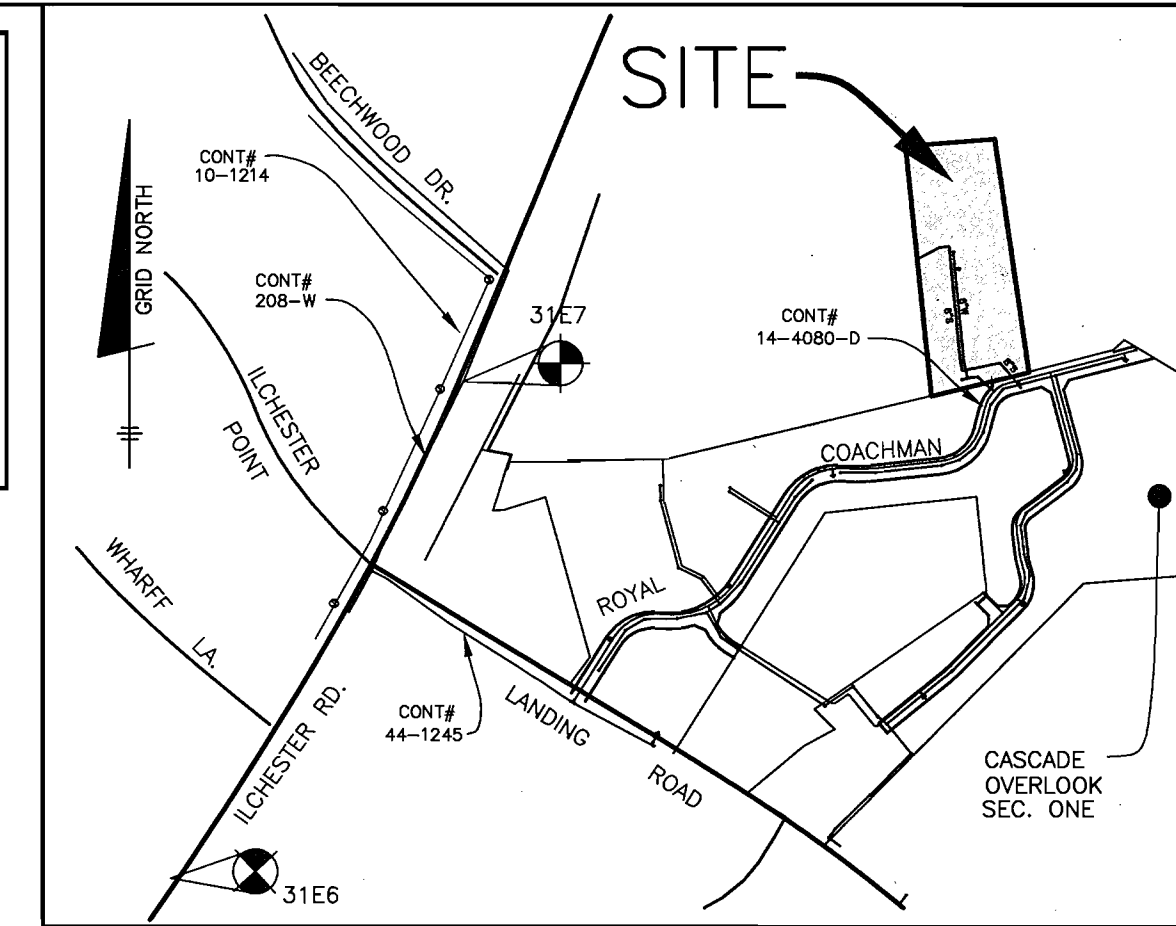


BENCH MARKS NAD'83

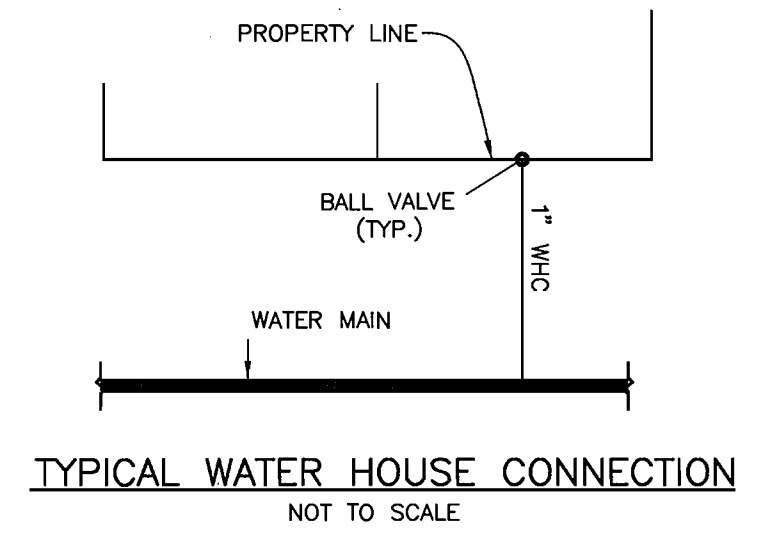
HO. CO. #31E6	3/4" REBAR 0.5' BELOW SURFACE	5' SOUTHWEST OF ILCHESTER ROAD PAVING	500' WEST OF WHARF LANE.	E 1376700.6467'
HO. CO. #31E7	3/4" REBAR 0.5' BELOW SURFACE	9' SOUTHWEST OF ILCHESTER ROAD PAVING	250' WEST OF BEECHWOOD ROAD	E 1377504.0332'
N 572335.3503'				ELEV. 364.78'
HO. CO. BM#2740004				USED FOR VERTICAL CONTROL.



VICINITY MAP
SCALE: 1"=600'

(FOR COUNTY USE ONLY)

WATER CODE:	G-09	TYPE OF BUILDING:	SINGLE FAMILY DETACHED
SEWER CODE:	1254549	NUMBER OF LOTS:	9 BULIDABLE
TEST GRADIENT:	780	NUMBER OF SHC'S:	9
		NUMBER OF WHC'S:	9
		DRAINAGE AREA:	PATAPSCO
		TREATMENT PLANT:	WASTEWATER TREATMENT PLANT



SHEET INDEX

NO.	DESCRIPTION
1	WATER AND SEWER PLAN AND DETAIL
2	SEWER AND WATER PROFILE

GENERAL NOTES
PART 1 - GENERAL

- 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. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12'. CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [] AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
STATE HIGHWAY ADMINISTRATION.....531-5533
BALTIMORE GAS & ELECTRIC CO.850-4620
BALTIMORE GAS & ELECTRIC CO.850-4620
UNDERGROUND DAMAGE CONTROL.....787-9068
MISS UTILITY.....1-800-257-7777
COLONIAL PIPELINE CO.....795-1390
HOWARD CO. DEPT. OF PUBLIC WORKS.....313-4900
BUREAU OF UTILITIES.....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 LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY MAINTENANCE OPERATIONS. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY AT (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 18.114(c) OF THE HOWARD COUNTY CODE.

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" D.I.P. WATER	498.9 L.F.			
1" WHC	155 L.F.			
8" PVC SEWER	463 L.F.			
8" DIP SEWER	218 L.F.			
MANHOLES	6 EACH			
4" SHC	121 L.F.			
FIRE HYDRANT	1 EACH			
1/2" DRAIN	1 EACH			

SEWER HOUSE CONNECTION TABLE

LOT NO.	INVERT AT MAIN/MH	INVERT AT ROW/EASEMENT	MCE	REMARKS
1	400.28	400.47	404.29	-
2	400.65	400.84	404.84	-
3	400.92	401.11	404.95	-
4	401.40	401.59	405.55	C.N.S.
5	401.67	401.86	405.80	C.N.S.
6	402.15	402.39	406.87	C.N.S.
7	401.80	402.21	406.61	C.N.S.
8	400.78	401.19	405.05	-
9	400.46	400.87	404.81	-

PART 2 - WATER

- ALL WATER MAINS TO 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 ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING UNLESS OTHERWISE NOTED ON PLANS OR IN SPECIFICATIONS.

PART 3 - SEWER

- ALL SEWER MAINS SHALL BE DIP OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4' - 0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER TIGHT FRAME AND COVERS, STANDARD DETAIL 05.52, WHERE WATER TIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1' - 6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

WELL ABANDONMENT SEQUENCE

- NOTIFY THE HOWARD COUNTY HEALTH DEPARTMENT THAT THE EXISTING WELL IS READY TO BE ABANDONED.
- HAVE THE WELL FILLED AND CAPPED WITH CONCRETE BY A CERTIFIED WELL DRILLER.
- THE DEVELOPER SHALL FORWARD A COPY OF THE WELL DRILLER'S CERTIFICATE TO THE HOWARD COUNTY HEALTH DEPARTMENT.

PLAN
SCALE: 1" = 50'

LEGEND

EXIST. WATER MAIN	[Symbol]
EXIST. SEWER MAIN	[Symbol]
EXIST. SEWER MANHOLE	[Symbol]
PROP. WATER MAIN	[Symbol]
PROP. SEWER MAIN	[Symbol]
PROP. STORM DRAIN (BY OTHERS)	[Symbol]
PROP. SEWER MANHOLE	[Symbol]
PROP. SEWER HOUSE CONNECTION	[Symbol]
PROP. WATER HOUSE CONNECTION (SINGLE - 1")	[Symbol]
PROP. FIRE HYDRANT	[Symbol]
PROP. VALVE	[Symbol]
M.C.E.	[Symbol]

HOWARD SOIL CONSERVATION DISTRICT:
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 12/23/03
NATURAL RESOURCES OBSERVATION SERVICE DATE

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

John R. Robertson 12/23/03
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER ROAD CONSTRUCTION PLANS, F-03-150

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert H. Bunnings 12-15-03
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

John P. ... 12/24/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE A SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-466-9109 FAX: 410-465-6644

Donald M. ... 12/19/03
REGISTERED PROFESSIONAL ENGINEER

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

DES:	RPS			
DRN:	RPS/DBT			
CHK:	DAM			
DATE:	12/03			
BY:	NO.			

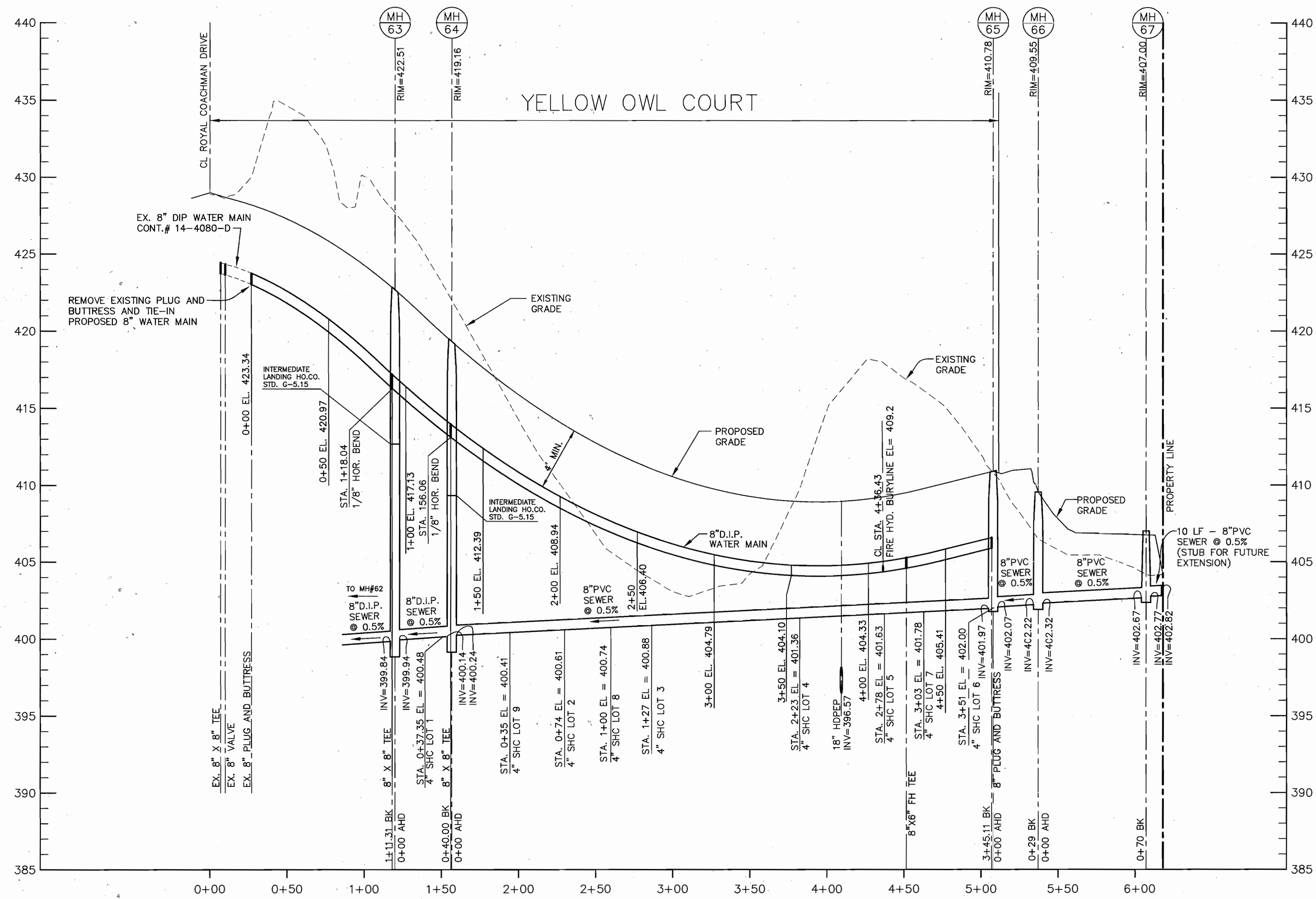
WATER AND SEWER PLAN AND DETAILS

DATE: 600 SCALE MAP No. 31 BLOCK 11

CASCADE OVERLOOK
SECTION TWO
OPEN SPACE LOTS 10 -11 AND NON-BUILDABLE BULK PARCEL 'A'
TAX MAP 31, GRID 11, PARCEL 259
1st. ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
CONTRACT NO.14-4132-D

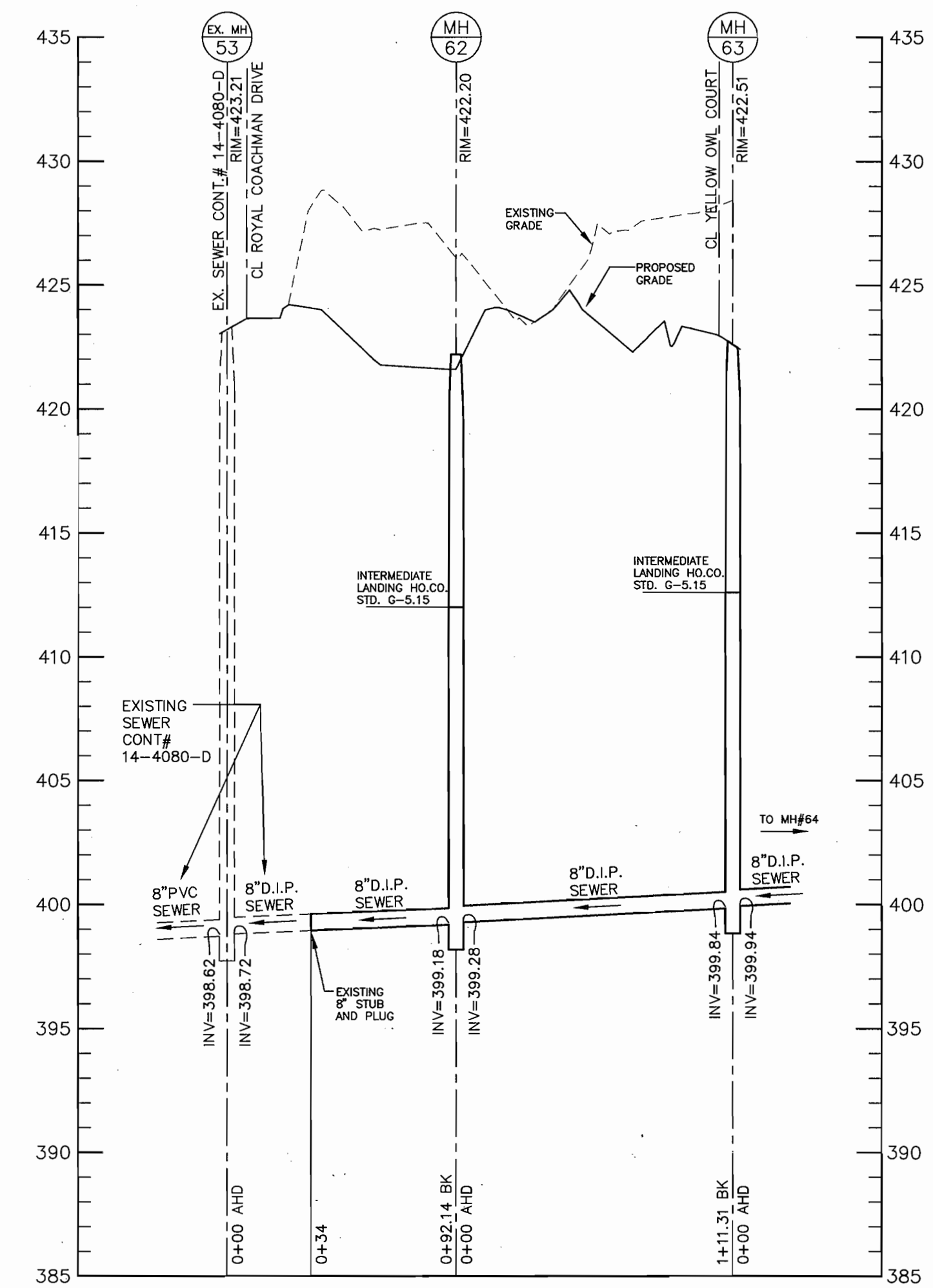
SCALE: AS SHOWN
SHEET NO. 1 OF 2

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PUBLIC SEWER MAIN PROFILE (MH#63 TO MH#66)

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



PUBLIC SEWER MAIN PROFILE (EX. MH#53 TO MH#63)

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLSWORTH CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-6644



DES:	RPS			
DRN:	RPS			
CHK:	DAM			
DATE:	9/03			
BY:	NO.			

WATER AND SEWER
PROFILES

DATE 600 SCALE MAP No. 31

BLOCK 11

CASCADE OVERLOOK
SECTION II
A SUBDIVISION OF PARCEL 259
LOTS 1 THROUGH 9
AND OPEN SPACE LOTS 10 AND 11
TAX MAP 31, GRID 11, PARCEL 259
1st. ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-4132-D

SCALE:
AS SHOWN

SHEET NO.
2 OF 2