HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
ELLICOTT CITY, MARYLAND 21043

QUANTITIES

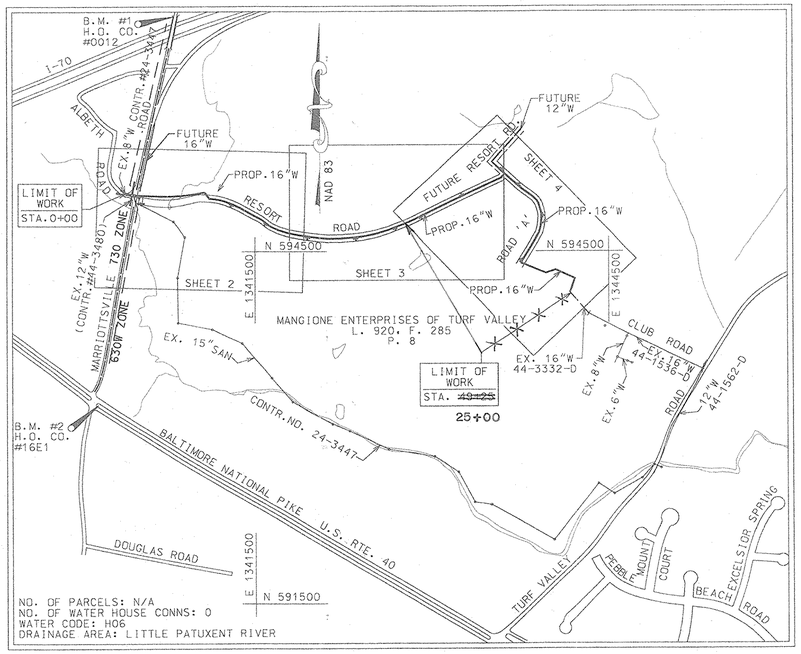
ITEM	UNIT	ESTIMATE	AS-BUILT	SUPPLIER
16" WATER MAIN D.I.P. CL. ~~52~~ 54	L.F.	~~1,615~~ 2,135	2,135	U.S. PIPE
8" WATER MAIN D.I.P. CL. ~~52~~ 54	L.F.	~~240~~ 210	214	U.S. PIPE
6" WATER MAIN D.I.P. CL. ~~52~~ 54	L.F.	320	128	U.S. PIPE
16" VALVE	EA.	~~2~~ 3	3	BRS
12" VALVE	L.F.	~~1~~	—	
8" VALVE	EA.	~~5~~ 6	5	BRS
6" VALVE	EA.	~~12~~ 6	6	BRS
16"x16"x16" TEE	EA.	~~2~~ 0	—	
16"x16"x8" TEE	EA.	~~5~~ 4	5	BRS
16"x16"x6" TEE	EA.	~~12~~ 6	6	BRS
FIRE HYDRANT	EA.	~~11~~ 6	6	BRS
16",1/4 BEND	EA.	~~2~~ 0	—	
16",1/8 BEND	EA.	~~8~~ 3	4	BRS
16",1/16 BEND	EA.	~~4~~ 2	2	BRS
16",1/32 BEND	EA.	~~3~~ 1	—	
~~AIR RELEASE VALVE & MH 1" VALVE~~	~~EA.~~	~~1~~		
16" BUTTRESS	EA.	~~2~~ 1	1	
16" SPACER	EA.	1	1	
12" SPACER	EA.	1	1	
16" x 12" REDUCER	EA.	1	1	BRS
16" CAP	EA.	~~2~~ 1	1	BRS
8" CAP	EA.	5	5	BRS
~~12" TAPPING SLEEVE & VALVE~~	~~EA.~~	~~1~~		
~~16" TAPPING SLEEVE & VALVE~~	~~EA.~~	~~1~~		
24" ~~42"~~ DIA. STEEL CASING w/ 16" WATER MAIN	L.F.	60 ~~320~~	60	U.S. PIPE

TRAVERSE DATA

HEC TRAV. PT.	NORTHING	EASTING
1	594999.2219	1340529.8178
2	595339.5218	1340610.5705
3	594886.2227	1340673.4322
4	594841.2378	1340931.5870
5	594887.0410	1341121.4400
6	594932.6897	1341261.3725
7	594717.3174	1341398.9802
8	594739.4805	1341606.7414
9	594729.9717	1341738.5489
10	594644.2991	1341926.7350
11	594709.2273	1342105.7756
12	594748.8187	1342287.1447
13	594808.3117	1342418.7360
14	594914.7467	1342528.1181
15	595028.5692	1342689.3000
16	595220.1096	1342903.5083
17	595308.1401	1343197.4286
18	595326.7522	1343348.3856
19	595197.5523	1343461.7136
20	594880.4346	1344001.8589
21	594253.9210	1344173.3305
22	593811.9146	1344549.4725
23	593466.5461	1345349.7269
24	593157.7211	1345102.6813

WATER STAKEOUT TABLE

RESORT ROAD		COORDINATES	
ITEM	STATION	NORTHING	EASTING
12"x 12"T.S.& VALVE	0+00	594993.05	1340513.00
~~16",1/32 VERT.BEND~~	~~0+12~~	~~594990.34~~	~~1340524.08~~
~~16",1/32 VERT.BEND~~	~~0+62~~	~~594985.37~~	~~1340572.42~~
16"x 16"x 6"TEE	1+09	594968.63	1340618.54
16",1/32 HOR.BEND	2+34	594941.81	1340740.03
16",1/16 VERT.BEND	2+42	594941.75	1340748.03
16",1/16 VERT.BEND	2+72	594941.37	1340778.03
42"ST.CASING PIPE	2+85	594941.21	1340789.38
42"ST.CASING PIPE	6+05	594936.91	1341108.54
16",1/8 HOR.BEND	6+07	594936.86	1341112.13
16",1/8 VERT.BEND	6+55	594904.63	1341143.71
16",1/8 HOR.BEND	7+12	594860.21	1341187.23
16"x 16"x 6"TEE	9+00	594837.06	1341375.04
16"x 16"x 6"TEE	9+72	594814.45	1341442.67
16"x 16"x 8"TEE	10+20	594794.82	1341487.26
16"GATE VALVE	10+87	594764.42	1341543.38
16"x 16"x 8"TEE	11+35	594739.36	1341587.14
16"x 16"x 8"TEE	12+70	594674.97	1341704.27
16"x 16"x 6"TEE	12+95	594663.25	1341729.08
16"x 16"x 6"TEE	16+00	594578.05	1342020.46
16"x 16"x 6"TEE	19+28	594581.67	1342347.35
16"x 16"x 6"TEE	23+17	594696.75	1342720.03
16"x 16"x 8"TEE	24+55	594743.01	1342847.86
16"x 16"x 6"TEE	26+97	594825.91	1343076.92
16"x 16"x 6"TEE	30+22	594951.53	1343383.17
16",1/8 HOR.BEND	33+20	595050.32	1343664.06
16"x 16"x 16"TEE	33+60	595082.23	1343689.32
16"x 16"x 6"TEE	34+48	595027.98	1343757.88
16"x 16"x 6"TEE	38+50	594686.76	1343917.79
16"x 16"x 8"TEE	39+25	594616.16	1343894.59
16"x 16"x 6"TEE	42+30	594360.78	1343745.07
16"x 16"x 16"TEE	42+40	594340.33	1343739.46
16",1/32 HOR.BEND	43+16	594322.73	1343811.74
AIR RELEASE MANHOLE	44+70	594266.02	1343953.27
16",1/8 HOR.BEND	45+35	594240.96	1344013.16
16",1/8 HOR.BEND	46+02	594276.78	1344070.19
16",1/16 HOR.BEND	46+70	594263.20	1344138.12
16",1/8 HOR.BEND	47+68	594210.85	1344220.36
16",1/8 HOR.BEND	47+79	594198.59	1344223.87
16",1/16 HOR.BEND	48+90	594095.72	1344183.91
16"x 16"T.S.& VALVE	49+25	594074.79	1344162.12



NO. OF PARCELS: N/A
NO. OF WATER HOUSE CONNS: 0
WATER CODE: H06
DRAINAGE AREA: LITTLE PATUXENT RIVER

VICINITY MAP
SCALE: 1"=600'

SURVEY CONTROL

B.M. #1 - HOWARD COUNTY SURV. CONTROL STA. NO 0012-CONC. MON. @SURFACE 6.84' W. OF N.W. COR. OF BRIDGE FOR MARRIOTTSVILLE RD. OVER I-70 NORTH.

N 596,502.7603 ELEV. 486.822
E 1,340,864.365

B.M.#2 - HOWARD COUNTY SURV. CONTROL STA. NO. 16E1-CONC.MON.0.6' BELOW SURFACE @ N.E. COR. OF INTERSECTION OF MARRIOTTSVILLE RD. & E.B.L. OF U.S. RTE.40. 9' FROM THE EDGE OF MARRIOTTSVILLE RD. & 8.6' FROM THE EDGE OF E.B.L. U.S. RTE. 40.

N 593,250.9322 ELEV. 464.550
E 1,340,192.711

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 SHOWN ARE BASED ON MARYLAND STATE COORDINATES, NAD 83.
3. ALL VERTICAL CONTROLS ARE BASED ON NGVD 29.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS. UNLESS OTHERWISE NOTED.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 6" 12", CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED.
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 (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT LOCATION OF TEST PITS. A NOTE OR NOTES CONTAINING THE RESULT OF THE TEST 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 THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS PRIOR TO STARTING WORK SHOWN ON THESE PLANS:

   AT&T.....1-800-526-2000
   VERIZON-MD.....1-800-446-5266
   STATE HIGHWAY ADMINISTRATION.....410-531-5533
   BALTIMORE GAS ELECTRIC CO. CONTRACTOR SERVICES.....410-850-4620
   BALTIMORE GAS ELECTRIC CO. UNDERGROUND DAMAGE CONTROL.410-291-4607
   BALTIMORE GAS ELECTRIC CO. TROUBLE SHOOTING.....410-298-9001
   MISS UTILITY.....1-800-257-7777
   COLONIAL PIPELINE.....410-549-4120
   BUREAU OF UTILITIES. HOWARD CO. DEPT. OF PUBLIC WORKS.410-313-4900

9. 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.
10. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE FOR CONSTRUCTION OF THE MAIN AND SERVICE CONNECTIONS.
11. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
12. TRENCH REPAIRS TO BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAILS.
13. ALL WORK WILL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL SECTION 219.
14. LENGTH OF OPEN TRENCH WILL BE LIMITED TO THAT WHICH CAN BE FILLED AND STABILIZED WITHIN ONE WORKING DAY.
15. ALL FIRE HYDRANTS ARE TO BE SET 3 FT. FROM BACK OF CURB. SEE DETAIL W 1.11.
16. ALL WATER MAINS SHALL BE D.I.P., CLASS 54 ~~52~~, UNLESS OTHERWISE NOTED.
17. TOP OF WATER MAIN PIPE TO HAVE A MINIMUM OF 4.0' OF COVER UNLESS OTHERWISE NOTED.
18. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
19. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR IN THE DRAWING.
20. FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANTS SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
21. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM. CALL HOWARD COUNTY BUREAU OF UTILITIES AT 410-313-4900, COORDINATE THE TIE-IN TO THE EXISTING WATER MAIN AT LEAST FIVE WORKING DAYS PRIOR TO SCHEDULING.
22. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY AT 410-313-7450 AT LEAST 5 WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING / JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER MAINS AND HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(c.) OF THE HOWARD COUNTY CODE.
23. SOIL BORING LOCATIONS ARE SHOWN THUS B-1.
24. TO PROTECT IMPORTANT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED, AS DETERMINED BY THE CLASSIFICATION OF THE STREAM, AS FOLLOWS:
    USE I WATERS IN-STREAM WORK MAY NOT BE CONDUCTED DURING PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
25. ALL GRADING SHOWN IS EXISTING, UNLESS OTHERWISE NOTED.
26. MASS GRADING FOR RESORT ROAD APPROVED UNDER WP-02-96 ON NOVEMBER 1, 2002. GRADING PERMIT NO. G00008602.

ALBETH HEIGHTS WATER TRANSMISSION MAIN

CAPITAL PROJECT W-8195
CONTRACT NO. 44-3724

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN - 16" WATER MAIN
3	PLAN - 16" WATER MAIN
~~4~~	~~PLAN - 16" WATER MAIN~~
5	PROFILE - 16" WATER MAIN
6	PROFILE - 16" WATER MAIN
~~7~~	~~PROFILE - 16" WATER MAIN~~
~~8~~	~~PROFILE - 16" WATER MAIN~~
9	SOIL EROSION & SEDIMENT CONTROL
10	SOIL EROSION & SEDIMENT CONTROL
~~11~~	~~SOIL EROSION & SEDIMENT CONTROL~~
12	S.E. & S.C. DETAIL SHEET

AS-BUILT 09/07

DEVELOPERS 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 CERTIFICATION OF ATTENDANCE AT A MARYLAND DEPARTMENT OF ENVIROMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

9/20/05
BUREAU OF ENGINEERING DATE
DEPARTMENT OF PUBLIC WORKS

ENGINEERS CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRATICAL 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."

H.E. Hicks, P.E.
HICKS ENGINEERING COMPANY, INC.
ENGINEERS - SURVEYORS - PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286 TEL (410)494-0001

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

1/23/07
APPROVED, HOWARD COUNTY S.C.D. DATE

REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS

1/23/07
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

NONTIDAL WETLANDS NO.
JOINT PERMIT APPLICATION TRACKING NO. 199960075
NATIONWIDE PERMIT #12
WATER QUALITY CERTIFICATION (88-6WQC-001R)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

9/20/05 — DIRECTOR OF PUBLIC WORKS DATE
9/20/05 — CHIEF, BUREAU OF ENGINEERING DATE
9/20/05 — CHIEF, BUREAU OF UTILITIES DATE
9-20-05 — CHIEF, WATER & SEWER DIVISION DATE

HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 8976 — REGISTERED PROFESSIONAL ENGINEER

DES: F.W.
DRN: JPM
CHK: DEH
DATE: 9/13/04

BY	NO.	REVISION	DATE
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	9/12/05
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	7/8/05
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	3/05

TITLE SHEET

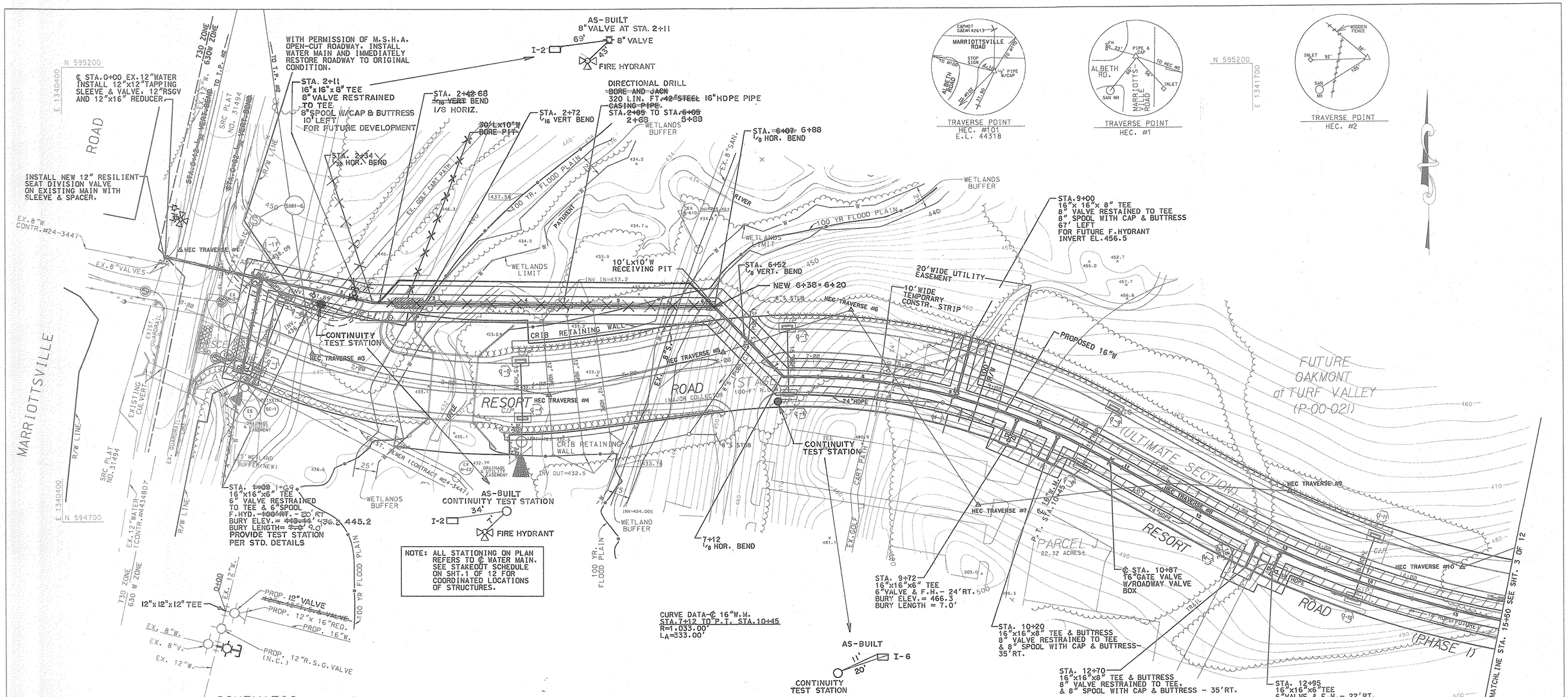
600' SCALE MAP NO. W-16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 1 OF 12

H.E.C. #93110

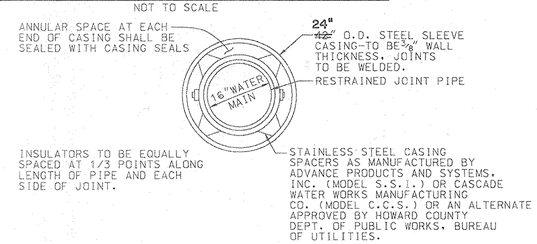


SCHEMATIC PLACEMENT OF DIVISION VALVE

NOT TO SCALE

PLAN

SCALE: 1"=50'



DETAIL FOR TRENCHLESS EXCAVATION CROSSING @ LITTLE PATUXENT RIVER

NOT TO SCALE

ADDITIONAL FITTINGS

STA.	DESCRIPTION
2+08	1/8 HB-16"
2+20	1/8 HB-16"
2+26	16" HDPE ADAPTER
5+94	1/8 HB-16"@HDPE ADAPTER
6+00	1/16 HB-16"
6+68	1/16 HB-16"

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/30/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05
CHIEF, BUREAU OF UTILITIES — DATE 9/26/05
CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05

HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS No. 6818 REGISTERED PROFESSIONAL ENGINEER

DES: FW					
DRN: JPM					
CHK: DEH	HEC		REVISED PER HOWARD COUNTY'S COMMENTS	9/12/05	
	HEC		REVISED PER HOWARD COUNTY'S COMMENTS	7/8/05	
DATE: 9/13/04	HEC		REVISED PER HOWARD COUNTY'S COMMENTS	3/05	
	BY	NO.	REVISION	DATE	

PLAN
16" WATER MAIN

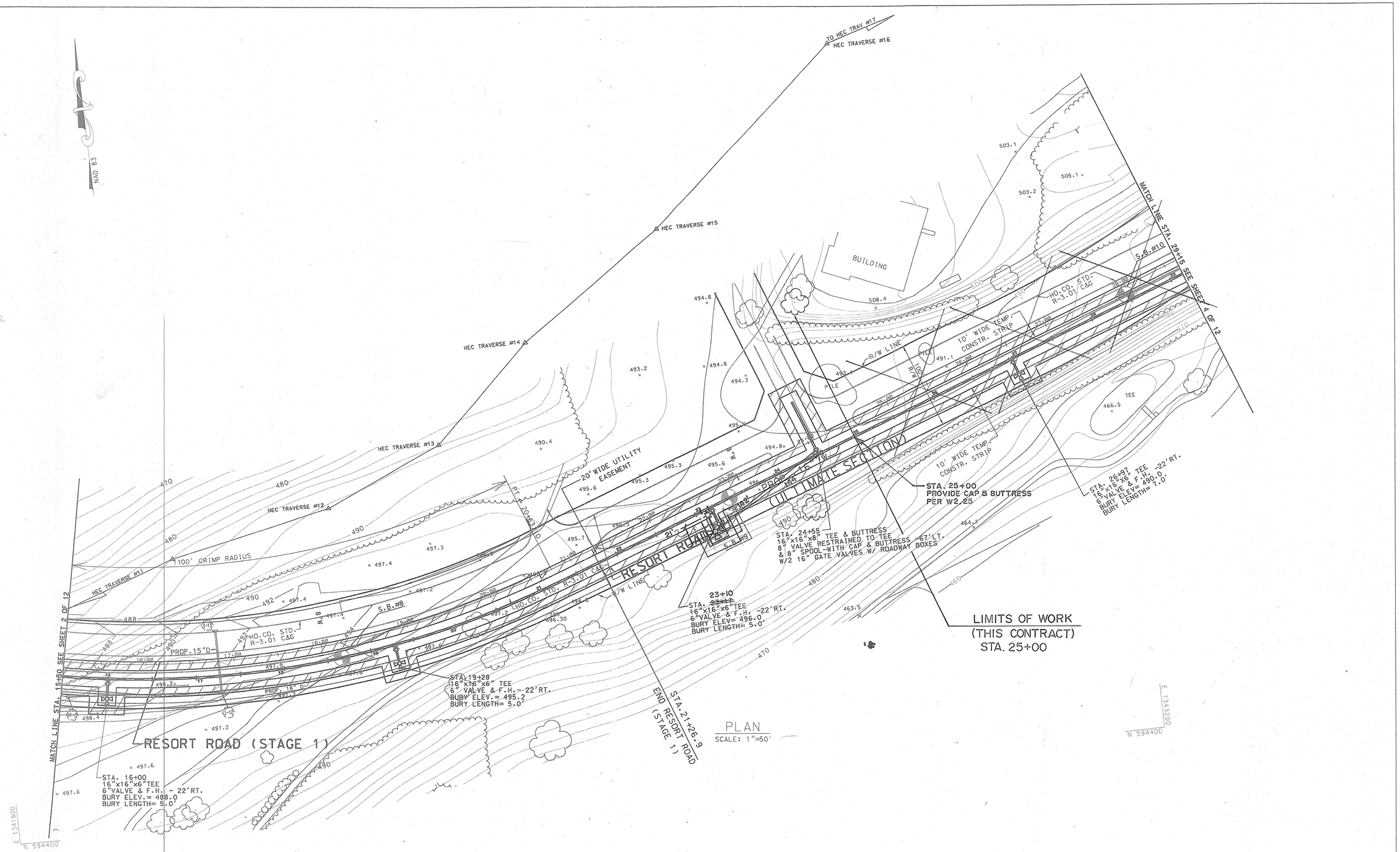
600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 2 OF 12

H.E.C. JOB #93110



PLAN
SCALE: 1"=50'

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/30/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05
CHIEF, BUREAU OF UTILITIES — DATE 9/26/05
CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05

HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 6818 — REGISTERED PROFESSIONAL ENGINEER

DES: FW
DRN: JPM
CHK: DEH
DATE: 9/13/04

BY	NO.	REVISION	DATE
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	9/12/05
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	7/8/05
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	3/05

PLAN
16" WATER MAIN

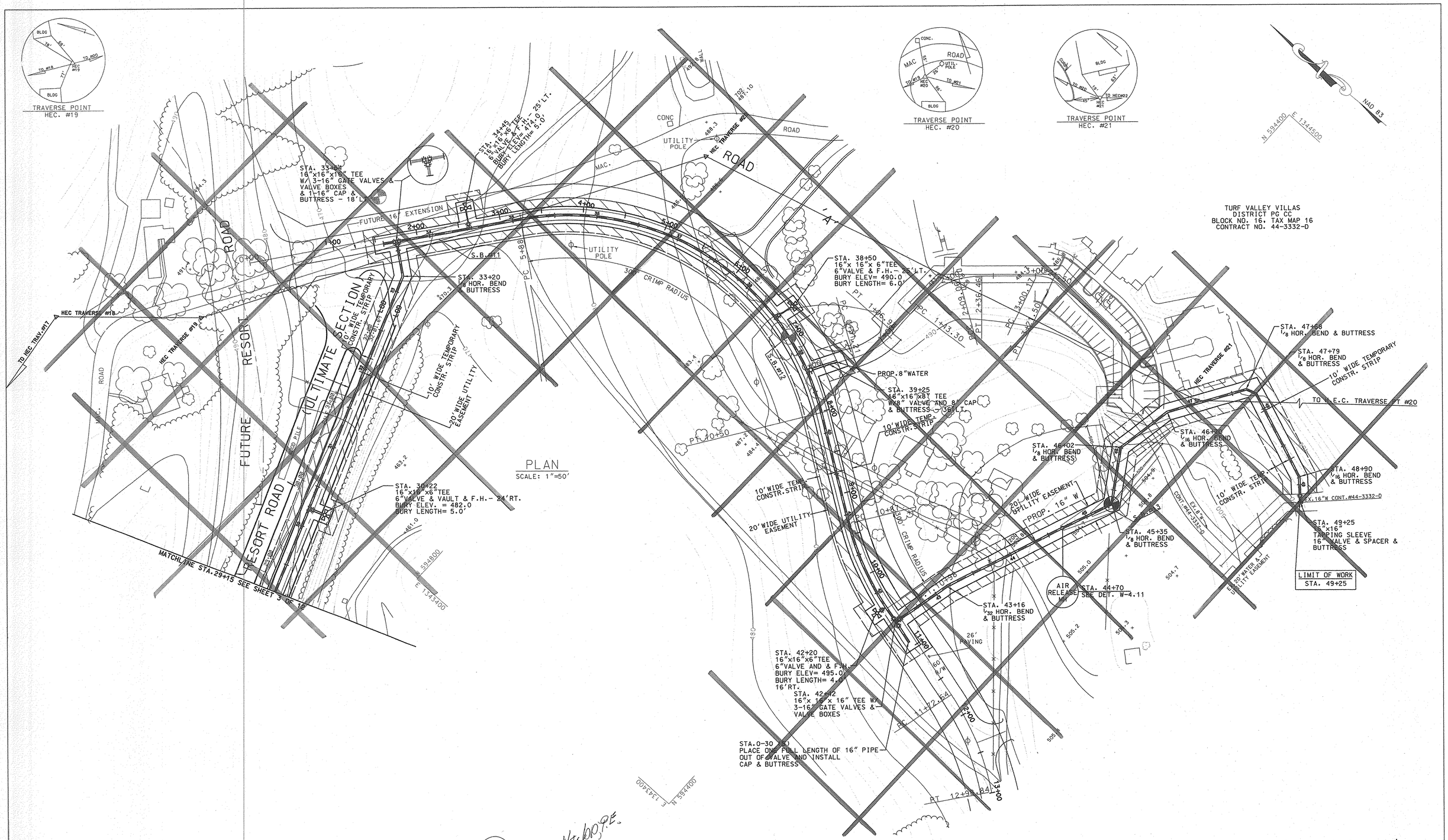
600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 3 OF 12

HEC JOB #93110



AS-BUILT 9/07

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		
DIRECTOR OF PUBLIC WORKS — DATE 9/30/05	CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05	
CHIEF, BUREAU OF UTILITIES — DATE 9/20/05	CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05	

H.E.C. JOB #98110

HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD – SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 8878 — REGISTERED PROFESSIONAL ENGINEER

DES: FW					
DRN: JPM					
CHK: DEH	HEC		REVISED PER HOWARD COUNTY COMMENTS	9/12/05	
	HEC		REVISED PER HOWARD COUNTY COMMENTS	7/8/05	
DATE: 9/13/04	HEC		REVISED PER HOWARD COUNTY COMMENTS	3/05	
	BY	NO.	REVISION	DATE	

PLAN
16" WATER MAIN

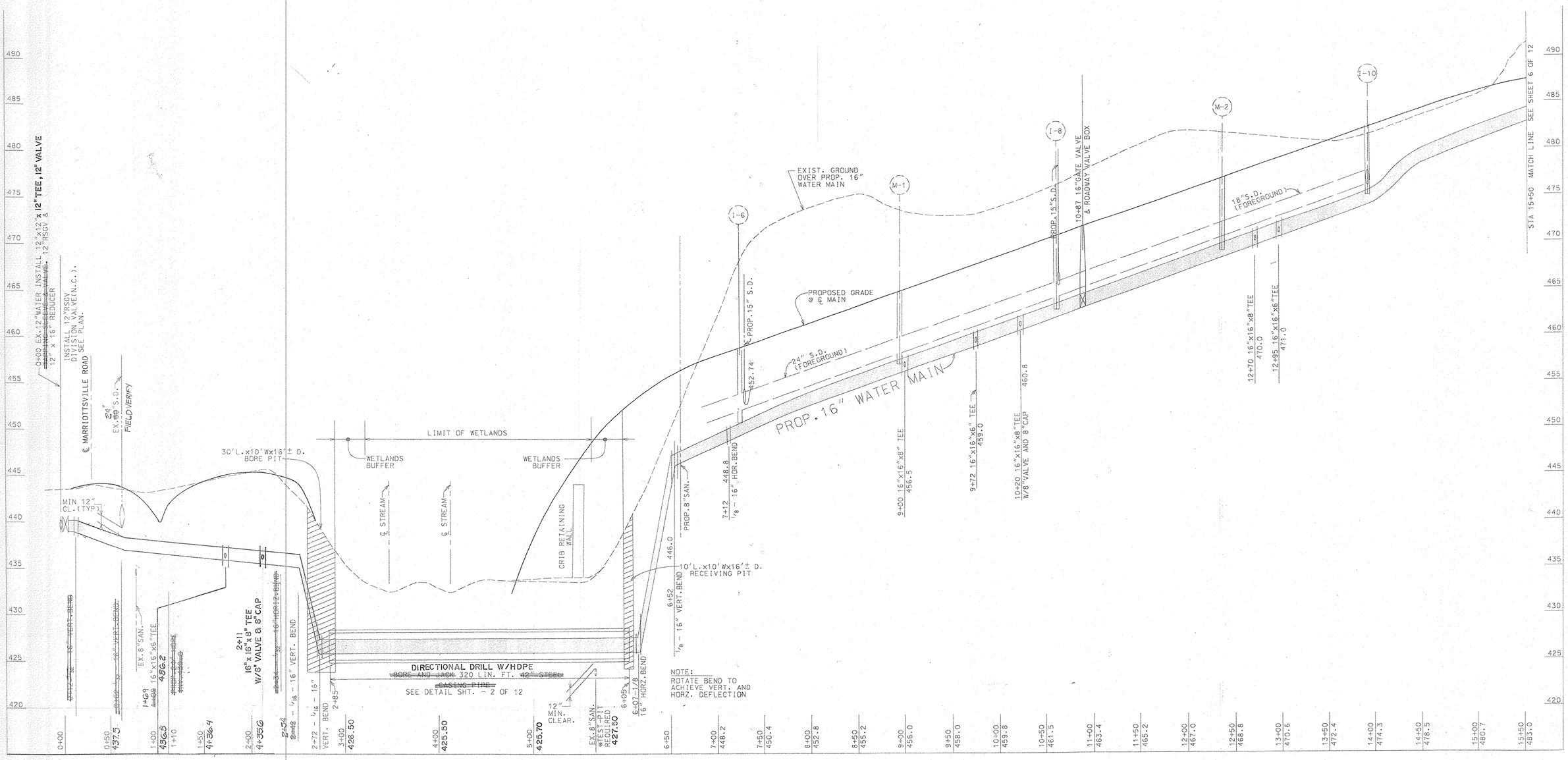
600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN

ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 4 OF 12



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

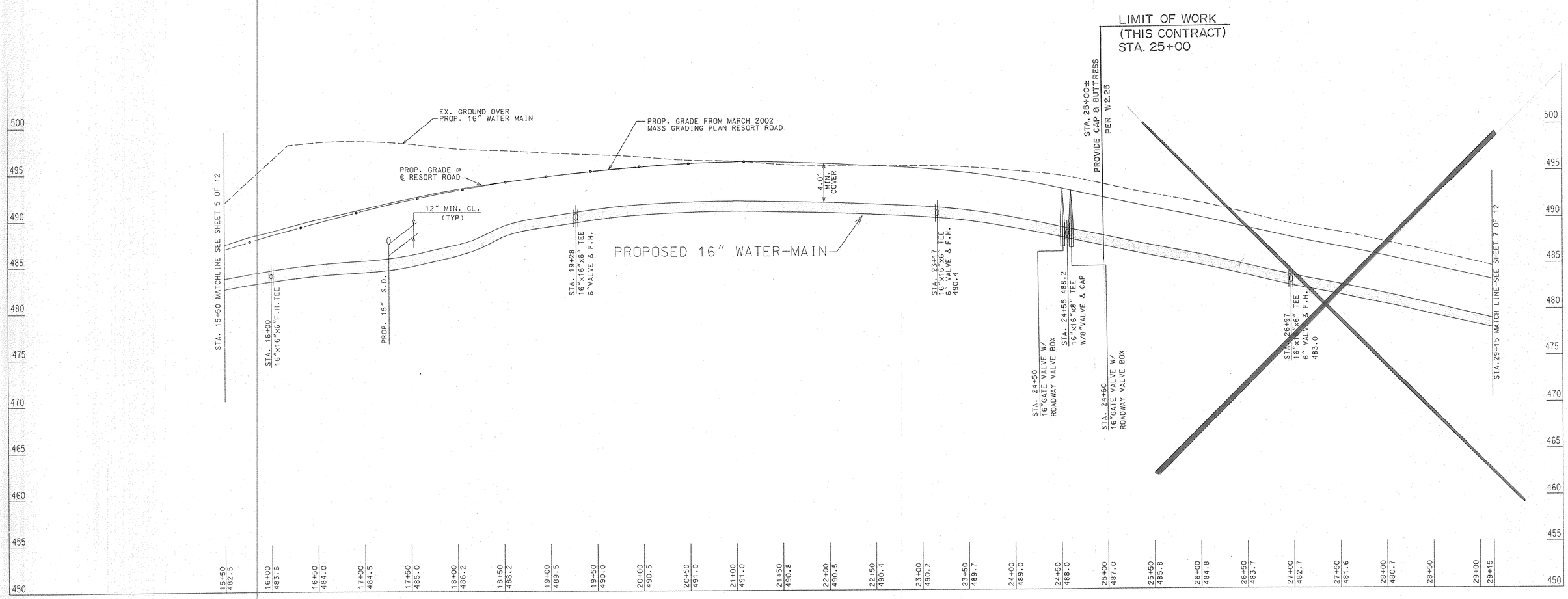
AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	HICKS ENGINEERING CO., INC. ENGINEERS • SURVEYORS & PLANNERS 200 EAST JOPPA ROAD - SUITE 402 TOWSON, MARYLAND 21286-3160 (410) 494-0001	DES: FW DRN: JPM CHK: DEH DATE: 9/13/04	BY / NO. / REVISION / DATE HEC / REVISED PER HOWARD COUNTY'S COMMENTS / 9/12/05 HEC / REVISED PER HOWARD COUNTY'S COMMENTS / 7/8/05 HEC / REVISED PER HOWARD COUNTY'S COMMENTS / 3/05	PROFILE 16" WATER MAIN 600' SCALE MAP NO. W16 BLOCK NO.	ALBETH HEIGHTS WATER TRANSMISSION MAIN ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. W-8195 CONTRACT NO. 44-3724	SCALE AS SHOWN SHEET 5 OF 12

DIRECTOR OF PUBLIC WORKS — DATE 9/20/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05
CHIEF, BUREAU OF UTILITIES — DATE 9/20/05
CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 6076 — REGISTERED PROFESSIONAL ENGINEER

H.E.C. JOB #93110



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

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE 9/30/05	CHIEF, BUREAU OF ENGINEERING	DATE 9/20/05
CHIEF, BUREAU OF UTILITIES	DATE 9/26/05	CHIEF, WATER & SEWER DESIGN DIV.	DATE 9-20-05

H.E.C. JOB #93110

HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND
DONALD EDWIN HICKS
No. 6878
REGISTERED
PROFESSIONAL ENGINEER

DES: FW
DRN: KEB
CHK: DEH
DATE: 03/16/05

BY	NO.	REVISION	DATE
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	9/12/05
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	7/8/05
HEC		REVISED PER HOWARD COUNTY'S COMMENTS	3/05

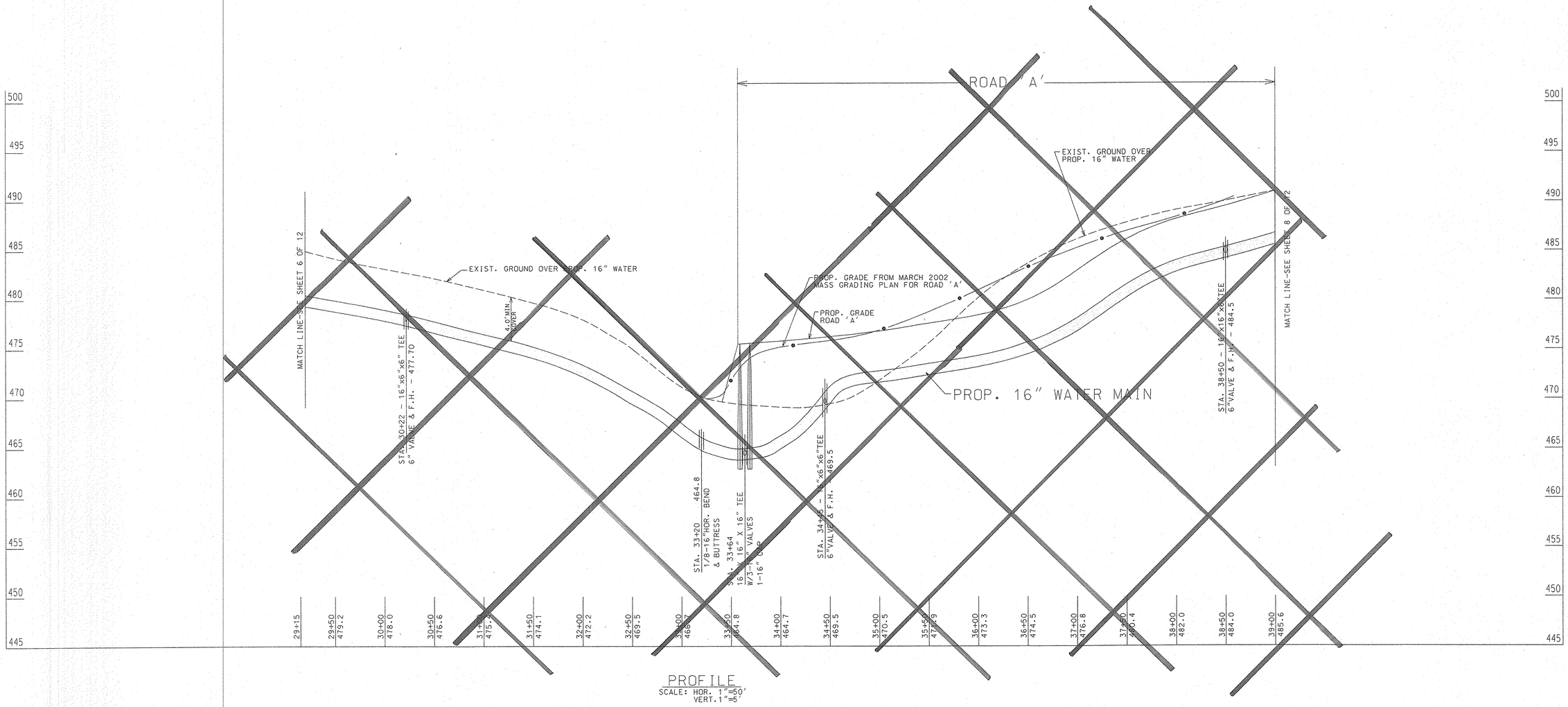
PROFILE
16" WATER MAIN

600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 6 OF 12



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

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/30/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05
CHIEF, BUREAU OF UTILITIES — DATE 9/26/05
CHIEF, WATER & SEWER DESIGN DIV. — DATE 9.20.05

H. E. C. JOB #93110

HICKS ENGINEERING CO. INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS — NO. 8878 — REGISTERED PROFESSIONAL ENGINEER

DES: FW
DRN: KEB
CHK: DEH
DATE: 3/18/05

BY	NO.	REVISION	DATE
HEC		REVISED PER HOWARD COUNTY COMMENTS	9/12/05
HEC		REVISED PER HOWARD COUNTY COMMENTS	7/8/05
HEC		REVISED PER HOWARD COUNTY COMMENTS	3/05

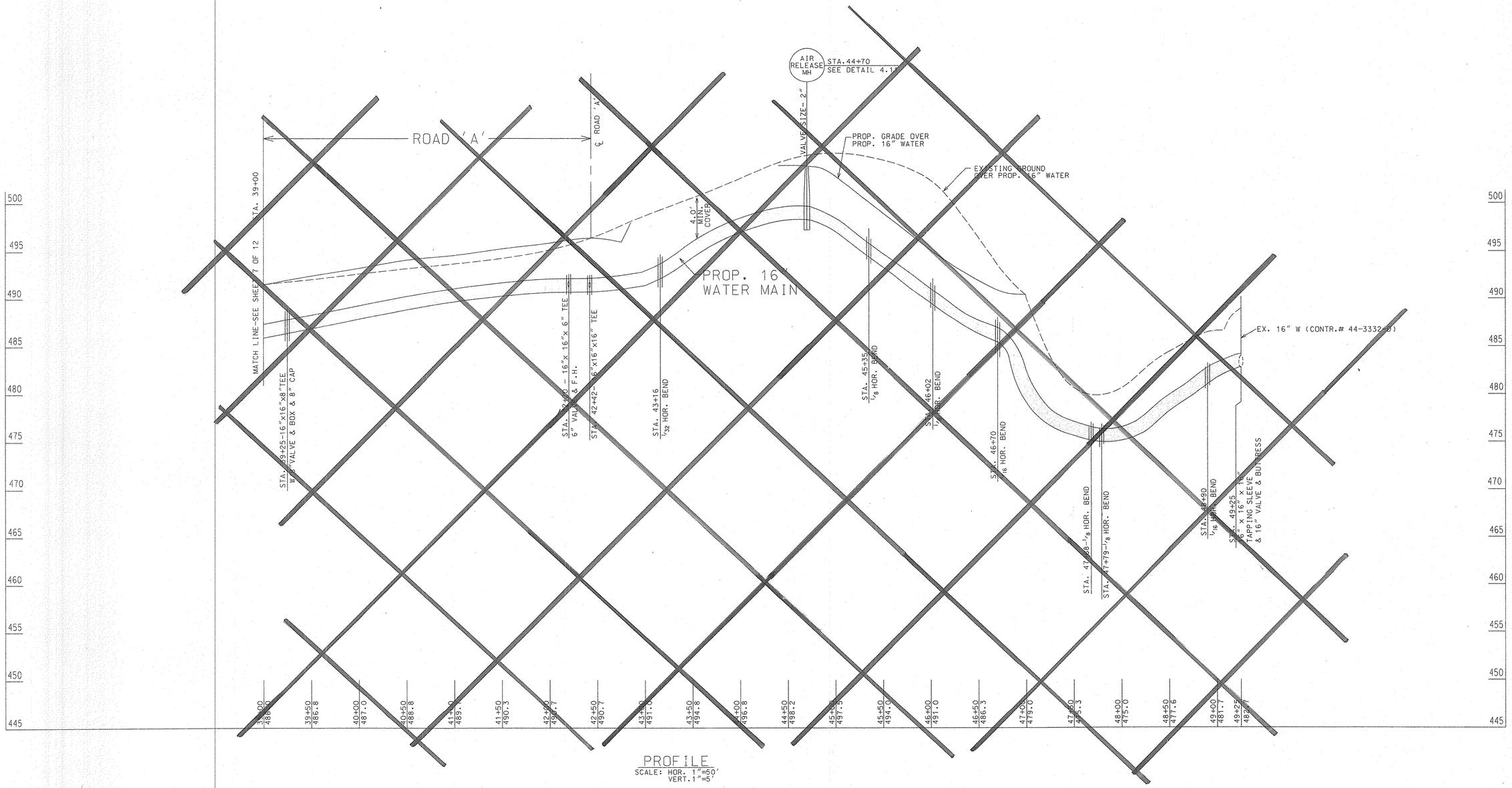
PROFILE
16" WATER MAIN

600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 7 OF 12



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

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/30/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05
CHIEF, BUREAU OF UTILITIES — DATE 9/20/05
CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05

H HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 6809 — REGISTERED PROFESSIONAL ENGINEER

DES: FW
DRN: KEB
CHK: DEH
DATE: 03/21/05

BY	NO.	REVISION	DATE
HEC		REVISED PER HOWARD COUNTY COMMENTS	9/12/05
HEC		REVISED PER HOWARD COUNTY COMMENTS	7/8/05
HEC		REVISED PER HOWARD COUNTY COMMENTS	3/05

PROFILE
16" WATER MAIN

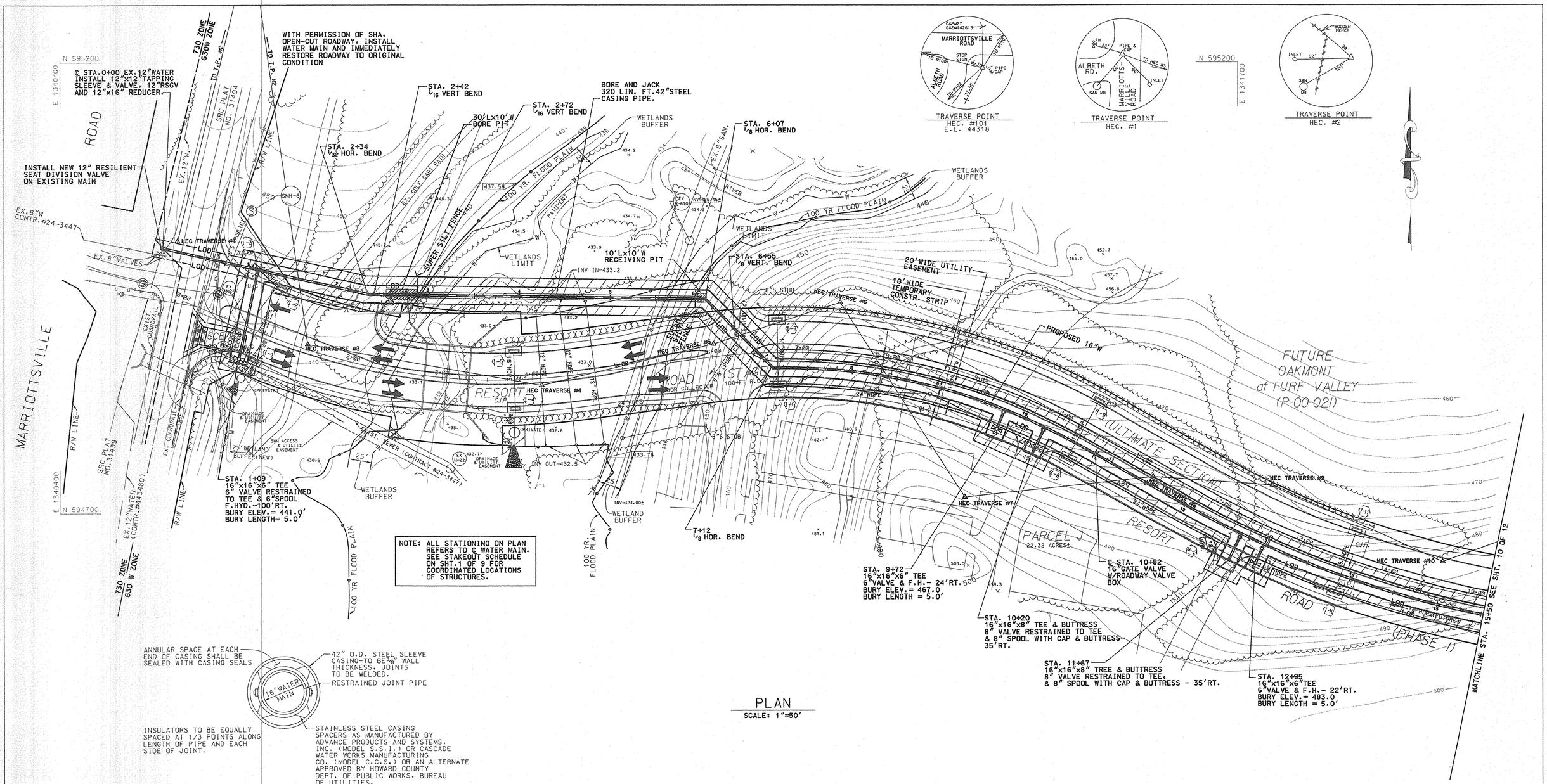
600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 8 OF 12

H.E.C. JOB #93110



DETAIL FOR TRENCHLESS EXCAVATION CROSSING @ LITTLE PATUXENT RIVER

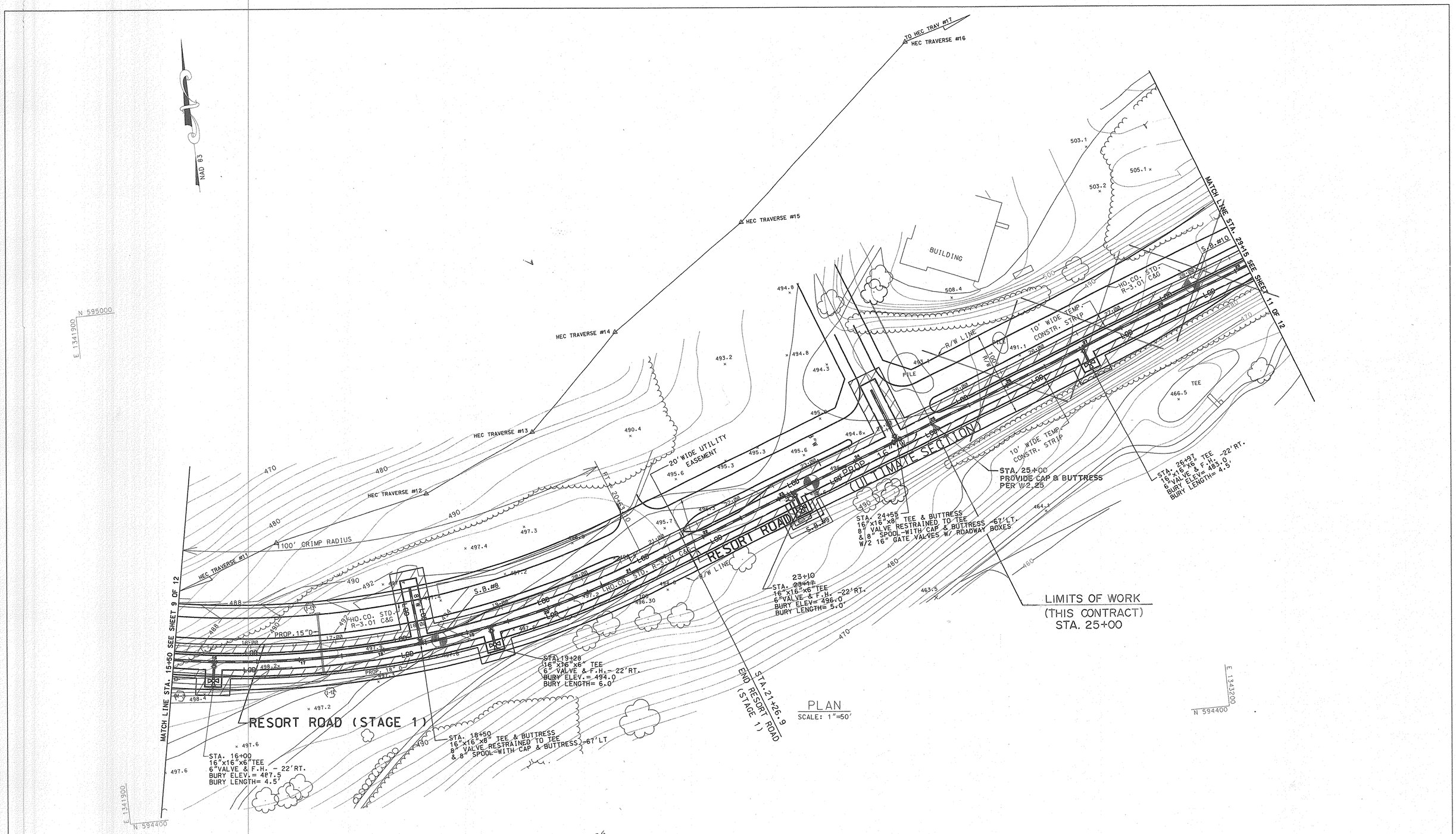
NOT TO SCALE

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND								
DIRECTOR OF PUBLIC WORKS — DATE 9/30/05	CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05	HICKS ENGINEERING CO., INC. ENGINEERS, SURVEYORS & PLANNERS 200 EAST JOPPA ROAD - SUITE 402 TOWSON, MARYLAND 21286-3160 (410) 494-0001	DES: FW				SOIL EROSION AND SEDIMENT CONTROL PLAN	ALBETH HEIGHTS WATER TRANSMISSION MAIN ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. W-8195 CONTRACT NO. 44-3724	SCALE AS SHOWN
CHIEF, BUREAU OF UTILITIES — DATE 9/22/05	CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05		DRN: JPM						
			CHK: DEH	HEC		REVISED PER HOWARD COUNTY'S COMMENTS	9/12/05		SHEET 9 OF 12
				HEC		REVISED PER HOWARD COUNTY'S COMMENTS	7/8/05		
			DATE: 9/13/04	HEC		REVISED PER HOWARD COUNTY'S COMMENTS	3/05	600' SCALE MAP NO. W16 BLOCK NO.	
				BY	NO.	REVISION	DATE		

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 8879 — REGISTERED PROFESSIONAL ENGINEER

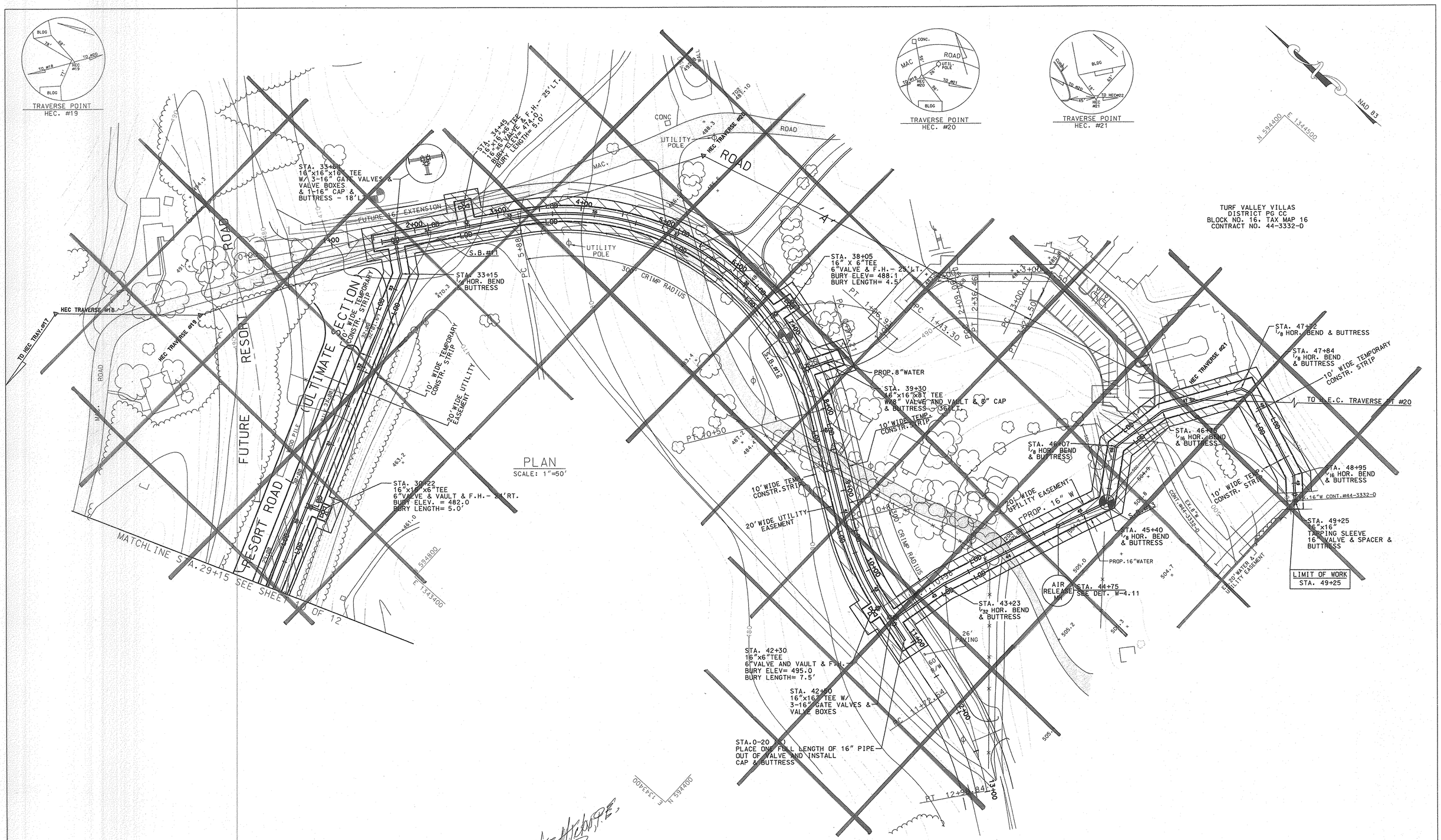
H.E.C. JOB #93110



AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 9/30/05 CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05 CHIEF, BUREAU OF UTILITIES — DATE 9/20/05 CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05	HICKS ENGINEERING CO., INC. ENGINEERS, SURVEYORS & PLANNERS 200 EAST JOPPA ROAD - SUITE 402 TOWSON, MARYLAND 21286-3160 (410) 494-0001 STATE OF MARYLAND — DONALD EDWIN HICKS — No. 8000 — REGISTERED PROFESSIONAL ENGINEER	DES: FW DRN: JPM CHK: DEH DATE: 9/13/04	BY	NO.	REVISION	DATE	SOIL EROSION AND SEDIMENT CONTROL PLAN 600' SCALE MAP NO. W16 BLOCK NO.	ALBETH HEIGHTS WATER TRANSMISSION MAIN ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. W-8195 CONTRACT NO. 44-3724	SCALE AS SHOWN SHEET 10 OF 12
			HEC		REVISED PER HOWARD COUNTY'S COMMENTS	9/12/05			
			HEC		REVISED PER HOWARD COUNTY'S COMMENTS	3/05			

H.E.C. JOB #93110



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND								
DIRECTOR OF PUBLIC WORKS — DATE 9/20/05	CHIEF, BUREAU OF ENGINEERING — DATE 9/20/05	HICKS ENGINEERING CO., INC. ENGINEERS, SURVEYORS & PLANNERS 200 EAST JOPPA ROAD - SUITE 402 TOWSON, MARYLAND 21286-3160 (410) 494-0001	STATE OF MARYLAND DONALD EDWIN HICKS No. 8818 REGISTERED PROFESSIONAL ENGINEER	DES: FW DRN: JPM CHK: DEH DATE: 9/13/04	BY	NO.	REVISION	DATE
CHIEF, BUREAU OF UTILITIES — DATE 9/20/05	CHIEF, WATER & SEWER DESIGN DIV. — DATE 9-20-05				HEC		REVISED PER HOWARD COUNTY COMMENTS	9/12/05
					HEC		REVISED PER HOWARD COUNTY COMMENTS	3/05

SOIL EROSION AND SEDIMENT CONTROL PLAN

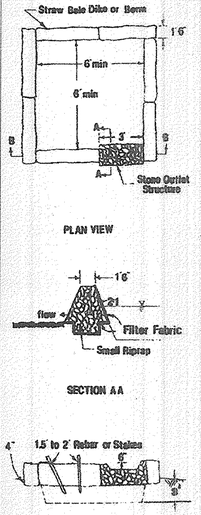
600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 11 OF 12

H.E.C. JOB #93110



I. Description

The work shall consist of the construction of a dewatering basin for the purpose of receiving sediment-laden water pumped from a construction site to allow filtration before the water re-enters the waterway.

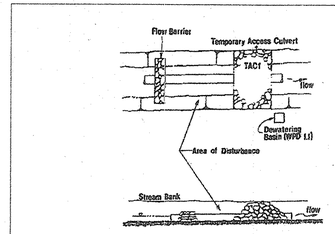
II. Material Specifications

1. Riprap: Riprap shall consist of 4-8 inch washed stone or gravel.
2. Filter Fabric: The filter cloth shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, and rot resistant. No. 6 stone (AASHTO 57) may be used on the lower-face for filtering instead of fabric.
3. Strawbales: Strawbales shall meet the criteria as specified in the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

III. Construction Requirements

1. The contractor shall install all sediment and erosion control devices as the first order of business.
2. Excavated materials shall be stored such that sediments are prevented from entering the waterway; i.e., sediment perimeter controls may be necessary.
3. Excavated subsoil and topsoil shall be kept separate and replaced in their natural order.
4. Any dewatering of the construction area shall be filtered through a dewatering basin prior to entering the waterway.
5. The dewatering basin shall be excavated to a minimum depth of 3 feet.
6. Once the dewatering basin becomes filled to 1/2 of the excavated depth, accumulated sediment shall be removed and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
7. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All ground contours shall be returned to their original condition unless specifically approved otherwise by the Administration.

WATER RESOURCES ADMINISTRATION	Dewatering Basins	Approved On 1/24/96 Charles K Pierson Chief, Waterway Permits	WPD 1.1



PLAN & PROFILE

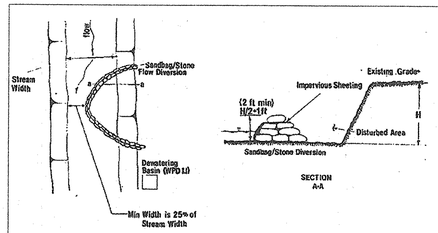
I. Description

The work shall consist of installing a flow diversion structure in conjunction with a temporary culvert crossing during in-stream construction such as utility crossings.

II. Construction Requirements

1. All erosion and sediment control devices shall be installed as the first order of business.
2. Pipes must be sized to accommodate normal stream flow.
3. The flow barrier shall be constructed of sandbags, washed riprap, or other approved material as per WPD2.3. The materials shall be sized to withstand normal stream flow velocities.
4. All dewatering of the construction area shall be pumped to a dewatering basin (WPD1.1) prior to re-entering the stream.
5. The temporary culvert crossing shall be constructed in accordance with Standard Detail (TAC-1), 1983 Maryland Standards and Specifications for Sediment and Erosion Control.
6. Sediment control devices shall remain in place until all disturbed areas have been stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

WATER RESOURCES ADMINISTRATION	Culvert: Pipe with Access Road	Approved On 1/24/96 Charles K Pierson Chief, Waterway Permits	WPD 2.1



SECTION A-A

I. Description

The work shall consist of installing flow diversions for the purpose of erosion control when construction activities take place within the stream channel such as bank stabilization or bridge abutment construction.

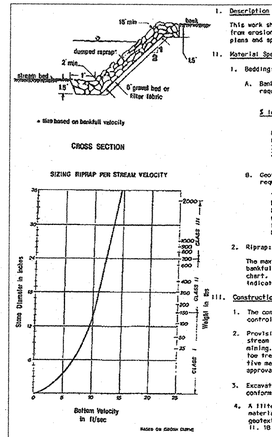
II. Material Specifications

1. Sandbags: Sandbags shall consist of materials which are resistant to ultra-violet radiation, tearing and puncture and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
2. Stone: Stone shall be washed and have a minimum diameter of 6 inches.
3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

III. Construction Requirements

1. All erosion and sediment control devices shall be installed as the first order of work.
2. The diversion structure shall be installed from upstream to downstream.
3. The height of the diversion structure shall be one half the distance from stream bed to stream bank plus one foot, as indicated on the cross-section view.
4. All excavated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
5. All dewatering of the construction area shall be pumped to a dewatering basin prior to re-entering the stream.
6. Sheeting shall be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap.
7. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

WATER RESOURCES ADMINISTRATION	Sandbag / Stone Diversion	Approved On 1/24/96 Charles K Pierson Chief, Waterway Permits	WPD 2.3



I. Description

This work shall consist of protecting slopes and channels from erosion with coverings of stone in accordance with the plans and specifications shown on this drawing.

II. Material Specifications

1. Bedding:

A. Bank run gravel shall meet the following requirements:

% less than	U.S. Standard sieve size
100	2 1/2 in
85 - 100	1 in
50 - 100	1/2 in
35 - 70	No. 10
20 - 50	No. 40
3 - 20	No. 200

B. Geotextile filter fabric shall meet the following requirements:

Tensile Strength	200 lbs.
Burst Strength	350 lbs.
Puncture Strength	70 lbs.
Permeability	.02 cm/sec
Elongation at failure	30%
Minimum Lap Length	24 in

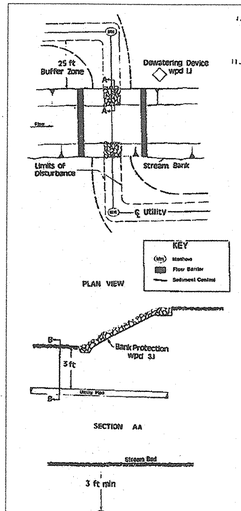
2. Riprap:

The maximum weight of stone shall be based upon the bankfull stream channel velocity, using the given chart. The gradation of the stone shall be as indicated.

III. Construction Requirements

1. The contractor shall install all sediment and erosion control devices as a first order of business.
2. Provisions must be made to anchor the riprap at the stream bed so as to provide protection against undermining. If this cannot be accomplished by extending the toe trench, as indicated in Cross Section, an alternative method of protection must receive prior written approval of the Administration.
3. Excavation for riprap shall be made in reasonably close conformity with the existing stream slope and bed.
4. A filter bedding is required under all riprap. Bedding material shall consist of either a bank run gravel or a geotextile filter fabric meeting the specifications of II. 1B above.
5. The placement of riprap shall begin with the toe. The larger stones shall be placed in the toe and along the outside edges of the limits of the slope and channel protection. The riprap shall be placed with suitable equipment in such a manner as to produce a reasonably graded mass of stones with zero drop height. The placing of stones that cause extensive segregation is not allowed.
6. Any excavation voids existing along the edges of the completed slope and channel protection shall be backfilled.
7. All disturbed areas shall be permanently stabilized in accordance with an approved sediment and erosion control plan.

WATER RESOURCES ADMINISTRATION	Riprap	Approved On 1/24/96 Charles K Pierson Chief, Waterway Permits	WPD 3.1



I. Description

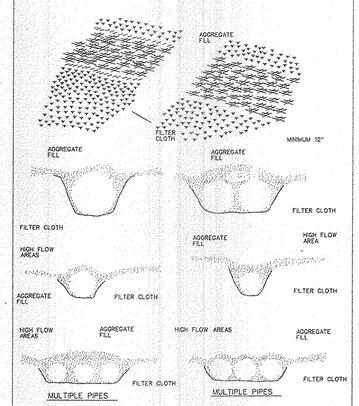
This work shall consist of installing erosion control devices in and adjacent to temporary stream construction such as utility crossings.

II. Construction Requirements

1. All erosion and sediment control devices shall be installed as the first order of work.
2. The contractor shall insure that a continuous perimeter control barrier is in place so as to minimize pollutants entering the water.
3. Excavated topsoil and subsoil shall be kept separate and replaced in their natural order.
4. All excavated materials shall be placed on the upland side of the excavation.
5. All construction shall take place during stream low flows. The length of construction time shall be limited to a maximum of 5 days for each crossing.
6. All utility crossings shall be placed at least three feet beneath the stream bed unless an alternative section is specifically approved by the Administration.
7. The contractor may elect to construct the utility crossing in two stages. In this case, a WRA approved flow barrier may be constructed to keep the construction area dry.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspection authority approves their removal.

WATER RESOURCES ADMINISTRATION	Utility Crossing (See Stream Crossing Note)	Approved On 1/24/96 Charles K Pierson Chief, Waterway Permits	WPD 5.1

DETAIL 36 - TEMPORARY ACCESS CULVERT



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 29 - 12	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TEMPORARY ACCESS CULVERT

Construction Specifications

1. Restrictions - No Construction or removal of a temporary access culvert will be permitted between October 1 through April 30 for Class III and Class IV Trout Waters or between March 1 through June 15 for non-trout waterways.

2. Culvert Strength - All culverts shall be strong enough to support their cross sectional area under maximum expected loads.

3. Culvert Size - The size of the culvert pipe shall be the largest pipe diameter that will fit into the existing channel without major excavation of the waterway channel or without major approach fills. If a channel width exceeds 3 feet, additional pipes may be used until the cross sectional area of the pipes is greater than 60 percent of the cross sectional area of the existing channel. The minimum size culvert that may be used is a 12" diameter pipe. In all cases, the pipe(s) shall be large enough to convey normal stream flows.

4. Culvert Length - The culvert(s) shall extend a minimum of one foot beyond the upstream and downstream toe to the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.

5. Filter Cloth - Filter cloth shall be placed on the streambed and streambanks prior to placement of the pipe culvert(s) and aggregate. The filter cloth shall cover the streambed and extend a minimum six inches and a maximum one foot beyond the end of the culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.

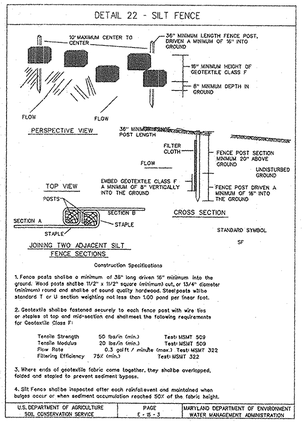
6. Culvert Placement - The invert elevation of the culvert shall be installed on the natural streambed grade to minimize interference with fish migration (free passage of fish).

7. Culvert Protection - The culvert(s) shall be covered with a minimum of one foot of aggregate. If multiple culverts are used they shall be separated by at least 12" of compacted aggregate fill.

8. Stabilization - All areas disturbed during culvert installation shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for "Critical Area Stabilization With Permanent Seeding."

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 29 - 13A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square cross-sectional, or 12.5" diameter (nominal) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pond per linear foot.

2. 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:

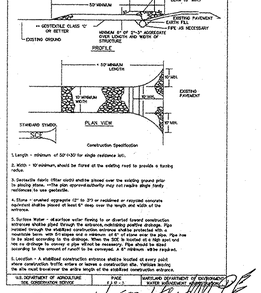
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft / min/ft (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when bulged sediment or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile (Mirafi 500X) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

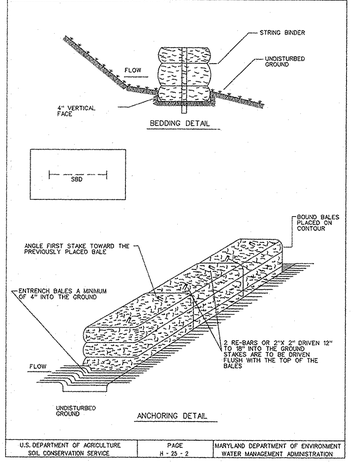
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall pass to a properly designed sediment control and vegetated area. Provisions must be made to prevent surface water from flowing onto the public road system. Pipe must be installed according to the drawings. 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.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic will enter or leave a construction site. The entire site must be under the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H-27-1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 32 - STRAW BALE DIKE



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

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FUTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1. PREFERRED - APPLAY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQUARE FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISC 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.)

2. 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 DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER15, 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 (.09 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 1½ TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTEN 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 RESEEDING.

* SEE CONDITIONS, (CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS) & BUFFER AREAS.

"CONDITIONS AND MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS"

1. NO MATERIALS OR EQUIPMENT MAY BE STORED OR STOCKPILED WITHIN NON-TIDAL WETLANDS. 25-FOOT WETLANDS BUFFER OR 100-YEAR FLOODPLAIN.

2. STOCKPILE AND MAINTAIN SEPARATELY THE TOP 6"-12" OF TOPSOIL MATERIAL EXCAVATED FROM NON-TIDAL WETLANDS, TO BE REPLACED AS THE TOP LAYER OF THE BACKFILLED MATERIAL:

3. REMOVE EXCESS FILL OR CONSTRUCTION MATERIAL OR DEBRIS TO AN UNPLANED DISPOSAL AREA:

4. PLACED MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NON-TIDAL WETLAND:

5. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NON-TIDAL WETLANDS.

6. USE PREVIOUSLY EVCAVATED MATERIALS AS BACKFILL, UNLESS IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL OR ANY OTHER DELETERIOUS SUBSTANCE. USE CLEAN BORROW MATERIAL WHEN EXCAVATED MATERIAL IS NOT SUITABLE FOR USE AS BACKFILL:

7. ALL STABILIZATION IN THE WETLANDS AND BUFFER SHALL BE OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (AVNOLA SP.) AND/OR RYE (SECALE CEREALE) THESE SPECIES ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NONPERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN THE WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATION OF NON-TIDAL WETLANDS THE SAME AS THE ORIGINAL GRADES AND ELEVATION:

9. TO PROTECT IMPORTANT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM AS FOLLOWS:

USE I WATERS. IN-STREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR

* THESE CONDITIONS ALSO APPLY FOR WORK THAT WILL RESULT IN IMPACTS TO THE 25-FOOT WETLAND BUFFER, F.E.M.A. MAPPED 100 YEAR FLOOD PLAIN, AND REGULATED WATERWAYS.

UTILITY NOTES

1. OPEN ONLY THAT SECTION OF TRECH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY.

2. PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.

3. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1880)

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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. 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 1:1, B. 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTUBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 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.

6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OUTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL, INSPECTOR.

7. SITE ANALYSIS:

TOTAL AREA OF SITE	0.31 ACRES
AREA DISTURBED	0.31 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.16 ACRES
TOTAL CUT	0.31 ACRES
TOTAL FILL	N/A CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A CU. YDS.

ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILTIES MUST BE REPAIRED ON THE SAME DAY OF DISTURANCE.

ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.

ON ALL SITES WITH DISTURBED AREA 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.

STREAM CROSSING NOTE

WORK FOR EACH STREAM CROSSING SHALL START ONLY WITH A 5 DAY CLEAR WEATHER FORECAST AND MUST BE COMPLETED WITHIN 5 DAYS. THESE TIME CONSTRAINTS WILL NOT APPLY IF BORE AND JACK METHOD (PREFERRED) IS USED.

SEQUENCE OF CONSTRUCTION

1. ACQUIRE A GRADING PERMIT. (1 WEEK)

2. CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION (313-1880) PRIOR TO STARTING DATE. (1 DAY)

3. INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOL IV. AND APPROVED CONTROLS UNDER THIS PLAN.

* 4. CONSTRUCT WATERMAIN (2 MONTHS)

5. RESTORE PAVING AND EARTH TRENCHES TO THEIR ORIGINAL CONDITION AS PER HOWARD COUNTY STANDARDS.

6. UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES. (2 WEEKS)

7. FINE GRADE ALL DISTURBED AREAS AND STABILIZE WITH PERMANENT SEEDING. (1 MONTH)

*NOTE: LENGTH OF OPEN TRENCH FOR WATER PLACEMENT SHALL BE LIMITED TO 3 PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED IN ONE WORK DAY.

STAGING AREAS SHALL BE LOCATED AS PER AGREEMENT BETWEEN THE PROPERTY OWNER AND CONTRACTOR, BUT SHALL NOT BE WITHIN THE 100 YEAR FLOODPLAIN, WETLANDS, OR WETLANDS BUFFERS AS DELINEATED ON THESE PLANS.

AS-BUILT 09/07

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF, BUREAU OF ENGINEERING — 9/20/05 DATE

CHIEF, BUREAU OF UTILITIES — DATE — CHIEF, WATER & SEWER DESIGN DIV. — 9-20-05 DATE

H.E.O. JOB #93110

HICKS ENGINEERING CO., INC.
ENGINEERS, SURVEYORS & PLANNERS
200 EAST JOPPA ROAD - SUITE 402
TOWSON, MARYLAND 21286-3160
(410) 494-0001

STATE OF MARYLAND — DONALD EDWIN HICKS — No. 6070 — REGISTERED PROFESSIONAL ENGINEER

DES:	FW
DRN:	JPM
CHK:	DEH
DATE:	9/6/02

BY	NO.	REVISION	DATE

SOIL EROSION AND SEDIMENT CONTROL DETAIL SHEET

600' SCALE MAP NO. W16 BLOCK NO.

ALBETH HEIGHTS
WATER TRANSMISSION MAIN
ELECTION DISTRICT NO. 3
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT NO. W-8195
CONTRACT NO. 44-3724

SCALE AS SHOWN

SHEET 12 OF 12