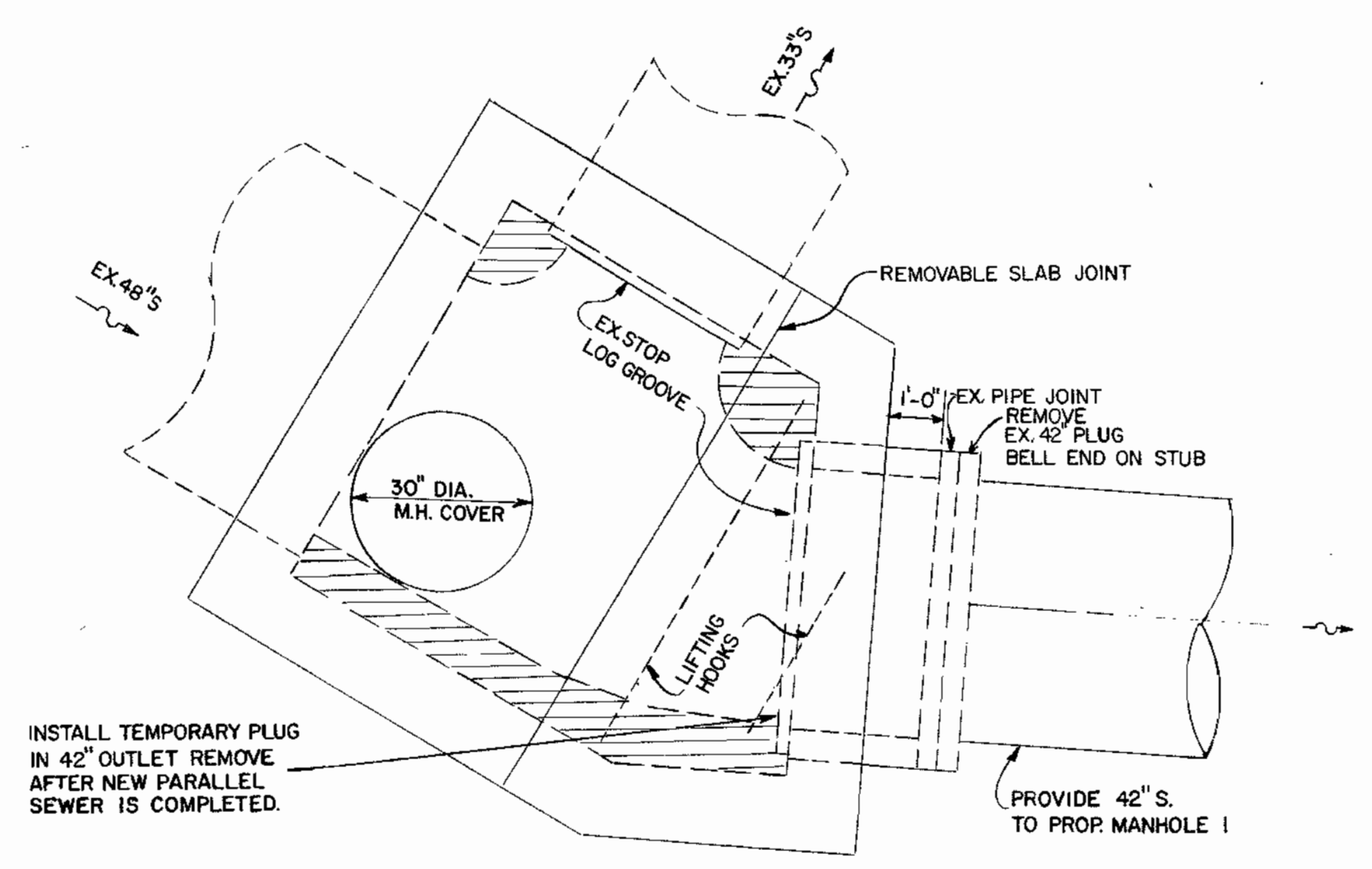
- ① PROVIDE GROUND WIRE (NOT SHOWN) IN ALL RACEWAY.
- ② PROVIDE APPROPRIATE TERMINAL BLOCK, LINE PROTECTOR, ETC. FOR LEASED TELEPHONE LINE.



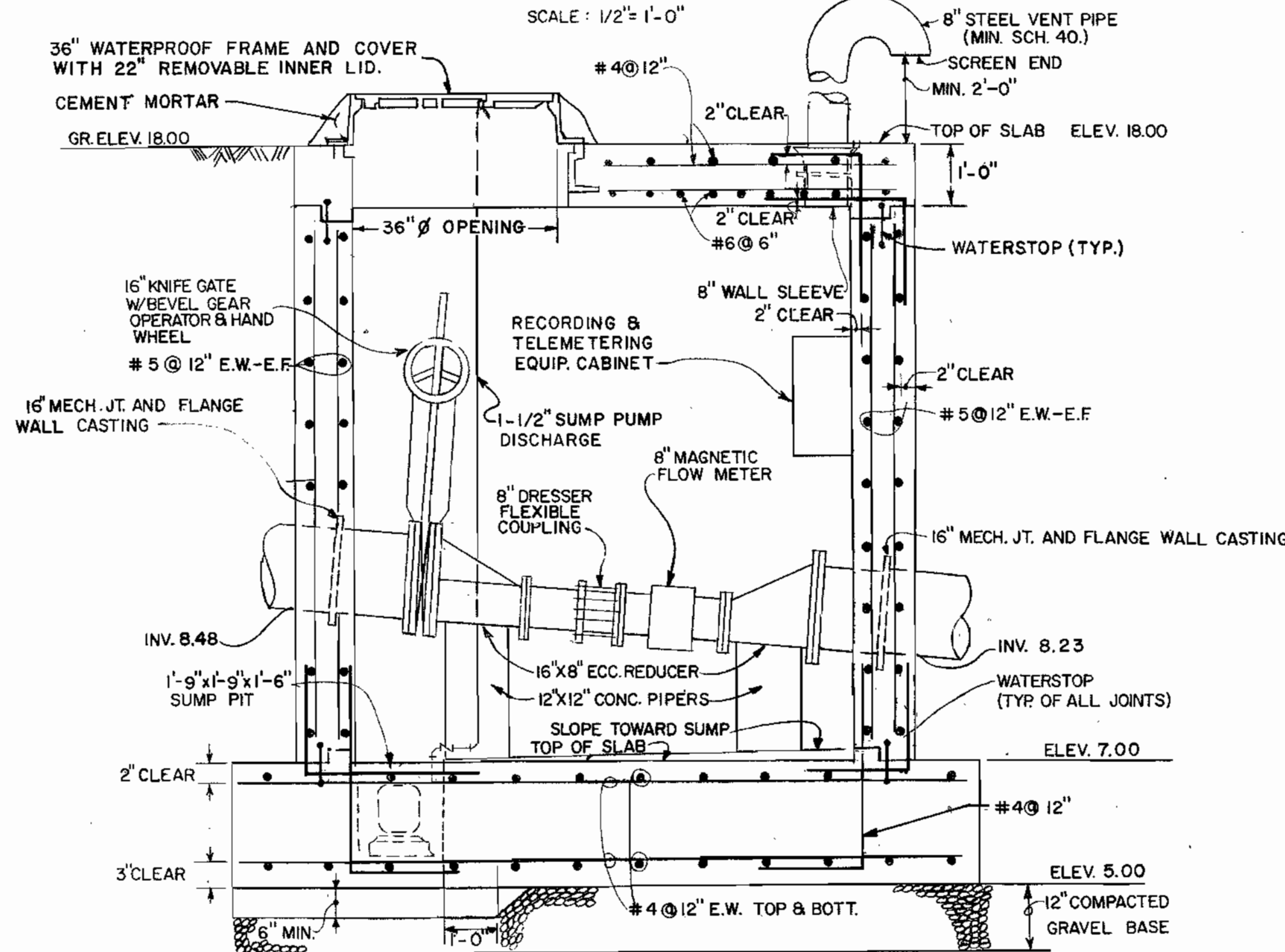
PLAN-PROPOSED METER VAULT
SCALE: 1/2" = 1'-0"



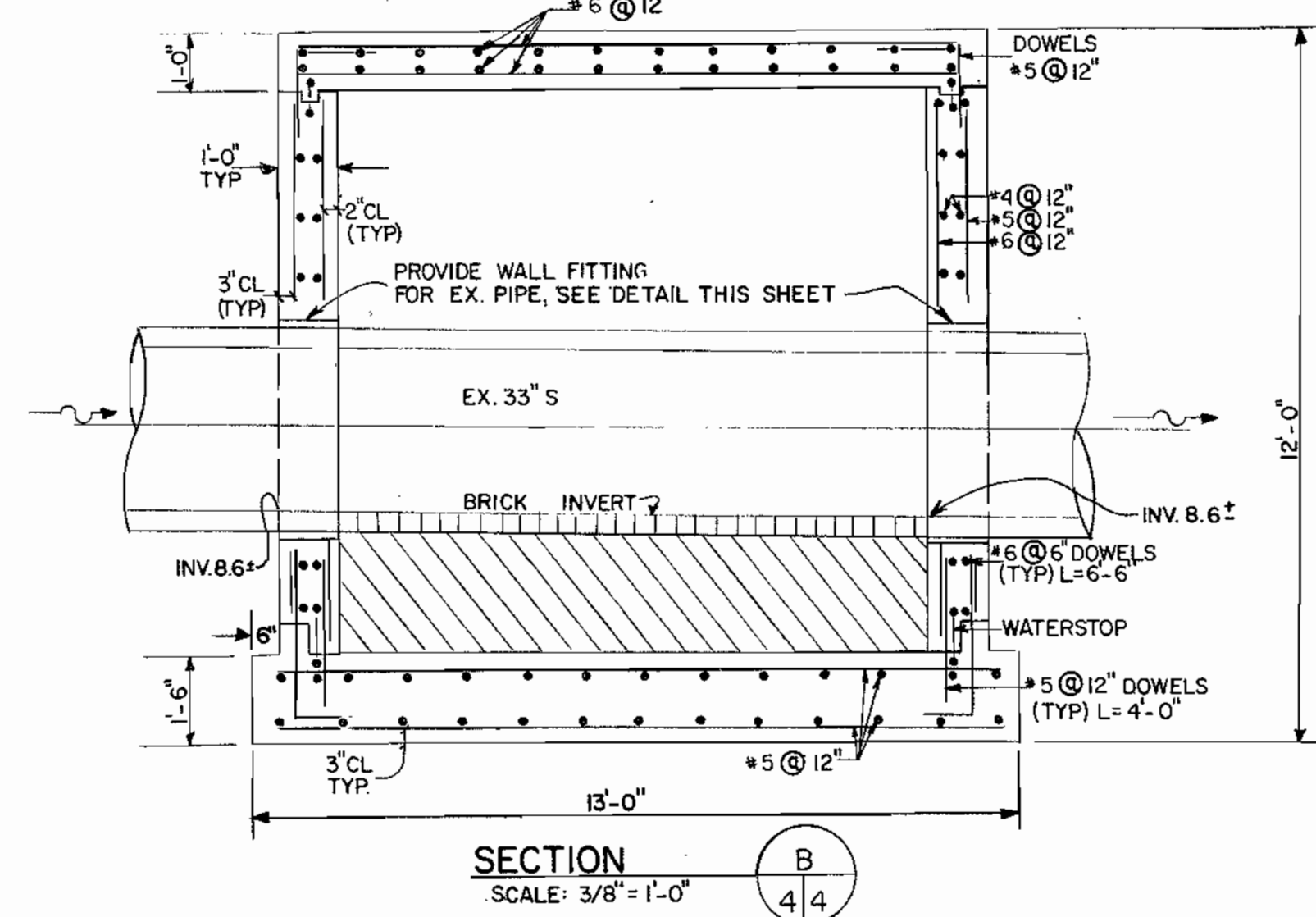
PLAN PROP DIVERSION VAULT 4
SCALE: 3/8" = 1'-0"



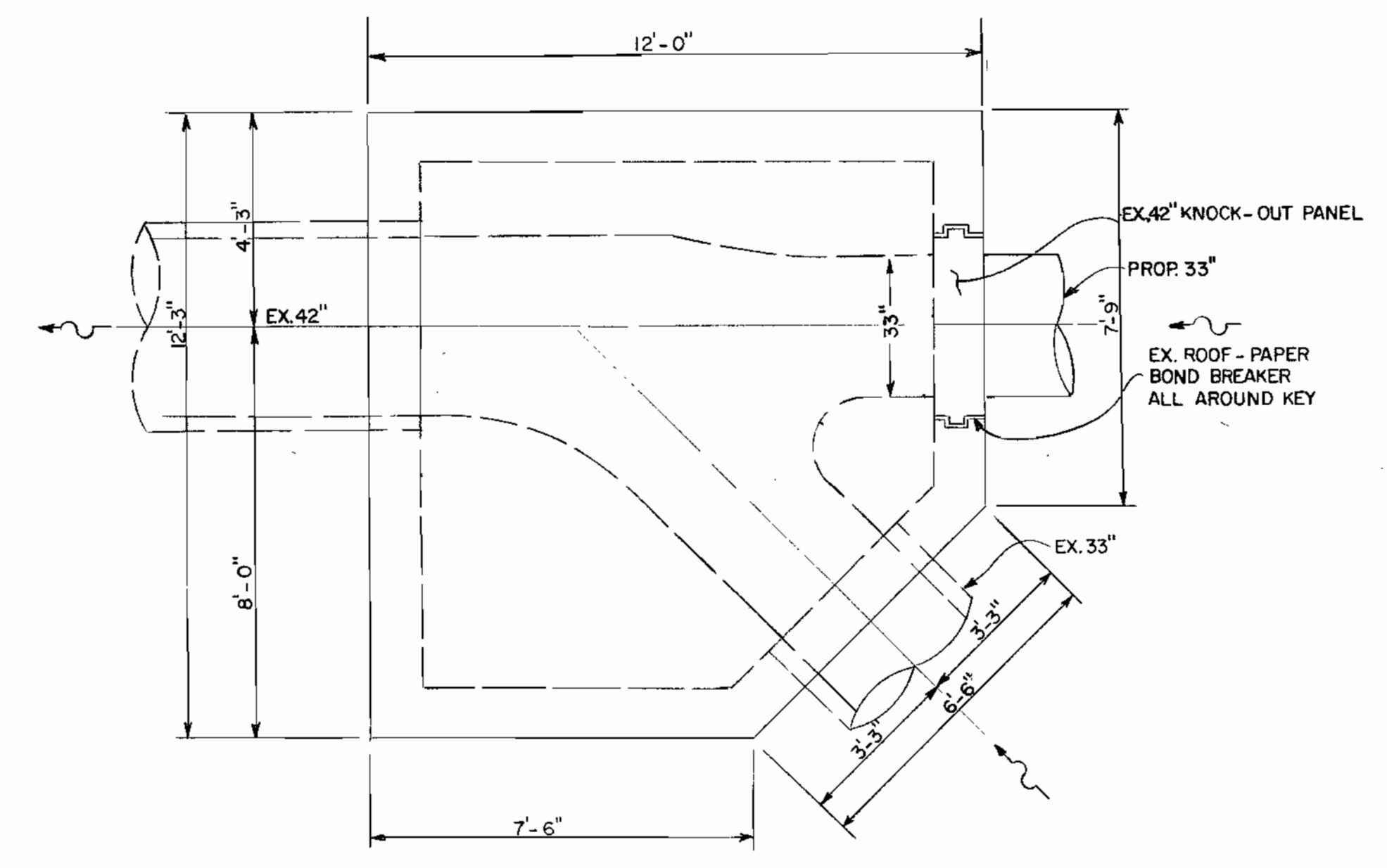
EX. MANHOLE 2558
SCALE: 1/2" = 1'-0"



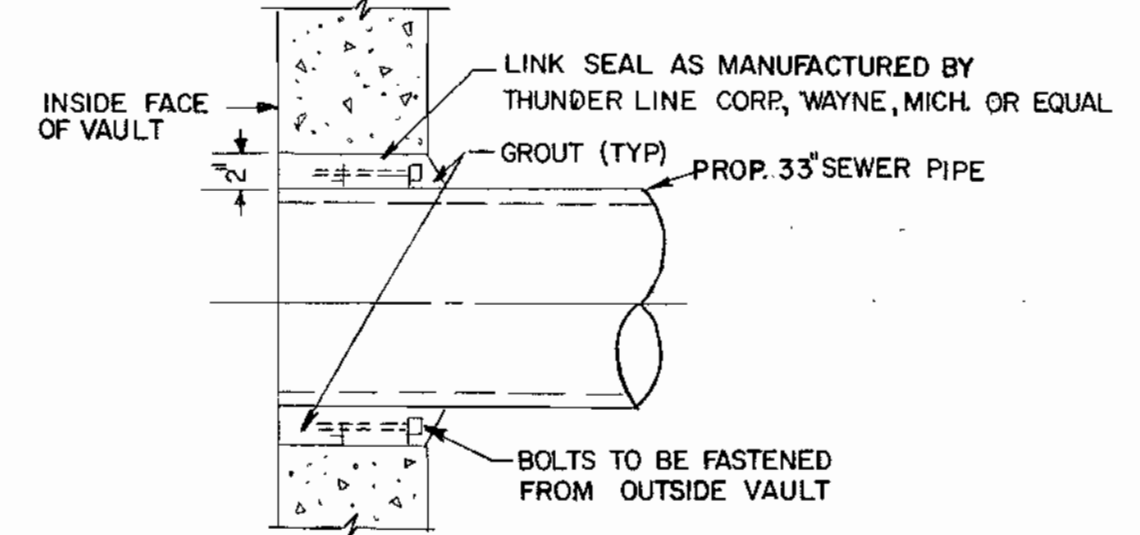
SECTION A-A
SCALE: 1/2" = 1'-0"



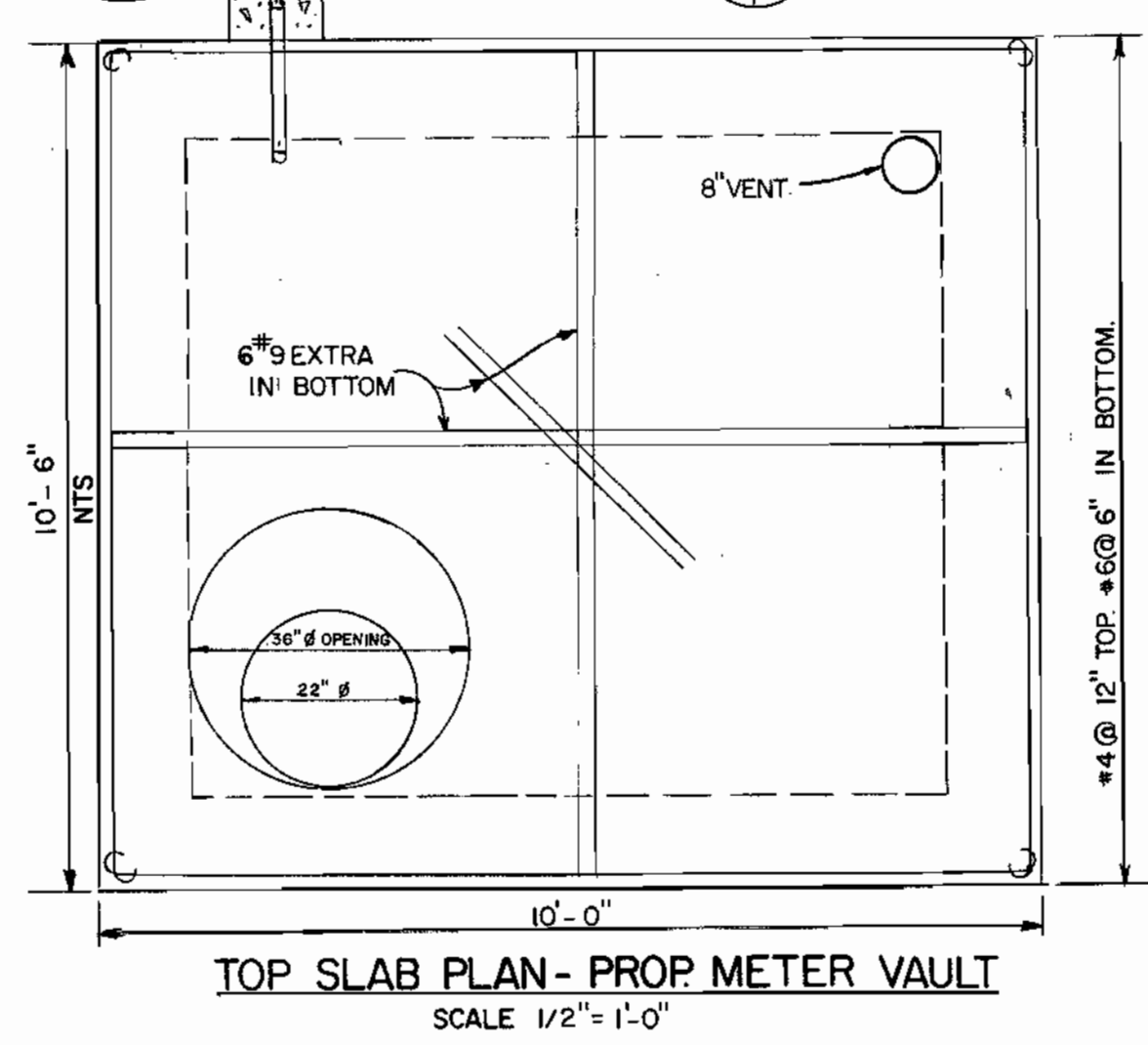
SECTION B-B
SCALE: 3/8" = 1'-0"



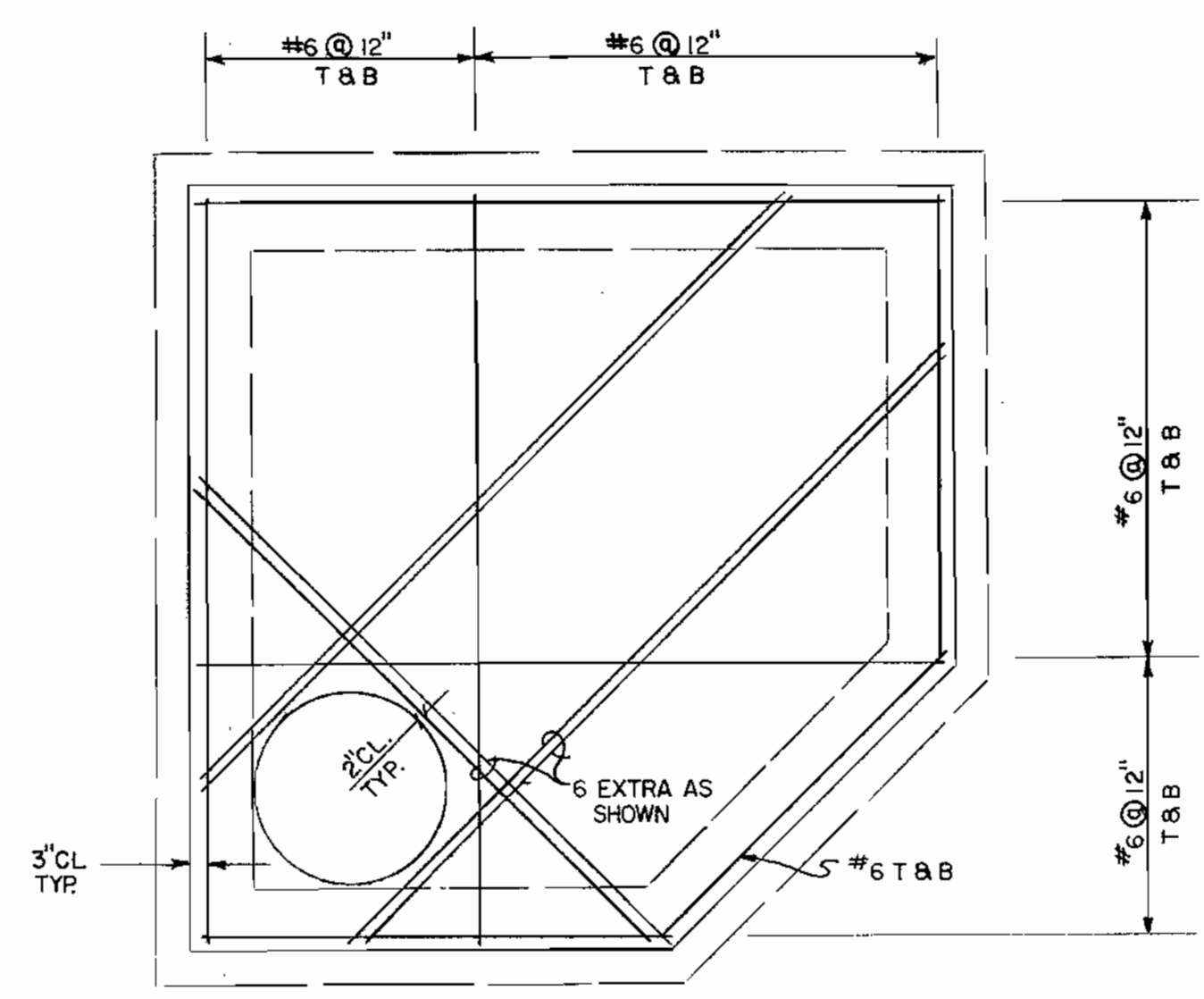
PLAN-EX. JUNCTION CHAMBER NO. 5
SCALE: 3/8" = 1'-0"



DETAIL-WALL FITTING FOR EXISTING 33" SEWER AT NORTH & SOUTH CONN. TO PROP. DIVERSION VAULT 4
NOT TO SCALE



TOP SLAB PLAN - PROP METER VAULT
SCALE: 1/2" = 1'-0"

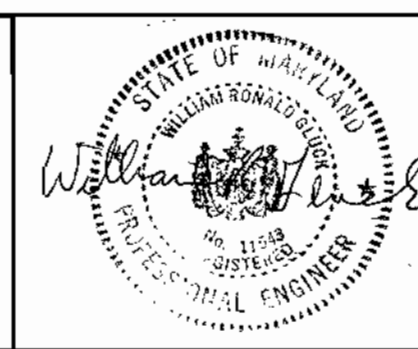


TOP SLAB PLAN - PROP DIVERSION VAULT 4
SCALE: 3/8" = 1'-0"

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS



DES: S.E.S.	
DRN: S.L.M.	
CHK: W.R.G.	
DATE:	
BY:	
NO.	
REVISION	
DATE	

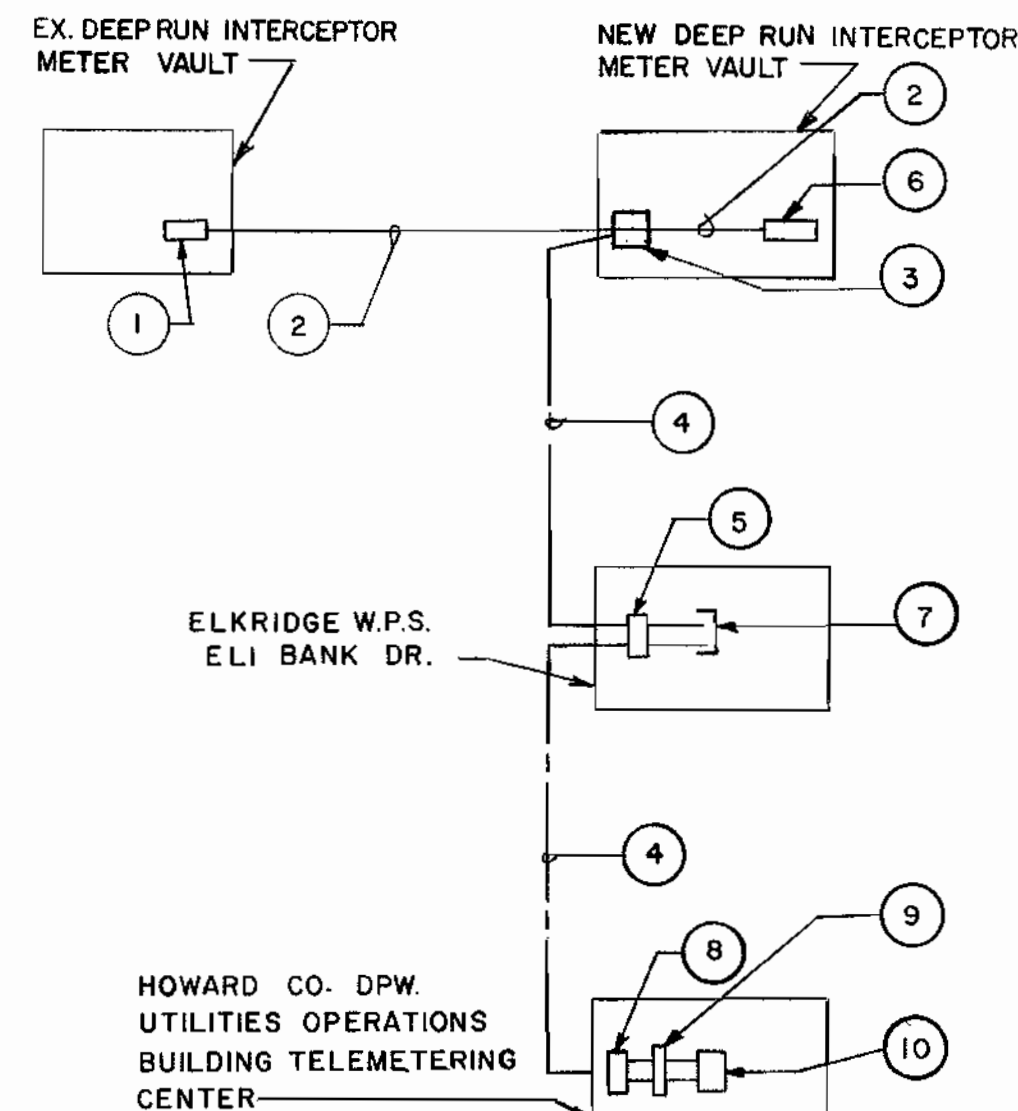
DETAILS

DEEP RUN PARALLEL INTERCEPTOR SEWER
CAPITAL PROJECT S-6124
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1809
ELECTION DISTRICT No. 1

SCALE AS SHOWN
SHEET 4 OF 5

69150

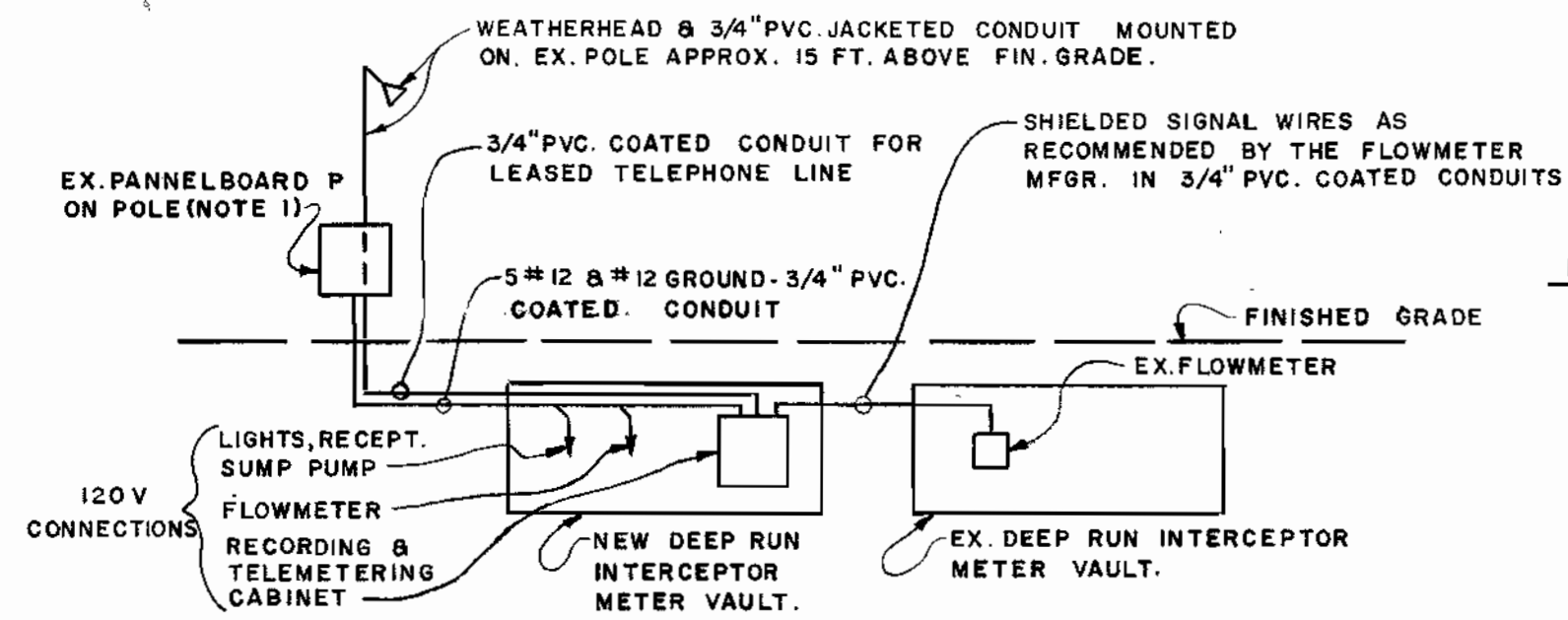
CAP. PROJ. S-6124



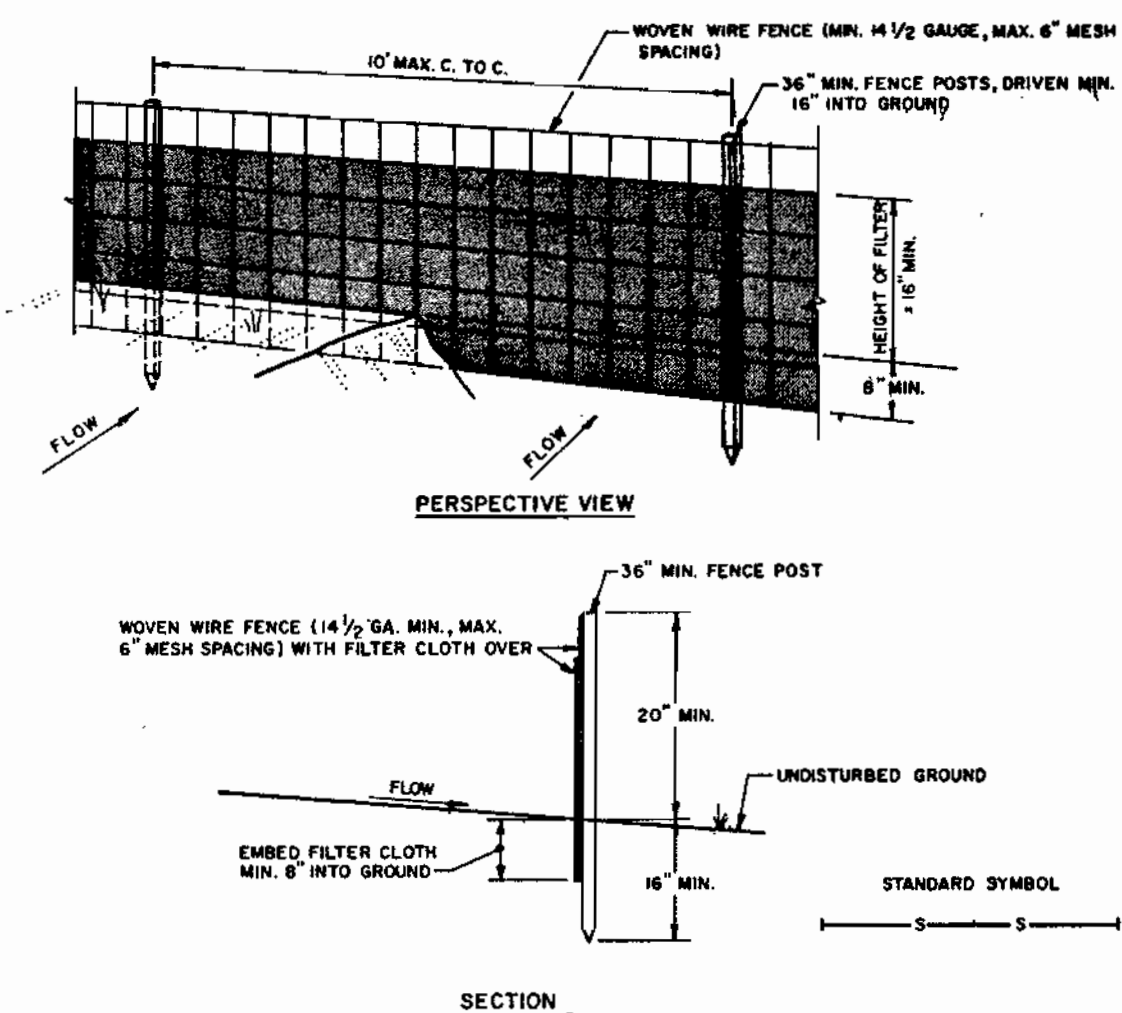
TELEMETERING SYSTEM FUNCTIONAL DIAGRAM

NOTES:

- 1. EX. MAGNETIC FLOWMETER INDICATOR RECORDER IN NEMA-4X CABINET EXTEND 4-20MA. SIGNAL CIRCUIT TO TONE TRANSMITTER IN NEW VAULT.
2. NEW SHIELDED SIGNAL CABLE (SIZE AND TYPE RECOMMENDED BY INSTRUMENT MANUFACTURER) IN 3/4" PVC JACKETED RIGID STEEL CONDUIT FOR 4-20 MA. FLOW SIGNAL.
3. NEMA-4X CABINET WITH NEW FLOWMETER TOTALIZER-INDICATOR-RECORDER, 2 TONE TRANSMITTERS, POWER SUPPLY, LEASED TELEPHONE LINE TERMINAL EQUIP. ETC.



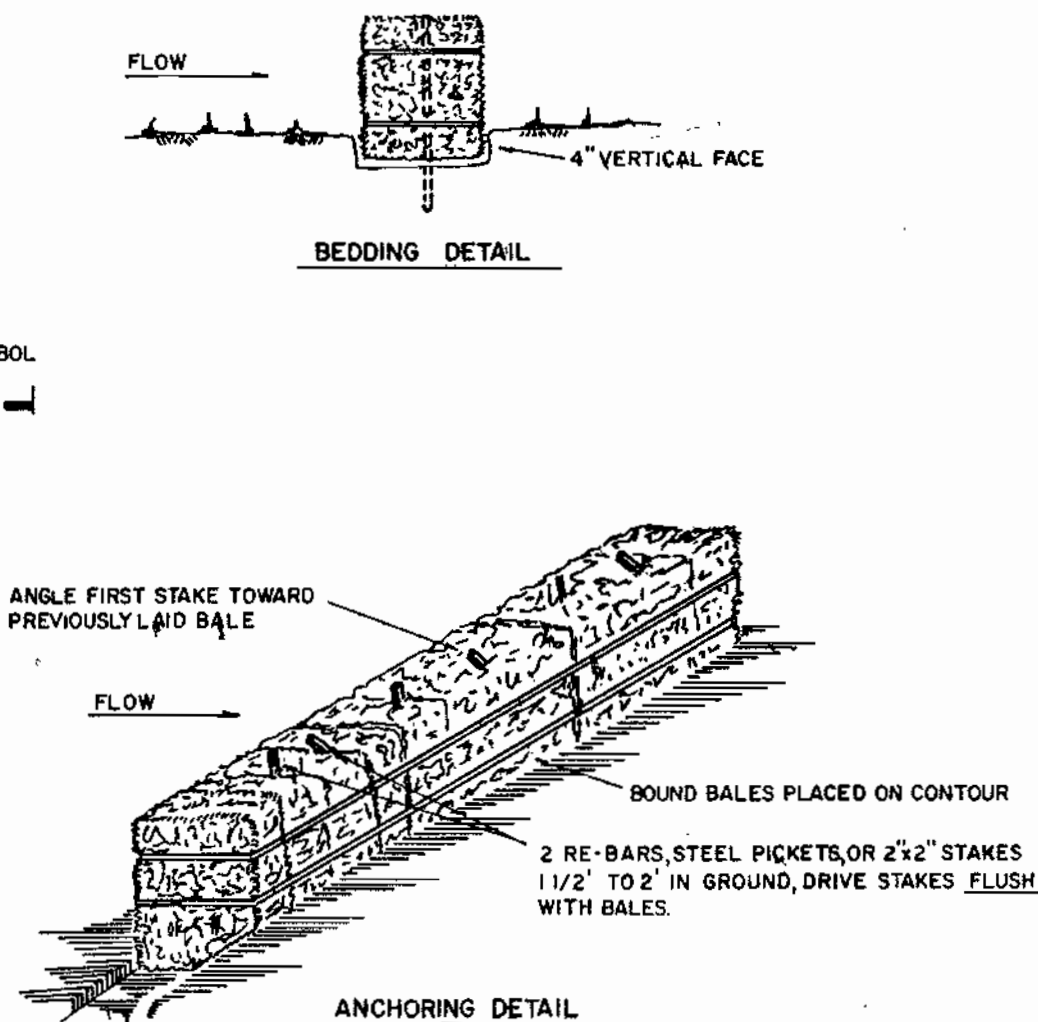
ELECTRICAL AND TELEMETERING ONE-LINE DIAGRAM



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- 1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.

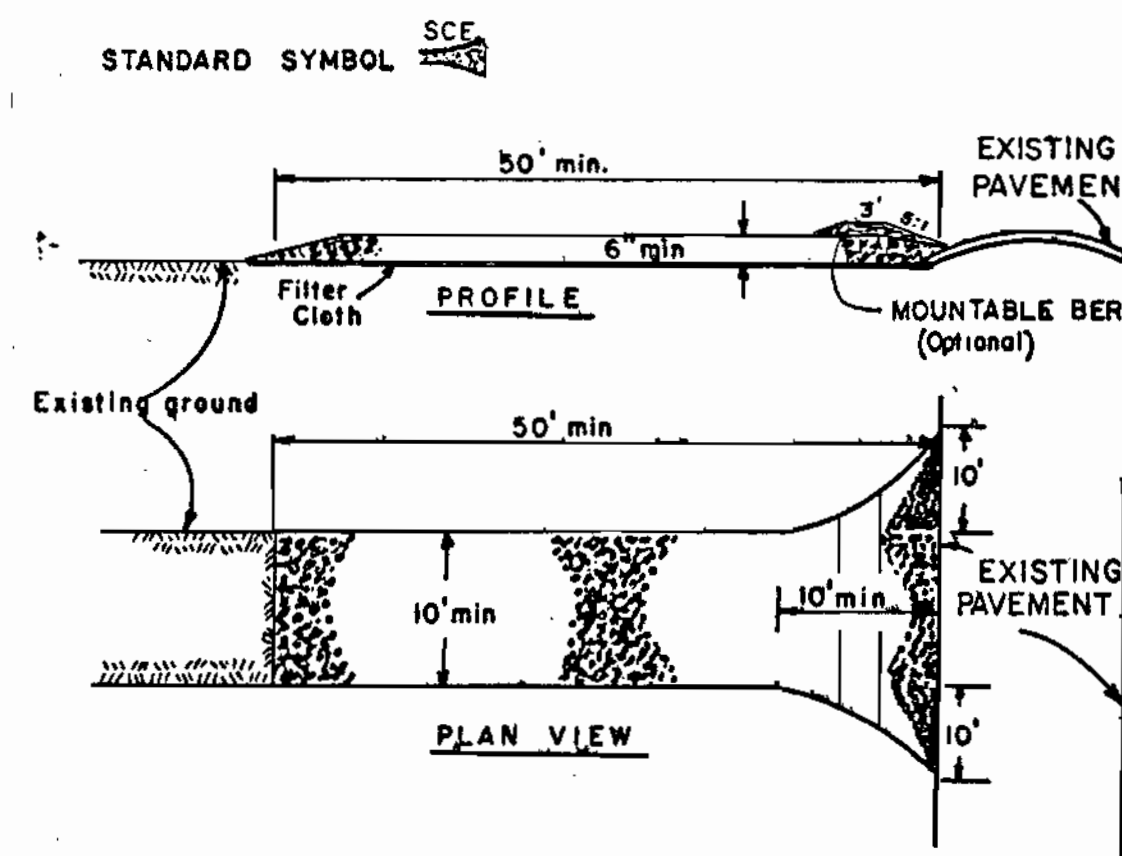
SILT FENCE NTS



CONSTRUCTION SPECIFICATIONS

- 1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY BUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE.

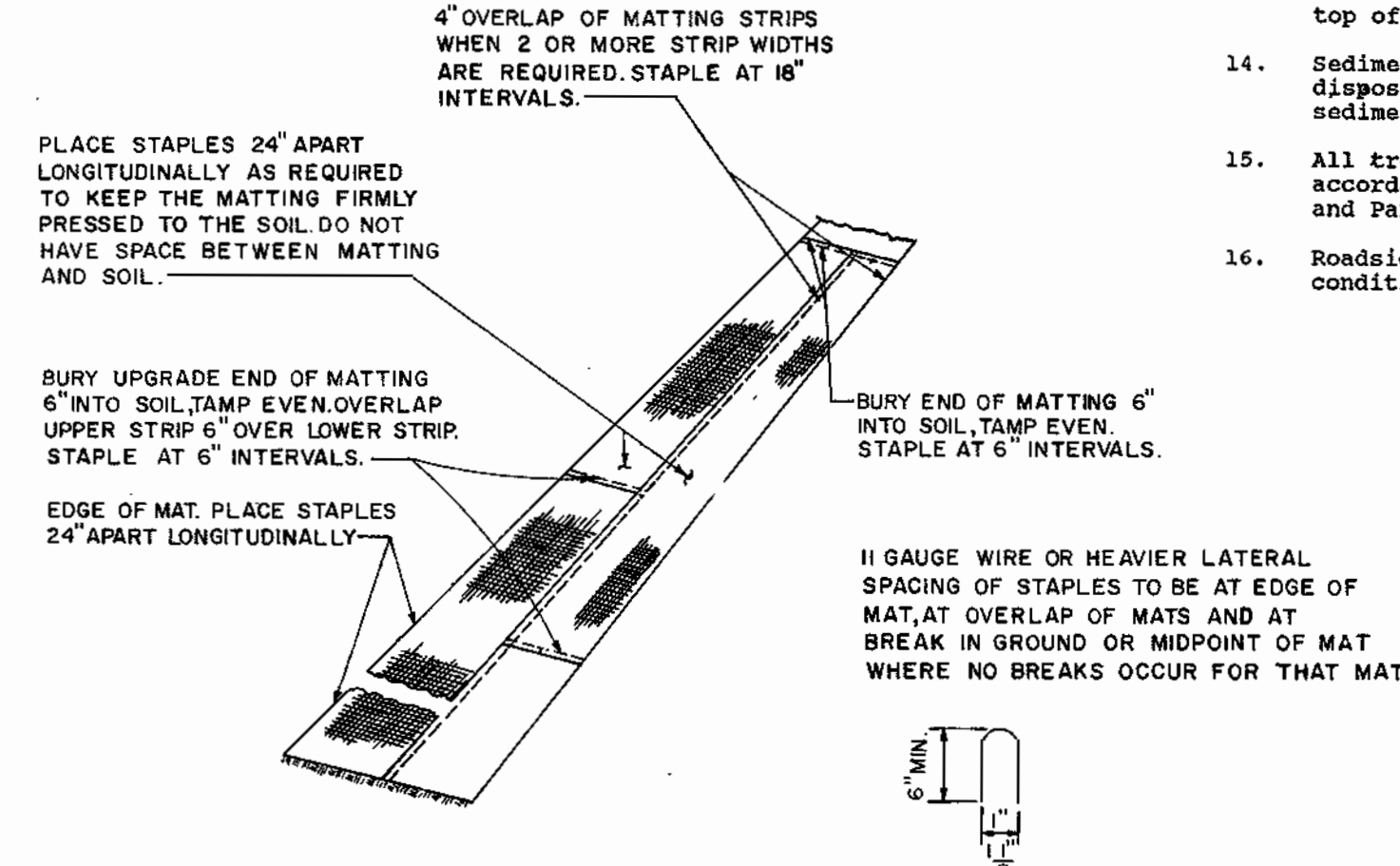
STRAW BALE DIKE NTS



CONSTRUCTION SPECIFICATIONS

- 1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.

STABILIZED CONSTRUCTION ENTRANCE NTS



SOIL STABILIZATION MATTING

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 County Soil Conservation District.

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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project.

Reviewed for Howard County S.C.D. and meets technical requirements. Date: 2/23/80. U.S. SOIL CONSERVATION SERVICE. This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.

SEQUENCE OF CONSTRUCTION

- 1. Obtain grading permit for overall project. Construct pipelines.
2. Gravity sewer construction shall proceed in an uphill fashion.
3. Install sediment control measures down grade of construction. Excavate trench and place material on upstream side of trench.

SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

- 1. Permanent Seeding: A. Seedbed Preparation: Loosen upper 3" of soil by raking, discing or other acceptable means prior to seeding. B. Soil Amendments: In lieu of soil test use one of the following: 1. Before seeding apply 92 lbs. of dolomitic limestone and 14 lbs. of 10-10-10 fertilizer per 1,000 square feet.

SOIL EROSION AND SEDIMENT CONTROL NOTES

- 1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (892-2437)
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1981 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1 and 14 days for all other disturbed or graded areas on the project site.

Table with 2 columns: Area, Acres. Total Area of Site: 192 Acres. Area Disturbed: 192 Acres. Area to be roofed or paved: 192 Acres. Area to be vegetatively stabilized: 192 Acres.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

JOHN E. HARMS, JR. & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND 21122 301-647-6000

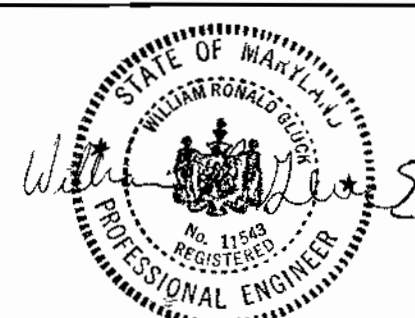


Table with columns: DES, DRN, CHK, DATE, BY, NO., REVISION, DATE. Includes a 600' SCALE MAP NO. and BLOCK NO.

ELECTRICAL DETAILS AND SEDIMENT CONTROL DETAILS

DEEP RUN PARALLEL INTERCEPTOR SEWER CAPITAL PROJECT S-6124 HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1809 ELECTION DISTRICT No. 1 AS-BUILT

SCALE AS SHOWN SHEET 5 OF 5

BRUNING 89150