

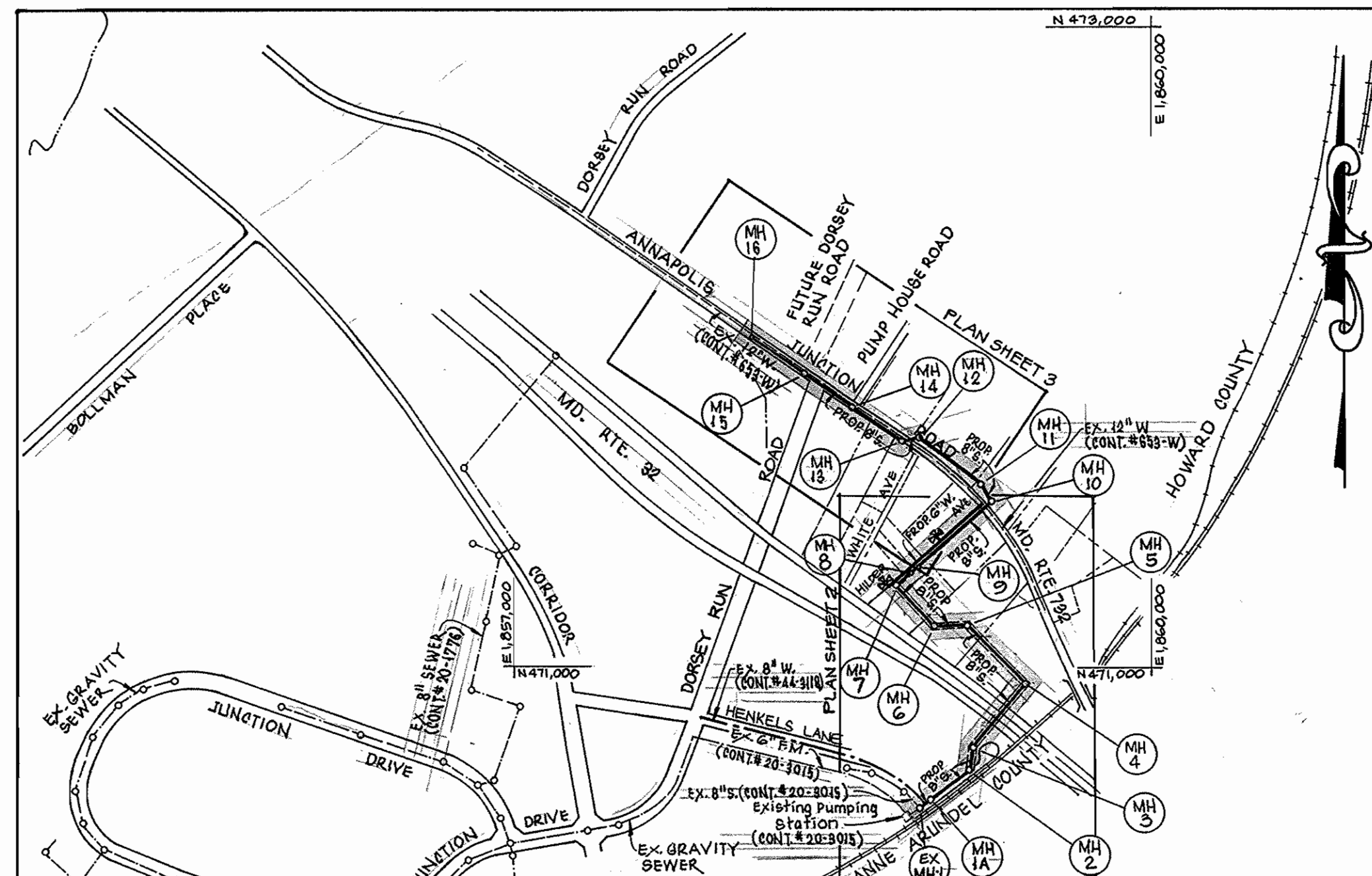
AS-BUILT 1/30/98

# ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVENUE WATER CAP. PROJ. # S-6171 CONT. #24-3417 HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

QUANTITIES					
ITEM	UNIT	QUANTITIES		TYPE MATERIAL	SUPPLIER
		ESTIM.	AS BUILT		
6" WATER	L.F.	580	580	D.I.P. CL. 52	GRIFFIN PIPE PRODUCTS INC.
6" WATER FOR F.H.	L.F.	20	20	"	"
6" VALVE	EACH	2	2	"	UNION FOUNDRY COMPANY
12" x 6" TAPPING SLEEVE AND VALVE	EACH	1	1	"	"
6" x 6" TEE	EACH	2	2	"	"
6" CAP & BUTTRESS	EACH	1	1	"	"
18" STEEL SLEEVE	L.F.	14	14	STEEL	"
FIRE HYDRANT	EACH	2	2		AMERICAN FOUNDRY COMPANY
3/4" WATER HOUSE CONNECTION	L.F.	50	50	COPPER	MUELLER INDUSTRIES INC.
STANDARD PRECAST MANHOLE	EACH	15	15	CONCRETE	MAYER BROS. INC.
DROP MANHOLE TYPE "B"	EACH	1	1	"	"
4" SEWER HOUSE CONNECTION	L.F.	828	843.8	P.V.C.	J-M PIPE INC.
8" SANITARY SEWER	L.F.	434	434	P.V.C.	"
8" SANITARY SEWER	L.F.	3296	3296	D.I.P.	GRIFFIN PIPE PRODUCTS INC.

NAME OF UTILITY CONTRACTOR:

CHECKBOX	
AS BUILT DATE	
SURVEY AND DRAFTING DIVISION	



TYPE OF BUILDING: INDUSTRIAL  
 NUMBER OF PARCELS: 19  
 WATER HOUSE CONNECTIONS: 3  
 SEWER HOUSE CONNECTIONS: 19  
 DRAINAGE AREA: LITTLE PATUXENT  
 WATER PRESSURE ZONE: 400

VICINITY MAP  
 SCALE: 1" = 600'

WATER CODE FOR COUNTY USE ONLY:  
 WATER NO. 802

SEWER CODE FOR COUNTY USE ONLY:  
 SEWER NO. 402.0000

GENERAL NOTES:

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS & SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS BASED ON U.S.G.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-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 WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORK DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 STATE HIGHWAY ADMINISTRATION - 531-5533  
 BALTO. GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620  
 BALTO. GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL - 787-9068  
 MISS UTILITY - 1-800-257-7777  
 BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900  
 CHESAPEAKE AND POTOMAC TELEPHONE CO. - 597-8585  
 COLONIAL PIPELINE CO. - 795-1390  
 AT&T - 865-3803
- 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH D.P.W. REQUIREMENTS PER SECTION 18.114(d) OF THE HOWARD COUNTY CODE.
- ALL WATER MAINS SHALL BE DUCTILE IRON PIPE CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES AJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- MANHOLES SHOWN WITH 12" & 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLE DESIGNATED W. T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME AND COVER, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.
- ALL 3/4" W.H.C. SHALL BE FOR INSIDE METER SETTING CONNECTIONS, UNLESS NOTE OTHERWISE. THE CONTRACTOR SHALL PROVIDE BALL VALVE AND BOX, HOWARD CO. STD. DETAIL W 3.29.

NOTE:  
 "SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOLUME 4, SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS."

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET, INDEX OF DRAWINGS, GENERAL NOTES
2	WATER AND SEWER PLAN
3	SEWER PLAN
4	WATER AND SEWER PROFILES
5	SEWER PROFILES
6	SEDIMENT CONTROL MEASURES AND TRAVERSE INFORMATION

**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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

*Ronald G. Lepson* DATE 6/13/96  
 SIGNATURE OF DEVELOPER  
 PRINT NAME BELOW SIGNATURE *Ronald G. Lepson*

---

**ENGINEER'S CERTIFICATE**

"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."

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS  
*J. A. [Signature]* DATE 6/13/96  
 U.S.D.A. NATURAL RESOURCES SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR THE SOIL EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* DATE 6/13/96  
 APPROVED HOWARD S.C.D.

DFI  
 504 BALTIMORE/ANNAPOLIS BLVD.  
 SEVERNA PARK, MD 21146  
 TEL (410) 647-2727

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

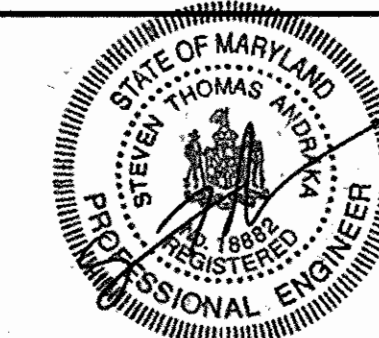
*[Signature]* DATE 6/13/96  
 DIRECTOR OF PUBLIC WORKS

*[Signature]* DATE 6-13-96  
 CHIEF, BUREAU OF ENGINEERING

*[Signature]* DATE 6-13-96  
 CHIEF, WATER & SEWER DESIGN DIVISION

**dfi** CONSULTING ENGINEERS, SURVEYORS AND LAND PLANNERS

504 BALTIMORE/ANNAPOLIS BLVD.  
 SEVERNA PARK MD 21146 647-2727



DES: M.K.D.  
 DRN: L.R.G./R.J.B.  
 CHK: S.T.A.  
 DATE: 5/96

BY	NO.	REVISION

TITLE SHEET  
 INDEX OF DRAWINGS  
 GENERAL NOTES

600' SCALE MAP NO. 48 BLOCK NO. 14, 20

M.D.E. REVOLVING LOAN FUND No. C-240994-01LE (14)

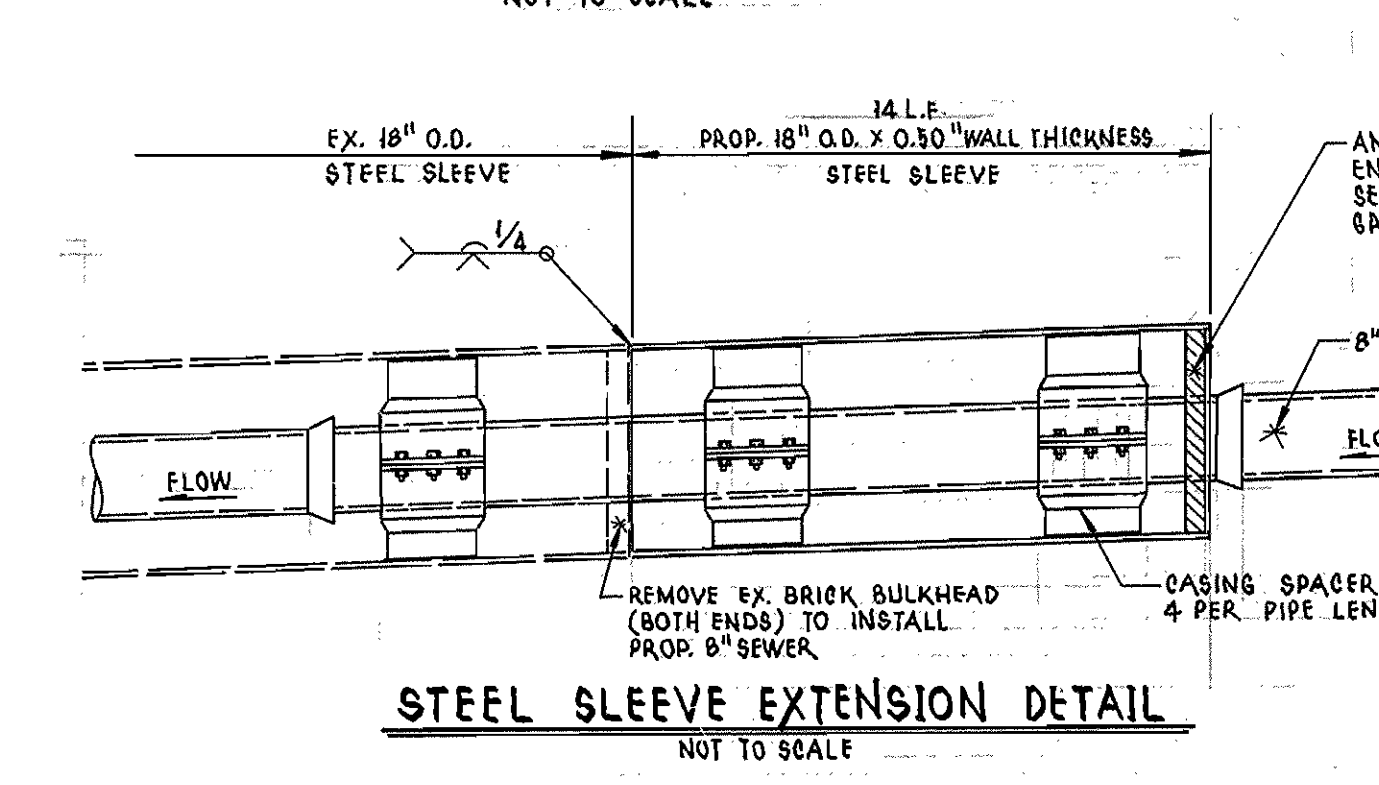
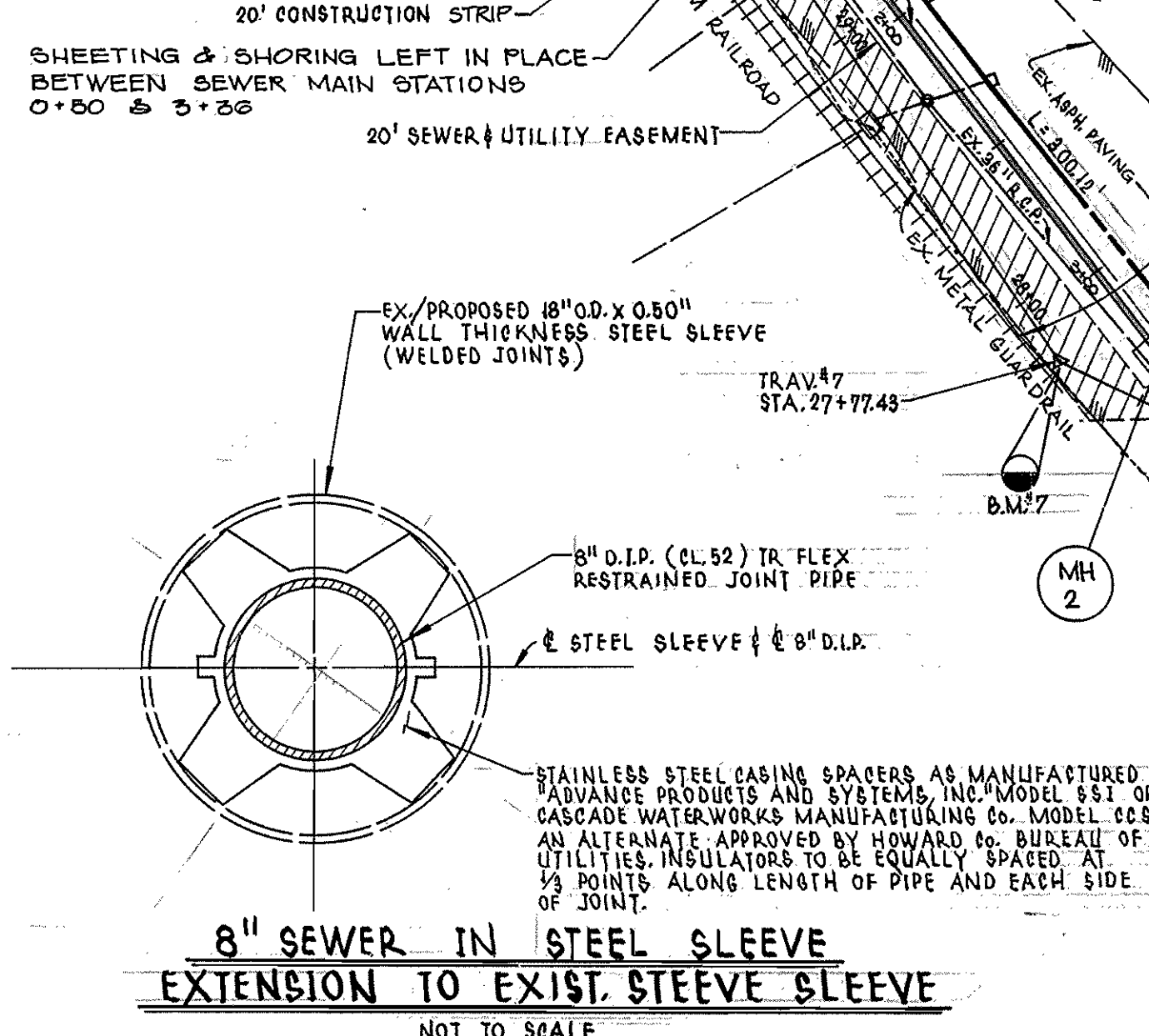
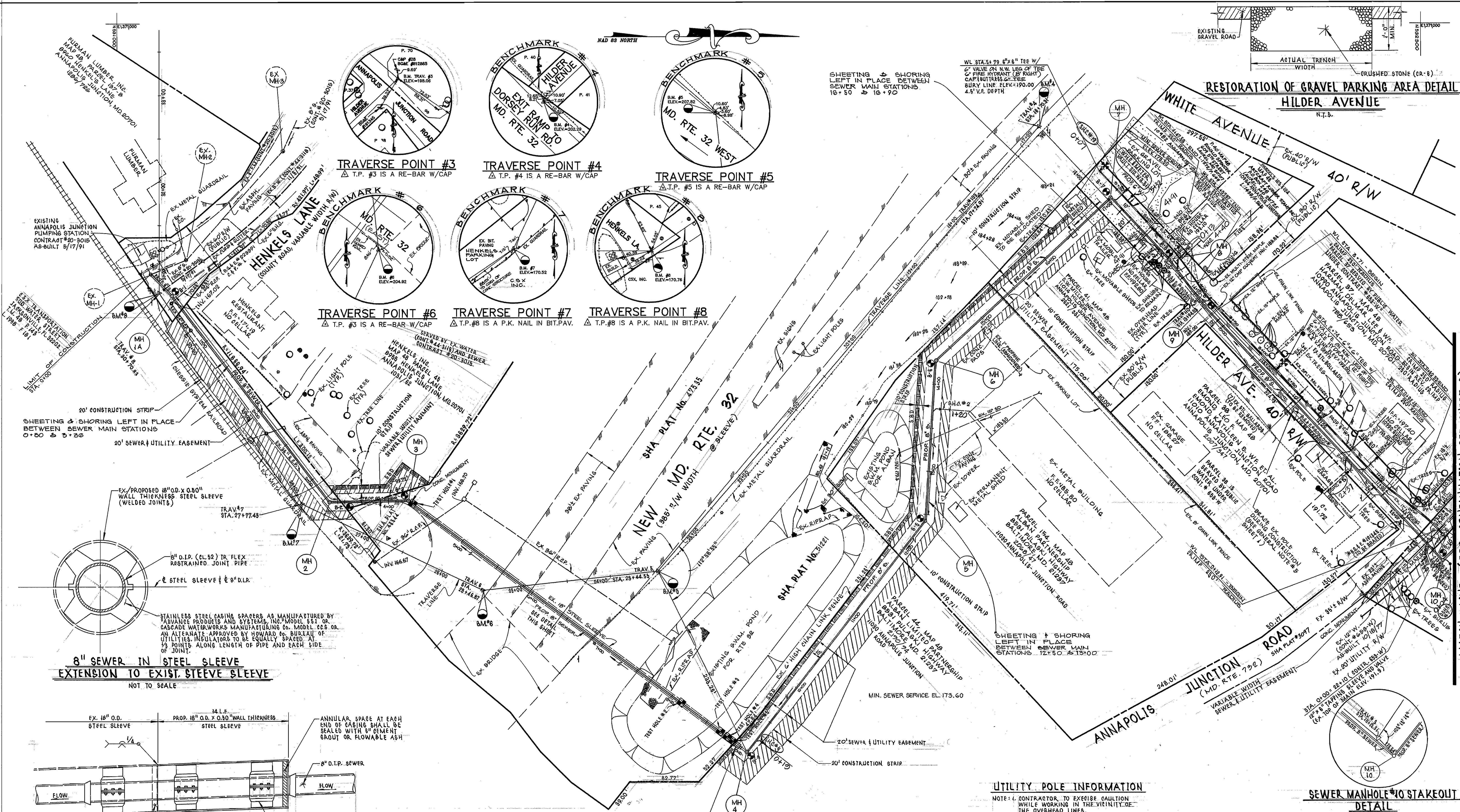
ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVENUE WATER  
 CAPITAL PROJECT S-6171  
 CONTRACT NO. 24-3417  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 6

AS-BUILT 1/30/98



AS-BUILT 1/30/98



**NOTE:**  
 ALL CONSTRUCTION BETWEEN MANHOLES MH1A AND MH2 SHALL BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 10:00PM AND 6:00AM. THE PARKING LOT FOR HENKELS RESTAURANT SHALL BE KEPT CLEAN AND CLEAR OF CONSTRUCTION EQUIPMENT, AND MATERIALS DURING NON-WORK HOURS.

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

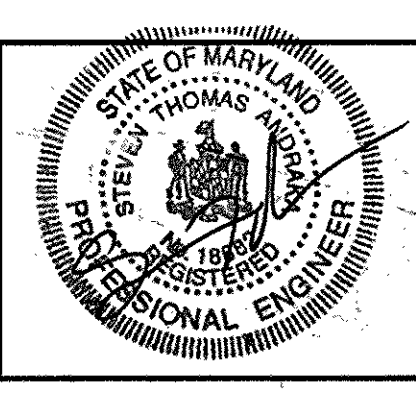
**UTILITY POLE INFORMATION**  
 NOTE: 1. CONTRACTOR TO EXERCISE CAUTION WHILE WORKING IN THE VICINITY OF THE OVERHEAD LINES.  
 2. EXISTING 8.5" E. AND OR C & P POLES TO BE GRADED (SHOW THUSLY):  
 8.5" E. # 191845  
 C & P # 28, 86, & E. # 812865  
 8.5" E. # 808605  
 8.5" E. # 808607

**SEWER MANHOLE #10 STAKEOUT DETAIL**  
 SCALE: 1" = 50'

NOTE: SEE SHEET 6 OF 6 FOR TRAVERSE POINT COORDINATES AND BEARING AND DISTANCES BETWEEN TRAVERSE POINTS.  
 NOTE: THE INVERT ELEVATIONS OF THE SEWER HOUSE CONNECTIONS AT THE PROPERTY LINE AND AT THE SEWER ARE SHOWN ON SHEET 4 OF 6.

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *Robert Deming* DATE: 6-13-96  
 Chief, Bureau of Utilities: *Robert Deming* DATE: 6-13-96

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 SEVERNA PARK, MD 21146 647-2727

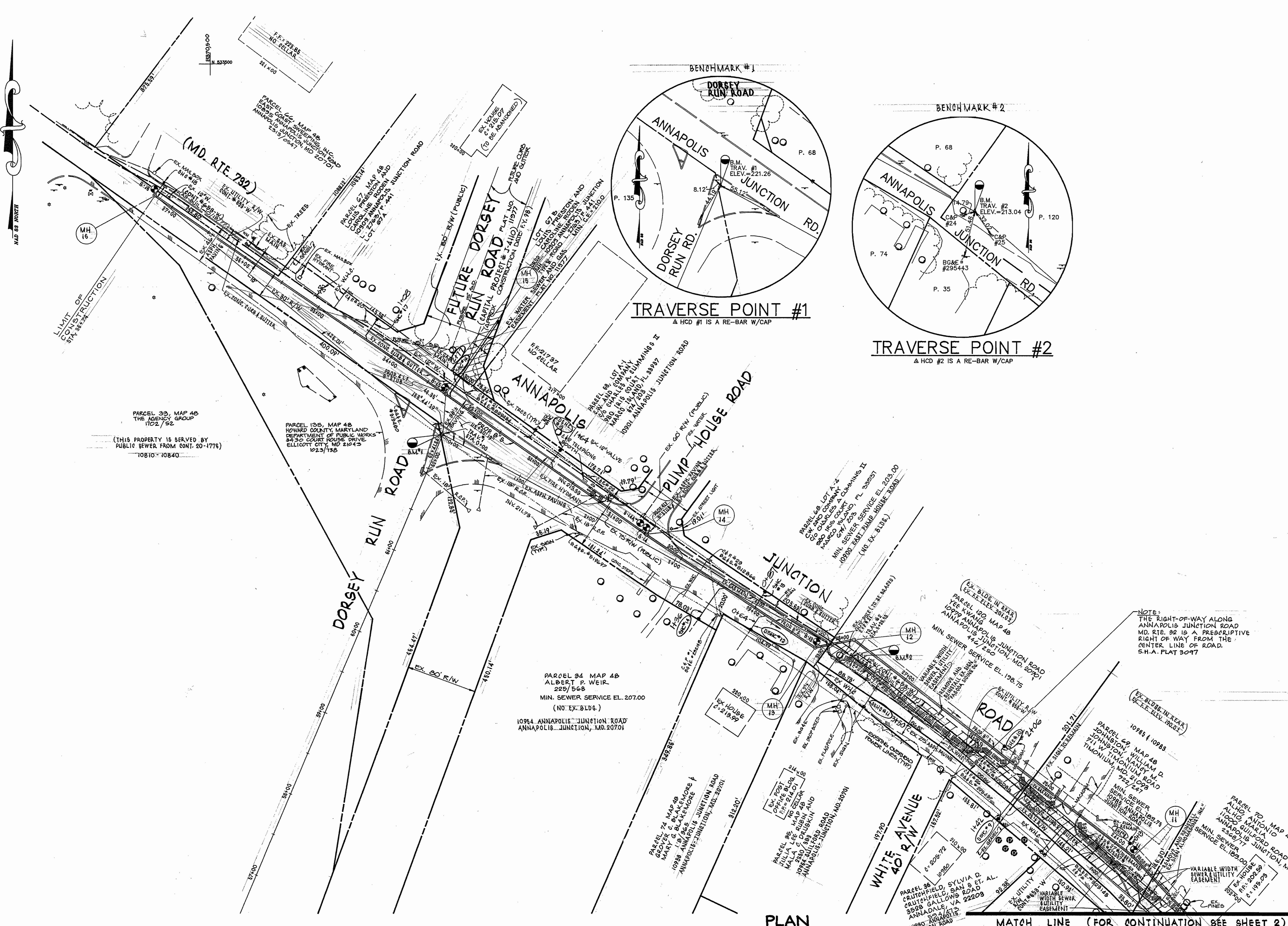


DES: M.K.D.					
DRN: L.R.C./R.J.B.					
CHK: S.T.A.					
DATE: 5/96	BY:	NO.	REVISION		

**WATER & SEWER PLAN**  
 600' SCALE MAP NO. 48 BLOCK NO. 14.20

ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVENUE WATER  
 CAPITAL PROJECT S-6171  
 CONTRACT NO. 24-3417  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN 1" = 50'  
 SHEET 2 OF 6  
 AS-BUILT 1/30/98





6" WATER MAIN STAKEOUT	
TRAVERSE STATION & OFFSET	DESCRIPTION
STA: 10+00.64	12"x6" TEE
OFFSET: 11.14 L	
STA: 9+89.27	BENCH. CIRCLE 90' RADIUS
OFFSET: 1.70 R	STA. 0+15.01
STA: 10+58.10	BENCH. CIRCLE 90' RADIUS
OFFSET: 12.78 R	STA. 0+15.01
STA: 10+47.55	END CURVE 210' RADIUS
OFFSET: 8.75 R	STA. 0+22.13
STA: 13+73.14	BENCH. CIRCLE 150' RADIUS
OFFSET: 4.81 R	STA. 5+71
STA: 14+07.15	BENCH. CIRCLE 150' RADIUS
OFFSET: 5.18 R	STA. 5+71
STA: 14+33	END CURVE 150' RADIUS
OFFSET: 14.00 R	STA. 4+47.58
STA: 15+14.03	END OF MAIN
OFFSET: 17.00 R	STA. 5+71

SEWER MAIN STAKEOUT	
TRAVERSE STATION & OFFSET	DESCRIPTION
STA: 30+58.29	SM# #1A
OFFSET: 10.28 R	
STA: 27+49.44	SM# #2
OFFSET: 15.01 R	
STA: 26+48.13	SM# #3
OFFSET: 56.87 R	
STA: SEE PLAN	SM# #4
OFFSET: FOR STAKEOUT	
STA: 20+98.51	SM# #5
OFFSET: 195.54 L	
STA: 19+52.14	SM# #6
OFFSET: 5.13 R	
STA: 14+56.48	SM# #7
OFFSET: 4.59 R	
STA: 13+49.02	SM# #8
OFFSET: 3.11 L	
STA: SEE DETAIL	SM# #10
OFFSET: SHEET 2 OF 6	
STA: 9+15.95	SM# #11
OFFSET: 37.05 L	
STA: 5+00.15	SM# #12
OFFSET: 17.63 L	
STA: 4+85.54	SM# #13
OFFSET: 11.31 R	
STA: 2+56.53	SM# #14
OFFSET: 10.00	
STA: SEE PLAN	SM# #15
OFFSET: FOR STAKEOUT	
STA: SEE PLAN	SM# #16
OFFSET: FOR STAKEOUT	

**UTILITY POLE INFORMATION**

NOTE: CONTRACTOR TO EXERCISE CAUTION WHILE WORKING IN THE VICINITY OF THE OVERHEAD LINES.

2. EXISTING B.G.E. AND OR C.A.P. POLES TO BE BRACED.  
(SHOWN THUSLY:\*)  
C & P # 21 GUY POLE  
C & P # 27, B.G.E. 475887

NOTE: THE RIGHT-OF-WAY ALONG ANNAPOLIS JUNCTION ROAD MD. RTE. 92 IS A PRESCRIPTIVE RIGHT OF WAY FROM THE CENTER LINE OF ROAD. S.H.A. PLAT 3097

NOTE: THE INVERT ELEVATIONS ON THE SEWER HOUSE CONNECTIONS AT THE PROPERTY LINE AND AT THE SEWER ARE SHOWN ON SHEET 4 OF 6.

NOTE: SEE SHEET 6 OF 8 FOR TRAVERSE POINT COORDINATES AND BEARINGS AND DISTANCES BETWEEN TRAVERSE POINTS.

ALHO PROPERTY, PARCEL 70: CONTRACTOR SHALL REPLACE ANY PORTION OF THE MACADAM DRIVEWAY DISTURBED DURING CONSTRUCTION OF THE SEWER MAIN.

PLAN SCALE: 1" = 50'

MATCH LINE (FOR CONTINUATION SEE SHEET 2)

M.D.E. REVOLVING LOAN FUND No. C-240994-OILE (14)

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 6/13/96  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 6-13-96  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 6-13-96  
CHIEF, WATER & SEWER DESIGN DIVISION DATE

**dfi** CONSULTING ENGINEERS, SURVEYORS AND LAND PLANNERS

504 BALTIMORE/ANNAPOLIS BLVD.  
SEVERNA PARK, MD 21146 847-2727



DES: M.K.D.	
DRN: L.R.C./R.I.S.	
CHK: S.T.A.	
DATE: 3/96	
BY NO.	
REVISION	3/18/97 ADDED NOTE FOR PARCEL 70

**SEWER PLAN**

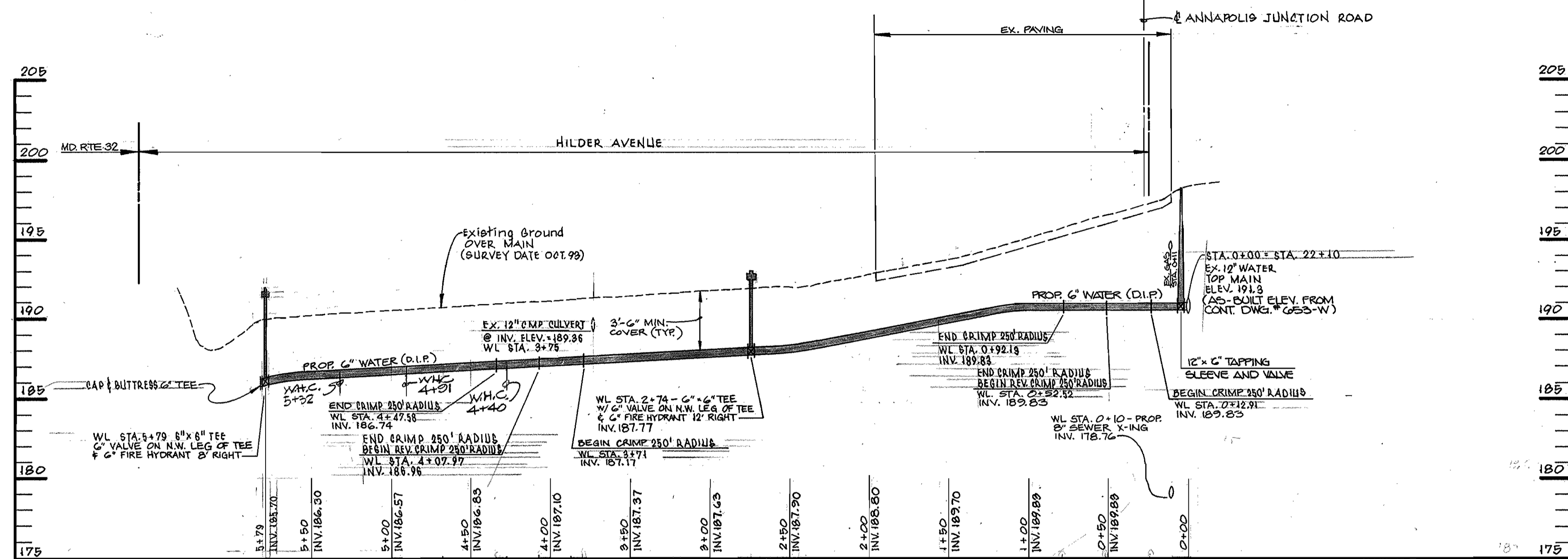
600' SCALE MAP NO. 48 BLOCK NO. 14, 20

**ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVENUE WATER**

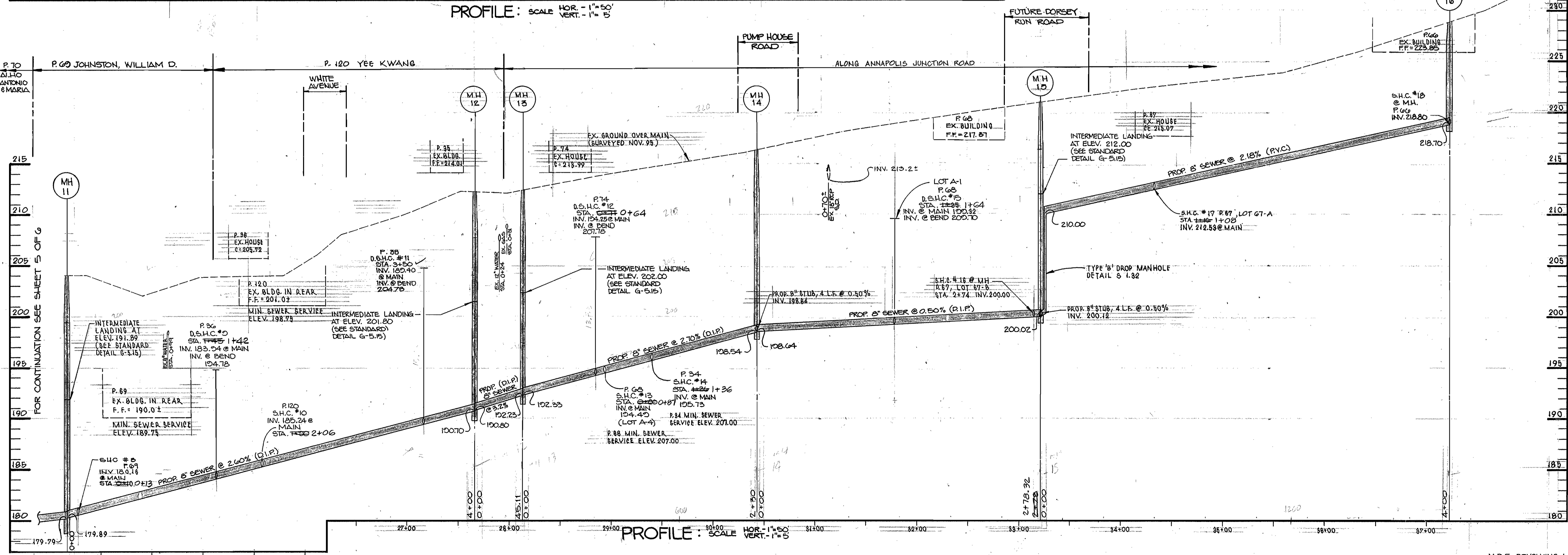
CAPITAL PROJECT S-6171  
CONTRACT NO. 24-3417  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN 1" = 50'  
SHEET 3 OF 6





PROFILE: SCALE HOR. - 1" = 50'  
VERT. - 1" = 5'



PROFILE: SCALE HOR. - 1" = 50'  
VERT. - 1" = 5'

SEWER HOUSE CONNECTIONS INVERT ELEVATIONS AT MAIN AND PROPERTY LINE		
CONNECTION NO.	INVERT @ MAIN	INVERT @ P. TO CLEANOUT
1	166.97	167.11
2	170.74	170.54
3	174.77	165.40
* 4	174.82	165.40
* 5	177.64	167.66
* 6	177.73	169.32
* 7	178.98	165.20
8	180.16	180.86
* 9	183.54	201.72
10	185.24	190.95
* 11	185.40	208.81
* 12	194.25	205.59
13	194.45	194.77
* 14	195.75	196.69
* 15	199.32	210.20
† 16	200.00	201.00
† 17	212.33	213.13
18	218.80	219.20
19	174.08	174.46

NOTE: ALL SEWER HOUSE CONNECTIONS TO BE HOWARD COUNTY STD. (S.2.1) AND CLEAN-OUTS TO BE (S.2.2) AND PLACED AT 2% SLOPE.

\* - DROP SEWER HOUSE CONNECTIONS, HOWARD COUNTY STD. (S.2.1, TYPE "A") (D.S.H.)

† - SLOPE OF S.H.C. IS 1.00%

STRUCTURE SCHEDULE				
NO.	TOP ELEV.	INV. IN	INV. IN	TYPE
EX. MH-1	170.76	159.24	159.34	EX. STD. PRECAST MH
1A	170.30	160.65	160.75	STD. PRECAST MH G.5.11
2	171.40	162.36	162.46	" " " " " "
3	172.00	163.24	163.34	" " " " " "
4	181.50	166.74	166.84	" " " " " "
5	183.20	169.61	169.71	" " " " " "
6	185.30	171.32	171.42	" " " " " "
7	191.40	173.90	174.00	" " " " " "
8	190.20	174.86	174.96	" " " " " "
9	191.10	175.93	176.03	" " " " " "
10	198.00	178.83	178.93	" " " " " "
11	204.00	179.79	179.89	" " " " " "
12	212.20	190.70	190.80	" " " " " "
13	212.40	192.23	192.33	" " " " " "
14	216.40	198.54	198.64	" " " " " "
15	221.00	200.02	210.00	TYPE "B" DROP MH S.1.32
16	223.00	218.70	" " " " " "	

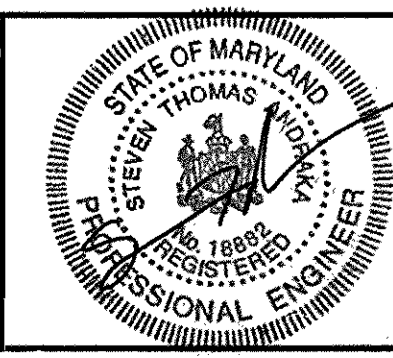
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DATE: 6/13/96  
DATE: 6/13/96

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**dfi** CONSULTING ENGINEERS, SURVEYORS AND LAND PLANNERS

504 BALTIMORE/ANNAPOLIS BLVD.  
SEVERNA PARK, MD 21146 647-2727



DES: M.K.D.					
DRN: L.R.C./R.J.B.					
CHK: S.T.A.					
DATE: 5/96	BY	NO.	REVISION		

**WATER & SEWER PROFILES**

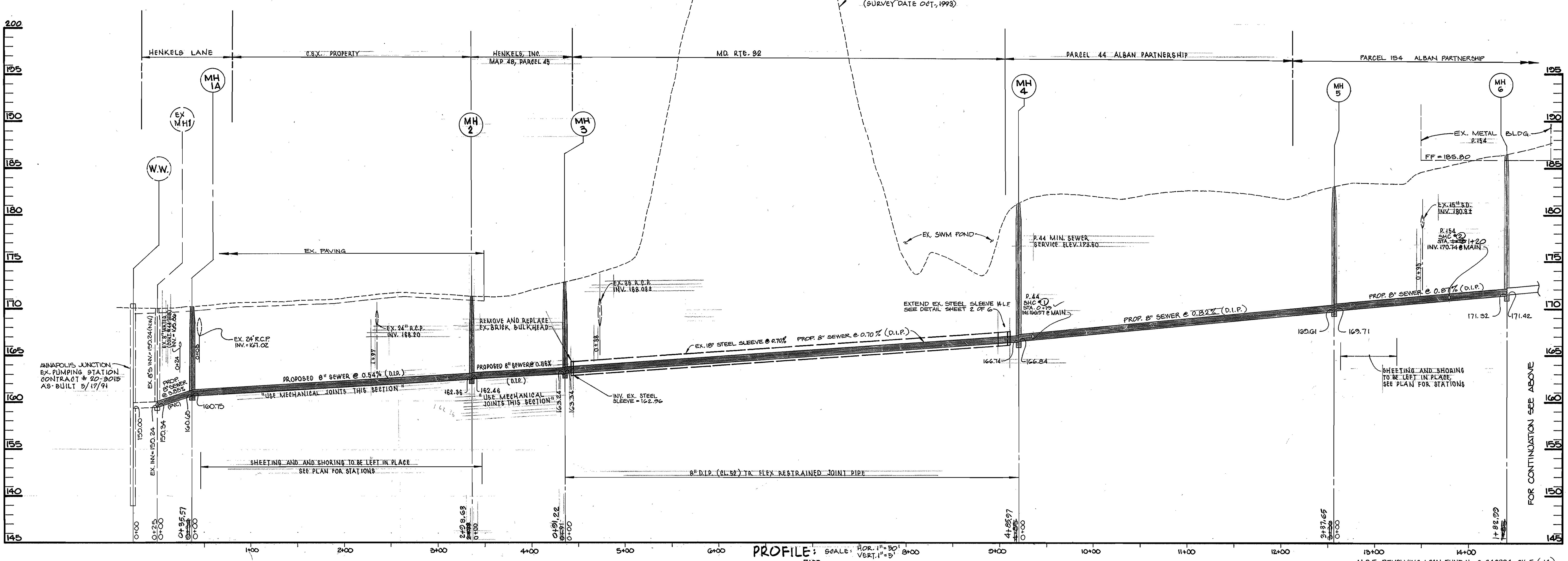
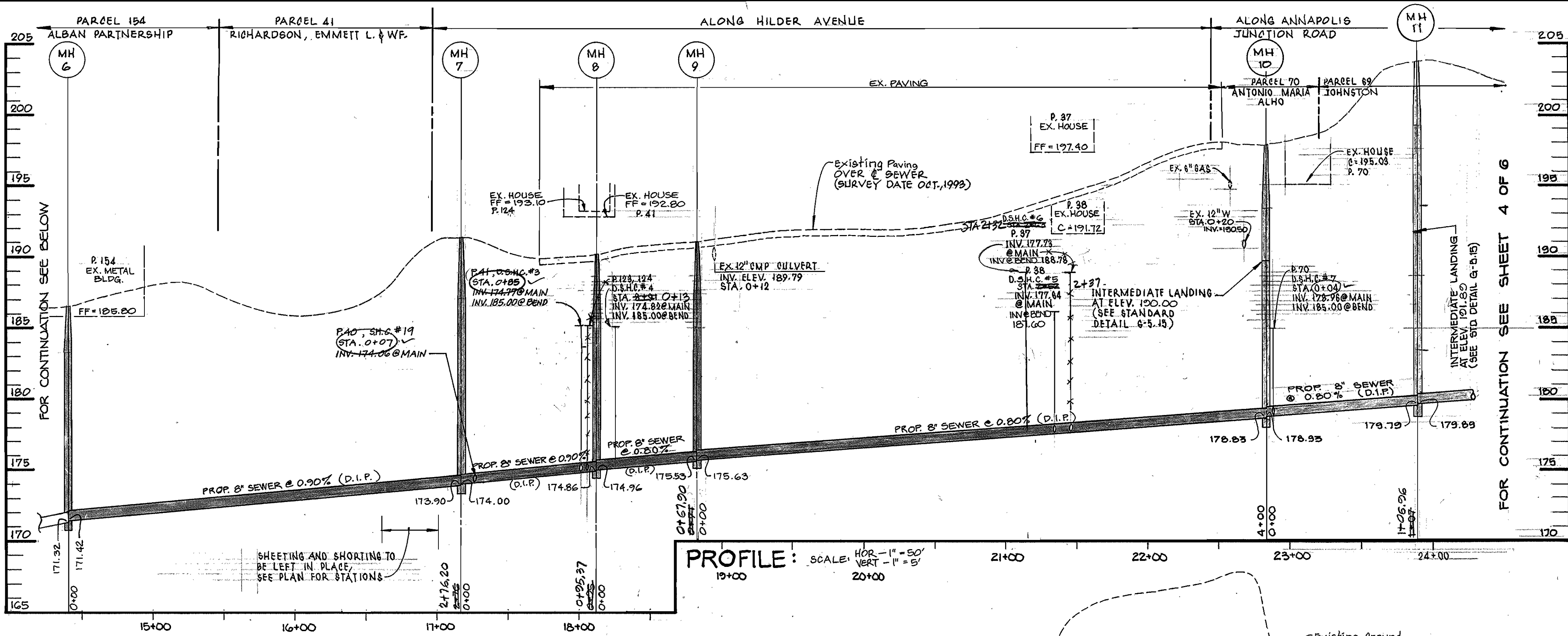
600 SCALE MAP NO. 48 BLOCK NO. 14, 20

M.D.E. REVOLVING LOAN FUND No. C-240994-01LE (14)

**ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVENUE WATER**

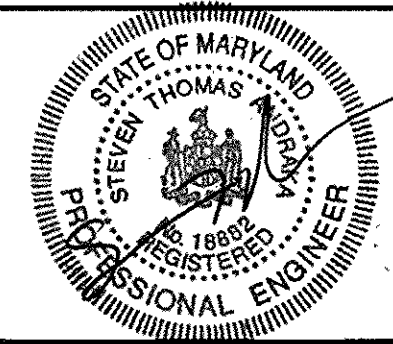
CAPITAL PROJECT S-6171  
CONTRACT NO. 24-3417  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

AS-BUILT 1/30/98



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *James J. Swann* 6/13/96  
 Chief, Bureau of Engineering: *Clifford L. Seaman* 6/13/96  
 Chief, Bureau of Utilities: *Robert J. Seaman* 6-13-96  
 Chief, Water & Sewer Design Division: *Don L. Seaman* 6-13-96

**dfi** CONSULTING ENGINEERS, SURVEYORS AND LAND PLANNERS  
 504 BALTIMORE/ANNAPOLIS BLVD.  
 SEVERNA PARK, MD 21146 847-2727



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DRN: L.R.C./R.J.S.					
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DATE: 5/98	BY:	NO.	REVISION		

**SEWER PROFILES**  
 600' SCALE MAP NO. 48 BLOCK NO. 14, 20

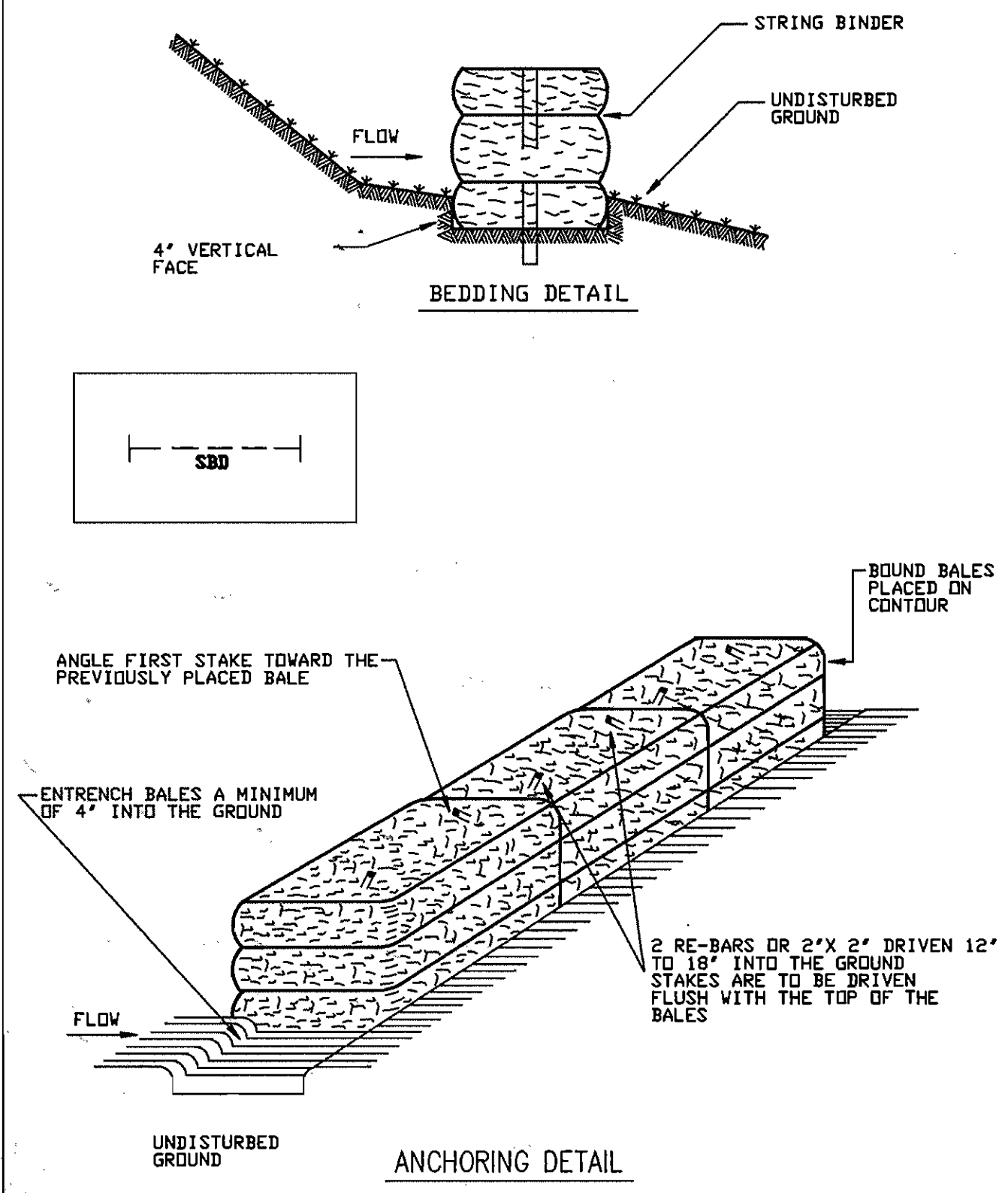
**ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVENUE WATER**  
 CAPITAL PROJECT S-6171  
 CONTRACT NO. 24-3417  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 5 OF 6

AS-BUILT 1/30/98



AS-BUILT 1/30/98

DETAIL 32 - STRAW BALE DIKE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-25-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STRAW BALE DIKE

CONSTRUCTION SPECIFICATIONS

- Bales shall be placed at the toe of a slope, on the contour, and in a row with the ends of each bale tightly abutting the adjacent bales.
- Each bale shall be entrenched in the soil a minimum of 4" and placed so the bindings are horizontal.
- Bales shall be securely anchored in place by either two stakes or re-bars driven through the bale 12" to 18" into the ground. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the top of the bale.
- Straw bale dikes shall be inspected frequently and after each rain event and maintenance performed as necessary.
- All bales shall be removed when the site has been stabilized. The trench where the bales were located shall be graded flush and stabilized.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-25-2A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TRAVERSE DESCRIPTION

POINT NO.	NORTH	EAST	BEARING	DISTANCE
1	533080	1370763		
2	532829	1371226	S 61° 31' 34" E	526.53
3	532510	1371596	S 49° 07' 27" E	488.78
4	532061	1371118	S 46° 46' 10" W	655.00
5	531622	1371630	S 49° 22' 06" E	674.24
6	531421	1371652	S 06° 18' 15" E	202.32
7	531213	1371553	S 25° 31' 08" W	230.56
8	531049	1371310	S 55° 58' 25" W	293.40

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 THE 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, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON 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 MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

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 600 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 "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND ANY REVISIONS THERETO FOR RATE AND METHODS NOT COVERED.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (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 SEC. 219 OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS AND THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND ANY REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b) 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" SEC. G-2.0.0 FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING AND MULCHING. 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.
- SITE ANALYSIS:  
TOTAL AREA OF SITE 96,477 S.F. 2.22 AC.  
AREA DISTURBED 45,225 S.F. 1.06 AC.  
AREA TO BE ROOFED OR PAVED 24,000 S.F. 0.55 AC.  
AREA TO BE VEGETATIVELY STABILIZED 22,225 S.F. 0.51 AC.  
TOTAL CUT 65,858 CU.YDS.  
TOTAL FILL 65,858 CU.YDS. (USE CUT MATERIAL FOR FILL)  
OFFSITE WASTE/BORROW AREA LOCATION: NONE
- 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 CONTROLS 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 (3) PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE/STRAW BALES ON DOWNHILL SIDE OF TRENCH.
- REFER TO SEEDING NOTES ON THIS SHEET.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT. 1 DAY
- LAYOUT ALIGNMENT AT SITE. 3 DAYS
- INSTALL SEDIMENT CONTROL DEVICE (STRAW BALES) PERPENDICULAR TO THE CURB/EDGE OF PAVEMENT ON THE DOWN-SLOPE SIDE OF CONSTRUCTION. 1 WEEK
- EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE. 5 WEEKS
- INSTALL WATER MAIN AND SEWER MAIN. 5 WEEKS
- BACKFILL TRENCH AND RESURFACE WITH TEMPORARY BITUMINOUS PAVING WHERE NEEDED. 5 WEEKS
- CLEAN UP CONSTRUCTION SITE. 1 DAY
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR.

RESTORATION SCHEDULE

LOCATION	LENGTH	MATERIAL
<b>WATER</b>		
8" WATER STA. 0+00 TO STA. 0+10	10'	SEED & MULCH
STA. 0+10 TO STA. 0+40	30'	S.H.A. PAVING
STA. 0+40 TO STA. 2+00	160'	HO. CO. PAVING P-2
STA. 2+00 TO STA. 4+15	215'	(LT) HO. CO. PAVING P-2 (RT) SEED & MULCH
STA. 4+15 TO STA. 4+30	15'	(LT) HO. CO. PAVING P-2 (RT) 12" GRAVEL
STA. 4+30 TO STA. 4+77	47'	(RT) GRAVEL (SHEET 2 OF 3)
<b>SEWER</b>		
EX. MH1 STA. 0+00 TO STA. 3+25	325.00'	HO. CO. PAVING P-3
STA. 3+25 TO STA. 3+70	45.00'	SEED & MULCH
STA. 3+70 TO STA. 4+30	60.00'	(LT) SEED & MULCH; (RT) HOWARD CO. PAVING P-3
STA. 4+70 TO STA. 16+67	797.00'	SEED & MULCH
STA. 16+67 TO STA. 17+60	93.00'	12" GRAVEL (DETAIL SHEET 2 OF 3)
STA. 17+60 TO STA. 19+15	155.00'	(LT) HO. CO. PAVING P-2; (RT) SEED & MULCH
STA. 19+15 TO STA. 20+00	85.00'	HO. CO. PAVING P-2
STA. 20+00 TO STA. 20+30	30.00'	(LT) HO. CO. PAVING P-2; (RT) SEED & MULCH
STA. 20+30 TO STA. 20+80	50.00'	HO. CO. PAVING P-2
STA. 20+80 TO STA. 22+10	130.00'	(LT) HO. CO. PAVING P-2; (RT) SEED & MULCH
STA. 22+10 TO STA. 22+37	27.00'	S.H.A. PAVING
STA. 22+37 TO STA. 23+00	63.00'	SEED & MULCH
STA. 23+00 TO STA. 23+20	20.00'	12" GRAVEL (DETAIL SHEET 2 OF 3)
STA. 23+20 TO STA. 24+52.50	132.50'	SEED & MULCH
STA. 24+52.50 TO STA. 24+77	24.50'	HO. CO. PAVING P-3
STA. 24+77 TO STA. 25+34	57.00'	SEED & MULCH
STA. 25+34 TO STA. 25+53.50	19.50'	HO. CO. PAVING P-3
STA. 25+53.50 TO STA. 28+06	252.50'	SEED & MULCH
STA. 28+06 TO STA. 37+29.98	923.98'	S.H.A. PAVING

PERMANENT PAVING SPECIFICATIONS  
 HOWARD COUNTY PAVING:  
 HILDER AVENUE R 2.01 SEC. P-2  
 HENKELS LANE R 2.01 SEC. P-3  
 AND PARKING LOT  
 S.H.A. PAVING: 2" BIT. CONC. SURFACE COURSE (60)  
 10" PORTLAND CEMENT CONC. BASE (MIX NO. 6)  
 PER MSHA DETAIL NO. MD-178.01

MDE REVOLVING LOAN FUND NO. C-240994-OILE (14)

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works DATE 6/13/96  
 Chief, Bureau of Engineering DATE 6/13/96  
 Chief, Bureau of Utilities DATE 6/13/96  
 Chief, Water and Sewer Design Division DATE

CONSULTING ENGINEERS, SURVEYORS AND LAND PLANNERS  
 dfi  
 504 BALTIMORE/ANNAPOLIS BLVD.  
 SEVERNA PARK, MD 21146 847-2727

STATE OF MARYLAND  
 REGISTERED PROFESSIONAL ENGINEER  
 THOMAS J. STEVENS  
 LICENSE NO. 18880

DES: M.K.D.				
DRN: L.R.C./R.J.S.				
CHK: S.T.A.				
DATE: 5/96				
BY	NO.	REVISION		

SEDIMENT CONTROL MEASURES & TRAVERSE INFORMATION  
 600' SCALE MAP NO. 48 BLOCK NO. 14 & 20

ANNAPOLIS JUNCTION COLLECTOR SEWER & HILDER AVE. WATER  
 CAPITAL PROJECT S-6171  
 CONTRACT NO. 24-3417  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 6 OF 6

AS-BUILT 1/30/98