

MD 216 RELOCATED FROM EAST OF US 29 TO WEST OF I-95 WATER AND SEWER UTILITIES RELOCATIONS

**CAPITAL PROJECT W-8282
CONTRACT NO. 24-4018**

GENERAL NOTES:

PART I

1. APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83.
3. ALL VERTICAL CONTROLS ARE BASED ON NAVD 29.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
6. FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. 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.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - AT&T.....1-800-526-2000
 - BGE (CONTRACTOR SERVICES).....410-850-4620
 - BGE (UNDERGROUND DAMAGE CONTROL).....410-787-9068
 - BUREAU OF UTILITIES.....410-313-4900
 - VERIZON.....1-800-621-9900
 - COLONIAL PIPELINE CO.....410-795-1390
 - MISS UTILITY.....1-800-257-7177
 - STATE HIGHWAY ADMINISTRATION.....410-531-5533
9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
10. 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.
11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(d) OF THE HOWARD COUNTY CODE.
12. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY BUREAU OF UTILITIES FIFTEEN (15) DAYS PRIOR TO MAKING ANY CONNECTIONS TO THE EXISTING WATER OR SEWER MAINS.

PART II WATER

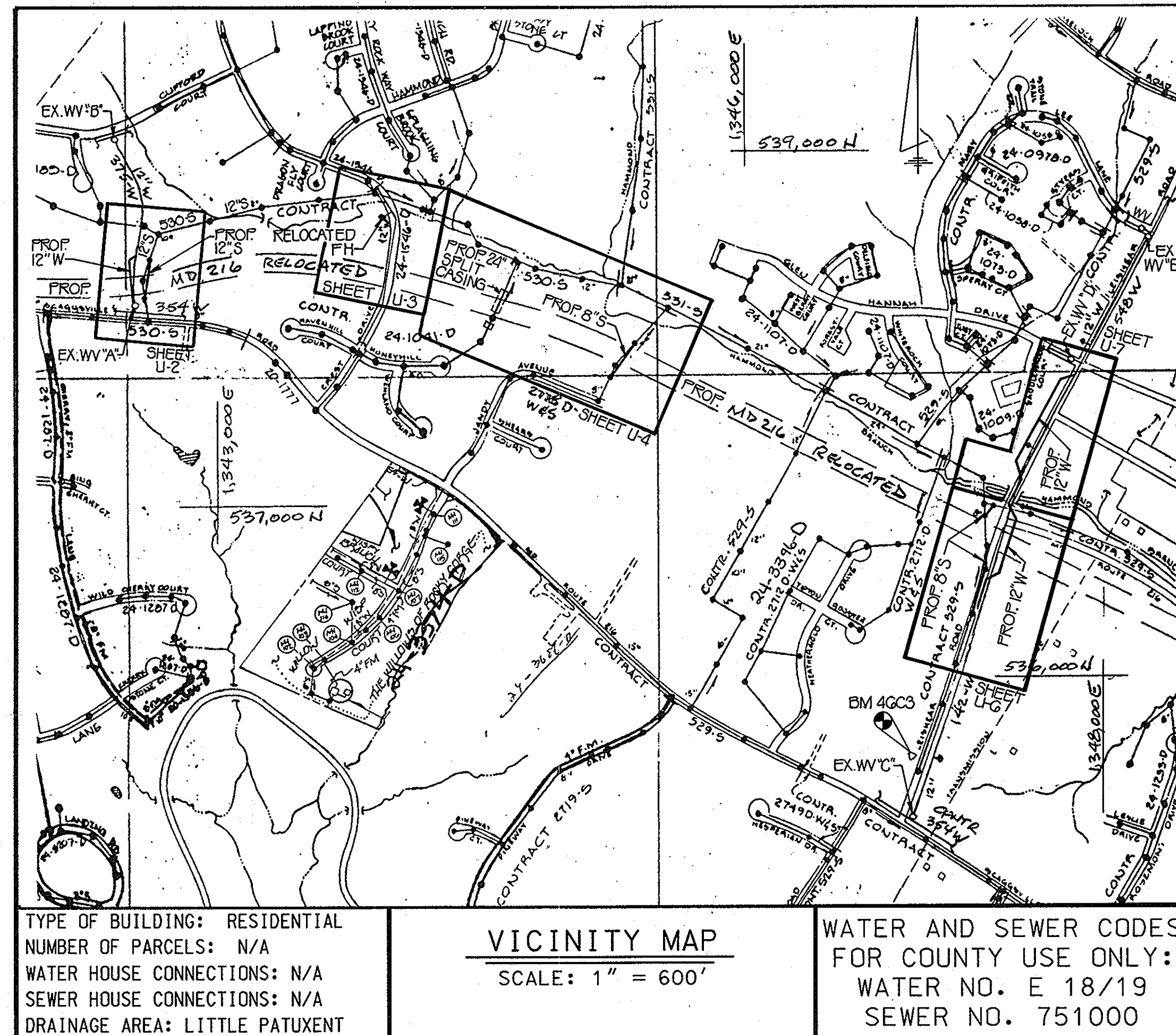
1. ALL WATER MAINS SHALL BE D.I.P. CLASS 52.
2. TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 4'-0" OF COVER UNLESS OTHERWISE NOTED.
3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
4. ALL FITTINGS SHALL BE RESTRAINED AND BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
5. FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

PART III SEWER

1. ALL SEWER MAINS SHALL BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
3. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

WATER QUANTITIES				
ITEM	QUANTITIES		TYPE MATERIAL	SUPPLIER
	ESTIMATED	AS BUILT		
12" WATER	1455 LF		DIP	US PIPE
12" WATER IN 36" STEEL CASING - OPEN CUT	370 LF		DIP & STEEL	US PIPE
FIRE HYDRANTS	1 EACH		---	MUELLER CO.
12" WATER IN 36" STEEL CASING (BORE & JACK)	100 LF		DIP & STEEL	US PIPE

SEWER QUANTITIES				
ITEM	QUANTITIES		TYPE MATERIAL	SUPPLIER
	ESTIMATED	AS BUILT		
8" SEWER	420 LF		DIP	U.S. PIPE
8" SEWER IN 24" STEEL CASING	150 LF		DIP & STEEL	U.S. PIPE
12" SEWER	25 LF		DIP	U.S. PIPE
12" SEWER IN 24" STEEL CASING (OPEN-CUT)	200 LF		DIP & STEEL	US PIPE
MANHOLES	50 VF		---	ATLANTIC PRECAST CONCRETE CO.
24" STEEL PIPE CASING	550 LF		STEEL	O.R.S. SALES CO.



NAME OF UTILITY CONTRACTOR: _____

BENCHMARKS				
N ^o	ELEV.	NORTHING	EASTING	DESCRIPTION
4GBA	426.400	537,545.794	1,339,849.092	U.S. ROUTE 29 0.15 MILES SOUTH OF MD ROUTE 216
4GBB	423.326	538,306.510	1,341,329.150	AT TRAFFIC CIRCLE MD RT. 216 EAST OF U.S. RT. 29
4GC3	334.537	537,405.871	1,347,556.240	LEISHEAR ROAD 400' NORTH OF MD RT. 216
47AA	363.346	538,361.685	1,348,438.970	LEISHEAR ROAD 260' SOUTH OF GRAELOCK RD.
BAS8	436.366	538,932.730	1,340,077.863	IN PARKING LOT, NW CORNER MD RT. 216 AT U.S. RT. 29

NOTE:
THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES. CUT SHEETS SHALL BE PREPARED BASED ON THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS.

INDEX OF SHEETS		
SHEET NO.	DWG. NO.	DESCRIPTION
1	U-1	TITLE SHEET
2	U-2	PLAN AND PROFILE
3	U-3	PLAN AND PROFILE
4	U-4	PLAN
5	U-5	PROFILE
6	U-6	PLAN AND PROFILE
7	U-7	PLAN AND PROFILE
8	U-8	PROFILE AND DETAILS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

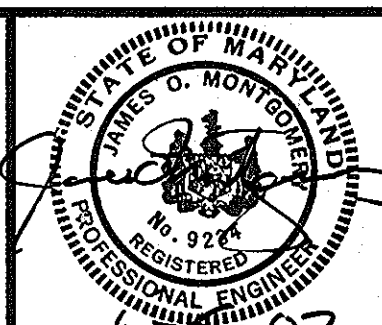
[Signature] 9/4/02
DIRECTOR OF PUBLIC WORKS

[Signature] 8/29/02
CHIEF, BUREAU OF ENGINEERING

[Signature] 9-4-02
CHIEF, BUREAU OF UTILITIES

[Signature] 8-29-02
CHIEF, UTILITY DESIGN DIVISION

WALLACE, MONTGOMERY & ASSOCIATES, LLP
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21284



DES: LAF
DRN: KJP
CHK: JJS
DATE: JUNE 2002

ADD. 1: ADDED BENCHMARK DATA & REVISED 8/29/02
VICINITY MAP

BY NO. _____ REVISION _____ DATE _____

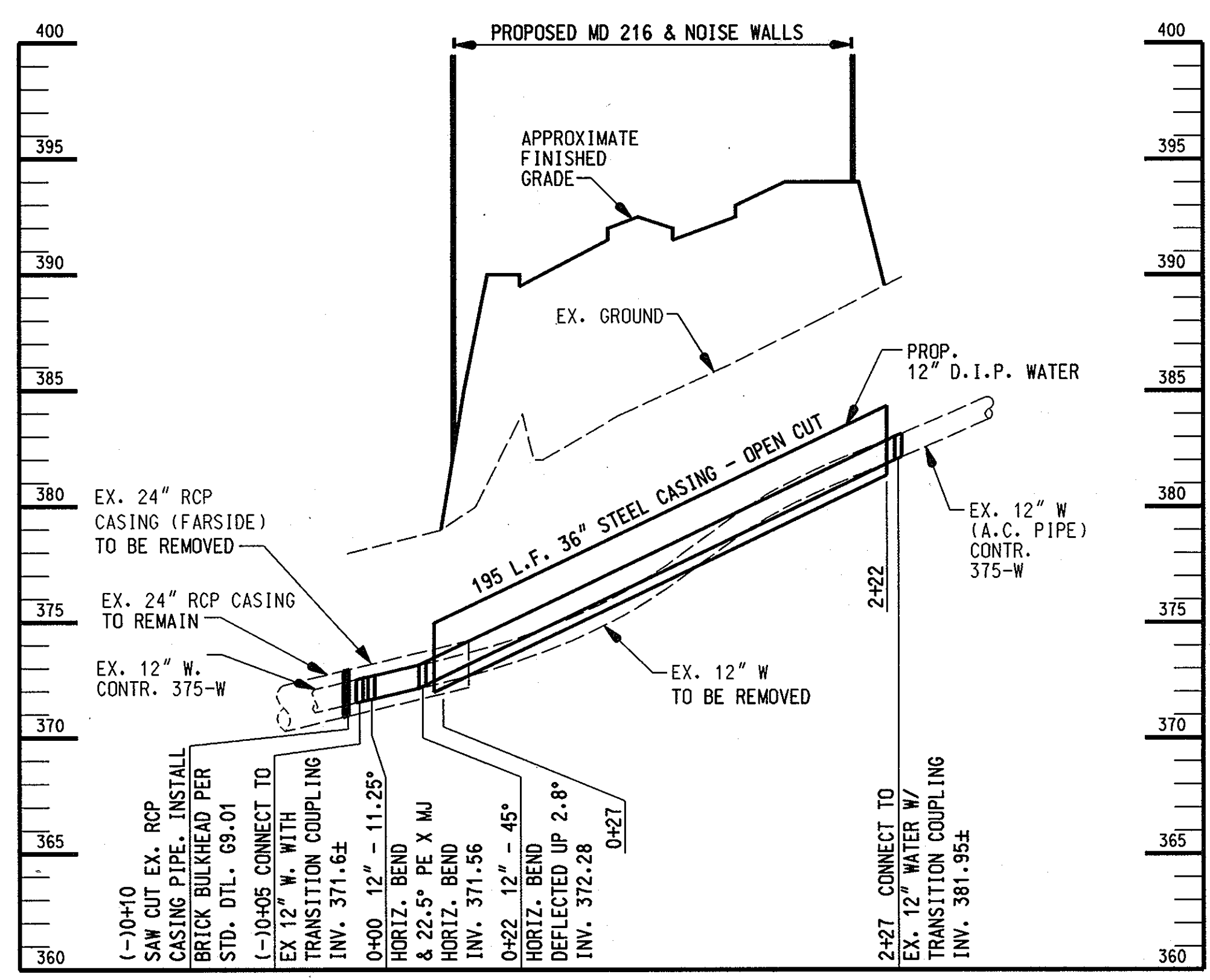
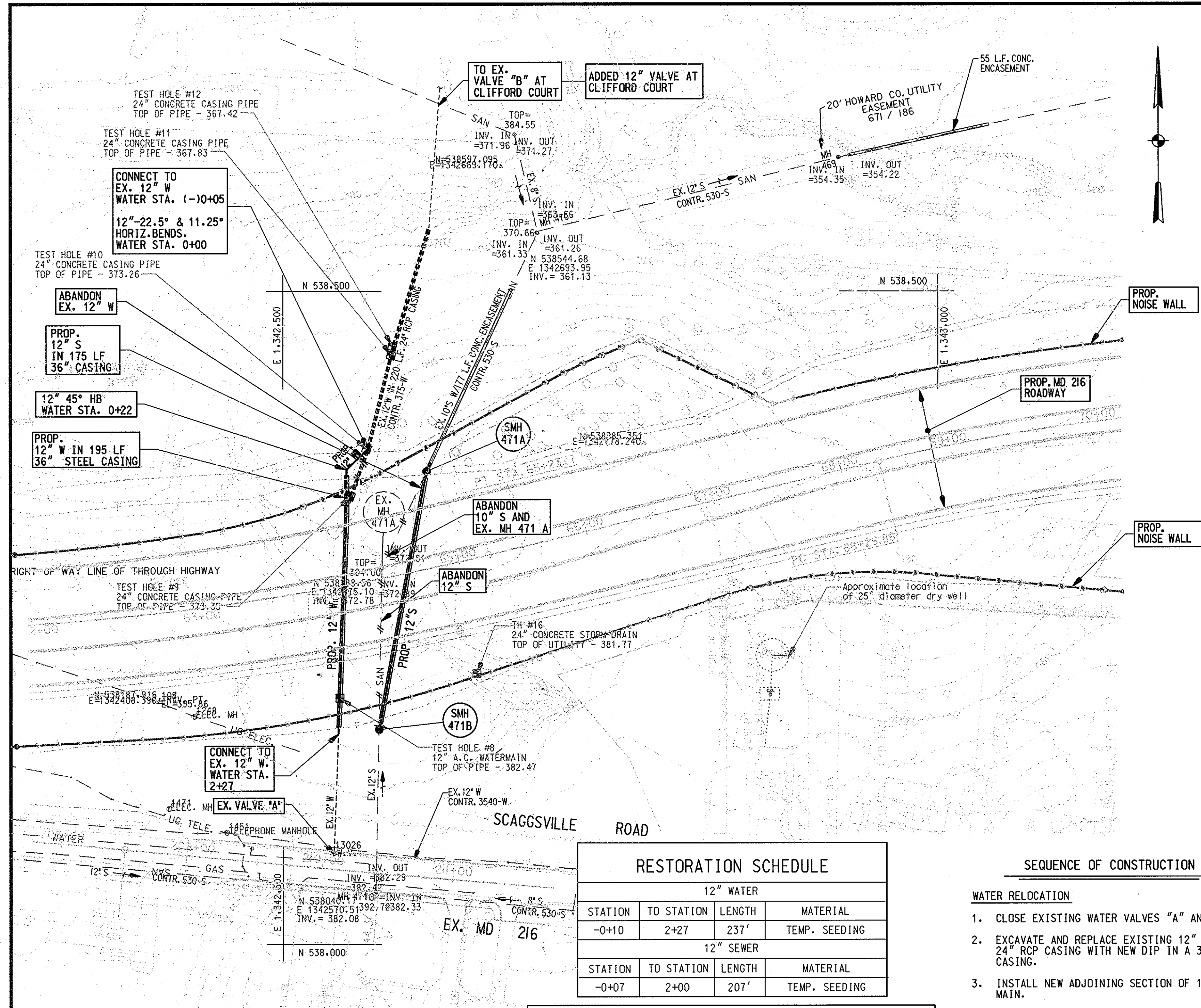
WATER & SEWER RELOCATIONS
TITLE SHEET

600' SCALE MAP NO. 46 BLOCK NO. 4.5.12

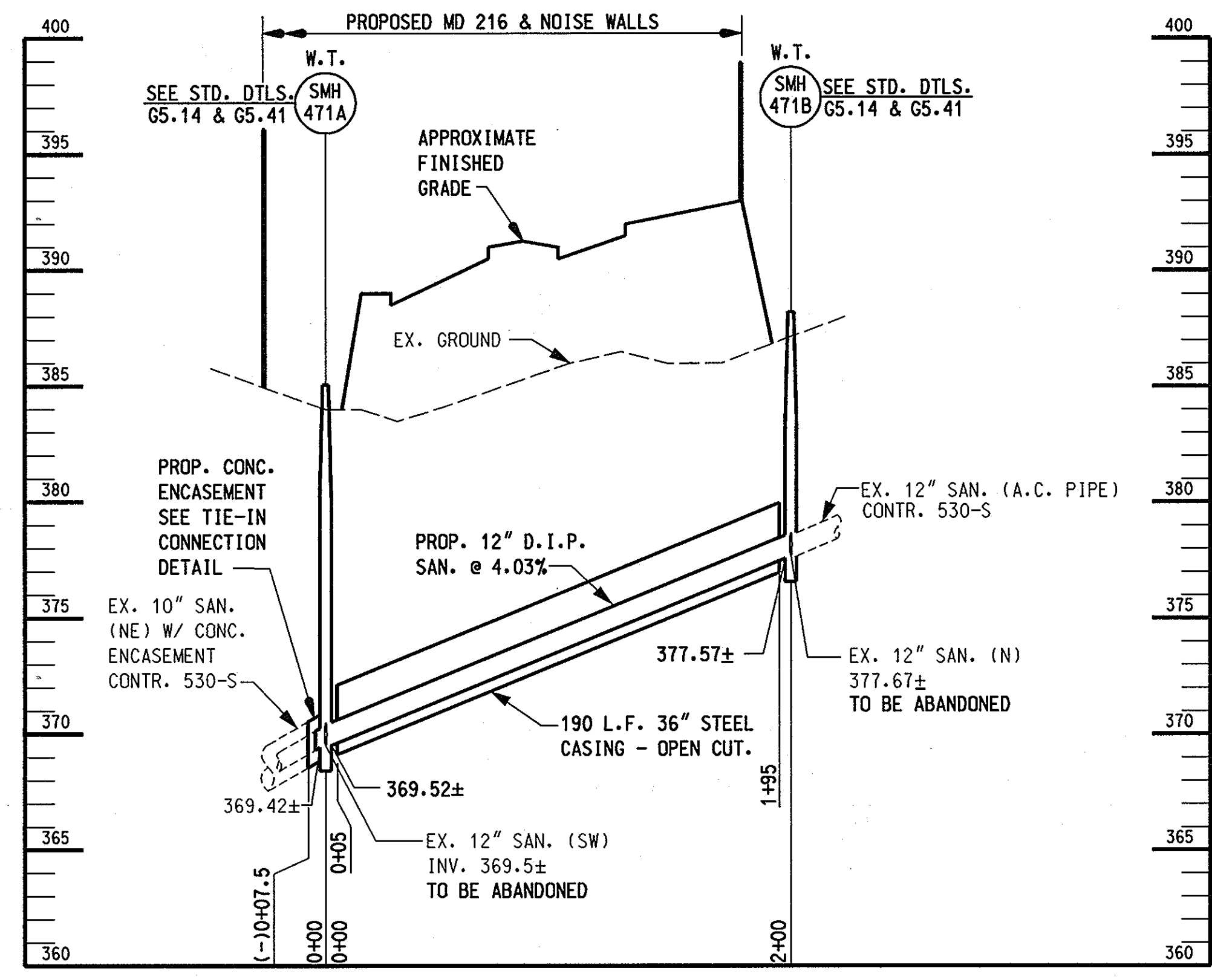
MD 216 RELOCATED FROM US 29 TO I-95
CAPITAL PROJECT W-8212
CONTRACT NO. 24-4018
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 8

"AS BUILT" 2/2/06 SHA CONTRACT NO. H0306B21 **AS-BUILT** U-1



12" WATER PROFILE
(B.L. STA. 63+80)
SCALE: 1"=50' HORIZ.
1"=5' VERT.



12" GRAVITY SEWER PROFILE
(B.L. STA. 64+58)
SCALE: 1"=50' HORIZ.
1"=5' VERT.

RESTORATION SCHEDULE

12" WATER			
STATION	TO STATION	LENGTH	MATERIAL
-0+10	2+27	237'	TEMP. SEEDING
12" SEWER			
STATION	TO STATION	LENGTH	MATERIAL
-0+07	2+00	207'	TEMP. SEEDING

- SEQUENCE OF CONSTRUCTION**
- WATER RELOCATION**
- CLOSE EXISTING WATER VALVES "A" AND "B".
 - EXCAVATE AND REPLACE EXISTING 12" WATER IN 24" RCP CASING WITH NEW DIP IN A 36" STEEL CASING.
 - INSTALL NEW ADJOINING SECTION OF 12" DIP WATER MAIN.
 - PERFORM LEAKAGE TESTS AND DISINFECTION.
 - TIE INTO EXISTING WATER MAIN.
 - SEAL EXISTING 24" RCP CASING PIPE.
 - REOPEN EXISTING WATER VALVES "A" AND "B".
- SEWER RELOCATION**
- INSTALL TEMPORARY BY-PASS PUMPING SYSTEM.
 - INSTALL PROPOSED 12" SEWER SYSTEM.
 - PERFORM SEWER TESTS.
 - ABANDON EXISTING SEWER SYSTEM.
 - REMOVE BY-PASS PUMPING SYSTEM.

STAKEOUT TABLE

WATER			
STATION	DESCRIPTION	NORTH	EAST
-0+05	CONNECT TO EX. 12" W	538384.50	1342566.20
0+00	12" 22.5° AND 11.25° H.B.	538379.64	1342565.00
0+22	12" 45° H.B.	538363.63	1342548.58
2+27	CONNECT TO EX. 12" W	538161.49	1342542.28
SEWER			
STATION	DESCRIPTION	NORTH	EAST
-0+07	CONNECT TO EX. 10" S	538369.05	1342612.78
0+00	SMH 471 A	538362.24	1342609.62
2+00	SMH 471 B	538164.77	1342573.27

NOTE: AFTER CONSTRUCTION OF WATER AND SEWER MAINS, PLACE FIBERGLASS UTILITY MARKERS OVER CENTERLINE OF NEW MAINS AT THE PROPOSED NOISE WALL CROSSINGS.

EXISTING UTILITY SCHEDULE

WATER			
FROM SHA STA.	TO SHA STA.	LENGTH	DESCRIPTION
64+24, 280'LT	64+49, 281'LT	48'	ABANDON 12" W
SEWER			
FROM SHA STA.	TO SHA STA.	LENGTH	DESCRIPTION
64+17, 101'RT	64+41, 8'LT	79'	ABANDON 10" S
64+41, 8'LT	64+89, 283'LT	121'	ABANDON 12" S

NOTE: FOR SHA STATIONING USE @ OF CONSTRUCTION MD 216

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DATE: 2/16/06
DATE: 2/15/06

WALLACE, MONTGOMERY & ASSOCIATES, LLP
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

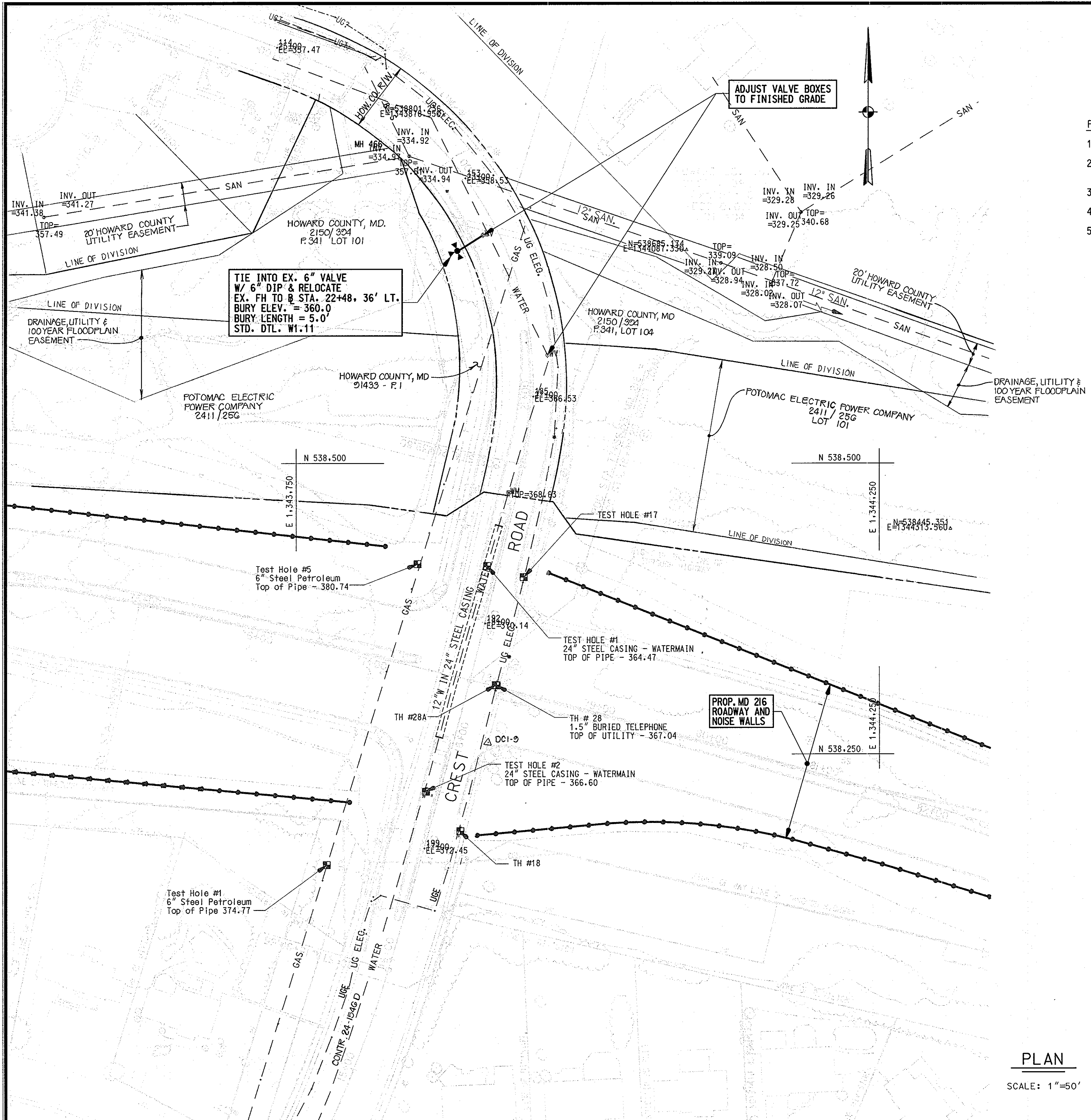
DES: LAF
DRN: KJP
CHK: JJS
DATE: JUNE 2002

WATER & SEWER RELOCATIONS
PLAN AND PROFILE

MD 216 RELOCATED FROM US 29 TO I-95
CAPITAL PROJECT W-8212
CONTRACT NO. 24-4018
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 8





SEQUENCE OF CONSTRUCTION

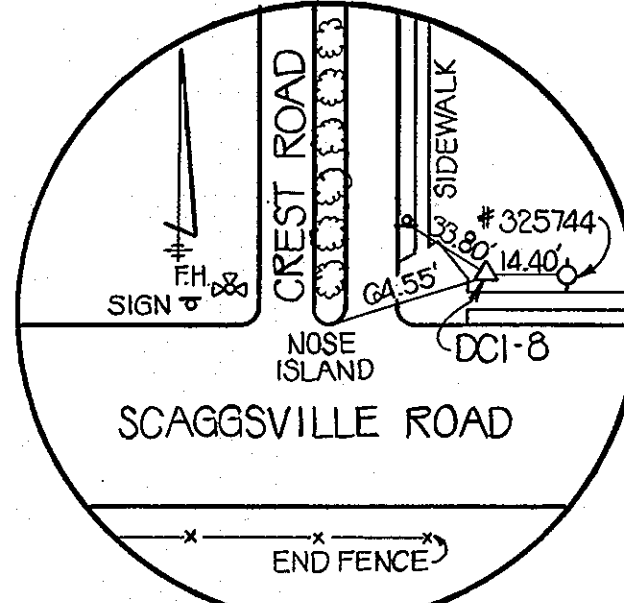
- FIRE HYDRANT RELOCATION**
1. CLOSE EXISTING FIRE HYDRANT VALVE.
 2. EXCAVATE AND REMOVE EXISTING FIRE HYDRANT, STANDPIPE AND SHOE.
 3. INSTALL PROPOSED FIRE HYDRANT ASSEMBLY.
 4. PERFORM LEAKAGE TESTS AND DISINFECTION.
 5. REOPEN EXISTING WATER VALVE.

STAKEOUT TABLE

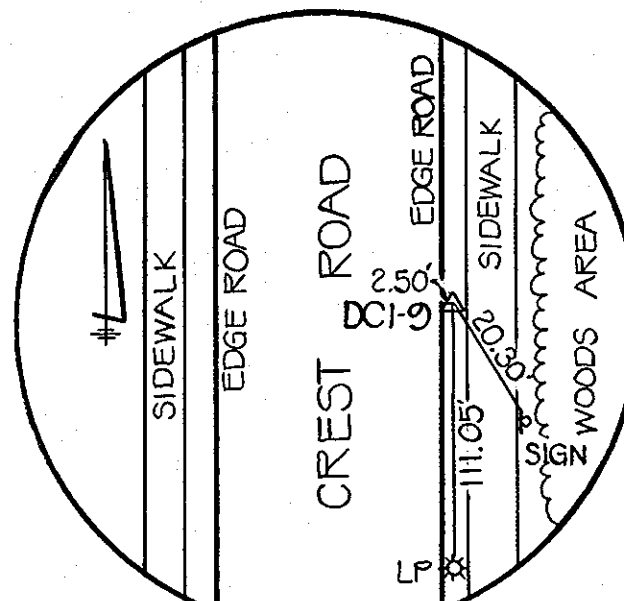
WATER			
STATION	DESCRIPTION	NORTH	EAST
0+00	CONNECT TO EX. 6" V	538695.48	1343908.83
0+24	RELOCATED FIRE HYDRANT	538683.68	1343890.42

RESTORATION SCHEDULE

6" WATER			
STATION	TO STATION	LENGTH	MATERIAL
0+00	0+10	10'	BITUMINOUS PAVING
0+10	0+24	14'	TEMP. SEEDING



DCI-8: HUB & TACK (INTERSECTION OF SCAGGSVILLE & CREST)
 NORTHING: 537547.7818
 EASTING: 1343578.3256
 ELEVATION: 399.65 FT.



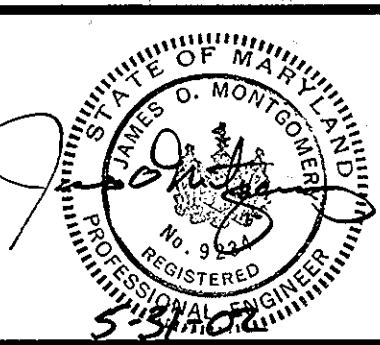
DCI-9: HUB & TACK (CREST ROAD)
 NORTHING: 538250.7887
 EASTING: 1343908.1974
 ELEVATION: 370.72 FT.

PLAN
 SCALE: 1"=50'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 6/3/02
 Chief, Bureau of Engineering: *[Signature]* DATE: 6/3/02
 Chief, Bureau of Utilities: *[Signature]* DATE: 6-3-02
 Chief, Utility Design Division: *[Signature]* DATE: 6-3-02

WALLACE, MONTGOMERY & ASSOCIATES, LLP
 CIVIL AND STRUCTURAL ENGINEERS
 110 WEST ROAD
 TOWSON, MARYLAND 21204



DES: LAF	WMA	ADD. NO. 4: ADDED PROPERTY INFO	8/29/02
ORN: KJP			
CHK: JJS			
DATE: JUNE 2002	BY NO.	REVISION	DATE

WATER & SEWER RELOCATIONS PLAN

600' SCALE MAP NO. 46 BLOCK NO. 4.5.12

MD 216 RELOCATED FROM US 29 TO I-95
 CAPITAL PROJECT W-8212
 CONTRACT NO. 24-4018
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

U-3
 SCALE AS SHOWN
 SHEET 3 OF 8

SEQUENCE OF CONSTRUCTION

- SPLIT SLEEVE INSTALLATION**
1. EXCAVATE AND EXPOSE EXISTING SANITARY SEWER.
 2. INSTALL SPLIT SLEEVE CASINGS.
 3. EXTEND EXISTING SMH 2 UP TO FINISHED GRADE.
 4. BACKFILL TRENCHES.
- SEWER RELOCATION**
1. EXCAVATE AND INSTALL PROPOSED SMH 416 A.
 2. INSTALL TEMPORARY BY-PASS PUMPING SYSTEM FROM EXISTING SMH 2 TO PROPOSED SMH 416 A.
 3. INSTALL PROPOSED 8" SEWER SYSTEM FROM SMH 416 A TO 416 B TO 416 C.
 4. PERFORM SEWER TESTS.
 5. BACKFILL TRENCH.
 6. REMOVE BY-PASS PUMPING SYSTEM.

RESTORATION SCHEDULE			
SEWER (STA. 290+50 +/-)			
STATION	TO STATION	LENGTH	MATERIAL
-1+22	0+20	142'	TEMP. SEEDING

RESTORATION SCHEDULE			
SEWER (STA. 297+40 +/-)			
STATION	TO STATION	LENGTH	MATERIAL
0+00	-1+05	405'	TEMP. SEEDING
0+00	1+11.5	111.5'	TEMP. SEEDING
0+00	2+00	200'	TEMP. SEEDING

EXISTING UTILITY SCHEDULE			
SEWER (STA. 297+40 +/-)			
FROM SHA STA.	TO SHA STA.	LENGTH	DESCRIPTION
91+69, 82' RT	92+22, 80' LT	473'	ABANDON 8" S
91+61, 83' RT	92+64, 157' LT	265'	

NOTE: FOR SHA STATIONING USE B OF CONSTRUCTION MD 216

STAKEOUT TABLE			
SEWER (STA. 290+50 +/-)			
STATION	DESCRIPTION	NORTH	EAST
0+20	END OF 24" SPLIT SLEEVE SPACING	538057.41	1344517.89
0+05	END OF 24" SPLIT SLEEVE CASING	538071.34	1344523.93
-0+05	END OF 24" SPLIT SLEEVE CASING	538082.36	1344528.70
-1+22	END OF 24" SPLIT SLEEVE CASING	538189.62	1344575.18

STAKEOUT TABLE			
SEWER (STA. 297+40 +/-)			
STATION	DESCRIPTION	NORTH	EAST
0+00	SMH 416 A	537921.30	1345285.75
		537978.57	1345357.68
+1+65	SMH 416 B	537797.91	1345175.42
1+11.5 = 0+00		537980.86	1345246.26
2+00	SMH 416 C	537798.02	1345165.20

NOTE: AFTER CONSTRUCTION OF WATER AND SEWER MAINS, PLACE FIBERGLASS UTILITY MARKERS OVER CENTERLINE OF NEW MAINS AT THE PROPOSED NOISE WALL CROSSINGS.

PLAN
SCALE: 1"=50'

As-Built

"AS BUILT Replacement Sheet" 2/206

U-4

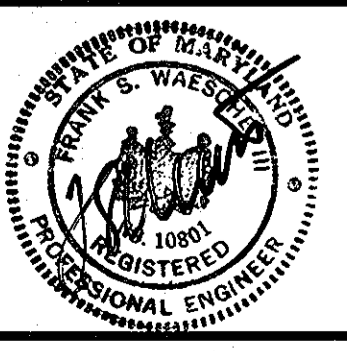
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 2/16/06
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 2-15-06
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 2-15-06
CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES, LLP
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



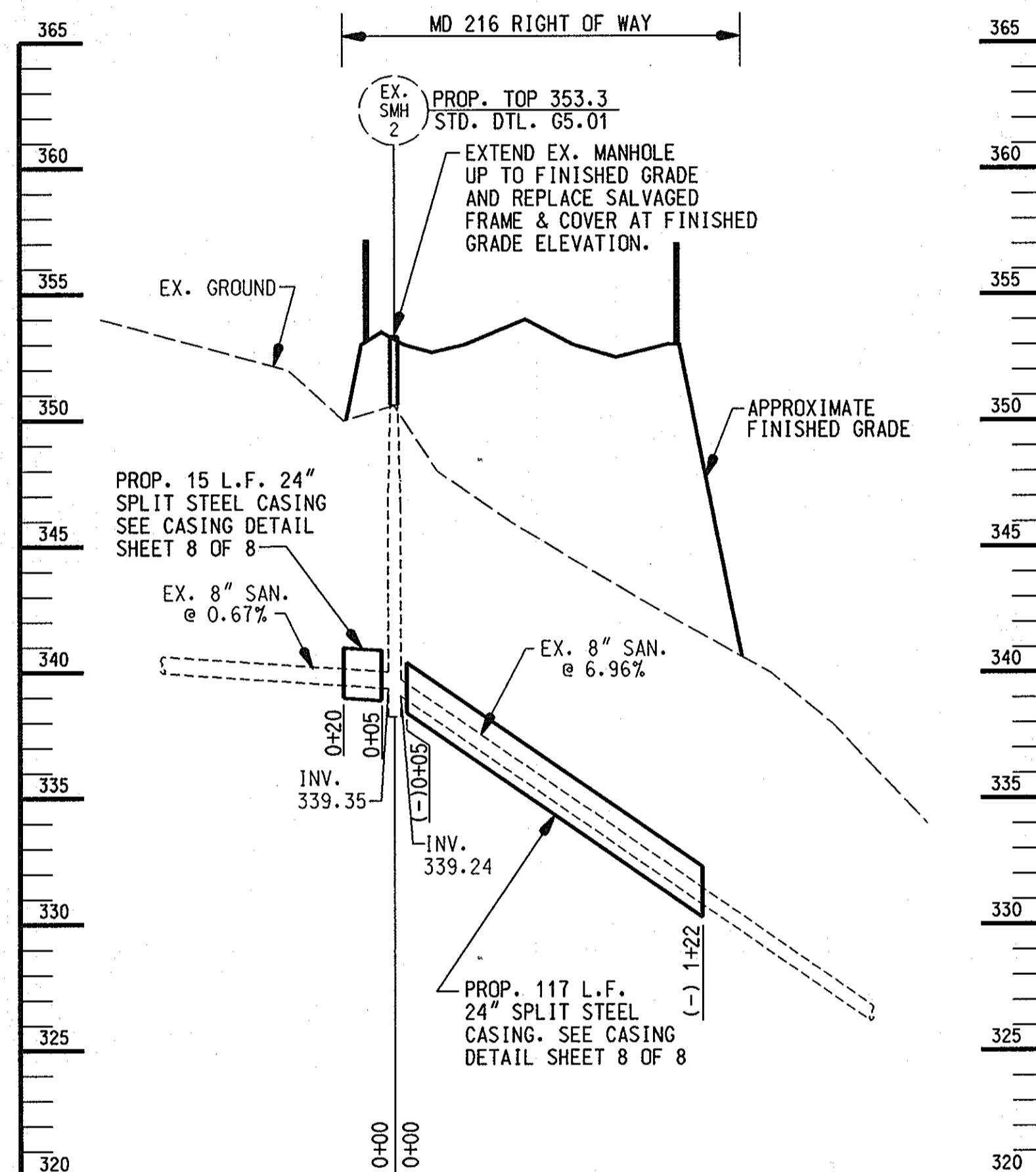
DES: LAF	WM&A	ADD No. 4 - MINOR REVISIONS	8/29/02
DRN: KJP	WM&A	REVISED EX. & PROP. 8" SEWER ALIGNMENTS	3/24/03
CHK: JJS			
DATE: JUNE 2002	BY NO.	REVISION	DATE

WATER & SEWER RELOCATIONS
PLAN

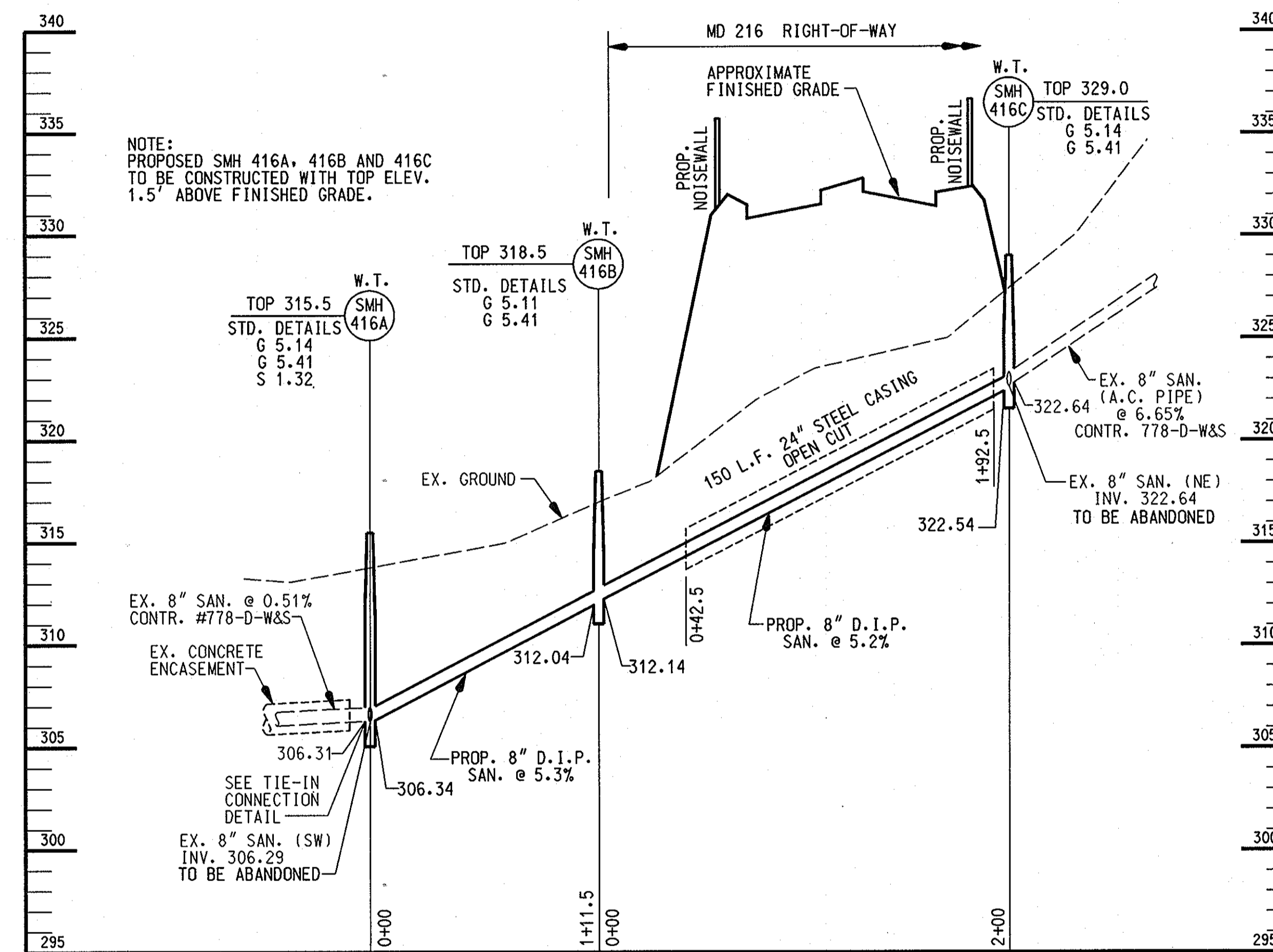
600' SCALE MAP NO. 46 BLOCK NO. 4.5.12

MD 216 RELOCATED FROM US 29 TO I-95
CAPITAL PROJECT W-8212
CONTRACT NO. 24-4018
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 8



8" GRAVITY SEWER PROFILE
(B.L. STA. 84+62 - LOOKING WEST)
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



8" GRAVITY SEWER PROFILE
(B.L. STA. 92+04)
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

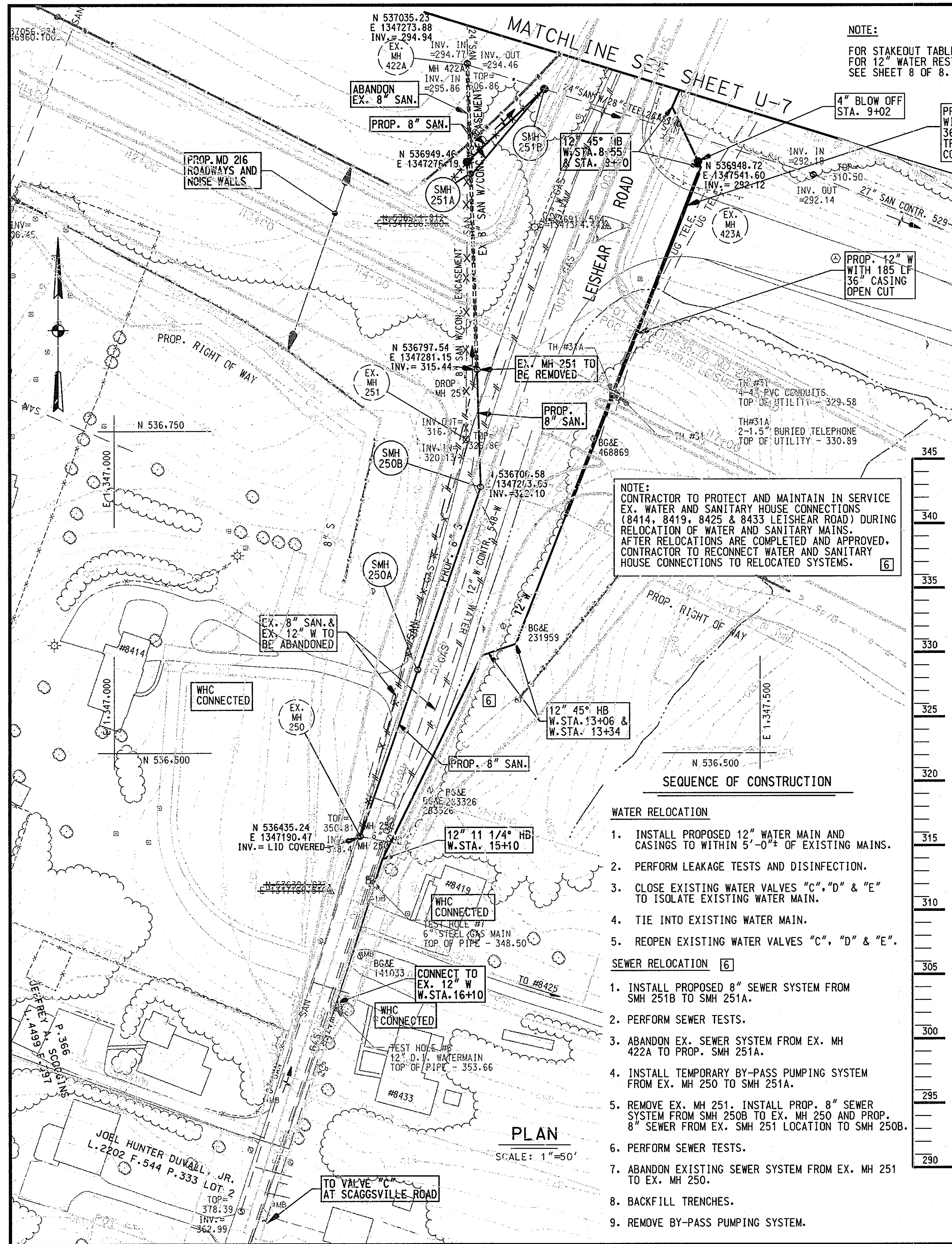
As-Built

"AS BUILT Replacement Sheet"
2/206

U-5

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/16/06 DATE: 2-15-06		WALLACE, MONTGOMERY & ASSOCIATES, LLP CIVIL AND STRUCTURAL ENGINEERS 110 WEST ROAD TOWSON, MARYLAND 21204		DES: LAF DRN: KJP CHK: JJS DATE: JUNE 2002		WM&A [4] REVISED 8" SAN. SEWER PROFILE 3/24/03		WATER & SEWER RELOCATIONS PROFILES		MD 216 RELOCATED FROM US 29 TO I-95 CAPITAL PROJECT W-8212 CONTRACT NO. 24-4018 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 5 OF 8	
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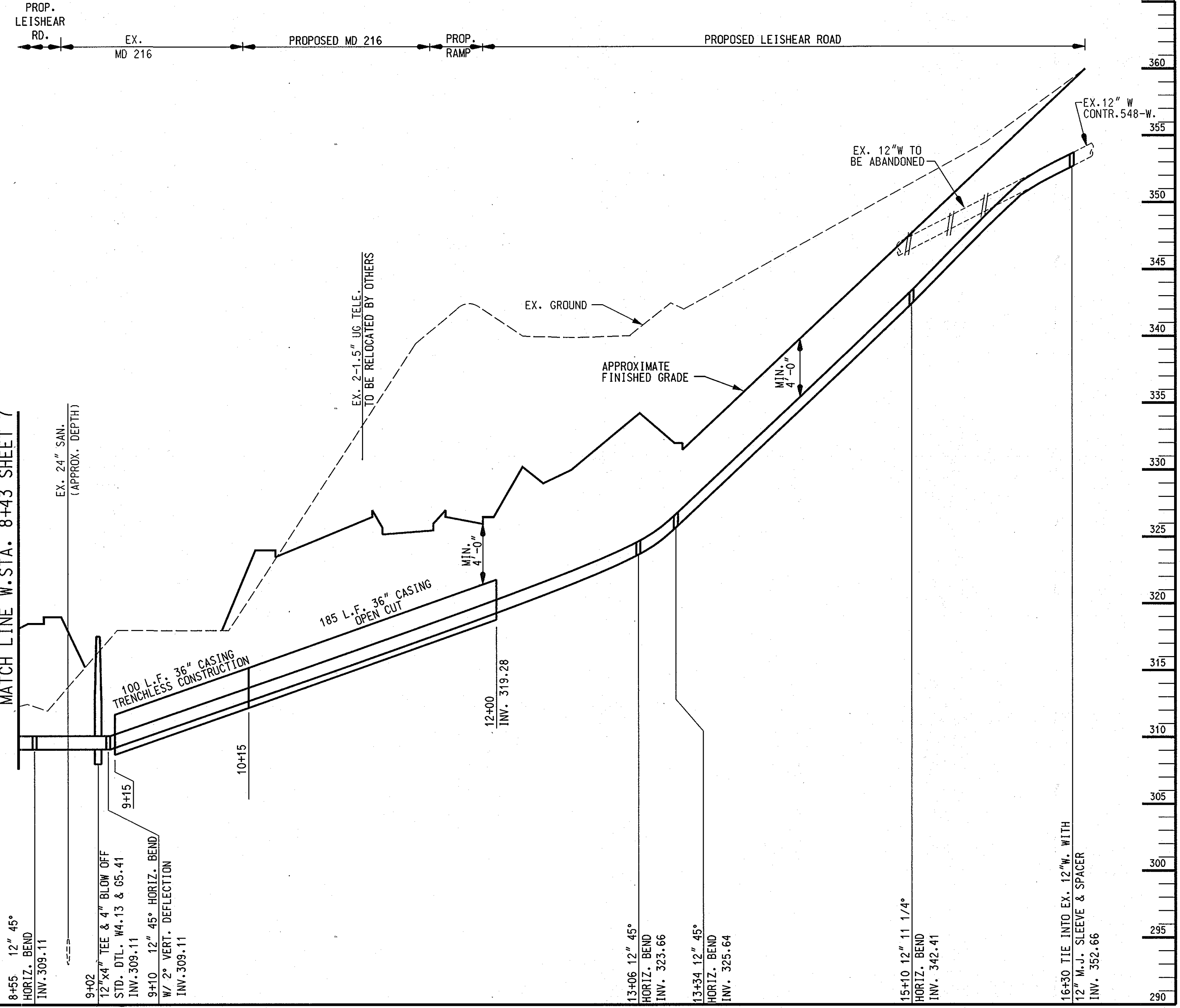


NOTE:
FOR STAKEOUT TABLE SEE SHEET 7 OF 8.
FOR 12" WATER RESTORATION SCHEDULE
SEE SHEET 8 OF 8.

EXISTING UTILITY SCHEDULE			
WATER			
FROM SHA STA.	TO SHA STA.	LENGTH	DESCRIPTION
47+37, 13'RT	61+85, 13'LT	1634'	ABANDON 12" W
SEWER			
47+47, 9'LT	51+30, 35'LT	370'	ABANDON 8" S
52+65, 87'LT	53+46, 117'LT	85'	ABANDON 8" S

RESTORATION SCHEDULE			
12" SEWER			
STATION	TO STATION	LENGTH	MATERIAL
SMH 251 A	SMH 251 B	87'	TEMP. SEEDING
EX. SMH 250	SMH 250 B	287'	BITUMINOUS PAVING
SMH 250 B	50+90, 23'LT	60'	BITUMINOUS PAVING
50+90, 23'LT	51+30, 35'LT	31'	TEMP. SEEDING

NOTE: FOR SHA STATIONING USE @ OF CONSTRUCTION LEISHEAR RD



NOTE:
CONTRACTOR TO PROTECT AND MAINTAIN IN SERVICE
EX. WATER AND SANITARY HOUSE CONNECTIONS
(8414, 8419, 8425 & 8433 LEISHEAR ROAD)
DURING RELOCATION OF WATER AND SANITARY MAINS.
AFTER RELOCATIONS ARE COMPLETED AND APPROVED,
CONTRACTOR TO RECONNECT WATER AND SANITARY
HOUSE CONNECTIONS TO RELOCATED SYSTEMS.

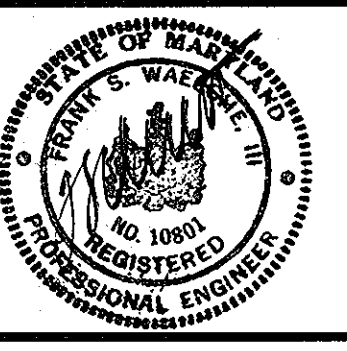
- SEQUENCE OF CONSTRUCTION**
- WATER RELOCATION**
1. INSTALL PROPOSED 12" WATER MAIN AND CASINGS TO WITHIN 5'-0" OF EXISTING MAINS.
 2. PERFORM LEAKAGE TESTS AND DISINFECTION.
 3. CLOSE EXISTING WATER VALVES "C", "D" & "E" TO ISOLATE EXISTING WATER MAIN.
 4. TIE INTO EXISTING WATER MAIN.
 5. REOPEN EXISTING WATER VALVES "C", "D" & "E".
- SEWER RELOCATION**
1. INSTALL PROPOSED 8" SEWER SYSTEM FROM SMH 251B TO SMH 251A.
 2. PERFORM SEWER TESTS.
 3. ABANDON EX. SEWER SYSTEM FROM EX. MH 422A TO PROP. SMH 251A.
 4. INSTALL TEMPORARY BY-PASS PUMPING SYSTEM FROM EX. MH 250 TO SMH 251A.
 5. REMOVE EX. MH 251. INSTALL PROP. 8" SEWER SYSTEM FROM SMH 250B TO EX. MH 250 AND PROP. 8" SEWER FROM EX. SMH 251 LOCATION TO SMH 250B.
 6. PERFORM SEWER TESTS.
 7. ABANDON EXISTING SEWER SYSTEM FROM EX. MH 251 TO EX. MH 250.
 8. BACKFILL TRENCHES.
 9. REMOVE BY-PASS PUMPING SYSTEM.

12" WATER PROFILE
(B.L. STA. 116+07)
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

AS-Built "AS BUILT Replacement Sheet"
2/206 U-6

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2/16/06
2/15/06

WALLACE, MONTGOMERY & ASSOCIATES, LLP
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

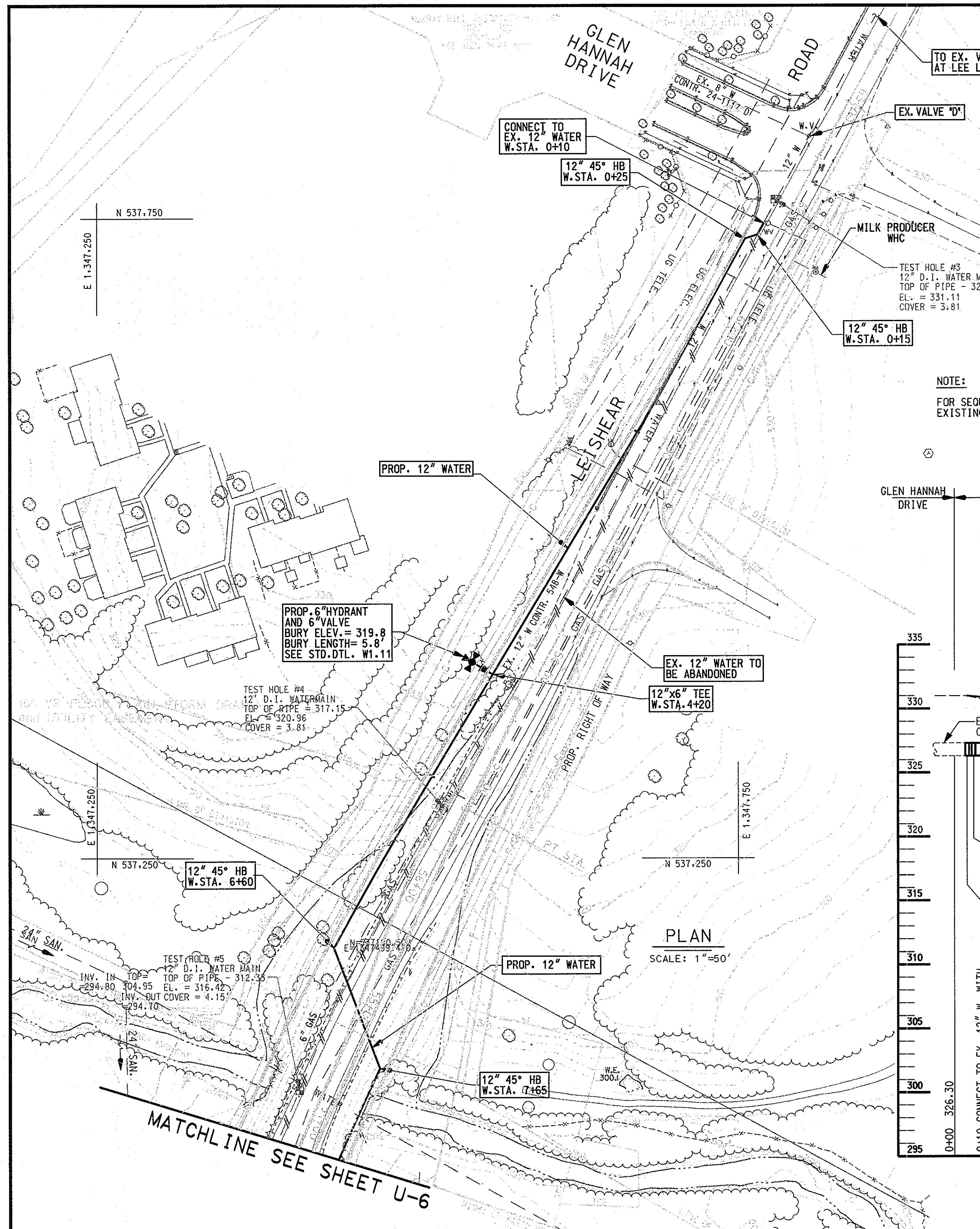


DES: LAF	WM&A [6]	REVISED SANITARY SEWER ALIGNMENT	4-16-03
DRN: KJP			
CHK: JJS			
DATE: JUNE 2002	BY NO.	REVISION	DATE

WATER & SEWER RELOCATIONS
PLAN AND PROFILE
600' SCALE MAP NO. 46 BLOCK NO. 4.5.12

MD 216 RELOCATED FROM US 29 TO I-95
CAPITAL PROJECT W-8212
CONTRACT NO. 24-4018
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 6 OF 8

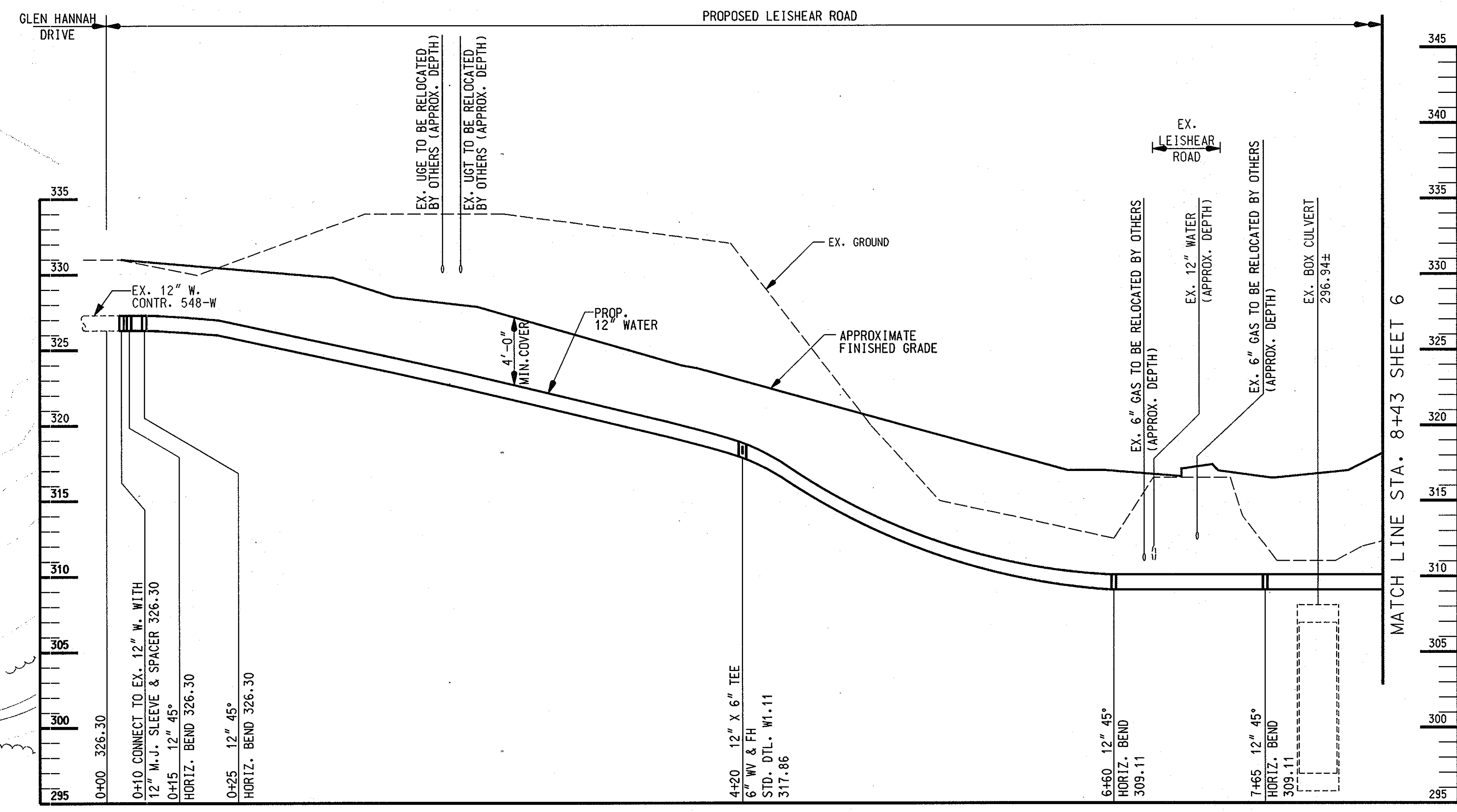


STAKEOUT TABLE			
WATER			
STATION	DESCRIPTION	NORTH	EAST
0+10	CONNECT TO EX. 12" W	537745.99	1347770.23
0+15	12" 45° H.B.	537737.44	1347765.55
0+25	12" 45° H.B.	537734.18	1347755.68
4+20	12" x 6" TEE	537393.71	1347558.62
6+60	12" 45° H.B.	537174.82	1347434.64
7+65	12" 45° H.B.	537085.80	1347470.45
8+55	12" 45° H.B.	537001.22	1347432.44
9+02	4" BLOW OFF	536959.07	1347452.39
9+10	12" 45° H.B.	536954.55	1347454.53
13+06	12" 45° H.B.	536584.82	1347310.96
13+34	12" 45° H.B.	536575.73	1347284.48
15+10	12" 11 1/4" H.B.	536417.43	1347207.42
16+30	CONNECT TO EX. 12" W	536305.87	1347171.59

STAKEOUT TABLE			
SEWER			
STATION	DESCRIPTION	NORTH	EAST
0+00	SMH 251 B	537015.24	1347333.37
0+87	SMH 251 A	536949.46	1347276.19
0+00	SMH 250 B	536706.58	1347283.63
1+50	SMH 250 A	536564.87	1347234.92

RESTORATION SCHEDULE			
12" WATER			
STATION	TO STATION	LENGTH	MATERIAL
0+00	1+00	100'	BITUMINOUS PAVING
1+00	7+00	600'	TEMP. SEEDING
7+00	7+50	50'	BITUMINOUS PAVING
7+50	16+30	880'	TEMP. SEEDING

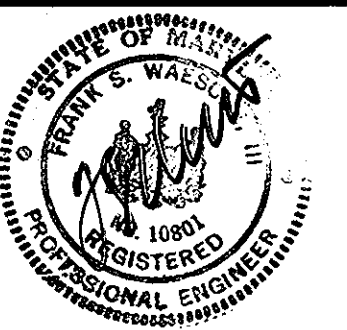
NOTE:
FOR SEQUENCE OF CONSTRUCTION AND EXISTING UTILITY SCHEDULE, SEE SHEET 6 OF 8.



12" WATER PROFILE
(B.L. STA. 116+07)
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 2/16/06
DATE: 2/15/06

WALLACE, MONTGOMERY & ASSOCIATES, LLP
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

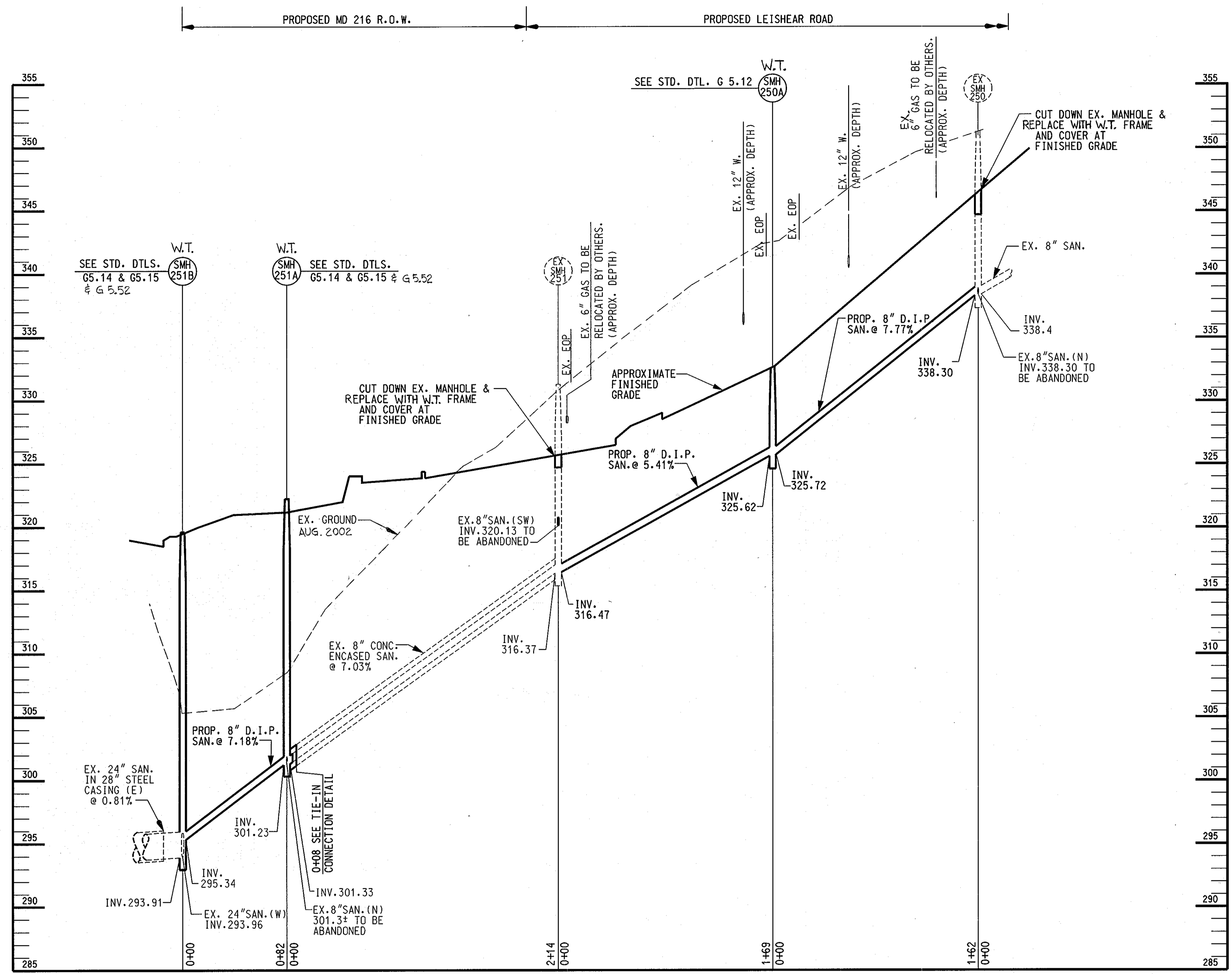


DES: LAF	WM&A	6	REVISED SANITARY SEWER ALIGNMENT	4-16-03
DRN: KJP				
CHK: JJS				
DATE: JUNE 2002	BY NO.		REVISION	DATE

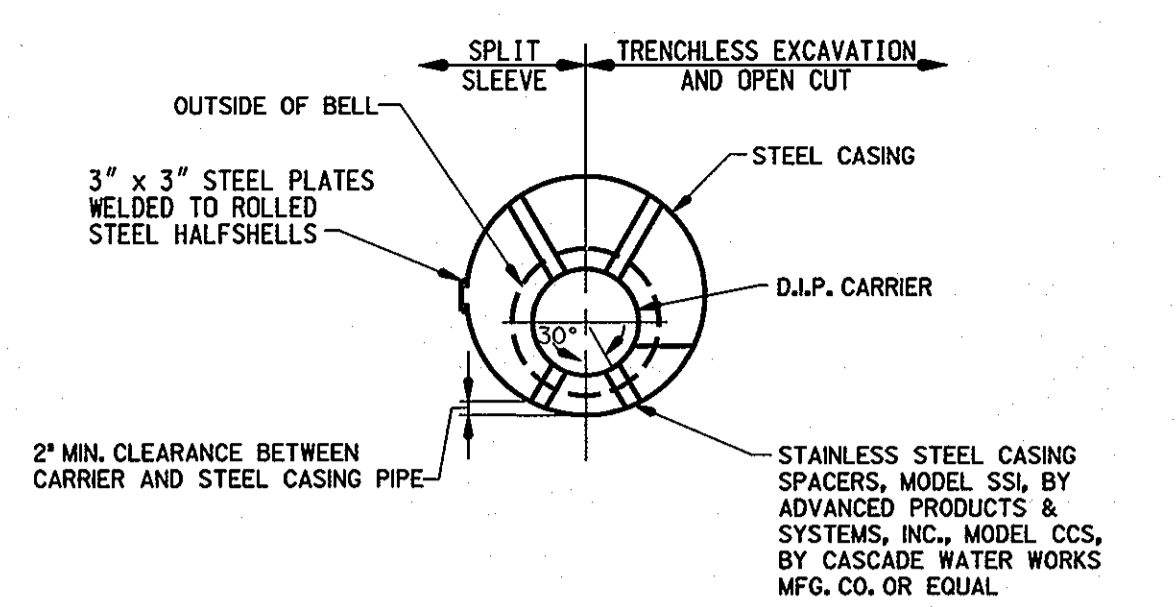
WATER & SEWER RELOCATIONS
PLAN AND PROFILE
600' SCALE MAP NO. 46 BLOCK NO. 4.5.12

"AS BUILT Replacement Sheet"
2/206
MD 216 RELOCATED FROM US 29 TO I-95
CAPITAL PROJECT W-8212
CONTRACT NO. 24-4018
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

U-7
SCALE AS SHOWN
SHEET 7 OF 8

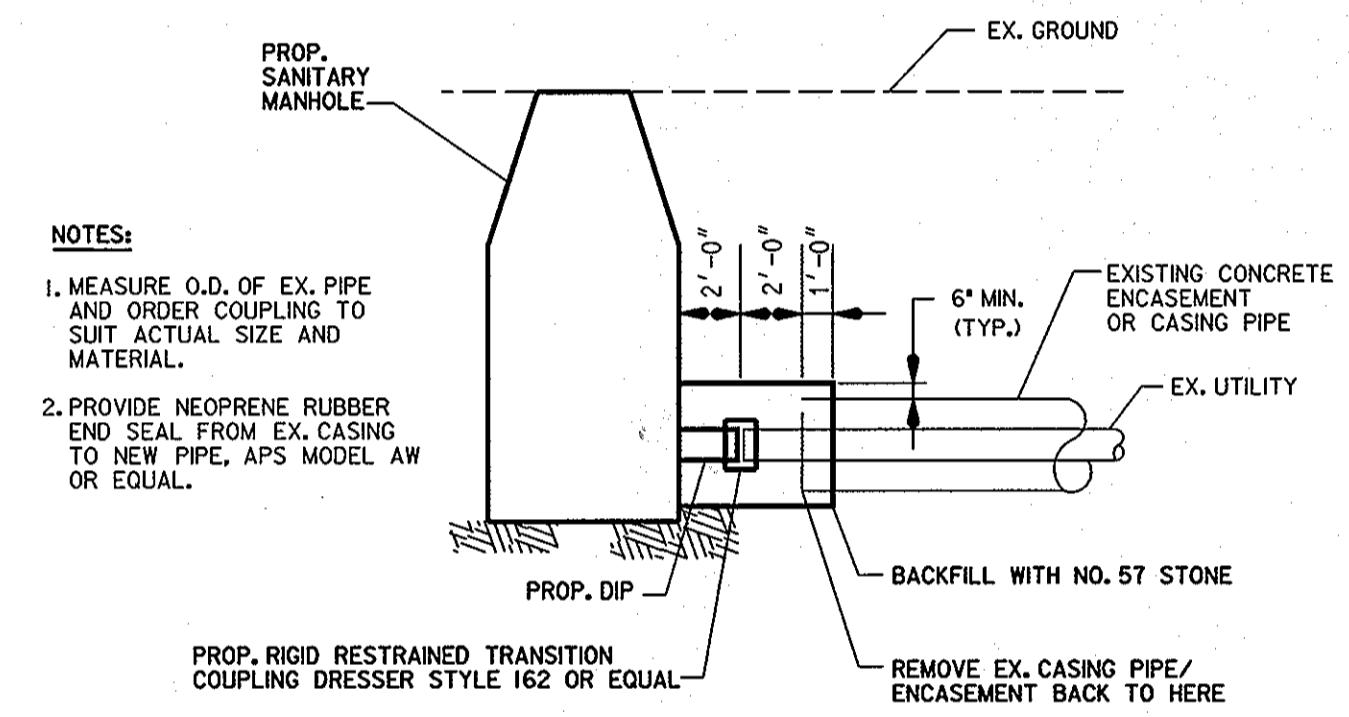


8" GRAVITY SEWER PROFILE
 (B.L. STA. 49+80 LEISHEAR ROAD)
 SCALE: 1" = 50' HORIZ.
 1" = 5' VERT.



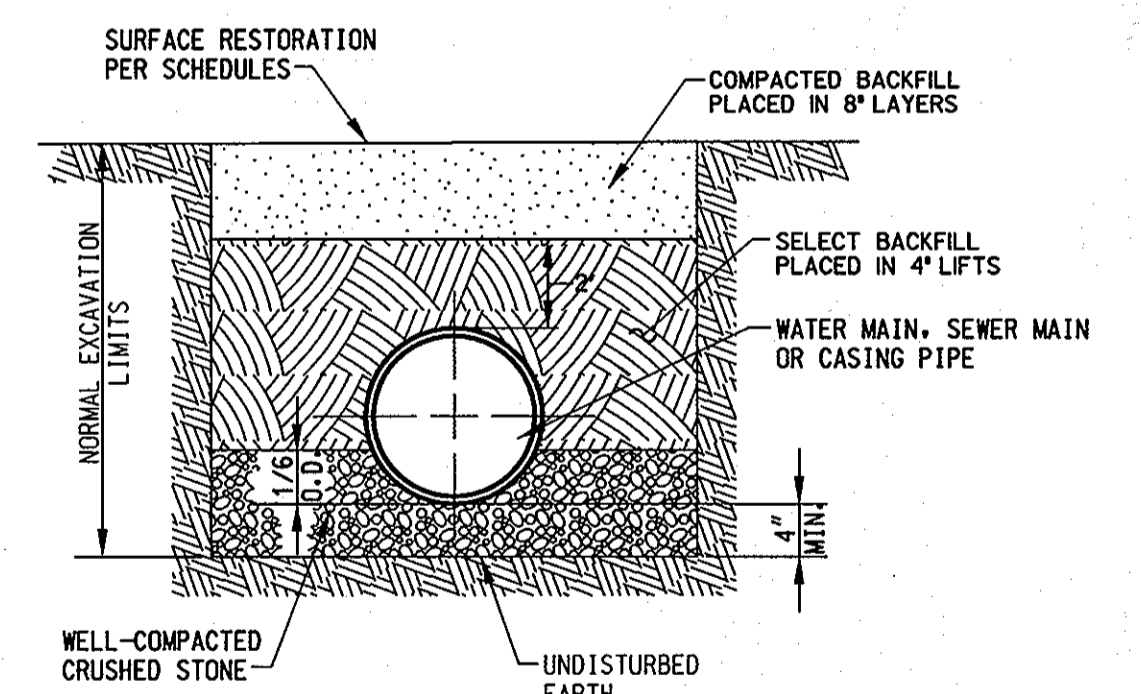
- NOTES:**
1. PROVIDE NEOPRENE RUBBER END SEAL WITH S.S. WORM GEAR CLAMPS. END SEALS SHALL BE ADVANCE PRODUCTS & SYSTEMS, INC. MODEL AW OR EQUAL. PROVIDE A JOINT IN THE MAIN WITHIN 2'-0" OF THE END OF THE CASING.
 2. STEEL CASING PIPE 3/4" WALL THICKNESS, A.W.W.A. C-203 OR C-210, IN 10' LENGTHS. JOINTS TO BE WELDED FULL CIRCUMFERENCE.
 3. MAXIMUM LENGTH OF EXISTING PIPE TO BE EXPOSED DURING INSTALLATION OF SPLIT SLEEVE CASING SHALL BE 10 L.F. AND ONE PIPE JOINT. ALL SEAMS IN SPLIT SLEEVES SHALL BE WELDED.
 4. FOR INSTALLATION OF SPLIT SLEEVE CASING PIPE AND OPEN CUT STEEL CASING, SEE TRENCH DETAIL, THIS SHEET.
 5. VERIFY THE LOCATION AND ELEVATION OF THE EXISTING MAINS PRIOR TO THE START OF ANY CONSTRUCTION.

SPLIT SLEEVE & CASING DETAIL
 NOT TO SCALE



- NOTES:**
1. MEASURE O.D. OF EX. PIPE AND ORDER COUPLING TO SUIT ACTUAL SIZE AND MATERIAL.
 2. PROVIDE NEOPRENE RUBBER END SEAL FROM EX. CASING TO NEW PIPE, APS MODEL AW OR EQUAL.

TIE-IN CONNECTION TO EX. ENCASEMENT/CASING
 NOT TO SCALE



- NOTES:**
1. FOR TRENCHES IN EXISTING ROADWAYS, CONTRACTOR SHALL PLACE TEMPORARY PAVING RESTORATION WITH COLD PATCH, WITH THICKNESS TO MATCH EXISTING SECTION. 3" MINIMUM, 5" MAXIMUM. MAINTAIN COLD PATCH SURFACE UNTIL PERMANENT PAVING IS PLACED.
 2. PLACE PERMANENT BITUMINOUS PAVING TO MATCH EXISTING WITHIN 90 DAYS OF INSTALLATION OF THE PIPE.

TRENCH DETAIL
 NOT TO SCALE

AS-Built

U-8

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James J. ... 6/3/02
 DIRECTOR OF PUBLIC WORKS DATE

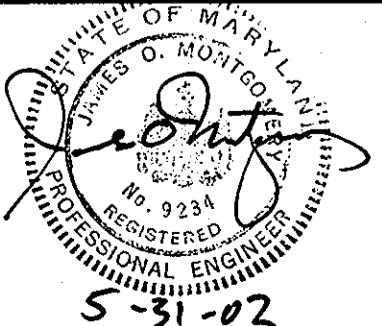
Paul ... 6-3-02
 CHIEF, BUREAU OF ENGINEERING DATE

John ... 6-3-02
 CHIEF, BUREAU OF UTILITIES DATE

John ... 6-3-02
 CHIEF, UTILITY DESIGN DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES, LLP
 CIVIL AND STRUCTURAL ENGINEERS

110 WEST ROAD
 TOWSON, MARYLAND 21204



DES: LAF	WM&A	ADD. NO. 4: REVISED EX. GROUND LINE	8/29/02
DRN: KJP			
CHK: JJS			
DATE: JUNE 2002	BY: NO.	REVISION	DATE

WATER & SEWER RELOCATIONS
PROFILE & DETAILS

600' SCALE MAP NO. 46 BLOCK NO. 4.5.12

MD 216 RELOCATED FROM US 29 TO I-95
 CAPITAL PROJECT W-8212
 CONTRACT NO. 24-4018
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 8 OF 8