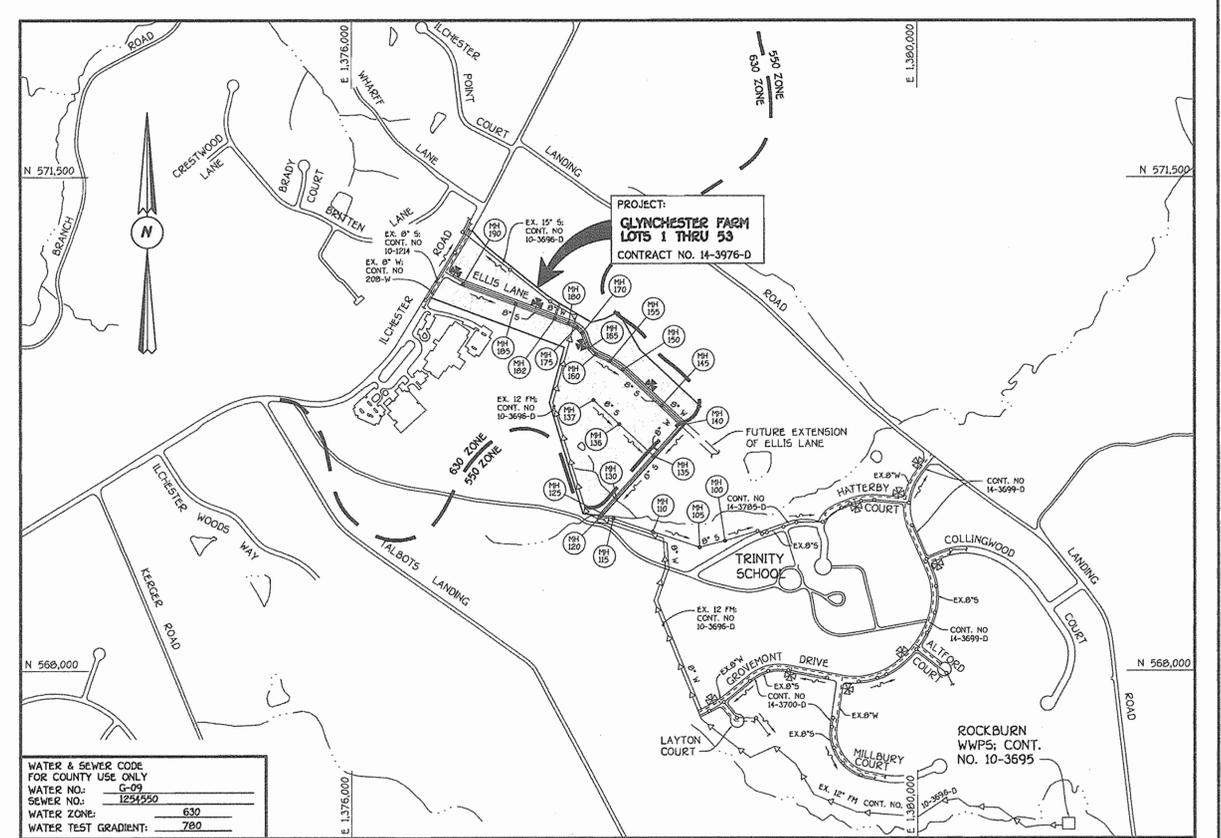


QUANTITIES				
ITEM	ESTIMATED	QUANTITIES	AS-BUILT	SUPPLIER
8" WATER	4,805.40 L.F.	5,104 L.F.	CL-52 CORRUG	BLR
6" WATER	51 L.F.	65 L.F.	CL-52 CORRUG	"
1" W/C	1,084 L.F.	1,510 L.F.	K-COPPER	READING TUBE
FIRE HYDRANTS	4 EACH	4 EA	MUEWER HYD.	BLR
8" SEWER	3,690.35 L.F.	4,000 L.F.	PVC SDR 35	BLR
8" SEWER (D.I.P.)	972.32 L.F.	990 L.F.	CL-52	CRIFFIN/BLR
4" SEWER	920 L.F.	950 L.F.	SDR 35	BLR
MANHOLES	22 EACH	22 EA	4'	FREDERICK PRECAST
12" X 8" TAPPING SLEEVE & VALVE	1 EACH	1 EA		U.S. PIPE
8" X 8" TEE	3 EACH			
8" X 6" TEE	4 EACH		U.S. PIPE	BLR
8" VALVES	6 EACH	6	MUELLER	"
6" VALVES	4 EACH	4	"	"
1/8" H.B.	4 EACH	4	U.S. PIPE M.J.	U.S. PIPE
1/16" H.B.	7 EACH	7	M.J.	"
1/32" H.B.	1 EACH	1	"	"
1/32" V.B.	1 EACH	1	"	"
AIR RELEASE MANHOLES	3 EACH	3 EA		BLR
8" PLUG & BUTTRESS	3 EACH	3 EA		"
OUTSIDE METER SETTINGS	9 EACH	9		"



TYPE OF BUILDING	RESIDENTIAL: SINGLE FAMILY
NUMBER OF LOTS & PARCELS	53 (46 BUILDABLE)
NO. OF WATER HOUSE CONNECTIONS	46
NO. OF SEWER HOUSE CONNECTIONS	46
DRAINAGE AREA	PATAPSCO
TREATMENT PLANT	PATAPSCO WASTEWATER TREATMENT PLANT VIA THE ROCKBURN BRANCH PUMPING STATION

VICINITY MAP
SCALE: 1"=600'

GENERAL NOTES

- 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.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 29.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (991 AMENDMENTS) THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- 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 VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO THE EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - AT&T 1-800-526-2000
 - BGE (CONTRACTOR SERVICES) 410-850-4620
 - BGE (UNDERGROUND DAMAGE CONTROL) 410-787-9095
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 410-313-4900
 - BELL ATLANTIC MARYLAND, INC. 1-800-821-9900
 - COLONIAL PIPELINE CO. 410-795-1990
 - MISS UTILITY 1-800-257-7777
 - STATE HIGHWAY ADMINISTRATION 410-531-5533
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- 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 THE CONSTRUCTION OF THE MAIN.
- 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.
- T.B. DENOTES TEST BORING.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- 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 PLANS OR SPECIFICATIONS.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL BE D.I.P., CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TREES SHALL BE STRAPPED TO TREES.
- 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 ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W111 AND W213). 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 MAIN SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH THE AWWA SPECIFICATIONS C-153. DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, (410) 313-2450 AT LEAST FIVE (5) 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 DPW REQUIREMENTS PER SECTION 18.114(d) OF THE HOWARD COUNTY CODE.

DEVELOPER'S CERTIFICATION
 I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 Paul W. Keadel FOR: Glynchester Farm LLC 04-23-02
 SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATION
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Paul W. Keadel 04/23/02
 SIGNATURE OF ENGINEER DATE

NTW & WD • 02-NY-0017/200261574
 REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Jim Myerall 5-15-02
 U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED:
 John R. Robertson 5-15-02
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDMIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AND AS SHOWN ON F02-05 AND ON THESE PLANS.
 Paul W. Keadel FOR: Glynchester Farm LLC 04-23-02
 SIGNATURE OF DEVELOPER DATE

CONTRACT No. 14-3976-D
GLYNCHESTER FARM
 LOTS 1 THRU 53
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND R. J. Berman 4-30-02 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND [Signature] 4/23/02 CHIEF, DEVELOPMENT ENGINEERING DIVISION
---	--

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10775 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 481-2000

DESIGNED BY: P.W.K.
 DRAWN BY: M.D.T.
 CHECKED BY: P.W.K.
 DATE: APRIL, 2002
 BY NO. [Signature] TERRELL A. FISHER

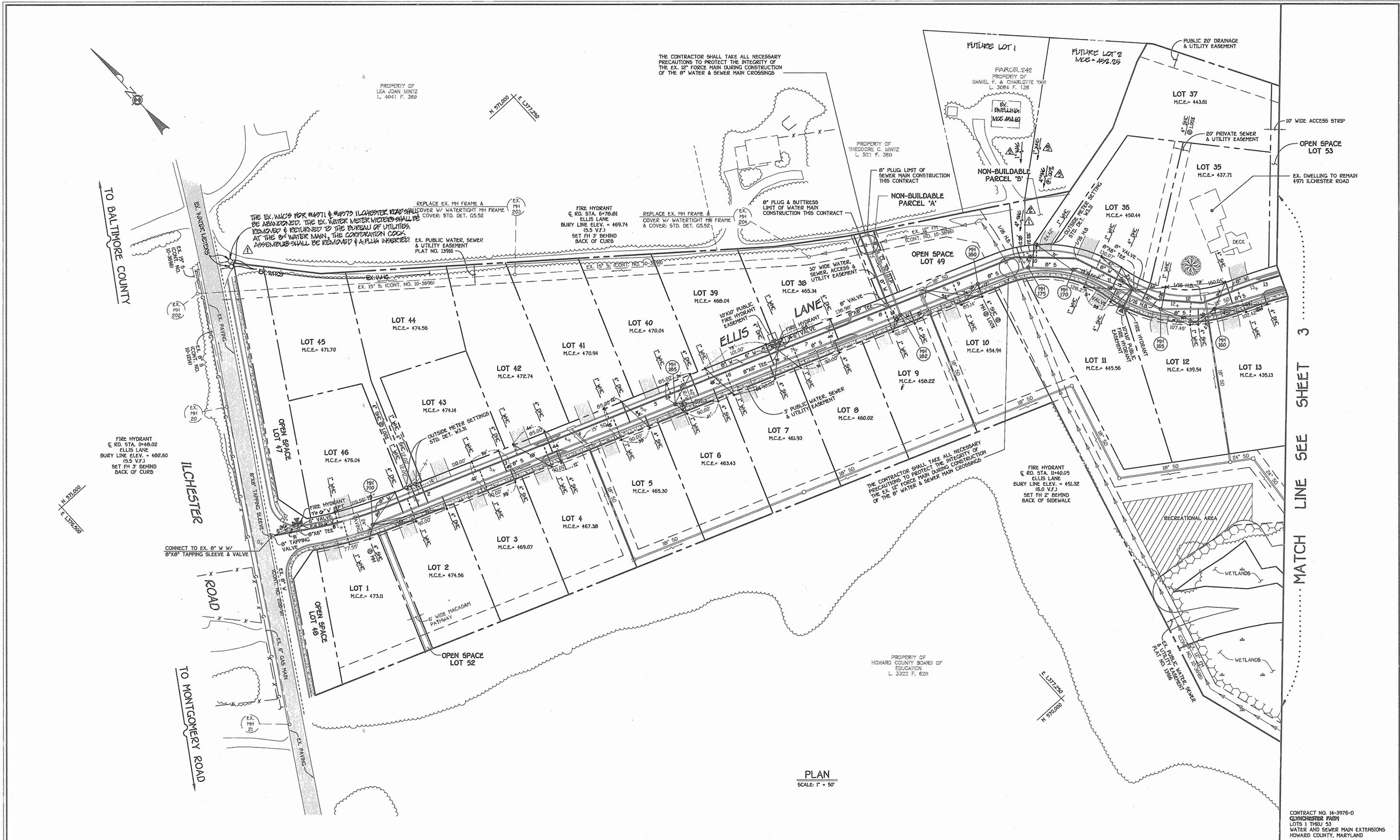
REVISION	DATE
AS-BUILT DATA SHOWN	01/20/02
REVISE NO. OF WATER & SEWER HOUSE CONNECTIONS	10/24/02
REVISE QUANTITIES FOR 1" W/C & 4" S/C	7/14/03
REVISE NO. OF W/C'S & S/C'S	7/14/03

WATER AND SEWER MAINS
 TITLE SHEET
 600' SCALE MAP NO. 31 BLOCK NO. 16
 F.C.C. WORK ORDER NO. 30521
 FILE NAME: 30521 FINAL WATER AND SEWER TITLE SHT 1

GLYNCHESTER FARM
 LOTS 1 THRU 53
 CONTRACT NO. 14-3976-D
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 1 OF 15

CONTRACT NO. 14-3976-D
 GLYNCHESTER FARM
 LOTS 1 THRU 53
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND



THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE INTEGRITY OF THE EX. 12" FORCE MAIN DURING CONSTRUCTION OF THE 8" WATER & SEWER MAIN CROSSINGS

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE INTEGRITY OF THE EX. 12" FORCE MAIN DURING CONSTRUCTION OF THE 8" WATER & SEWER MAIN CROSSINGS

PLAN
SCALE: 1" = 50'

MATCH LINE SEE SHEET 3

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
4-30-02
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
5/2/02
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
410.410.2955



DESIGNED BY:	P.W.K.	
DRAWN BY:	M.D.T.	
CHECKED BY:	P.W.K.	
DATE:	APRIL, 2002	
BY NO.		
REVISION		

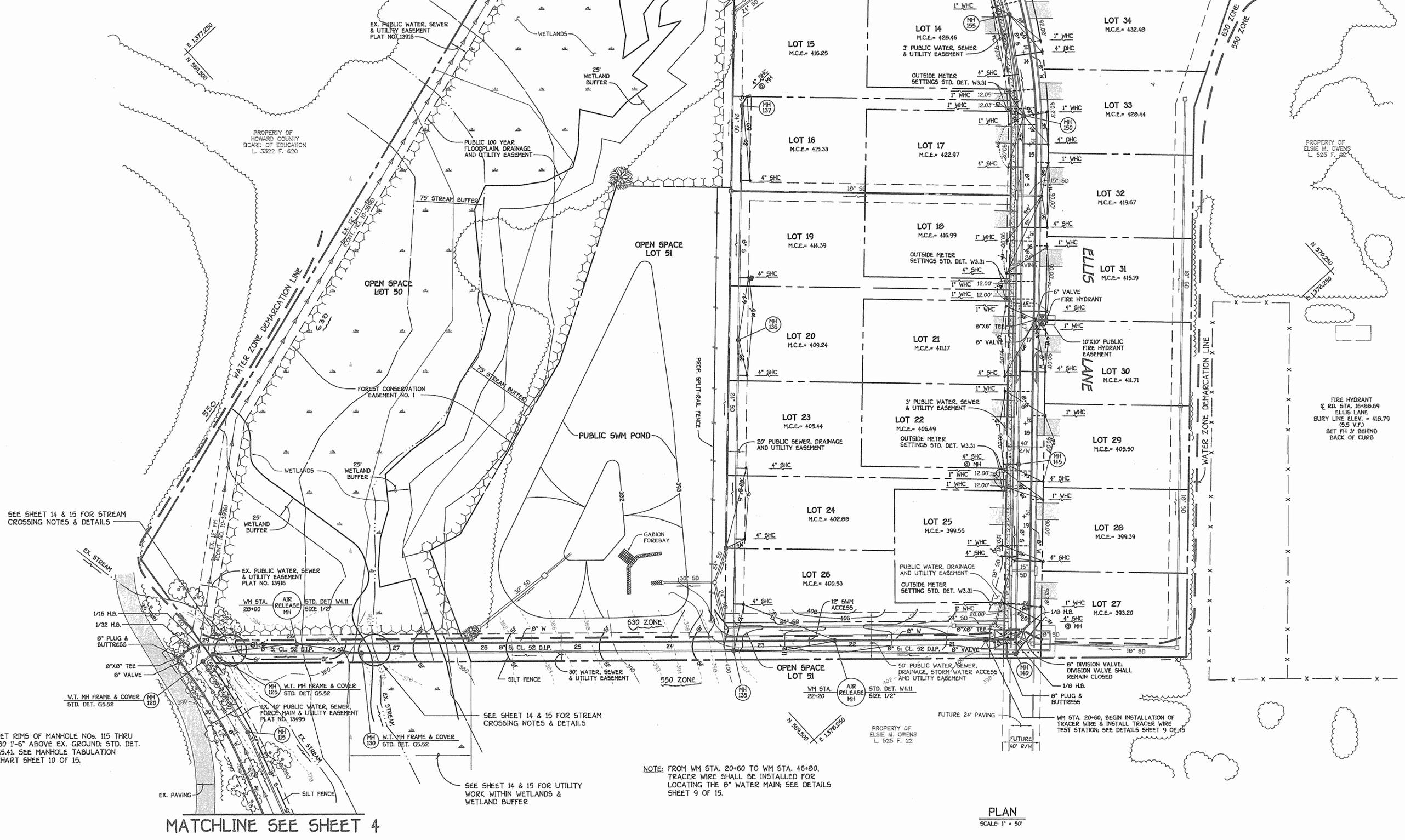
ASBUILT DATA ADDED TO PLAN	01/20/00
ADD WAG & ENC TO SERVE FUTURE LOT 2 OF YAN PROPERTY	10/24/02
ADD WAG & ENC TO SERVE EX. DWELLING ON YAN PROPERTY	7/14/03
INDICATE ABANDONMENT OF EX. WATER METERS & EX. WACS	4/27/02

WATER AND SEWER MAINS
PLAN VIEW
600' SCALE MAP NO. 31 BLOCK NO. 16
F.C.C. WORK ORDER NO. 30521
FILE NAME: 30521 FINAL WATER AND SEWER PLAN SHT 2

SCALE
AS
SHOWN
SHEET
2 of 15

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

MATCH LINE SEE SHEET 2



SEE SHEET 14 & 15 FOR STREAM CROSSING NOTES & DETAILS

SEE SHEET 14 & 15 FOR STREAM CROSSING NOTES & DETAILS

SEE SHEET 14 & 15 FOR UTILITY WORK WITHIN WETLANDS & WETLAND BUFFER

NOTE: FROM WM STA. 20+60 TO WM STA. 46+80, TRACER WIRE SHALL BE INSTALLED FOR LOCATING THE 8" WATER MAIN; SEE DETAILS SHEET 9 OF 15.

PLAN
SCALE: 1" = 50'

NOTE: SET RIMS OF MANHOLE NOS. 115 THRU 130 1'-6" ABOVE EX. GROUND; STD. DET. G5.41. SEE MANHOLE TABULATION CHART SHEET 10 OF 15.

FIRE HYDRANT
@ RD. STA. 16+88.69
ELLIS LANE
BURY LINE ELEV. = 418.79
(5.5 V.F.)
SET FH 3' BEHIND
BACK OF CURB

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND		 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELICOTT CITY, MARYLAND 21042 (410) 401-2999		 DESIGNED BY: P.W.K. DRAWN BY: M.D.T. CHECKED BY: P.W.K. DATE: APRIL, 2002		WATER AND SEWER MAINS PLAN VIEW		GLYNCHESTER FARM LOTS 1 THRU 53 CONTRACT NO. 14-3976-D FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN
R. J. ... CHIEF, BUREAU OF UTILITIES		... CHIEF, DEVELOPMENT ENGINEERING DIVISION		... TERRILL A. FISHER		1 ASBUILT DATA ADDED TO PLAN DATE: APRIL, 2002		600' SCALE MAP NO. 31 BLOCK NO. 16 F.C.C. WORK ORDER NO. 30521 FILE NAME: ... 30521 FINAL WATER AND SEWER PLAN SHT. 3		SHEET 3 OF 15		

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

MATCHLINE SEE THIS SHEET

NOTE: SET RIMS OF MANHOLE NOS. 100 THRU 110 1'-6" ABOVE EX. GROUND, STD. DET. G5.41. SEE MANHOLE TABULATION CHART SHEET 10 OF 15.

PLAN
SCALE: 1" = 50'

GROVEMONT PHASE 2 (F99-22)

NOTE: FROM WM STA. 20+60 TO WM STA. 46+00: TRACER WIRE SHALL BE INSTALLED FOR LOCATING THE 8" WATER MAIN; SEE DETAIL SHEET 9 OF 15.

PLAN
SCALE: 1" = 50'

MATCHLINE SEE THIS SHEET

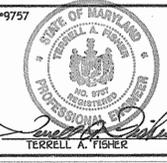
MATCHLINE SEE SHEET 3

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
4-30-02
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
5/21/02
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10072 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
410.440.2055



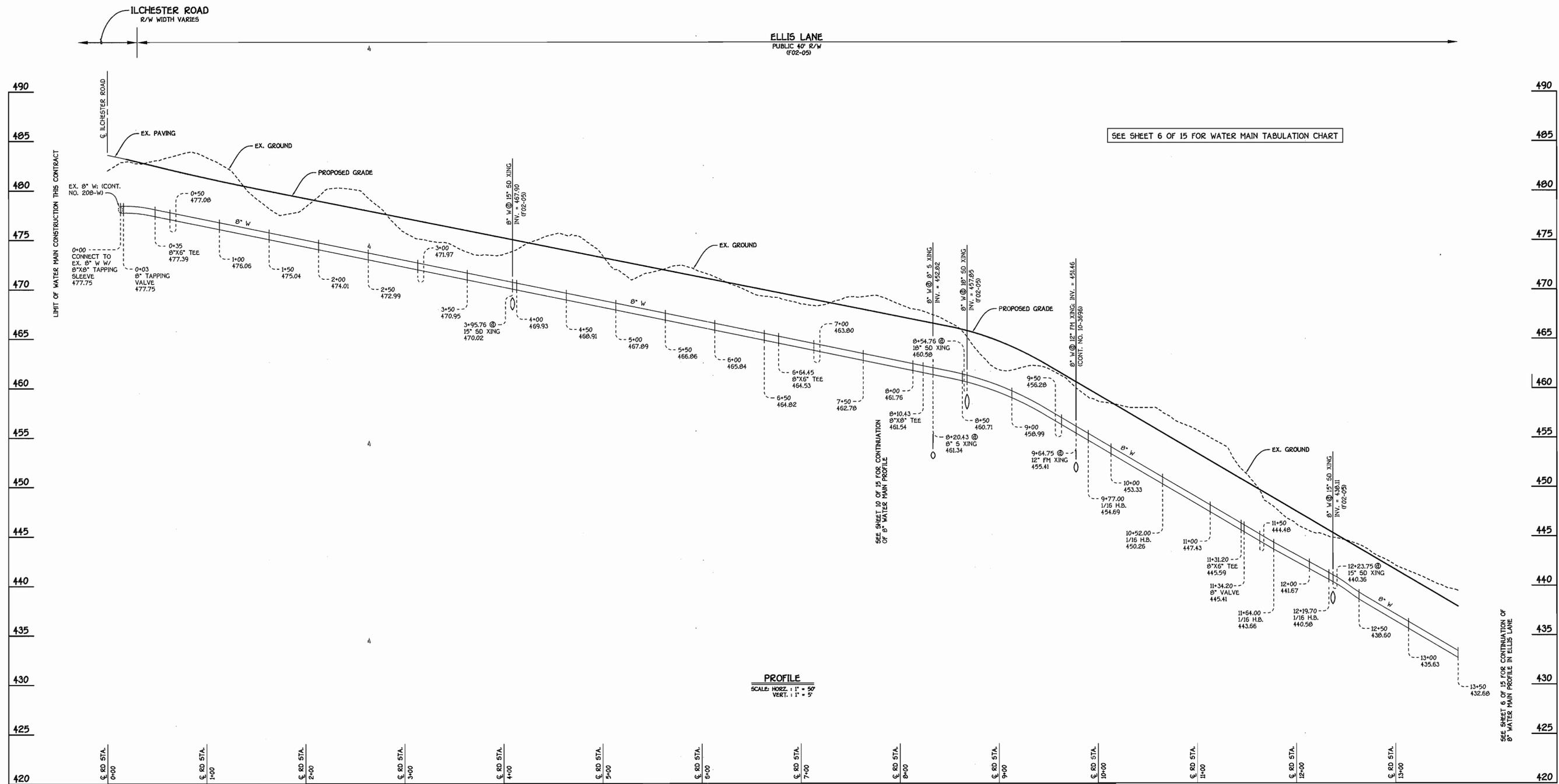
DESIGNED BY:	P.W.K.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	APRIL, 2002
BY NO.	
REVISION	
DATE	

WATER AND SEWER MAINS PLAN VIEW	
600' SCALE MAP NO. 31	BLOCK NO. 16
F.C.C. WORK ORDER NO. 30521	
FILE NAME: 30521 FINAL WATER AND SEWER PLAN SHT 4	

GLYNCHESTER FARM
LOTS 1 THRU 53
CONTRACT NO. 14-3976-D
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
4 OF 15

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8" WATER MAIN: ELLIS LANE

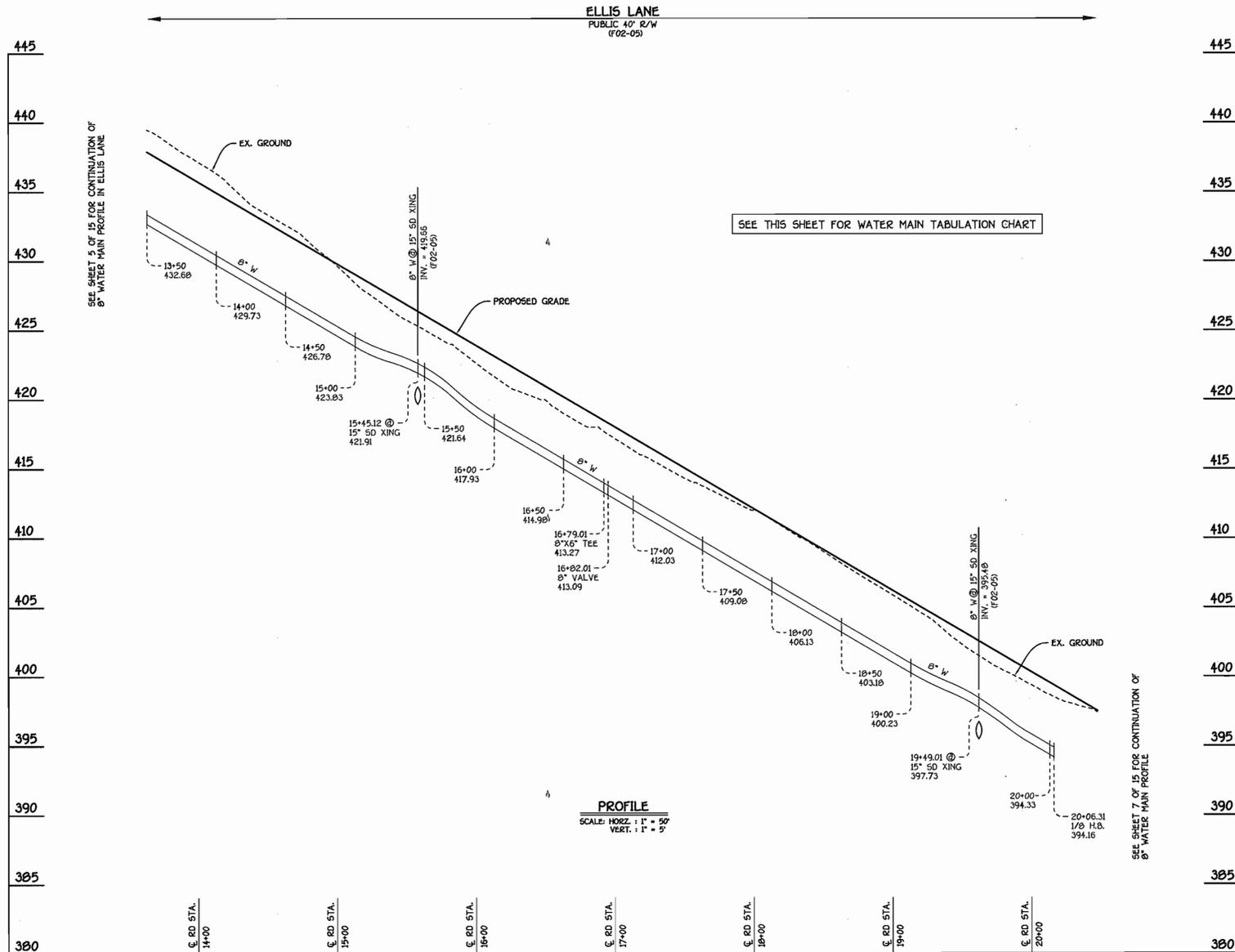
PROFILE
 SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'

SEE SHEET 6 OF 15 FOR WATER MAIN TABULATION CHART

SEE SHEET 6 OF 15 FOR CONTINUATION OF 8" WATER MAIN PROFILE IN ELLIS LANE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND R. A. Fisher CHIEF, BUREAU OF UTILITIES 4-30-02 DATE	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND [Signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION 5/2/02 DATE	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTURIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21114 (410) 461-2055	STATE OF MARYLAND TERRILL A. FISHER PROFESSIONAL ENGINEER NO. 9757	DESIGNED BY : P.W.K. DRAWN BY : M.D.T. CHECKED BY : P.W.K. DATE : APRIL, 2002	WATER MAINS PROFILES 600' SCALE MAP NO. 31 BLOCK NO. 16 F.C.C. WORK ORDER NO. 30521 FILE NAME : 30521.FINAL.WATER.MAIN.PROFILES.SHT.2	GLYNCHESTER FARM LOTS 1 THRU 53 CONTRACT NO. 14-3976-D FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 5 OF 15
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CONTRACT NO. 14-3976-D
 GLYNCHESTER FARM
 LOTS 1 THRU 53
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND



WATER MAIN TABULATION CHART			
WM STATION	APPURTENANCE	℄ ROAD STATION	DISTANCE
ELLIS LANE			
0+00	8" X 8" TAPPING SLEEVE	0+13.02	7' LT.
0+03	8" TAPPING VALVE	0+16.02	7' LT.
0+35	8" X 6" TEE	0+48.02	7' LT.
0+50.66	P.C. (CRIMP RADIUS = 510.00')	0+63.67	7' LT.
1+50.30	P.T. (CRIMP RADIUS = 510.00')	1+64.66	7' LT.
6+64.45	8" X 6" TEE	6+70.81	7' LT.
8+10.43	8" X 6" TEE	8+24.79	7' LT.
9+77.00	1/16 H.B.	9+91.05	8.65' LT.
10+52.00	1/16 H.B.	10+62.11	7.33' LT.
11+31.20	8" X 6" TEE	11+40.05	6.67' LT.
11+34.20	8" VALVE	11+43.05	6.67' LT.
11+64.00	1/16 H.B.	11+73.86	3.25' LT.
12+19.70	1/16 H.B.	12+31.05	2.79' LT.
12+56.49	P.C. (CRIMP RADIUS = 507.35')	12+68.54	7' LT.
14+87.72	P.T. (CRIMP RADIUS = 507.35')	14+97.21	7' LT.
16+79.01	8" X 6" TEE	16+88.69	7' LT.
16+82.01	8" VALVE	16+91.69	7' LT.
20+06.31	1/8 H.B.	20+16.00	7' LT.
20+16.00	8" DIVISION VALVE	20+22.85	℄ ℄ ROAD
20+29.70	1/8 H.B.	20+32.60	9.60' RT.
20+37.11	8" X 8" TEE	20+32.75	16.92' RT.

8" WATER MAIN: ELLIS LANE

CONTRACT NO. 14-3976-D
 GLYNCHESTER FARM
 LOTS 1 THRU 53
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND R. J. ... CHIEF, BUREAU OF UTILITIES DATE: 4-30-02	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND ... CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE:	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 30272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21114 (410) 461-2000	DESIGNED BY: P.W.K. DRAWN BY: M.D.T. CHECKED BY: P.W.K. DATE: APRIL, 2002	WATER MAINS PROFILES 600' SCALE MAP NO. 31 BLOCK NO. 16 F.C.C. WORK ORDER NO. 30621 FILE NAME: 30621 FINAL WATER MAIN PROFILES_SHT 6	GLYNCHESTER FARM LOTS 1 THRU 53 CONTRACT NO. 14-3976-D FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 6 OF 15
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ELLIS LANE
PUBLIC 40' R/W
(FG2-05)

50' PUBLIC WATER, SEWER, DRAINAGE, STORMWATER
FACILITY ACCESS & UTILITY EASEMENT

30' PUBLIC WATER, SEWER & UTILITY EASEMENT

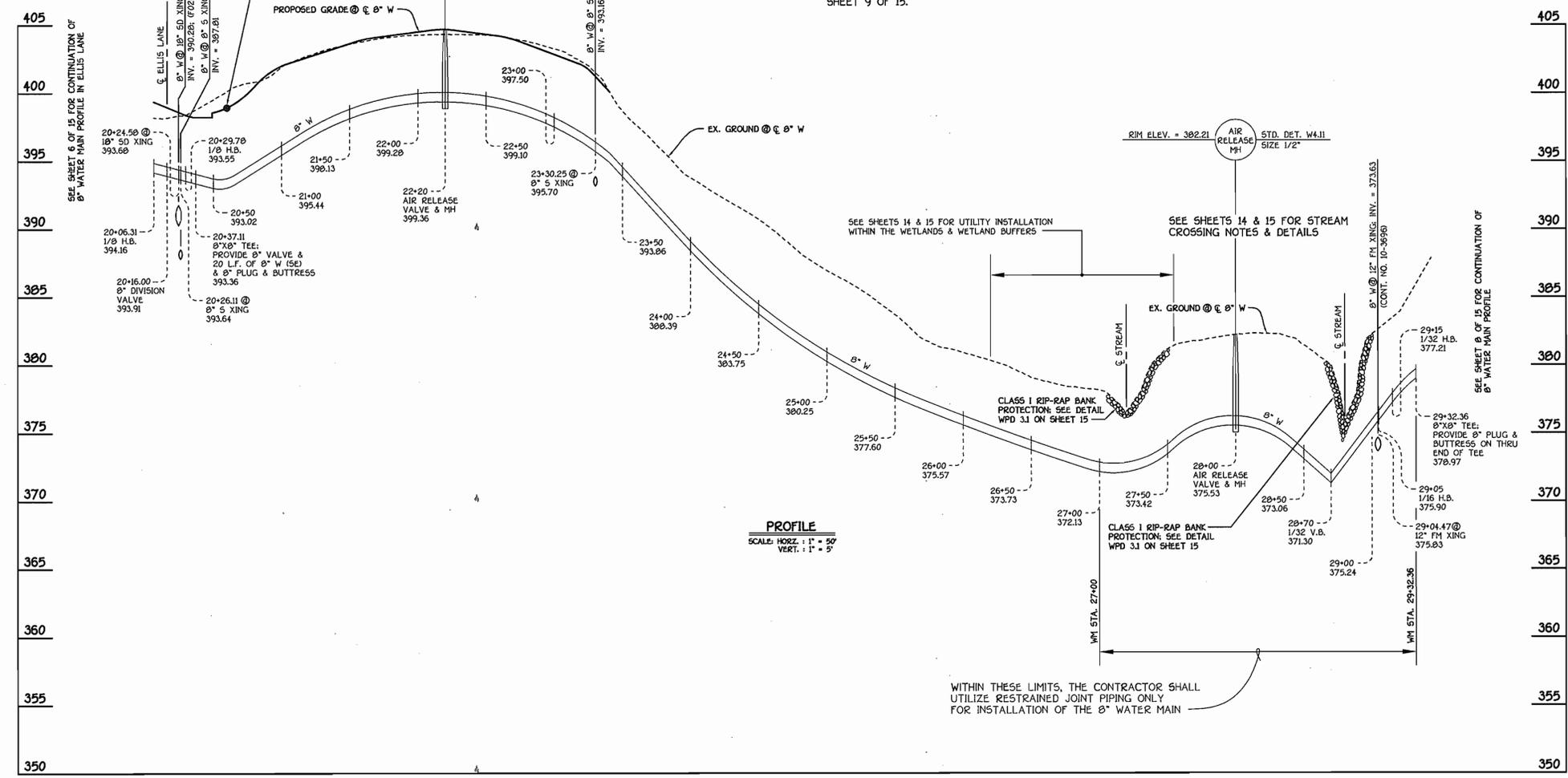
EX. 40' PUBLIC WATER, SEWER, FORCE MAIN
& UTILITY EASEMENT; PLAT NO. 13495

WM STA. 20+60; BEGIN INSTALLATION OF
TRACER WIRE & INSTALL TRACER WIRE
TEST STATION; SEE DETAILS SHEET 9 OF 15

RIM ELEV. = 404.69 AIR
RELEASE
MH
STD. DET. W4.11
SIZE 1/2"

SEE SHEET 9 OF 15 FOR WATER MAIN TABULATION CHART

NOTE: FROM WM STA. 20+60 TO WM STA. 46+80,
TRACER WIRE SHALL BE INSTALLED FOR
LOCATING THE 8" WATER MAIN; SEE DETAILS
SHEET 9 OF 15.



8" WATER MAIN: ELLIS LANE TO GROVEMONT DRIVE

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
R. J. Dwyer
CHIEF, BUREAU OF UTILITIES
4-30-02
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
William J. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PkE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2999



DESIGNED BY:	P.W.K.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	APRIL, 2002
BY NO.	
REVISION	
DATE	

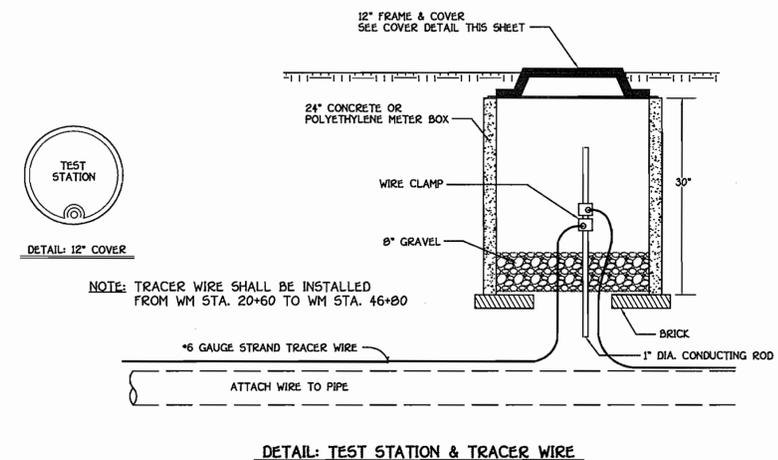
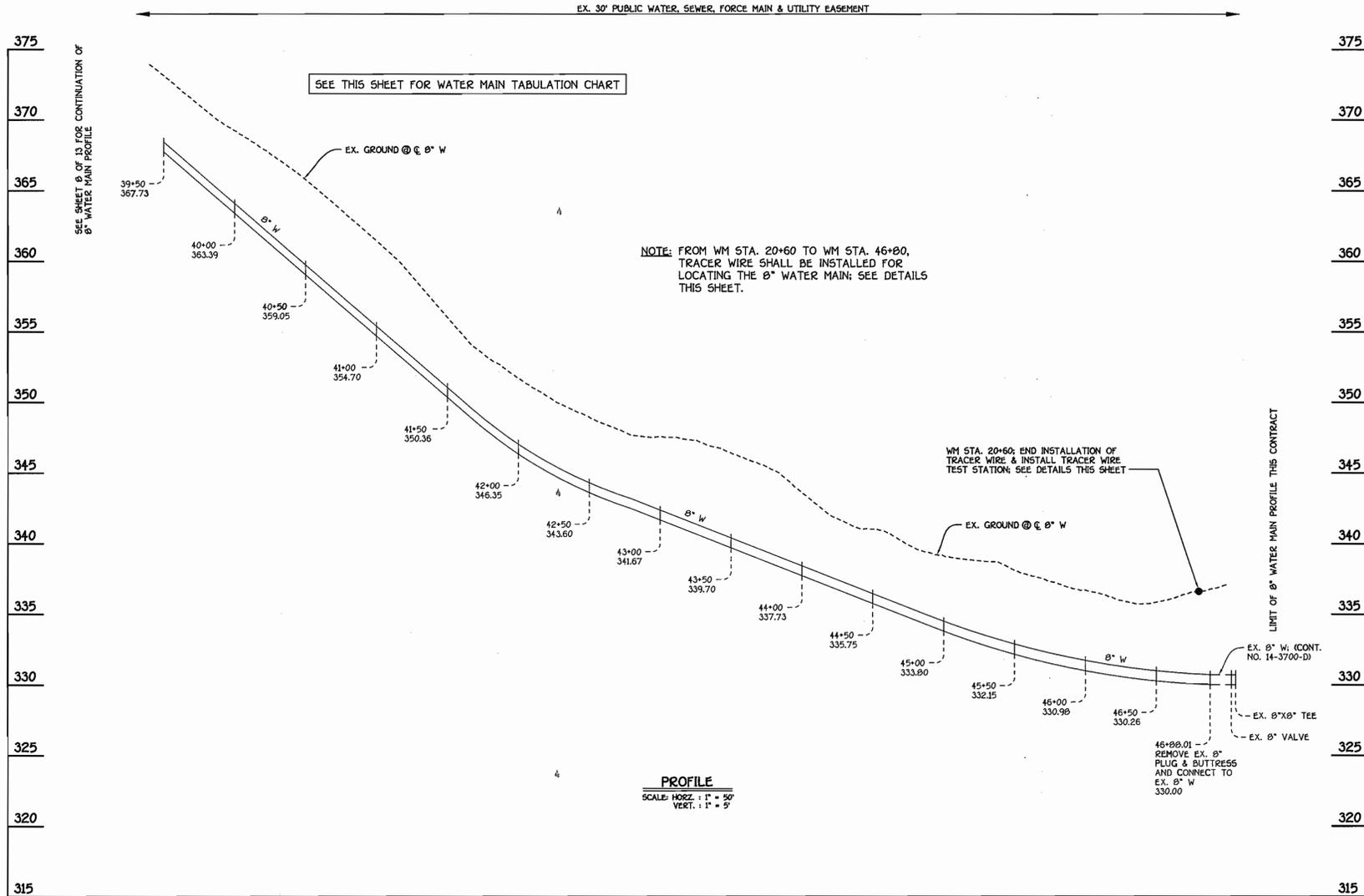
WATER MAINS PROFILES	
600' SCALE MAP NO. 31	BLOCK NO. 16
F.C.C. WORK ORDER NO. 30521	
FILE NAME: 30521 FINAL WATER MAIN PROFILES SHT 7	

GLYNCHESTER FARM
LOTS 1 THRU 53
CONTRACT NO. 14-3976-D
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
7 OF 15

K:\Drawings\30521 Ellis - Grovemont Road\WaterSewer\Final\30521 Final Water Main Profiles Sht 7.dwg, 04/22/02 06:53:01 PM

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN FROM ELLIS LANE TO GROVEMONT DRIVE			
22+20.00	AIR RELEASE MANHOLE	569508.31	1378105.93
29+00.00	AIR RELEASE MANHOLE	569158.27	1377799.73
29+05.00	1/16 H.B.	569080.15	1377729.58
29+15.00	1/32 H.B.	569070.71	1377726.25
29+32.36	8" X 8" TEE	569053.45	1377724.43
29+35.36	8" VALVE	569053.12	1377727.41
29+59.87	P.C. (CRIMP RADIUS = 490')	569050.41	1377751.77
30+63.02	P.T. (CRIMP RADIUS = 490')	569028.21	1377892.31
34+31.48	1/16 H.B.	568911.40	1378201.76
34+47.77	1/8 H.B.	568900.63	1378213.99
36+49.10	1/16 H.B.	568899.78	1378227.93
36+84.00	AIR RELEASE MANHOLE	568868.92	1378216.55
38+01.24	1/8 H.B.	568857.04	1378175.29
46+88.01	CONNECT TO EX. 8" WATER	567733.77	1378504.79



8" WATER MAIN: ELLIS LANE TO GROVEMONT DRIVE

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTURIAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2899



DESIGNED BY:	P.W.K.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	APRIL 2002
BY NO.	
REVISION	
DATE	

WATER MAINS
PROFILES

600' SCALE MAP NO. 31	BLOCK NO. 16
F.C.C. WORK ORDER NO. 30621	
FILE NAME: 30621 FINAL WATER MAIN PROFILES SHT. 9	

GLYNCHESTER FARM
LOTS 1 THRU 53
CONTRACT NO. 14-3976-D
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

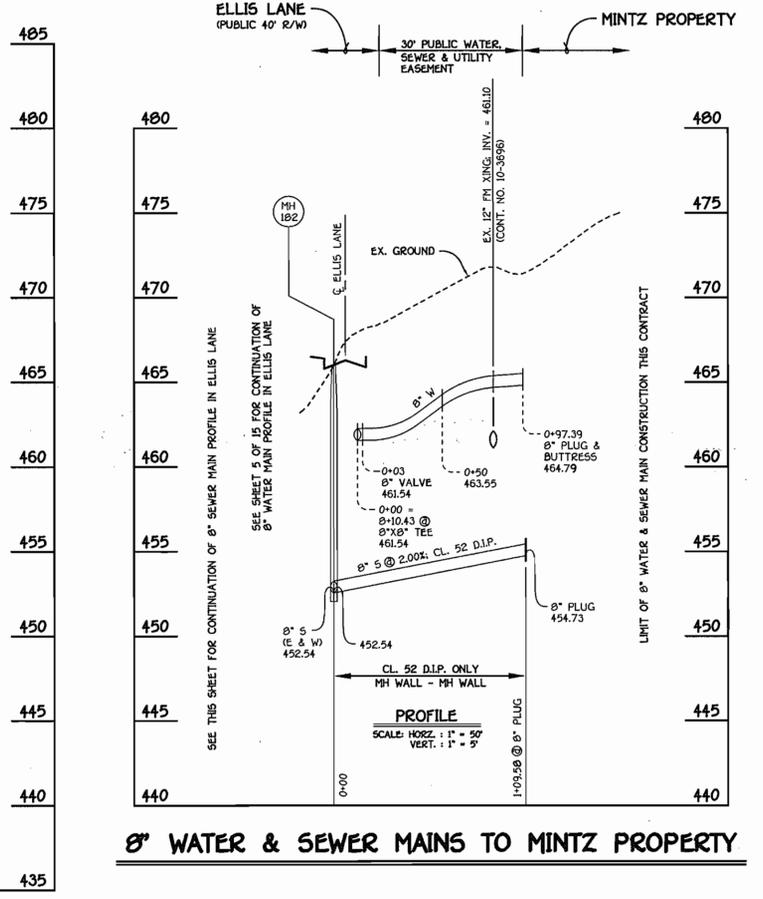
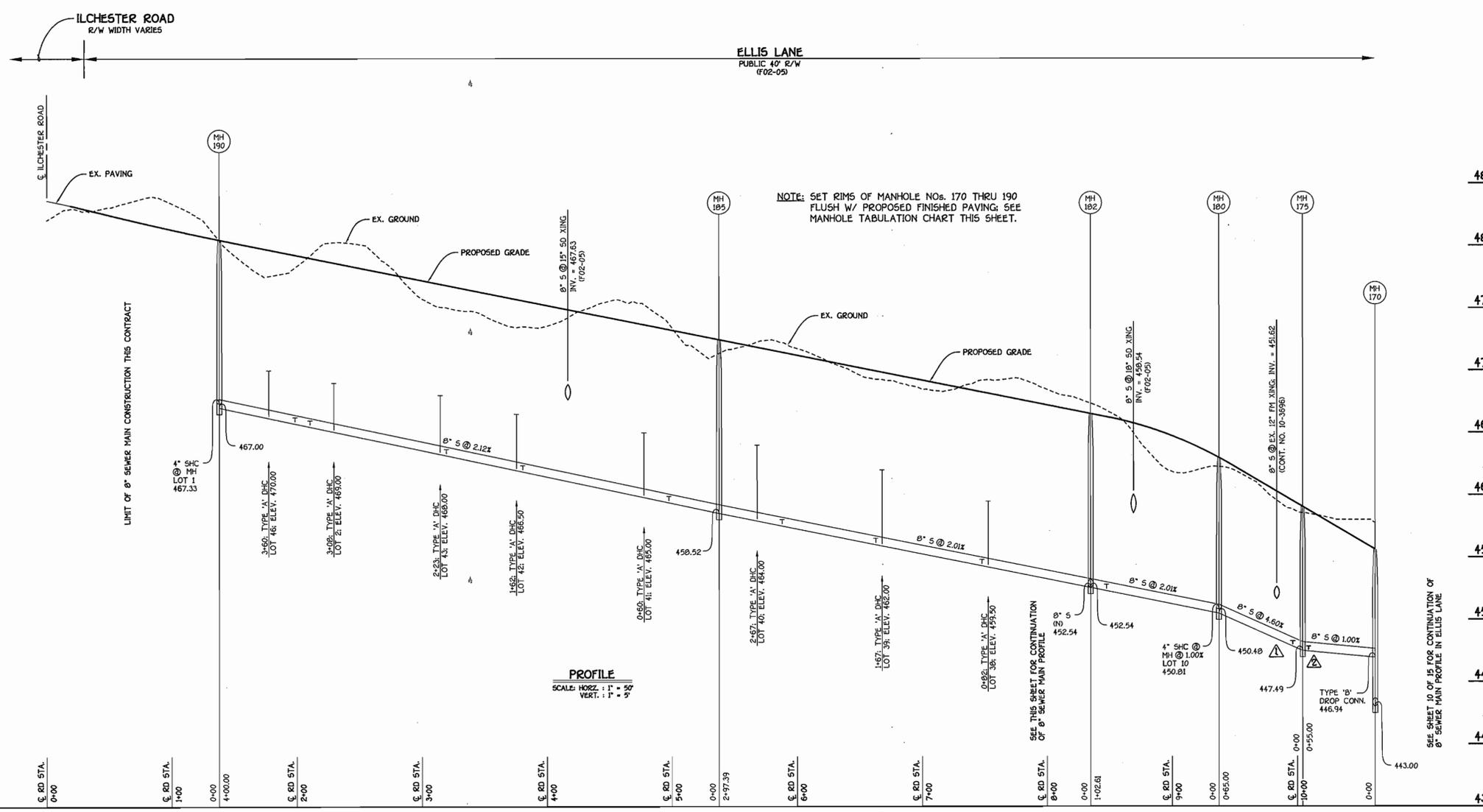
SCALE
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SHEET
9 of 15

K:\Drawings\30621 Ellis - Winchester Road\HwySewer\Final\30621 Final Water Main Profiles Sht 9.dwg, 04/22/02 08:00:02 PM

MANHOLE TABULATION CHART				
NO.	℄ ROAD STATION	DISTANCE	SLOPE	RIM ELEVATION
140	20+48.14 ELLIS LANE	7.00' RT.	-5.90%	397.29
145	10+44.14 ELLIS LANE	7.00' RT.	-5.90%	409.33
150	14+68.73 ELLIS LANE	6.40' RT.	-5.90%	431.47
155	13+57.39 ELLIS LANE	7.00' RT.	-5.90%	438.04
160	12+44.35 ELLIS LANE	7.00' RT.	-5.90%	444.71
165	11+80.82 ELLIS LANE	7.00' RT.	-5.90%	448.46
170	10+62.29 ELLIS LANE	7.00' RT.	-5.90%	455.45
175	10+04.24 ELLIS LANE	7.00' RT.	-5.90%	458.88
180	9+37.40 ELLIS LANE	7.00' RT.	-5.40%	462.76
182	8+34.79 ELLIS LANE	7.00' RT.	-2.00%	466.33
185	5+37.39 ELLIS LANE	7.00' RT.	-2.00%	472.28
190	1+37.78 ELLIS LANE	7.70' RT.	-2.04%	480.28
		NORTHING	EASTING	
100**	OUTFALL SEWER MAIN*	568904.68	1378628.75	371.50
105**	OUTFALL SEWER MAIN*	568950.75	1378446.57	379.50
110**	OUTFALL SEWER MAIN*	568961.66	1378114.61	381.50
115**	OUTFALL SEWER MAIN*	569055.84	1377832.70	383.50
120**	OUTFALL SEWER MAIN**	569071.33	1377745.56	385.00
125**	OUTFALL SEWER MAIN**	569084.53	1377746.95	383.50
130**	OUTFALL SEWER MAIN*	569203.32	1377853.64	379.50
135*	OUTFALL SEWER MAIN*	569500.93	1378120.90	401.30
136*	8" SEWER MAIN*	569729.25	1377877.12	413.60
137*	8" SEWER MAIN*	569901.51	1377693.19	416.00

* SET MH RIMS FLUSH W/ PROPOSED FINISHED GRADE OR EXISTING GROUND AS APPLICABLE
 ** SET MH RIMS 1'-6" ABOVE EXISTING GROUND, STD. DET. C5.41

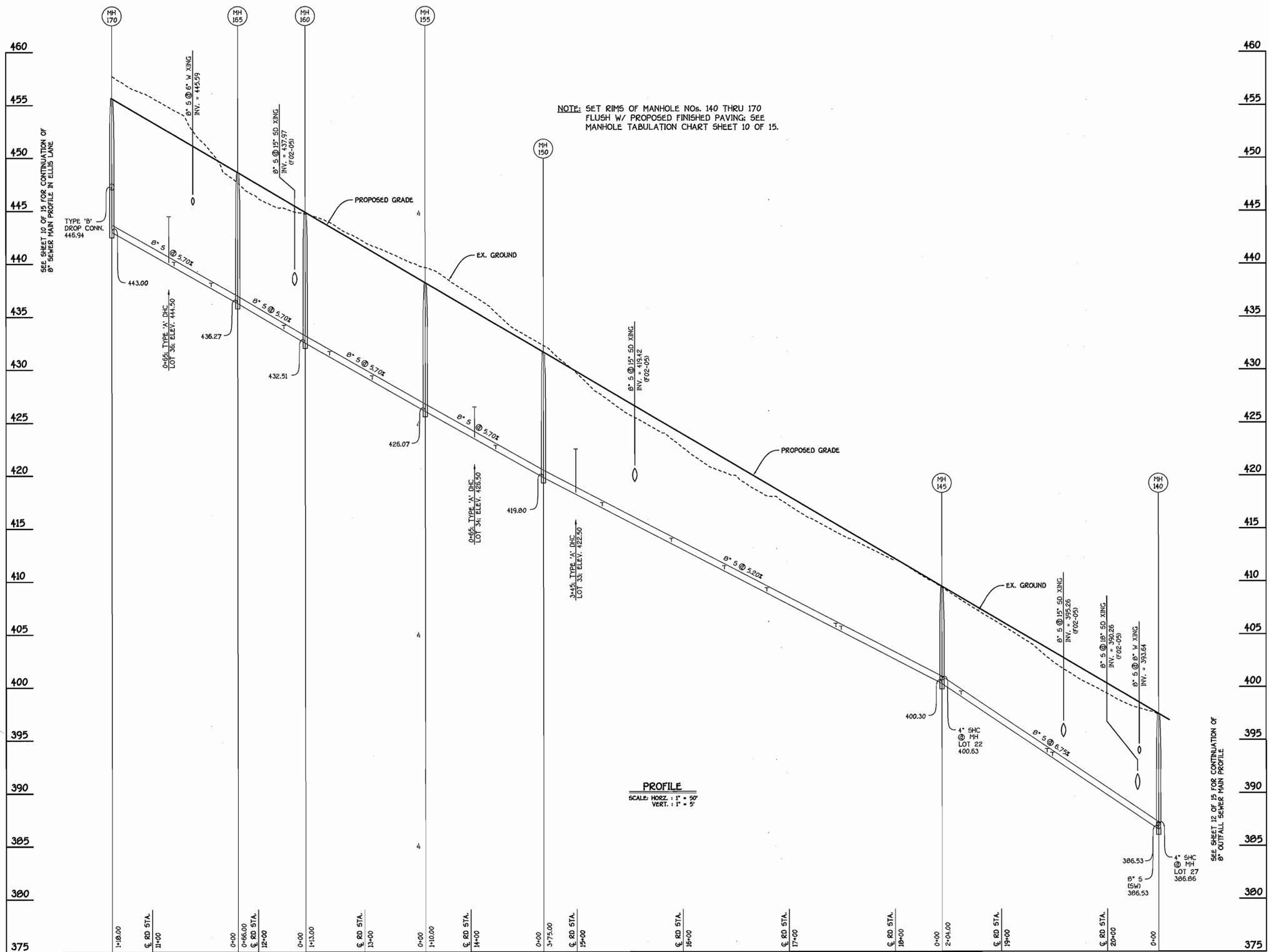


8" SEWER MAIN: ELLIS LANE

8" WATER & SEWER MAINS TO MINTZ PROPERTY

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 4-30-02 DATE	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND 5/2/02 DATE	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL Pk. ELLICOTT CITY, MARYLAND 21114 (410) 481-2955	DESIGNED BY: P.W.K. DRAWN BY: M.D.T. CHECKED BY: P.W.K. DATE: APRIL, 2002	WATER AND SEWER MAINS PROFILES 600' SCALE MAP NO. 31 BLOCK NO. 36 F.C.C. WORK ORDER NO. 30621 FILE NAME: 30621 FINAL SEWER MAIN PROFILES SHT 10	Glynchester Farm LOTS 1 THRU 53 CONTRACT NO. 14-3976-D FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 10 OF 15
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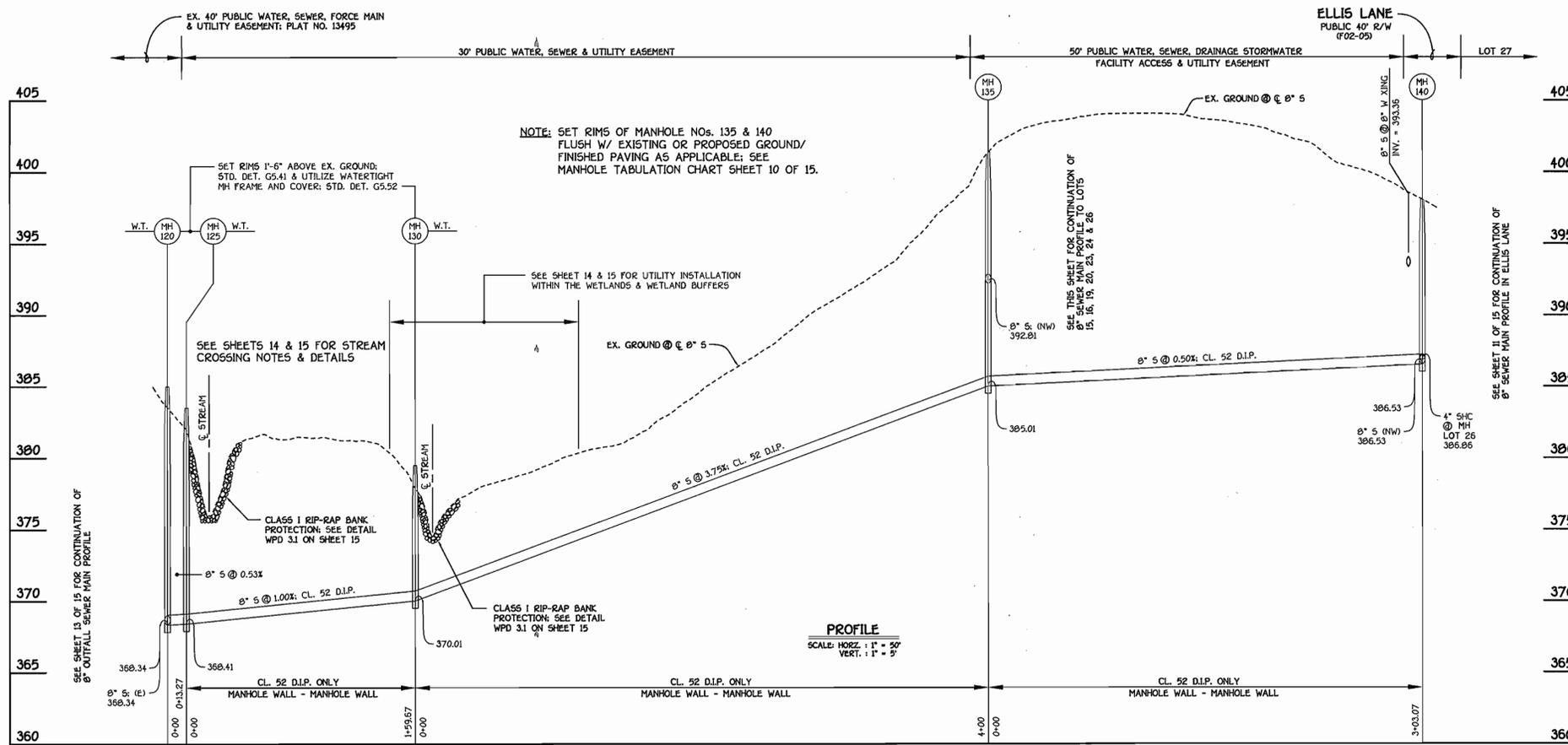
ELLIS LANE
PUBLIC 40' R/W
(702-05)



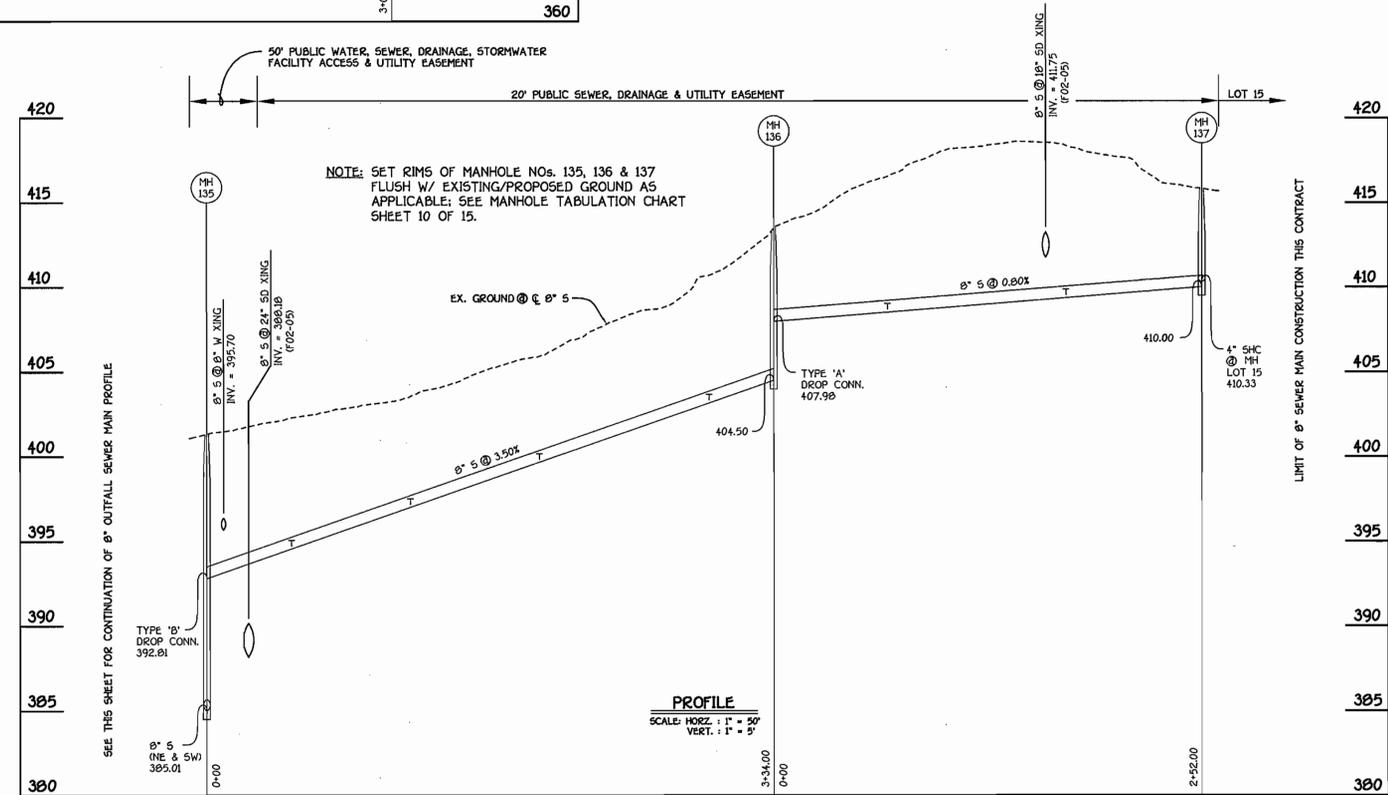
SHC INVERT @ PROPERTY LINE CHART		
STATION	LOT	ELEVATION
MH 135 TO MH 136		
0+50 RT.	26	394.93
1+20 RT.	24	397.38
1+96 RT.	23	400.04
2+96 RT.	20	403.54
MH 136 TO MH 137		
0+67 RT.	19	409.89
1+72 RT.	16	409.73
⊙ MH 137 RT.	15 (SHC @ MH)	410.55
MH 140 TO MH 145		
⊙ MH 140 RT.	27 (SHC @ MH)	387.50
1+00 RT.	28	393.99
1+05 LT.	25	394.05
1+86 RT.	29	399.80
⊙ MH 145 LT.	22 (SHC @ MH)	400.89
MH 145 TO MH 150		
0+95 LT.	21	405.67
1+00 RT.	30	406.21
1+65 RT.	31	409.59
2+05 LT.	18	411.39
2+55 RT.	32	414.27
3+20 LT.	17	417.37
3+45 RT.	33 (DHC)	423.04
MH 150 TO MH 155		
0+45 LT.	14	422.76
0+65 RT.	34 (DHC)	427.08
MH 155 TO MH 160		
0+50 LT.	13	429.33
0+90 RT.	35	431.91
MH 160 TO MH 165		
0+20 LT.	16	434.14
MH 165 TO MH 170		
0+25 RT.	37	438.11
0+60 LT.	11	440.16
0+65 RT.	36	445.04
MH 175 TO MH 180		
⊙ MH 180 LT.	10 (SHC @ MH @ 100X)	450.94
MH 180 TO MH 182		
0+90 LT.	9	452.72
MH 182 TO MH 185		
0+82 RT.	38 (DHC)	460.04
0+87 LT.	8	454.72
1+67 RT.	39 (DHC)	462.54
1+72 LT.	7	456.43
2+47 LT.	6	457.93
2+67 RT.	40 (DHC)	464.54
MH 185 TO MH 190		
0+40 LT.	5	459.80
0+60 RT.	41 (DHC)	465.54
1+57 LT.	4	462.28
1+62 RT.	42 (DHC)	467.04
2+18 LT.	3	463.57
2+23 RT.	43 (DHC)	468.54
3+08 RT.	2 (DHC)	469.28
3+27 RT.	44	466.16
3+39 RT.	45 (SHC @ 100X)	466.15
3+60 RT.	46 (DHC)	470.54
⊙ MH 190 LT.	1 (SHC @ MH)	467.61
MH 179 TO MH 180		
0+08 RT.	PARCEL 242/LOT 1	440.90
MH 170 TO MH 175		
0+82 RT.	PARCEL 242/LOT 2	447.68

8" SEWER MAIN: ELLIS LANE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert Benjamin CHIEF, BUREAU OF UTILITIES 4-30-02 DATE	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND [Signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION 5/21/02 DATE	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 1927A BALTIMORE NATIONAL PIKE ELICOTT CITY, MARYLAND 21042 (410) 481-2000	STATE OF MARYLAND TERRILL A. FEMER PROFESSIONAL ENGINEER 9757	DESIGNED BY: P.W.K. DRAWN BY: M.D.T. CHECKED BY: P.W.K. DATE: APRIL, 2002	ADD SHC FOR FUTURE LOT 2 OF YAW PROPERTY REMOVE SHC INVERT @ PROPERTY LINE CHART 10/24/02 7/14/03	SEWER MAINS PROFILES 600' SCALE MAP NO. 31 BLOCK NO. 16 F.C.C. WORK ORDER NO. 30521 FILE NAME: 30521 FINAL SEWER MAIN PROFILES SH1 II	CONTRACT NO. 14-3976-D GLYNCHESTER FARM LOTS 1 THRU 53 WATER AND SEWER MAIN EXTENSIONS HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 11 OF 15
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8" OUTFALL SEWER MAIN



8" SEWER MAIN TO: LOTS 15, 16, 19, 20, 23, 24 & 26

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTURIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PkE
ELLSWORTH CITY, MARYLAND 21042
(410) 481-2955



DESIGNED BY:	P.W.K.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	APRIL, 2002
BY NO.	
REVISION	

SEWER MAINS
PROFILES

600' SCALE MAP NO. 31 BLOCK NO. 16
F.C.C. WORK ORDER NO. 30521
FILE NAME: 30521 FINAL SEWER MAIN PROFILES SHT 12

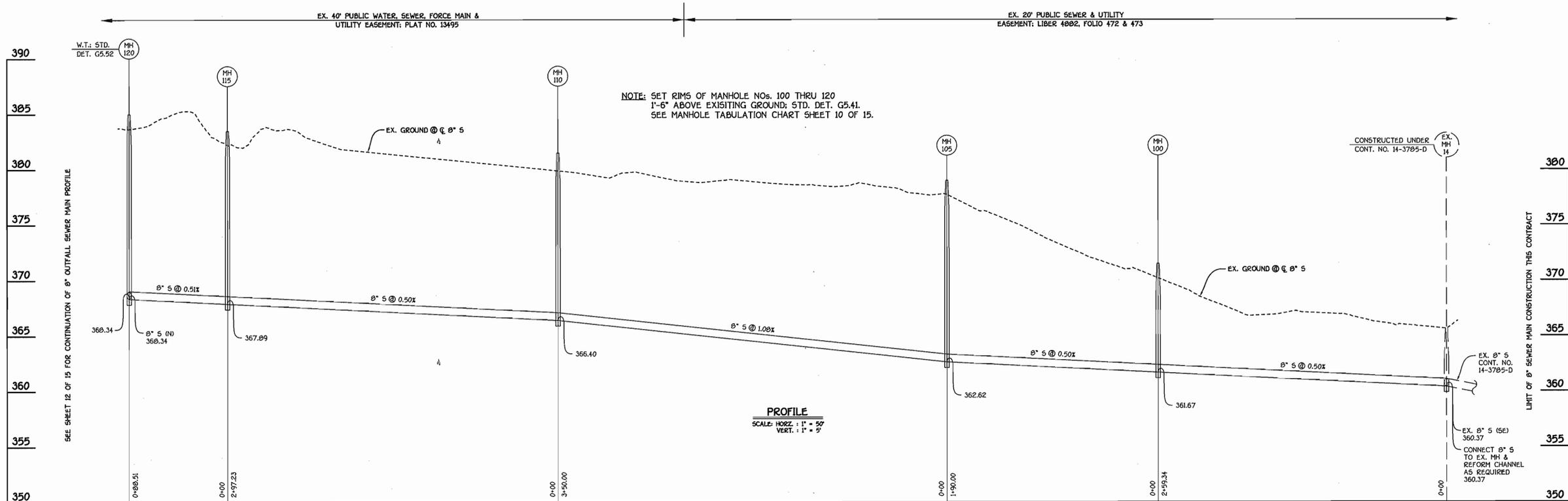
GLYNCHESTER FARM
LOTS 1 THRU 53
CONTRACT NO. 14-3976-D
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
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12 OF 15

4-30-02
DATE

5/21/02
DATE

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NOTE: SET RIMS OF MANHOLE NOS. 100 THRU 120
1'-6" ABOVE EXISTING GROUND; STD. DET. G5.41.
SEE MANHOLE TABULATION CHART SHEET 10 OF 15.

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

8" OUTFALL SEWER MAIN

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
R. J. ...
CHIEF, BUREAU OF UTILITIES
4-30-02
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
5/2/02
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2055



DESIGNED BY : P.W.K.
DRAWN BY : M.D.T.
CHECKED BY : P.W.K.
DATE : APRIL, 2002
BY NO. REVISION DATE

SEWER MAINS PROFILES
600' SCALE MAP NO. 31 BLOCK NO. 16
F.C.C. WORK ORDER NO. 30621
FILE NAME : 30621 FINAL SEWER MAIN PROFILES SHT. 13

GLYNCHESTER FARM
LOTS 1 THRU 53
CONTRACT NO. 14-3976-D
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 13 OF 15

STREAM CROSSING NOTES:

1. DELAY ALL WORK IN THE STREAM UNTIL THE START OF A 5-DAY CLEAR-WEATHER FORECAST. COMPLETE ALL WORK IN THE STREAM WITHIN THESE 5-DAYS.
2. FOLLOW THE SEQUENCE OF CONSTRUCTION: WATERWAY CROSSING FOR ALL WORK IN THE STREAM. (SEE THIS SHEET)
3. FOR THE STREAM CROSSING THE CONTRACTOR SHALL USE THE FOLLOWING CONSTRUCTION DETAILS:

DETAIL	DESCRIPTION	SIZE
WPD 5.1	UTILITY CROSSING	N/A
WPD 2.3	SANDBAG/STONE FLOW DIVERSION	24"
WPD 3.1	RIPRAP OUTLET PROTECTION	CLASS 1
SCS DETAIL 20B	SUMP PIT	N/A
FB	FILTER BAG	N/A

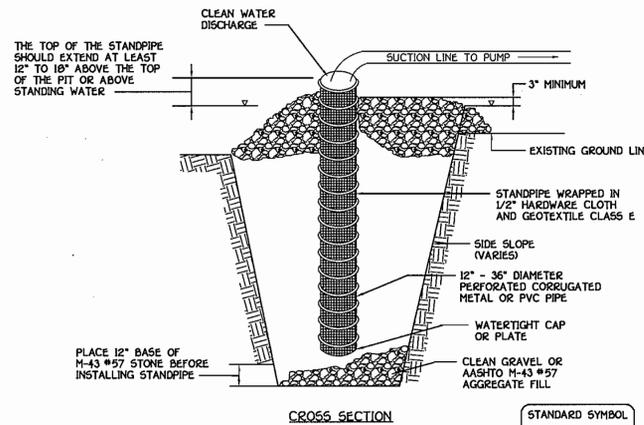
BEST MANAGEMENT PRACTICES FOR WORK IN NONTIDAL WETLANDS AND WETLAND BUFFERS

- NTW & WD * 02-NT-0017/200261574
1. CONDUCT ALL CONSTRUCTION ACTIVITIES SO AS NOT TO CAUSE OR CONTRIBUTE TO A DEGRADATION OF WATER QUALITY AS DETERMINED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
 2. CONDUCT THE REGULATED CONSTRUCTION ACTIVITY SO AS NOT TO RESTRICT OR IMPED THE FOLLOWING:
 - a. MOVEMENT OF WILDLIFE INDIGENOUS TO THE NONTIDAL WETLANDS OR ADJACENT WATER.
 - b. PASSAGE OF NORMAL OR EXPECTED HIGH WATER FLOWS.
 3. STREAMS ARE CLASSIFIED AS USE 1 WATERS; NO IN-STREAM WORK SHALL BE CONDUCTED DURING THE PERIOD MARCH 1st THRU JUNE 15th.
 4. MAINTAIN THE HYDROLOGIC REGIME OF ALL ADJACENT NONTIDAL WETLANDS.
 5. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN THE WETLANDS OR BUFFERS.
 6. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLANDS & BUFFERS.
 7. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF ANY DELETERIOUS SUBSTANCES.
 8. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS AND BUFFERS.
 9. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS IN EXCESS OF NONTIDAL WETLANDS LOST UNDER THE ORIGINAL CONSTRUCTION OR FILL.
 10. RECTIFY ANY NONTIDAL WETLANDS TEMPORARILY IMPACTED BY ANY CONSTRUCTION OR MAINTENANCE ACTIVITY.
 11. ALL STABILIZATION IN THE WETLANDS AND BUFFERS SHALL BE OF THE FOLLOWING RECOMMENDED SPECIES: ANNUAL RYEGRASS (*Lolium multiflorum*), MILLET (*Setaria italica*), BARLEY (*Hordeum sp.*), OATS (*Avena sp.*), AND OR RYE (*Secale cereale*). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTANT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE DIVISION. KENTUCKY 33 FESCUE SHALL NOT BE UTILIZED IN THE WETLAND OR BUFFER AREAS. THE AREA SHALL BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
 12. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS OF NONTIDAL WETLANDS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS.
 13. STORMWATER RUNOFF FROM ADJACENT IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE STREAM.

SEQUENCE OF CONSTRUCTION: WATERWAY CROSSING

1. OBTAIN THE REQUIRED PERMITS/APPROVALS FROM THE APPROPRIATE AGENCIES. NTW & WD * 02-NT-0017/200261574
2. NOTIFY THE COMPLIANCE DIVISION OF THE MARYLAND WATER MANAGEMENT ADMINISTRATION AT LEAST FIVE (5) DAYS PRIOR TO THE INITIATION OF CONSTRUCTION AND FIVE (5) DAYS AFTER WORK ENDS. THE BALTIMORE OFFICE PHONE NUMBER IS (410) 631-3510.
3. CONTRACTOR SHALL NOTE THE TIME OF YEAR RESTRICTIONS ON WORK WITHIN THE STREAM SHOWN ON THE PERMITS.
4. INSTALL THE SANDBAG/STONE DIVERSION, THE FILTER BAG AND THE SUMP PIT. THE SEDIMENT CONTROL INSPECTOR MUST APPROVE ALL CONTROLS BEFORE COMMENCING WORK.
5. INSTALL PIPELINE AND THE RIPRAP BANK PROTECTION ACCORDING TO THE DRAWINGS AND SPECIFICATIONS DURING A TIME OF FAVORABLE WEATHER FORECAST.
6. WITH MINIMAL DISTURBANCE REMOVE DIVERSION CONTROLS AND FILTER BAG AND STABILIZE ALL DISTURBED AREAS.

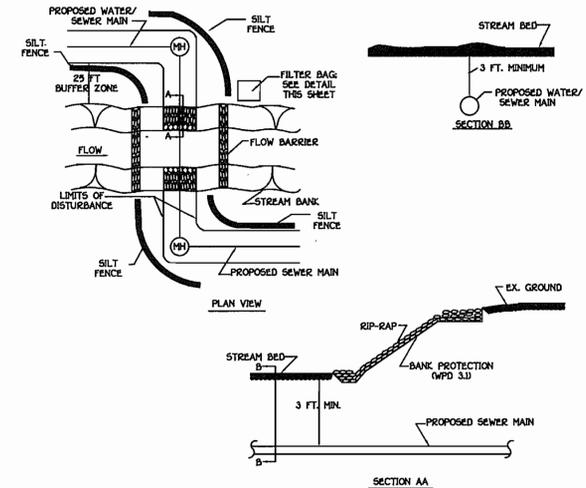
DETAIL CROSSING WPD 5.1



1. PIT DIMENSIONS ARE VARIABLE, WITH THE MINIMUM DIAMETER BEING 2 TIMES THE STANDPIPE DIAMETER.
2. THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORMING A 12" TO 24" DIAMETER CORRUGATED OR PVC PIPE. THEN WRAPPING WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE CLASS E. THE PERFORATIONS SHALL BE 1/2" X 6" SLITS OR 1" DIAMETER HOLES.
3. A BASE OR FILTER MATERIAL CONSISTING OF CLEAN GRAVEL OR #57 STONE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE THE PIT SURROUNDING THE STANDPIPE SHOULD THEN BE BACKFILLED WITH THE SAME FILTER MATERIAL.
4. THE STANDPIPE SHOULD EXTEND 12" TO 18" ABOVE THE LIP OF THE PIT OR THE RISER CREST ELEVATION (BASIN DEWATERING ONLY) AND THE FILTER MATERIAL SHOULD EXTEND 3" MINIMUM ABOVE THE ANTICIPATED STANDING WATER ELEVATION.

DETAIL 20B - SUMP PIT

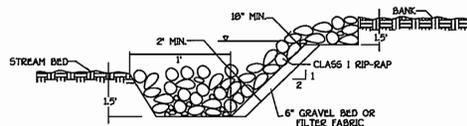
NO SCALE



1. DESCRIPTION
THIS WORK SHALL CONSIST OF INSTALLING EROSION CONTROL DEVICES IN & ADJACENT TO TEMPORARY STREAM CONSTRUCTION SUCH AS UTILITY CROSSINGS.
- II. CONSTRUCTION REQUIREMENTS
1. ALL EROSION & 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 & SUBSOIL SHALL BE KEPT SEPARATE & 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 WEA 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 & EROSION CONTROL PLAN & THE INSPECTION AUTHORITY APPROVES THEIR REMOVAL.

UTILITY CROSSING DETAIL: WPD 5.1

NO SCALE



DESCRIPTION

1. THIS WORK SHALL CONSIST OF PROTECTING SLOPES & CHANNELS FROM EROSION COVERINGS OF STONE IN ACCORDANCE WITH THE PLANS & SPECIFICATIONS SHOWN ON THIS DRAWING.

II. MATERIAL SPECIFICATIONS

A. BANK RUN GRAVEL SHALL MEET THE FOLLOWING REQUIREMENTS.

X LESS THAN	U.S. STANDARD SIEVE SIZE
100	2 1/2 IN.
65-100	1 IN.
60-100	1/2 IN.
35-70	NO. 10
25-50	NO. 40
5-20	NO. 200

B. GEOTEXTILE FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS:

TENSILE STRENGTH	200 LBS.
TUFT STRENGTH	350 LBS.
PUNCTURE STRENGTH	70 LBS.
PERMEABILITY	.02 CM/SEC.
ELONGATION AT FAILURE	30%
MINIMUM LAP LENGTH	24 IN.

III. CONSTRUCTION REQUIREMENTS

1. THE CONTRACTOR SHALL INSTALL ALL SEDIMENT & EROSION CONTROL DEVICES AS A FIRST ORDER OF BUSINESS.
2. PROVISIONS MUST BE MADE TO ANCHOR THE RIPIRAP 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 RIPIRAP SHALL BE MADE IN REASONABLY CLOSE CONFORMITY WITH THE EXISTING STREAM SLOPE & BED.
4. A FILTER BEDDING IS REQUIRED UNDER ALL RIPIRAP. BEDDING MATERIAL SHALL CONSIST OF EITHER A BANK RUN GRAVEL OR A GEOTEXTILE FILTER FABRIC MEETING THE SPECIFICATIONS OF II. 1. B ABOVE.
5. THE PLACEMENT OF RIPIRAP 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 & CHANNEL PROTECTION. THE RIPIRAP 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 & CHANNEL PROTECTION SHALL BE BACKFILLED.
7. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT & EROSION CONTROL PLAN.

RIPIRAP STREAM BANK PROTECTION DETAIL: WPD 3.1

NO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL PKE.
ELLCOTT CITY, MARYLAND 21042
(410) 461-2955



DESIGNED BY:	P.W.K.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	APRIL, 2002
BY NO.	
REVISION	
DATE	

STREAM CROSSING & SEDIMENT CONTROL NOTES AND DETAILS

600' SCALE MAP NO. 31 BLOCK NO. 16
F.C.C. WORK ORDER NO. 30621
FILE NAME : 30621.FINAL.WATER AND SEWER NOTES/DETAILS

GLYNCHESTER FARM
LOTS 1 THRU 53
CONTRACT NO. 14-3976-D
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 14 OF 15

CONTRACT NO. 14-3976-D
GLYNCHESTER FARM
LOTS 1 THRU 53
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

SECTION 20 : STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
 Using vegetation as cover for barren soil to protect it from forces that cause erosion.
PURPOSE
 Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to absorb infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.
CONDITIONS WHERE PRACTICE APPLIES
 This practice shall be used on denuded areas that may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration up to one year, and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil erosion, denuded areas, construction sites, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY
 Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and runoff. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by denuding these substances present within the root zone.
SEEDING
 Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or erosion control basins.
- Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
- Schedule required soil tests to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for this purpose.
- Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
- Lime materials shall be ground limestone (hydrated or burnt lime may be substituted which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
- Incorporate lime and fertilizer into the top 3-5" of soil by discing or other suitable means.

C. Seeded Preparation

- Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable erosion control equipment such as disc harrows or chisel plows or rollers mounted on construction equipment. After the soil is loosened it should not be ripped or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3%) shall be treated leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3-5" of soil by discing or other suitable means.
- Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - Soil shall contain sufficient pore space to receive and hold water. Vegetation over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the specifications shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Soil amendments shall be incorporated into the top 3-5" of soil by discing or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation loose soil by dragging with a dozer or other equipment to roughen the surface. Steep slopes (steeper than 3%) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-2" of soil should be loose and friable. Seeding loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to retesting by a recognized seed laboratory, seeds used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 - Seed tags shall be made available to the inspector to verify type and rate of seed used.
 - Incubant - The incubant for treating legume species shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Incubants shall not be used later than the date indicated on the container and shall be directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep incubant as cool as possible until used. Temperatures above 75° F. can weaken bacteria and reduce the incubant's effectiveness.
- Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultivator seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs./ac; K2O (potassium); 200 lbs./ac.
 - Lime - use only ground agricultural limestone, up to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - Dry Seeding - This includes use of conventional drop or broadcast spreaders.
 - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 255 or 266. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - Where multiple seed applications are required, apply seed perpendicular to each other. Apply half the seeding rate in each direction.
 - Drill or Cultivator Seeding - Mechanized seeders that apply and cover seed with soil.
 - Cultivating seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeders must be firm after planting.
 - Where multiple seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (in order of preference)

- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
- Wood Cellulose Fiber Mulch (WCFF)
 - WCFF shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFF shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFF, including dye, shall contain no germination or growth inhibiting factors.
 - WCFF materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a batter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFF material shall contain no elements or compounds at concentrations levels that will be phytotoxic.
 - WCFF must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1% maximum and water holding capacity of 90% minimum.
- Only sterile straw mulch should be used in areas where one species of grass is desired.
- Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber used as a mulch shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- Securing Straw Mulch Mulch Anchoring - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard.
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land this practice should be used on the contour if possible.
 - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 1,500 lbs. per acre. The fiber binder shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be applied uniform after binder application. Synthetic binders - such as Acrylic D.I.E. (Aqua-Tack), DCA-70 Petroseed, Terra-Tax II, Terra-Tack A8 or other approved equal may be used at rates recommended by the manufacturer and manufacturer's literature.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in lots 4' to 15' feet wide and 300 to 3,000 feet long.

TEMPORARY SEEDING NOTES

NOT APPLICABLE WITHIN DENOTED WETLANDS/WETLAND BUFFERS
 APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED
 WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

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

SOIL AMENDMENTS
 APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER ON LBS./1000 SQ.FT.

SEEDING
 FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 15 BUSHELS PER ACRE OF ANNUAL RYE (32 LBS./ACR) OF WEEDING LOVEGRASS (07 LBS./1000 SQ.FT.) FOR THE PERIODS NOVEMBER 15 THROUGH 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 SOIL.

MULCHING
 APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNKNOTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL, OR 250 GALLONS PER ACRE (5 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 0 FEET OR HIGHER, USE 340 GALLONS PER ACRE (34 GAL./1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1986 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

NOT APPLICABLE WITHIN DENOTED WETLANDS/WETLAND BUFFERS
 ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

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

SOIL AMENDMENTS
 APPLY TWO TONS PER ACRE (100 LBS./1000 SQ.FT.) OF DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 800 LBS. PER ACRE (80 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE (40 LBS./1000 SQ.FT.) UREA-NITROGEN FERTILIZER (9 LBS./1000 SQ.FT.) AND 800 LBS. PER ACRE (80 LBS./1000 SQ.FT.) OF 10-20-20 FERTILIZER.

SEEDING
 FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 50 LBS./ACRE (4 LBS./1000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.2 LBS./1000 SQ.FT.) OF WEEDING LOVEGRASS. DURING THE PERIOD OF OCTOBER 15 THROUGH FEBRUARY 28, PROTECT SITE BY OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOILS OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE REDISTURBED.

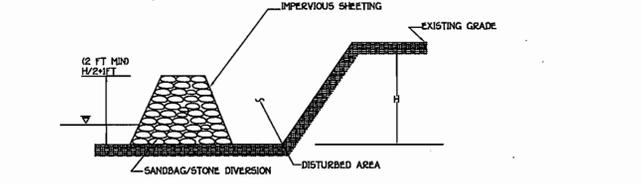
MULCHING
 APPLY 1 TO 2 TONS PER ACRE (50 TO 90 LBS./1000 SQ.FT.) OF UNKNOTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES, ON SLOPES 0 FEET OR HIGHER USE 340 GALLONS PER ACRE (34 GAL./1000 SQ.FT.) FOR ANCHORING.

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

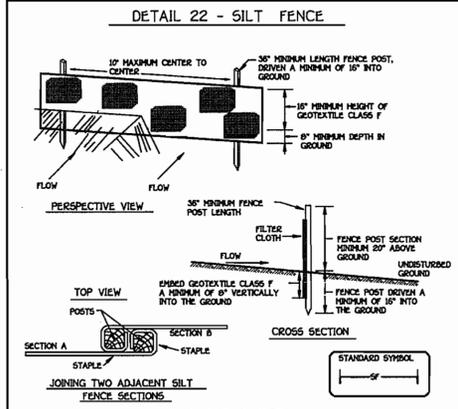
SEDIMENT CONTROL NOTES

- 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 (03-10-95).
- All Vegetative And Structural Practices Are To be Installed According To The Provisions Of This Plan And Are To be In Conformance With The Most Current Maryland Standards And Specifications For Soil Erosion And Sediment Control And Revisions Thereto.
- Following Initial Soil Disturbance Or Re-Disturbance, Permanent Or Temporary Stabilization Shall be Completed Within 42 Calendar Days For All Perimeter Sediment Control Structures, Dikes, Perimeter Slopes And All Slopes Steeper Than 3:1. By 14 Days As To All Other Disturbed Or Graded Areas On The Project Site. 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 12, Of The Howard County Design Manual, Storm Drainage, Chapter 12, Of The Howard County Design Manual, Storm Drainage.
- All Disturbed Areas Must be Stabilized Within The Time Period Specified Above In Accordance With The 1994 Maryland Standards And Specifications For Soil Erosion And Sediment Control For Permanent Seeding (Sec. 51), Soil (Sec. 54), Temporary Seeding (Sec. 50), Permanent Seeding (Sec. 51), Soil (Sec. 54), Temporary Seeding (Sec. 50), And Mulching (Sec. 52). 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	Acres
Area Disturbed	Acres
Area To be Seeded Or Planted	Acres
Area To be Vegetatively Stabilized	Acres
Total Cut	NOT APPLICABLE
Total Fill	CONSTRUCTION OF UTILITIES ONLY
Off-Site Water/Borrow Area Location	
- Any Sediment Control Practice Which is Disturbed by Grading Activity For Placement of Utilities Must be Replaced 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 Earthwork. Approval May Not be Authorized Until This Initial Approval By The Inspection Agency is Made.
- Trenches For The Construction Of Utilities is Limited To Three Pipe Lengths Or That Which Shall be Back-Filled And Stabilized Within One Working Day, Whichever is Shorter.
- The Total Amount of Silt Fence -
- The Builder is Responsible For Protecting Constructed And Stabilized Lots From Sediment Laden Runoff.



SANDBAG/STONE STREAM FLOW DIVERSION DETAIL; WPD 2.3



Construction Specifications

- Fence posts shall be a minimum of 30" long driven 15" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square minimum cut, or 1 1/2" diameter (minimum round and shall be of sound quality blackwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

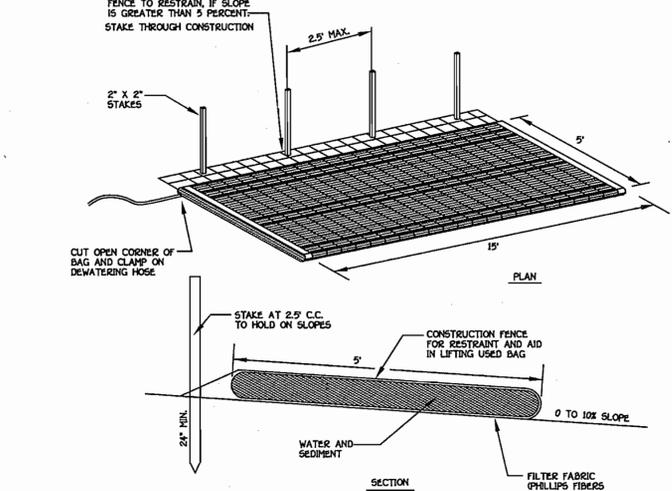
Tensile Strength	90 (bar/in min)	Test: MSMT 509
Tensile Modulus	20 (bar/in min)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max)	Test: MSMT 322
Filtering Efficiency	75% (min)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	Minimum Slope Length	Minimum Silt Fence Length
Flatter than 50%	unlimited	unlimited
50% to 10%	125 feet	1000 feet
10% to 5%	100 feet	750 feet
5% to 3%	80 feet	500 feet
3% to 2%	40 feet	250 feet
2% and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils USDA general classification system, soil Class A) minimum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



- NOTES**
- FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
 - WIDTH AND LENGTH SHALL BE AS SHOWN.
 - THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
 - FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
 - DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:

INDIAN VALLEY INDUSTRIES, INC. P.O. BOX 810 JOHNSON CITY, NEW YORK 13790 (600) 659-3111	OR	A.C.F. ENVIRONMENTAL 600-A HULLIS ROAD SUCHSOWN, VIRGINIA 23237 TOLL FREE 1-800-448-3636	OR	PRICE AND COMPANY, INC. 455 36TH STREET WYOMING, DEL. 19380 (610) 530-8230
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FILTER BAG DETAIL
 NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

4-30-02 DATE

5/2/02 DATE

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PkE
 ELICOTT CITY, MARYLAND 21042
 (410) 481-2955

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 TERRELL A. FISHER

DESIGNED BY:	P.W.K.
DRAWN BY:	M.D.T.
CHECKED BY:	P.W.K.
DATE:	APRIL, 2002
BY NO.	
REVISION	

STREAM CROSSING & SEDIMENT CONTROL NOTES AND DETAILS

600' SCALE MAP NO. 31 BLOCK NO. 16

F.C.C. WORK ORDER NO. 30621

FILE NAME : 30621.FINAL.WATER AND SEWER NOTES/DETAILS

CONTRACT NO. 14-3976-D
 GLYNCHESTER FARM
 LOTS 1 THRU 53
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 15 OF 15