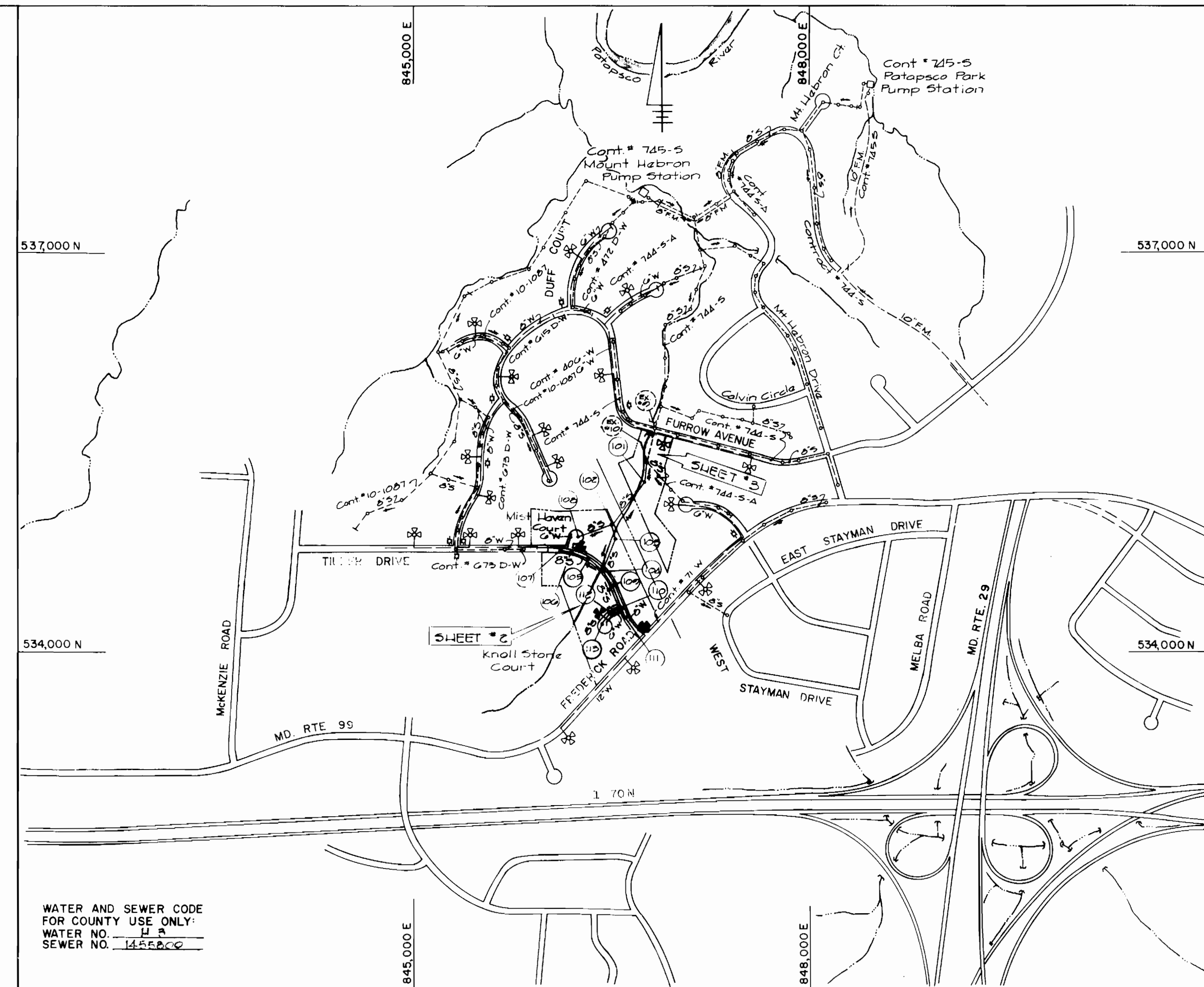


QUANTITIES			
ITEM	EST'D	AS BUILT	SUPPLIER
8" WATER	1073 LF	1077 LF	APP. WATER & SEWER SUPPLY
6" WATER	406 LF	471 LF	" "
3/4" W.H.C.	335 LF	500 LF	" "
1" W.H.C.	420 LF	392 LF	" "
FIRE HYDRANTS	4 EA.	4 Ea.	" "
12" TAPPING SLEEVE & 8" VALVE	1 EA.	1 Ea.	" "
8" SEWER	1847 LF	1852 LF	" "
8" SEWER (D.I.P.)	484 LF	481 LF	ATLANTIC STATES
MANHOLES	13 EA.	13 Ea.	" "
6" SEWER	1263 LF	999 LF	APP. WATER & SEWER SUPPLY
8" VALVES	1 EA.	1 Ea.	" "
6" VALVES (EXCLUDING FH'S)	2 EA.	2 Ea.	" "
6" FH. VALVES	4 EA.	4 Ea.	" "



TYPE OF BUILDING	SINGLE FAMILY RESIDENTIAL
NUMBER OF LOTS	34 (30 BUILDABLE)
NO. OF WATER HOUSE CONNECTIONS	30
NO. OF SEWER HOUSE CONNECTIONS	30
DRAINAGE AREA	PATAPSCO

SCALE: 1"=600'

# CONTRACT NO. 14-1263-D MT. HEBRON SECTION 17 WATER AND SEWER MAIN EXTENSIONS HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

### GENERAL NOTES

1. APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. 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. DATUM.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITIES 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.
6. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
  - BALTIMORE GAS & ELECTRIC COMPANY-CONTRACTOR SERVICES: 561-2585
  - BALTIMORE GAS & ELECTRIC COMPANY-UNDER GROUND DAMAGE CONTROL: 234-5621
  - BALTIMORE GAS & ELECTRIC COMPANY-TROUBLE SHOOTING: 298-9013
- "MISS UTILITY": 1-559-0100
- CHESAPEAKE & POTOMAC TELEPHONE COMPANY: 725-9976
- BUREAU OF UTILITIES-HOWARD COUNTY: 992-2366
7. TREES ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
8. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. AS DIRECTED BY THE ENGINEER, PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
9. PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
10. ALL SEWER MAINS SHALL BE C.S.P.X., R.C.S.P., P.V.C., V.C.P.X. OR A.C.P. CLASS 2400 UNLESS OTHERWISE NOTED.
11. CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALLS.
12. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
13. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE BRICK MANHOLES ONLY.
14. ALL WATER MAINS TO BE D.I.P. UNLESS OTHERWISE NOTED.
15. TOP OF WATER MAINS TO HAVE A MINIMUM OF 3'-6" COVER UNLESS OTHERWISE NOTED.
16. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
17. BURY LINE ELEVATIONS ON FIRE HYDRANTS SHALL BE SET TO THE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT TO BE COMPACTED IN ACCORDANCE WITH SECTION 1003 AND 1008 OF THE STANDARD SPECIFICATIONS.
18. ALL WATER HOUSE CONNECTIONS SHALL BE FOR AN INSIDE METER SETTING.
19. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING SYSTEM.
20. WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED SO AS TO HAVE AT LEAST ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
21. MANHOLES LOCATED WITHIN PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAME AND COVER, STANDARD DETAIL G5.51
22. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52 WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
23. FOR ALL COPPER WATER HOUSE CONNECTIONS, UTILIZE FLARED TYPE FITTINGS ONLY.
24. 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.
25. 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 WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
26. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
27. W.T. DESIGNATES WATERTIGHT MANHOLES.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL AND STANDARDS & SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL IN DEVELOPING AREAS & ALSO AS SHOWN ON THE GRADING & SEDIMENT CONTROL PLAN, 105-00, (SP. 85-12).

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

STABILIZATION NOTES  
FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: 1) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES, & ALL SLOPES GREATER THAN 3:1 2) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
 APPROVED: DATE: 5-23-85  
 U.S. SOIL CONSERVATION SERVICE

APPROVED: DATE: 5-23-85  
 HOWARD SOIL CONSERVATION DISTRICT

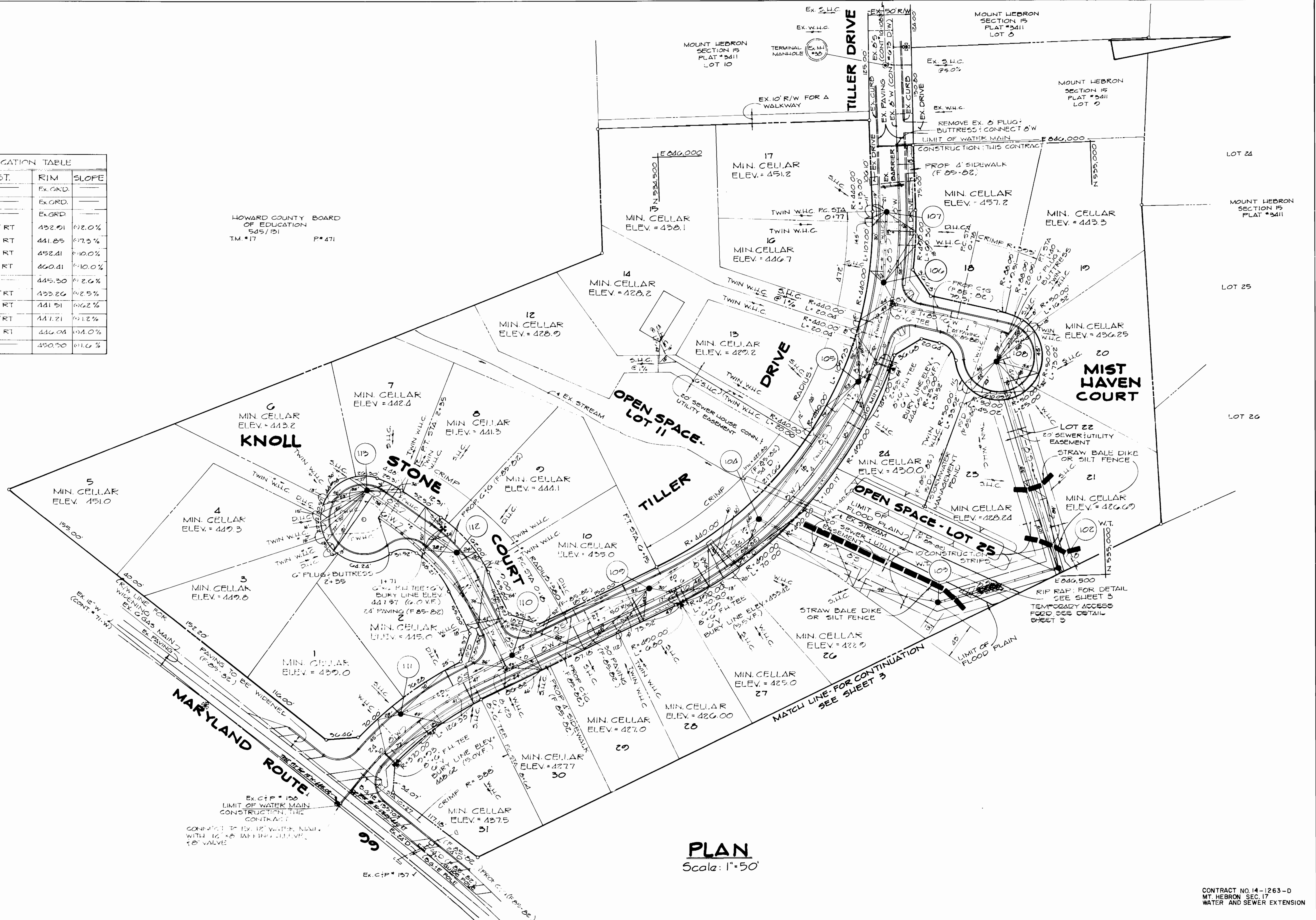
CONTRACT NO. 14-1263-D  
MT. HEBRON SEC. 17  
WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS:  DATE: 5-23-85 CHIEF, BUREAU OF UTILITIES:  DATE:	FISHER, COLLINS, AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 8388 COURT AVENUE ELLICOTT CITY, MARYLAND 21043  TERRELL A. FISHER	DES. DEV. _____ DRN. D.E.V. _____ CHK. T.A.F. _____ DATE: _____ BY NO. _____ REVISION _____	TITLE SHEET 600' SCALE MAP NO. 17 BLOCK NO. _____	MT. HEBRON SECTION 17 CONTRACT NO. 14-1263-D FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 1 OF 4
---	---	---	--	--

AS-BUILT 3-14-89 1/15/85

MANHOLE LOCATION TABLE				
M.I. #	ROAD STA.	DIST.	RIM	SLOPE
101			EX. GRD.	
102			EX. GRD.	
103			EX. GRD.	
104	18+70	4' RT	432.91	0.20%
105	16+80	2' RT	441.85	0.75%
106	15+58	7' RT	452.41	0.10%
107	14+76	7' RT	460.41	0.10%
108			445.30	0.20%
109	20+31	7' RT	433.26	0.25%
110	22+08	7' RT	441.51	0.62%
111	23+51	12' RT	441.21	0.12%
112	1+40	7' RT	446.04	0.10%
113			450.50	0.10%

HOWARD COUNTY BOARD OF EDUCATION  
545/151 P#471  
I.M.#17



**PLAN**  
Scale: 1"=50'

CONTRACT NO. 14-1263-D  
MT. HEBRON SEC. 17  
WATER AND SEWER EXTENSION

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John F. Niemi*  
DIRECTOR OF PUBLIC WORKS  
DATE: 3-21-85

*Robert M. ...*  
CHIEF, BUREAU OF UTILITIES  
DATE: 3-21-85

FISHER, COLLINS, AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS  
8388 COURT AVENUE  
ELLCOTT CITY, MARYLAND 21043

*Terrell A. Fisher*  
TERRELL A. FISHER

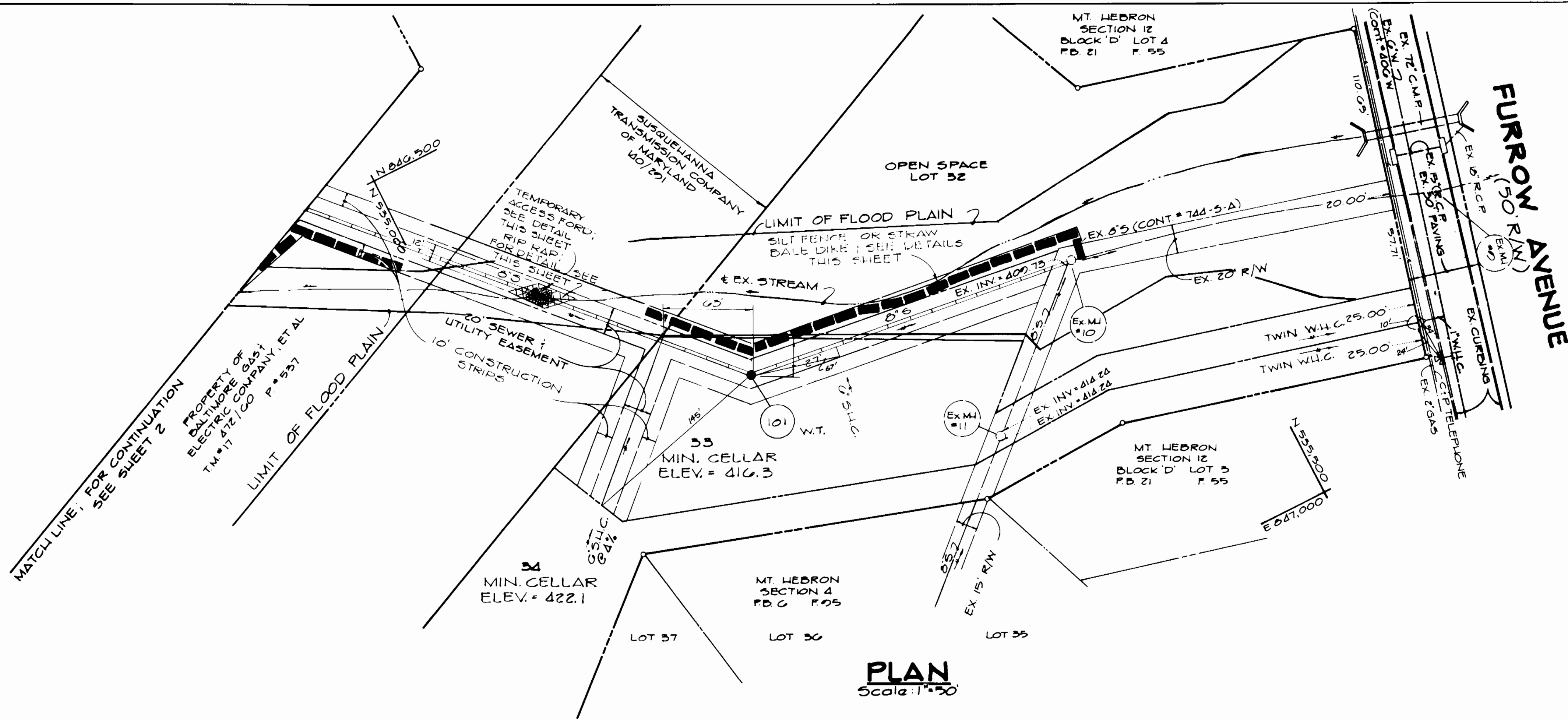
DES. DE.V.	
DRN. DE.V.	
CHK. T.A.F.	
DATE:	
BY NO.	
REVISION	
DATE	

PLAN  
WATER & SEWER MAIN

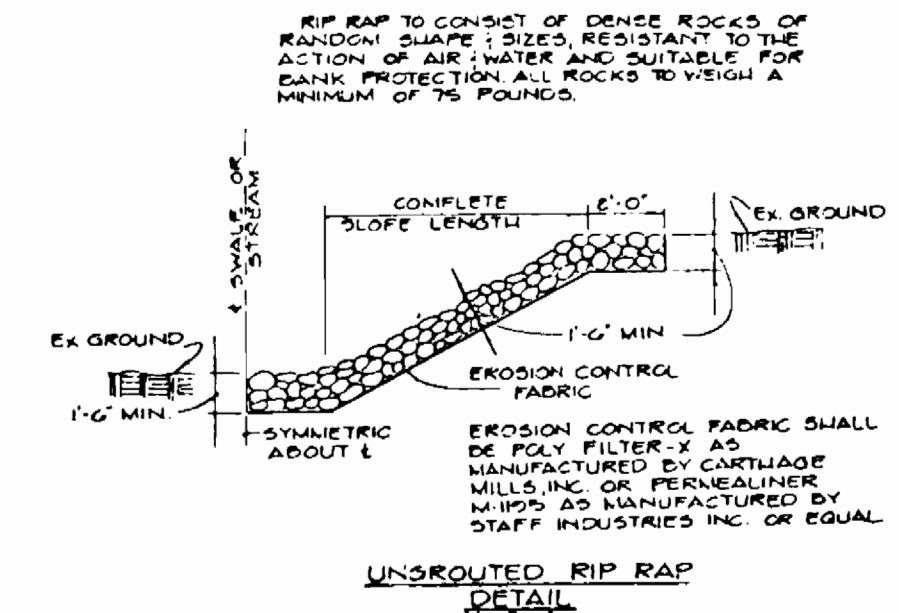
600' SCALE MAP NO. 17 BLOCK NO.

MT. HEBRON SECTION 17  
CONTRACT NO. 14-1263-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

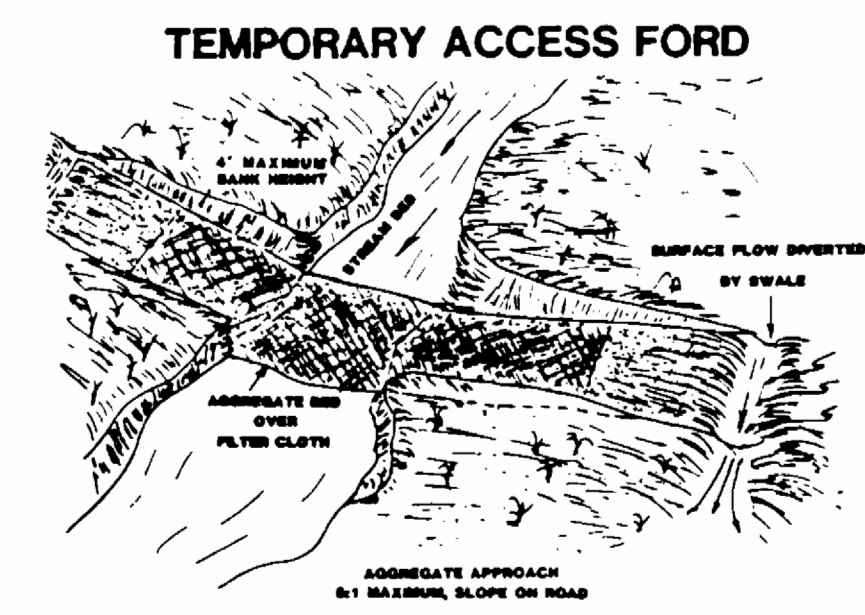
SCALE AS SHOWN  
SHEET 2 OF 4



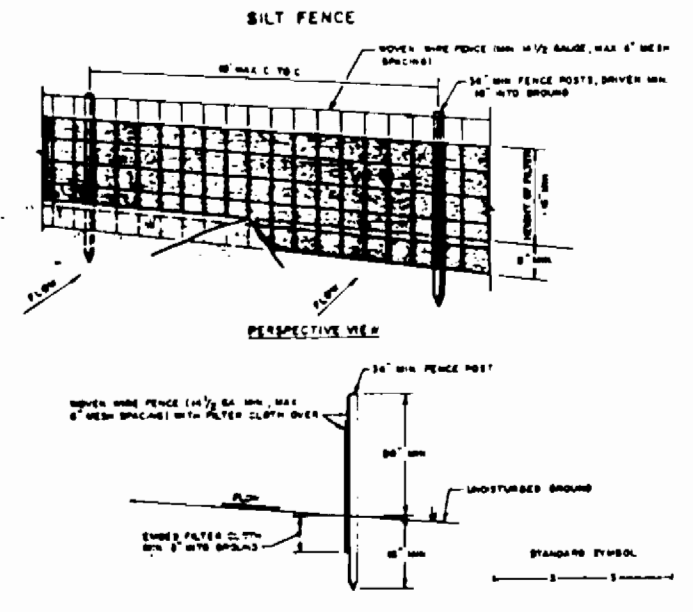
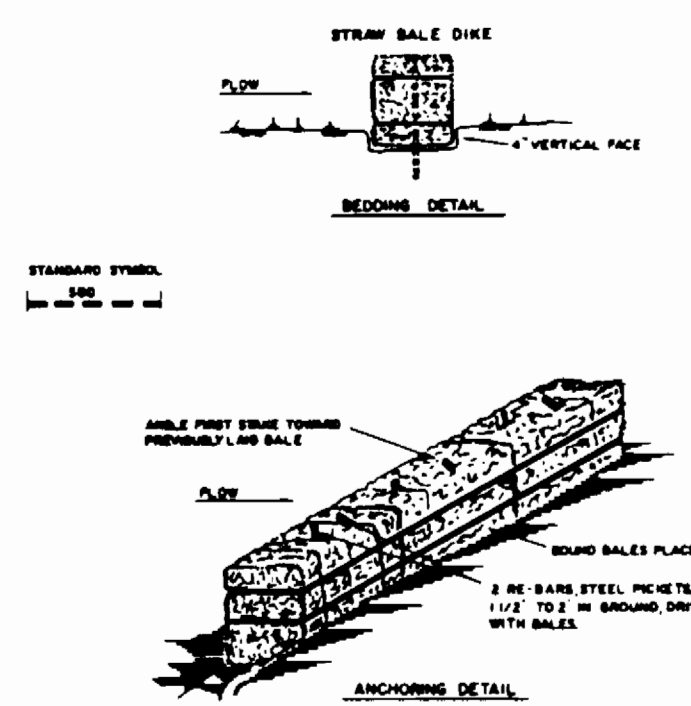
PLAN  
Scale 1"=50'



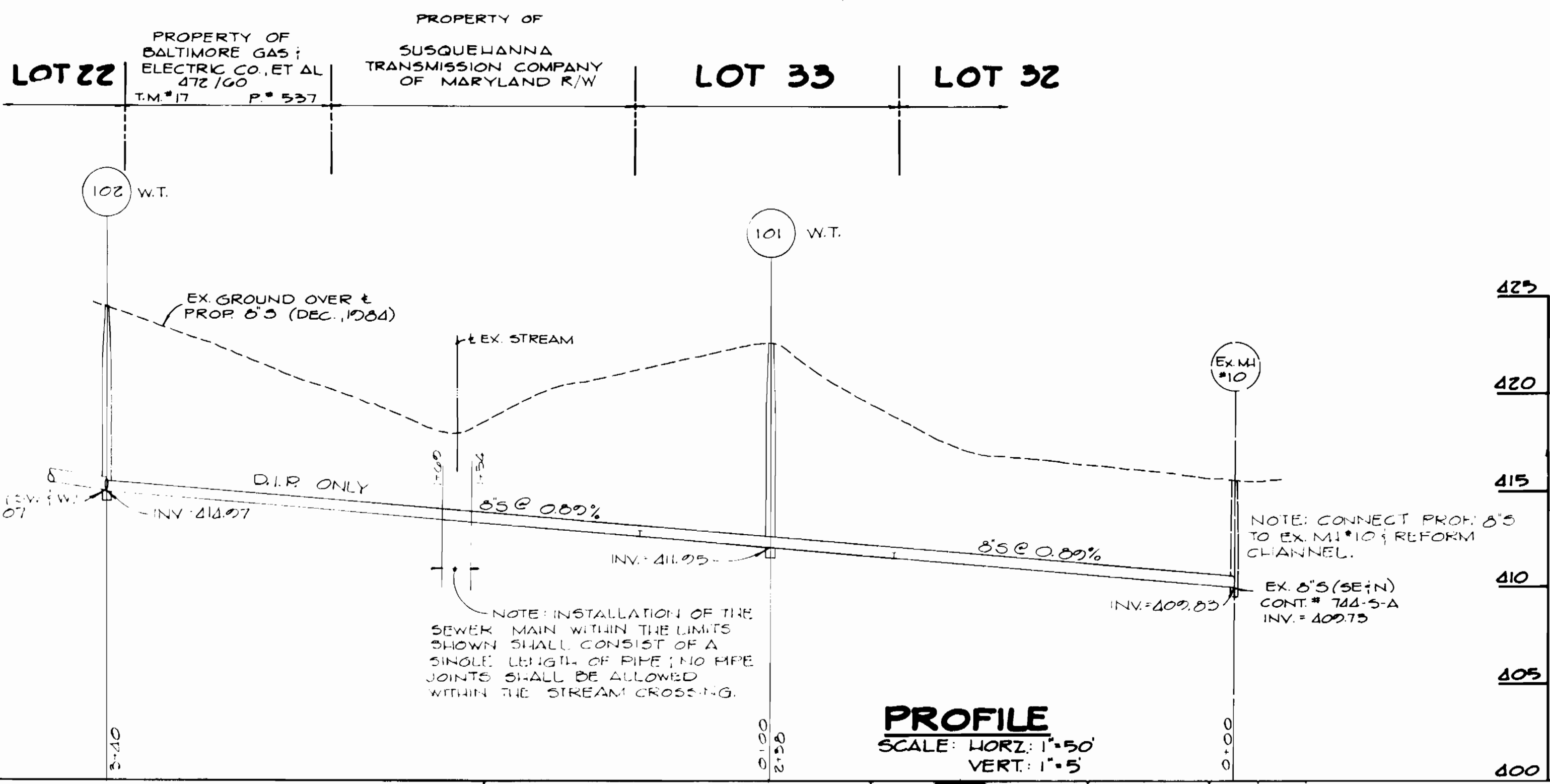
UNSCOURED RIP RAP  
DETAIL  
NO SCALE



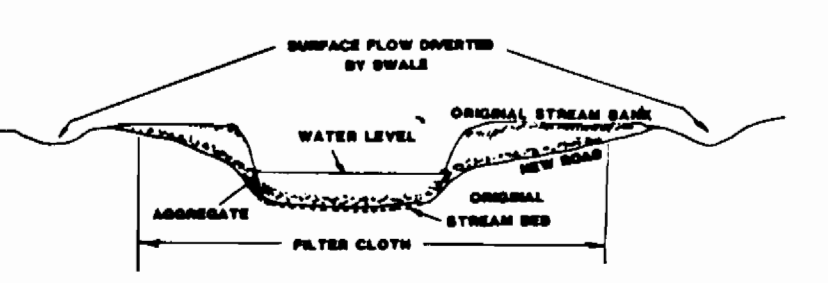
TEMPORARY ACCESS FORD



1. Silt fence shall be installed in a line with the slope of the stream.
2. Filter cloth shall be fastened to the aggregate bed with 1/2" x 1/2" staples.
3. No netting or other material shall be placed over the filter cloth.
4. Maintenance shall be performed as needed to keep the silt fence in good condition.



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



3. Temporary Ford

- A temporary access ford is a shallow structure placed in the bottom of a waterway over which the water flows while still allowing traffic to cross the waterway.
- Considerations**  
Temporary fords may be used where the streambanks are less than 4 feet above the lowest of the stream, and the streambed is armored with naturally occurring bedrock, or can be protected with an aggregate layer in conformance with these specifications.
- Construction Specifications**
1. Restrictions - Use or removal of a temporary access will not be permitted between October 1 and April 30 for all Class III and Class IV Front Waters. For other streams, use or removal of a temporary ford will be prohibited from March 15 through June 15 of each year because fish are spawning during this period.
  2. The approach to the structure shall consist of stone pads constructed to comply with the aggregate requirements of Section 1.8.1.
  3. The entire ford approach (where banks were cut) shall be covered with filter cloth and protected with aggregate to a depth of 4 inches.
  4. Fords shall be prohibited when the stream banks are 4 feet or more in height above the lowest of the stream.
  5. The approach roads at the cut banks shall be no steeper than 5:1. Spill material from the banks shall be stored out of the flood plain and stabilized.
  6. One layer of filter cloth shall be placed on the streambed, streambank and road approaches prior to placing the bedding material on the stream channel or approach. The filter cloth shall extend a minimum of 4 inches and a maximum one foot beyond bedding material.
  7. The bedding material shall be coarse aggregate or gabion mattresses filled with coarse aggregate.

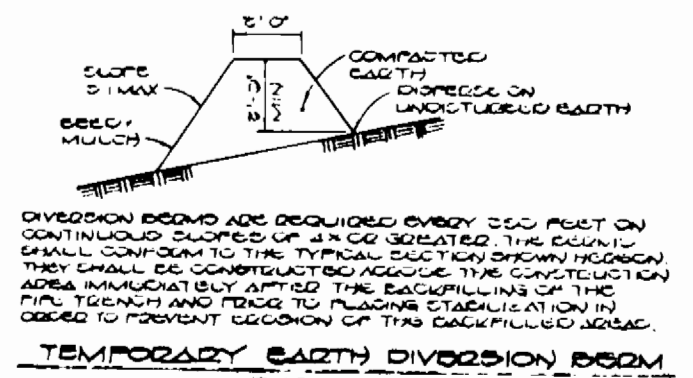
1. Silt shall be placed at the toe of a slope or on the contour and in a row with the top of the aggregate bed.
2. Each row shall be staggered in the row a minimum of (8) inches, and placed so the aggregate is horizontal.
3. Silt shall be placed in place by either the stages of a machine driven through the silt, or the first stage of a machine shall be driven through the material laid out in a row to force the silt together. Stages shall be driven down with the silt.
4. Inspection shall be provided and repair replacement shall be made promptly as needed.
5. Silt shall be replaced when they have eroded their displacement so as not to block or divert flow of drainage.

4. Aggregate used in ford construction shall meet the minimum requirements of Section 1.8.1.

5. All fords shall be constructed to minimize the blockage of stream flow and shall allow free flow over the ford. The placing of any material in the waterway bed will cause some upstream ponding. The depth of this ponding will be equivalent to the depth of the material placed within the stream and therefore should be kept to a minimum height. However, in no case will the bedding material be placed deeper than 12 inches or more than (5) the height of the existing banks whichever is smaller.
6. **Stabilization** - All areas disturbed during ford installation shall be stabilized within 14-calendar days of that disturbance in accordance with the Standards for Critical Area Stabilization With Permanent Seeding.

5. Ford Removal and Clean-Up Requirements

7. **Final Clean-Up** - Final clean-up shall consist of removal of excess temporary ford material from the waterway. All materials shall be stored outside the waterway flood plain.
  8. **Method** - Clean up shall be accomplished without construction equipment working in the stream channel.
  9. **Approach Disposition** - The approach slopes of the cut banks shall not be backfilled.
  10. **Final Stabilization** - All areas disturbed during ford removal shall be stabilized within 14-calendar days of that disturbance in accordance with the Standards for Critical Area Stabilization With Permanent Seeding.
- Any temporary access crossing shall conform to the technical requirements of this Standard and Specifications as well as any specific requirements imposed by the Water Resources Administration's Watershed Permit System (28F-228) Annapolis, Maryland.



TEMPORARY EARTH DIVERSION BODY  
NO SCALE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert F. Nummy*  
DIRECTOR OF PUBLIC WORKS  
DATE: 5-21-85

*Robert M. Bauman*  
CHIEF, BUREAU OF UTILITIES  
DATE: 5-21-85

FISHER, COLLINS, AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS  
8388 COURT AVENUE  
ELLCOTT CITY, MARYLAND 21043

*William E. Fisher*  
CHIEF, BUREAU OF ENGINEERING  
DATE: 5-21-85

*William E. Fisher*  
CHIEF, LAND DEVELOPMENT DIVISION  
DATE: 5-21-85



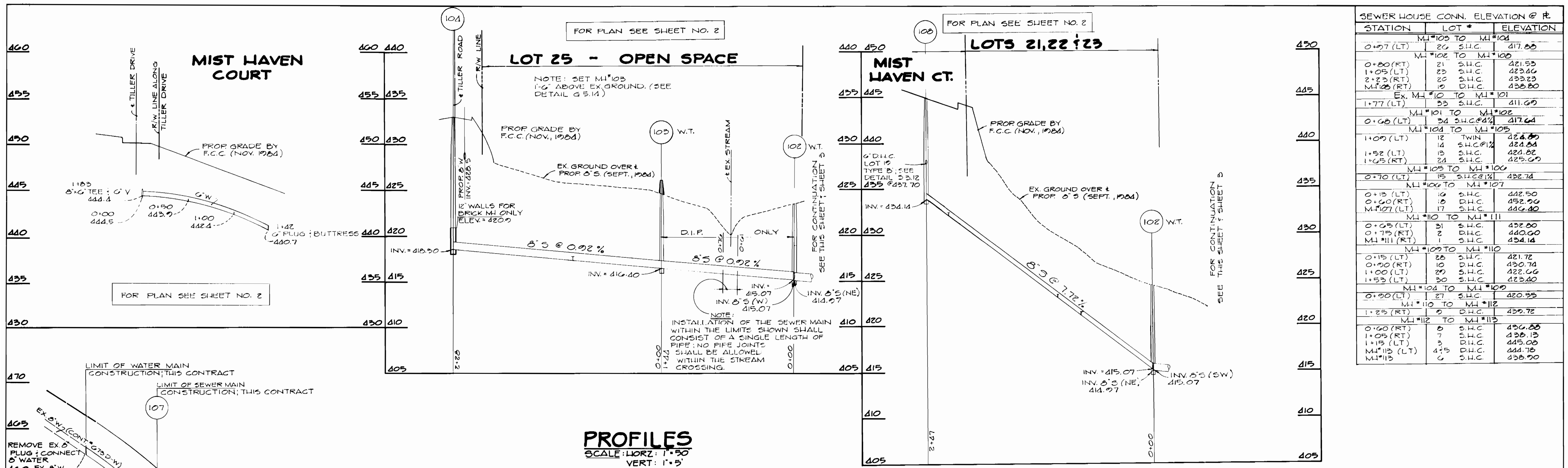
DES: D.E.V.					
DRN: D.E.V.					
CHK: T.A.F.					
DATE:	BY:	NO.	REVISION	DATE	

PLAN & PROFILES  
WATER & SEWER MAIN

600' SCALE MAP NO. 17 BLOCK NO.

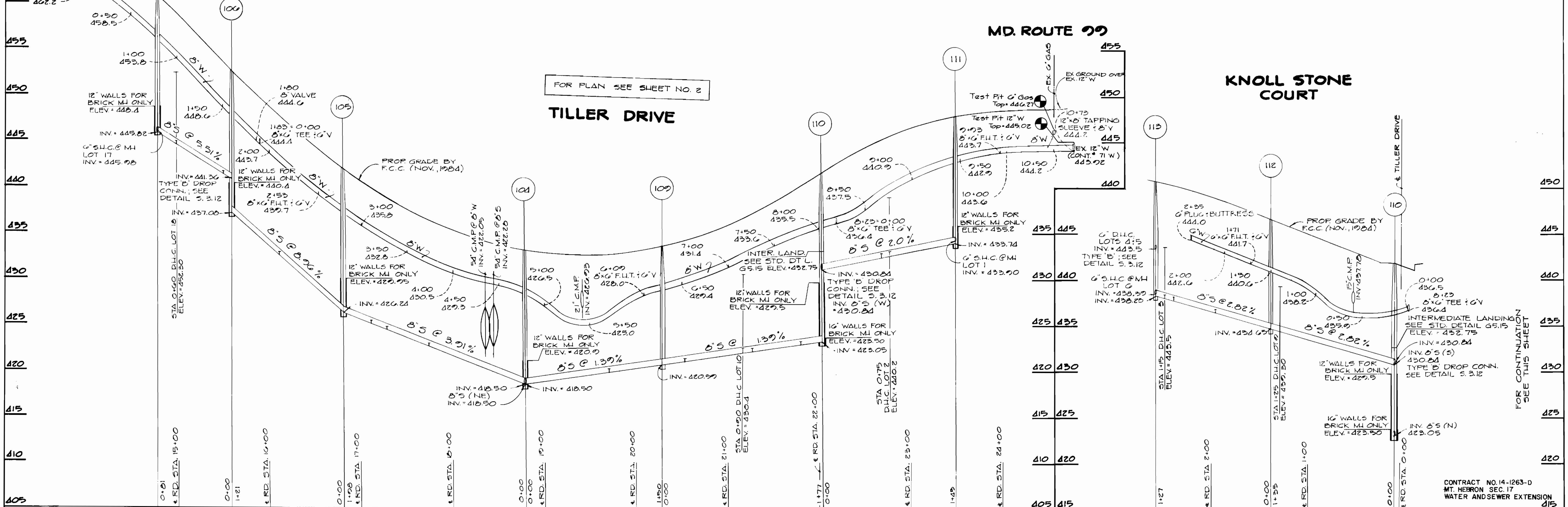
MT. HEBRON  
SECTION 17  
CONTRACT NO. 14-1263-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 3 OF 4



SEWER HOUSE CONN. ELEVATION @ #		
STATION	LOT #	ELEVATION
MI#105 TO MI#104		
0+97 (LT)	26 S.H.C.	417.85
MI#102 TO MI#100		
0+80 (RT)	21 S.H.C.	421.53
1+05 (LT)	23 S.H.C.	423.66
2+23 (RT)	20 S.H.C.	423.23
MI#102	19 D.H.C.	423.80
EX. MI#10 TO MI#101		
+77 (LT)	23 S.H.C.	411.69
MI#101 TO MI#102		
0+68 (LT)	34 S.H.C.	417.64
MI#104 TO MI#105		
1+09 (LT)	12 TWIN S.H.C.	424.80
1+52 (LT)	13 S.H.C.	424.82
1+63 (RT)	24 S.H.C.	425.09
MI#105 TO MI#100		
0+70 (LT)	15 S.H.C.	422.74
MI#100 TO MI#107		
0+13 (LT)	16 S.H.C.	422.50
0+60 (RT)	18 D.H.C.	422.96
MI#107 (LT)	17 S.H.C.	422.40
MI#110 TO MI#111		
0+65 (LT)	31 S.H.C.	422.80
0+75 (RT)	2 S.H.C.	420.60
MI#111 (RT)	1 S.H.C.	424.14
MI#102 TO MI#110		
0+15 (LT)	23 S.H.C.	421.72
0+90 (RT)	10 D.H.C.	420.74
1+00 (LT)	20 S.H.C.	422.66
1+53 (LT)	30 S.H.C.	423.40
MI#104 TO MI#109		
0+20 (LT)	27 S.H.C.	420.55
MI#110 TO MI#112		
1+25 (RT)	9 D.H.C.	422.72
MI#112 TO MI#113		
0+60 (RT)	5 S.H.C.	426.85
1+05 (RT)	7 S.H.C.	426.13
1+15 (LT)	3 D.H.C.	425.08
MI#113 (LT)	4 S.H.C.	424.78
MI#113	6 S.H.C.	426.90

PROFILES  
SCALE: HORZ: 1"=50'  
VERT: 1"=5'



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

FISHER, COLLINS, AND CARTER, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS  
8388 COURT AVENUE  
ELLICOTT CITY, MARYLAND 21043

PROFILES  
WATER & SEWER MAIN

MT. HEBRON  
SECTION 17  
CONTRACT NO. 14-1263-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

Director of Public Works  
5-27-35  
Date  
5-27-35  
Date

Terrell A. Fisher

DES: D.E.V.	
DRN: D.E.V.	
CHK: T.A.F.	
DATE:	
BY NO.	
REVISION	
DATE	