

**CHLORINATION REQUIREMENTS**

6" = 25' x 1.469 = 36.725  
 8" = 1695' x 2.64 = 4242.875  
 4279.60

1<sup>1/2</sup> / 16809 Ac.  
 4279.60 = 2547 lbs  
 1680.00

**SEWER**

AIR TESTED	8" STUBS
MH 100 - MH 101 PASSED 2/14/95	MH 101-40 LF - PASSED 3/2/95
MH 101 - MH 102 PASSED 2/14/95	MH 103-33 LF - PASSED 3/2/95
MH 102 - MH 103 PASSED 2/20/95	MH 105-37 LF - PASSED 3/2/95
MH 103 - MH 104 PASSED 2/22/95	
MH 104 - MH 105 PASSED 2/27/95	

QUANTITIES				
ITEM	ESTIMATED	QUANTITIES	TYPE	SUPPLIER
B' DEVIERS	791 L.F.	791	8" PVE.	WATER PRO
4' DEVIERS	86 L.F.	48	4" PVE.	"
MANHOLES	5 EACH	5	PRECAST CONCRETE	ATLANTIC CONC. PROD.
B' D.I.P. DEVIERS	425 L.F.	425 L.F.	TYPE S2 P.I.P.	GRAFFIN PIPE
B' WATER	1,625 L.F.	1,625 L.F.	"	"
G' WATER	25 L.F.	25 L.F.	"	"
1" WAC	219 L.F.	62 L.F.	TYPE K COPPER	WATER PRO
3/4" WAC	74 L.F.	61 L.F.	"	"
PIPE HYDRANTS	4 EACH	4	CENTURION	"
B' VALVES	4 EACH	4	GATE 1"	MUELLER
G' VALVES	4 EACH	4	"	"
4" TAPPING VALVE	4 EACH	4	"	"
4" WATER	250 L.F.			

NAME OF UTILITY CONTRACTOR:  
 SURVEY & DRAFTING DIVISION AS-BUILT DATE:  
 \* 4" WATER WAS ADDED TO CONT. REVS. AMOUNT  
 # 4" VALVE - MUELLER 42 L.F.  
 # 4" D.I.P. GRAFFIN PIPE C-52 42 L.F.  
 3/4" K COPPER 40 L.F.  
 1" K COPPER

**ENGINEER'S CERTIFICATE**

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. Kneidel August 18, 1994  
 SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

I/WE 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 A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

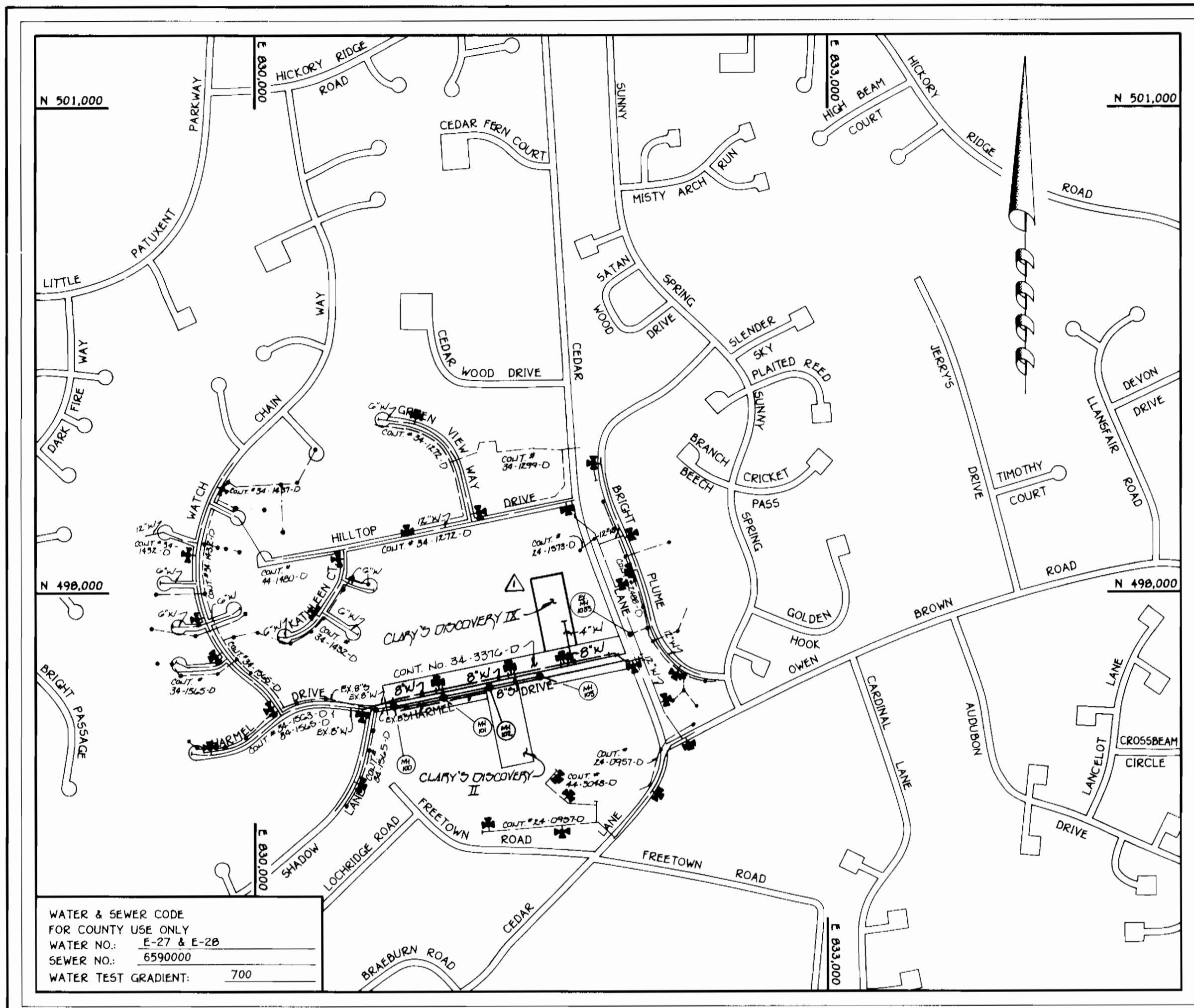
Paul W. Kneidel 8/17/94  
 SIGNATURE OF DEVELOPER DATE

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

APPROVED: John P. Rutzler 4/30/94  
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT 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 AS SHOWN ON THESE PLANS. REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

John P. Rutzler 11/30/94  
 U.S. SOIL CONSERVATION SERVICE DATE



WATER & SEWER CODE  
 FOR COUNTY USE ONLY  
 WATER NO.: E-27 & E-28  
 SEWER NO.: 6590000  
 WATER TEST GRADIENT: 700

TYPE OF BUILDING: SINGLE FAMILY DETACHED RESIDENTIAL  
 NUMBER OF LOTS: 4  
 NO. OF WATER HOUSE CONNECTIONS: 4  
 NO. OF SEWER HOUSE CONNECTIONS: 4  
 DRAINAGE AREA: MIDDLE PATUXENT  
 TREATMENT PLANT: LITTLE PATUXENT WATER QUALITY  
 MANAGEMENT CENTER: SAVAGE, MARYLAND

**VICINITY MAP**

SCALE: 1"=600'

PLAN REFERENCE NUMBERS:  
 P- NOT APPLICABLE  
 F- TO BE ASSIGNED

**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.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (1991 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 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:  
 STATE HIGHWAY ADMINISTRATION - 531-5533  
 BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620  
 BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 787-9068  
 MISS UTILITY - 1-800-257-7777  
 COLONIAL PIPELINE CO. - 795-1390  
 BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900
- 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 CONSTRUCTION OF THE MAIN.
- ALL SEWER MAINS SHALL BE D.I.P., R.C.P., C.S.P.X., R.C.C.P., V.C.P.X., 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 G.5.2.
- WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- HOUSE(S) 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 G.5.1.
- 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 TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W.11 AND W.213). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH 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 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 10.1B(4)(a) OF THE HOWARD COUNTY CODE.

**CONTRACT No. 34-3376-D**

**HARMEL DRIVE**

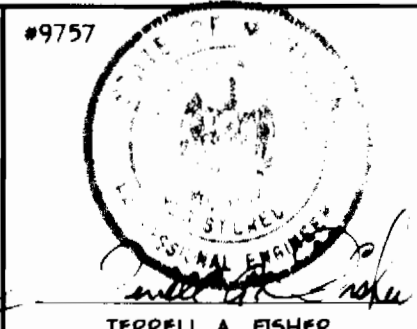
**WATER AND SEWER MAIN EXTENSIONS  
 HOWARD COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS**

AS-BUILT  
 3-23-95

CONTRACT NO. 34-3376-D  
 HARMEL DRIVE  
 WATER AND SEWER MAIN EXTENSIONS  
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director: James P. Sullivan 12/8/94  
 Chief, Bureau of Engineering: Randall J. Sisson 12/8/94  
 Chief, Bureau of Utilities: Robert W. Swanson 11-10-94  
 Chief, Land Development Division: [Signature] 12/8/94

Fisher, Collins & Carter, Inc.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 Suite 100, #171 Baltimore National Pike  
 Elliott City, Maryland 21042  
 (410) 461-2855



DES:	M.J.M.		
DRWN:	A.W.S.		
CHK:	P.W.K.	FCC	REVIEW QUANTITIES BLOCKS 11/4/95
DATE:		FCC	ADD CLARY'S DISCOVERY III SITE TO VICINITY MAP 11/4/95
BY:		NO.	

TITLE SHEET	
600' SCALE MAP NO. 35	BLOCK NO. 17

HARMEL DRIVE  
 WATER AND SEWER MAIN EXTENSIONS  
 CONTRACT NO. 34-3376-D  
 FIFTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 3

3376 WS/1 HARMEL DR.

3376 WSHZ HARMEL DR.

**SEQUENCE OF CONSTRUCTION**

- 1) OBTAIN THE REQUIRED GRADING PERMIT.
- 2) INSTALL THE REQUIRED SEDIMENT & EROSION CONTROL DEVICES AS INDICATED ON THIS SHEET.
- 3) CLEAR AND GRADE AS NECESSARY; ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS.
- 4) NOTE: THE LENGTH OF OPEN WATER AND SEWER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- 5) BEGINNING AT WATER MAIN STATION 0+00 UP TO WATER MAIN STATION 15+00 AND PROPOSED M4 100 UP TO PROPOSED M4 105; EXCAVATE TRENCHES & INSTALL WATER AND SEWER MAINS, AND APPURTENANCES, AND BACKFILL TRENCHES ACCORDINGLY.
- 6) FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMITS HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION & SEDIMENT CONTROL DEVICES.

**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."

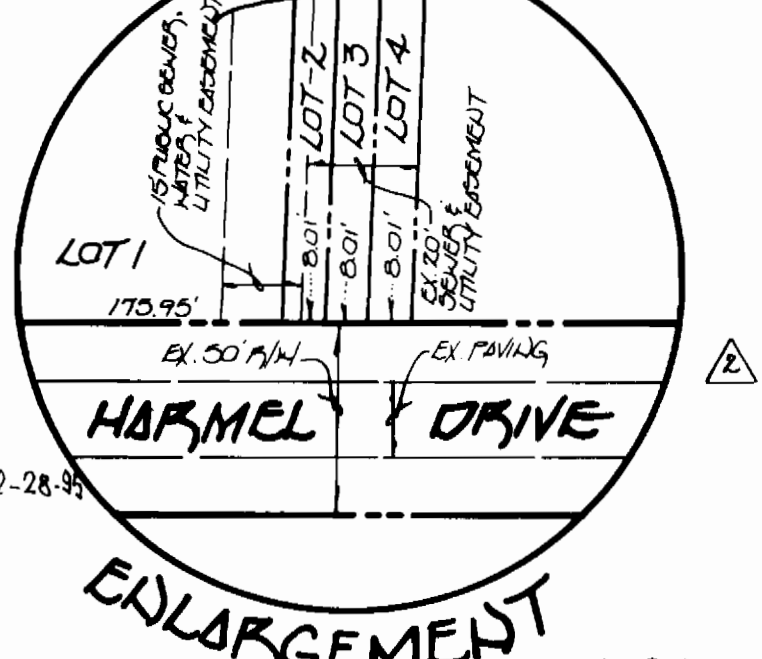
Paul W. Koebel  
SIGNATURE OF ENGINEER  
August 18, 1994  
DATE

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Mark Rein  
SIGNATURE OF DEVELOPER  
8/19/94  
DATE

**CLARY'S DISCOVERY II  
LOTS 1-4**



AS-BUILT  
3-23-95  
CONTRACT NO. 34-3376-D  
HARMEL DRIVE  
WATER AND SEWER MAIN EXTENSIONS  
HOWARD COUNTY, MARYLAND



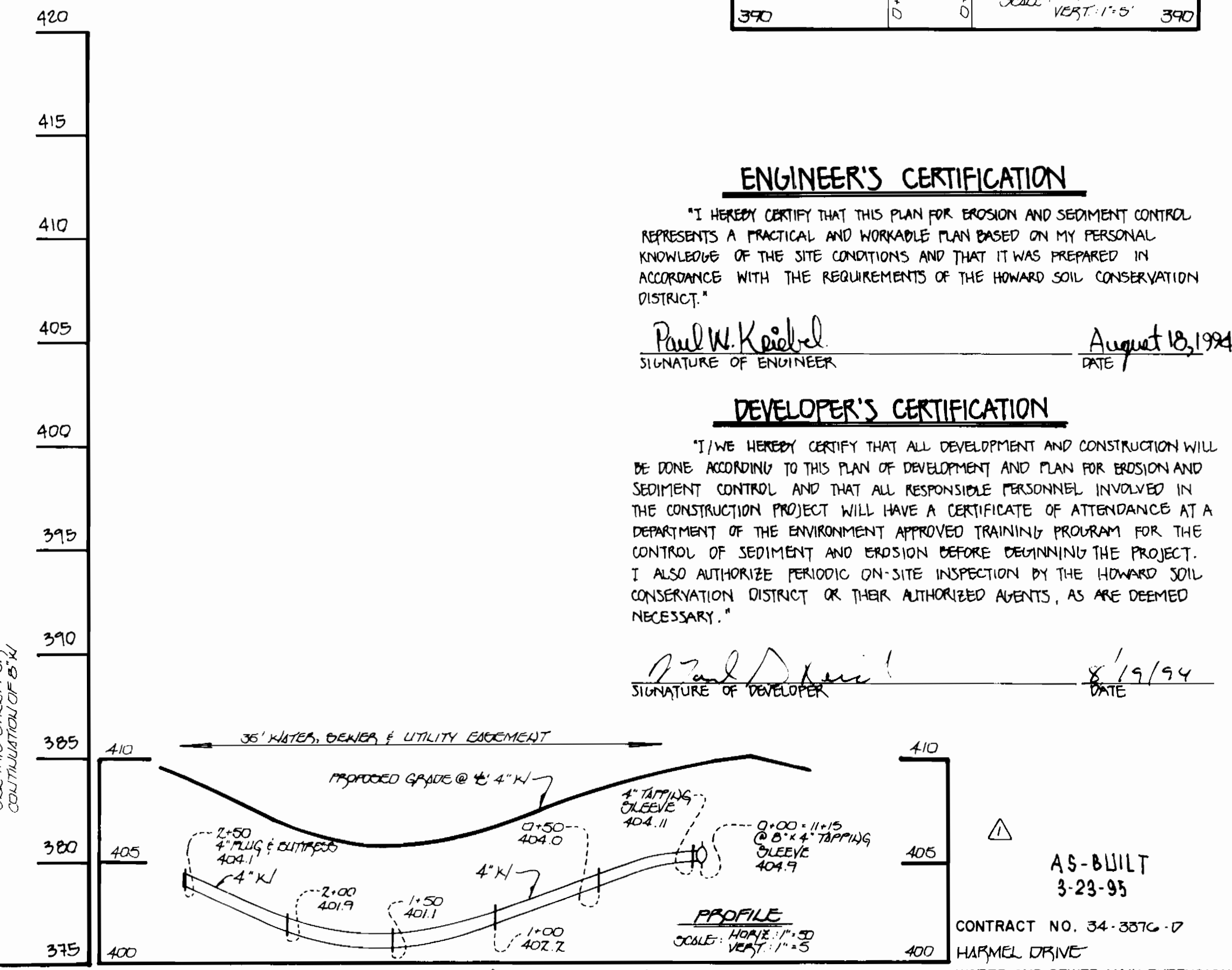
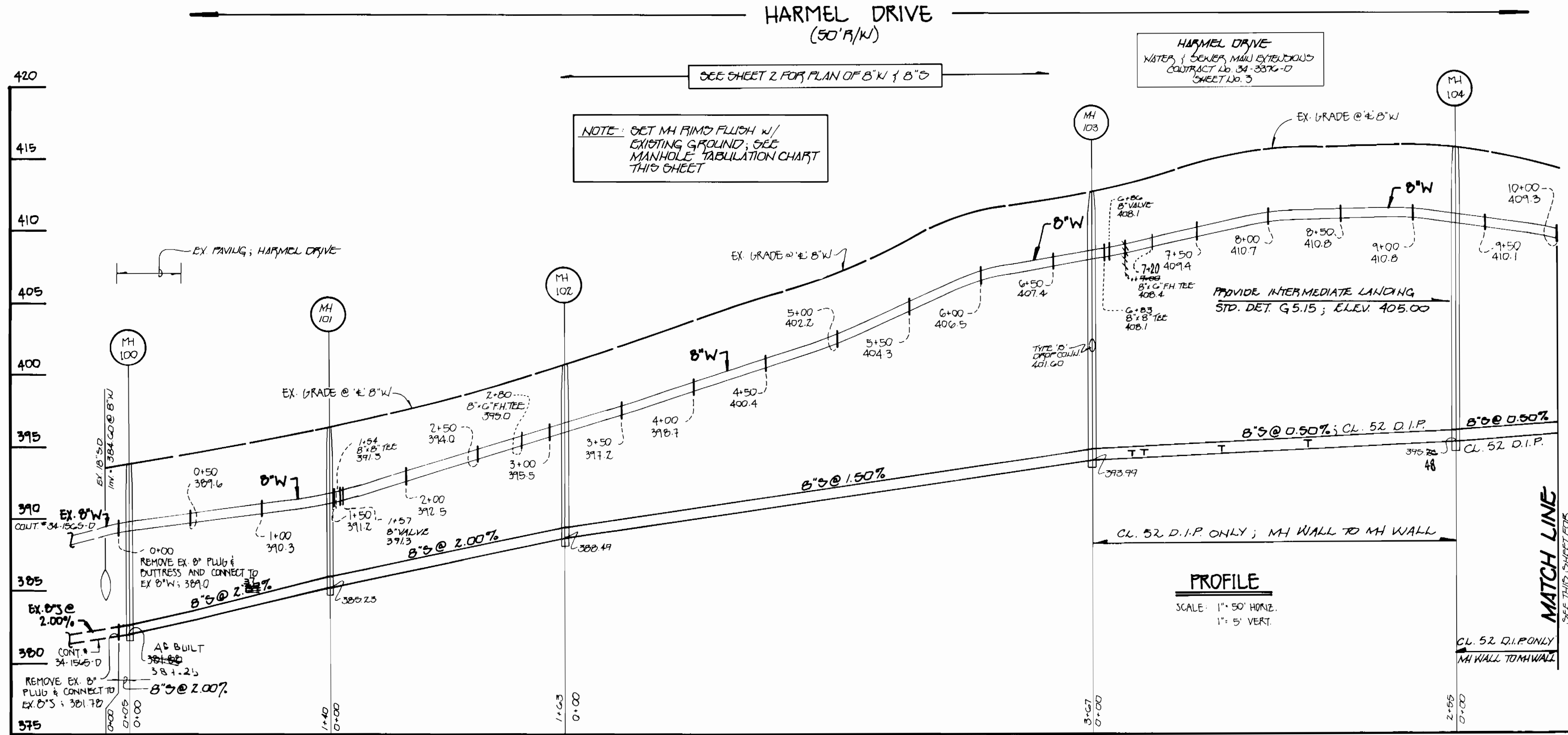
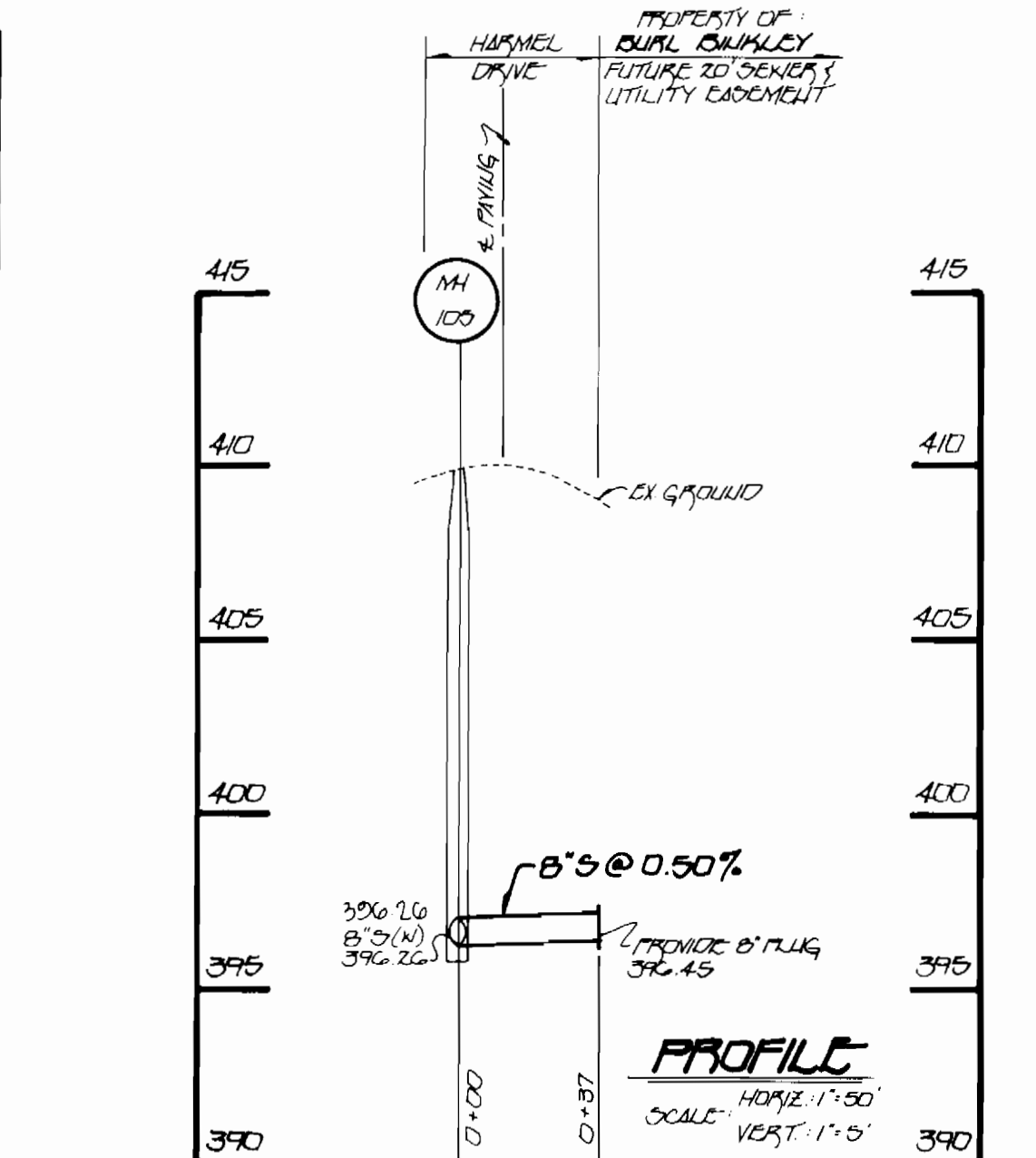
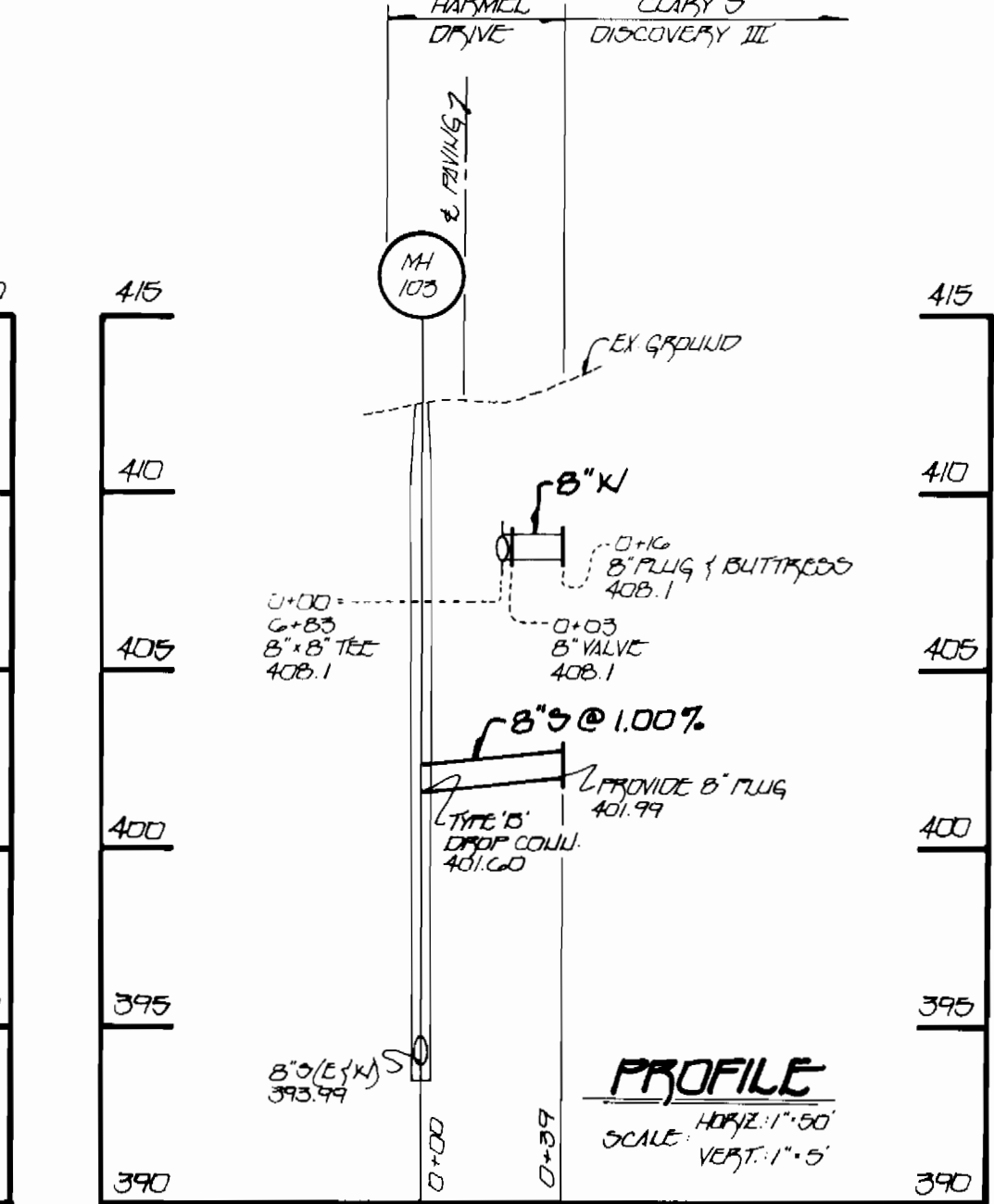
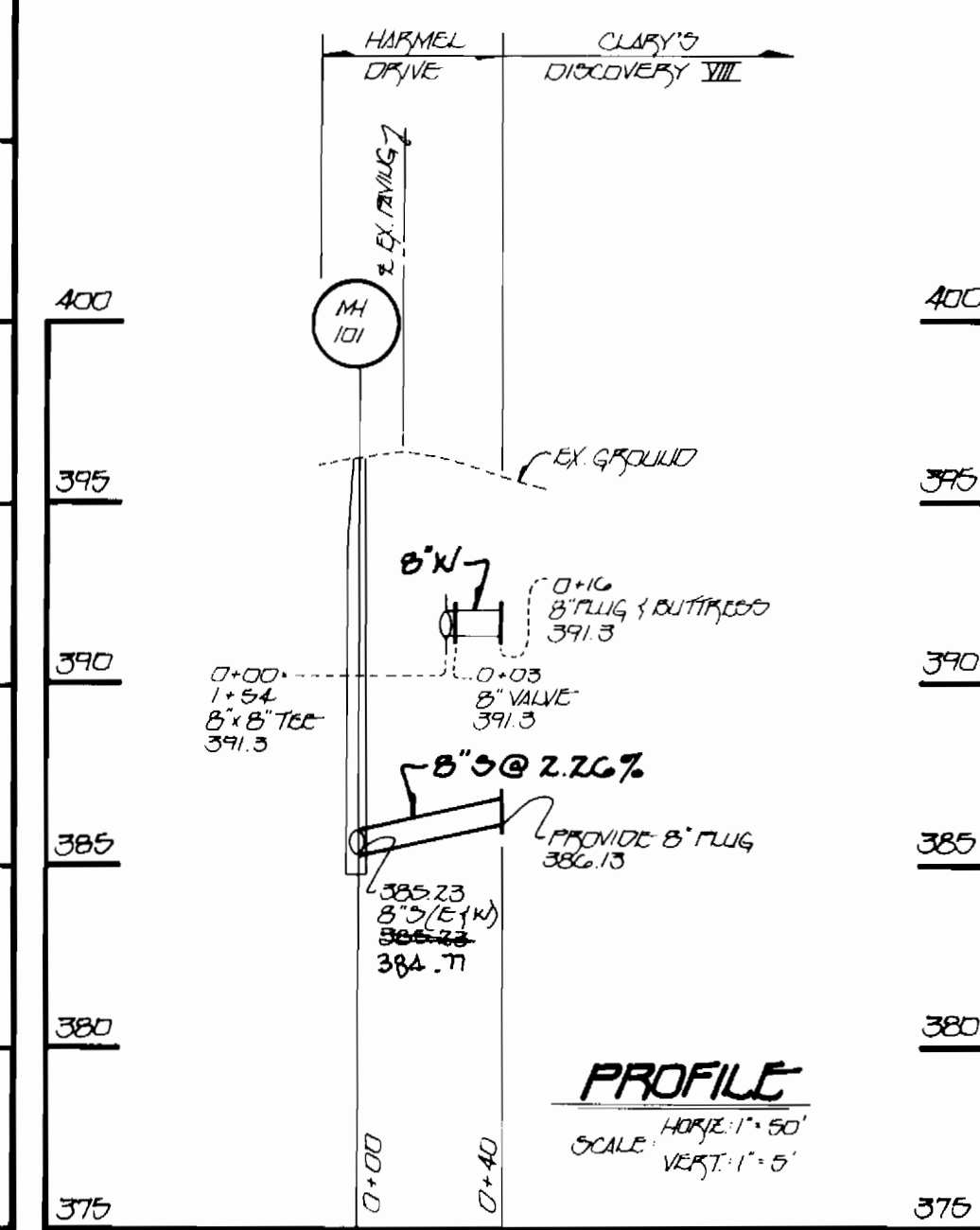
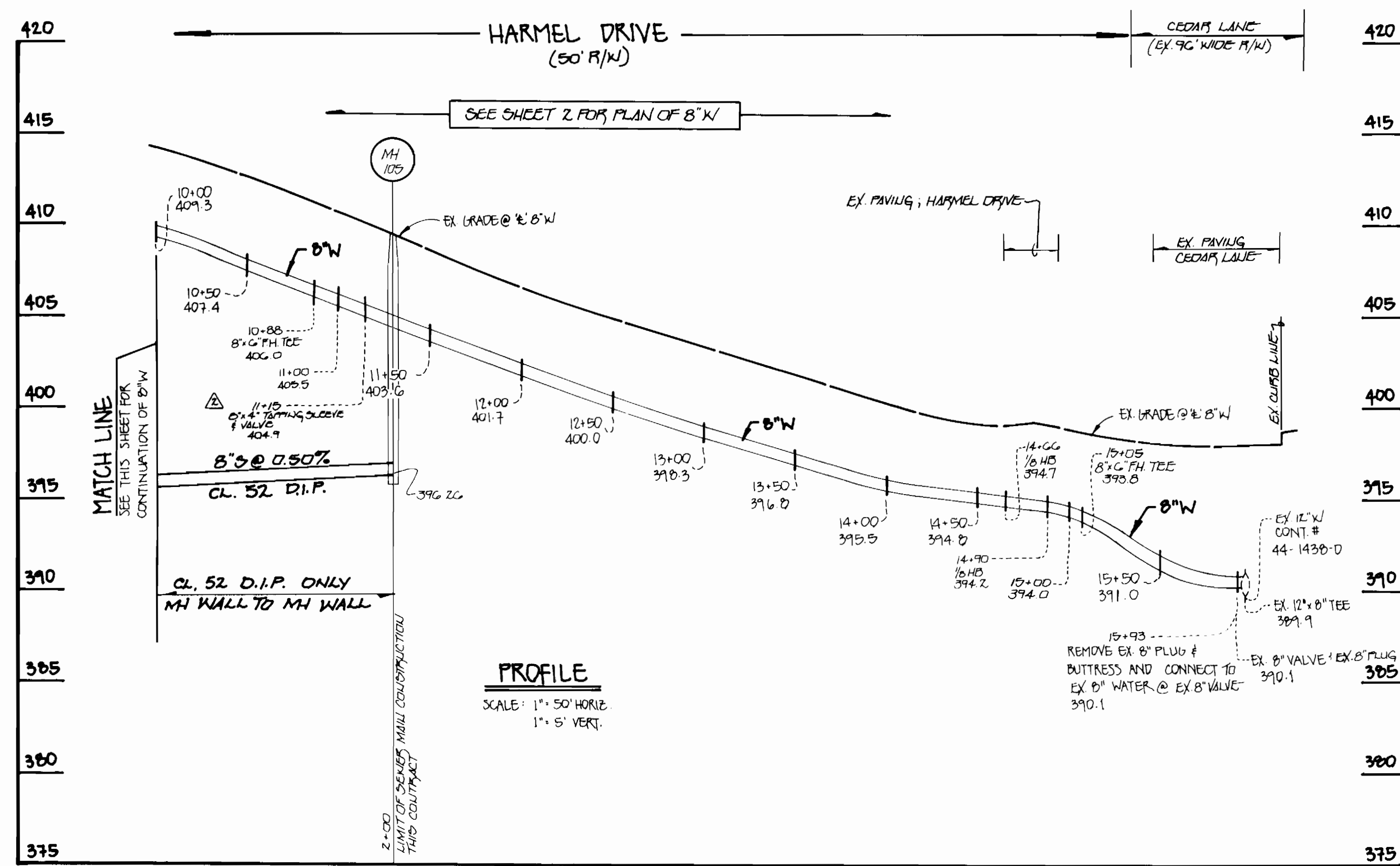
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 12/1/94 DATE: 11-10-94		FISHER, COLLINS, AND CARTER, INC. CONSULTING ENGINEERS AND LAND SURVEYORS 7171 BALTIMORE NATIONAL PIKE, SUITE 100 ELLICOTT CITY, MARYLAND 21042 DATE: 12/8/94		DES: MJM DRN: MJM CHK: PWR DATE:		WATER AND SEWER MAINS PLAN 600' SCALE MAP NO. 35 BLOCK NO. 17		HARMEL DRIVE WATER & SEWER MAIN EXTENSIONS CONTRACT NO. 34-3376-D FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 2 OF 3	
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3376 WS/3 HARMEL DR.

MH NO.	SLOPE	FM ELEVATION
100	2.35%	394.30
101	3.30%	396.70
102	3.00%	400.70
103	2.25%	412.30
104	1.00%	416.00
105	4.00%	410.35

STATION	LOT	ELEVATION
MH 102 to MH 103		
ST. 2441	1/100Z	397.85
ST. 0421	2	398.89
ST. 0435	3	399.14
ST. 0430	4	399.90

MH 101 - M102  
CLARY'S DISCOVERY II  
MH 103 - MH 104

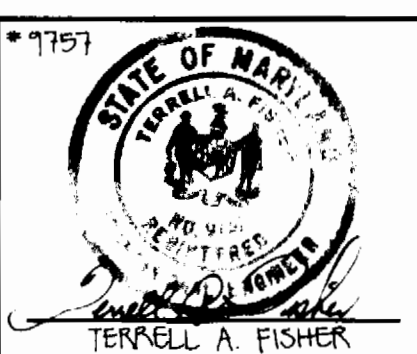


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 August 18, 1994  
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 Paul W. Keel  
 SIGNATURE OF DEVELOPER  
 8/19/94  
 DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: [Signature] 12/8/94  
 Chief, Bureau of Engineering: [Signature] 12/8/94  
 Chief, Bureau of Utilities: [Signature] 11-10-94  
 Chief, Land Development Division: [Signature] 12/8/94

FISHER, COLLINS, AND CARTER, INC.  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 7171 BALTIMORE NATIONAL PIKE - SUITE 100  
 ELLICOTT CITY, MARYLAND 21042



DES: MJM	
DRN: MJM	
CHK: PWK	
DATE:	
BY NO.	
REVISION	
DATE	

WATER AND SEWER MAINS PROFILES  
 600 SCALE MAP NO. 35 BLOCK NO. 17

HARMEL DRIVE  
 WATER & SEWER MAIN EXTENSIONS  
 CONTRACT NO. 34-3376-D  
 FIFTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 3 OF 3