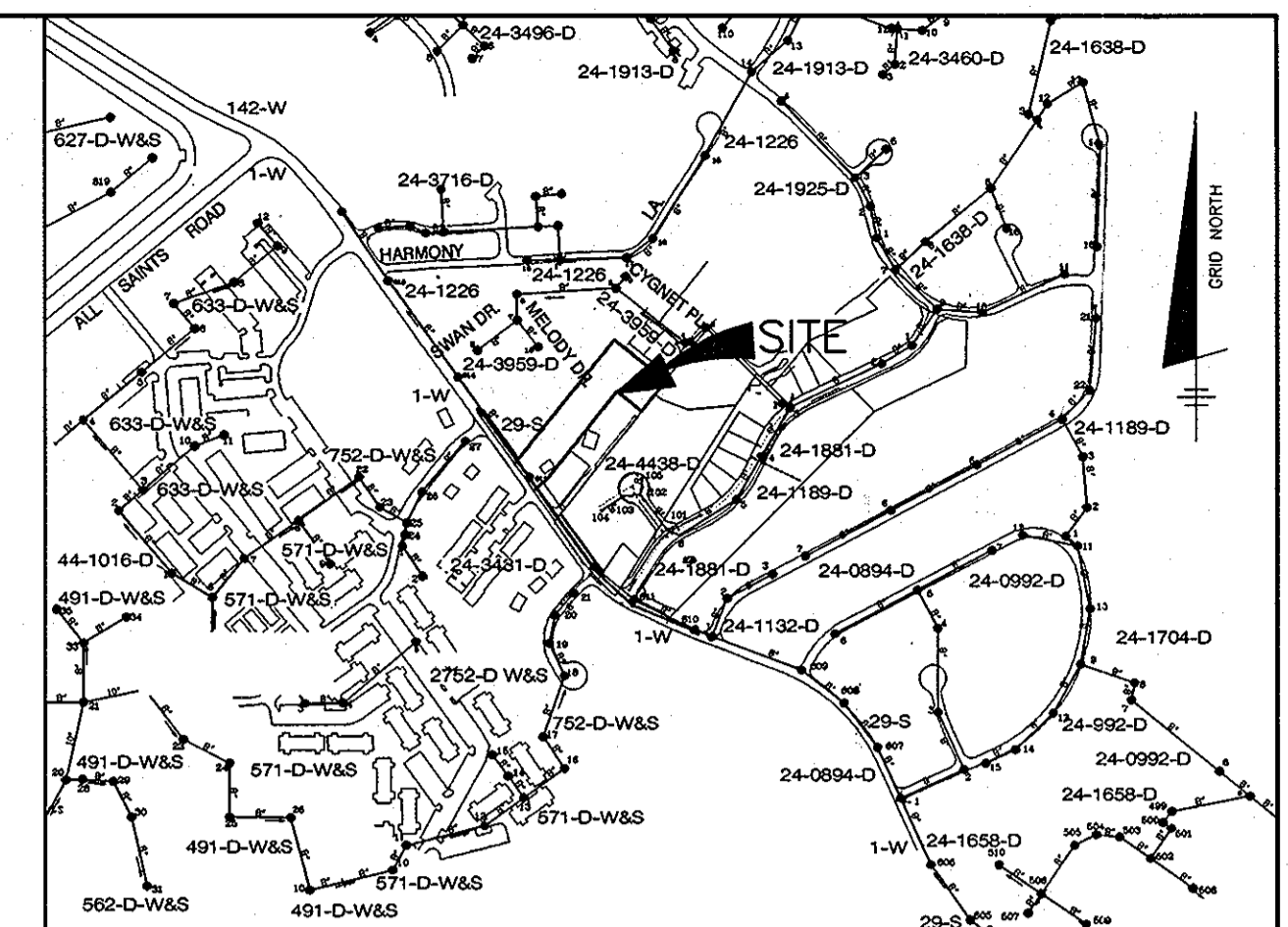


QUANTITIES		AS-BUILT	
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	MANUF./SUPPLIER
1 1/2" WHC	61 L.F.	61 L.F.	COPPER ROWELL METAL
8"x6" REDUCER	1 EACH	1 EACH	M3/DIP SIGMA
6" D.I.P.	225 L.F.	225 L.F.	DIP GRIFFIN PIPE
6" CAP	1 EACH	1 EACH	M3/DIP SIGMA
4" SHC	96 L.F.	96 L.F.	SDR 35 NORTH AMERICAN
8" SEWER	383 L.F.	383 L.F.	SDR 35
MANHOLES	2 EACH	2 EACH	EJ

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

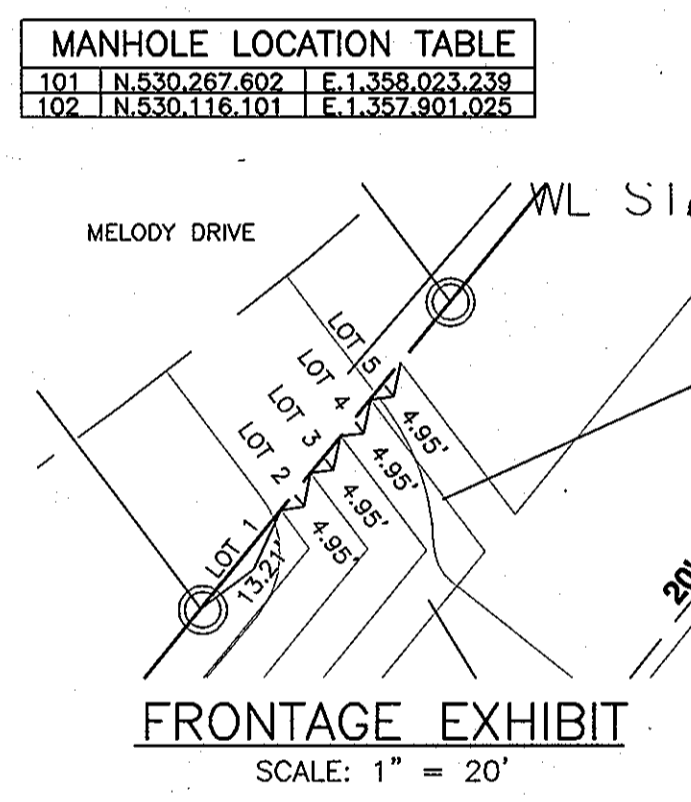
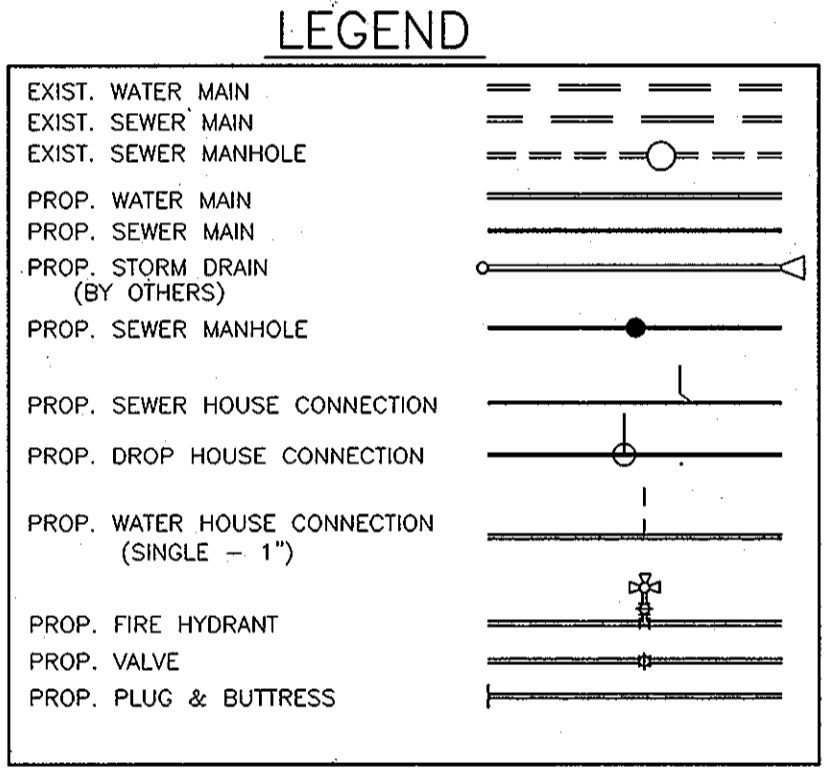


SHC TABLE	
LOT NO.	REMARKS
1	277.58 277.7 C.N.S. 278.6
2	277.13 277.6 C.N.S. 277.8
3	276.73 277.2 C.N.S. 277.4
4	276.28 276.7 C.N.S. 277.0
5	276.18 276.7 C.N.S. 277.0

WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE			
LOT NO.	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
LOT 1	MELODY DRIVE	MH 102 TO WHC 10.3	SHC #1 TO WHC #1 12.0
LOT 2	MELODY DRIVE	MH 102 TO WHC 37.4	SHC #2 TO WHC #2 10.0
LOT 3	MELODY DRIVE	MH 102 TO WHC 80.0	SHC #3 TO WHC #3 10.0
LOT 4	MELODY DRIVE	MH 101 TO WHC 54.6	SHC #4 TO WHC #4 10.0
LOT 5	MELODY DRIVE	MH 101 TO WHC 27.2	SHC #5 TO WHC #5 22.0

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE			
LOT NO.	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
LOT 1	MELODY DRIVE	MH 102 TO SHC 24.3	WHC #1 TO SHC #1 12.0
LOT 2	MELODY DRIVE	MH 102 TO SHC 46.2	WHC #2 TO SHC #2 10.0
LOT 3	MELODY DRIVE	MH 102 TO SHC 93.0	WHC #3 TO SHC #3 10.0
LOT 4	MELODY DRIVE	MH 101 TO SHC 40.4	WHC #4 TO SHC #4 10.0
LOT 5	MELODY DRIVE	MH 101 TO SHC 26.2	WHC #5 TO SHC #5 22.0

SANITARY SEWER MANHOLE DATA						
NO.	TYPE	LOCATION	SHC INV. IN	INV. IN	INV. OUT	REMARKS
EX. MH10	4" CONC.	MELODY DRIVE @ STA. 12+25.0 7.0' LEFT	-	274.79	EX. 274.69	EXISTING MANHOLE BUILT UNDER CONTRACT 24-3959-D
101	STD. 4.0" PRECAST	N 530,267.60 E 1,358,023.24	276.18	275.84	275.74	HO. CO. STD. 0-5.11
102	STD. 4.0" PRECAST	N 530,116.10 E 1,357,901.03	277.58	-	277.24	283.98± HO. CO. STD. 0-5.11



PLAN VIEW
SCALE: 1" = 50'

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
PLAT No. F-12-019
John K. Robertson 9/27/12
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Shelton C. Gunn 9/18/12
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
William C. Gunn 10/4/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-8108 (F) 410-465-8644
 60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3508
 WWW.BEN-ENR.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28236, Expiration Date: 11/20/15.

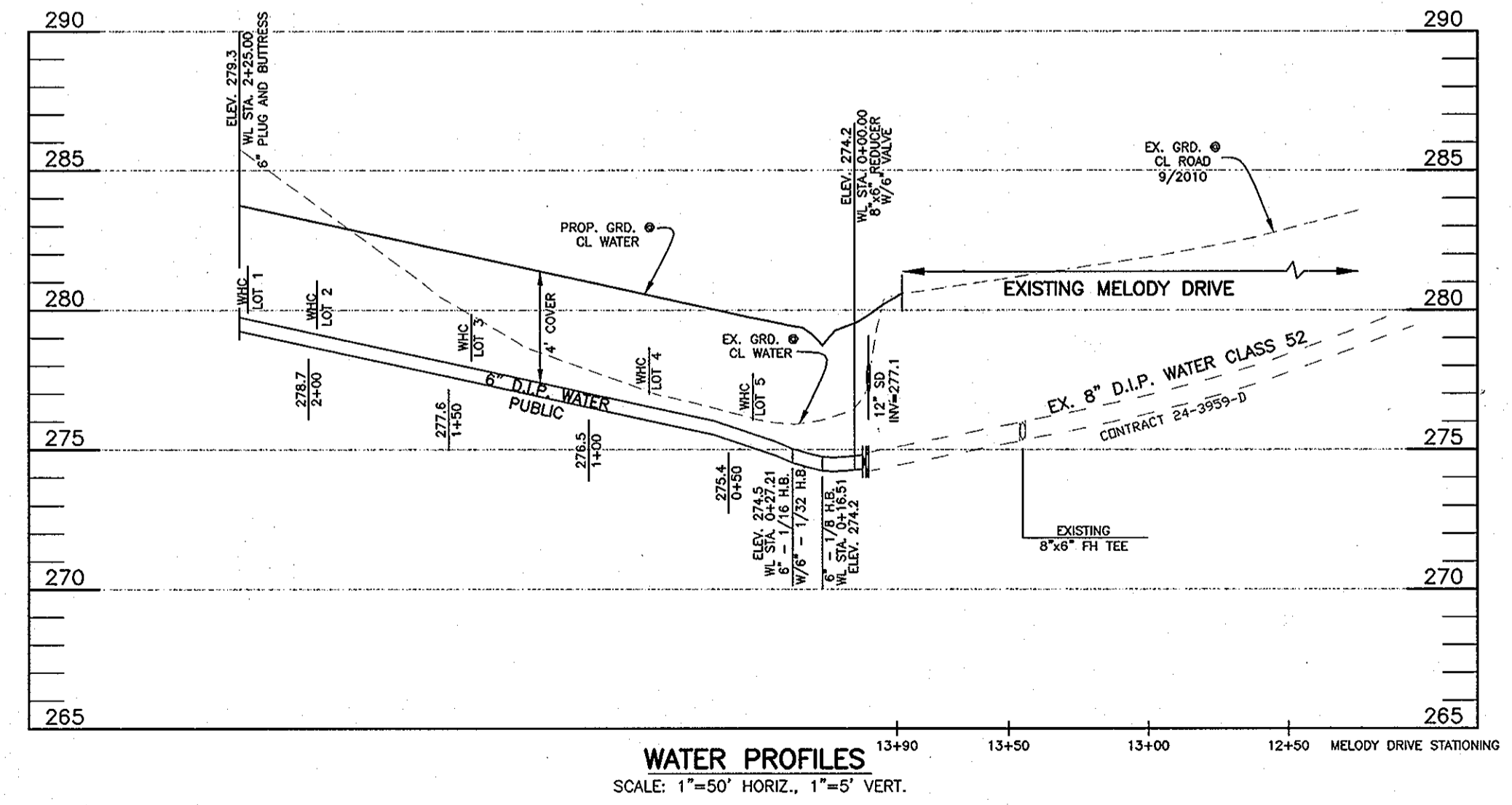
DESIGN: AAM
 DRAFT: AAM
 CHK: CAM
 DATE: AUG 2012
 BY NO. REVISIONS DATE

DEVELOPER/OWNER:
 SECURITY DEVELOPMENT, LLC
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21041
 410-465-4244

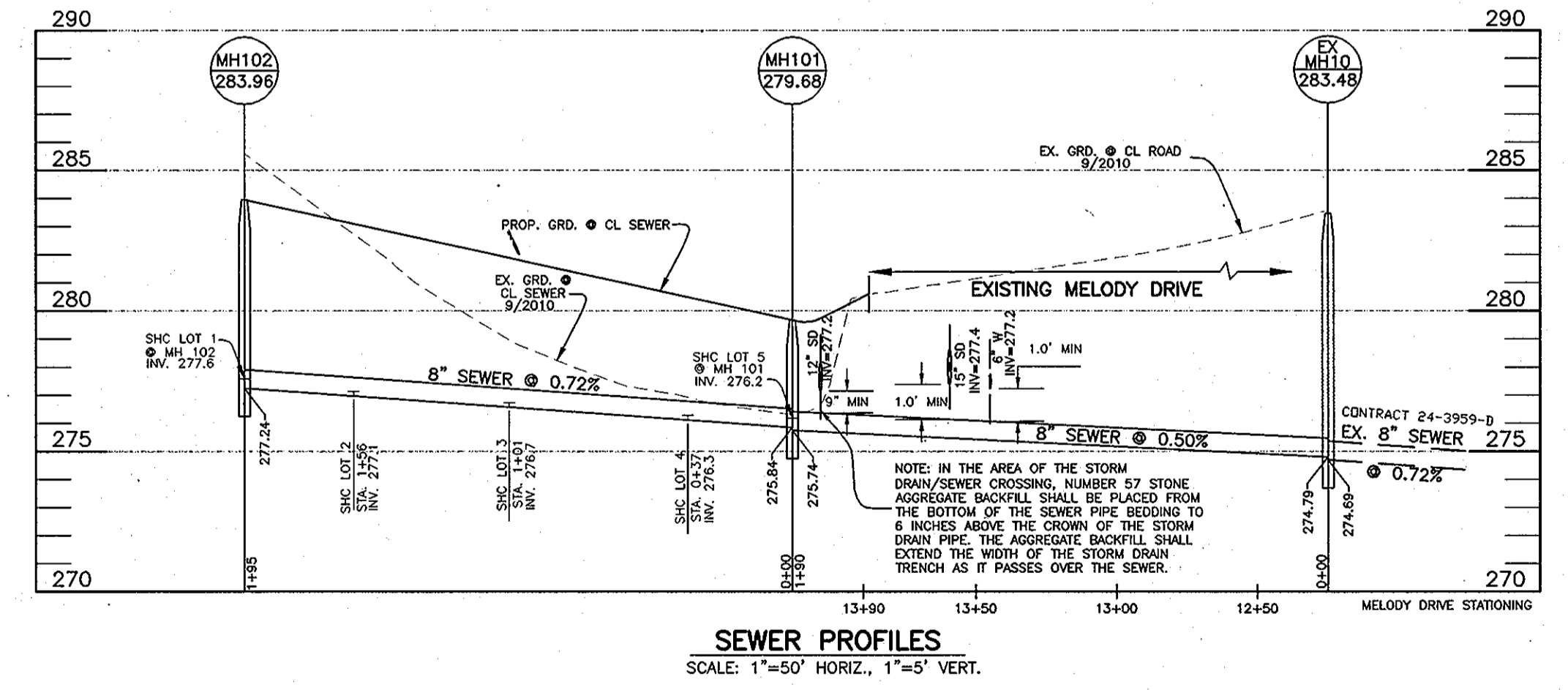
NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXISTING OVERHEAD LINES.

FINAL PUBLIC WATER AND SEWER

NOTE: ALL JOINTS AND CONNECTIONS LOCATED WITHIN STRUCTURAL FILL AREAS SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION)



WATER PROFILES
SCALE: 1"=50' HORIZ., 1"=5' VERT.



SEWER PROFILES
SCALE: 1"=50' HORIZ., 1"=5' VERT.

ADC MAP 5169 GRID F1
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.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN SEPTEMBER, 2010 BY BENCHMARK ENGINEERING INC.
- THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD'83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 508A AND NO.5085.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD'83. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE PROVIDED FROM HOWARD COUNTY MONUMENT 5085.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON PLAN.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. 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 MONIES 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 UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 AT&T.....1-800-252-1133
 BGE CONSTRUCTION SERVICES.....410-637-8713
 BGE (EMERGENCY).....410-685-0123
 BUREAU OF UTILITIES.....410-313-4900
 COLORADO PIPELINE CO.....410-795-1390
 MISS UTILITY.....1-800-257-7777
 STATE HIGHWAY ADMINISTRATION.....410-531-5533
 VERIZON.....1-800-743-0033/410-224-9210
- 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.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE (5) WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD 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 54 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" 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 ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED 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.
- TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METAL FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
- THE FIRE SPRINKLER CODE REQUIRES A MINIMUM 1 1/2" HOUSE CONNECTION WITH 1" METER, OUTSIDE SETTING.

PART 3 - SEWER

- 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.
- 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'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.
- COORDINATES SHOWN ARE TO CENTER OF STRUCTURE.
- GRANITY SEWER SERVICE, FIRST FLOOR ONLY. BASEMENT SEWER SERVICE TO BE PROVIDED BY PRIVATE ON-SITE PUMP. (WAIVER APPROVED NOVEMBER 17, 2011).
- A DESIGN MANUAL WAIVER WAS APPROVED JANUARY 23, 2012 ALLOWING A MINIMUM 9" SEPARATION BETWEEN STORM DRAIN PIPE (UPREVEYAL CURVED) AND THE SEWER MAIN. THE APPROVAL IS SUBJECT TO PLACING 57 STONE AGGREGATE BACKFILL FROM THE BOTTOM OF THE SEWER PIPE BEDDING TO 6 INCHES ABOVE THE CROWN OF THE STORM DRAIN AT THE CROSSING. THE STONE FILL SHALL EXTEND THE WIDTH OF THE STORM DRAIN TRENCH AS IT PASSES OVER THE SEWER.

KINGS ARMS SECTION 5
 LOTS 1-5 AND OPEN SPACE LOT 6
 TAX MAP 47 - GRID 22
 PARCEL 618 - ZONE: R-5C
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN
 SHEET NO. 1 OF 1
 CONTRACT NO. 14-4723-D