

**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 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 TO 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 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. UNDERGROUND DAMAGE CONTROL.....787-9068  
 MESS UTILITY.....1-800-257-7777  
 COLONIAL PIPELINE CO.....795-1390  
 HOWARD CO. DEPT. OF PUBLIC WORKS 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.

**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.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2' - 0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4' - 0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER-TIGHT FRAME AND COVERS. STANDARD DETAIL GS.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.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

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

*John Blanton* 8/14/14  
NATURAL RESOURCES CONSERVATION SERVICE

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

*John Blanton* 8/14/14  
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-01-35

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert M. ...* 8-28-01  
CHIEF, BUREAU OF UTILITIES

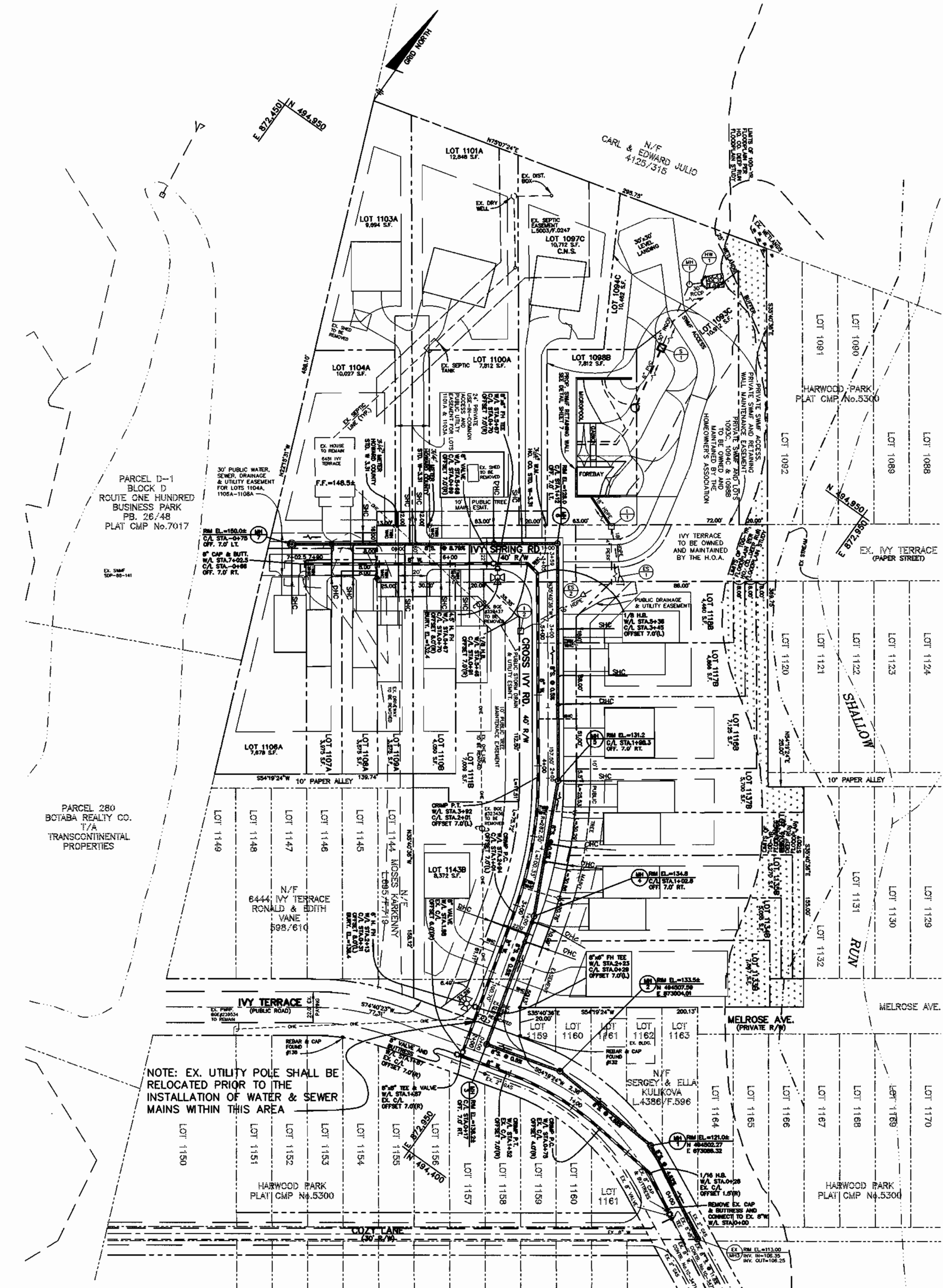
DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*...* 9/7/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

DES: DAM/MCR			
DRN: MCR			
CHK: DAM			
DATE: 8/03/01			
BY: NO.		REVISIONS	

**WATER AND SEWER PLAN AND DETAILS**  
600 SCALE MAPS: W38 & S38  
BLOCKS: 13 & 19

**HARWOOD PARK**  
LOT NUMBERS 1093C, 1094C, 1097C, 1098B, 1100A, 1101A, 1103A, 1104A, 1106A-1108A, 1109, 1110B, 1111B, 1116B-1118B, 1133B-1137B, 1141B 7 1143B  
ELECTION DISTRICT NO.1  
SCALE: AS SHOWN  
SHEET NO. 1 OF 2  
**CONTRACT NO.14-3916-D**

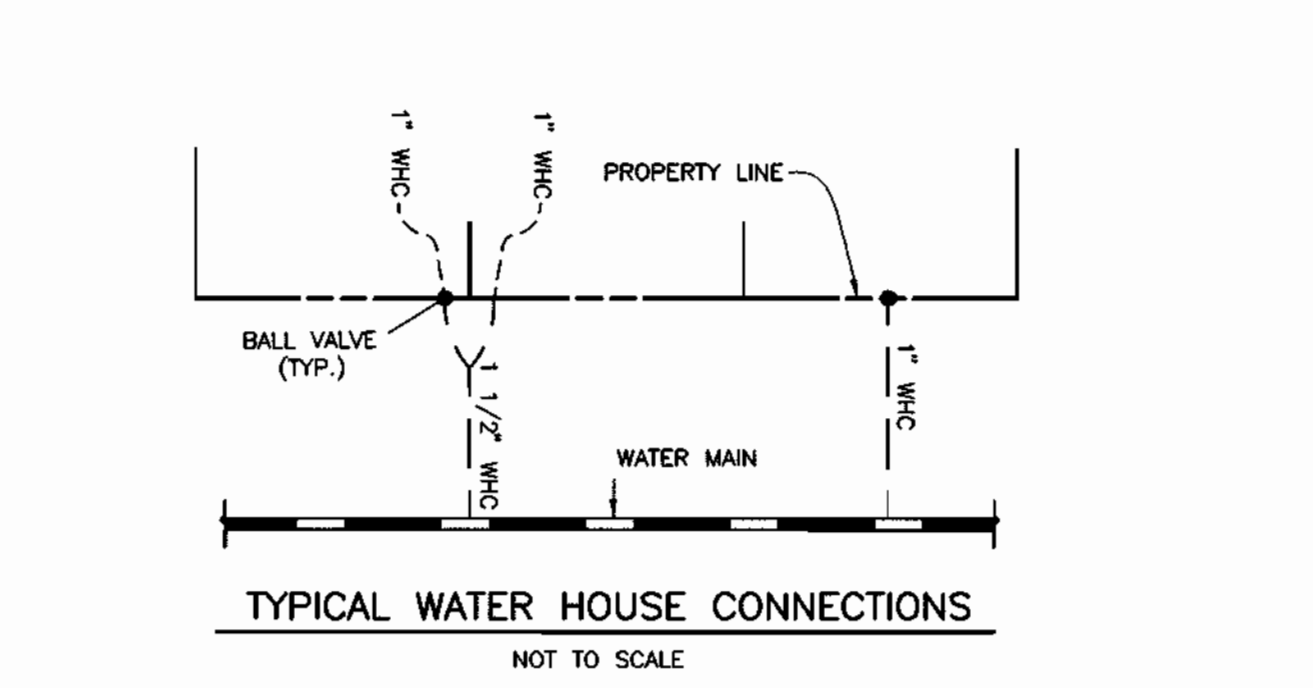


**PLAN**  
SCALE: 1" = 50'

**QUANTITIES**

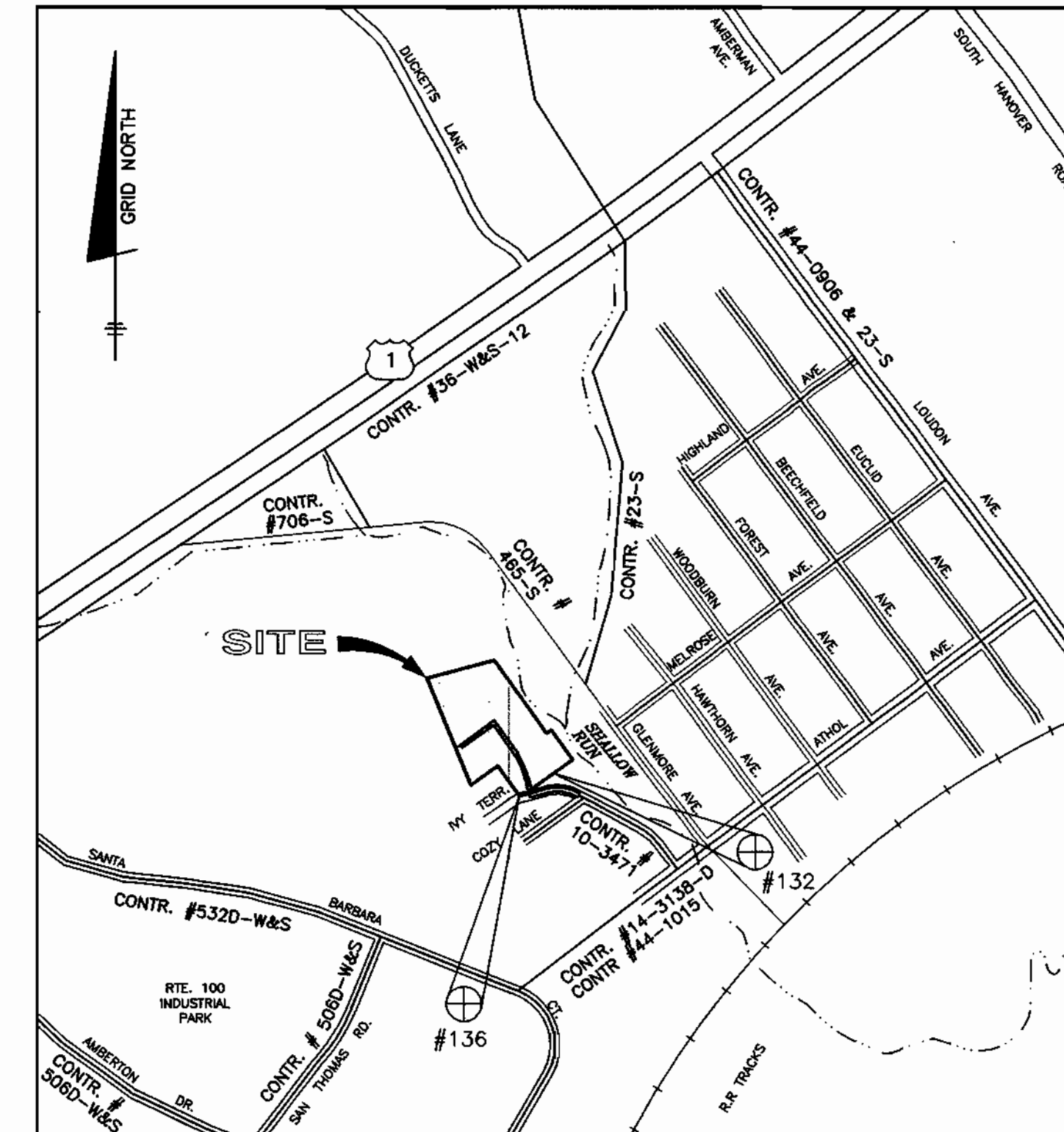
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" WATER	703 L.F.			
8" VALVES	3 EACH			
1-1/2" WHC	182 L.F.			
1" WHC	96 L.F.			
8"x6" FH TEE	2 EACH			
6" FH VALVE	2 EACH			
FIRE HYDRANT	2 EACH			
8" CAP & BUTT.	2 EACH			
4" DHC	64 V.F.			
8" SEWER	790 L.F.			
MANHOLES	7 EACH			
4" SHC	352 L.F.			

NAME OF UTILITY CONTRACTOR:  
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:



**SHC TABLE**

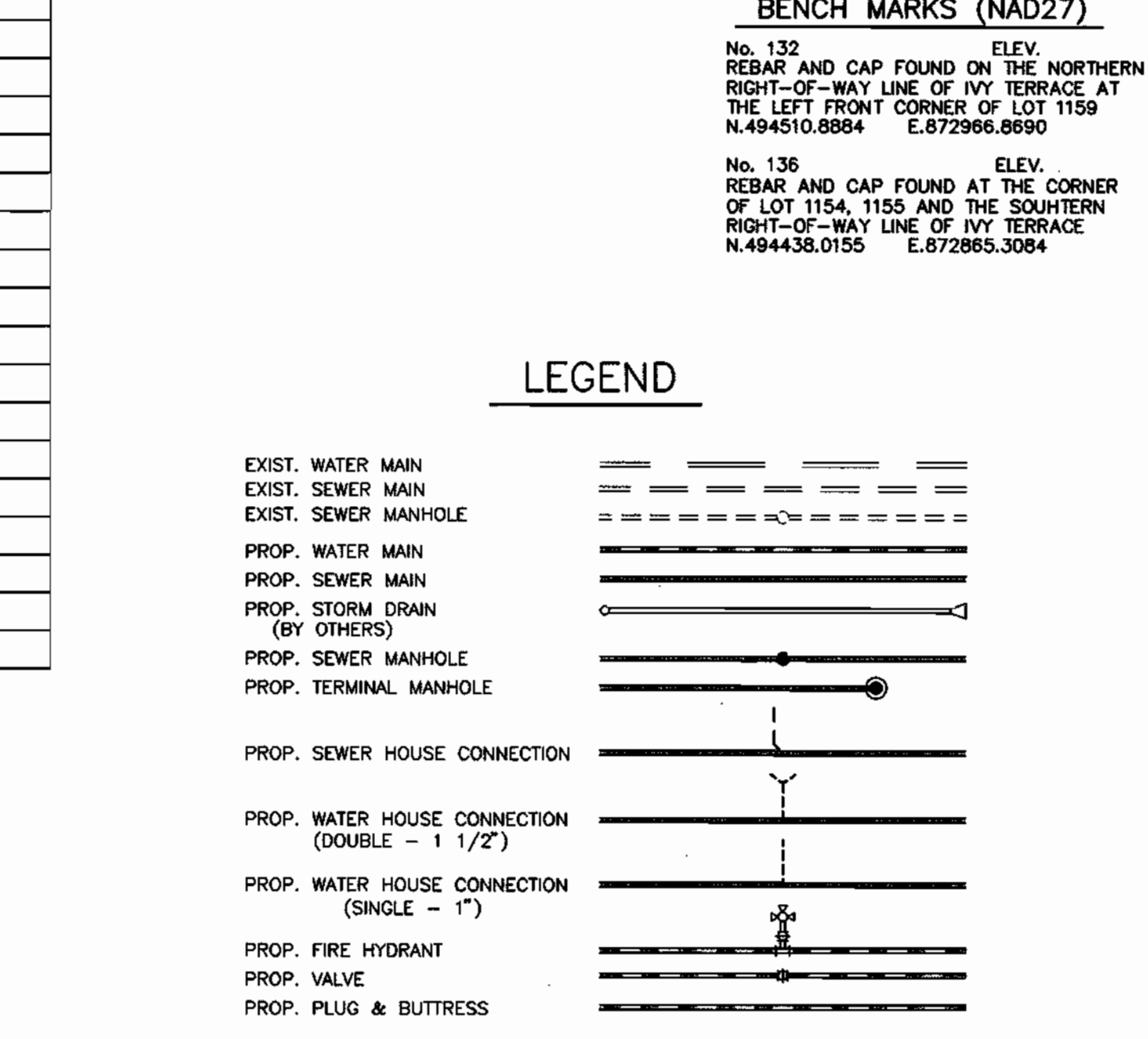
LOT NO.	INVERT AT MAIN	INVERT AT P/L OR ESMT.	MCE	REMARKS
1097C	118.70	118.96	125.40+	CNS
1100A	120.46	126.5	130.3	DHC
1101A	125.29	125.55	132.20	
1103A	125.64	125.90	132.54	
1104A	128.54	128.70	132.64	
1106A	132.77	139.1	142.8	
1107A	130.38	137.5	141.3	DHC
1108A	129.15	129.59	133.7	
1109A	125.81	126.3	130.4	
1110B	123.71	124.25	128.3	
1111B	121.95	122.49	126.6	
1116B	115.83	118.0	121.8	DHC
1117B	115.93	116.2	120.3	
1118B	116.10	116.38	120.40	
1133B	114.79	124.5	128.4	DHC
1134B	114.86	122.9	126.4	DHC
1135B	115.17	122.0	125.9	DHC
1136B	115.07	121.0	124.9	DHC
1137B	115.39	120.3	124.2	DHC
1143B	114.81	127.5	131.4	DHC



(FOR COUNTY USE ONLY)  
WATER AND SEWER COUNTY CODE  
WATER CODE: A-04  
SEWER CODE: 2151800  
TEST GRADIENT: 550

TYPE OF BUILDING: SINGLE FAMILY DETACHED  
SINGLE FAMILY ATTACHED  
NUMBER OF LOTS: 20 BUILDABLE (25 TOTAL INCL. 1 EXISTING)  
NUMBER OF SHC'S: 20  
NUMBER OF WHC'S: 20  
DRAINAGE AREA: DEEP RUN  
TREATMENT PLANT: PATAPSCO

**BENCH MARKS (NAD27)**  
No. 132 ELEV. REBAR AND CAP FOUND ON THE NORTHERN RIGHT-OF-WAY LINE OF IVY TERRACE AT THE LEFT FRONT CORNER OF LOT 1159 N.494510.8884 E.872966.8690  
No. 136 ELEV. REBAR AND CAP FOUND AT THE CORNER OF LOT 1154, 1155 AND THE SOUTHERN RIGHT-OF-WAY LINE OF IVY TERRACE N.494438.0155 E.872865.3064



**SHEET INDEX**

NO.	DESCRIPTION
1	WATER & SEWER PLAN AND DETAILS
2	WATER & SEWER PROFILES



**GENERAL NOTES**

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- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERPROOF FRAME AND COVERS, STANDARD DETAIL G5-52, WHERE WATERPROOF 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.

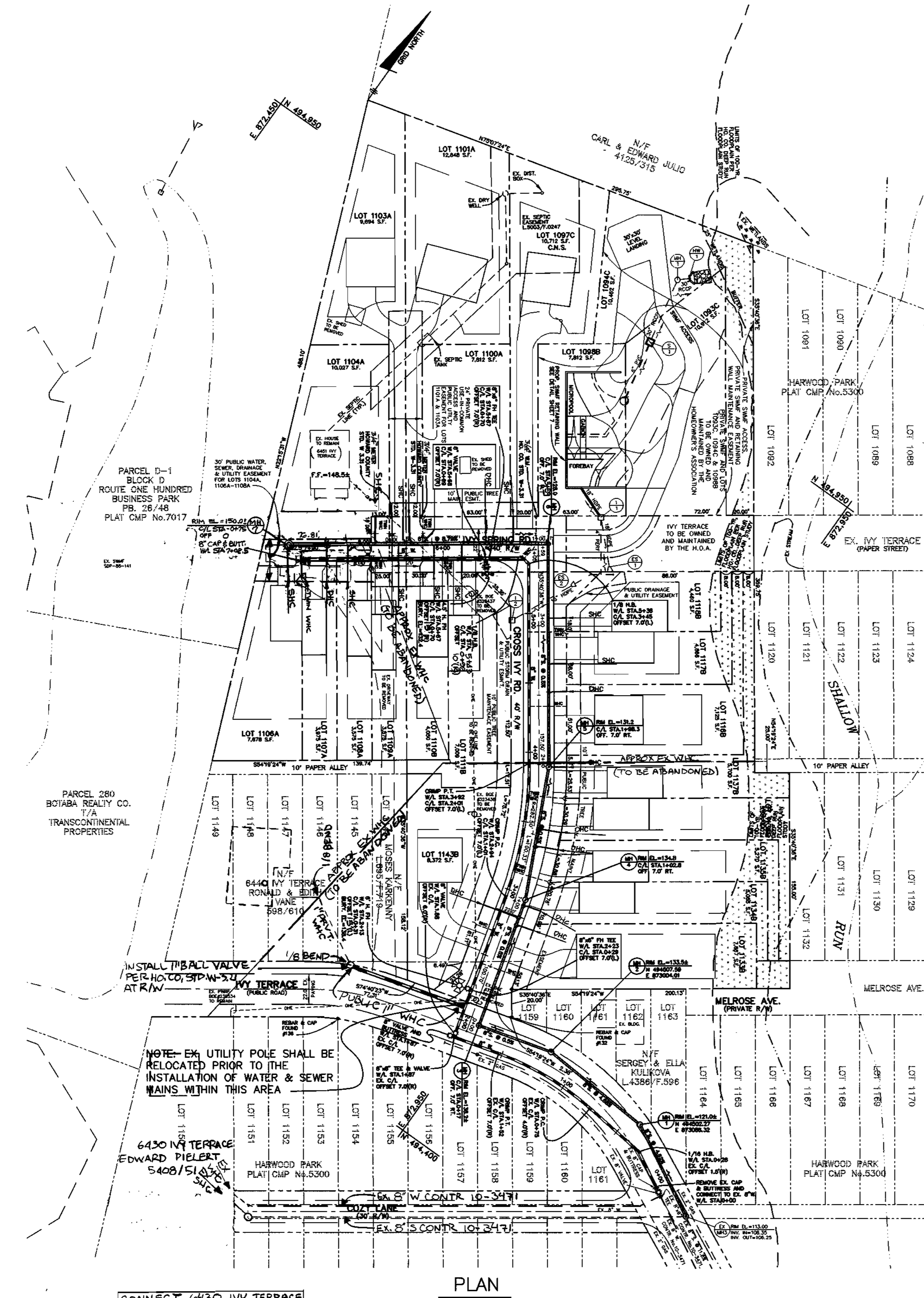
HOWARD SOIL CONSERVATION DISTRICT:  
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT  
AND MEETS TECHNICAL REQUIREMENTS

*[Signature]* 8/14/14  
NATURAL RESOURCES CONSERVATION SERVICE

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*[Signature]* 8/14/14  
HOWARD SOIL CONSERVATION DISTRICT

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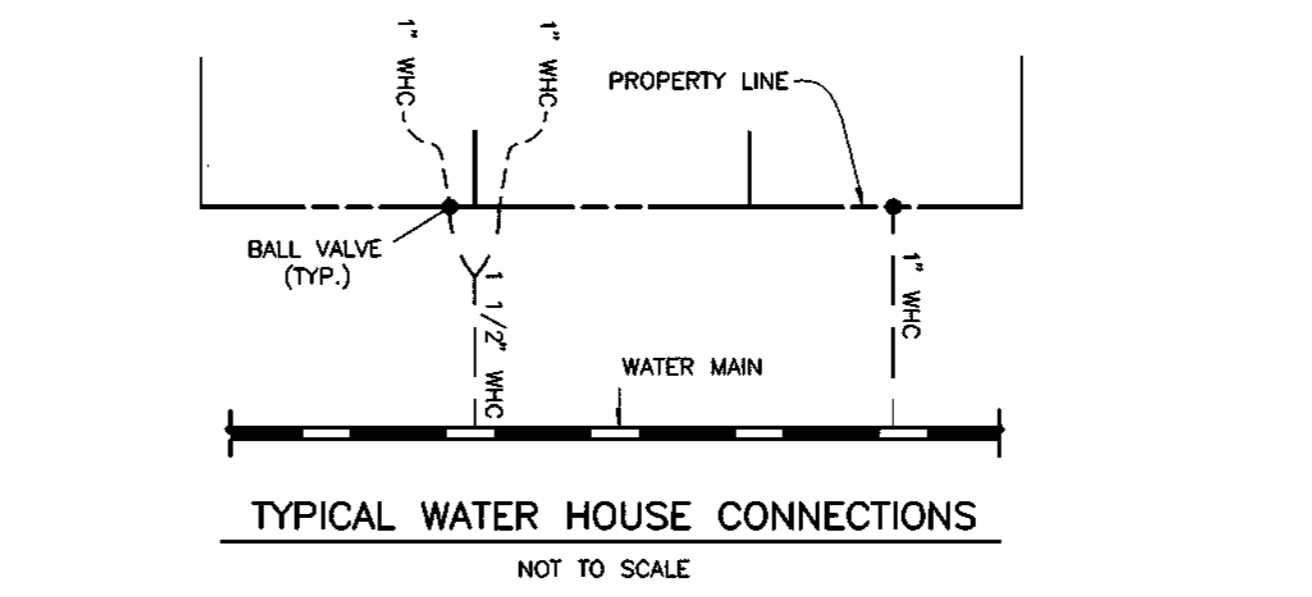


CONNECT 6430 IVY TERRACE TO THE EX. WHC LOCATED AT COZY LANE AND DISCONNECT FROM THE PRIVATE WHC CROSSING IVY TERRACE.

**QUANTITIES**

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" WATER	703 L.F.			
8" VALVES	3 EACH			
1-1/2" WHC	182 L.F.			
1" WHC	240 L.F.			
8"x6" FH TEE	2 EACH			
6" FH VALVE	2 EACH			
FIRE HYDRANT	2 EACH			
8" CAP & BUTT.	2 EACH			
1" BALL VALVE	1 EACH			
4" DHC	64 V.F.			
8" SEWER	790 L.F.			
MANHOLES	7 EACH			
4" SHC	352 L.F.			

NAME OF UTILITY CONTRACTOR:  
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:



**SHC TABLE**

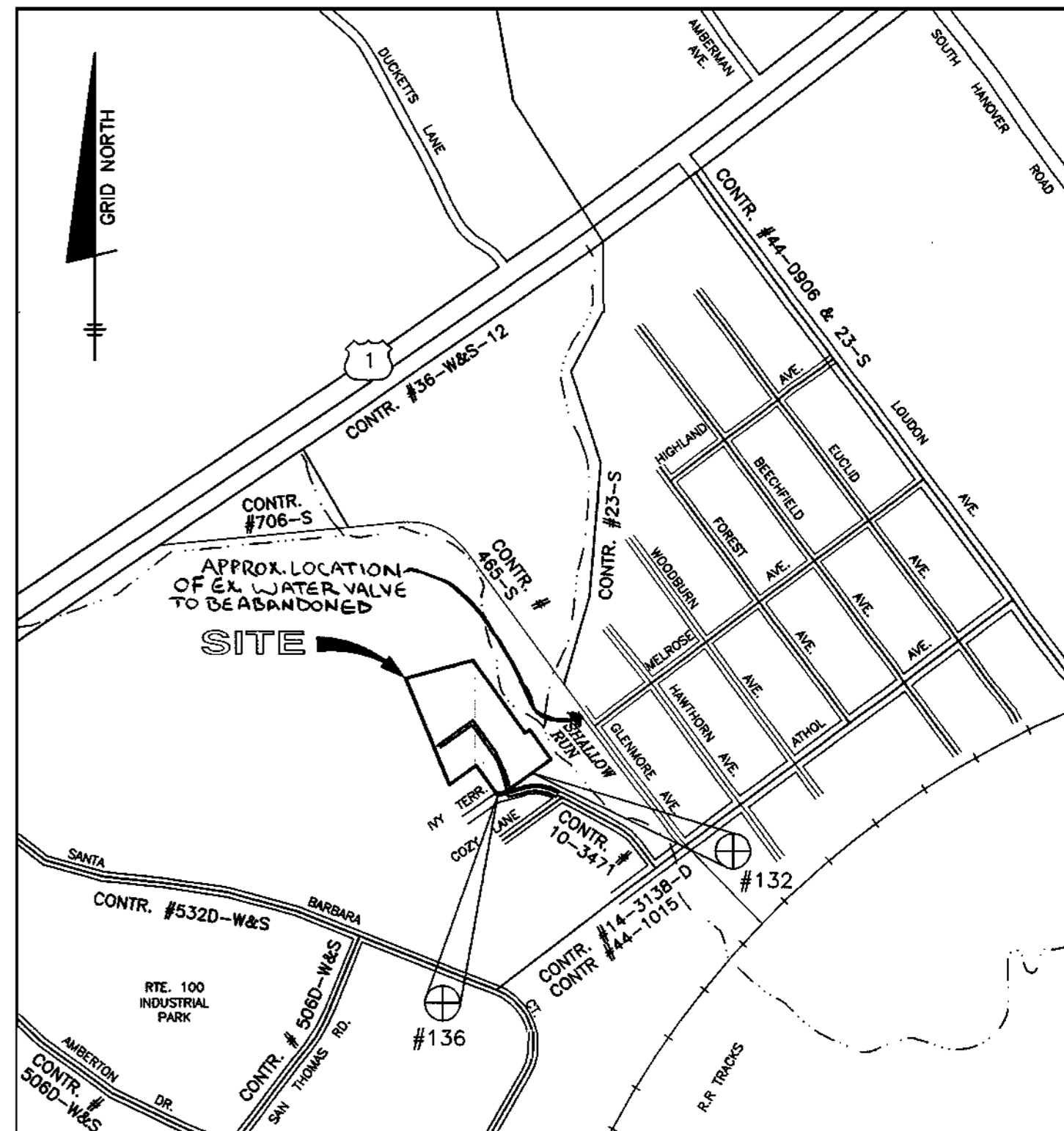
LOT NO.	INVERT AT MAIN	INVERT AT P/L OR ESMT.	MCE	REMARKS
1097C	118.70	118.96	125.40*	CNS
1100A	120.46	126.5	130.3	DHC
1101A	125.29	125.55	132.20	
1103A	125.64	125.90	132.54	
1104A	128.54	128.70	132.64	
1106A	132.77	139.1	142.8	
1107A	130.38	137.5	141.3	DHC
1108A	129.15	129.59	133.7	
1109A	125.81	126.3	130.4	
1110B	123.71	124.25	128.3	
1111B	121.95	122.49	126.6	
1116B	115.83	118.0	121.8	DHC
1117B	115.93	116.2	120.3	
1118B	116.10	116.36	120.40	
1133B	114.79	124.5	128.4	DHC
1134B	114.86	122.9	124.4	DHC
1135B	115.17	122.0	129.9	DHC
1136B	115.07	121.0	124.0	DHC
1137B	115.39	120.3	124.2	DHC
1143B	114.81	127.9	131.4	DHC

**CONTRACTOR NOTES:**

- 1.) MAINTAIN A MINIMUM OF ONE LANE OPEN ON EX. IVY TERRACE AT ALL TIMES DURING CONSTRUCTION ACTIVITY.
- 2.) MAINTAIN ACCESS TO EX. HOUSE VIA EX. DRIVEWAY AT ALL TIMES DURING CONSTRUCTION ACTIVITY.
- 3.) EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EX. OVERHEAD ELECTRIC LINES.
- 4.) A PRIVATE WHC EXISTS CROSSING THE PROPERTY TO SERVE THE RESIDENCES AT 6430, 6440 AND 6541 IVY TERRACE; THE EXACT LOCATION IS UNKNOWN; TEST PIT FOR LOCATION AND MAINTAIN SERVICE UNTIL SUCH TIME AS A CONNECTION TO THE PROP. WATERLINE WITHIN IVY TERRACE CAN BE MADE.
- 5.) CONTRACTOR SHALL REPAIR PAVING ALONG THE LINES OF EXCAVATION ON IVY TERRACE AFTER CONSTRUCTING PROPOSED WATER AND SEWER MAINS.

**NOTES CONTINUED**

- 6.) THE EXISTING WHC SERVING 6440, 6430 AND 6541 IVY TERRACE SHALL REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAIN IS PLACED IN SERVICE. THE PROP. WHC TO 6451 IVY TERRACE SHALL BE INSTALLED AND THE EX. WHC CAPPED AT THE SPLIT. THE WHC FOR 6430 IVY TERRACE SHALL BE CONNECTED TO THE EX. WHC LOCATED ON COZY LANE. AND THE EX. PRIVATE WHC SHALL BE CAPPED AT THE SPLIT. A NEW 1" WHC AND BALL VALVE SHALL BE INSTALLED WITHIN EX. R/W OF IVY TERRACE FOR 6440 IVY TERRACE. THEN THE EX. WHC SHALL BE DUG UP AT THE WATER MAIN AT MELROSE AVE. AND THE CORROSION REMOVED. THE EXISTING VALVE BOX SHOULD BE REMOVED AND THE VALVE AND WHC ABANDONED IN PLACE.



(FOR COUNTY USE ONLY)  
WATER AND SEWER COUNTY CODE

WATER CODE: A-04  
SEWER CODE: 2151800  
TEST GRADIENT: .550

TYPE OF BUILDING: SINGLE FAMILY DETACHED  
NUMBER OF LOTS: 20 BUILDABLE (23 TOTAL INCL. 1 EXISTING)  
NUMBER OF SHC'S: 20  
NUMBER OF WHC'S: 20  
DRAINAGE AREA: DEEP RUN  
TREATMENT PLANT: PATAPSCO

**VICINITY MAP**

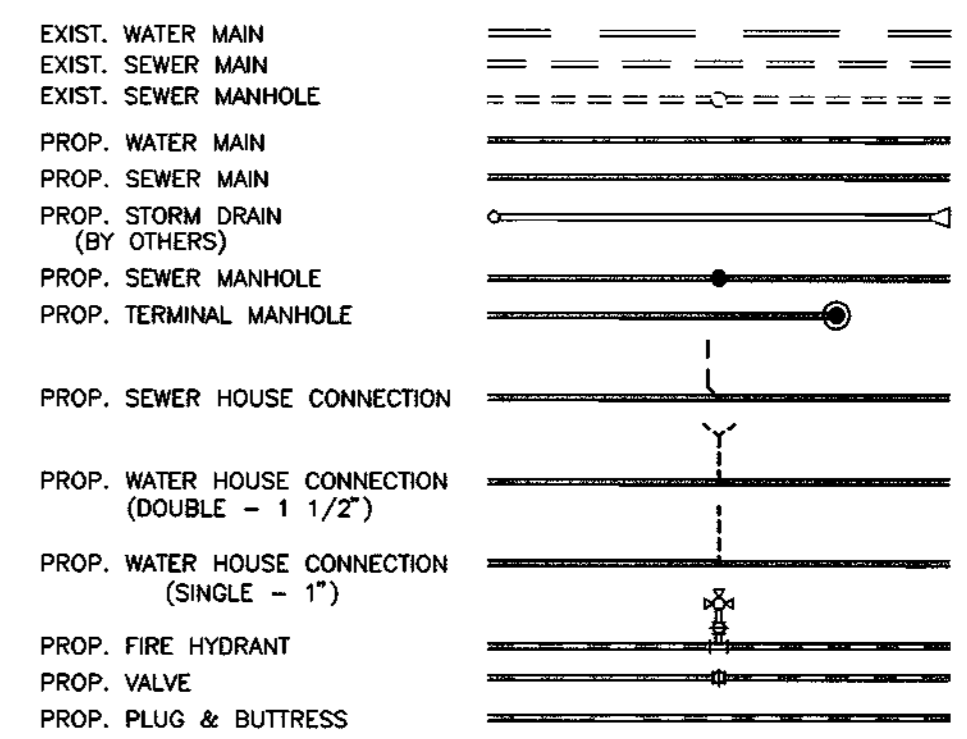
SCALE: 1" = 600'

**BENCH MARKS (NAD27)**

No. 132 ELEV. REBAR AND CAP FOUND ON THE NORTHERN RIGHT-OF-WAY LINE OF IVY TERRACE AT THE LEFT FRONT CORNER OF LOT 1159 N.494510.8884 E.872966.8690

No. 136 ELEV. REBAR AND CAP FOUND AT THE CORNER OF LOT 1154, 1155 AND THE SOUTHERN RIGHT-OF-WAY LINE OF IVY TERRACE N.494438.0155 E.872865.3084

**LEGEND**



**SHEET INDEX**

NO.	DESCRIPTION
1	WATER & SEWER PLAN AND DETAILS
2	WATER & SEWER PROFILES

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 8-28-01  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 9/7/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
8400 BALTIMORE NATIONAL PIKE & SUITE 418  
ELLSWOOD CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644

*[Signature]*  
DATE: 8/03/01

BY	NO.	REVISIONS	DATE
		REVISIONS TO ADDRESS WHC'S TO 6430, 6440 AND 6451 IVY TERRACE	

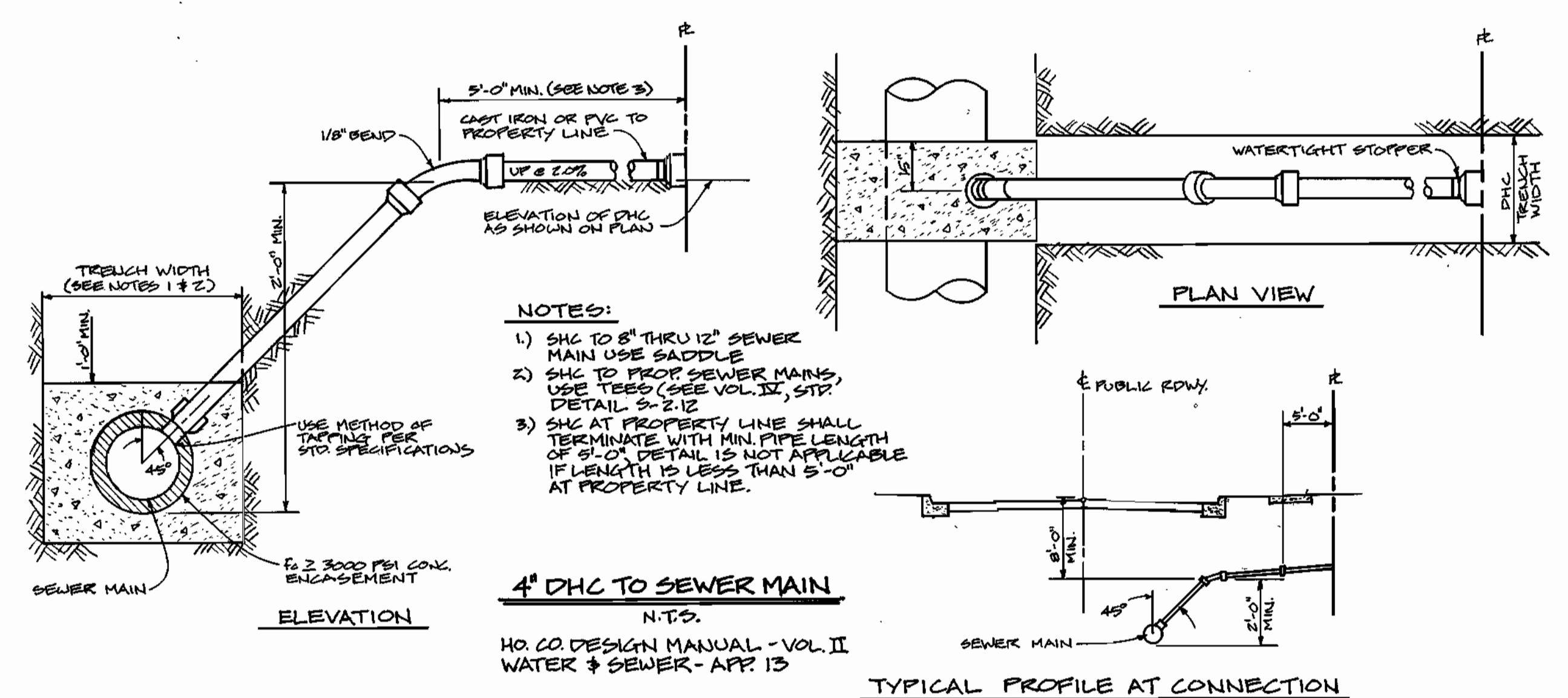
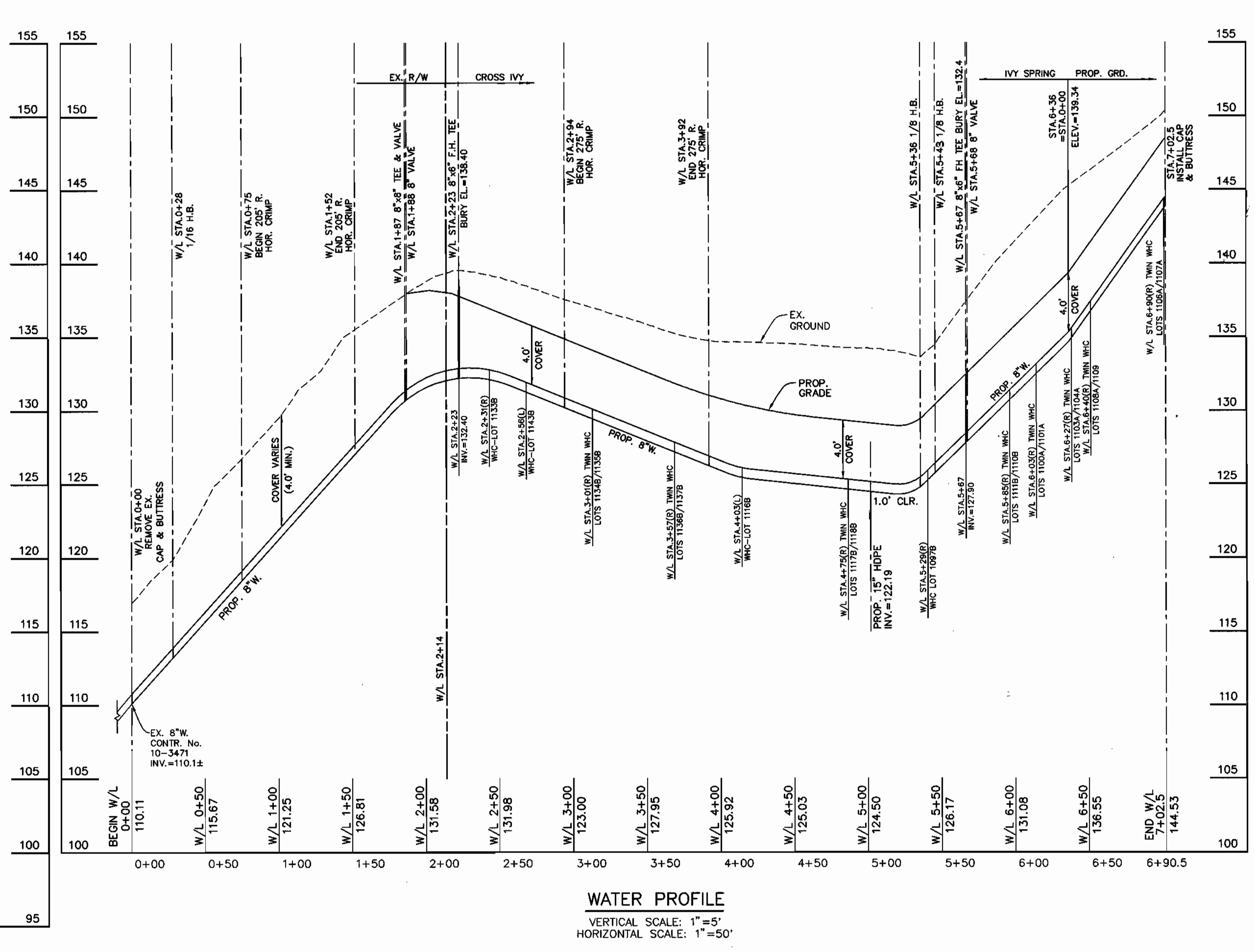
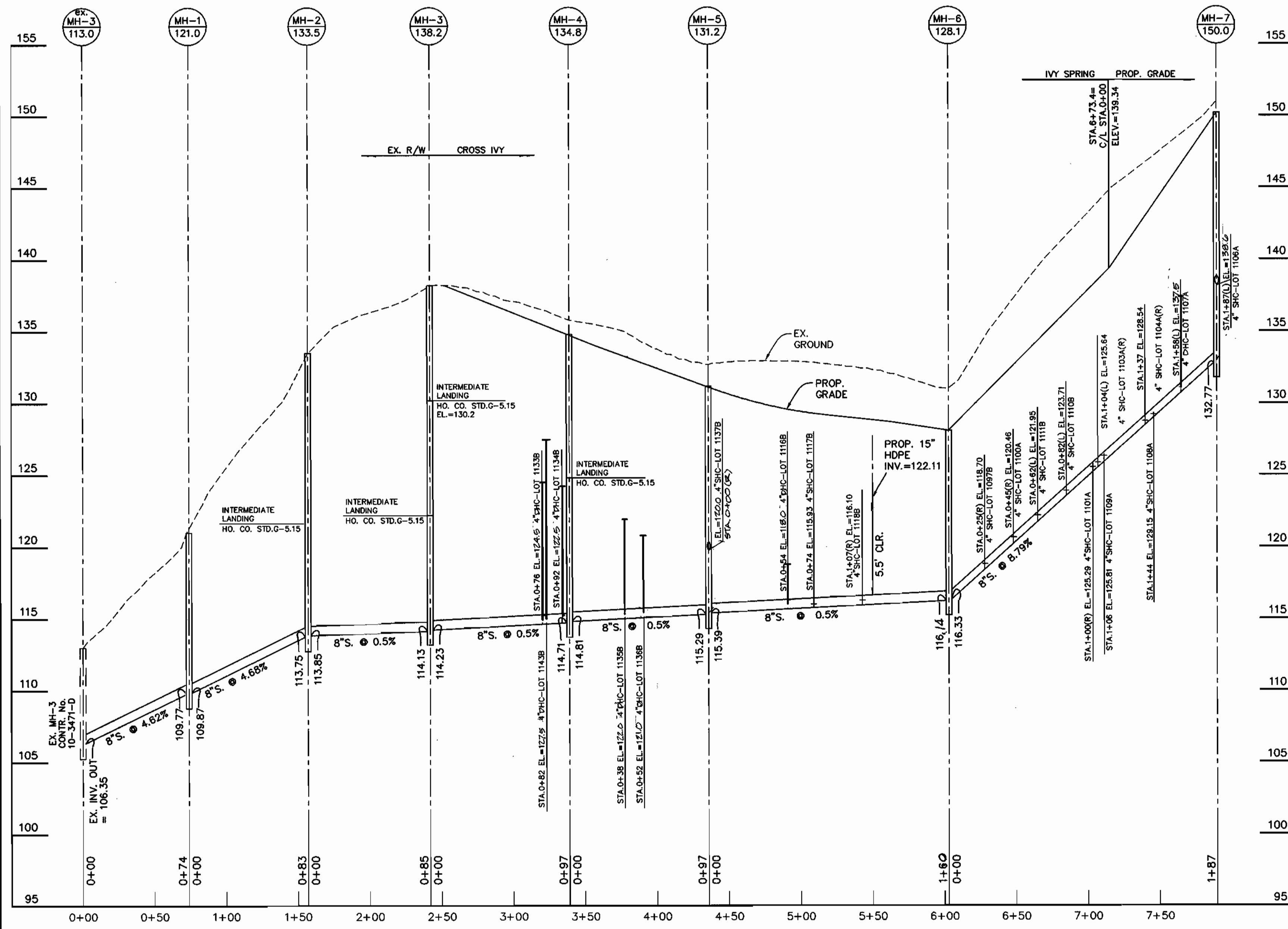
**WATER AND SEWER PLAN AND DETAILS**

600 SCALE MAPS: W38 & S38 BLOCKS: 13 & 19

**HARWOOD PARK**  
LOT NUMBERS 1093C, 1094C, 1097C, 1098B, 1100A, 1101A, 1103A, 1104A, 1106A-1108A, 1109, 1110B, 1111B, 1116B-1118B, 1133B-1137B, 1141B AND 1143B  
ELECTION DISTRICT NO. 1

SCALE: AS SHOWN  
SHEET NO. 1 OF 2

**CONTRACT NO. 14-3916-D**



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND R. J. ... 8-28-01 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND ... 9/7/01 CHIEF, DEVELOPMENT ENGINEERING DIVISION	<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELIJAH CITY, MARYLAND 21043 PHONE: 410-485-8105 FAX: 410-485-6644	DES: DAM/MCR DRN: MCR CHK: DAM DATE: 8/03/01 BY: NO.	REVISIONS REVISE TITLE BLOCK, ADDED "AND" DATE: 8/03/01	<b>WATER AND SEWER PROFILES</b> 600 SCALE MAPS: W38 & S38 BLOCKS: 13 & 19	<b>HARWOOD PARK</b> LOT NUMBERS 1093C, 1094C, 1097C, 1098B, 1100A, 1101A, 1103A, 1104A, 1106A-1108A, 1109, 1110B, 1111B, 1116B-1118B, 1133B-1137B, 1141B & 1143B ELECTION DISTRICT NO. 1 <b>CONTRACT NO. 14-3916-D</b>	SCALE: AS SHOWN SHEET NO. 2 OF 2
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- 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. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

**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.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2' - 0" OF EXTERIOR MANHOLE WALL.
- 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 G5.52, 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.

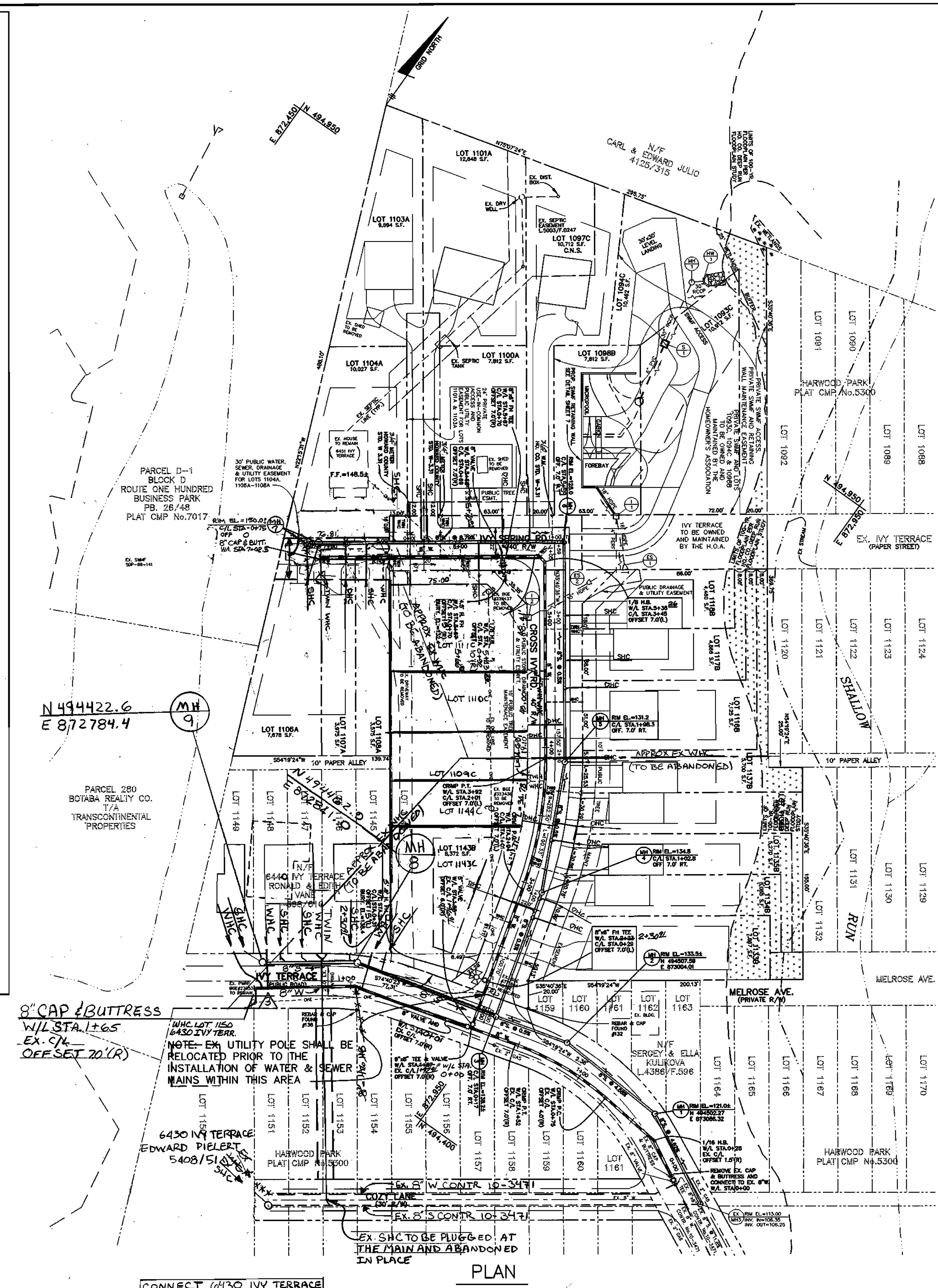
HOWARD SOIL CONSERVATION DISTRICT:  
REVIEWED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

*[Signature]* 8/14/01  
NATURAL RESOURCES CONSERVATION SERVICE

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

*[Signature]* 8/14/01  
HOWARD SOIL CONSERVATION DISTRICT

SEDMIMENT 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-01-35

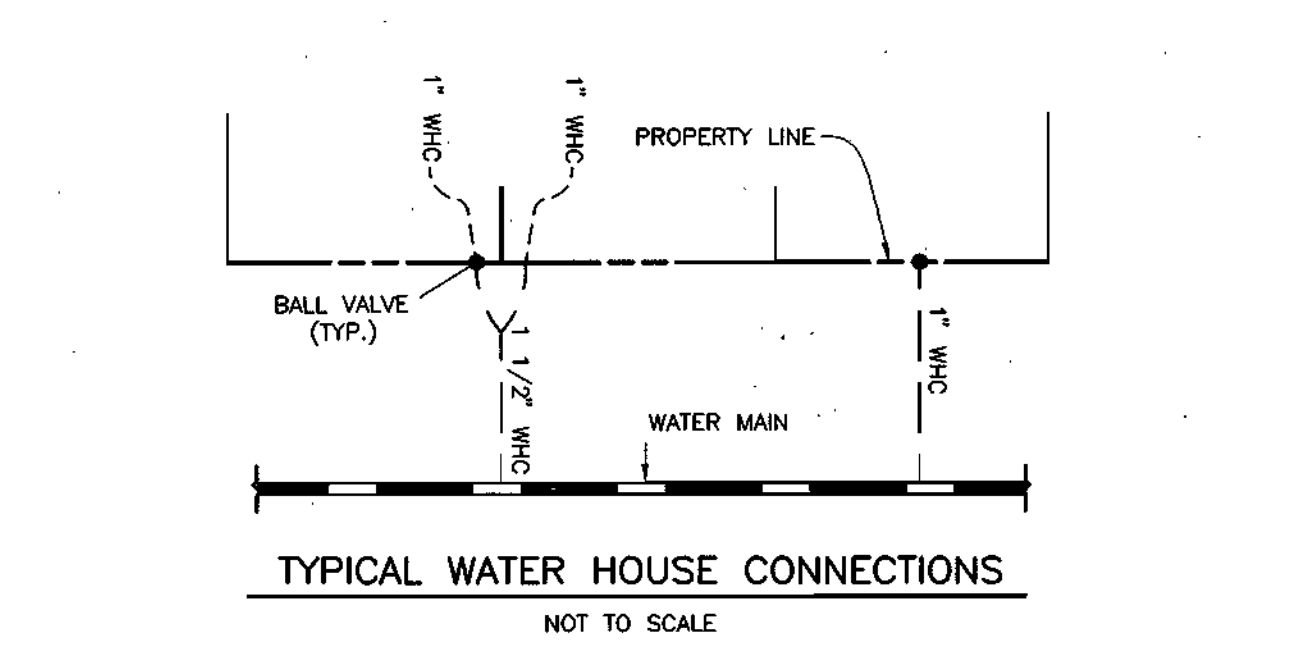


**PLAN**  
SCALE: 1" = 50'

**QUANTITIES**

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" WATER	868 LF.	868 LF.	DIP CLASS 52	U.S. PIPE & FOUNDRY BELAIR RD. SUPPLY
8" VALVES	3 EACH	3 EA.	R-3.0 R. GATE VALVE	MUELLER CO. BELAIR RD. SUPPLY
1-1/2" WHC	208 LF.	208 LF.	COPPER TYPE K	READING TUBE BELAIR RD. SUPPLY
1" WHC	322 LF.	322 LF.	" " "	" " "
8"x6" FH TEE	2 EACH	2 EA.	DIP M3	U.S. PIPE & FOUNDRY BELAIR RD. SUPPLY
6" FH VALVE	2 EACH	2 EA.	R-3.0 R. GATE VALVE	MUELLER CO. BELAIR RD. SUPPLY
FIRE HYDRANT	2 EACH	2 EA.	" " "	" " "
8" CAP & BUTT.	2 EACH	2 EA.	DIP M3	U.S. PIPE & FOUNDRY BELAIR RD. SUPPLY
1" BALL VALVE	27 EACH	27 EA.	FIX PL. 1/2" X 1/2"	MUELLER CO. BELAIR RD. SUPPLY
4" DHC	64 VF.	64 VF.	PVC SDR 35	J.M. MFG. BELAIR RD. SUPPLY
8" SEWER	973 LF.	973 LF.	" " "	" " "
MANHOLES	9 EACH	9 EA.	PRECAST CONCRETE	ATLANTIC CONCRETE PRODUCTS
4" SHC	393 LF.	393 LF.	PVC SDR 35	J.M. MFG. BELAIR RD. SUPPLY

NAME OF UTILITY CONTRACTOR: BURSEMEISTER BELL  
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:



**SHC TABLE**

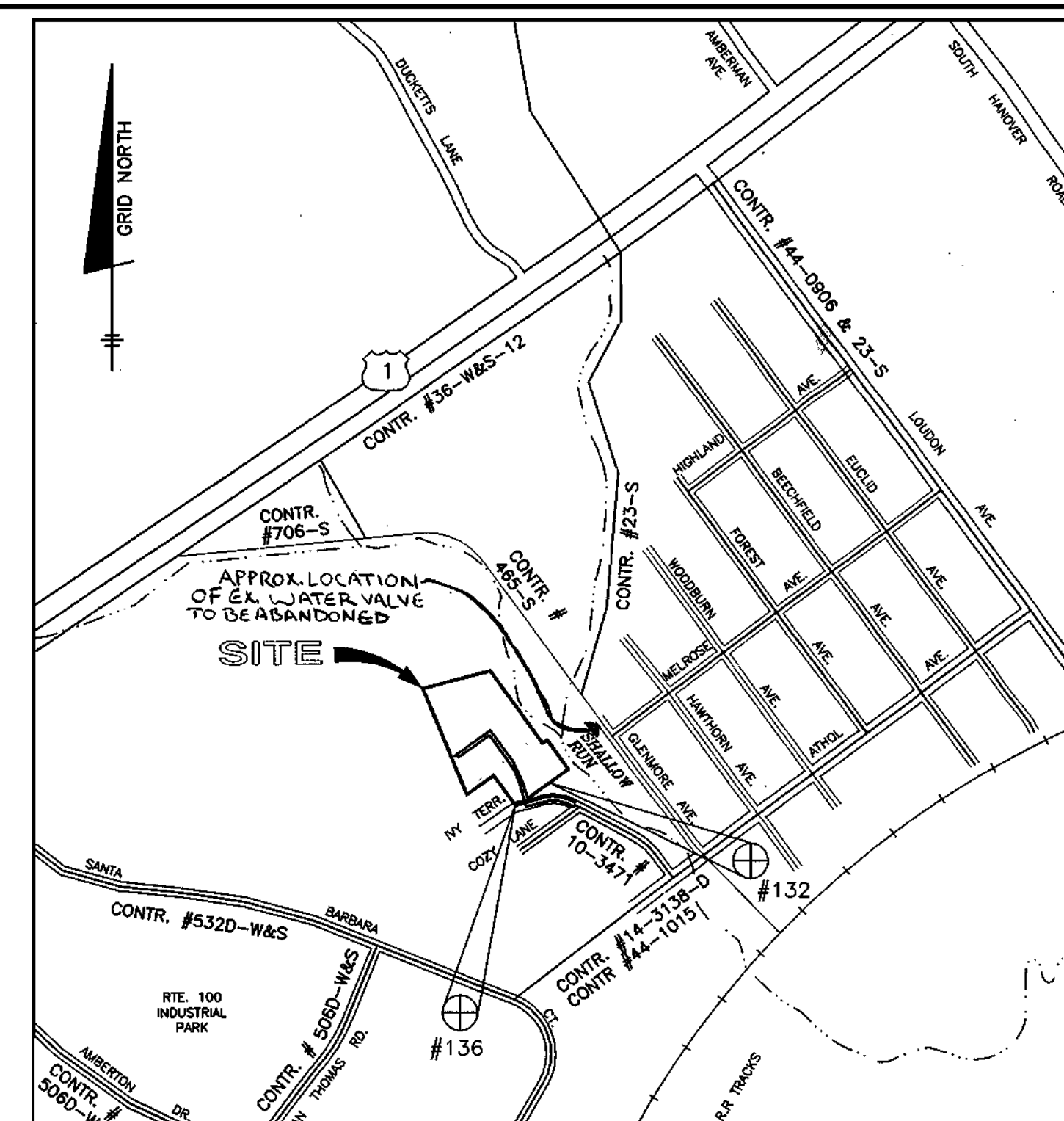
LOT NO.	INVERT AT MAIN	INVERT AT P/L OR ESMT.	MCE	REMARKS
1097C	118.70	118.96	125.40*	CNS
1100A	120.46	126.5	130.3	DHC
1101A	125.29	125.55	132.20	
1103A	125.64	125.90	132.54	
1104A	128.54	128.70	132.64	
1106A	132.77	139.1	142.8	
1107A	130.38	137.5	141.3	DHC
1108A	129.15	129.59	133.7	
1109C	115.48	118.0	122.0	
1110C	115.53	118.0	122.0	
1111C	121.95	122.49	126.6	
1116B	115.83	118.0	121.8	DHC
1117B	115.93	116.2	120.3	
1118B	116.10	116.36	120.40	
1133B	114.79	124.5	128.4	DHC
1134B	114.86	122.8	126.4	DHC
1135B	115.17	122.0	125.9	DHC
1136B	115.07	121.0	124.9	DHC
1137B	115.39	120.3	124.2	
1143B	114.81	127.8	131.4	DHC
1144C	115.05	121.0	124.9	DHC
1145	124.69	124.95	139.05	
1146	136.07	136.21	140.31	
1147	139.08	139.2	143.3	
1148	140.40	140.5	144.6	
1149	142.00	142.2	146.3	

**CONTRACTOR NOTES:**

- 1) MAINTAIN A MINIMUM OF ONE LANE OPEN ON EX. IVY TERRACE AT ALL TIMES DURING CONSTRUCTION ACTIVITY.
- 2) MAINTAIN ACCESS TO EX. HOUSE VIA EX. DRIVEWAY AT ALL TIMES DURING CONSTRUCTION ACTIVITY.
- 3) EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EX. OVERHEAD ELECTRIC LINES.
- 4) A PRIVATE WHC EXISTS CROSSING THE PROPERTY TO SERVE THE RESIDENCES AT 6440 AND 6541 IVY TERRACE. THE EXACT LOCATION IS UNKNOWN. TEST PIT FOR LOCATION AND MAINTAIN SERVICE UNTIL SUCH TIME AS A CONNECTION TO THE PROP. WATERLINE WITHIN IVY TERRACE CAN BE MADE.
- 5) CONTRACTOR SHALL REPAIR PAVING ALONG THE LINES OF EXCAVATION ON IVY TERRACE AFTER CONSTRUCTING PROPOSED WATER AND SEWER MAINS.

**NOTES CONTINUED**

6) THE EXISTING WHC SERVING 6440 6430 AND 6451 IVY TERRACE SHALL REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAIN IS PLACED IN SERVICE. THE PROP. WHC TO 6451 IVY TERRACE SHALL BE INSTALLED AND THE EX. WHC CAPPED AT THE SPLIT. THE WHC FOR 6430 IVY TERRACE SHALL BE CONNECTED TO THE EX. WHC LOCATED ON COZY LANE. AND THE EX. PRIVATE WHC SHALL BE CAPPED AT THE SPLIT. A NEW 1" WHC AND BALL VALVE SHALL BE INSTALLED WITHIN EX. R/W OF IVY TERRACE FOR 6440 IVY TERRACE. THEN THE EX. WHC SHALL BE DUG UP AT THE WATER MAIN AT MELROSE AVE AND THE CORPORATION REMOVED. THE EXISTING VALVE BOX SHOULD BE REMOVED AND THE VALVE AND WHC ABANDONED IN PLACE.



(FOR COUNTY USE ONLY)  
WATER AND SEWER COUNTY CODE

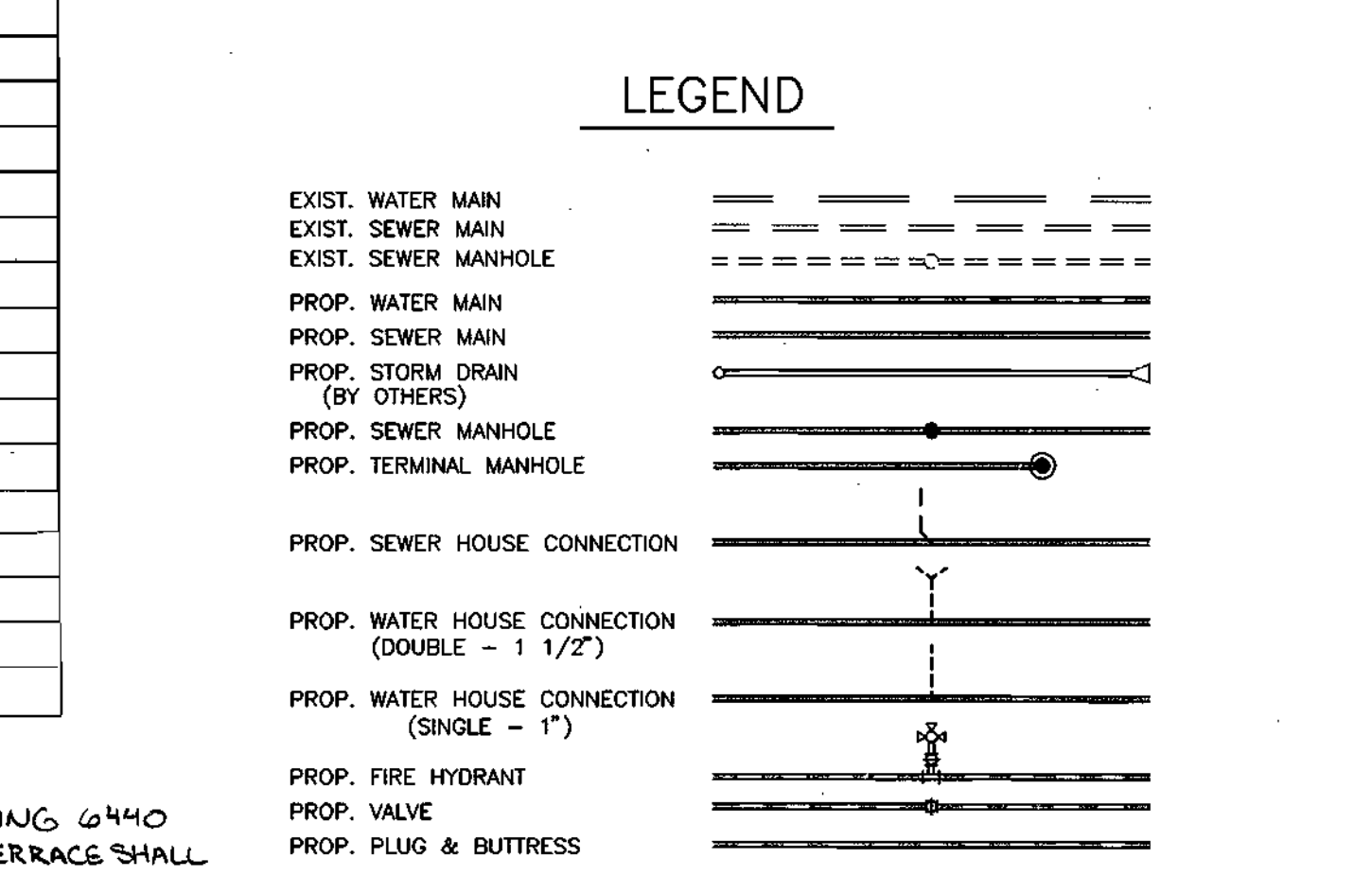
WATER CODE: A-04  
SEWER CODE: 2151800  
TEST GRADIENT: 550

TYPE OF BUILDING: SINGLE FAMILY DETACHED  
NUMBER OF LOTS: 25 BUILDABLE (23 TOTAL INCL. 1 EXISTING)  
NUMBER OF SHC'S: 25  
NUMBER OF WHC'S: 25  
DRAINAGE AREA: DEEP RUN  
TREATMENT PLANT: PATAPSCO

**BENCH MARKS (NAD27)**

No. 132  
ELEV. 87296.8690  
REBAR AND CAP FOUND ON THE NORTHERN RIGHT-OF-WAY LINE OF IVY TERRACE AT THE LEFT FRONT CORNER OF LOT 1159

No. 136  
ELEV. 87286.3084  
REBAR AND CAP FOUND AT THE CORNER OF LOT 1154, 1155 AND THE SOUTHERN RIGHT-OF-WAY LINE OF IVY TERRACE



**SHEET INDEX**

NO.	DESCRIPTION
1	WATER & SEWER PLAN AND DETAILS
2	WATER & SEWER PROFILES

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 8-28-01  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 9/7/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS

*[Signature]*  
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE A SUITE 418  
ELUCOTT CITY, MARYLAND 21043  
PHONE: 410-465-0105 FAX: 410-465-6644

DES: DAM/MCR  
DRN: MCR  
CHK: DAM  
DATE: 8/03/01

AS-BUILT DATA ADDED TO PLAN  
EX. 8" W & 8" S TO LOTS 1145 - 1149  
REVISE LOT LAYOUT LOT 1111C, 1109C, 1109E, 1144C & 1143C  
REVISIONS TO ADDRESS WHC'S TO 6430, 6440 AND 6451 IVY TERRACE

BY NO. REVISIONS

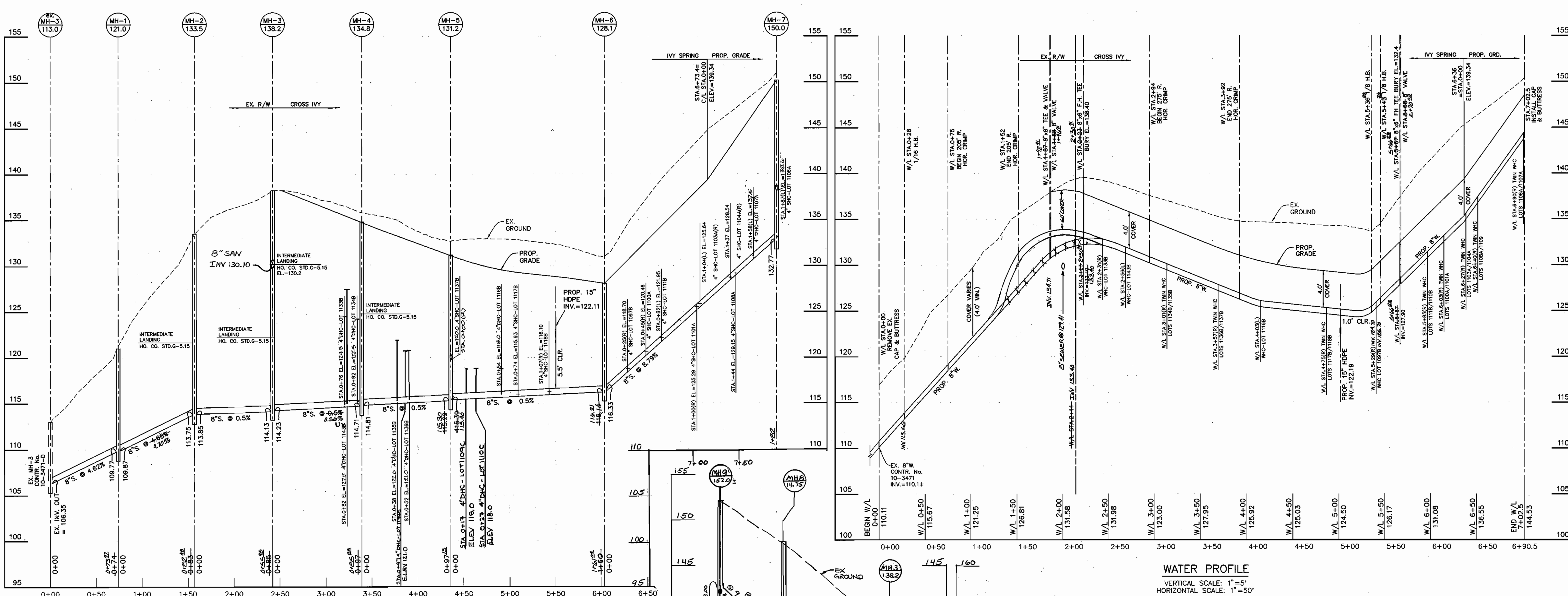
**WATER AND SEWER PLAN AND DETAILS**

600 SCALE MAPS: W38 & S38  
BLOCKS: 13 & 19

**HARWOOD PARK**  
LOT NUMBERS 1093C, 1094C, 1097C, 1098B, 1100A, 1101A, 1103A, 1104A, 1106A-1108A, 1109C, 1110C, 1111C, 1116B-1118B, 1133B-1137B, 1141B AND 1143C AND 1144C  
ELECTION DISTRICT NO. 1

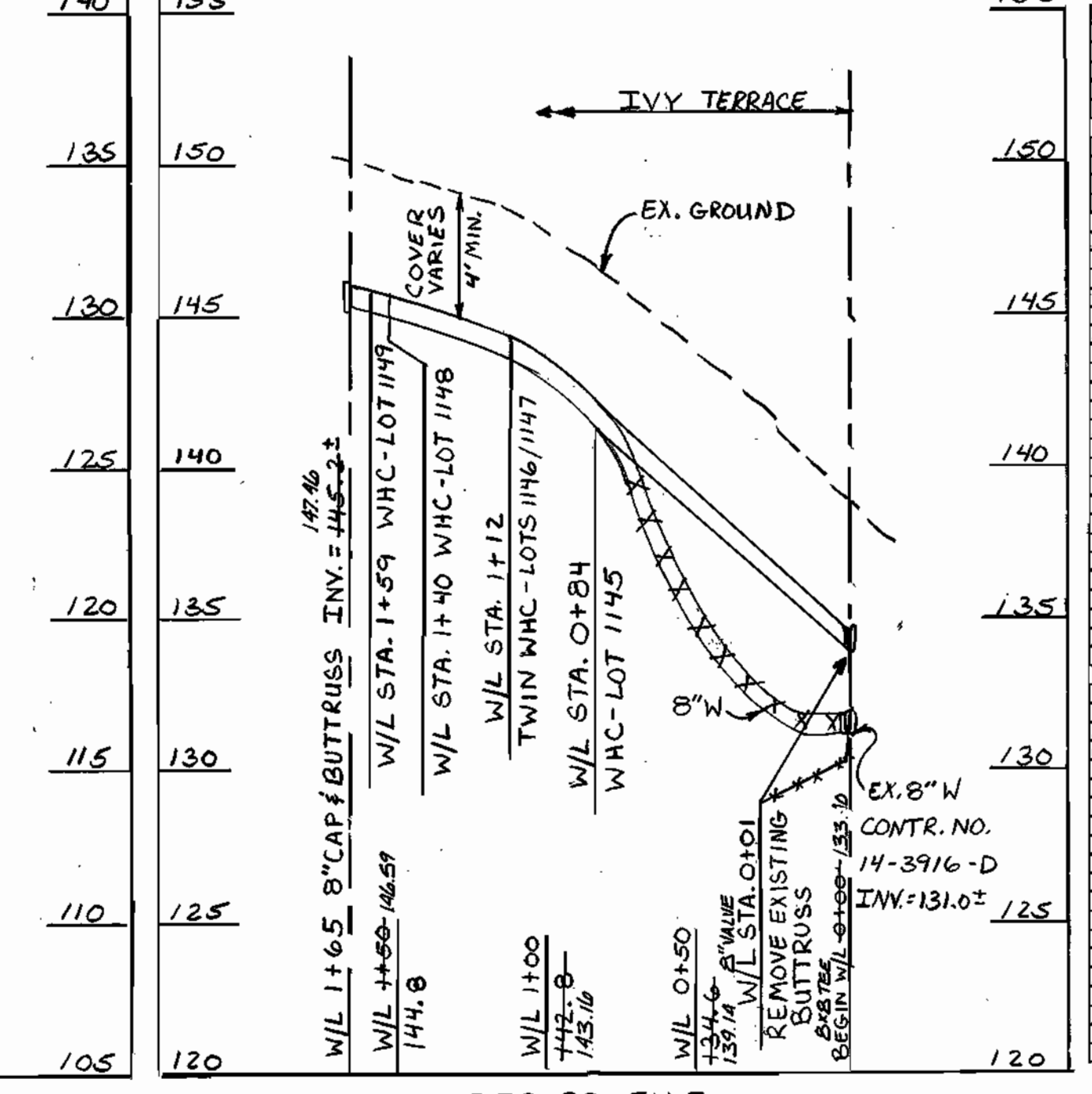
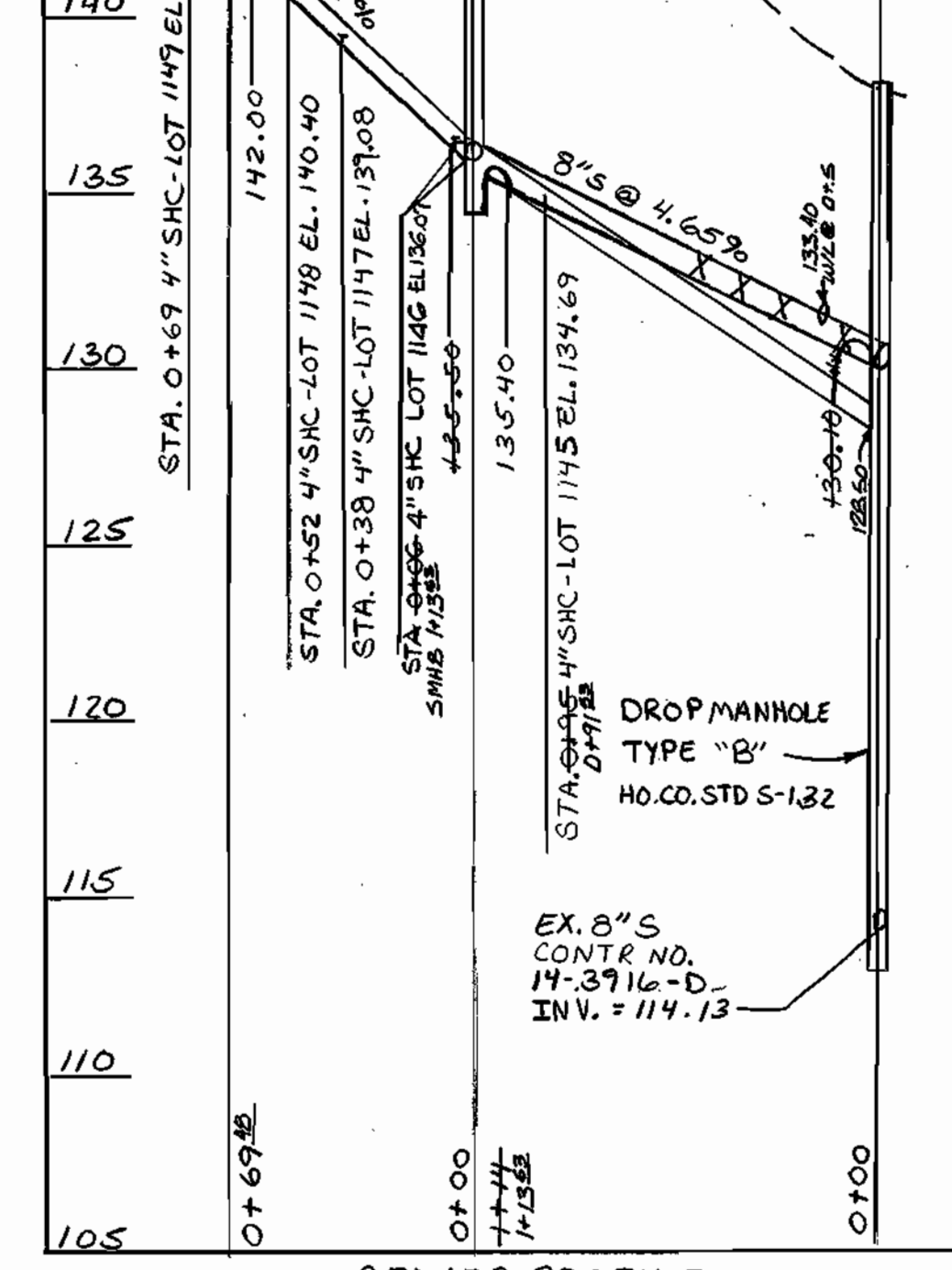
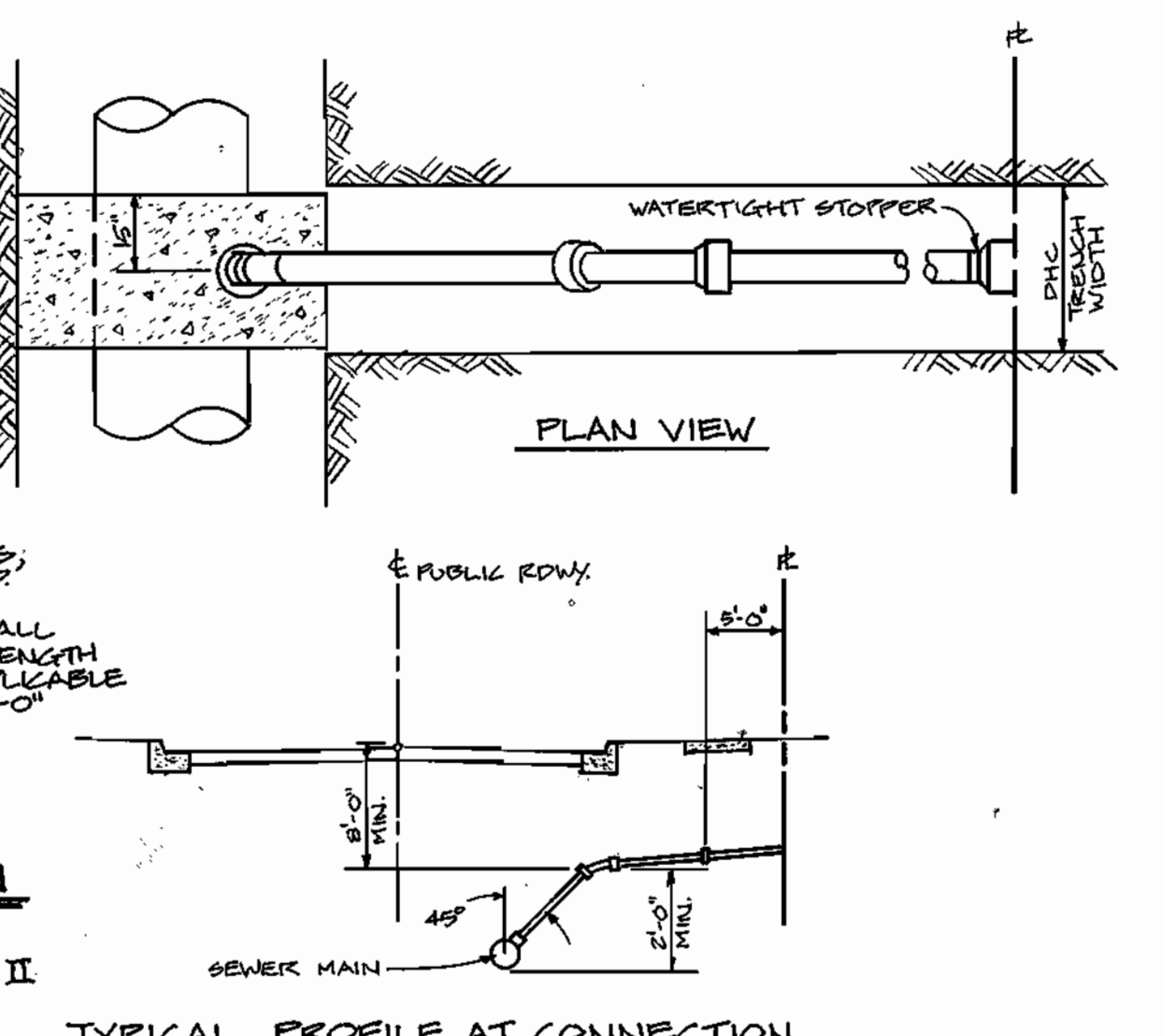
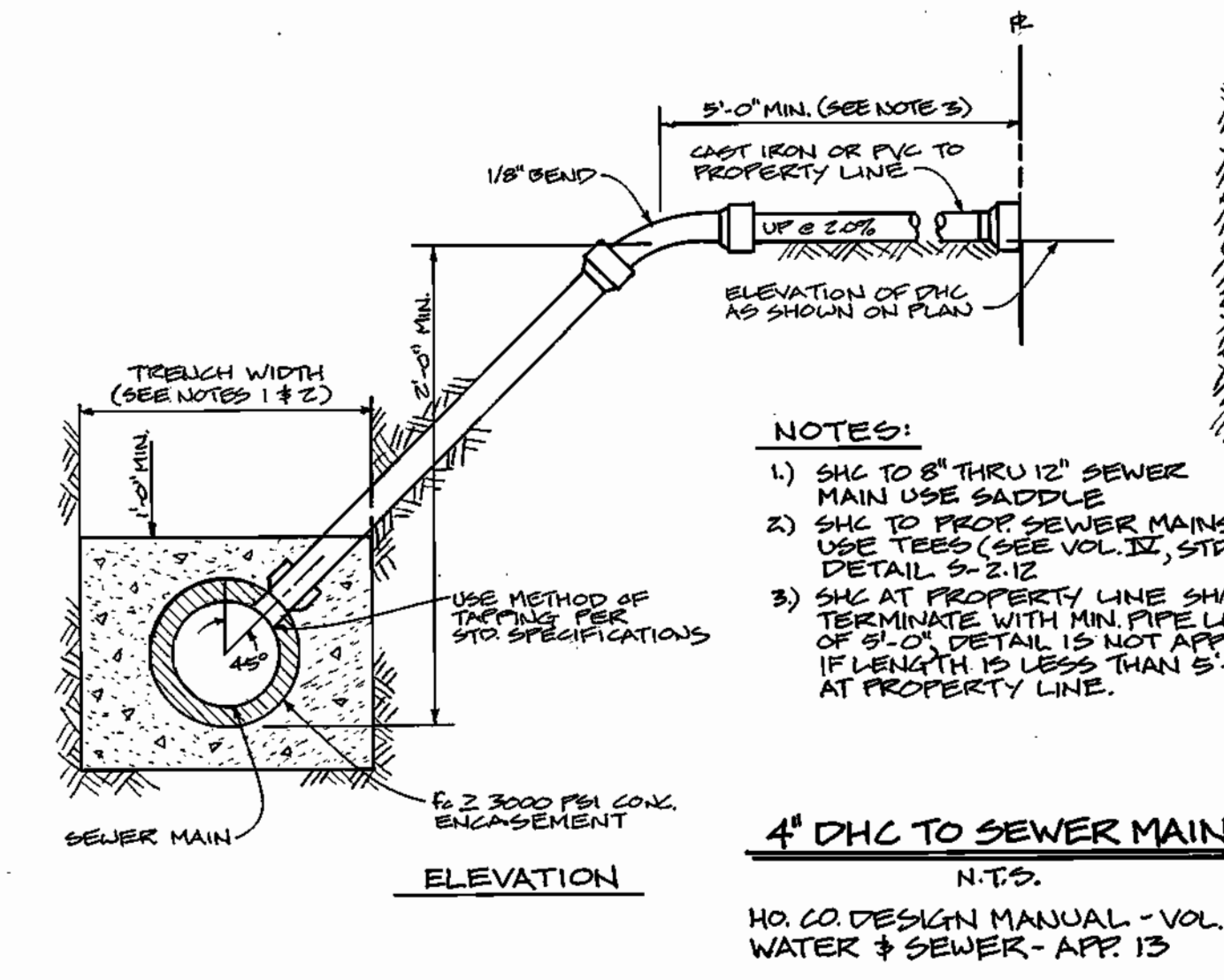
CONTRACT NO. 14-3916-D

SCALE: AS SHOWN  
SHEET NO. 1 OF 2



**SEWER PROFILE**  
 VERTICAL SCALE: 1"=5'  
 HORIZONTAL SCALE: 1"=50'

**WATER PROFILE**  
 VERTICAL SCALE: 1"=5'  
 HORIZONTAL SCALE: 1"=50'



**WATER AS-BUILT DATA**

LOT	FROM	TO	DIAM.	DATE	LOT	FROM	TO	DIAM.	DATE
1101A	1101A	1101A	8"	1988	1101A	1101A	8"	1988	1988
1101B	1101B	1101B	8"	1988	1101B	1101B	8"	1988	1988
1101C	1101C	1101C	8"	1988	1101C	1101C	8"	1988	1988
1101D	1101D	1101D	8"	1988	1101D	1101D	8"	1988	1988
1101E	1101E	1101E	8"	1988	1101E	1101E	8"	1988	1988
1101F	1101F	1101F	8"	1988	1101F	1101F	8"	1988	1988
1101G	1101G	1101G	8"	1988	1101G	1101G	8"	1988	1988
1101H	1101H	1101H	8"	1988	1101H	1101H	8"	1988	1988
1101I	1101I	1101I	8"	1988	1101I	1101I	8"	1988	1988
1101J	1101J	1101J	8"	1988	1101J	1101J	8"	1988	1988
1101K	1101K	1101K	8"	1988	1101K	1101K	8"	1988	1988
1101L	1101L	1101L	8"	1988	1101L	1101L	8"	1988	1988
1101M	1101M	1101M	8"	1988	1101M	1101M	8"	1988	1988
1101N	1101N	1101N	8"	1988	1101N	1101N	8"	1988	1988
1101O	1101O	1101O	8"	1988	1101O	1101O	8"	1988	1988
1101P	1101P	1101P	8"	1988	1101P	1101P	8"	1988	1988
1101Q	1101Q	1101Q	8"	1988	1101Q	1101Q	8"	1988	1988
1101R	1101R	1101R	8"	1988	1101R	1101R	8"	1988	1988
1101S	1101S	1101S	8"	1988	1101S	1101S	8"	1988	1988
1101T	1101T	1101T	8"	1988	1101T	1101T	8"	1988	1988
1101U	1101U	1101U	8"	1988	1101U	1101U	8"	1988	1988
1101V	1101V	1101V	8"	1988	1101V	1101V	8"	1988	1988
1101W	1101W	1101W	8"	1988	1101W	1101W	8"	1988	1988
1101X	1101X	1101X	8"	1988	1101X	1101X	8"	1988	1988
1101Y	1101Y	1101Y	8"	1988	1101Y	1101Y	8"	1988	1988
1101Z	1101Z	1101Z	8"	1988	1101Z	1101Z	8"	1988	1988

**SEWER AS-BUILT DATA**

LOT	FROM	TO	DIAM.	DATE	LOT	FROM	TO	DIAM.	DATE
1101A	1101A	1101A	8"	1988	1101A	1101A	8"	1988	1988
1101B	1101B	1101B	8"	1988	1101B	1101B	8"	1988	1988
1101C	1101C	1101C	8"	1988	1101C	1101C	8"	1988	1988
1101D	1101D	1101D	8"	1988	1101D	1101D	8"	1988	1988
1101E	1101E	1101E	8"	1988	1101E	1101E	8"	1988	1988
1101F	1101F	1101F	8"	1988	1101F	1101F	8"	1988	1988
1101G	1101G	1101G	8"	1988	1101G	1101G	8"	1988	1988
1101H	1101H	1101H	8"	1988	1101H	1101H	8"	1988	1988
1101I	1101I	1101I	8"	1988	1101I	1101I	8"	1988	1988
1101J	1101J	1101J	8"	1988	1101J	1101J	8"	1988	1988
1101K	1101K	1101K	8"	1988	1101K	1101K	8"	1988	1988
1101L	1101L	1101L	8"	1988	1101L	1101L	8"	1988	1988
1101M	1101M	1101M	8"	1988	1101M	1101M	8"	1988	1988
1101N	1101N	1101N	8"	1988	1101N	1101N	8"	1988	1988
1101O	1101O	1101O	8"	1988	1101O	1101O	8"	1988	1988
1101P	1101P	1101P	8"	1988	1101P	1101P	8"	1988	1988
1101Q	1101Q	1101Q	8"	1988	1101Q	1101Q	8"	1988	1988
1101R	1101R	1101R	8"	1988	1101R	1101R	8"	1988	1988
1101S	1101S	1101S	8"	1988	1101S	1101S	8"	1988	1988
1101T	1101T	1101T	8"	1988	1101T	1101T	8"	1988	1988
1101U	1101U	1101U	8"	1988	1101U	1101U	8"	1988	1988
1101V	1101V	1101V	8"	1988	1101V	1101V	8"	1988	1988
1101W	1101W	1101W	8"	1988	1101W	1101W	8"	1988	1988
1101X	1101X	1101X	8"	1988	1101X	1101X	8"	1988	1988
1101Y	1101Y	1101Y	8"	1988	1101Y	1101Y	8"	1988	1988
1101Z	1101Z	1101Z	8"	1988	1101Z	1101Z	8"	1988	1988

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8400 BALTIMORE NATIONAL PIKE & SUITE 418  
 ELICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-8100 FAX: 410-465-6044

DES: DAM/MCR  
 DRN: MCR  
 CHK: DAM  
 DATE: 8/03/01

AS-BUILT DATA ADDED TO PLAN  
 EXTEND 8" W & 8" S TO LOTS 1145 - 1149  
 REVISE SHCS TO LOTS 1101, 1102, 1103, 1104, 1144C & 1143C  
 REVISE TITLE BLOCK, ADDED "AND"

DATE: 8/03/01

**HARWOOD PARK**  
 LOT NUMBERS 1093C, 1094C, 1097C, 1098B, 1100A, 1101A, 1103A, 1104A, 1106A-1108A, 1109C, 1110C, 1111C, 1116B-1118B, 1133B-1137B, 1141B, 1143C AND 1144C  
 ELECTION DISTRICT NO. 1

SCALE: AS SHOWN  
 SHEET NO. 2 OF 2

CONTRACT NO. 14-3916-D

600 SCALE MAPS: W38 & S38 BLOCKS: 13 & 19

**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 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 DAMAGED 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 WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

- STATE HIGHWAY ADMINISTRATION.....531-5533
  - BALTIMORE GAS & ELECTRIC CO.....850-4620
  - CONTRACTOR SERVICES.....787-9088
  - BALTIMORE GAS & ELECTRIC CO.....787-9088
  - UNDERGROUND DAMAGE CONTROL.....1-800-257-7777
  - MESS UTILITY.....795-1390
  - COLONIAL PIPELINE CO.....313-4900
  - HOWARD CO. DEPT. OF PUBLIC WORKS 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(o) 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'-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.
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**PART 3 - SEWER**

- ALL SEWER MAINS SHALL BE DIP OR P.V.C. UNLESS OTHERWISE NOTED.
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- 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 GS-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.

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

*John P. Blanton* 8/14/01  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John P. Blanton* 8/14/01  
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-01-35

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Robert M. Beaman* 8-28-01  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*Robert M. Beaman* 9/7/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

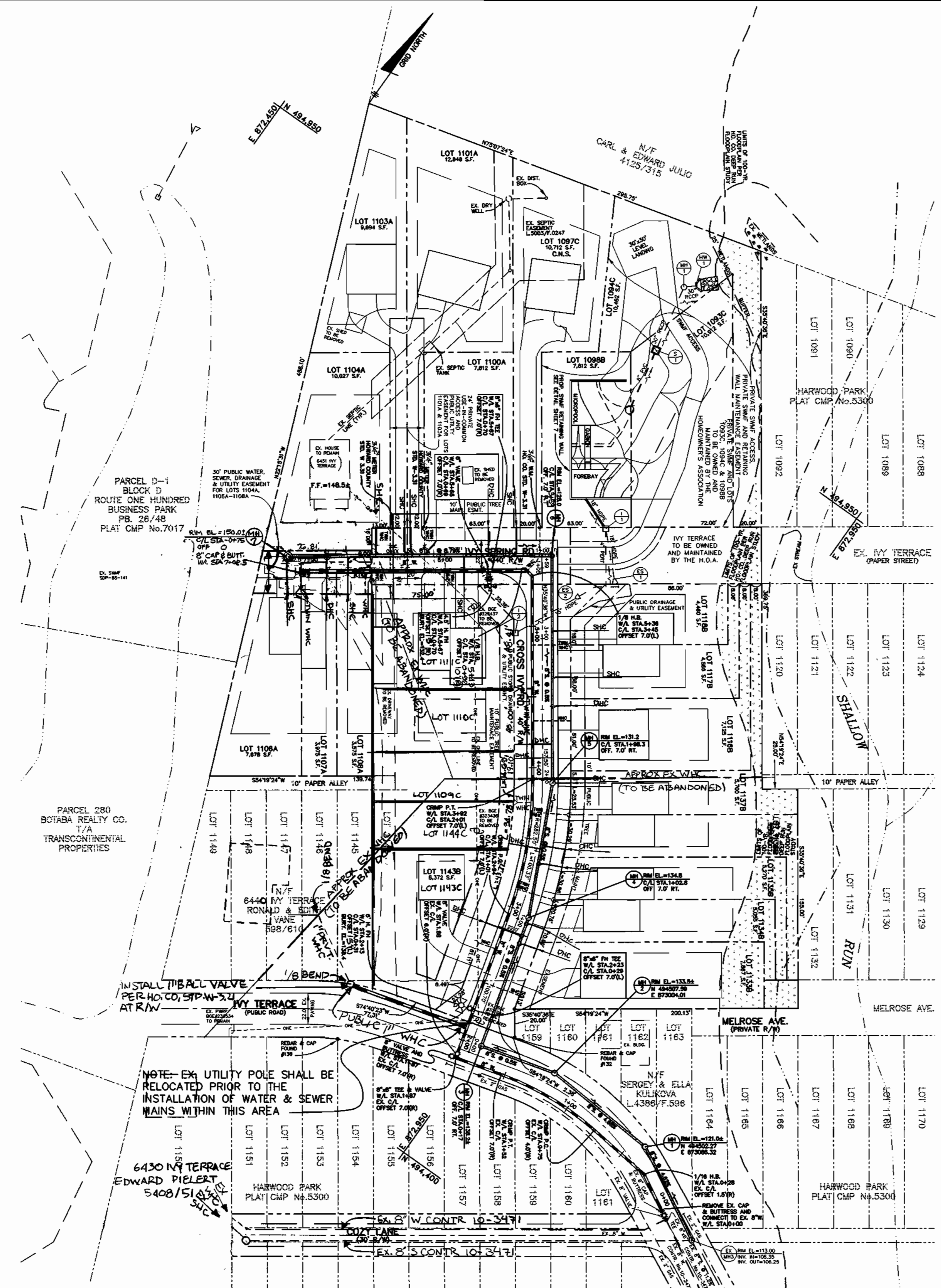
**BENCHMARK ENGINEERING, INC.**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
2480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6844

*Donald M. Man*  
DATE: 8/03/01

DES: DAM/MCR	
DRN: MCR	
CHK: DAM	
DATE: 8/03/01	
BY NO.	

REVISIONS	
1	REVISE LOT LAYOUT LOT 1109C, 1094C, 1104C, 1144C & 1143C REVISE HOUSE CONNECTIONS TO THESE LOTS 2/26/01
2	REVISIONS TO ADDRESS WHCS TO 6430, 6440 AND 6451 IVY TERRACE
DATE	600 SCALE MAPS: W38 & S38 BLOCKS: 13 & 19

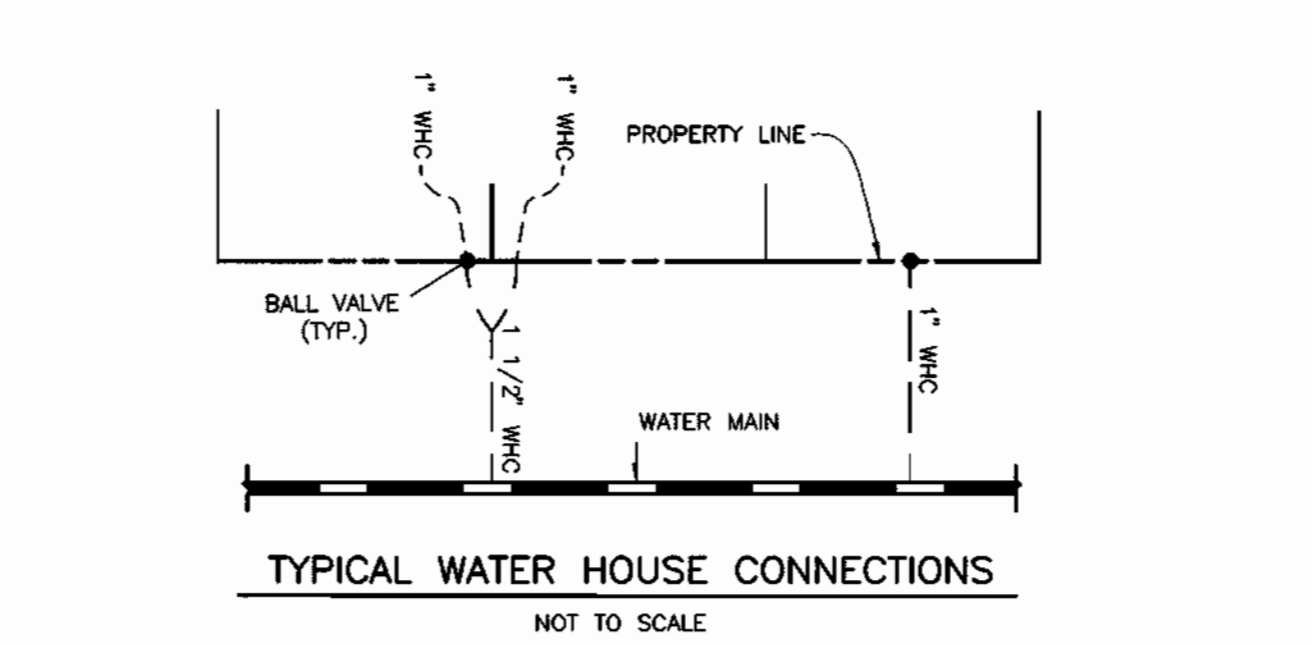
**HARWOOD PARK**  
LOT NUMBERS 1093C, 1094C, 1097C, 1098B, 1100A, 1101A, 1103A, 1104A, 1106A-1108A, 1109C, 1110C, 1111C, 1116B-1118B, 1133B-1137B, 1141B and 1143C AND 1144C  
ELECTION DISTRICT NO. 1  
**CONTRACT NO. 14-3916-D**  
SCALE: AS SHOWN  
SHEET NO. 1 OF 2



**QUANTITIES**

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" WATER	703 L.F.			
8" VALVES	3 EACH			
1-1/2" WHC	182 L.F.			
1" WHC	240 L.F.			
8"x6" FH TEE	2 EACH			
6" FH VALVE	2 EACH			
FIRE HYDRANT	2 EACH			
8" CAP & BUTT.	2 EACH			
1" BALL VALVE	1 EACH			
4" DHC	64 V.F.			
8" SEWER	790 L.F.			
MANHOLES	7 EACH			
4" SHC	352 L.F.			

NAME OF UTILITY CONTRACTOR:  
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:



**SHC TABLE**

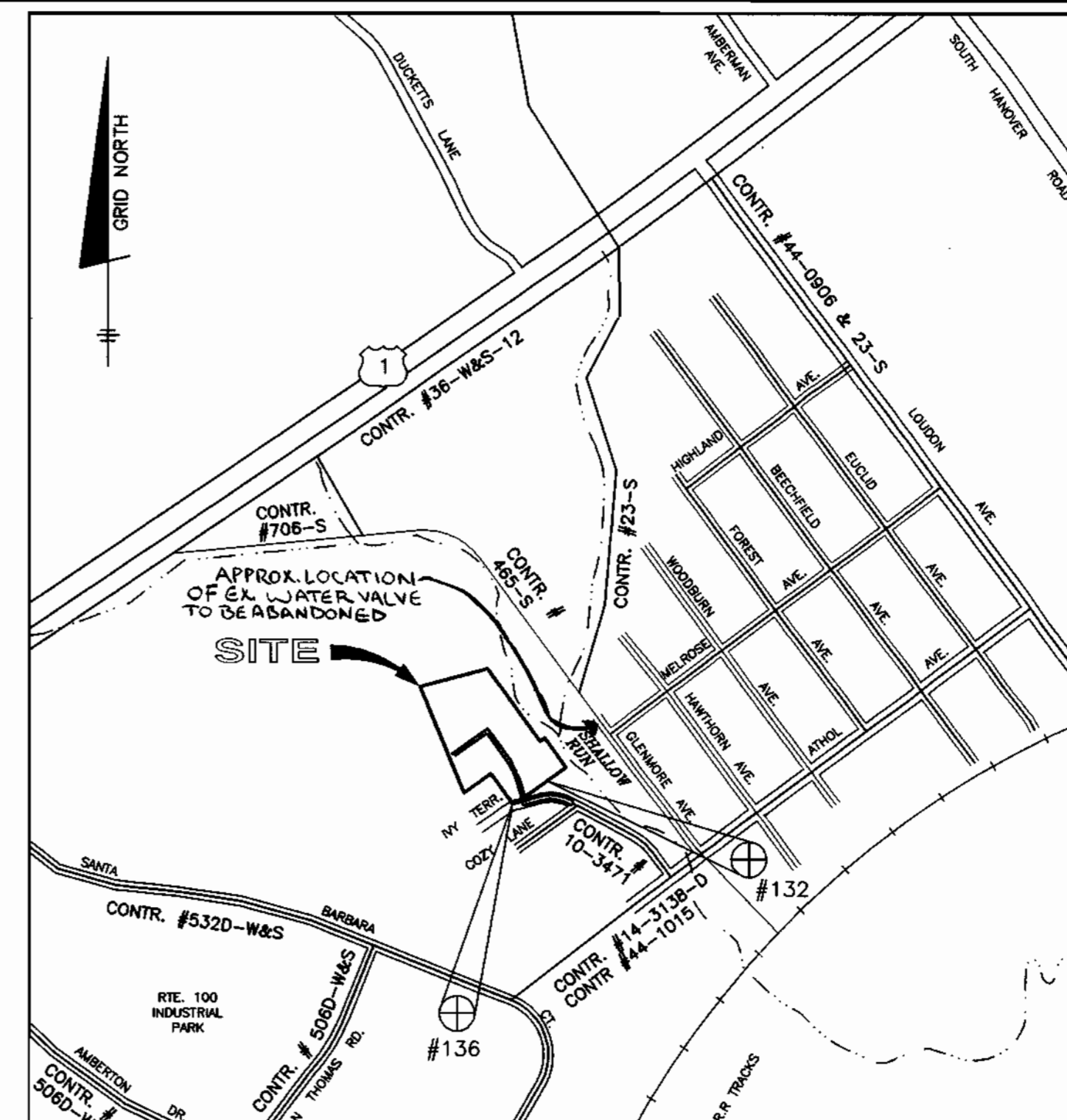
LOT NO.	INVERT AT MAIN	INVERT AT P/L OR ESMT.	MCE	REMARKS
1097C	118.70	118.96	125.40*	CNS
1100A	120.46	126.5	130.3	DHC
1101A	125.29	125.55	132.20	
1103A	125.64	125.90	132.54	
1104A	128.54	128.70	132.64	
1106A	132.77	139.1	142.8	
1107A	130.38	137.5	141.3	DHC
1108A	129.15	129.59	133.7	
1109C	115.48	118.0	122.0	
1110C	115.53	118.0	122.0	
1111C	121.95	122.49	126.6	
1116B	115.83	118.0	121.8	DHC
1117B	115.93	116.2	120.3	
1118B	116.10	116.36	120.40	
1133B	114.79	124.5	128.4	DHC
1134B	114.86	122.9	126.4	DHC
1135B	115.17	122.0	125.9	DHC
1136B	115.07	121.0	124.9	DHC
1137B	115.39	120.3	124.2	
1143B	114.81	127.5	131.4	DHC
1144C	115.05	121.0	124.9	DHC

**CONTRACTOR NOTES:**

- MAINTAIN A MINIMUM OF ONE LANE OPEN ON EX. IVY TERRACE AT ALL TIMES DURING CONSTRUCTION ACTIVITY
- MAINTAIN ACCESS TO EX. HOUSE VIA EX. DRIVEWAY AT ALL TIMES DURING CONSTRUCTION ACTIVITY
- EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF EX. OVERHEAD ELECTRIC LINES
- A PRIVATE WHC EXISTS CROSSING THE PROPERTY TO SERVE THE RESIDENCES AT 6430, 6440, AND 6451 IVY TERRACE; THE EXACT LOCATION IS UNKNOWN; TEST PIT FOR LOCATION AND MAINTAIN SERVICE UNTIL SUCH TIME AS A CONNECTION TO THE PROP. WATERLINE WITHIN IVY TERRACE CAN BE MADE
- CONTRACTOR SHALL REPAIR PAVING ALONG THE LINES OF EXCAVATION ON IVY TERRACE AFTER CONSTRUCTING PROPOSED WATER AND SEWER MAINS

**NOTES CONTINUED**

- THE EXISTING WHC SERVING 6440, 6430 AND 6451 IVY TERRACE SHALL REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAIN IS PLACED IN SERVICE. THE PROP. WHC TO 6451 IVY TERRACE SHALL BE INSTALLED AND THE EX. WHC CAPPED AT THE SPLIT. THE WHC FOR 6430 IVY TERRACE SHALL BE CONNECTED TO THE EX. WHC LOCATED ON COZY LANE. AND THE EX. PRIVATE WHC SHALL BE CAPPED AT THE SPLIT. A NEW 1" WHC AND BALL VALVE SHALL BE INSTALLED WITHIN EX. RW OF IVY TERRACE FOR 6440 IVY TERRACE. THEN THE EX. WHC SHALL BE CUP UP AT THE WATER MAIN AT MELROSE AVE AND THE CORROSION REMOVED. THE EXISTING VALVE BOX SHOULD BE REMOVED AND THE VALVE AND WHC ABANDONED IN PLACE.



(FOR COUNTY USE ONLY)  
WATER AND SEWER COUNTY CODE  
WATER CODE: A-04  
SEWER CODE: 2151800  
TEST GRADIENT: 550

TYPE OF BUILDING: SINGLE FAMILY DETACHED  
NUMBER OF LOTS: 20 BUILDABLE (23 TOTAL INCL. 1 EXISTING)  
NUMBER OF SHC'S: 20  
NUMBER OF WHC'S: 20  
DRAINAGE AREA: DEEP RUN  
TREATMENT PLANT: PATAPSCO

**VICINITY MAP**  
SCALE: 1" = 600'

**BENCH MARKS (NAD27)**

No. 132 ELEV. REBAR AND CAP FOUND ON THE NORTHERN RIGHT-OF-WAY LINE OF IVY TERRACE AT THE LEFT FRONT CORNER OF LOT 1159 N.494510.8684 E.872966.8690

No. 136 ELEV. REBAR AND CAP FOUND AT THE CORNER OF LOT 1154, 1155 AND THE SOUTHERN RIGHT-OF-WAY LINE OF IVY TERRACE N.494438.0155 E.872966.3084

**LEGEND**

EXIST. WATER MAIN	
EXIST. SEWER MAIN	
EXIST. SEWER MANHOLE	
PROP. WATER MAIN	
PROP. SEWER MAIN	
PROP. STORM DRAIN (BY OTHERS)	
PROP. SEWER MANHOLE	
PROP. TERMINAL MANHOLE	
PROP. SEWER HOUSE CONNECTION	
PROP. WATER HOUSE CONNECTION (DOUBLE - 1 1/2")	
PROP. WATER HOUSE CONNECTION (SINGLE - 1")	
PROP. FIRE HYDRANT	
PROP. VALVE	
PROP. PLUG & BUTTRESS	

**SHEET INDEX**

NO.	DESCRIPTION
1	WATER & SEWER PLAN AND DETAILS
2	WATER & SEWER PROFILES

