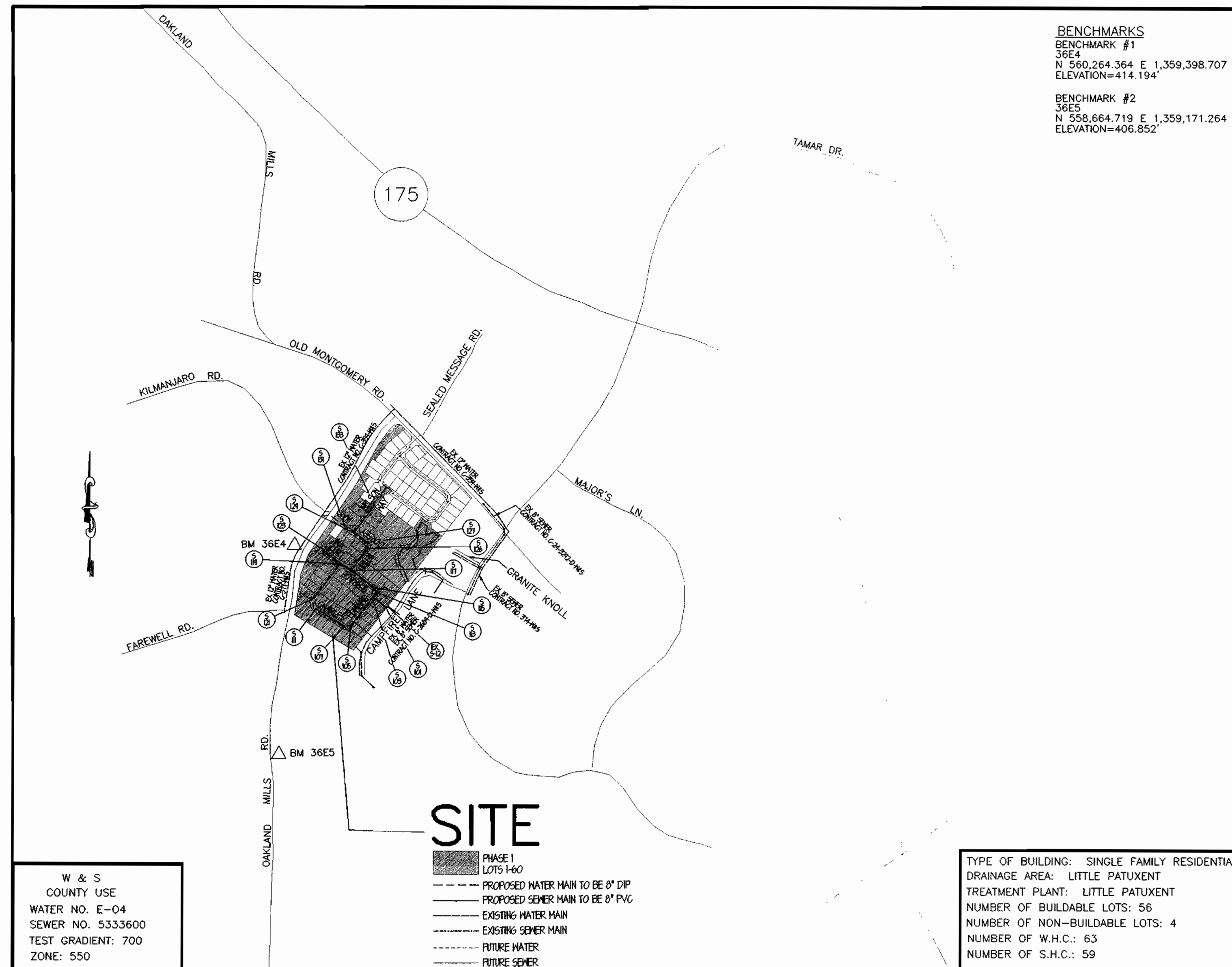


# WATER AND SEWER PLAN ECKERS HOLLOW - PHASE I SECTION 1

## 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SANITARY SEWER CLEAN-OUT CHART									
LOT NO.	STATION @ MAIN	INVERT @ MAIN	INVERT @ D.H.C.	LENGTH OF SERVICE	SLOPE OF SERVICE	INV. @ ESMT/PROP. LINE	TOP C/O ELEV.	MIN. CELLAR ELEVATION (MCE)	
SMH 101 TO SMH 103									
42	0+91	391.74	---	10'	2.00%	392.74	403.75	396.00	
43	0+96	391.76	---	10'	2.00%	392.76	404.75	396.50	
SMH 103 TO SMH 105									
21	0+70	393.43	---	24'	2.00%	394.07	405.21	397.86	
43	0+75	393.53	---	19'	2.00%	394.07	404.51	397.87	
40	1+30	394.24	---	24'	2.00%	395.25	406.36	399.05	
22	1+47.43	394.95	---	19'	2.00%	395.50	405.89	399.35	
39	1+90	395.80	---	24'	2.00%	396.44	407.52	400.24	
35	2+55	397.09	---	24'	2.00%	397.73	408.96	401.57	
SMH 105 TO SMH 107									
37	0+SMH 105	397.84	---	23'	2.00%	398.30	409.64	402.34	
21	0+25	397.80	---	14'	2.00%	398.24	408.98	402.14	
35	0+27	397.81	---	29'	2.00%	398.55	409.72	402.67	
35	0+27	397.81	---	6'	2.00%	398.58	409.80	402.68	
* NOTE - TWIN HOUSE CONNECTION SMH 107 TO SMH 111									
34	0+26.24	398.24	---	24'	2.00%	398.88	410.80	402.78	
20	0+58.24	398.53	---	19'	2.00%	399.08	410.57	403.00	
33	0+86.74	398.78	---	24'	2.00%	399.42	411.59	403.32	
11	1+45.24	399.31	---	24'	2.00%	399.95	410.76	403.85	
19	1+48.24	399.33	---	19'	2.00%	399.87	409.44	403.77	
15	2+08.24	399.86	---	19'	2.00%	400.40	409.90	404.30	
31	2+36.48	400.14	---	24'	2.00%	400.78	409.27	404.67	
30	0+SMH 111	400.43	---	23.26'	2.00%	400.90	410.24	405.00	
SMH 113 TO SMH 115									
44	0+SMH 113	392.54	---	12.50'	2.00%	392.79	403.05	396.19	
45	0+13	392.44	---	13.50'	2.00%	392.87	402.82	396.97	
46	0+SMH 115	392.79	---	12'	2.00%	393.03	401.94	397.50	
SMH 115 TO SMH 117									
24	0+SMH 115	392.79	---	31.14'	2.00%	393.41	402.58	397.31	
47	0+39.46	392.82	---	16'	2.00%	393.30	401.93	397.20	
25	0+71.46	392.98	---	27'	2.00%	393.68	402.96	397.58	
26	0+94.46	393.09	---	16'	2.00%	393.57	402.91	397.47	
18	1+31.46	393.26	---	27'	2.00%	393.98	404.47	397.88	
49	1+74.46	393.49	---	16'	2.00%	393.97	404.91	397.87	
27	1+91.46	393.58	---	27'	2.00%	394.28	405.97	398.18	
SMH 117 TO SMH 119									
28	0+42	395.73	---	23'	2.00%	396.35	408.10	400.25	
SMH 119 TO SMH 121									
29	1+23.69	399.16	---	19'	2.00%	399.70	408.12	403.60	
12	1+34.88	399.24	---	24'	2.00%	399.88	409.58	403.78	
13	1+94.88	399.66	---	24'	2.00%	400.30	410.07	404.20	
16	2+23.89	399.87	---	24'	2.00%	400.41	410.11	404.31	
14	2+54.88	400.06	---	24'	2.00%	400.73	411.57	404.83	
15	0+SMH 121	400.75	---	24'	2.00%	401.27	411.74	405.17	
17	0+SMH 121	400.79	---	19'	2.00%	401.17	410.94	404.37	
SMH 119 TO SMH 123									
6	0+37	399.95	---	20'	2.00%	400.51	409.91	404.51	
11	0+50	400.54	---	24'	2.00%	401.18	411.27	405.08	
7	0+97	402.66	---	19'	2.00%	403.20	412.01	407.20	
10	1+02	402.89	---	24'	2.00%	403.53	413.02	407.43	
8	1+52	405.15	---	19'	2.00%	405.69	413.94	409.69	
9	1+59.50	405.49	---	24'	2.00%	406.13	415.02	410.03	
SMH 117 TO SMH 125									
5	0+48.50	394.11	---	27'	2.00%	394.81	405.47	398.71	
50	1+21	394.48	---	16'	2.00%	394.96	403.53	398.86	
4	1+28.50	394.51	---	27'	2.00%	395.21	404.12	399.11	
3	1+78.50	394.76	---	27'	2.00%	395.46	404.35	399.36	
SMH 127 TO SMH 129									
2	1+05	400.20	---	27'	2.00%	400.90	410.43	404.80	
SMH 129 TO SMH 131									
1	0+32	402.57	---	32'	2.00%	403.37	411.83	407.27	
52	0+84	403.30	---	21'	2.00%	404.89	412.75	408.09	
PARCEL A	0+92	405.82	---	32'	2.00%	406.62	414.31	410.52	
51	0+SMH 131	406.48	---	21'	2.00%	406.90	414.79	410.80	
SMH 129 TO SMH 133									
55	1+28.78	403.31	---	16'	2.00%	403.80	412.91	407.70	
53	1+31.01	403.36	---	27'	2.00%	404.07	413.59	407.97	
56	1+85.78	404.46	---	16'	2.00%	404.95	414.13	408.85	
54	1+91.26	404.51	---	27'	2.00%	405.22	414.81	409.12	
PUT LOT 62 @ SMH 133	406.11	---	---	27'	2.00%	406.65	415.91	410.55	
PUT LOT 93 @ SMH 133	406.11	---	---	16'	2.00%	406.43	415.27	410.33	

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
12"x8" TS & VALVE	1 EACH			
8" VALVE	9 EACH			
8"x8" TEE	5 EACH			
8" - 1/8 HB	8 EACH			
8" - 1/16 HB	4 EACH			
8" - 1/32 HB	3 EACH			
6"x8" TEE	7 EACH			
6" VALVE	7 EACH			
6" FIRE HYDRANT	7 EACH			
8" CAP	3 EACH			
8" D.I.P.	2,922 LF			
6" D.I.P.	80 LF			
1" COPPER PIPE	1,203 LF			
6" x 6" TS & V	1 EACH			
8" x 6" REDUCER	1 EACH			
SEWER MH G-5.11	15 EACH			
SEWER MH S-1.31	1 EACH			
4" CLEANOUT	59 EACH			
8" PVC SEWER	2,374 LF			
4" SHC	1,515 LF			
4" DHC	1,108 LF			
CURB STOPS W/ CURB SERVICE BOX	63 EACH			



**BENCHMARKS**  
BENCHMARK #1  
36E4  
N 560,264.364 E 1,359,398.707  
ELEVATION=414.194

BENCHMARK #2  
36E5  
N 558,664.719 E 1,359,171.264  
ELEVATION=406.852

### GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, DETAILS AND SPECIFICATIONS FOR CONSTRUCTION.
- COORDINATES SHOWN HEREON ARE BASED ON MARYLAND COORDINATE SYSTEM NAD '83 AS MONUMENTED BY HOWARD COUNTY GEODETIC CONTROL STATION 36E4 AND 36E5.
- 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 PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- 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 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.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARDS SPECIFICATIONS AND DETAILS 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 TEST 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  
BALTIMORE GAS & ELECTRIC CO. CONTRACTOR SERVICES 410-850-4620  
BALTIMORE GAS & ELECTRIC CO. UNDERGROUND DAMAGE CONTROL 410-291-4607  
MISS UTILITY 1-800-257-7777  
BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 410-313-4900  
VERIZON 1-800-446-5266
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- 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' OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO THE 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 THE PLANS OR IN THE SPECIFICATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- THE FIRE HYDRANTS SHALL BE INSTALLED AS PER STANDARD DETAIL W 2.11.
- FIRE HYDRANTS WILL BE LOCATED 1' FROM THE BACK OF CURB UNLESS OTHERWISE NOTED.
- SEWER HOUSE CONNECTIONS TO BE 4" IN SIZE.
- THERE ARE TO BE NO TWIN SEWER HOUSE CONNECTIONS.
- STANDARD SLOPE FOR SEWER HOUSE CONNECTIONS IS 2%, WITH A MINIMUM SLOPE OF 1% AND A MAXIMUM SLOPE OF 5%.
- MINIMUM SIZE WATER HOUSE CONNECTION IS 1".
- ALL SEWER MAINS SHALL BE P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- SEE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS WP-01-09, S-00-02, P-00-13, F-01-22, SDP-01-16.
- CONTRACTOR SHALL LOCATE CURBSTOPS AND CLEANOUTS 3 FEET FROM THE EDGE OF THE SIDEWALK AND OUTSIDE OF DRIVEWAYS IN THE EASEMENT PROVIDED.
- FILL AREAS WITHIN THE RIGHT-OF-WAY AND UNDERNEATH PROPOSED UTILITIES IS TO BE SELECT BACKFILL, COMPACTED TO 95% COMPACTION IN ACCORDANCE WITH ASSHTO-T 180.

### SHEET INDEX

NO.	
1	TITLE SHEET
2	SITE PLAN
3	WATER PROFILES
4	SEWER PROFILES

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

**DEPARTMENT OF PLANNING & ZONING**  
HOWARD COUNTY, MARYLAND

Robert M. Deuninger 12-7-00  
CHIEF, BUREAU OF UTILITIES DATE

Michael J. Deuninger 12/14/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**MIRA**  
MORRIS & RITCHIE ASSOCIATES, INC.  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
9090 JUNCTION DRIVE SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9792 or (301) 776-1690  
FAX (410) 792-7395

**STATE OF MARYLAND**  
**PROFESSIONAL ENGINEER**  
MICHAEL J. ESTEL (#11537)  
DATE: 11/29/00

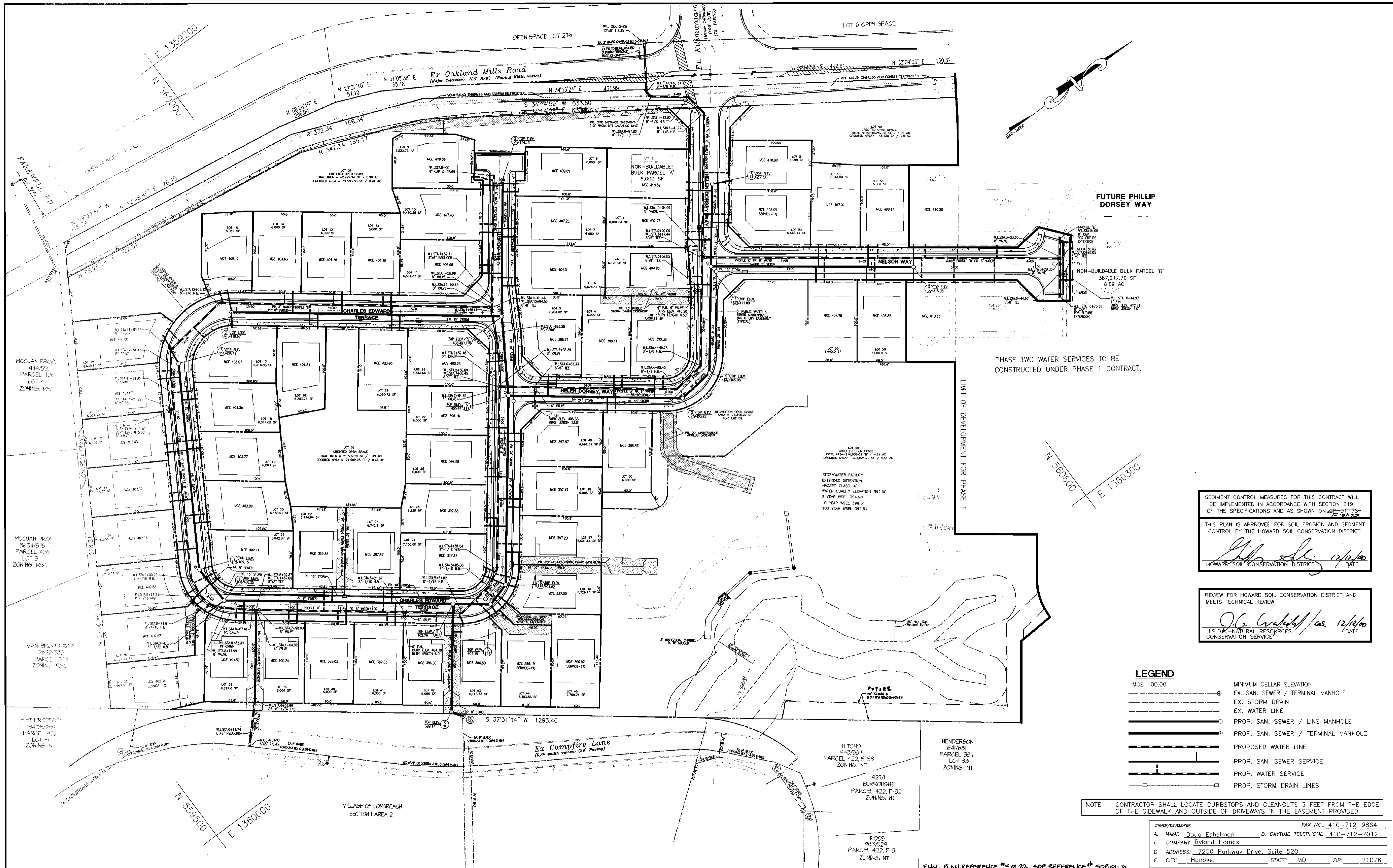
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DRN: TCN/CAO	
CHK: MJE	
DATE: 11/29/00	
BY NO.	
REVISIONS	
DATE	

**FINAL  
WATER MAIN & SEWER SYSTEM  
TITLE SHEET**

600' SCALE MAP NO. 36 BLOCK NO. 10

**ECKERS HOLLOW  
SECTION 1 PHASE 1  
(LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
OAKLAND MILLS ROAD  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT # 24-3917-D**

SCALE AS SHOWN  
SHEET 1 OF 4



FUTURE PHILLIP DORSEY WAY

PHASE TWO WATER SERVICES TO BE CONSTRUCTED UNDER PHASE 1 CONTRACT.

LIMIT OF DEVELOPMENT FOR PHASE 1

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON ~~GP-01-78~~ **F-01-23**

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

*[Signature]* 12/14/00  
HOWARD SOIL CONSERVATION DISTRICT DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

*[Signature]* / as 12/14/00  
U.S.D.A. - NATURAL RESOURCES CONSERVATION SERVICE DATE

LEGEND	
MCE 100.00	MINIMUM CELLAR ELEVATION
	EX. SAN. SEWER / TERMINAL MANHOLE
	EX. STORM DRAIN
	EX. WATER LINE
	PROP. SAN. SEWER / LINE MANHOLE
	PROP. SAN. SEWER / TERMINAL MANHOLE
	PROPOSED WATER LINE
	PROP. SAN. SEWER SERVICE
	PROP. WATER SERVICE
	PROP. STORM DRAIN LINES

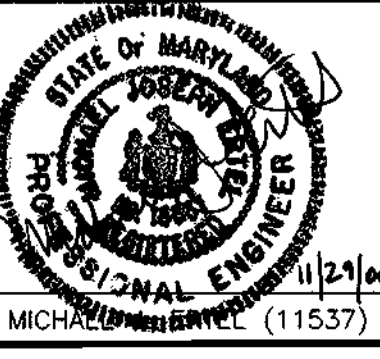
NOTE: CONTRACTOR SHALL LOCATE CURBSTOPS AND CLEANOUTS 3 FEET FROM THE EDGE OF THE SIDEWALK AND OUTSIDE OF DRIVEWAYS IN THE EASEMENT PROVIDED.

OWNER/DEVELOPER FAX NO.: 410-712-9864  
 A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-7012  
 C. COMPANY: Ryland Homes  
 D. ADDRESS: 7250 Parkway Drive, Suite 520  
 E. CITY: Hanover STATE: MD. ZIP: 21076

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*[Signature]* 12-7-00  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*[Signature]* 12/14/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**MRA**  
MORRIS & RITCHIE ASSOCIATES, INC.  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
9090 JUNCTION DRIVE SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9792 or (301) 776-1690  
FAX (410) 792-7395

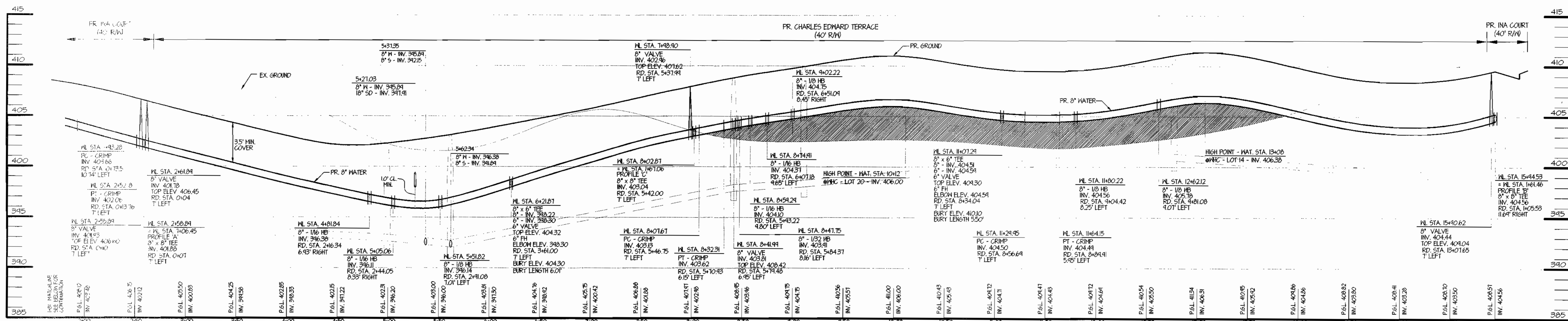


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DATE: 11/29/00

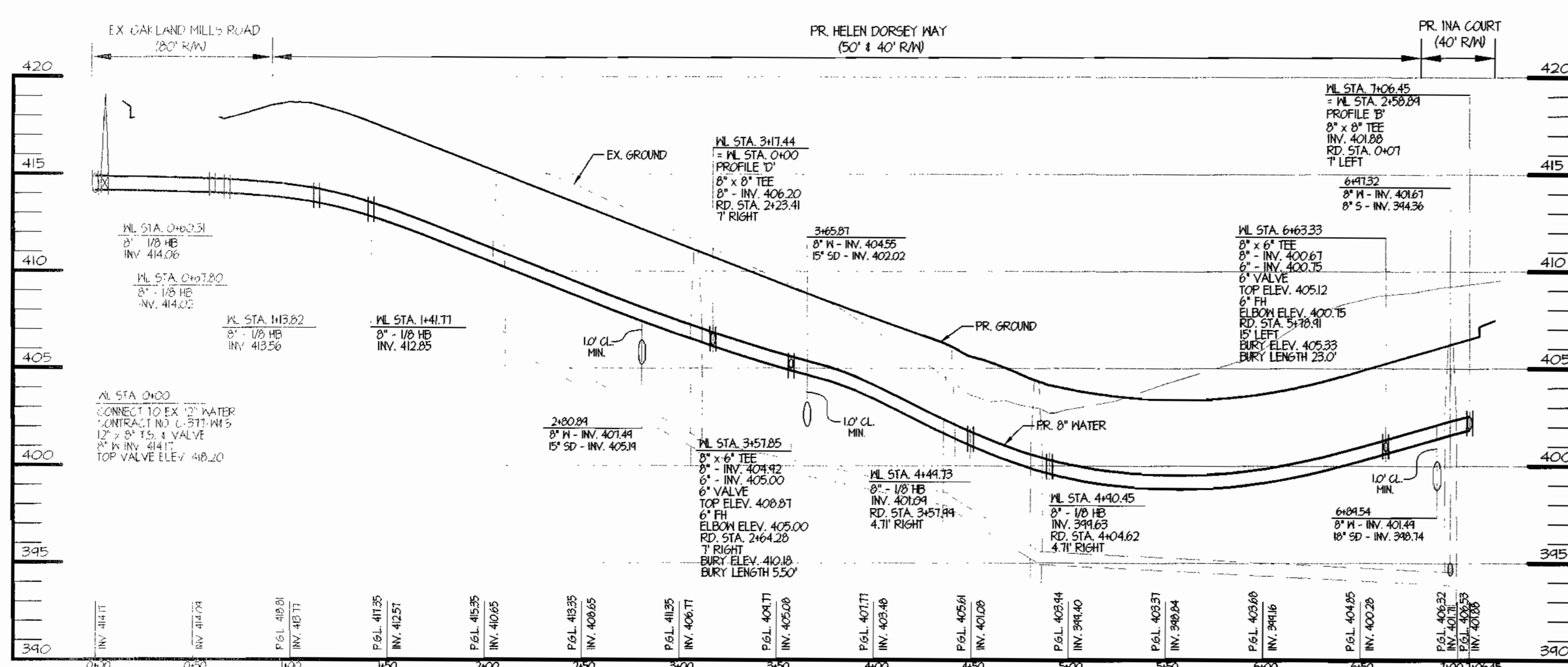
BY NO.	REVISIONS	DATE

**FINAL WATER MAIN & SEWER SYSTEM PLAN SHEET**  
600' SCALE MAP NO. 36 BLOCK NO. 10

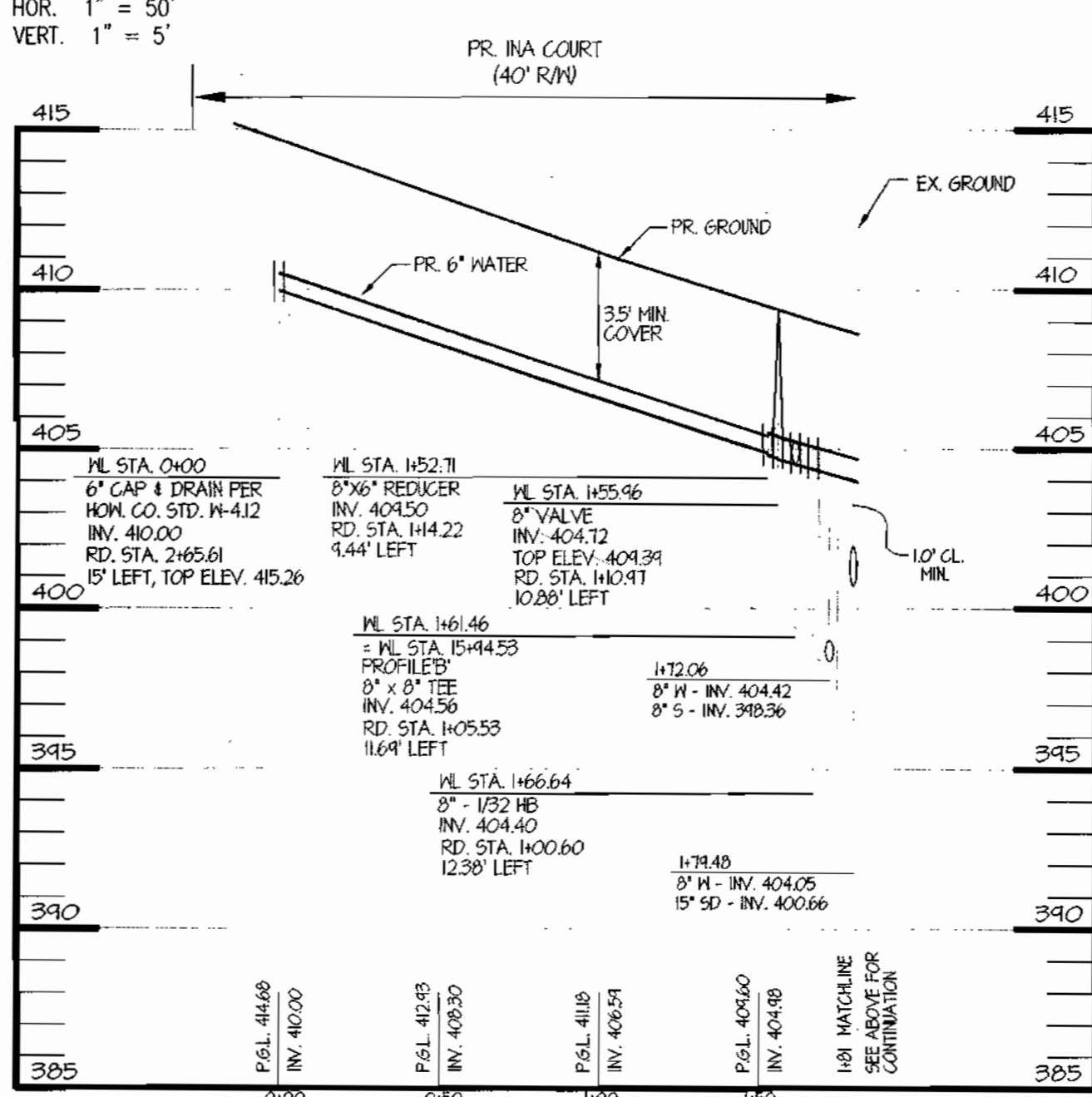
**ECKERS HOLLOW SECTION 1, PHASE 1**  
(LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
OAKLAND MILLS ROAD  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT # 24-3917-D  
SCALE 1" = 50'  
SHEET 2 OF 4



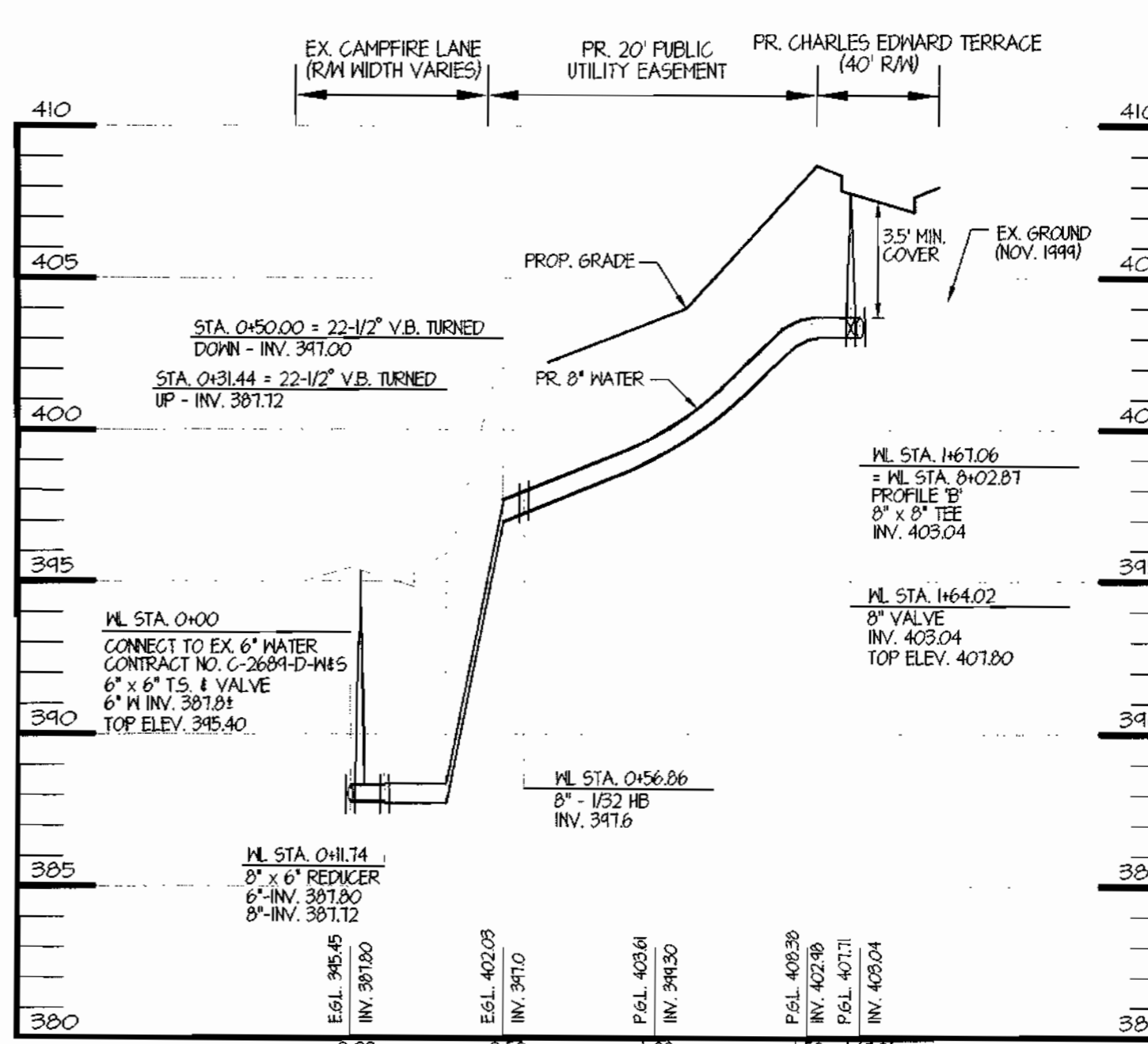
**WATER PROFILE 'B'**  
 HOR. 1" = 50'  
 VERT. 1" = 5'



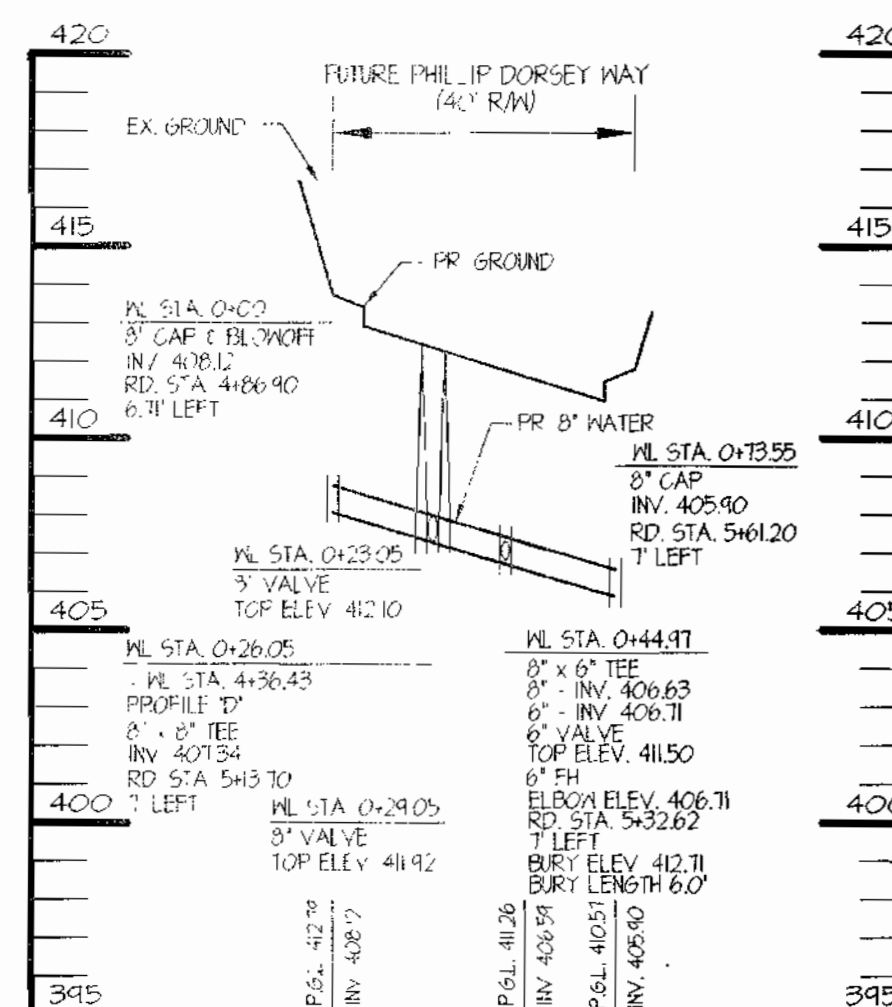
**WATER PROFILE 'A'**  
 HOR. 1" = 50'  
 VERT. 1" = 5'



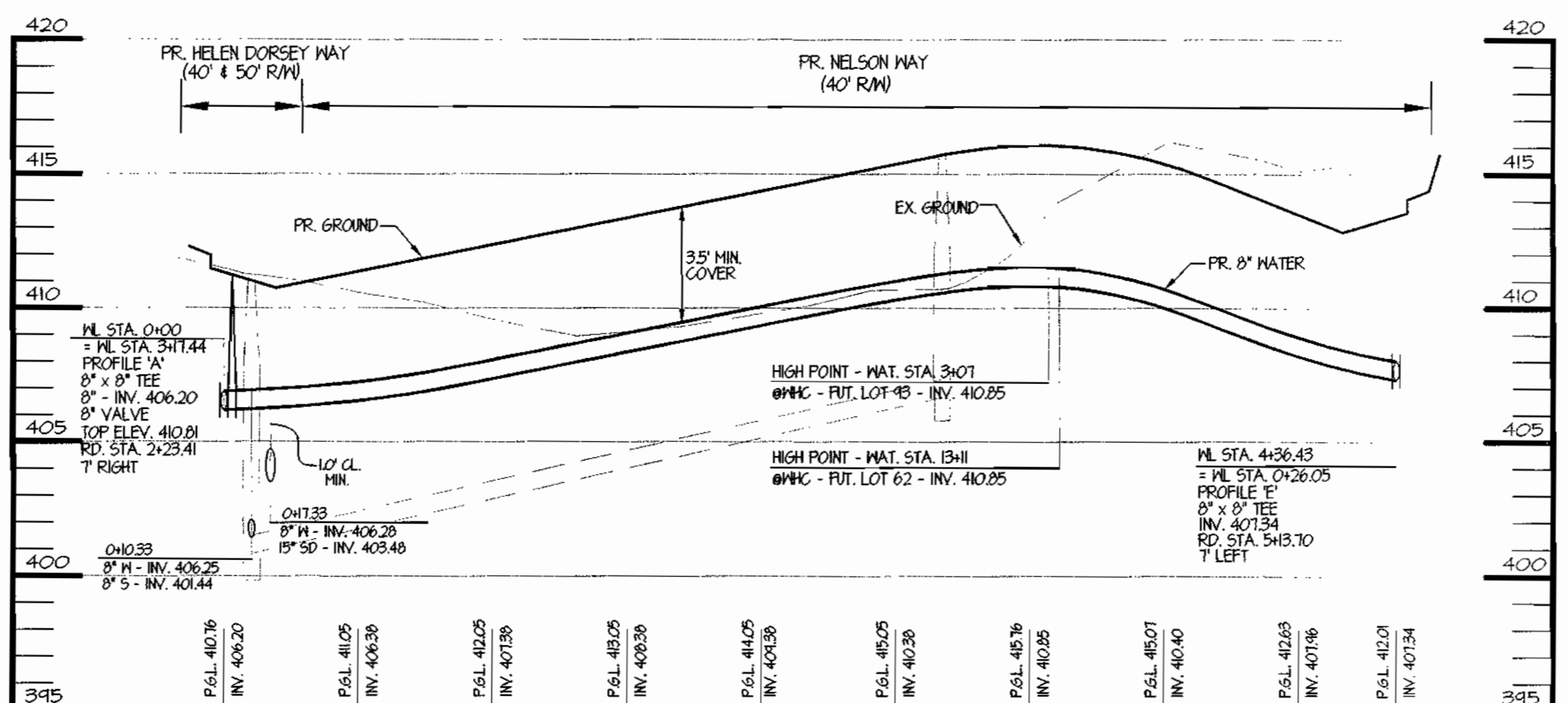
**WATER PROFILE 'B'**  
 HOR. 1" = 50'  
 VERT. 1" = 5'



**WATER PROFILE 'C'**  
 HOR. 1" = 50'  
 VERT. 1" = 5'



**WATER PROFILE 'E'**  
 HOR. 1" = 50'  
 VERT. 1" = 5'



**WATER PROFILE 'D'**  
 HOR. 1" = 50'  
 VERT. 1" = 5'

CONTROLLED AND COMPACTED FILL AS DIRECTED BY AN APPROVED SOILS ENGINEER TO 95% COMPACTION

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON E-01-22

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

*[Signature]* 12/14/00  
 HOWARD SOIL CONSERVATION DISTRICT DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

*[Signature]* 12/14/00  
 U.S. A. - NATURAL RESOURCES CONSERVATION SERVICE DATE

OWNER/DEVELOPER: A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-7012  
 C. COMPANY: Ryland Homes  
 D. ADDRESS: 7250 Parkway Drive, Suite 520  
 E. CITY: Hanover STATE: MD. ZIP: 21076

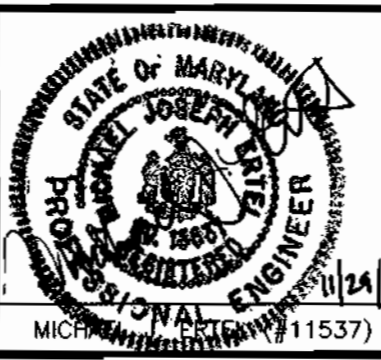
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*[Signature]* 12-7-00  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND

*[Signature]* 12/14/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**MRA**  
 MORRIS & RITCHIE ASSOCIATES, INC.  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
 3090 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395



DES:	TCN/CAO
DRN:	TCN/CAO
CHK:	MAJE
DATE:	11/29/00
BY NO.	
REVISIONS	
DATE	

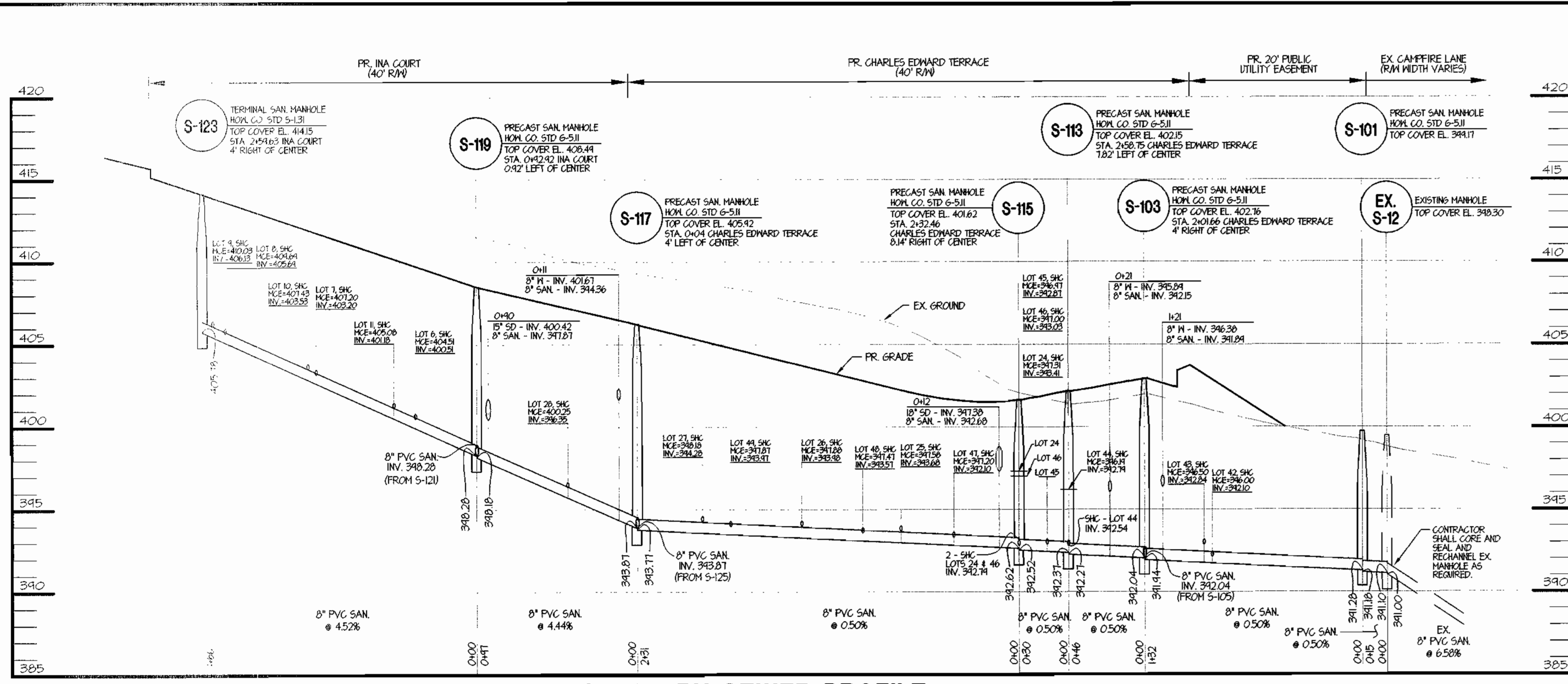
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**FINAL WATER MAIN & SEWER SYSTEM WATER PROFILE**

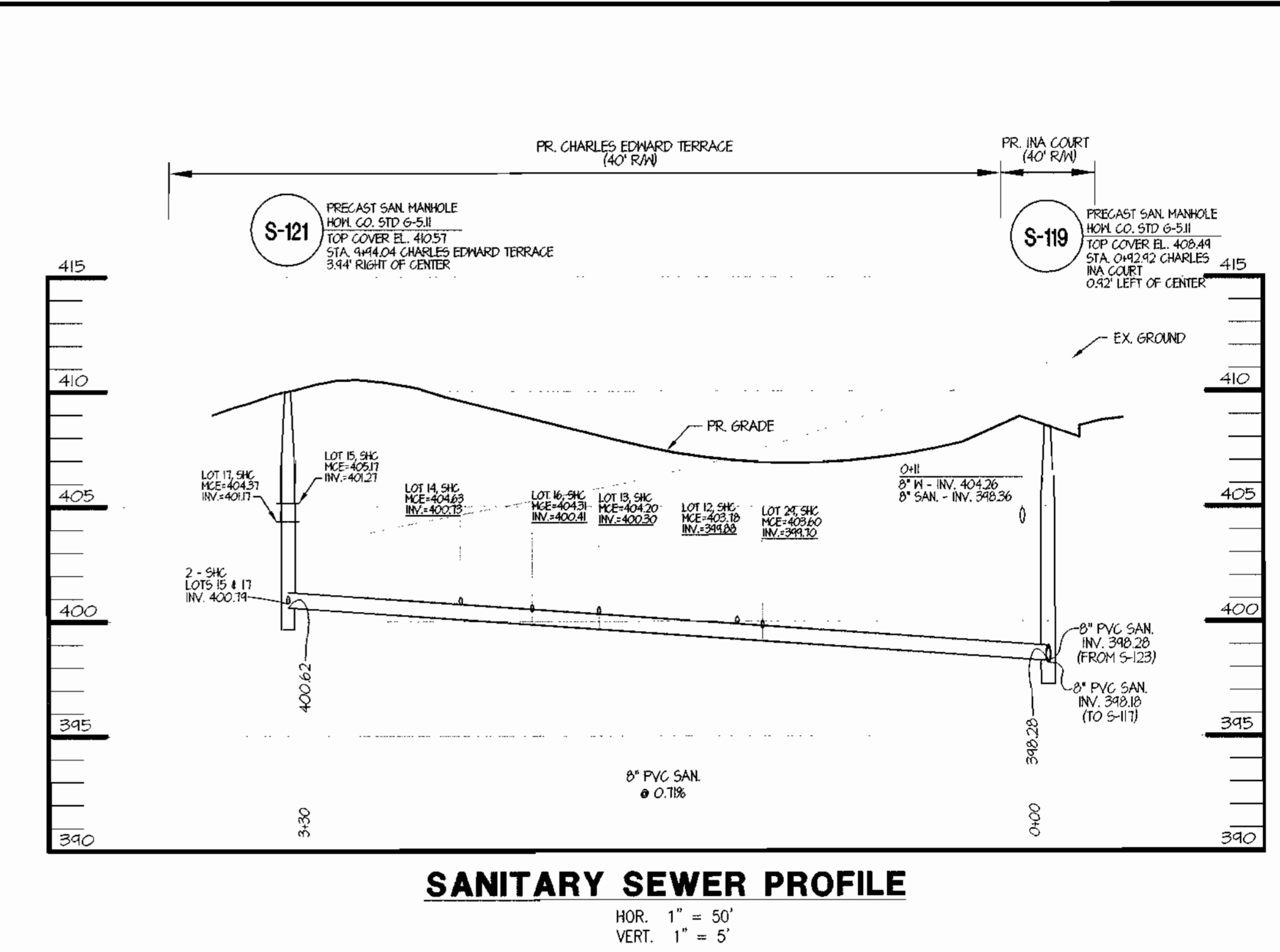
600' SCALE MAP NO. 36 BLOCK NO. 10

**ECKERS HOLLOW SECTION 1, PHASE 1**  
 (LOTS 1-54, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
 OAKLAND MILLS ROAD  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 CONTRACT # 24-3917-D

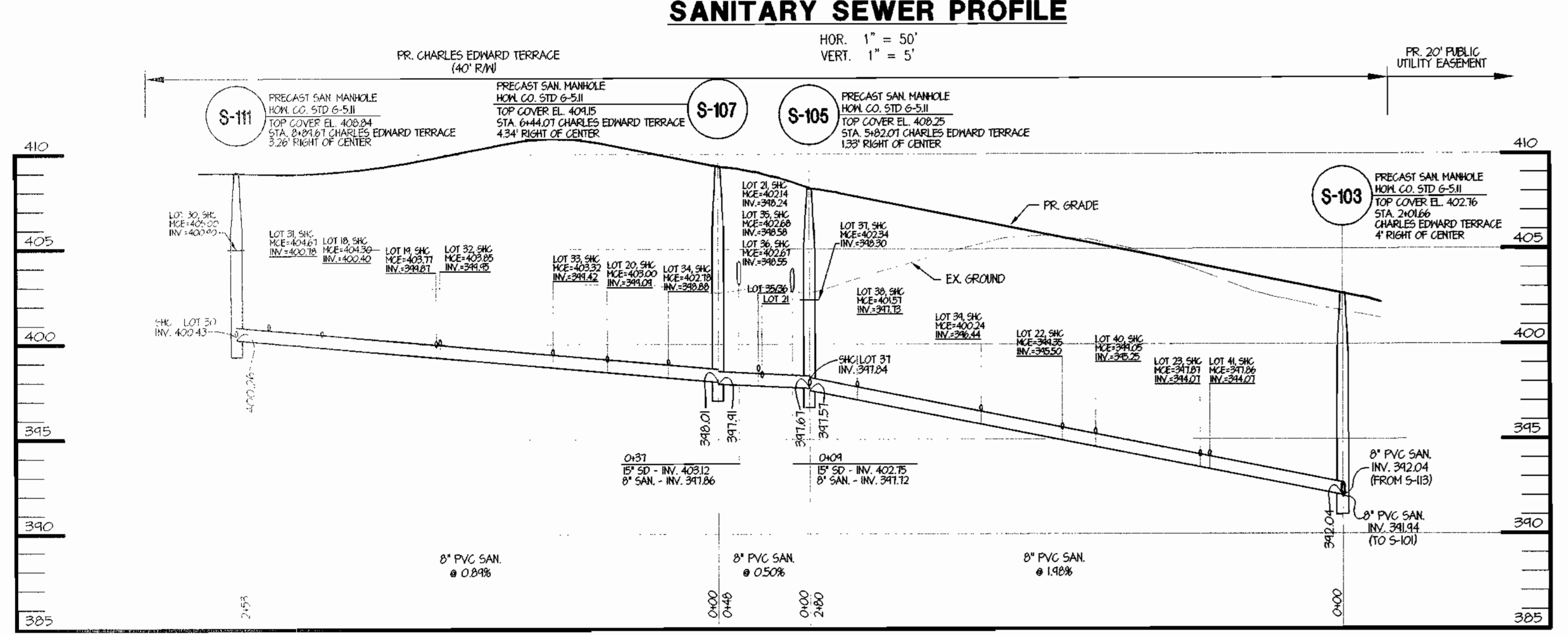
SCALE AS SHOWN  
 SHEET 3 OF 4



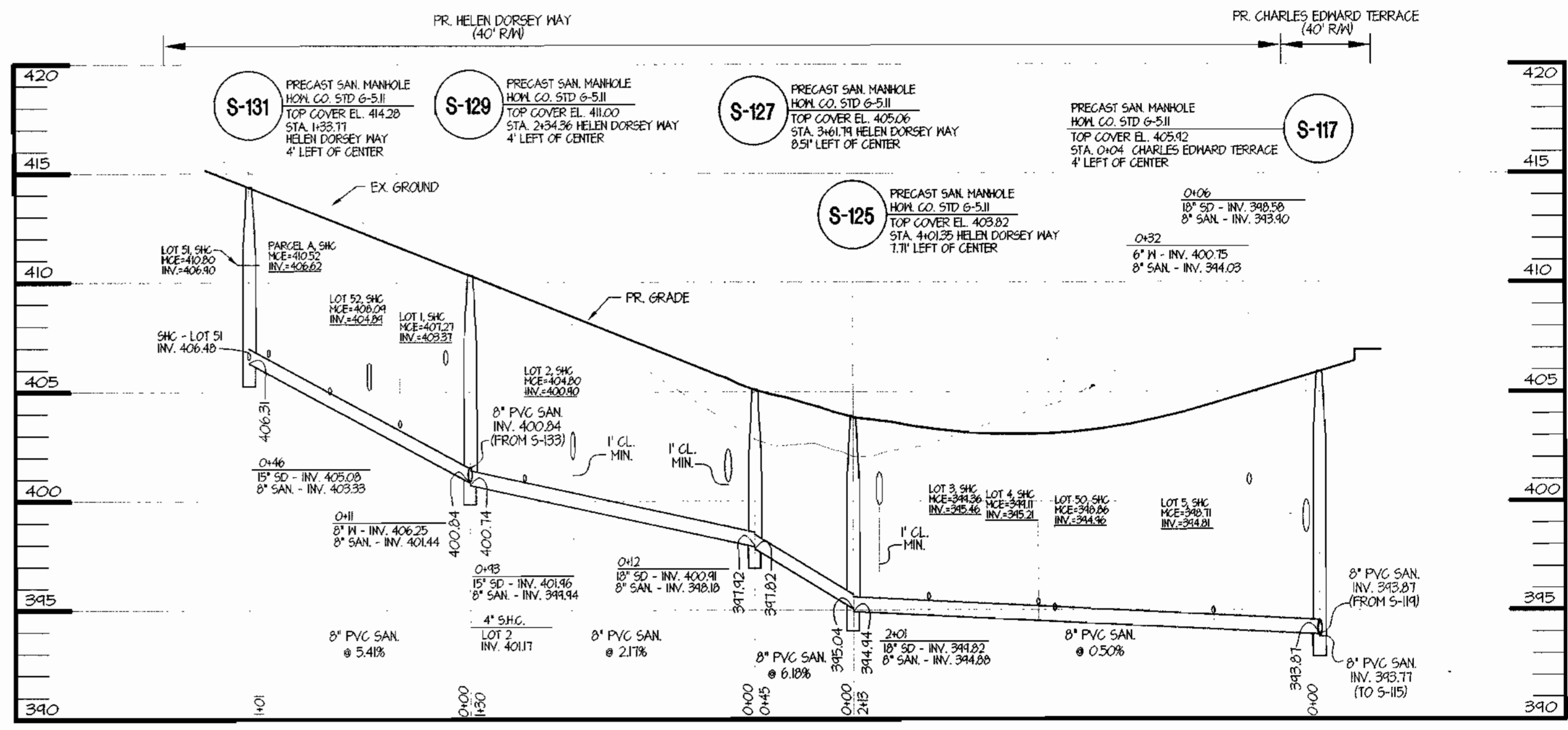
**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**

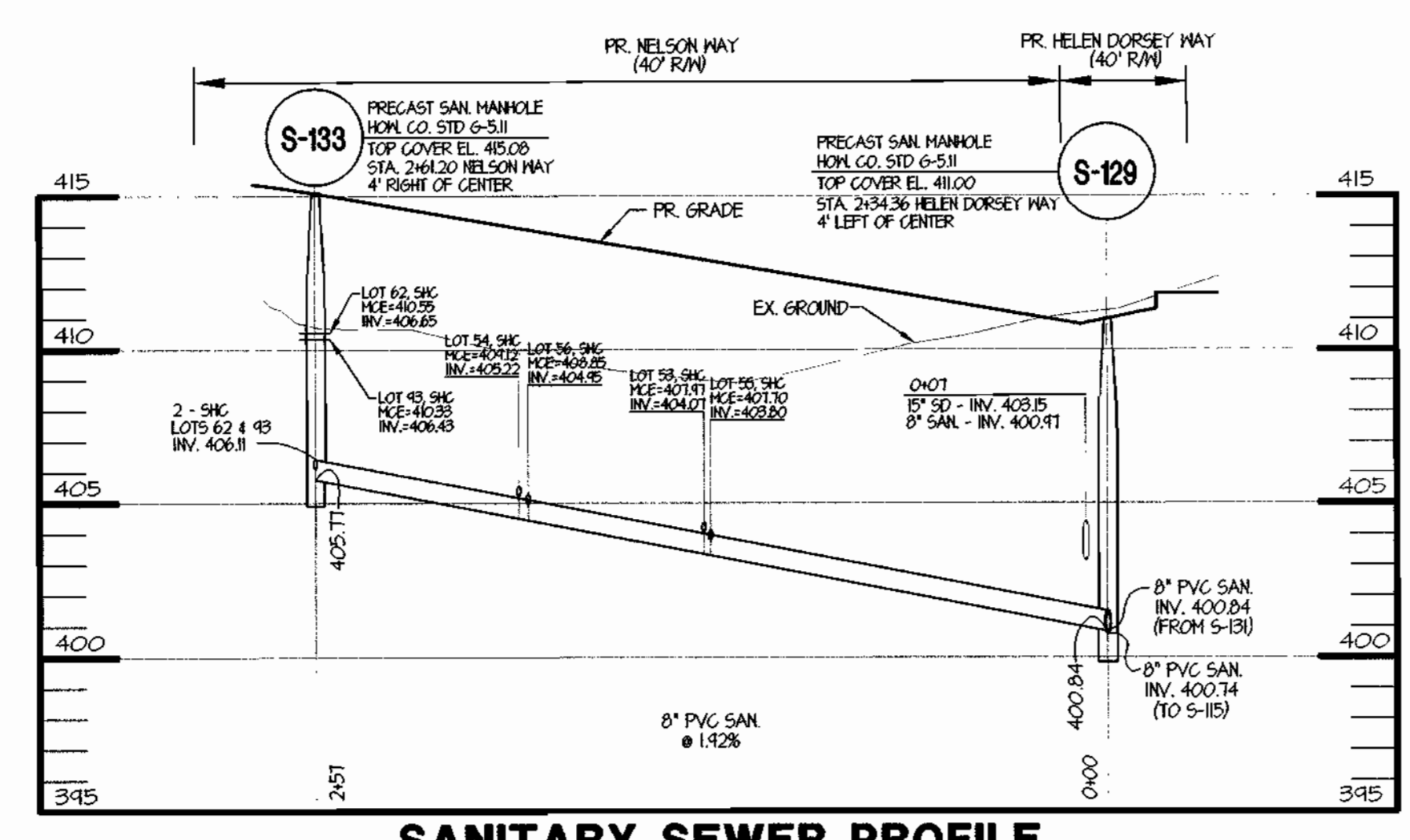


**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**

NOTE: ALL SHC INVERT ELEVATIONS SHOWN ON THESE PLANS ARE THE INVERT ELEVATION AT THE ROW OR EASEMENT LINE WITH THE SHC RUN AT 2% FROM THE MAIN 8" SANITARY LINE.



**SANITARY SEWER PROFILE**

STR NO.	TOP ELEV	INV IN	INV IN	INV OUT	TYPE	REMARKS	NORTHING	EASTING
S-101	399.17	391.28	---	391.18	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,820.27	1,360,050.21
S-103	402.76	392.04	392.04	391.94	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,900.54	1,359,945.62
S-105	408.25	397.67	397.84	397.57	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,678.52	1,359,775.65
S-107	409.15	398.01	---	397.91	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,677.29	1,359,727.35
S-111	408.84	---	400.43	400.25	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,807.13	1,359,510.19
S-113	402.15	392.37	392.54	392.27	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,937.01	1,359,972.88
S-115	401.62	392.62	392.79	392.52	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,966.12	1,359,965.06
S-117	405.92	393.87	393.87	393.77	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,106.82	1,359,781.82
S-119	408.49	398.28	398.28	398.18	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,158.02	1,359,699.41
S-121	410.57	400.79	400.79	400.62	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,896.47	1,359,498.57
S-123	414.15	---	---	405.78	TERMINAL MANHOLE	HOWARD CO. STD. DETAIL S-1.31	560,258.28	1,359,566.53
S-125	403.82	395.04	---	394.94	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,275.79	1,359,910.94
S-127	405.06	397.92	---	397.82	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,320.32	1,359,906.07
S-129	411.00	400.84	400.84	400.74	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,399.61	1,359,802.80
S-131	414.28	406.48	406.48	406.31	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,460.88	1,359,723.02
S-133	415.08	406.11	406.11	405.77	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,605.71	1,359,956.77

COORDINATES TO CENTERLINE OF STRUCTURE

OWNER/DEVELOPER: A. NAME: Dava Eshelman B. DAYTIME TELEPHONE: 410-712-7012  
 C. COMPANY: Ryland Homes  
 D. ADDRESS: 7250 Parkway Drive, Suite 520  
 E. CITY: Hanover STATE: MD. ZIP: 21076

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Robert Benz 12-7-00  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
 [Signature] 12/14/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MORRIS & RITCHIE ASSOCIATES, INC.  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
 9090 JUNCTION DRIVE SUITE 9  
 ANNAPOLIS, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395

DES: TCN/CAO  
 DRN: TCN/CAO  
 CHK: MJE  
 DATE: 11/29/00

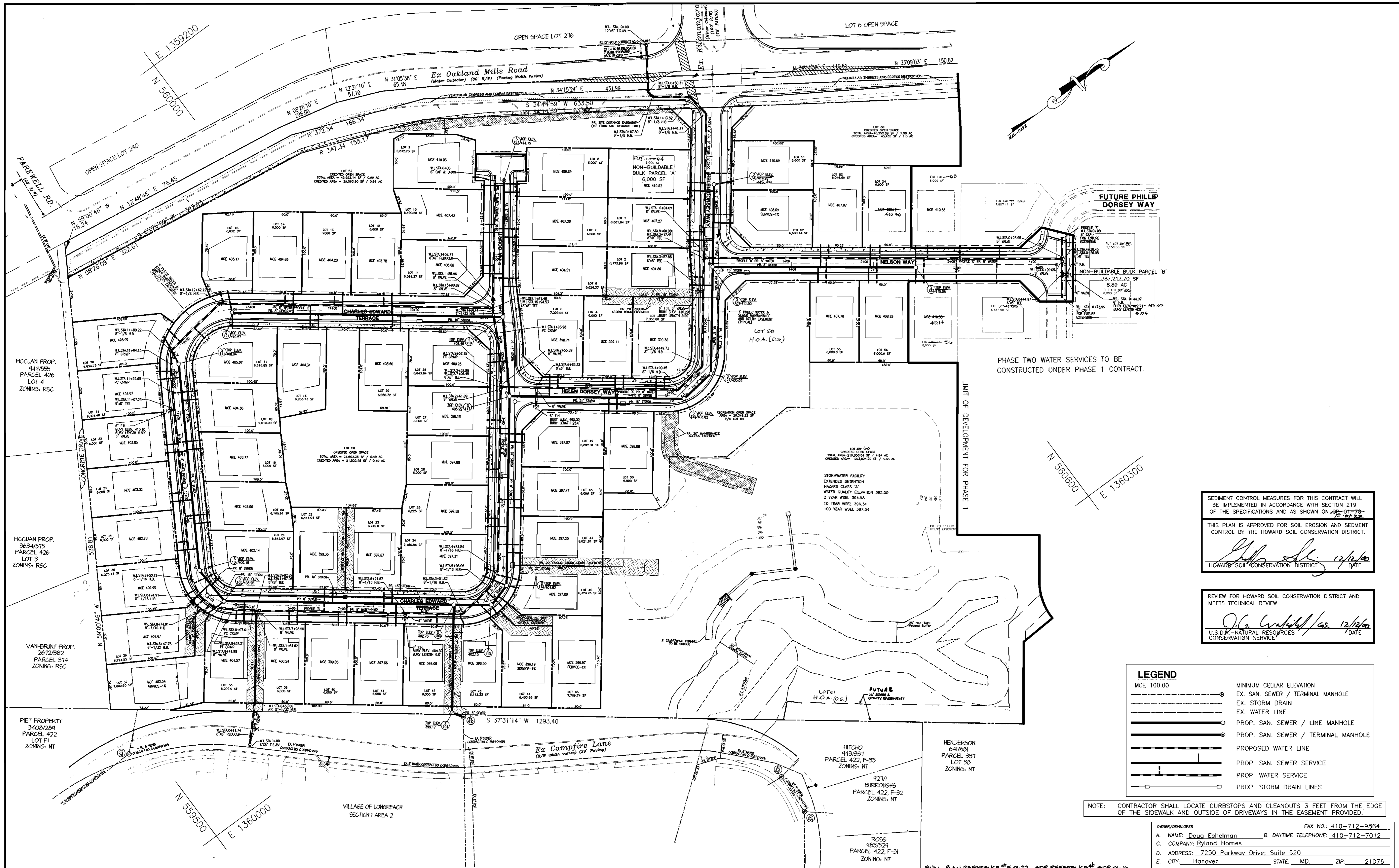
BY NO. REVISIONS DATE

FINAL WATER MAIN & SEWER SYSTEM SEWER PROFILES  
 600' SCALE MAP NO. 36 BLOCK NO. 10

ECKERS HOLLOW SECTION 1, PHASE 1  
 (LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
 OAKLAND MILLS ROAD  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 CONTRACT # 24-3917-D

SCALE AS SHOWN  
 SHEET 4 OF 4





PHASE TWO WATER SERVICES TO BE CONSTRUCTED UNDER PHASE 1 CONTRACT.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON SP-01-78.  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 12/16/00  
 HOWARD SOIL CONSERVATION DISTRICT DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW  
*[Signature]* 12/16/00  
 U.S.D.C. - NATURAL RESOURCES CONSERVATION SERVICE DATE

LEGEND	
MCE 100.00	MINIMUM CELLAR ELEVATION
---○---	EX. SAN. SEWER / TERMINAL MANHOLE
---	EX. STORM DRAIN
---	EX. WATER LINE
---○---	PROP. SAN. SEWER / LINE MANHOLE
---○---	PROP. SAN. SEWER / TERMINAL MANHOLE
---	PROPOSED WATER LINE
---	PROP. SAN. SEWER SERVICE
---	PROP. WATER SERVICE
---	PROP. STORM DRAIN LINES

NOTE: CONTRACTOR SHALL LOCATE CURBSTOPS AND CLEANOUTS 3 FEET FROM THE EDGE OF THE SIDEWALK AND OUTSIDE OF DRIVEWAYS IN THE EASEMENT PROVIDED.

OWNER/DEVELOPER: FAX NO.: 410-712-9864  
 A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-7012  
 C. COMPANY: Ryland Homes  
 D. ADDRESS: 7250 Parkway Drive, Suite 520  
 E. CITY: Hanover STATE: MD. ZIP: 21076

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*[Signature]* 12-7-00  
 CHIEF, BUREAU OF UTILITIES DATE

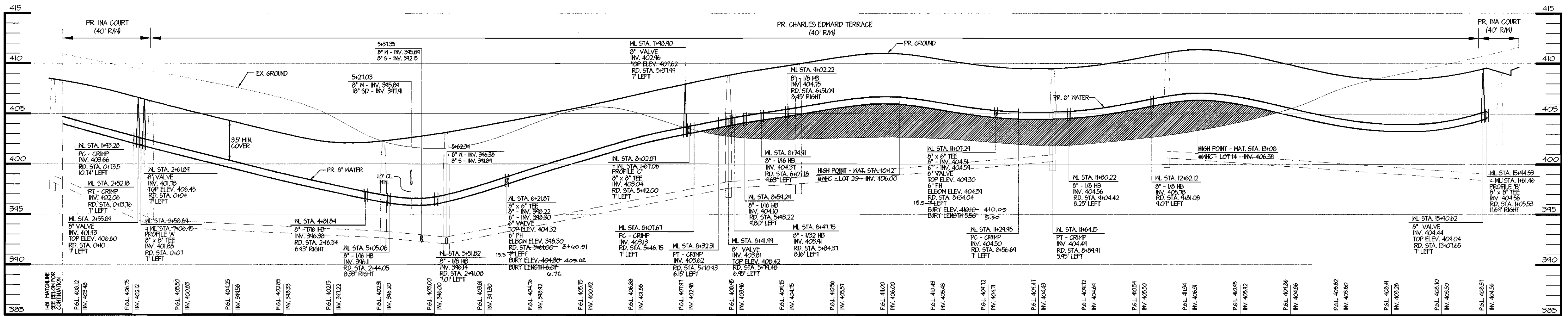
DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
*[Signature]* 12/16/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**MIRA**  
**MORRIS & RITCHIE ASSOCIATES, INC.**  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
 9090 JUNCTION DRIVE SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-8792 or (301) 776-1890  
 FAX (410) 792-7395  
 MICHAEL J. RITCHIE (11537)  
 PROFESSIONAL ENGINEER

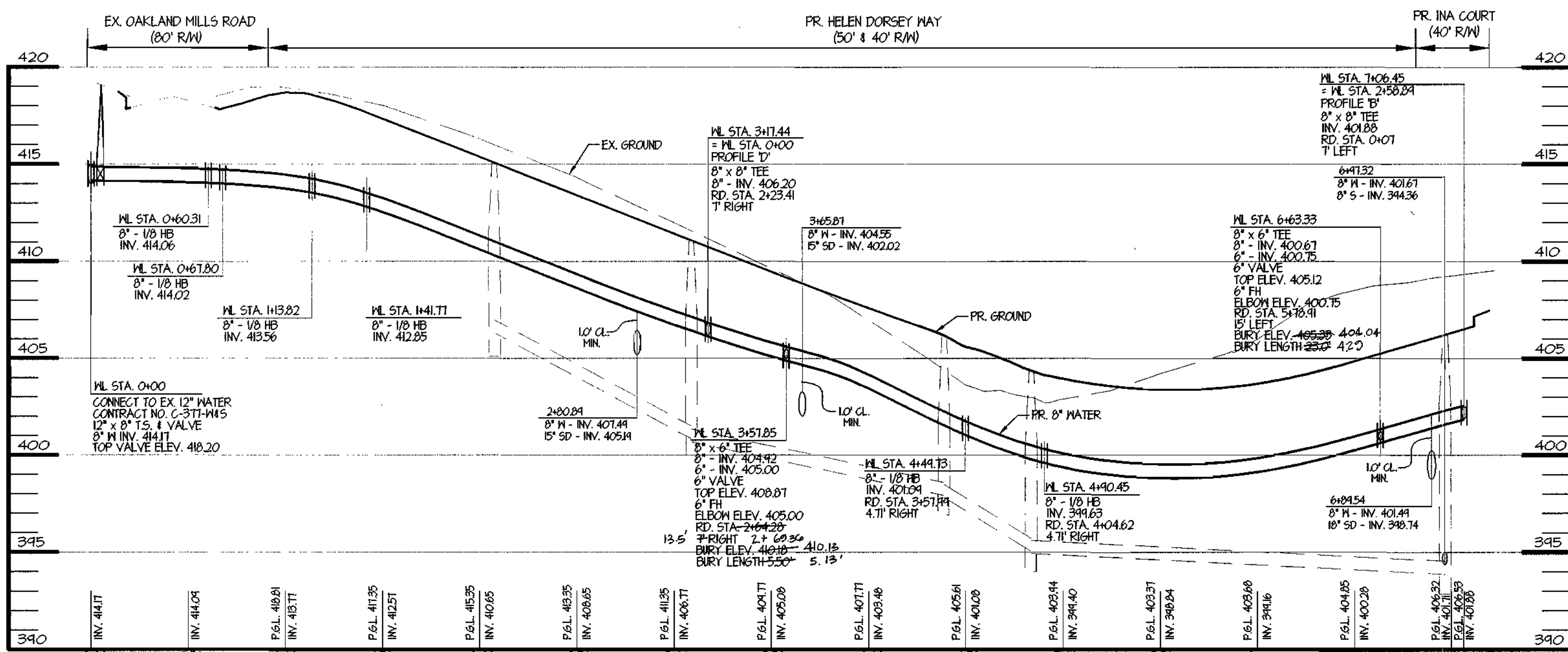
DES: TCN/CAO	
DRN: TCN/CAO	
CHK: MJE	
DATE: 11/29/00	
BY: NO. 1	ASBUILT DATA ADDED TO PLAN
REVISIONS	DATE: 9/19/01

**FINAL WATER MAIN & SEWER SYSTEM PLAN SHEET**  
 600' SCALE MAP NO. 36 BLOCK NO. 10

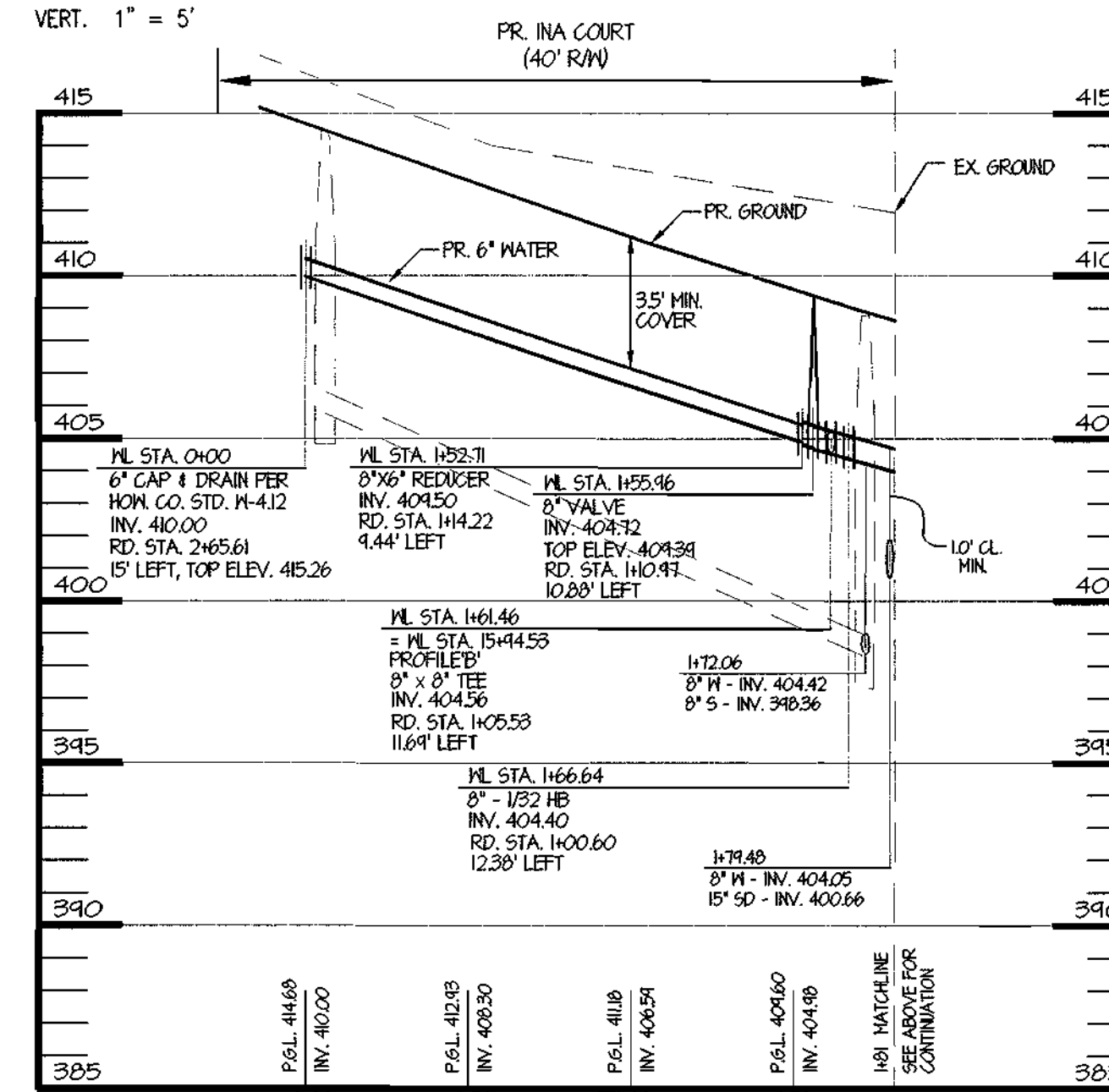
**ECKERS HOLLOW SECTION 1, PHASE 1**  
 (LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
 OAKLAND MILLS ROAD  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 CONTRACT # 24-3917-D  
 SCALE: 1" = 50'  
 SHEET 2 OF 4



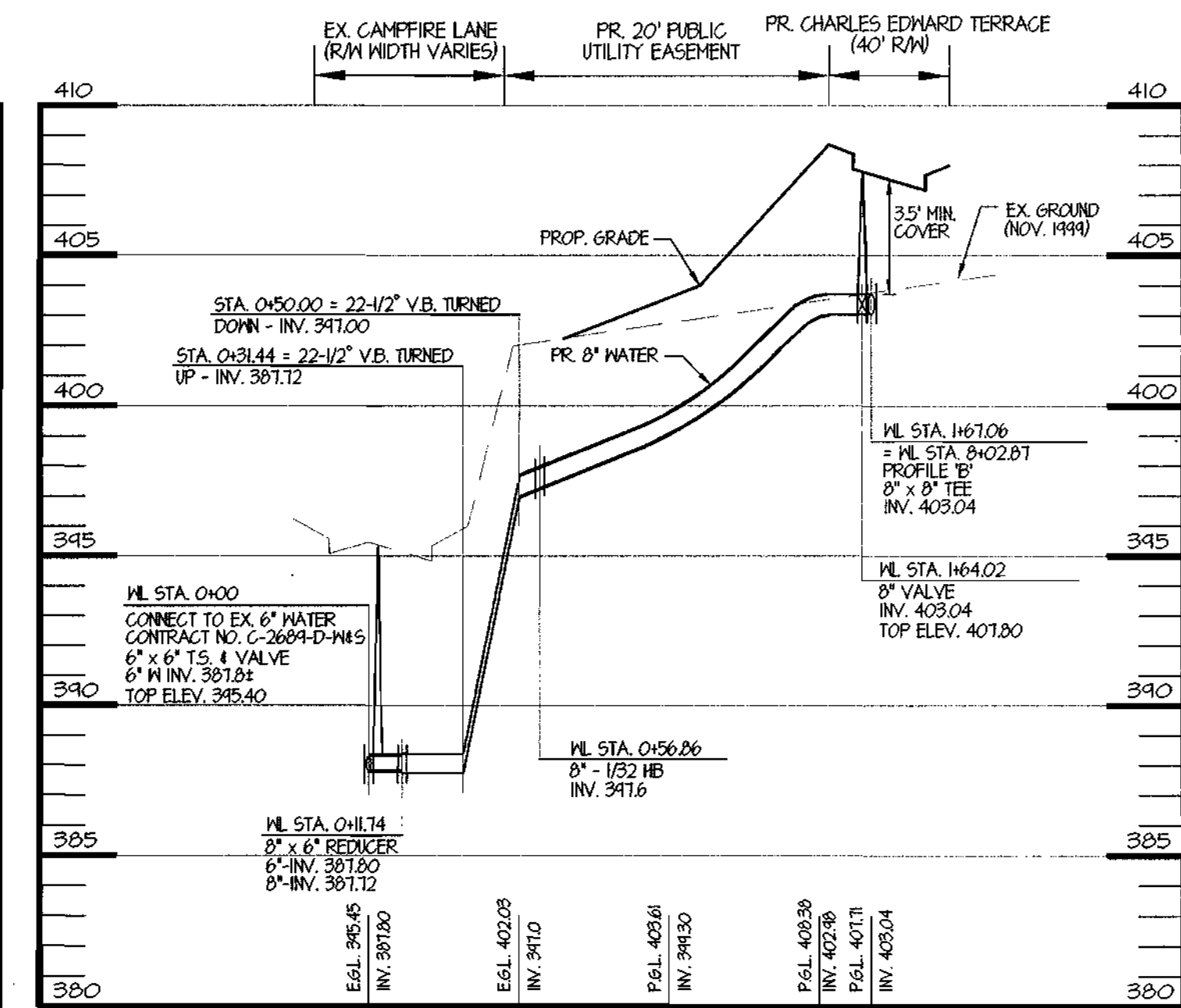
**WATER PROFILE 'B'**



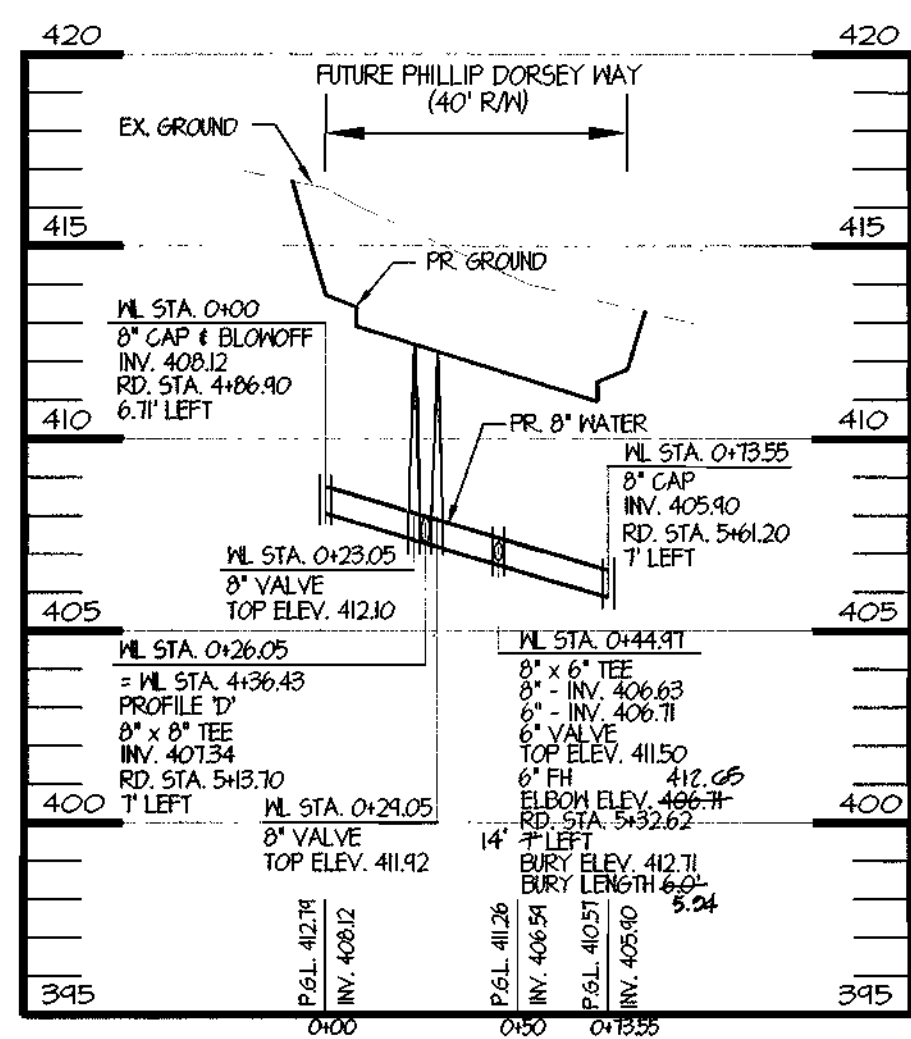
**WATER PROFILE 'A'**



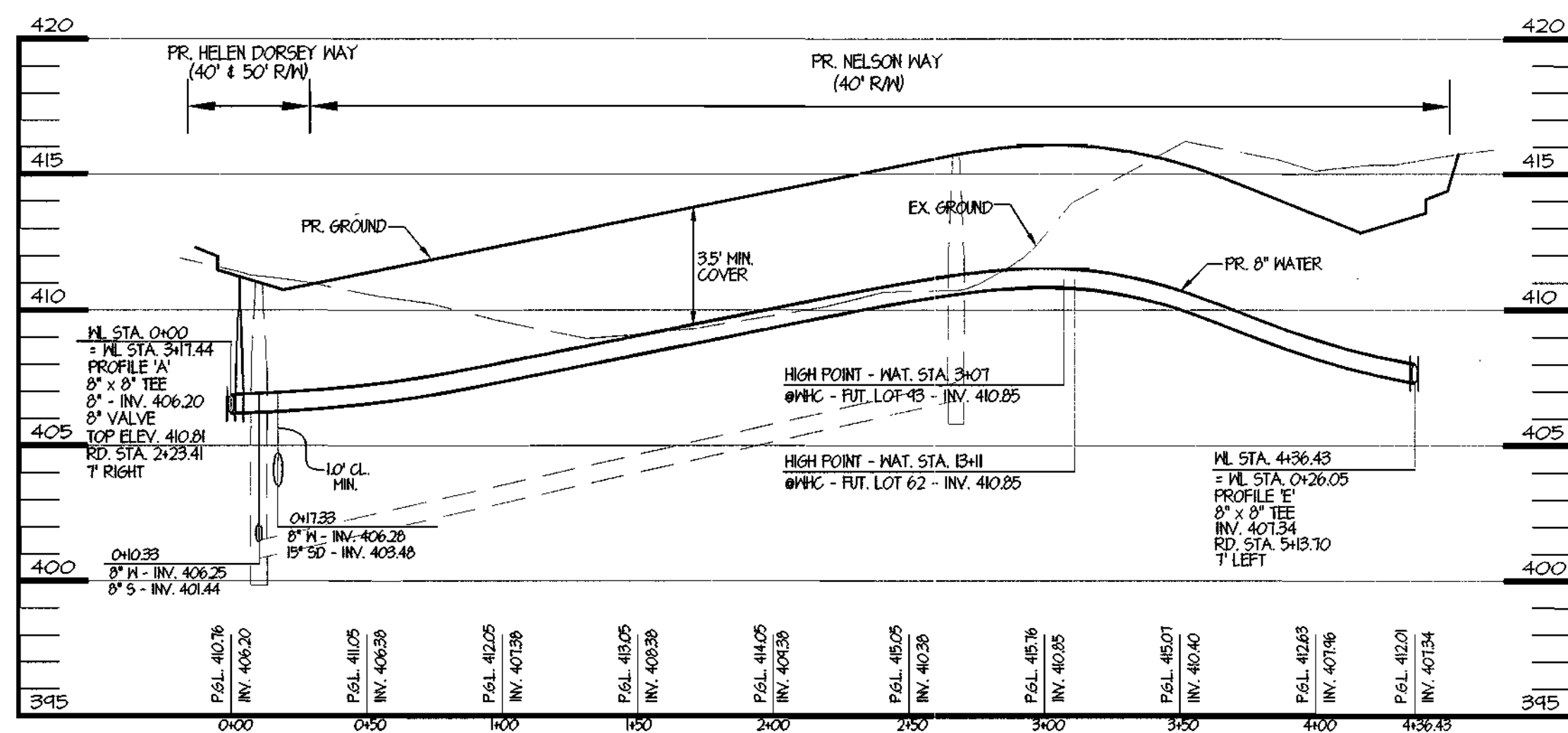
**WATER PROFILE 'B'**



**WATER PROFILE 'C'**



**WATER PROFILE 'E'**



**WATER PROFILE 'D'**

CONTROLLED AND COMPACTED FILL AS DIRECTED BY AN APPROVED SOILS ENGINEER TO 95% COMPACTION

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON E-01-22. THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 12/14/02  
HOWARD SOIL CONSERVATION DISTRICT DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

*[Signature]* 12/14/02  
U.S. A. - NATURAL RESOURCES CONSERVATION SERVICE DATE

OWNER/DEVELOPER: A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-9864  
 COMPANY: Ryland Homes  
 ADDRESS: 7250 Parkway Drive, Suite 520  
 CITY: Hanover STATE: MD. ZIP: 21076

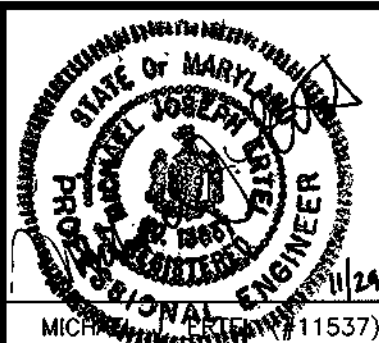
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 12-7-02  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 12/14/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**MRA**  
MORRIS & RITCHIE ASSOCIATES, INC.  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
9090 JUNCTION DRIVE SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-3752 or (301) 776-1690  
FAX (410) 792-7395



DES:	TCN/CAO	
DRN:	TCN/CAO	
CHK:	MJE	
DATE:	11/29/00	
BY NO.	KCI 1	ASBUILT DATA ADDED TO PLAN 09/19/01
REVISIONS:		

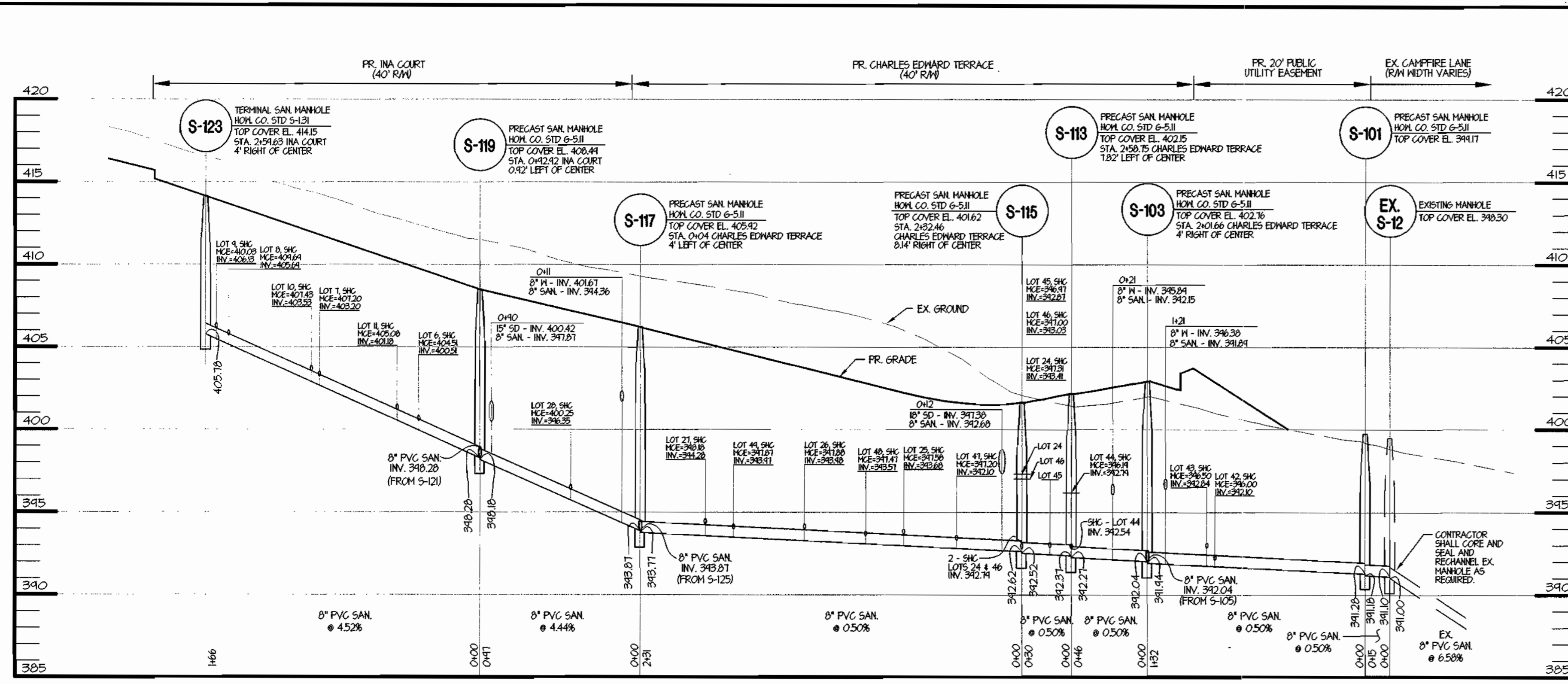
FINAL PLAN REFERENCE # F-01-22 GDP REFERENCE # GDP-01-16

**FINAL WATER MAIN & SEWER SYSTEM WATER PROFILE**

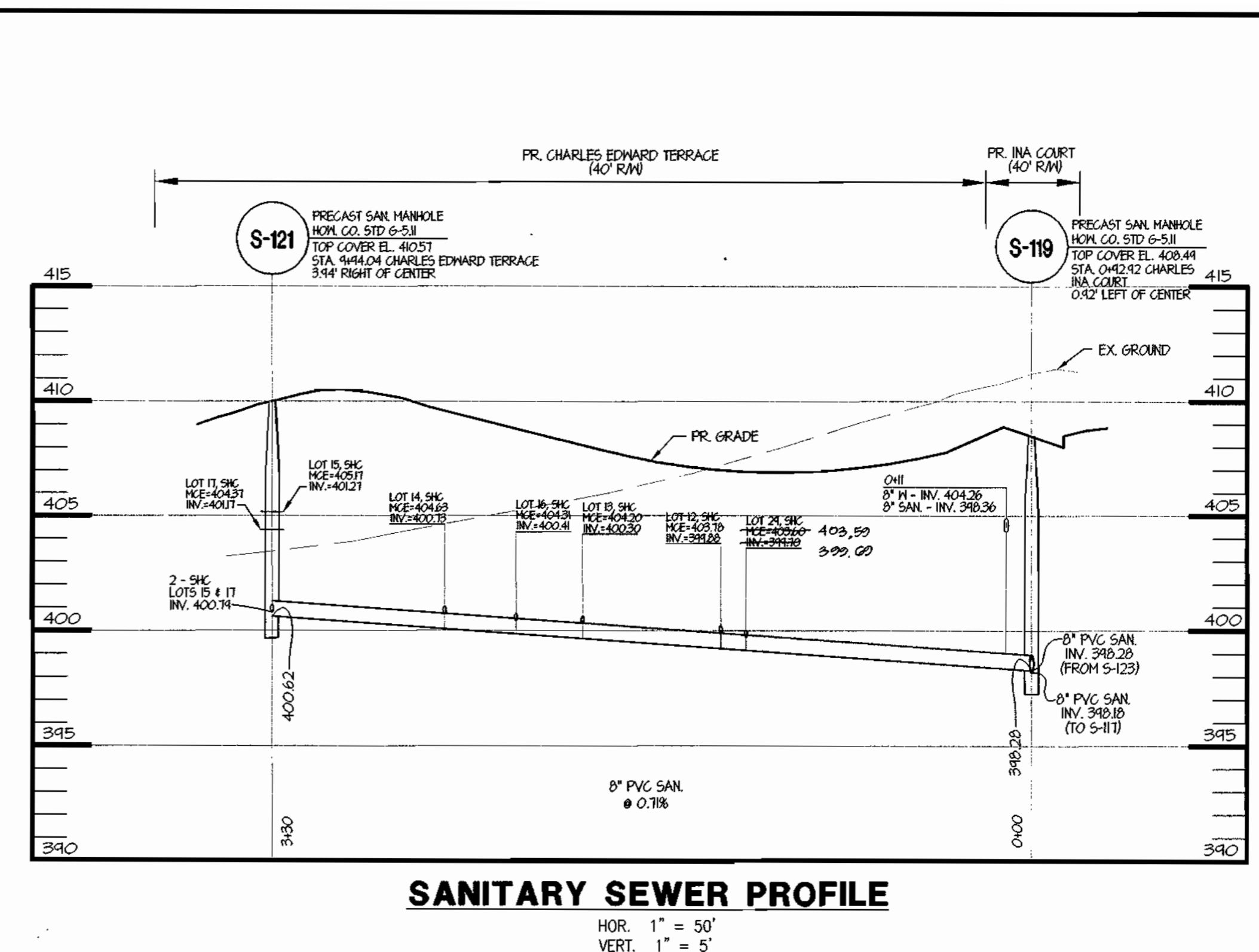
600' SCALE MAP NO. 36 BLOCK NO. 10

**ECKERS HOLLOW SECTION 1, PHASE 1**  
 (LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
 OAKLAND MILLS ROAD  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 CONTRACT # 24-3917-D

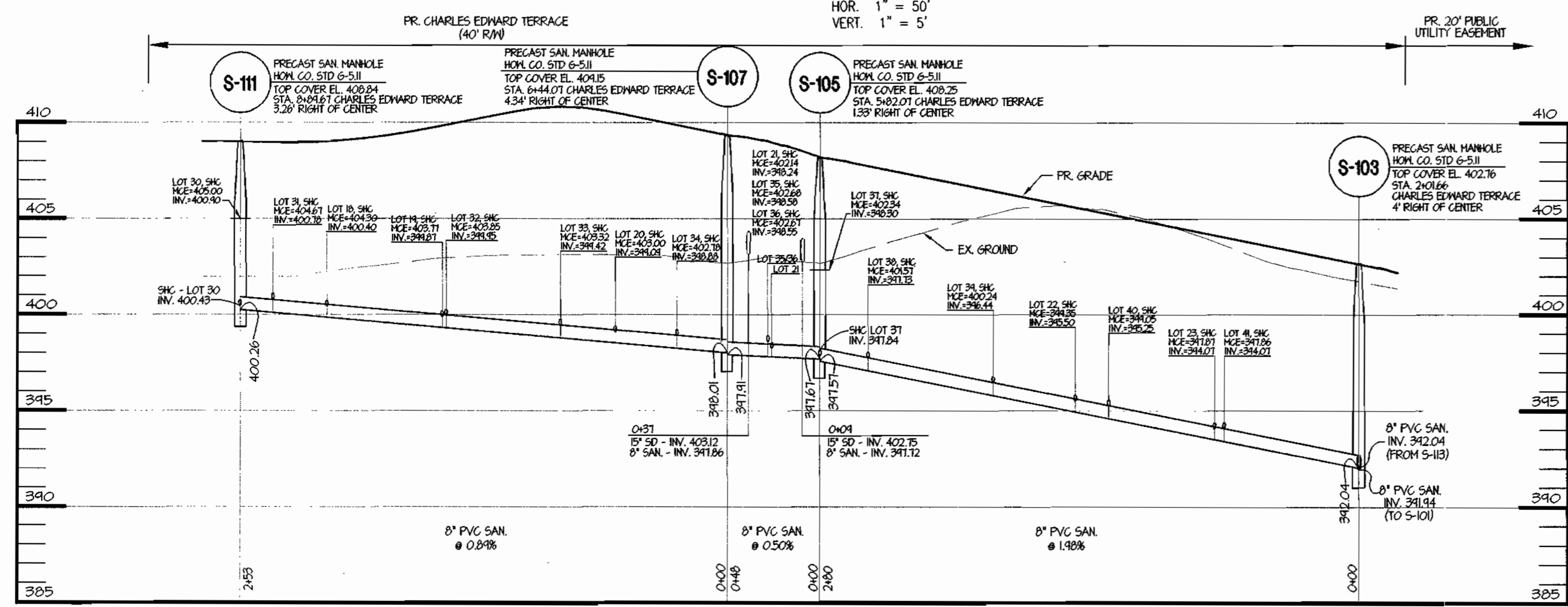
SCALE AS SHOWN  
SHEET 3 OF 4



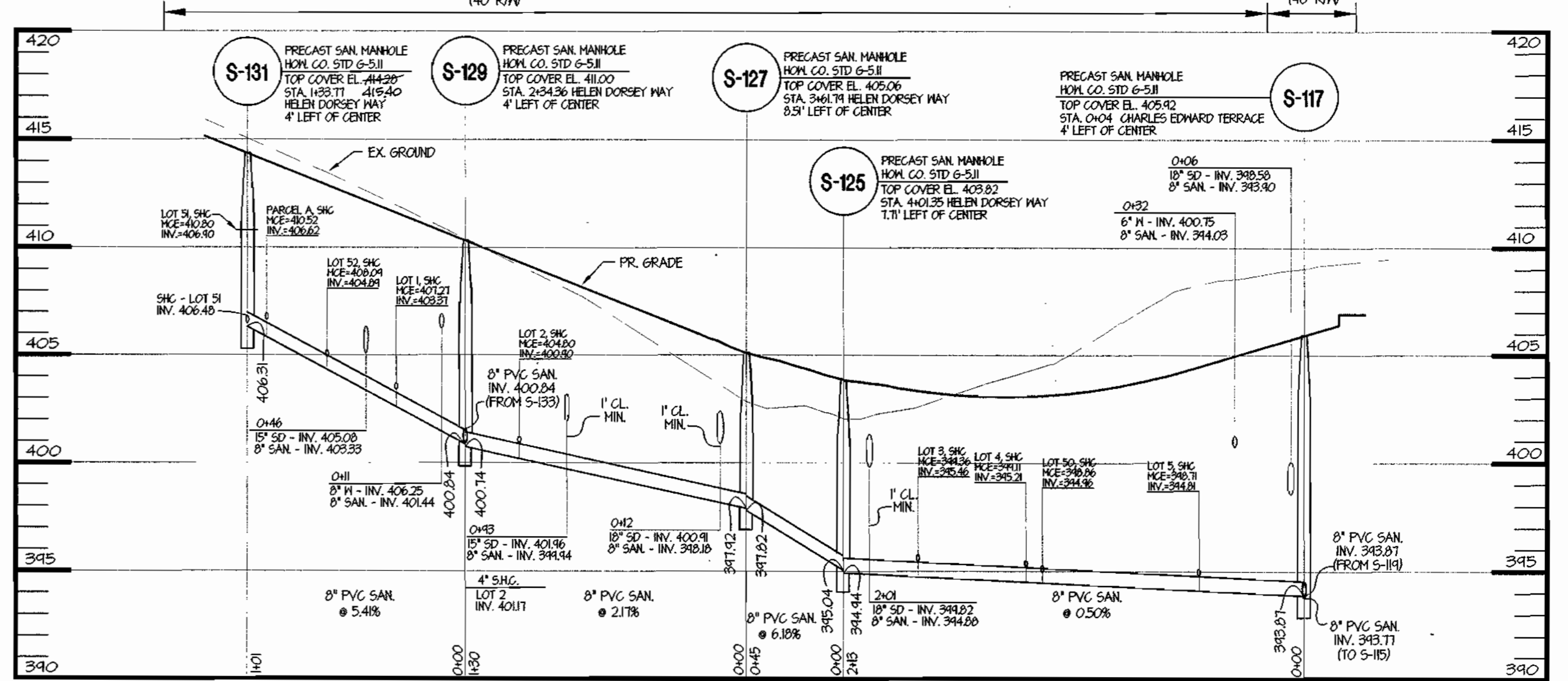
**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**

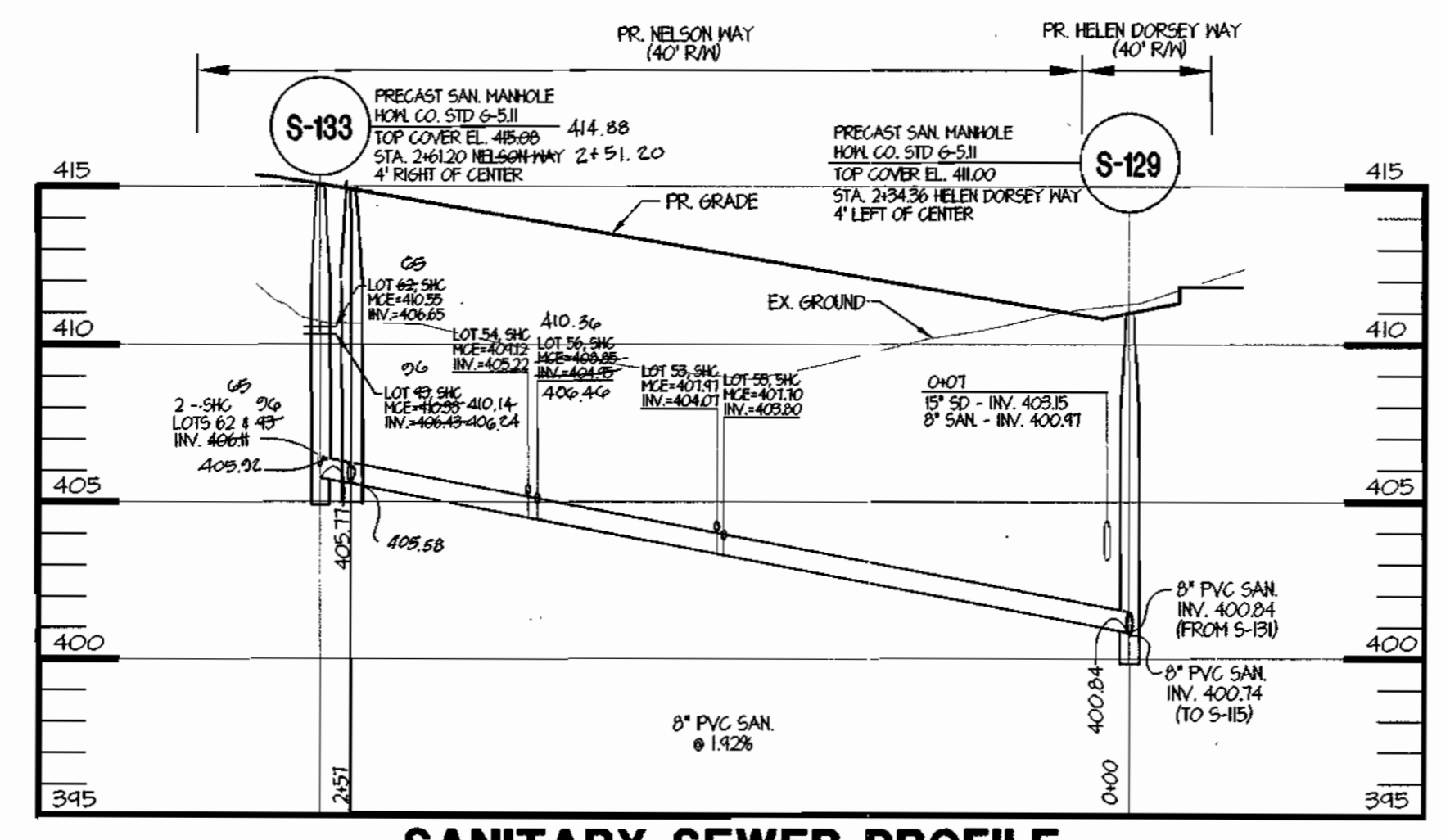


**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**

NOTE: ALL SHC INVERT ELEVATIONS SHOWN ON THESE PLANS ARE THE INVERT ELEVATION AT THE ROW OR EASEMENT LINE WITH THE SHC RUN AT 2% FROM THE MAIN 8" SANITARY LINE.



**SANITARY SEWER PROFILE**

STR. NO.	TOP ELEV.	IN IN	IN IN	IN OUT	TYPE	REMARKS	NORTHING	EASTING
S-101	399.17	391.28	---	391.18	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,820.27	1,360,050.2
S-103	402.76	392.04	392.04	391.94	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,900.54	1,359,945.62
S-105	408.25	397.67	397.84	397.57	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,678.52	1,359,775.65
S-107	409.15	398.01	---	397.91	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,677.29	1,359,727.35
S-111	408.84	---	400.43	400.25	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,807.13	1,359,510.19
S-113	402.15	392.37	392.54	392.27	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,937.01	1,359,972.88
S-115	401.62	392.62	392.79	392.52	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		559,966.12	1,359,965.06
S-117	405.92	393.87	393.87	393.77	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,258.28	1,359,906.07
S-119	408.49	398.28	398.28	398.18	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,106.82	1,359,781.82
S-121	410.57	400.79	400.79	400.62	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,158.02	1,359,899.41
S-123	414.15	---	---	405.78	TERMINAL MANHOLE HOWARD CO. STD. DETAIL S-1.31		559,896.47	1,359,498.57
S-125	403.82	395.04	---	394.94	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,275.79	1,359,910.94
S-127	405.06	397.92	---	397.82	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,320.32	1,359,906.07
S-129	411.00	400.84	400.84	400.74	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,399.61	1,359,802.80
S-131	414.28	406.48	406.48	406.31	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,460.88	1,359,723.02
S-133	418.08	406.14	406.14	405.77	PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.11		560,605.71	1,359,956.77
							560,507.70	1,350,950.78

COORDINATES TO CENTERLINE OF STRUCTURE

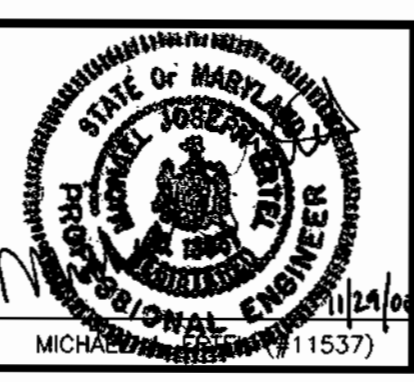
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON **SDP-01-22**.  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 12/12/00  
 HOWARD SOIL CONSERVATION DISTRICT

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW  
 [Signature] 12/14/00  
 U.S.D.A. - NATURAL RESOURCES CONSERVATION SERVICE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 [Signature] 12-7-00  
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
 [Signature] 12/14/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

MRA  
 MORRIS & RITCHIE ASSOCIATES, INC.  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
 9090 JUNCTION DRIVE SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-3792 or (301) 775-1690  
 FAX (410) 792-7395



DES: TCN/CAO	
DRN: TCN/CAO	
CHK: MJE	
DATE: 11/29/00	
BY: NO.	REVISIONS
	1 AS-BUILT DATA ADDED TO PLAN
	2/2/01

FINAL PLAN REFERENCE # F-01-22 SOP REFERENCE # SOP-01-16  
**FINAL WATER MAIN & SEWER SYSTEM SEWER PROFILES**  
 600' SCALE MAP NO. 36 BLOCK NO. 10

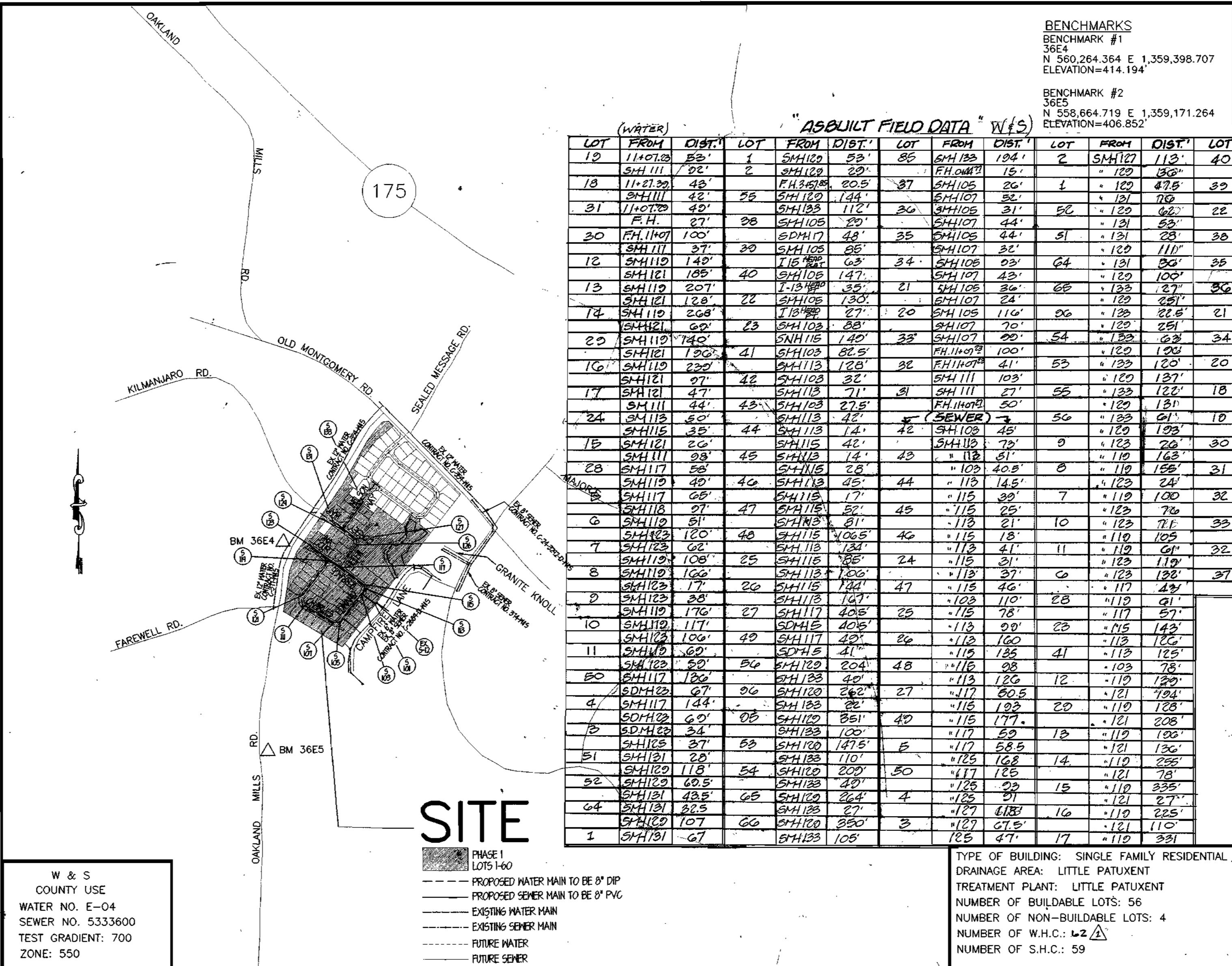
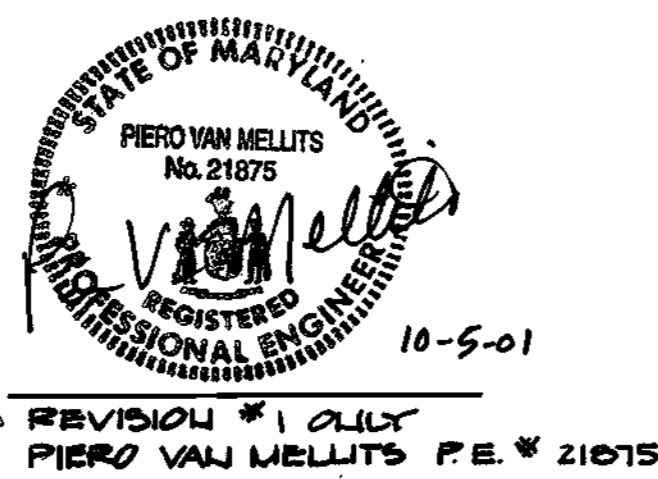
OWNER/DEVELOPER  
 A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-9864  
 C. COMPANY: Ryland Homes  
 D. ADDRESS: 7250 Parkway Drive, Suite 520  
 E. CITY: Hanover STATE: MD. ZIP: 21076  
 FAX NO.: 410-712-9864  
 DAYTIME TELEPHONE: 410-712-7012  
 ADDRESS: 7250 Parkway Drive, Suite 520  
 CITY: Hanover STATE: MD. ZIP: 21076  
**ECKERS HOLLOW SECTION 1, PHASE 1**  
 (LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
 OAKLAND MILLS ROAD  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 CONTRACT # 24-3917-D  
 SCALE AS SHOWN  
 SHEET 4 OF 4



# WATER AND SEWER PLAN ECKERS HOLLOW - PHASE I SECTION 1

## 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

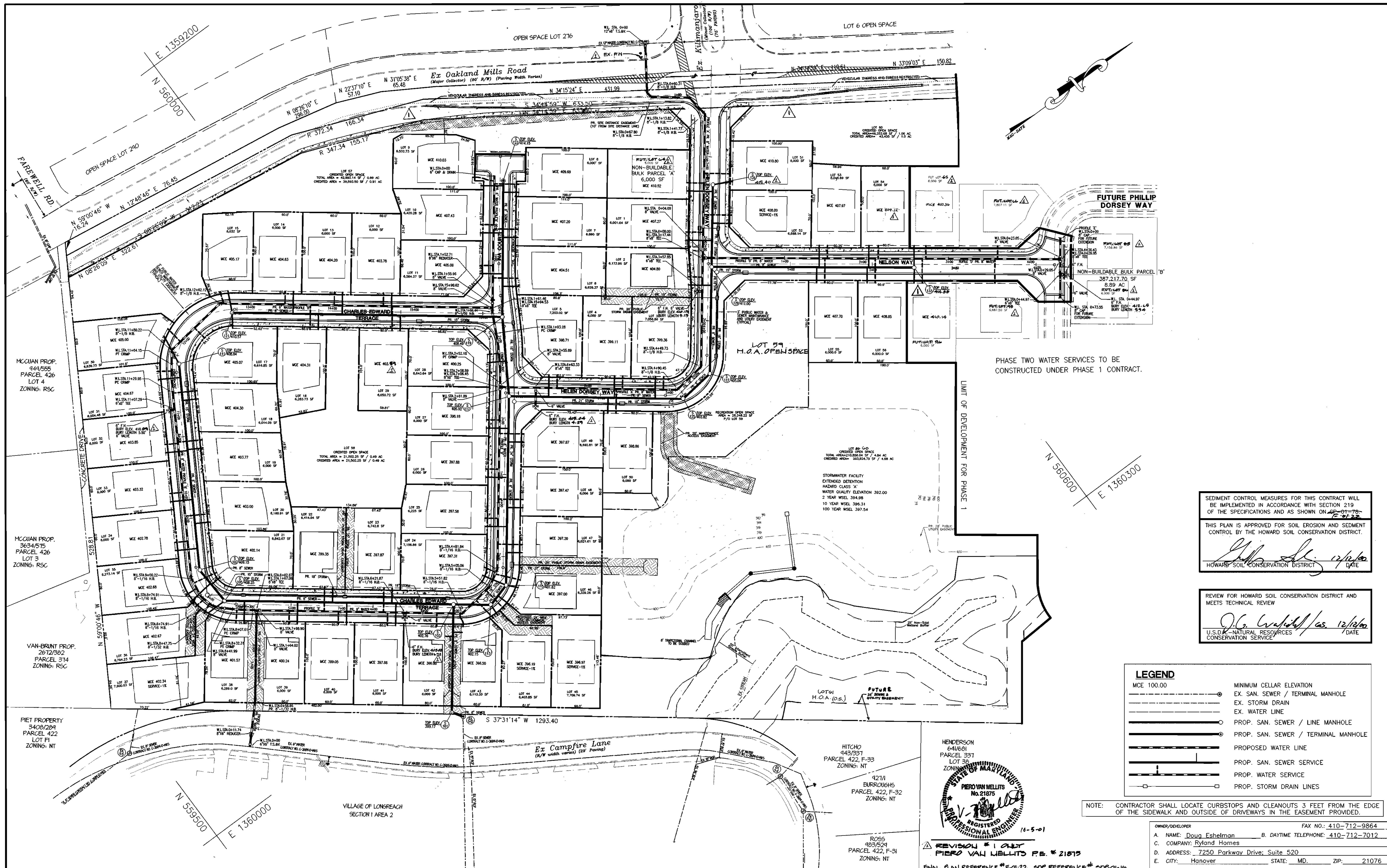
SANITARY SEWER CLEAN-OUT CHART									
LOT NO.	STATION	INVERT MAIN	INVERT D.H.C.	LENGTH OF SERVICE	SLOPE OF SERVICE	INV. @ ESMT/PROP. LINE	TOP C/O ELEV.	MIN. CELLAR ELEVATION (MCE)	
SMH 101 TO SMH 103									
42	0+91	391.74	---	10'	2.00%	392.10	403.75	396.00	
43	0+96	391.76	---	10'	2.00%	392.84	404.75	396.50	
SMH 103 TO SMH 105									
41	0+70	393.43	---	24'	2.00%	394.07	405.21	397.86	
23	0+75	393.53	---	19'	2.00%	394.07	404.51	397.87	
40	1+30	394.81	---	24'	2.00%	395.25	405.36	398.08	
22	1+47.43	394.98	---	19'	2.00%	395.50	405.89	399.35	
39	1+90	395.80	---	24'	2.00%	396.44	407.52	400.24	
38	2+55	397.09	---	24'	2.00%	397.73	408.96	401.57	
SMH 105 TO SMH 107									
37	0 SMH 105	397.84	---	23'	2.00%	398.30	409.64	402.34	
21	0+25	397.80	---	14'	2.00%	398.24	408.98	402.14	
*36	0+27	397.81	---	29'	2.00%	398.50	409.22	402.30	
*35	0+27	397.81	---	6'	2.00%	398.58	409.80	402.68	
* NOTE-TWIN HOUSE CONNECTION SMH 107 TO SMH 111									
34	0+26.24	398.24	---	24'	2.00%	398.88	410.80	402.78	
20	0+58.24	398.53	---	19'	2.00%	399.08	410.57	403.00	
33	0+86.74	398.78	---	24'	2.00%	399.42	411.59	403.32	
32	1+46.24	399.31	---	24'	2.00%	399.95	410.76	403.85	
49	1+48.24	399.49	---	19'	2.00%	399.87	409.44	403.77	
18	2+08.24	399.86	---	19'	2.00%	400.40	409.90	404.30	
31	2+36.48	400.14	---	24'	2.00%	400.78	409.27	404.67	
30	0 SMH 111	400.43	---	23.26'	2.00%	400.90	410.24	405.00	
SMH 113 TO SMH 115									
44	0 SMH 113	392.54	---	12.50'	2.00%	392.79	403.05	396.19	
45	0+13	392.44	---	13.50'	2.00%	392.87	402.82	396.97	
46	0 SMH 115	392.79	---	12'	2.00%	393.03	403.94	397.00	
SMH 115 TO SMH 117									
24	0 SMH 115	392.79	---	31.14'	2.00%	393.41	402.58	397.31	
47	0+39.46	392.82	---	16'	2.00%	393.30	401.93	397.20	
25	0+71.46	392.98	---	27'	2.00%	393.68	402.99	397.58	
48	0+94.46	393.09	---	16'	2.00%	393.57	402.91	397.42	
26	1+31.46	393.28	---	27'	2.00%	393.96	404.47	397.88	
49	1+74.46	393.49	---	16'	2.00%	393.97	404.91	397.87	
27	1+91.46	393.58	---	27'	2.00%	394.28	405.97	398.18	
SMH 117 TO SMH 119									
28	0+42	395.73	---	23'	2.00%	396.35	408.10	400.25	
SMH 119 TO SMH 121									
29	1+29.00	399.15	---	19'	2.00%	399.49	408.12	409.59	
12	1+34.88	399.24	---	24'	2.00%	399.88	409.58	403.78	
13	1+94.88	399.65	---	24'	2.00%	400.30	410.07	404.20	
16	2+53.89	400.08	---	19'	2.00%	400.41	410.11	404.31	
14	2+54.89	400.09	---	24'	2.00%	400.73	411.57	404.63	
15	0 SMH 121	400.79	---	24'	2.00%	401.27	411.74	405.17	
17	0 SMH 121	400.79	---	19'	2.00%	401.17	410.94	404.37	
SMH 119 TO SMH 123									
6	0+37	399.95	---	20'	2.00%	400.51	409.91	404.51	
11	0+50	400.54	---	24'	2.00%	401.18	411.27	405.08	
7	0+97	402.66	---	19'	2.00%	403.20	412.01	407.20	
10	1+02	402.89	---	24'	2.00%	403.53	413.02	407.43	
8	1+52	405.15	---	19'	2.00%	405.69	413.94	409.69	
9	1+59.50	405.49	---	24'	2.00%	406.13	415.02	410.89	
SMH 117 TO SMH 125									
5	0+48.50	394.11	---	27'	2.00%	394.81	405.47	398.71	
50	1+21	394.48	---	16'	2.00%	394.96	405.53	398.86	
4	1+78.50	394.76	---	27'	2.00%	395.46	406.35	399.36	
SMH 127 TO SMH 129									
2	1+05	400.20	---	27'	2.00%	400.90	410.43	404.80	
SMH 129 TO SMH 131									
1	0+32	402.57	---	32'	2.00%	403.37	412.92	407.27	
52	0+64	403.30	---	21'	2.00%	404.88	413.98	408.09	
PARCEL A	0+92	405.82	---	32'	2.00%	406.62	416.40	410.52	
51	0 SMH 131	406.48	---	21'	2.00%	406.90	416.28	410.80	
SMH 129 TO SMH 133									
55	1+28.78	403.31	---	16'	2.00%	403.80	412.91	407.70	
53	1+31.01	403.36	---	27'	2.00%	404.07	413.59	407.97	
56	1+88.78	404.46	---	16'	2.00%	404.95	414.13	408.85	
54	1+91.26	404.51	---	27'	2.00%	405.22	414.81	409.12	
FUT. LOT 6	0 SMH 133	409.42	---	27'	2.00%	409.46	415.91	409.96	
FUT. LOT 4	0 SMH 133	409.42	---	16'	2.00%	409.24	415.27	409.74	



BENCHMARKS											
BENCHMARK #1					BENCHMARK #2						
36E4					36E5						
N 560,264.364 E 1,359,398.707 ELEVATION=414.194'					N 558,664.719 E 1,359,171.264 ELEVATION=406.852'						
ASBUILT FIELD DATA W/S											
LOT	FROM	DIST'	LOT	FROM	DIST'	LOT	FROM	DIST'	LOT	FROM	DIST'
10	11+07.00	85'	1	SMH103	53'	85	SMH103	184'	2	SMH107	113'
18	11+21.30	42'	2	SMH103	20'	20	SMH103	184'	4	SMH103	184'
31	11+07.00	42'	26	SMH103	144'	37	SMH103	26'	4	SMH103	184'
20	F.H. 27'	28	SMH103	20'	20	SMH103	31'	52	SMH103	22'	
12	SMH103	37'	20	SMH103	85'	20	SMH103	32'	64	SMH103	35'
13	SMH103	207'	40	SMH103	147'	21	SMH103	36'	66	SMH103	36'
14	SMH103	128'	28	SMH103	130'	20	SMH103	116'	68	SMH103	36'
17	SMH103	140'	41	SMH103	128'	38	SMH103	100'	70	SMH103	36'
16	SMH103	220'	42	SMH103	82'	36	SMH103	82'	72	SMH103	36'
19	SMH103	47'	43	SMH103	27.5'	31	SMH103	27'	74	SMH103	36'
24	SMH103	50'	44	SMH103	14'	42	SMH103	45'	76	SMH103	36'
15	SMH103	20'	45	SMH103	14'	43	SMH103	51'	78	SMH103	36'
28	SMH103	38'	46	SMH103	28'	44	SMH103	45'	80	SMH103	36'
9	SMH103	49'	47	SMH103	27'	45	SMH103	25'	82	SMH103	36'
7	SMH103	62'	48	SMH103	106.5'	46	SMH103	18'	84	SMH103	36'
8	SMH103	100'	49	SMH103	128'	47	SMH103	37'	86	SMH103	36'
2	SMH103	17'	50	SMH103	184'	47	SMH103	46'	88	SMH103	36'
10	SMH103	170'	27	SMH103	405'	25	SMH103	110'	90	SMH103	36'
11	SMH103	60'	42	SMH103	41'	86	SMH103	160'	92	SMH103	36'
30	SMH103	80'	50	SMH103	204'	48	SMH103	98'	94	SMH103	36'
4	SDMH103	67'	50	SMH103	40'	48	SMH103	120'	96	SMH103	36'
12	SDMH103	60'	51	SMH103	184'	49	SMH103	85'	98	SMH103	36'
13	SDMH103	34'	52	SMH103	120'	50	SMH103	177'	100	SMH103	36'
31	SMH103	37'	53	SMH103	187.5'	50	SMH103	59'	102	SMH103	36'
32	SMH103	28'	54	SMH103	110'	50	SMH103	168'	104	SMH103	36'
64	SMH103	82.5'	55	SMH103	20'	4	SMH103	20'	106	SMH103	36'
1	SMH103	67'	56	SMH103	220'	3	SMH103	27'	108	SMH103	36'

- ### GENERAL NOTES
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, DETAILS AND SPECIFICATIONS FOR CONSTRUCTION.
  - COORDINATES SHOWN HEREON ARE BASED ON MARYLAND COORDINATE SYSTEM NAD '83 AS MONUMENTED BY HOWARD COUNTY GEODETIC CONTROL STATION 36E4 AND 36E5.
  - 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 PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
  - 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 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.
  - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARDS SPECIFICATIONS AND DETAILS 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 TEST 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   |
| BALTIMORE GAS & ELECTRIC CO. CONTRACTOR SERVICES              | 410-850-4620   |
| BALTIMORE GAS & ELECTRIC CO. UNDERGROUND DAMAGE CONTROL       | 410-291-4607   |
| MISS UTILITY                                                  | 1-800-257-7777 |
| BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS | 410-313-4900   |
| VERIZON                                                       | 1-800-446-5266 |
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- 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' OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO THE 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 THE PLANS OR IN THE SPECIFICATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- THE FIRE HYDRANTS SHALL BE INSTALLED AS PER STANDARD DETAIL W 2.11.
- FIRE HYDRANTS WILL BE LOCATED 1' FROM THE BACK OF CURB UNLESS OTHERWISE NOTED.
- HOWARD COUNTY DPW IS HEREBY GRANTED PERMISSION TO ACCESS PRIVATE LOTS SHOWN ON THESE PLANS IN ORDER TO MAINTAIN PUBLIC WATER AND SEWER HOUSE CONNECTIONS AT THE CURB STOPS AND/OR CLEANOUTS.
- SEWER HOUSE CONNECTIONS TO BE 4" IN SIZE.
- THERE ARE TO BE NO TWIN SEWER HOUSE CONNECTIONS.
- STANDARD SLOPE FOR SEWER HOUSE CONNECTIONS IS 2%, WITH A MINIMUM SLOPE OF 1% AND A MAXIMUM SLOPE OF 5%.
24. MINIMUM SIZE WATER HOUSE CONNECTION IS 1"
25. ALL SEWER MAINS SHALL BE P.V.C. UNLESS OTHERWISE NOTED.
26. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
27. SEE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS WP-01-09, S-00-02, P-00-13, F-01-22, SDP-01-16.
28. CONTRACTOR SHALL LOCATE CURBSTOPS AND CLEANOUTS 3 FEET FROM THE EDGE OF THE SIDEWALK AND OUTSIDE OF DRIVEWAYS IN THE EASEMENT PROVIDED.
29. FILL AREAS WITHIN THE RIGHT-OF-WAY AND UNDERNEATH PROPOSED UTILITIES IS TO BE SELECT BACKFILL, COMPACTED TO 95% COMPACTION IN ACCORDANCE WITH ASSHTO-T 180.

QUANTITIES				
ITEMS	QUANTITIES		AS-B	



PHASE TWO WATER SERVICES TO BE CONSTRUCTED UNDER PHASE 1 CONTRACT.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON ~~APP. 01-78~~ **F-01-22**.  
 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* / 12/16/00  
 HOWARD SOIL CONSERVATION DISTRICT / DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW.  
*[Signature]* / 12/16/00  
 U.S.D.C. - NATURAL RESOURCES CONSERVATION SERVICE / DATE

LEGEND	
MCE 100.00	MINIMUM CELLAR ELEVATION
---	EX. SAN. SEWER / TERMINAL MANHOLE
---	EX. STORM DRAIN
---	EX. WATER LINE
---	PROP. SAN. SEWER / LINE MANHOLE
---	PROP. SAN. SEWER / TERMINAL MANHOLE
---	PROPOSED WATER LINE
---	PROP. SAN. SEWER SERVICE
---	PROP. WATER SERVICE
---	PROP. STORM DRAIN LINES

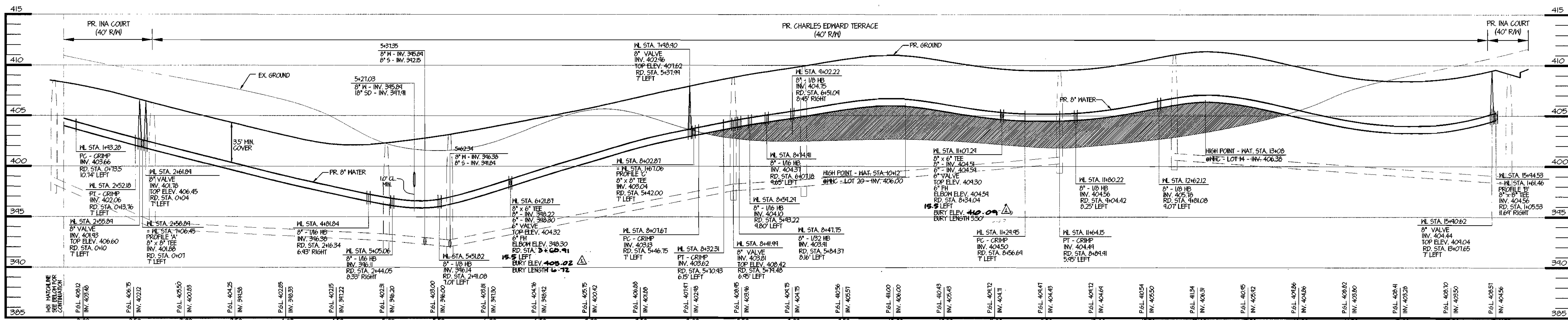
NOTE: CONTRACTOR SHALL LOCATE CURBSTOPS AND CLEANOUTS 3 FEET FROM THE EDGE OF THE SIDEWALK AND OUTSIDE OF DRIVEWAYS IN THE EASEMENT PROVIDED.

OWNER/DEVELOPER: FAX NO.: 410-712-9864  
 A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-7012  
 C. COMPANY: Ryland Homes  
 D. ADDRESS: 7250 Parkway Drive, Suite 520  
 E. CITY: Hanover STATE: MD. ZIP: 21076

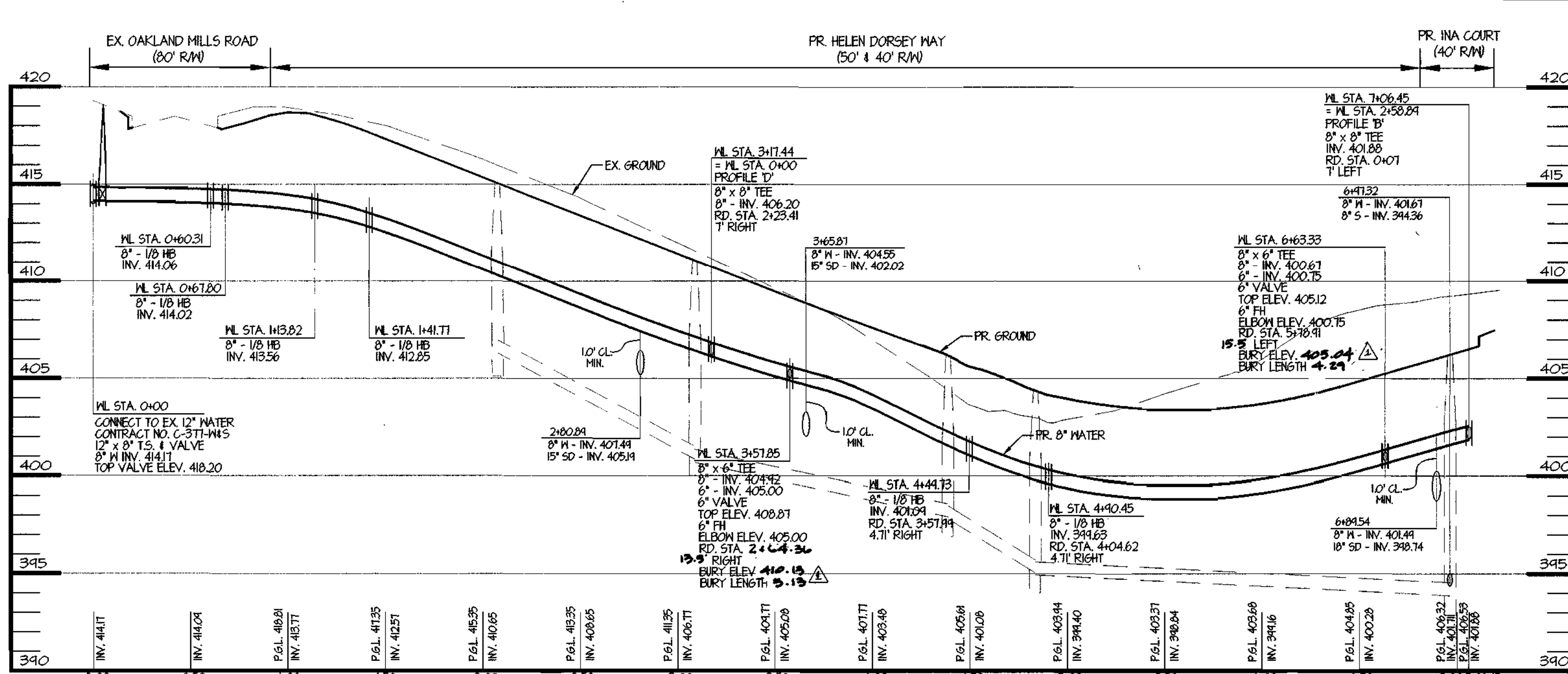


REVISION # 1 ONLY  
 PIERO VAN WELLOTS P.E. # 21875  
 FINAL PLAN REFERENCE \*F-01-22 60P REFERENCE \*SDP-01-16

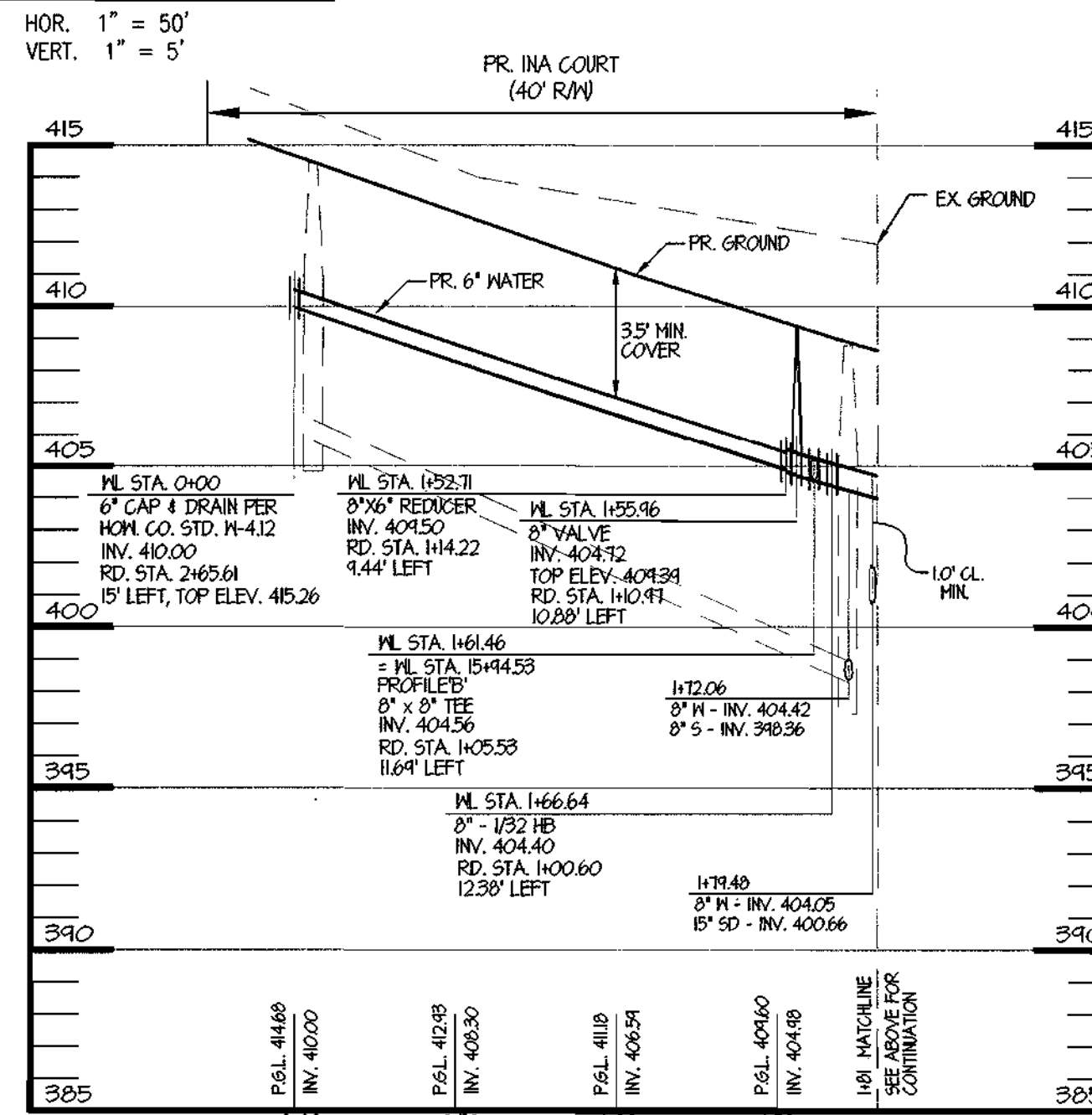
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert M. Beaman 12-7-00 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND [Signature] 12/14/00 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	MRA MORRIS & RITCHIE ASSOCIATES, INC. ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS 9090 JUNCTION DRIVE SUITE 9 ANNAPOLIS JUNCTION, MARYLAND 20701 (410) 792-9792 or (301) 776-1890 FAX (410) 792-7395	DES: TCN/CAO DRN: TCN/CAO CHK: MJE DATE: 11/29/00	DESIGNED BY: MJE DATE: 8/24/01 CHECKED BY: [Signature] DATE: 9/19/01	FINAL WATER MAIN & SEWER SYSTEM PLAN SHEET 600' SCALE MAP NO. 36 BLOCK NO. 10	ECKER'S HOLLOW SECTION 1, PHASE 1 (LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B) OAKLAND MILLS ROAD 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT # 24-3917-D SCALE: 1" = 50' SHEET 2 OF 4
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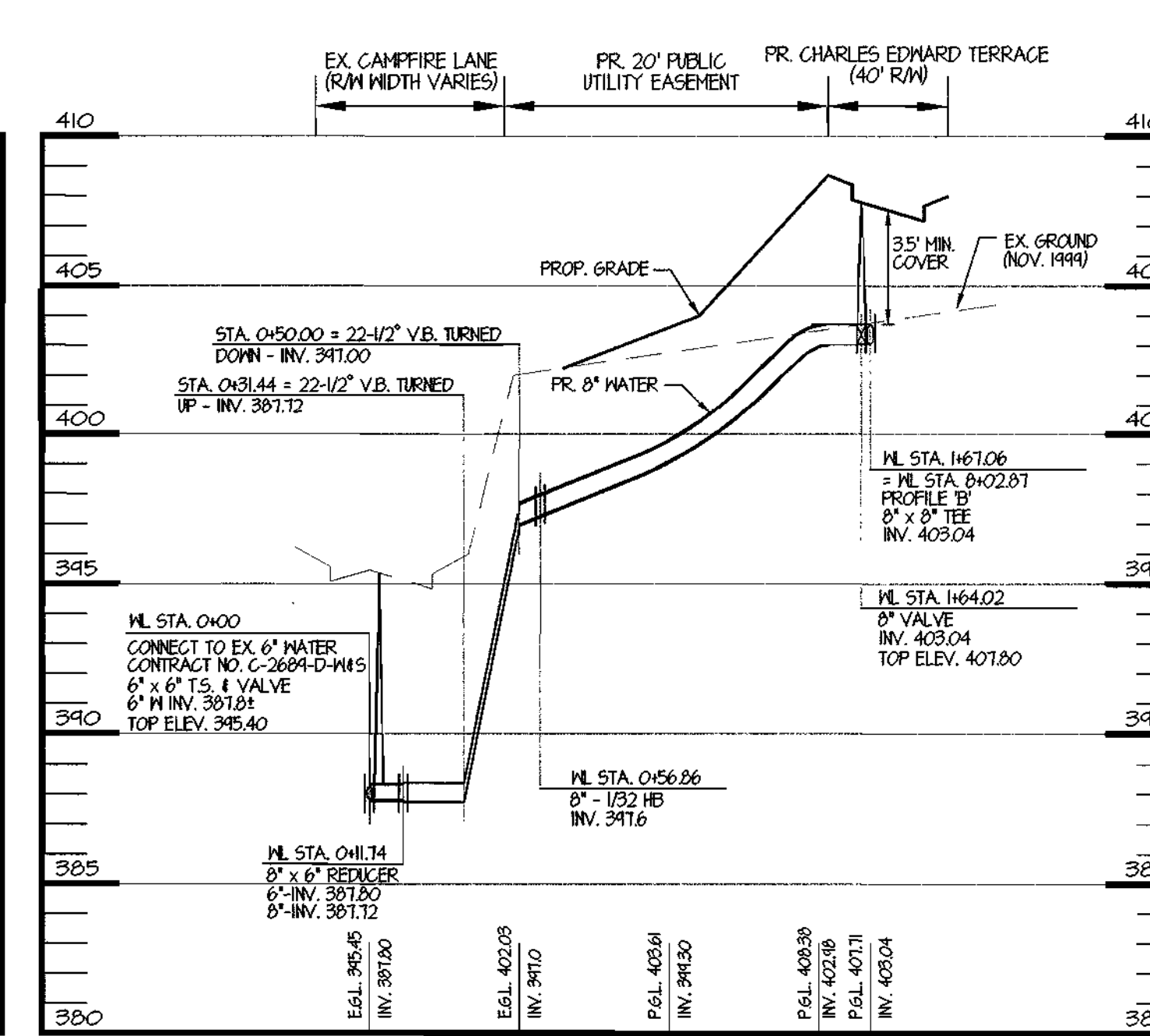
**WATER PROFILE 'B'**



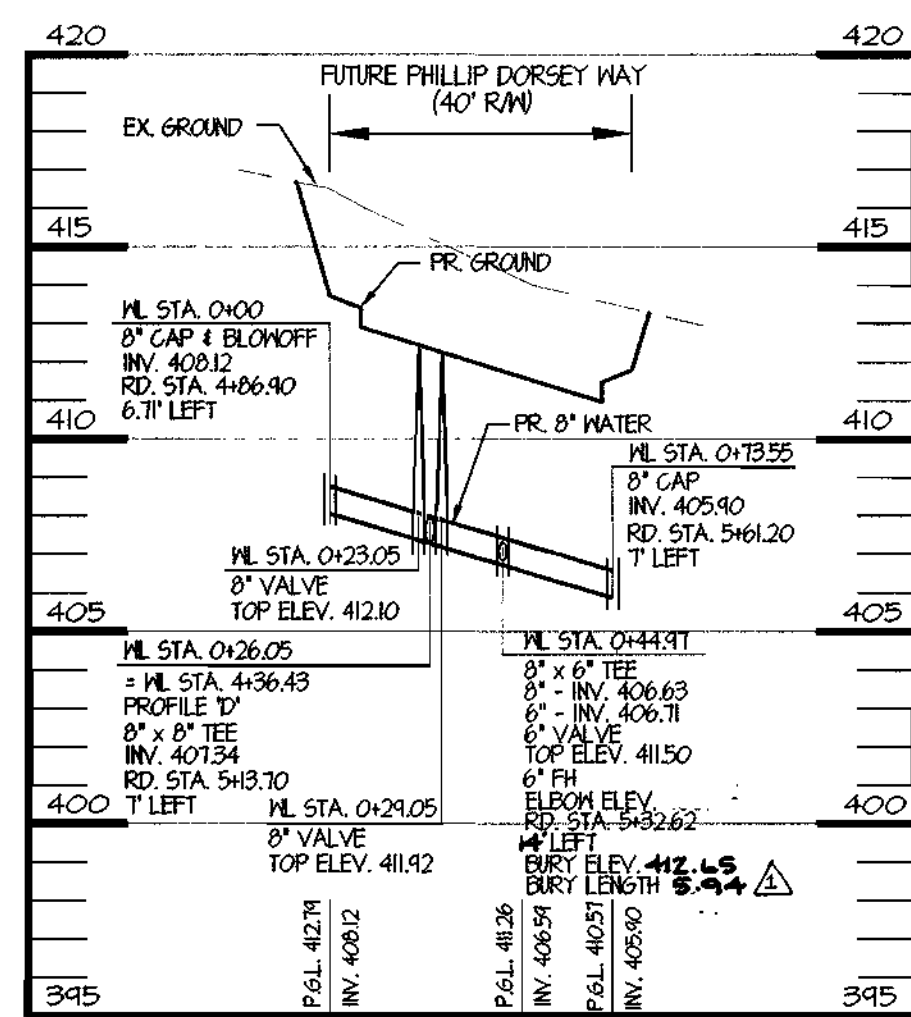
**WATER PROFILE 'A'**



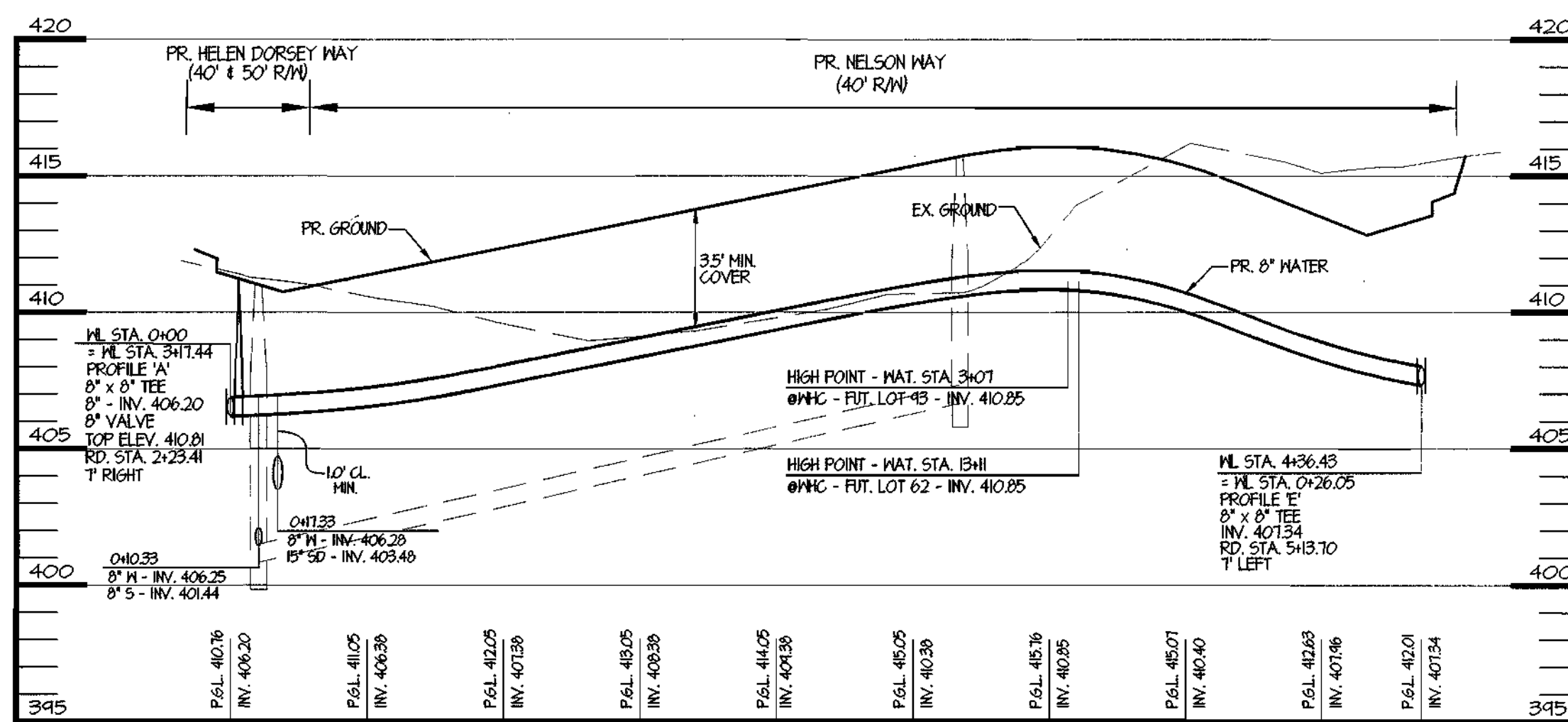
**WATER PROFILE 'B'**



**WATER PROFILE 'C'**



**WATER PROFILE 'E'**



**WATER PROFILE 'D'**

CONTROLLED AND COMPACTED FILL AS DIRECTED BY AN APPROVED SOILS ENGINEER. TO 95% COMPACTION



REVISION #1 ONLY  
PIERO VAN MELLITS P.E. # 21875

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON SHEET 24-391-D-22  
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
12/14/00

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW  
DATE 12/14/00

OWNER/DEVELOPER: A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-9864  
C. COMPANY: Ryland Homes  
D. ADDRESS: 7250 Parkway Drive, Suite 520  
E. CITY: Hanover STATE: MD. ZIP: 21076

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Robt. B. ... 12-7-00  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
... 12/14/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

MRA  
MORRIS & RITCHIE ASSOCIATES, INC.  
ENGINEERS, PLANNERS, SURVIVORS AND LANDSCAPE ARCHITECTS  
9090 JUNCTION DRIVE SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9732 or (301) 778-1690  
FAX (410) 792-7395

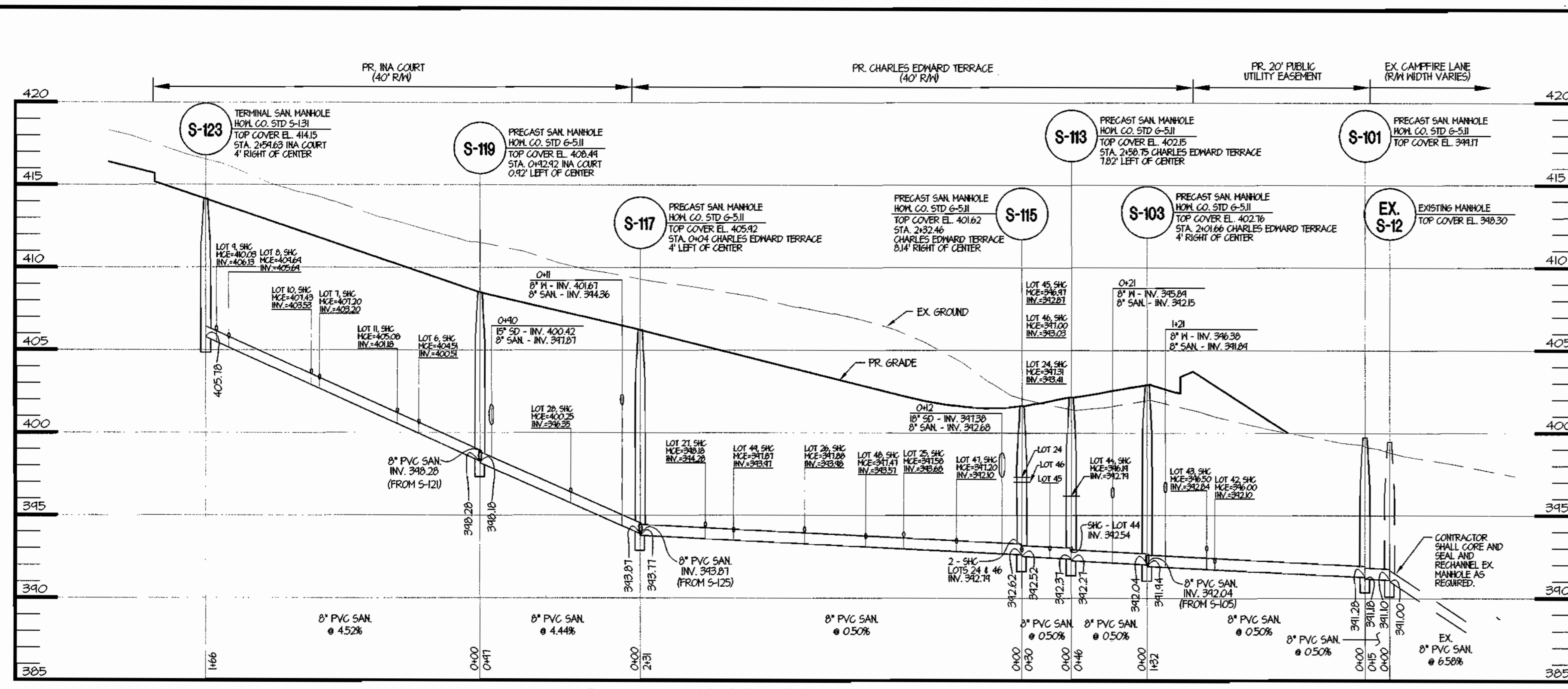


DES: TCN/CAO  
DRN: TCN/CAO  
CHK: MJE  
DATE: 11/29/00

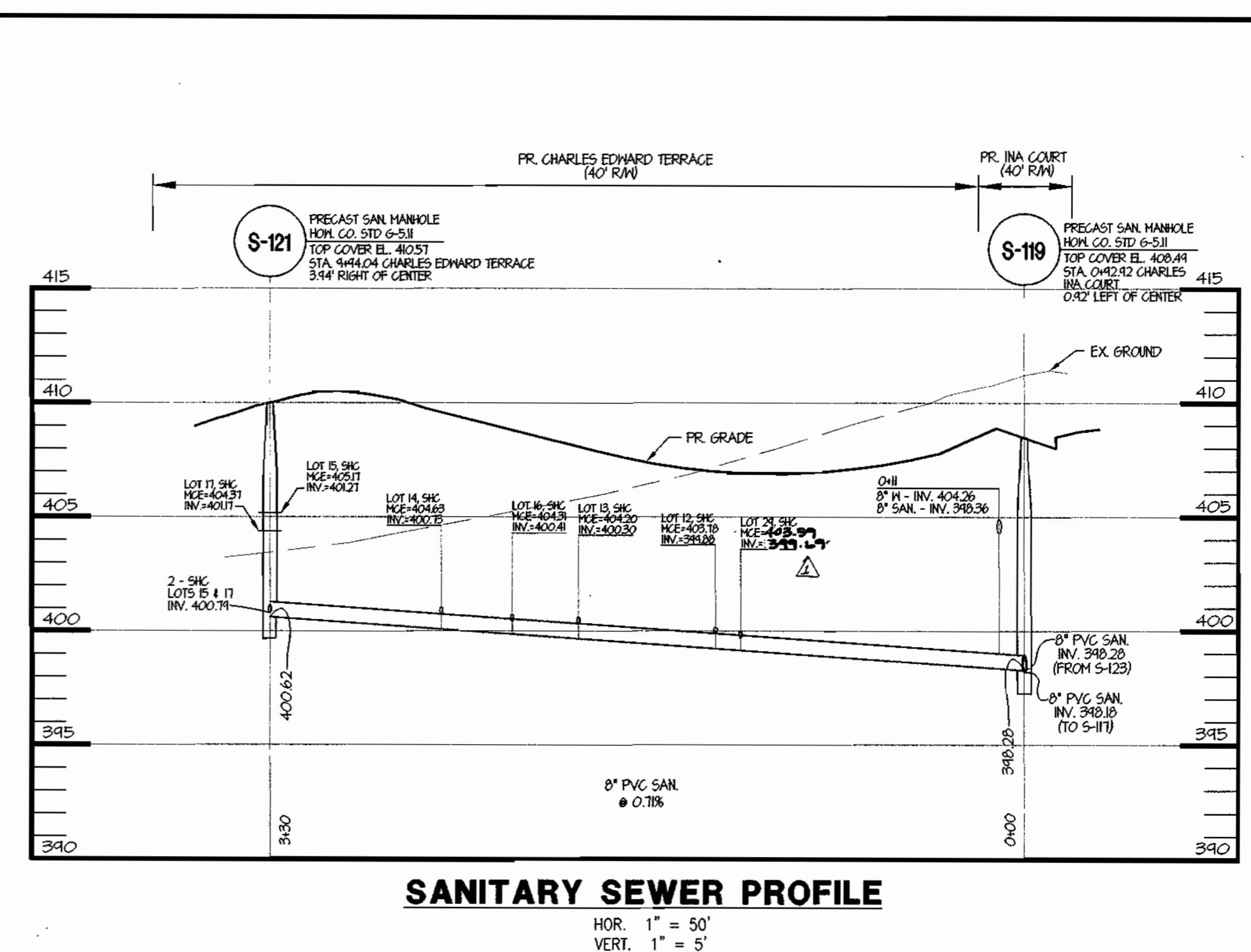
BY NO.	REVISIONS	DATE
MRA	REVISE PLAN FOR P&Z 24-391-D	8/24/01
K.C.I.	ASBUILT DATA ADDED TO PLAN	09/19/01

FINAL  
WATER MAIN & SEWER SYSTEM  
WATER PROFILE  
600' SCALE MAP NO. 36 BLOCK NO. 10

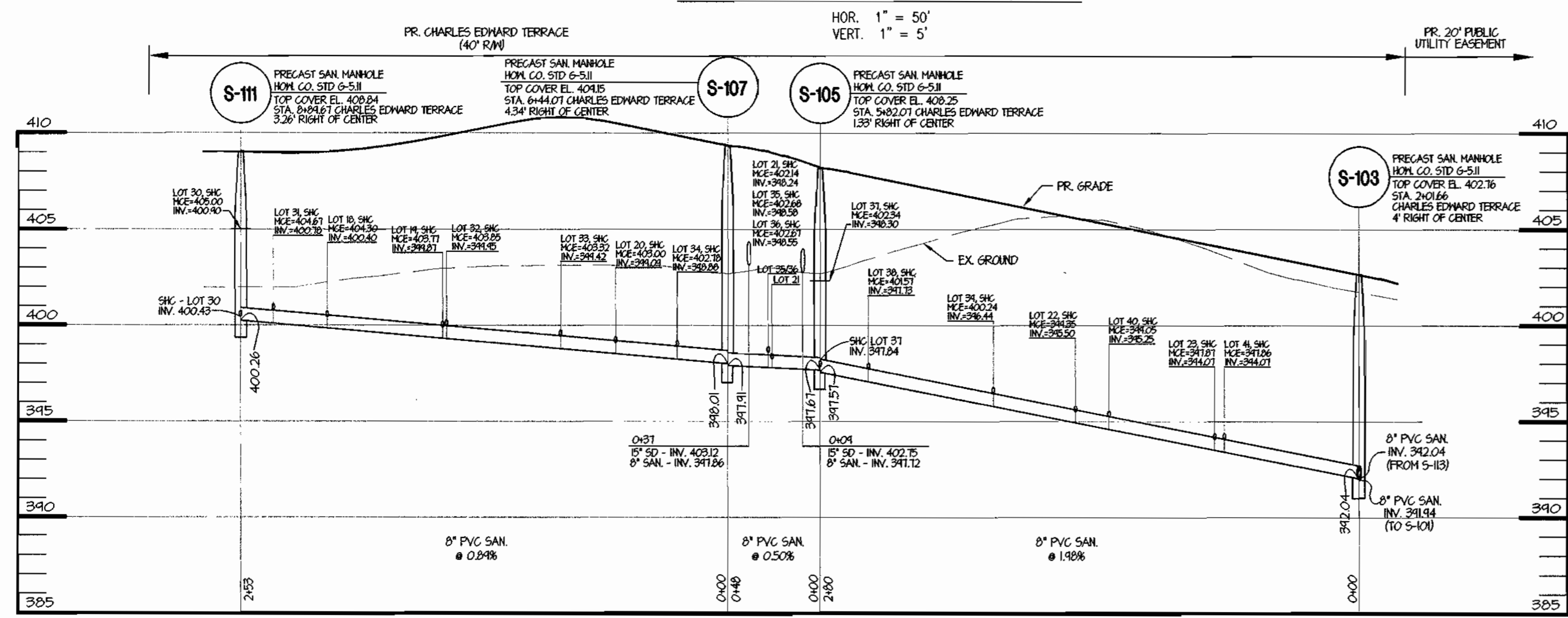
ECKERS HOLLOW  
SECTION 1, PHASE 1  
(LOTS 1-50, OPEN SPACE LOTS 51-60, NON-BUILDABLE PARCELS A & B)  
OAKLAND MILLS ROAD  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT # 24-391-D  
SCALE AS SHOWN  
SHEET 3 OF 4



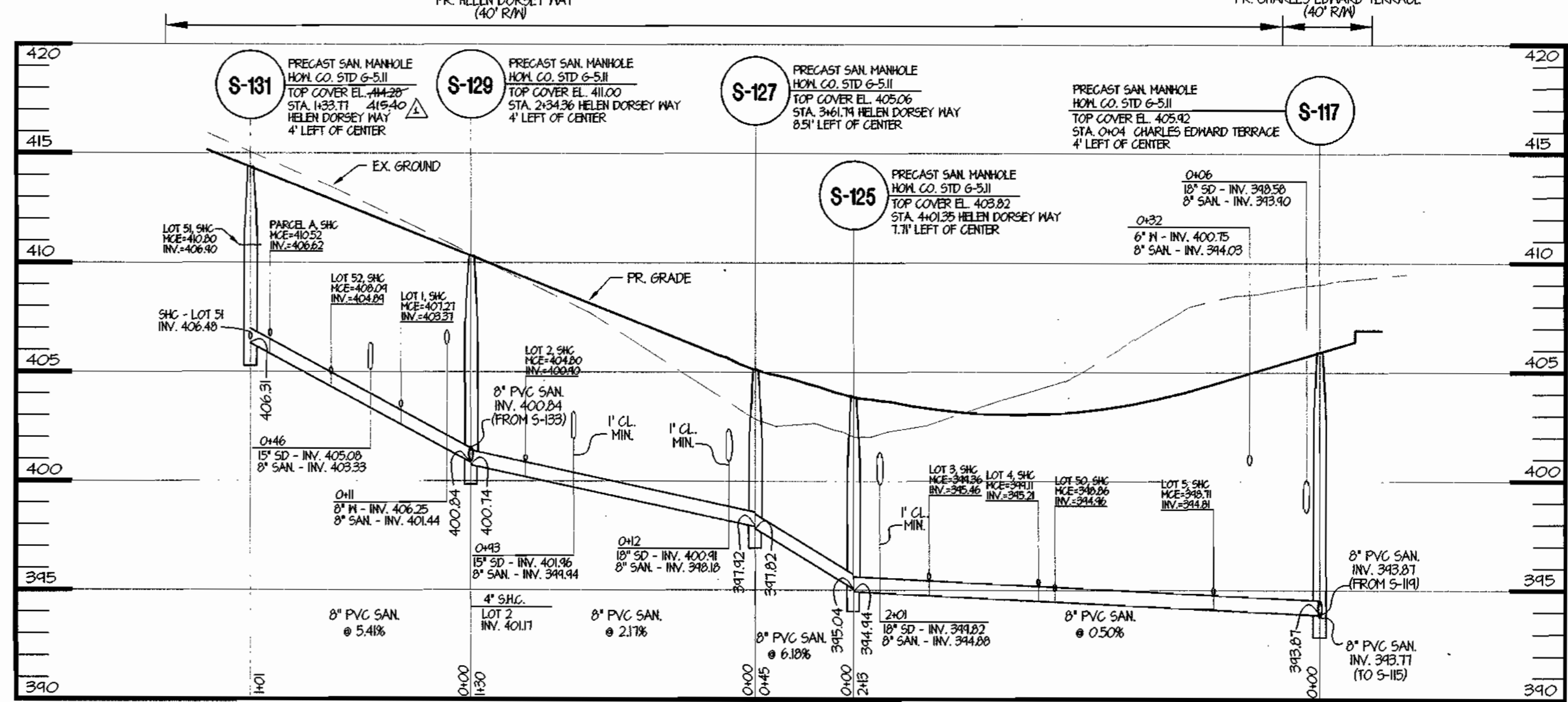
**SANITARY SEWER PROFILE**



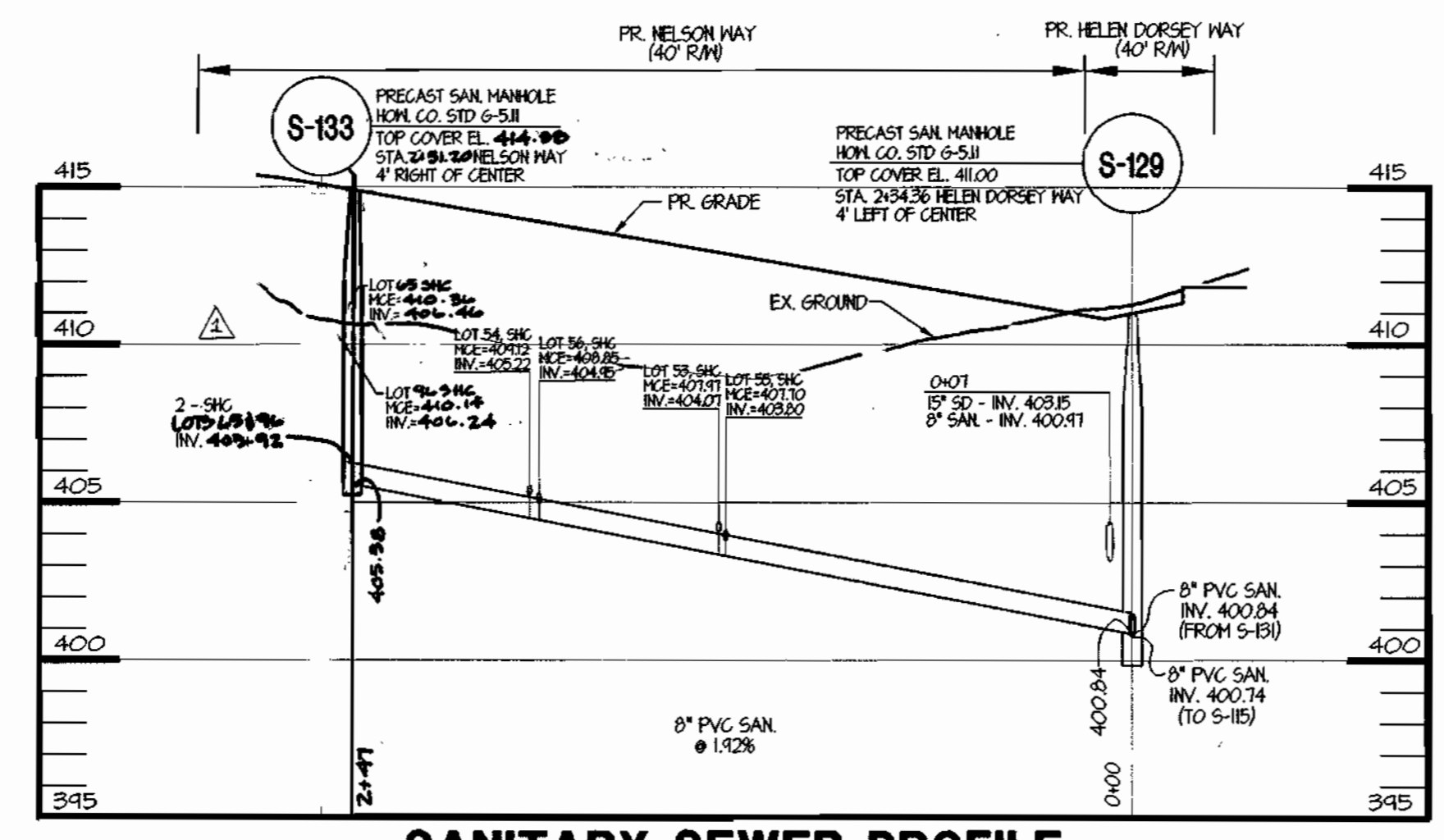
**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**



**SANITARY SEWER PROFILE**

STR. NO.	TOP ELEV.	IN IN.	IN IN.	IN IN.	TYPE	REMARKS	NORTHING	EASTING
S-101	399.17	391.28	---	391.18	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,820.27	1,360,050.2
S-103	402.76	392.04	392.04	391.94	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,900.54	1,359,945.62
S-105	408.25	397.67	397.84	397.57	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,678.52	1,359,775.65
S-107	409.15	398.01	---	397.91	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,677.29	1,359,727.35
S-111	408.84	---	400.43	400.25	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,807.13	1,359,510.19
S-113	402.15	392.37	392.54	392.27	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,937.01	1,359,972.88
S-115	401.62	392.62	392.79	392.52	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,966.12	1,359,965.06
S-117	405.92	393.87	393.87	393.77	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,106.82	1,359,781.82
S-119	408.49	398.28	398.28	398.18	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,158.02	1,359,699.41
S-121	410.57	400.79	400.79	400.62	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	559,896.47	1,359,498.57
S-123	414.15	---	---	---	TERMINAL MANHOLE	HOWARD CO. STD. DETAIL S-1.31	560,258.28	1,359,566.53
S-125	403.82	395.04	---	394.94	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,275.79	1,359,910.94
S-127	405.06	397.92	---	397.82	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,320.32	1,359,906.07
S-129	411.00	400.84	400.84	400.74	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,399.61	1,359,802.80
S-131	415.40	406.48	406.31	---	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,460.88	1,359,723.02
S-133	414.80	408.92	408.92	408.88	PRECAST MANHOLE	HOWARD CO. STD. DETAIL G-5.11	560,597.70	1,359,750.78

● COORDINATES TO CENTERLINE OF STRUCTURE

NOTE: ALL SHC INVERT ELEVATIONS SHOWN ON THESE PLANS ARE THE INVERT ELEVATION AT THE ROW OR EASEMENT LINE WITH THE SHC RUN AT 2% FROM THE MAIN 8" SANITARY LINE.



REVISION # 1 ONLY  
PIERO VAN MELLITS P.E. # 21875

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON 2-21-22

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

*[Signature]* 12/16/20  
HOWARD SOIL CONSERVATION DISTRICT DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

*[Signature]* 12/16/20  
U.S.D.A. - NATURAL RESOURCES CONSERVATION SERVICE DATE

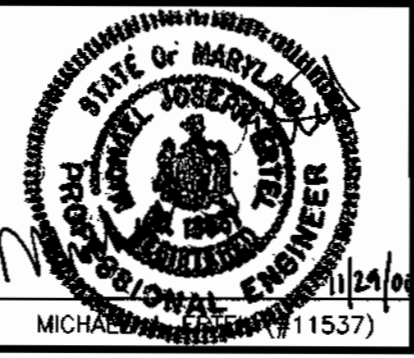
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 12-7-20  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 12/14/20  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MRA  
MORRIS & RITCHIE ASSOCIATES, INC.  
ENGINEERS, PLANNERS, SURVEYORS AND LEGAL AGENTS  
9090 JUNCTION DRIVE SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-8792 or (301) 776-1690  
FAX (410) 792-7595



DES: TCN/CAO  
DRN: TCN/CAO  
CHK: MJE  
DATE: 11/29/00

REVISIONS  
BY NO. DATE

1 AS-BUILT DATA ADDED TO PLAN 8/22/01  
2 9/20/04

FINAL PLAN REFERENCE # F-01-22 SOP REFERENCE # SOP-01-16

FINAL WATER MAIN & SEWER SYSTEM SEWER PROFILES  
600' SCALE MAP NO. 36 BLOCK NO. 10

ECKERS HOLLOW SECTION 1, PHASE 1  
(LOTS 1-56, OPEN SPACE LOTS 57-60, NON-BUILDABLE PARCELS A & B)  
OAKLAND MILLS ROAD  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT # 24-3917-D

SCALE AS SHOWN  
SHEET 4 OF 4

OWNER/DEVELOPER FAX NO.: 410-712-9864  
A. NAME: Doug Eshelman B. DAYTIME TELEPHONE: 410-712-7012  
C. COMPANY: Ryland Homes  
D. ADDRESS: 7250 Parkway Drive, Suite 520  
E. CITY: Hanover STATE: MD. ZIP: 21076