

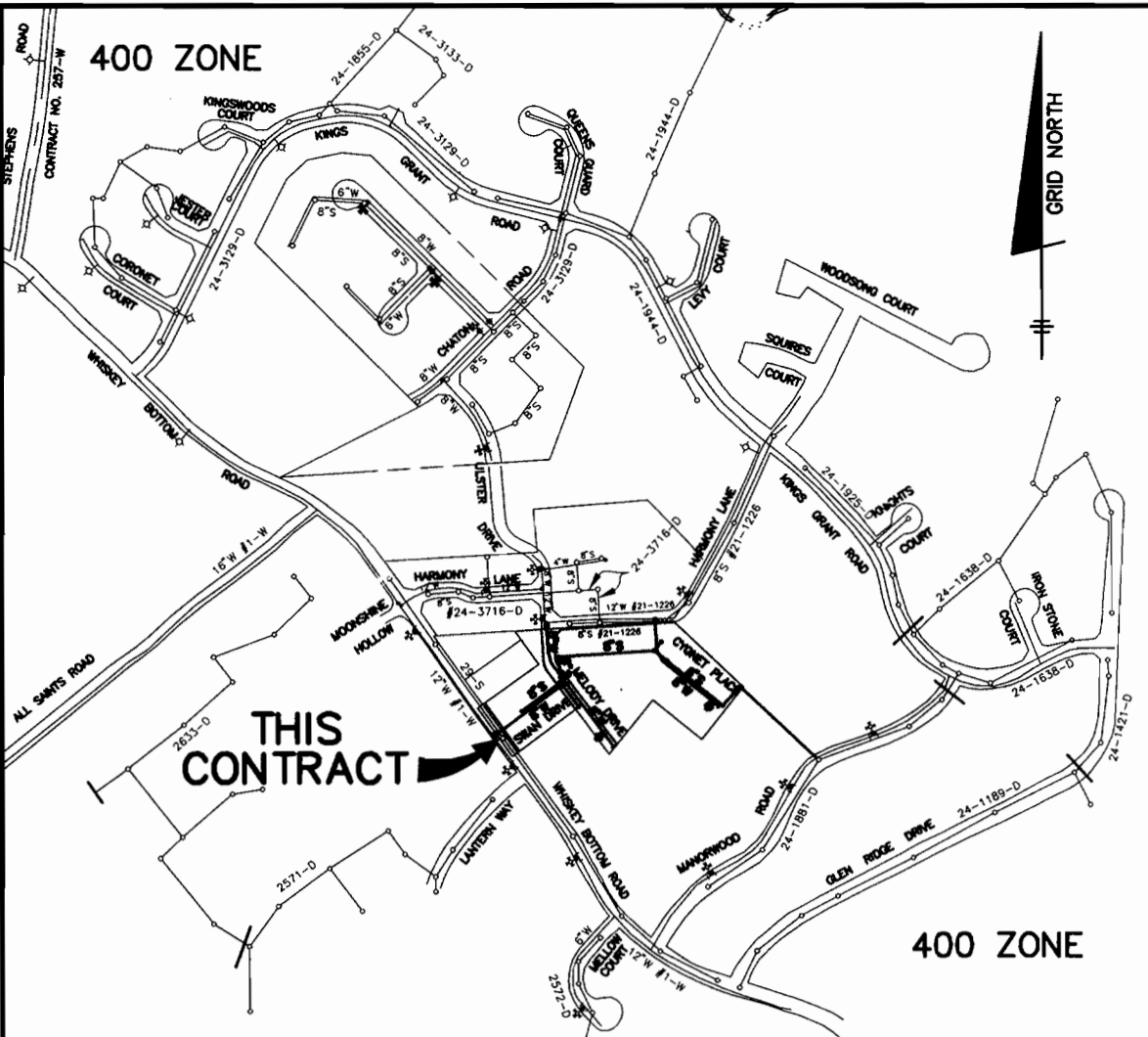
PUBLIC WATER AND SEWER CONSTRUCTION PLANS KINGS ARMS, SECTION 2 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT No. 24-3959-D

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" WATER	1172 L.F.			
8" VALVES	4 EA.			
6" VALVES	2 EA.			
1 1/2" BLOWOFF	1 EA.			
FIRE HYDRANTS	2 EA.			
1" WHC	378 L.F.			
8" SEWER	679.5 L.F.			
8" D.I.P. SEWER	756.5 L.F.			
MANHOLES	10 EA.			
VERT. FEET OF MH	128.5 L.F.			
4" SHC	328 L.F.			
NAME OF UTILITY CONTRACTOR:				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:				

BEST MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100-YEAR FLOODPLAINS

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Place materials in a location and manner that does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Do not use the excavated material as backfill if it contains waste material products, unignited debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unignited debris, toxic material, or any other deleterious substance.
 - Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
 - Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
 - All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (*Lolium multiflorum*), Wheat (*Triticum aestivum*), 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 nontidal wetland species. Other non-permanent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 tissue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
 - After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
 - To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
- Use 1 waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
 - Culverts shall be constructed and any forces placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

BENCH MARKS--(NAD'83)			
HO. CO. #508A	EL. N/A	STANDARD DISC ON CONC. MONUMENT	
N 527561.6702'	E 1359772.5936'		
HO. CO. #5085	EL. 178.242'	STANDARD DISC ON CONC. MONUMENT	
N 524999.3640'	E 1357925.6751'		

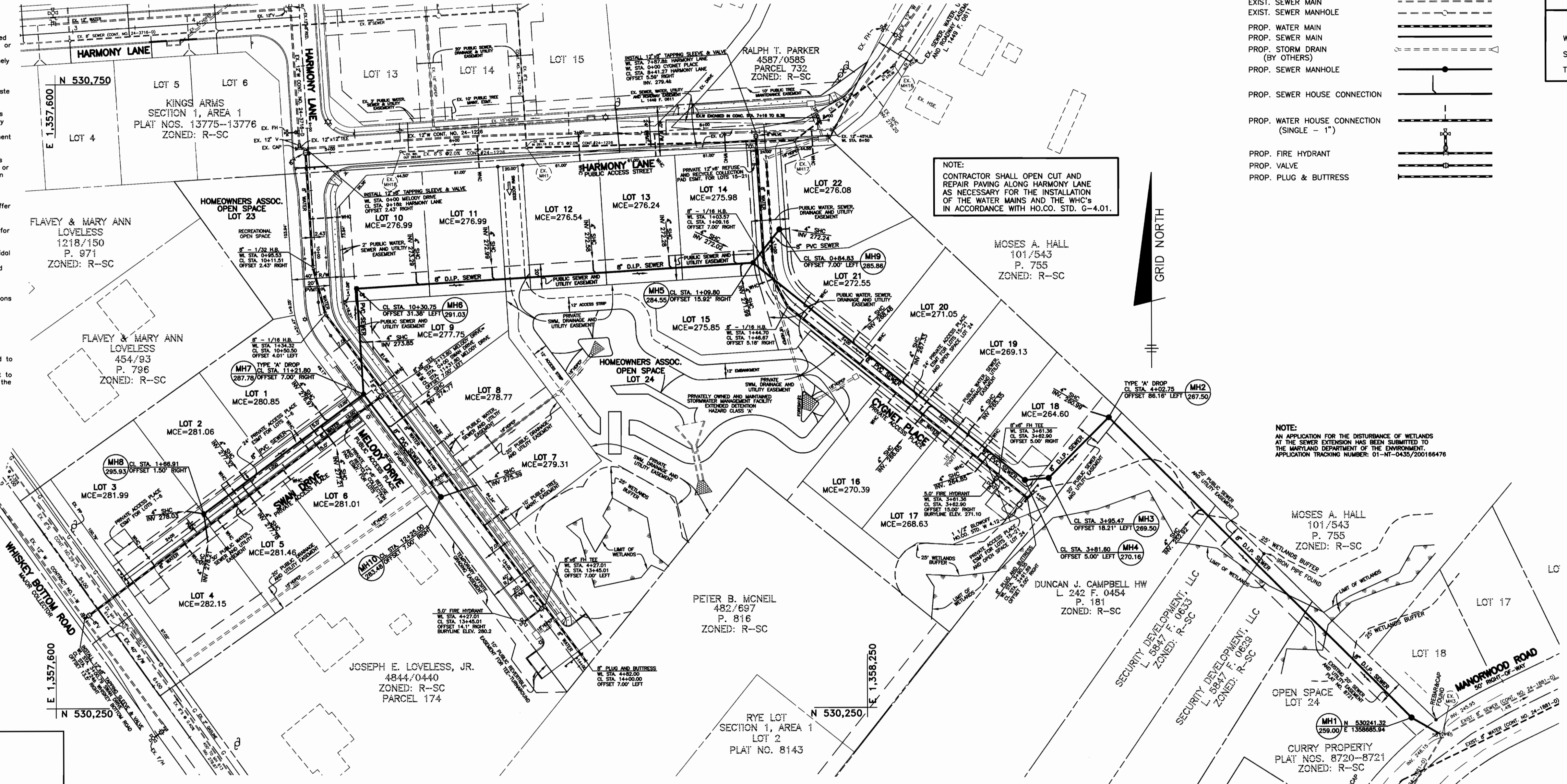


WATER AND SEWER COUNTY CODE		TYPE OF BUILDING: SINGLE FAMILY DETACHED	
WATER CODE:	C-03	NUMBER OF LOTS:	22 BUILDABLE
SEWER CODE:	7270000	NUMBER OF SHCS:	23
TEST GRADIENT:	550	NUMBER OF WHCS:	22
		DRAINAGE AREA:	PATUXENT
		TREATMENT PLANT:	LITTLE PATUXENT
			WATER QUALITY MANAGEMENT CENTER

VICINITY MAP
SCALE: 1" = 600'

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 VERTICAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES. (NORTH AMERICAN DATUM OF 1983 (NAD'83)).
 - 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 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR 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. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
- STATE HIGHWAY ADMINISTRATION.....410-531-5533
BGE CONTRACTOR SERVICES.....410-850-4620
BGE UNDERGROUND DAMAGE CONTROL.....410-291-4607
MISS UTILITY.....1-800-257-7777
COLONIAL PIPELINE CO.....410-549-4120
HOWARD CO. DEPT. OF PUBLIC WORKS.....410-313-4900
BUREAU OF UTILITIES.....1-800-446-5266
BELL ATLANTIC.....1-800-446-5266
- 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 (5) WORKING DAYS BEFORE ANY OPEN CUT AT 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(a) OF THE HOWARD COUNTY CODE.
- 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 3.5' 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. ALL WATER HOUSE CONNECTIONS SHALL BE 1 INCH.
 - FOR SPRINKLER SYSTEM FOR ALL TOWN HOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A MINIMUM OF 1' CONNECTION WITH A 3/4" METER.
- 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 WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-0" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.



NOTE:
CONTRACTOR SHALL OPEN CUT AND REPAIR PAVING ALONG HARMONY LANE AS NECESSARY FOR THE INSTALLATION OF THE WATER MAINS AND THE WHC'S IN ACCORDANCE WITH HO.CO. STD. G-4.01.

NOTE:
AN APPLICATION FOR THE DISTURBANCE OF WETLANDS AT THE SEWER EXTENSION HAS BEEN SUBMITTED TO THE WATLAND DEPARTMENT OF THE ENVIRONMENT. APPLICATION TRACKING NUMBER: 01-10-0435/200186476

PLAN VIEW
SCALE: 1" = 50'

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

Jim M. Myers 2/14/02
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John P. Robertson 2/14/02
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-01-130

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
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

Donald Mean
1/21/02

DESIGN: DBT					
DRAWN: DBT					
CHECK: DAM					
DATE: 1/15/02	BY	NO.	REVISIONS	DATE	

**PLAN OF WATER
AND SEWER MAINS**

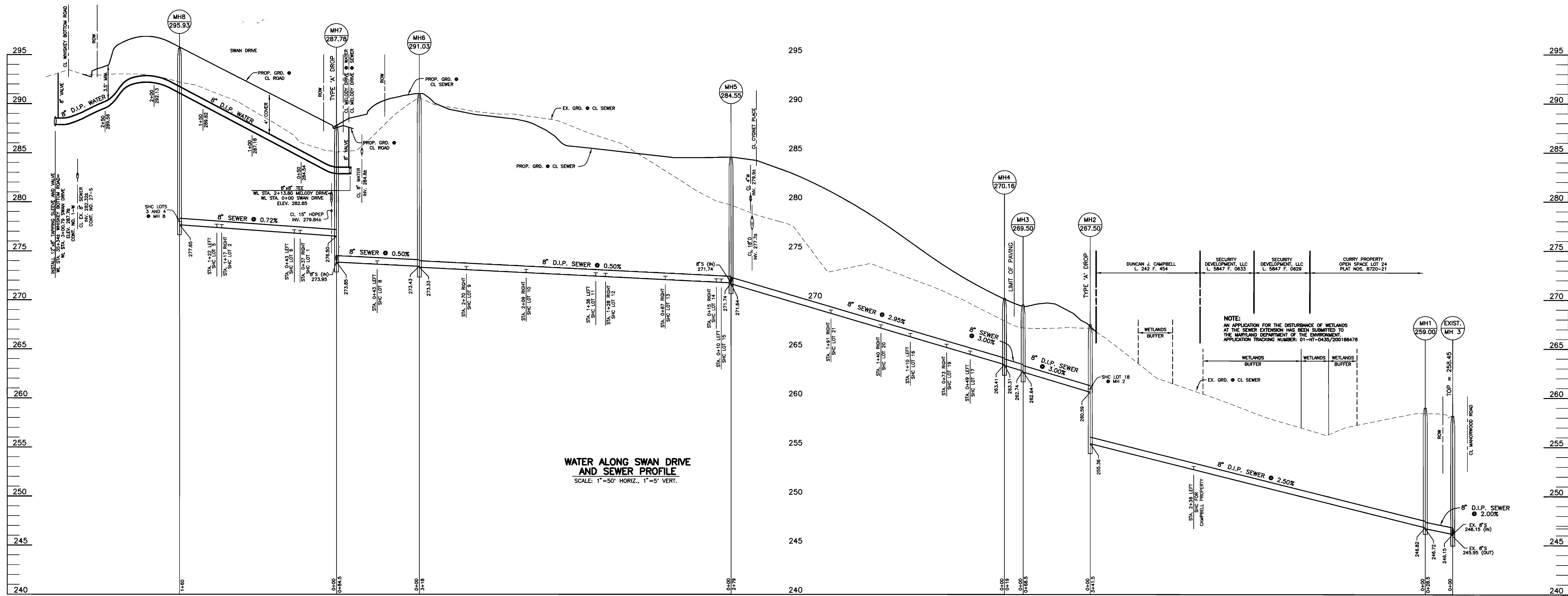
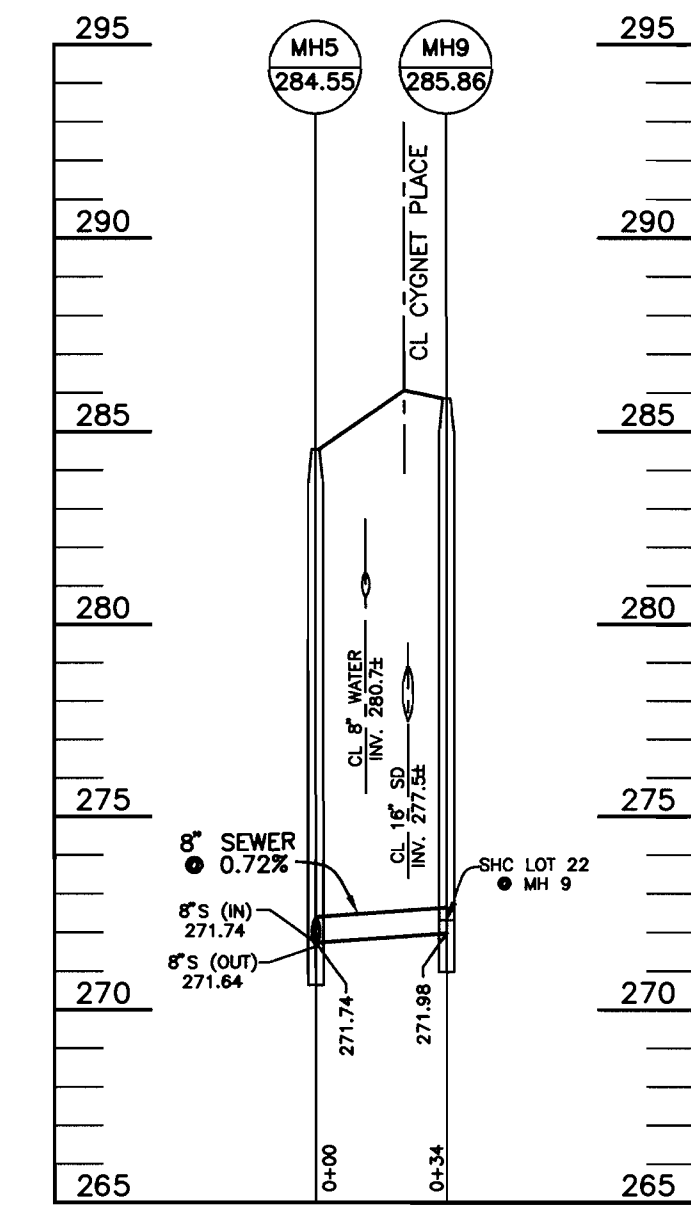
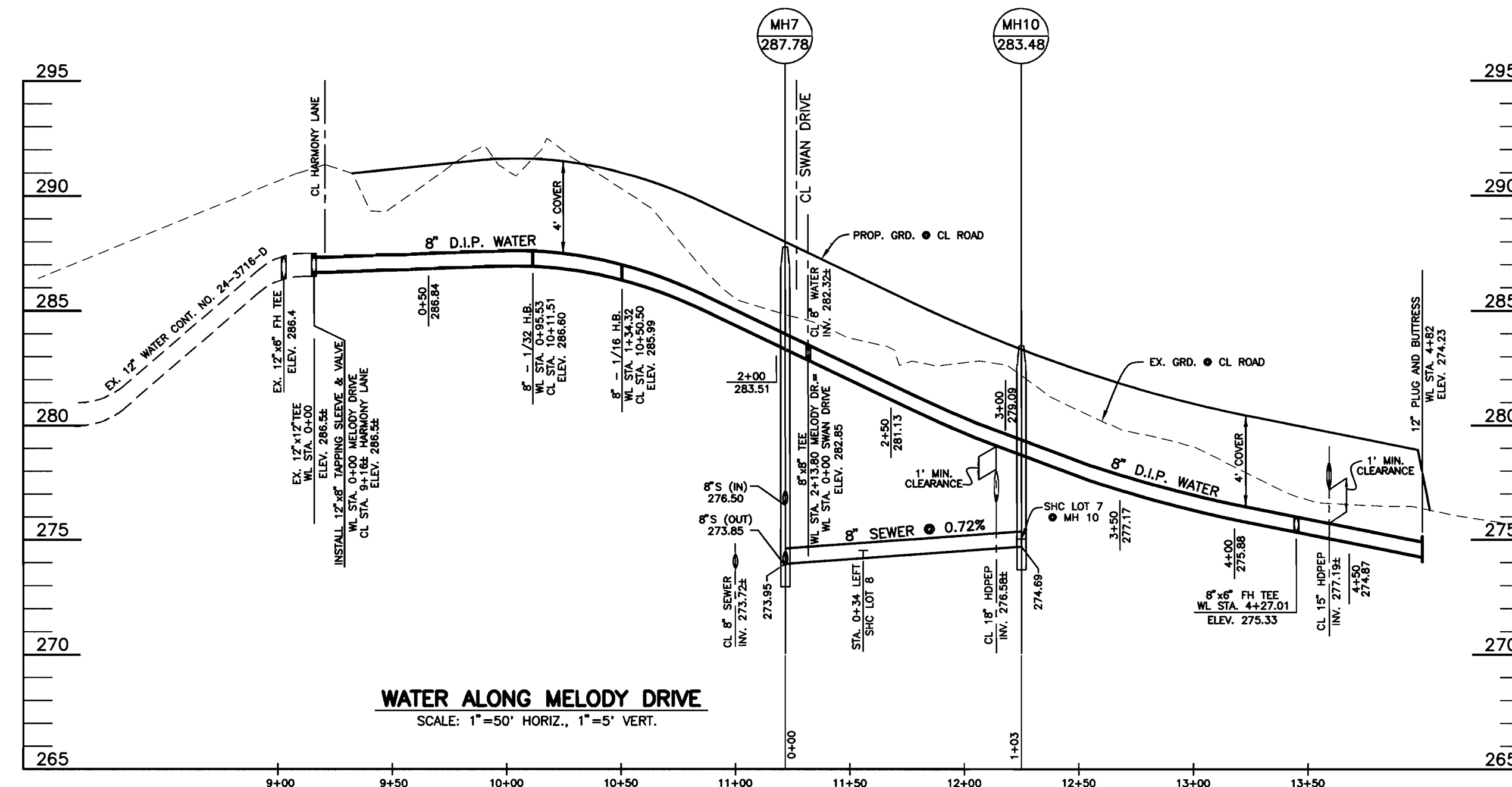
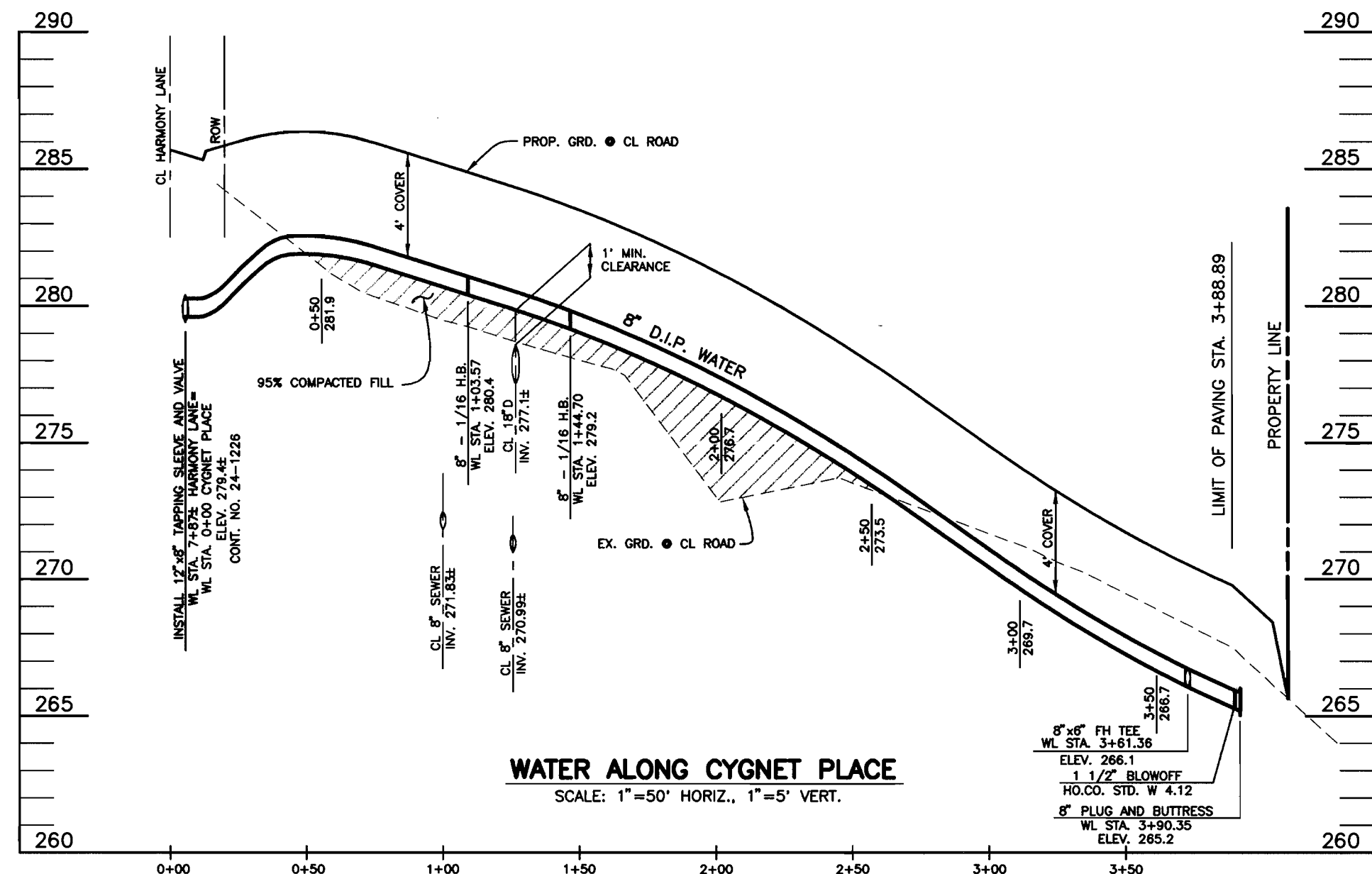
600 SCALE MAP NO. 47
BLOCK 22

KINGS ARMS SECTION 2
LOTS 1-22 AND OPEN SPACE LOTS 23 AND 24

ELECTION DISTRICT NO. 6
CONTRACT NO. 24-3959-D

SCALE:
AS SHOWN

SHEET NO.
1 OF 2



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert D. ...
CHIEF, BUREAU OF UTILITIES

DATE: 2-8-02

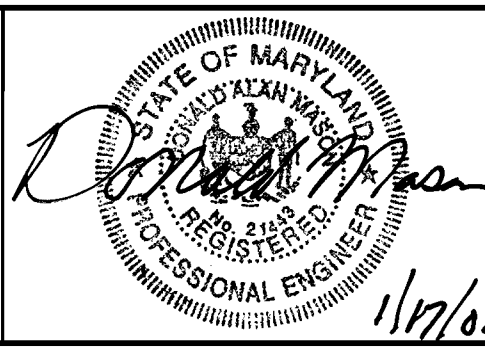
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

...
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 2/15/02

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.

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PHONE: 410-465-6105 FAX: 410-465-6644



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PROFILES OF WATER AND SEWER MAINS

600 SCALE MAP NO. 47

BLOCK 22

KINGS ARMS SECTION 2
LOTS 1-22 AND OPEN SPACE LOTS 23 AND 24

ELECTION DISTRICT NO. 6

CONTRACT NO. 24-3959-D

SCALE:
AS SHOWN

SHEET NO.
2 OF 2