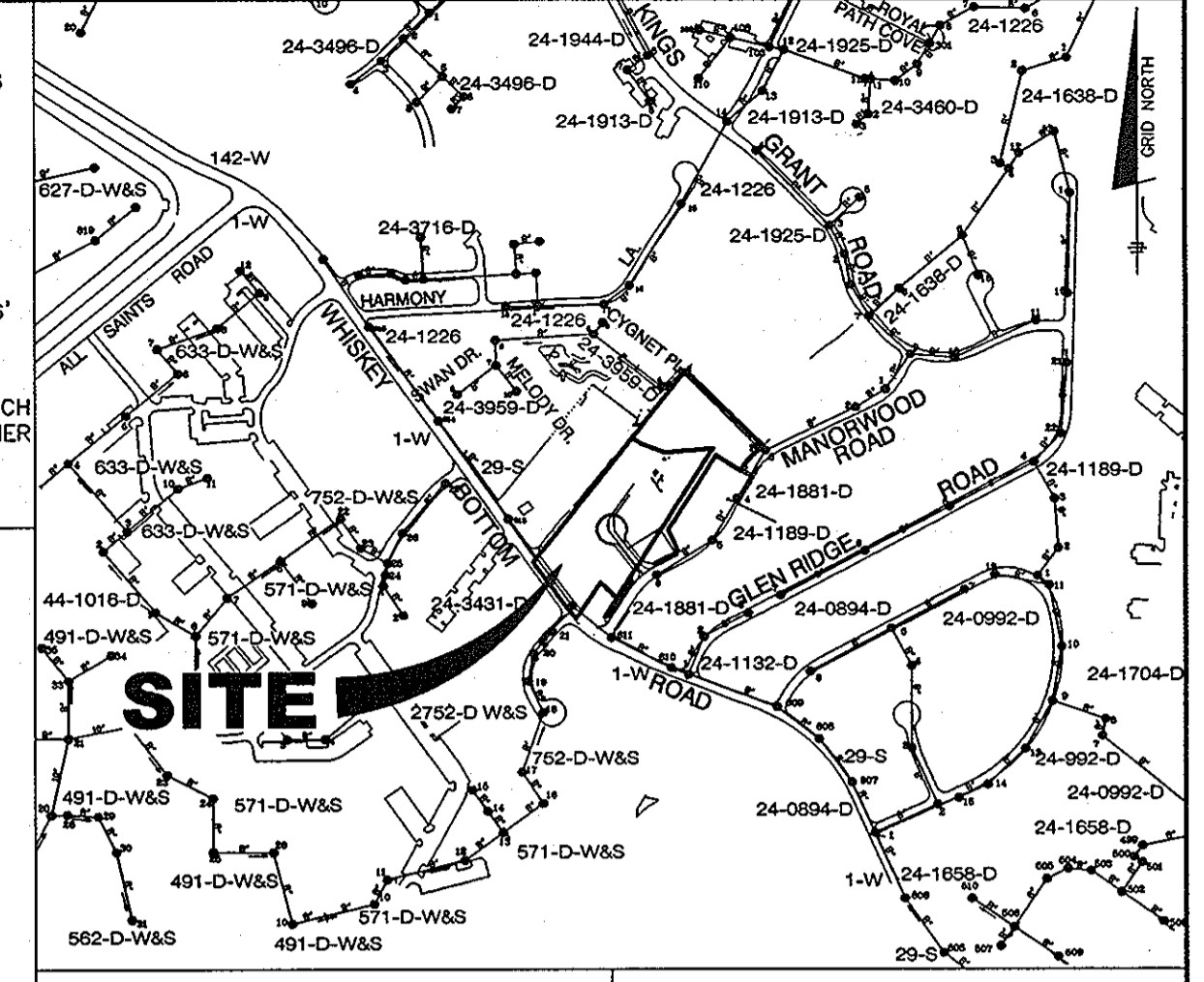


**BENCH MARKS**  
 HO. CO. #0048 (NAD '83) ELEV. 348.036  
 STANDARD DISC ON CONCRETE MONUMENT BEING 103.0' OFF CENTER LINE OF MANFIELD RD. AND 5.3' NORTHWEST OF B&E POLL NO. 254657  
 N 557526.346' E 1370661.99'  
 HO. CO. #3744 (NAD '83) ELEV. 437.276'  
 STANDARD DISC ON CONCRETE MONUMENT BEING 23.0' OFF THE NORTH EAST CURB OF ROUTE 108/WATERLOO ROAD EAST OF GOLDFINCH COURT AND 19.8' FROM THE NORTHEAST CORNER OF THE END OF THE SIDEWALK  
 N 563835.911' E 1367971.65'



**WATER AND SEWER COUNTY CODE**  
 WATER CODE: C03  
 SEWER CODE: 7270000  
 TEST GRADIENT: 550

**TYPE OF BUILDING: SINGLE FAMILY DETACHED**  
 NUMBER OF BUILDABLE LOTS: 12  
 NUMBER OF SHC'S: 12  
 NUMBER OF WHC'S: 12  
 DRAINAGE AREA: 12 PATUXENT  
 TREATMENT PLANT: LITTLE PATUXENT WATER RECLAMATION PLANT

**QUANTITIES**

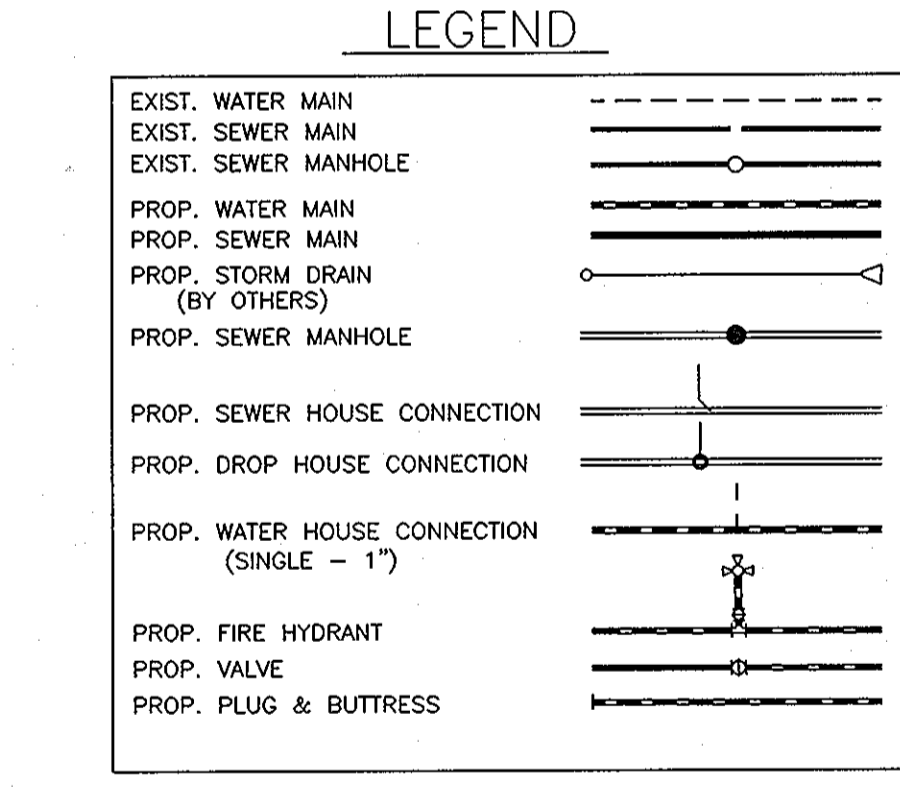
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" WATER	235 L.F.	235 ± L.F.	DIP, CL. 54	ATLANTIC STATES/FERGUSON
8" WATER	126 L.F.	126 ± L.F.	DIP, CL. 54	" " " "
8" VALVES	1	1	M.J.	MUELLER/FERGUSON
8" VALVES	1	1	M.J.	" " " "
8" x 6" REDUCER	1	1	M.J. C-153	UNION FOUNDRY/ " "
FIRE HYDRANTS	-	-	-	-
1" WHC	204	217	TYPE KCOPPER	MUELLER IND. / " "
8" 1/16 HB	1	1	M.J. C-153	UNION FOUNDRY/ " "
8" 1/8 HB	1	1	" " " "	" " " "
8" 1/16 HB	1	1	" " " "	" " " "
8" x 8" T.S.&V.	1	1	STAINLESS STEEL	SMITH BLAIR / " "
8" PLUG	1	1	M.J. C-153	UNION FOUNDRY/ " "
8" PLUG	1	1	M.J. C-153	" " " "
1 1/2" DRAIN	1	1	COPPER	MUELLER/FERGUSON
1 1/2" COPPER	-	10 L.F.	TYPE KCOPPER	" " " "
8" PVC SEWER	395 L.F.	395 ± L.F.	PVC, SDR-35	NORTH AMERICAN/FERGUSON
MANHOLES	5	5	PRECAST CONC.	CONTRACTORS SUPPLY CONC.
VERT. FEET OF MH	-	-	-	-
4" SHC	100 L.F.	100 ± L.F.	PVC, SDR-35	NORTH AMERICAN/FERGUSON

NAME OF UTILITY CONTRACTOR: C.J. MILLER  
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE: MARCH 2010

**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 HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES. NORTH AMERICAN DATUM OF 1983 (AND 83).
  - ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
  - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
  - 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 ADDITIONAL BRACING OF 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.
  - 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 OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(g) OF THE HOWARD COUNTY CODE.



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

NATURAL RESOURCES CONSERVATION SERVICE

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

*John R. Reuter* 11/19/07  
 HOWARD SOIL CONSERVATION DISTRICT

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-07-68

**SHC TABLE**

LOT NO.	INVERT AT MAIN	INVERT AT P/L OR ESMT.	MCE	REMARKS
1	268.00	268.70	272.52	-
2	269.30	269.84	275.11	-
3	269.75	269.85	274.20	-
4	275.07	275.29	279.23	-
5	275.07	275.32	279.34	-
6	273.15	273.69	277.79	-
7	271.47	272.50	276.60	-
8	271.40	272.04	275.89	-
9	269.10	269.62	273.56	-

**SANITARY SEWER MANHOLE DATA**

NO.	TYPE	LOCATION	INV. IN	INV. IN	INV. OUT	RIM ELEV.	REMARKS
EX MH 6	CONTRACT #24-1881-D	MANORWOOD ROAD	265.61 (LAT.)	265.67	265.47	EX. 277.21±	BUILDING INTO EXISTING MANHOLE WITH PROPOSED 8" SEWER MAIN
101	STD. PRECAST CONC. MANHOLE	HOLLY BROTHERS COURT @ STA. 0+25.44 7.00' RIGHT	-	267.26	267.06	279.49	SS 19, STD. 48" MANHOLE
102	STD. PRECAST CONC. MANHOLE	HOLLY BROTHERS COURT @ STA. 1+65.01 6.67' RIGHT	-	270.10	269.90	282.45	SS 19, STD. 48" MANHOLE
103	STD. PRECAST CONC. MANHOLE	N 529,944.40 E 1,358,180.90	-	271.92	271.72	283.05	SS 19, STD. 48" MANHOLE
104	STD. PRECAST CONC. MANHOLE	N 529,899.07 E 1,358,111.40	275.07 (LAT.)	275.07 (LAT.)	274.87	288.40	SS 19, STD. 48" MANHOLE
105	STD. PRECAST CONC. MANHOLE	N 530,003.25 E 1,358,241.48	-	271.40	271.20	282.45	SS 19, STD. 48" MANHOLE

**AS BUILT**  
 DATE: MARCH 2010

**OWNER/DEVELOPER**  
 PARCEL: 176  
 SECURITY DEVELOPMENT, LLC.  
 P.O. BOX 417  
 ELLICOTT CITY, MARYLAND 21041  
 410-465-4244

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

*Michael A. D'Amico* 11/19/07  
 CHIEF, BUREAU OF UTILITIES

*Michael A. D'Amico* 11/20/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BENCHMARK ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE & SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-8105 FAX: 410-465-8644

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. 28559, Expiration Date: 07-22-2009.

DESIGN: WEO  
 DRAFT: WEO  
 CHK: BFC  
 DATE: 7/25/07  
 BY NO. REVISIONS DATE

BFC Δ REVISE SEWER MAIN TO APPROVED FINAL PLAN + PLAT 7/24/08

FINAL  
 PLAN VIEW OF WATER  
 AND SEWER MAINS

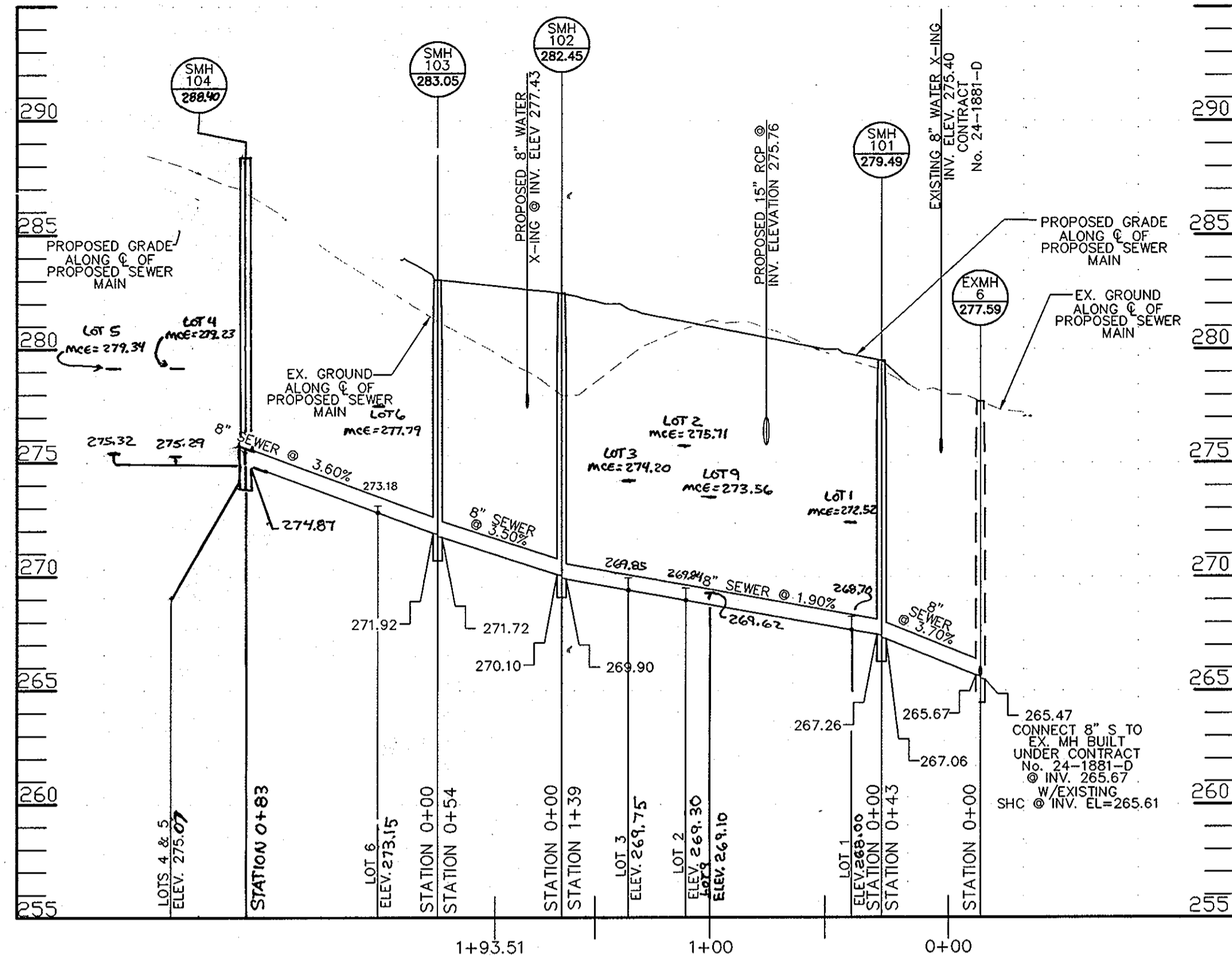
600 SCALE MAP NO. 50 BLOCK 3

**KINGS ARMS SECTION 4**  
 LOTS 1-9 AND  
 OPEN SPACE LOTS 10-12  
 TAX MAP: 47, GRID: 22 PARCELS: 176,178,181  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE:  
 AS SHOWN

SHEET NO.  
 1 OF 2

**CONTRACT NO. 24-4438-D**



**HOLLY BROTHERS COURT**  
**SEWER PROFILE**  
 SCALE: HORIZONTAL: 1"=50'  
 VERTICAL: 1"=5'  
 EX. MH 6 TO SMH 104

**WATER AND SEWER HOUSE CONNECTIONS AS-BUILTS**

LOT	FROM	TO	DISTANCE	
LOT 1	SHC	MH-101	34.5'	
	SHC	6" VALVE @ MANORWOOD	41'	
	SHC	WHC LOT1	40'	
	WHC	WHC LOT2	8'	
	WHC	MH-101	57'	
LOT 2	WHC	MH-102	83.5'	
	WHC	SHC LOT2	10.5'	
	WHC	MH-101	04'	
LOT 3	WHC	MH-102	70.5'	
	SHC	SHC LOT3	10.4'	
	SHC	MH-102	02'	
	WHC	MH-103	62.5'	
	WHC	6" VALVE	07.5'	
LOT 4	WHC	SHC LOT4	10'	
	WHC	MH-104	12'	
	WHC	MH-103	77.5'	
	SHC	SHC LOT5	14'	
	SHC	MH-104	13'	
LOT 5	WHC	MH-104	11.5'	
	SHC	WHC LOT5	15.5'	
	WHC	MH-104	22.4'	
	WHC	WHC LOT6	40'	
	WHC	MH-103	95'	
LOT 6	WHC	MH-104	42.8'	
	WHC	SHC LOT6	21'	
	WHC	MH-103	51'	
	SHC	MH-103	33.5'	
	SHC	MH-104	02'	
LOT 7	SHC	WHC LOT7	18.5'	
	SHC	1 1/2" DRAIN	14'	
	WHC	CABLE X-ING	7'	
LOT 8	WHC	LOT 7	CABLE X-ING	11'
	WHC	6" VALVE	55.5'	
	WHC	MH-105	45.5'	
LOT 9	WHC	SHC LOT8	12'	
	SHC	MH-105	53'	
	SHC	6" VALVE	55'	

LOT	FROM	TO	DISTANCE
LOT 7	WHC	MH-103	29'
	WHC	6" VALVE	52'
	WHC	SHC LOT7	45'
	SHC	MH-103	01'
	SHC	MH-105	72'
LOT 8	SHC	WHC LOT8	41'
	WHC	1 1/2" DRAIN	7.5'
	SHC	6" VALVE	52'

LOT	FROM	TO	DISTANCE
LOT 9	WHC	MH-102	37'
	WHC	6" VALVE	71'
	WHC	SHC LOT9	30'
	SHC	MH-102	00'
	SHC	MH-101	07'

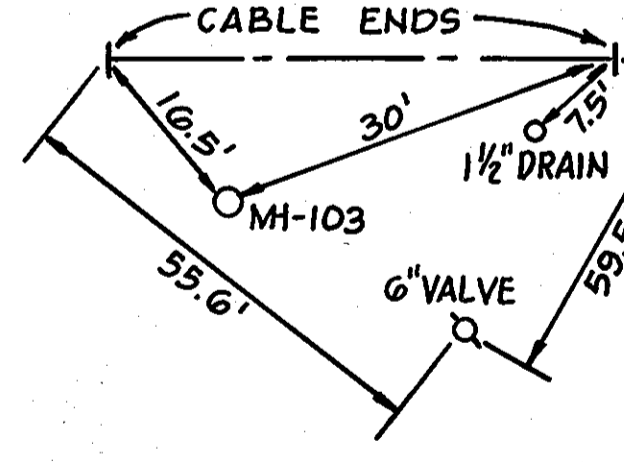
LOT	FROM	TO	DISTANCE
LOT 9	WHC	MH-102	37'
	WHC	6" VALVE	71'
	WHC	SHC LOT9	30'
	SHC	MH-102	00'
	SHC	MH-101	07'

LOT	FROM	TO	DISTANCE
LOT 9	WHC	MH-102	37'
	WHC	6" VALVE	71'
	WHC	SHC LOT9	30'
	SHC	MH-102	00'
	SHC	MH-101	07'

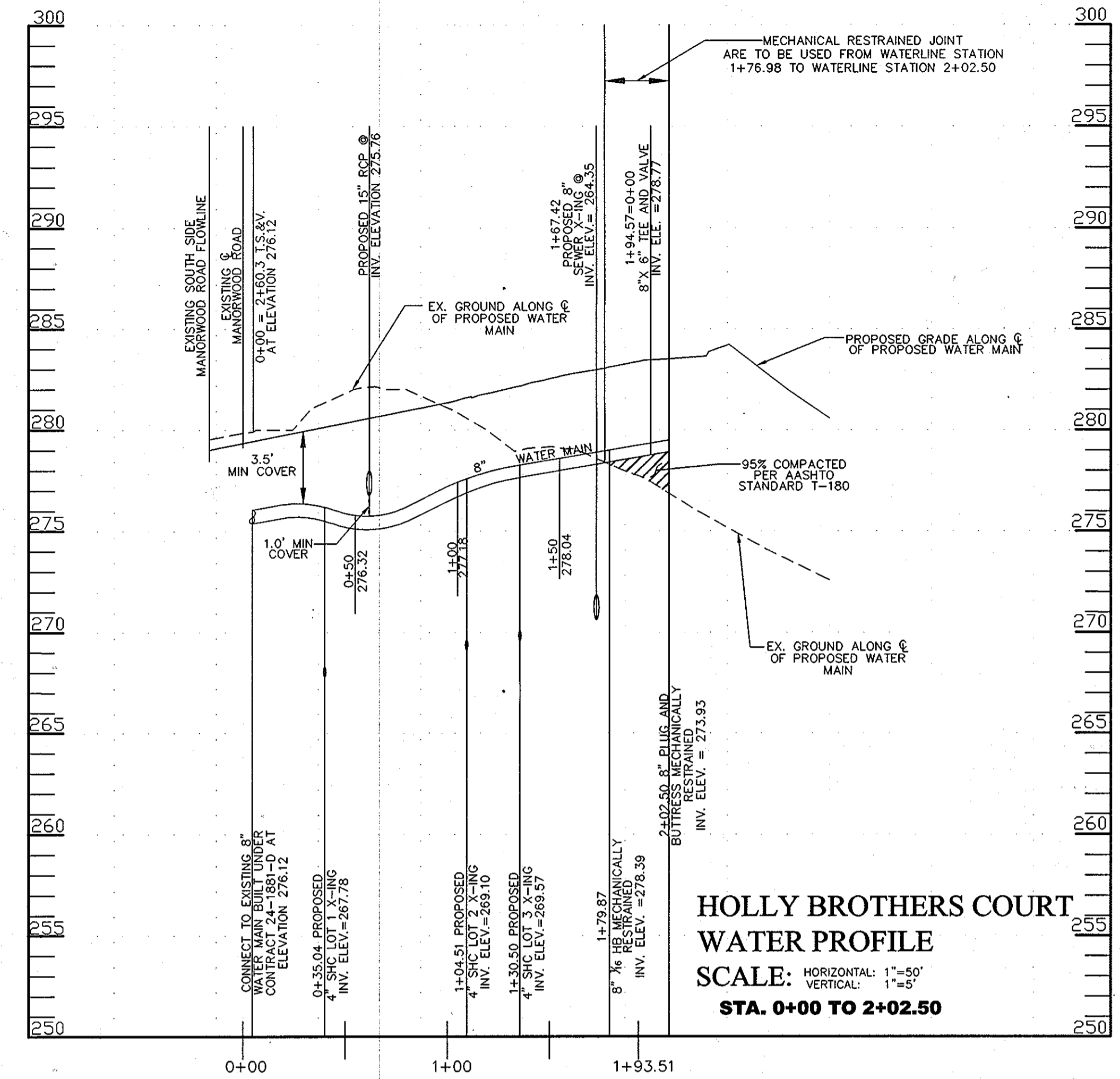
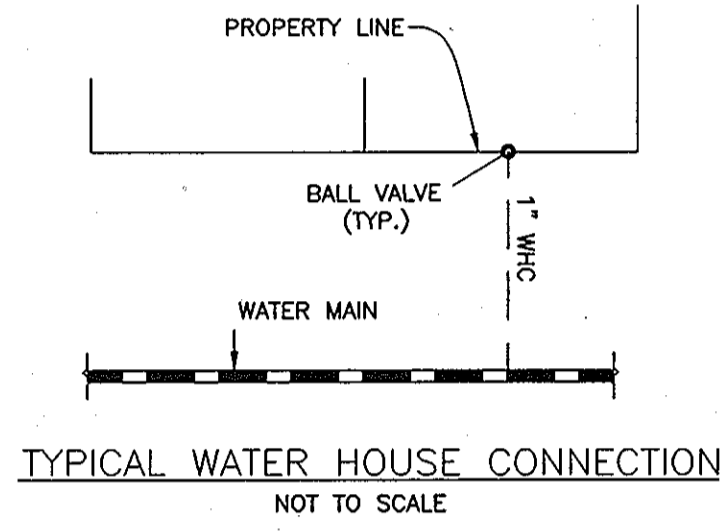
LOT	FROM	TO	DISTANCE
LOT 9	WHC	MH-102	37'
	WHC	6" VALVE	71'
	WHC	SHC LOT9	30'
	SHC	MH-102	00'
	SHC	MH-101	07'

LOT	FROM	TO	DISTANCE
LOT 9	WHC	MH-102	37'
	WHC	6" VALVE	71'
	WHC	SHC LOT9	30'
	SHC	MH-102	00'
	SHC	MH-101	07'

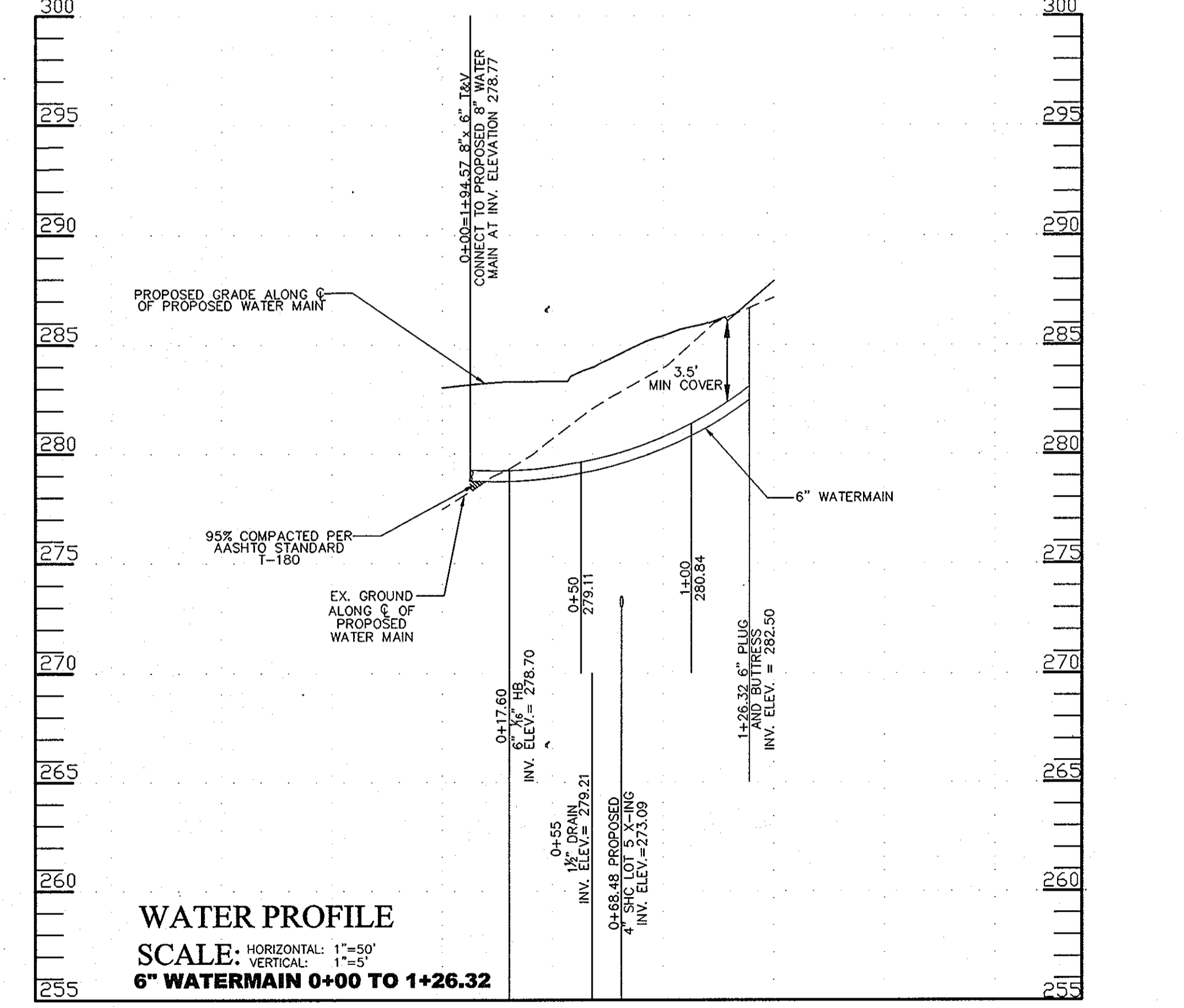
LOT	FROM	TO	DISTANCE
LOT 9	WHC	MH-102	37'
	WHC	6" VALVE	71'
	WHC	SHC LOT9	30'
	SHC	MH-102	00'
	SHC	MH-101	07'



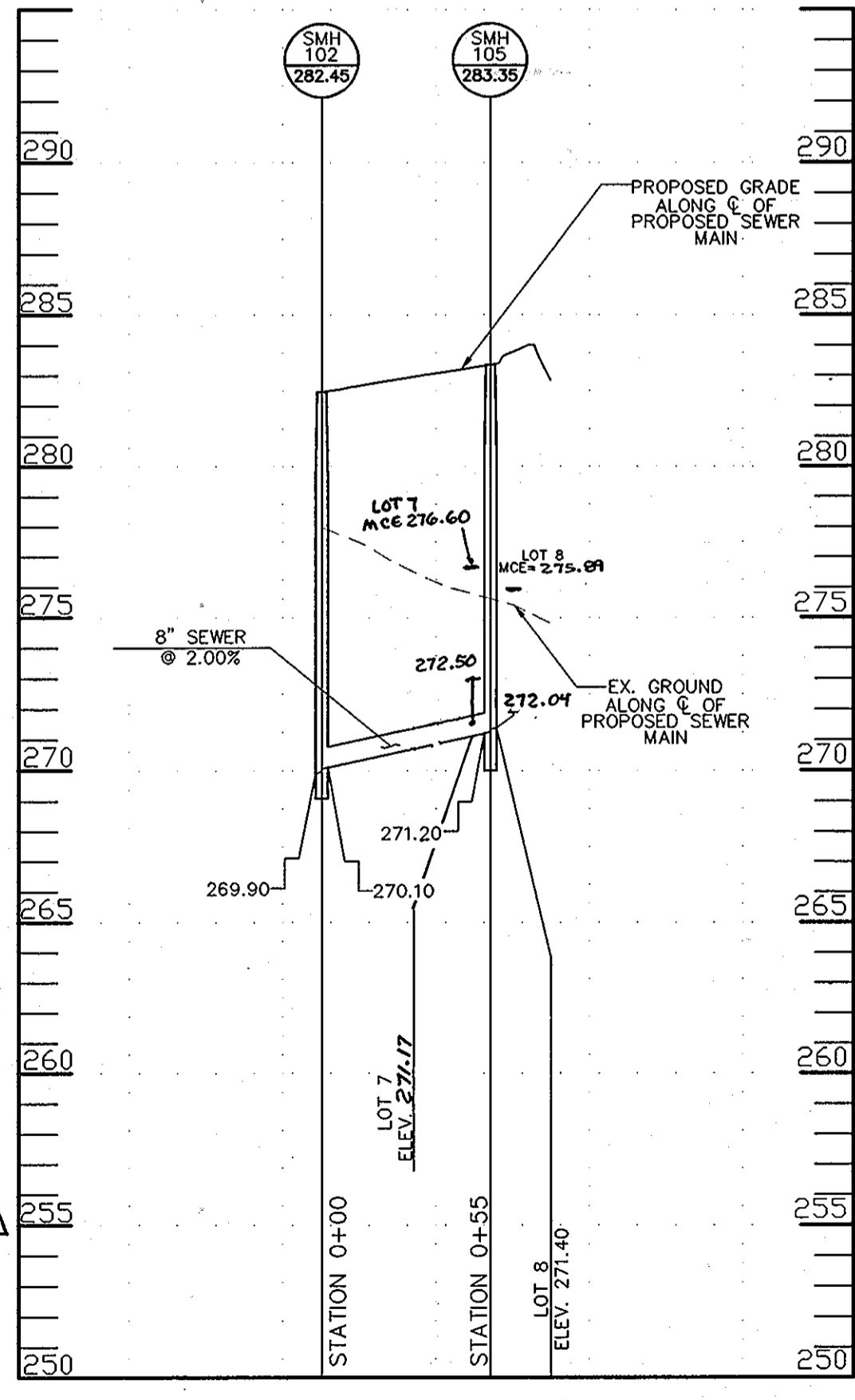
**SEWER PROFILE**  
 SCALE: HORIZONTAL: 1"=50'  
 VERTICAL: 1"=5'  
 SMH 102 TO SMH 105



**HOLLY BROTHERS COURT**  
**WATER PROFILE**  
 SCALE: HORIZONTAL: 1"=50'  
 VERTICAL: 1"=5'  
 STA. 0+00 TO 2+02.50



**WATER PROFILE**  
 SCALE: HORIZONTAL: 1"=50'  
 VERTICAL: 1"=5'  
 6" WATERMAIN 0+00 TO 1+26.32



**SEWER PROFILE**  
 SCALE: HORIZONTAL: 1"=50'  
 VERTICAL: 1"=5'  
 SMH 102 TO SMH 105

**AS BUILT**  
 DATE: MARCH 2010

OWNER / DEVELOPER  
 PARCEL: 176  
 SECURITY DEVELOPMENT, LLC.  
 P.O. BOX 417  
 ELLICOTT CITY, MARYLAND 21041  
 410-465-4244

**KINGS ARMS SECTION 4**  
 LOTS 1-9 AND  
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 TAX MAP: 67, GRID: 22 PARCELS: 176,178,181  
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 HOWARD COUNTY, MARYLAND  
**CONTRACT NO. 24-4438-D**

SCALE:  
 AS SHOWN  
 SHEET NO.  
 2 OF 2

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 DATE: 11/9/08

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND  
 DATE: 11/26/08

**BENCHMARK**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
**ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644

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. 28592, Expiration Date: 07-22-2009.

DESIGN: WEO  
 DRAFT: WEO  
 CHK: BFC  
 DATE: 7/25/07

FINAL  
 WATER AND SEWER MAINS  
 PROFILES  
 600 SCALE MAP NO. 50  
 BLOCK 3

REVISIONS  
 NO. DATE  
 BFC 1 REVISE PROFILE PER APPROVED F-PLAN REVISE MCE 7/24/08