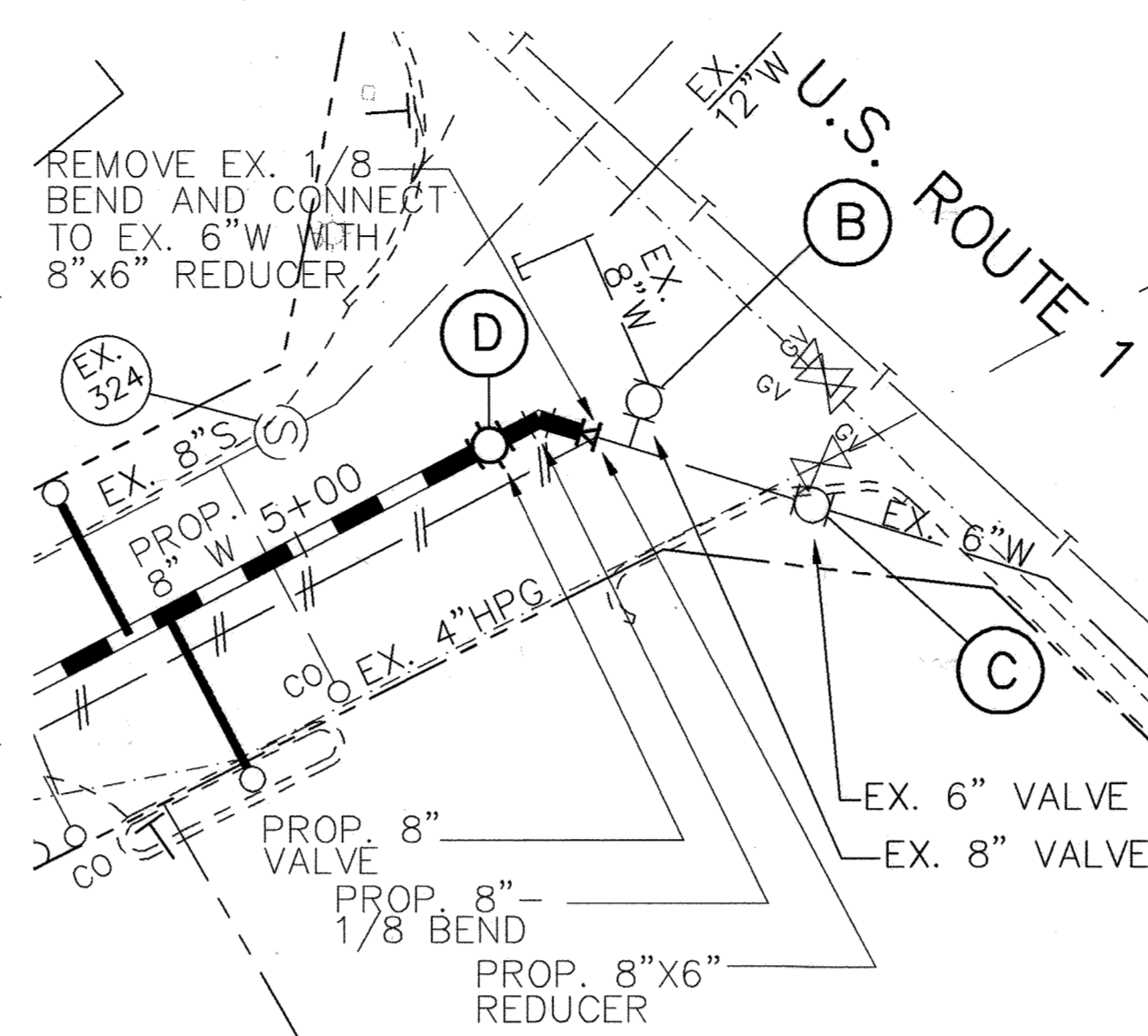


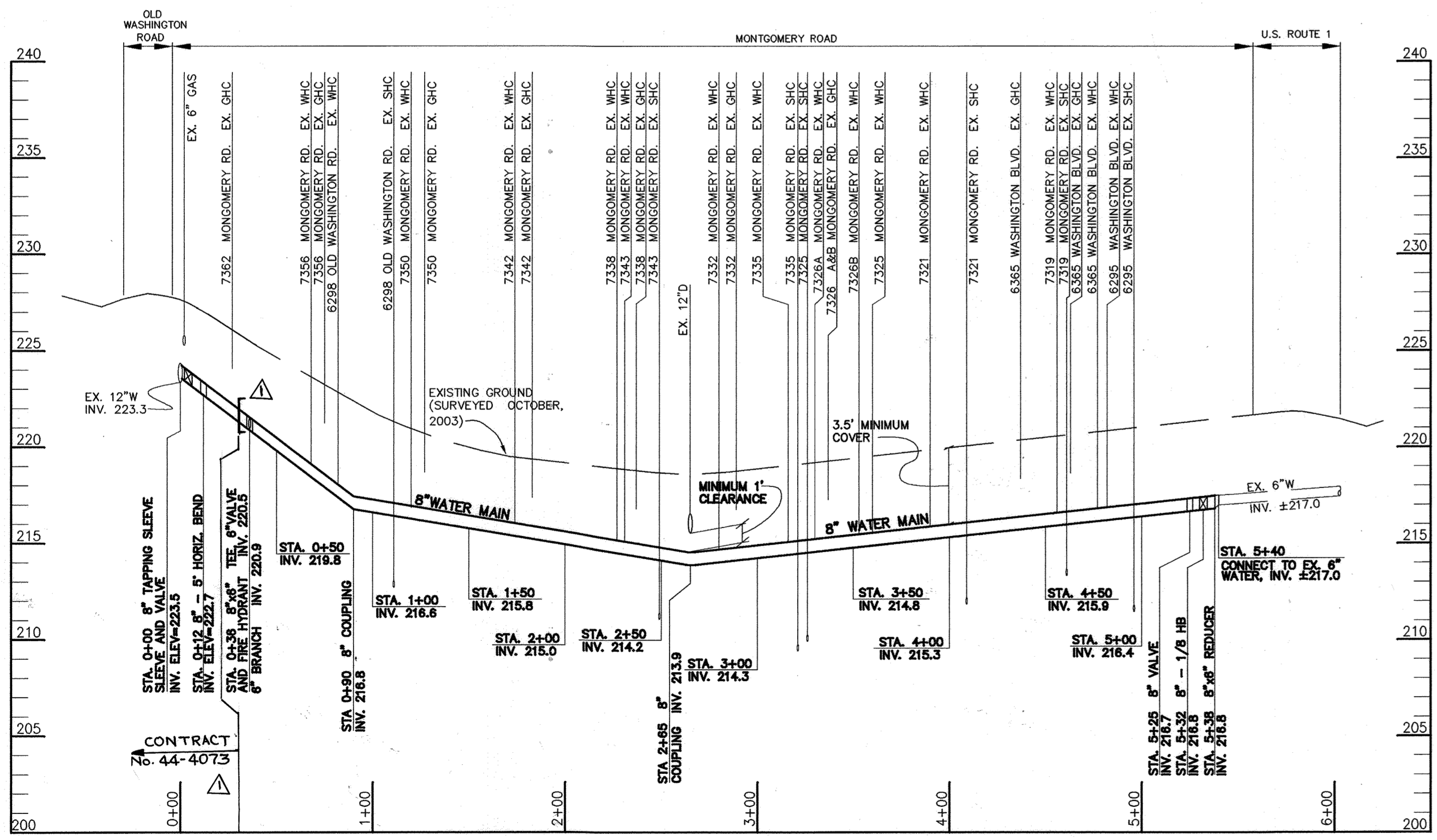
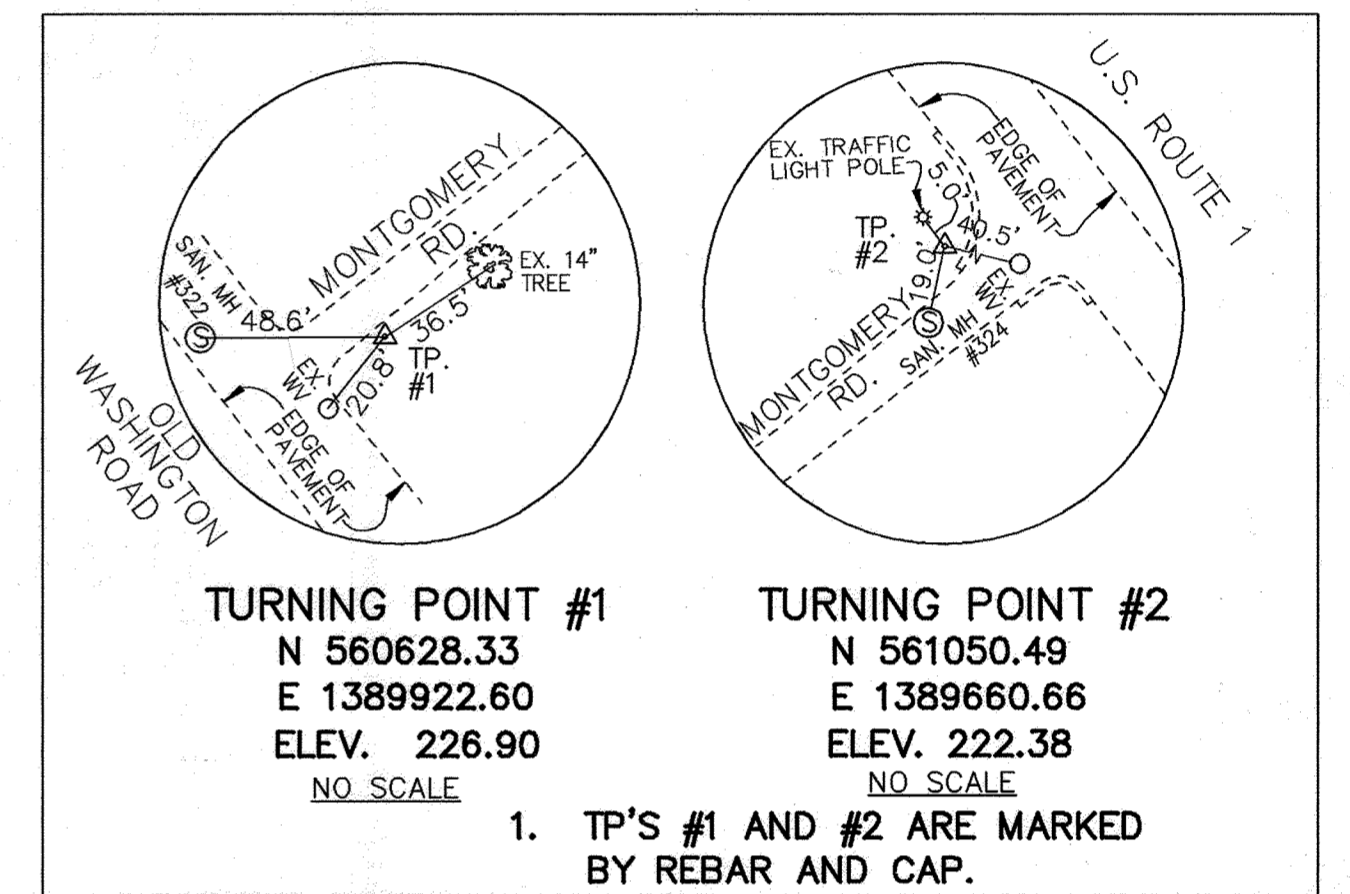


- NOTES:**
- EXISTING FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED TO THE HOWARD COUNTY BUREAU OF UTILITIES AFTER THE NEW WATER MAIN IS CONSTRUCTED.
 - ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.
 - EXISTING VALVES TO BE ABANDONED, SHALL BE ABANDONED IN PLACE BY REMOVAL OF ROADWAY BOX AND BACKFILLED.
 - SEE SHEET 17 FOR WATER MAIN STAKEOUT TABLE.

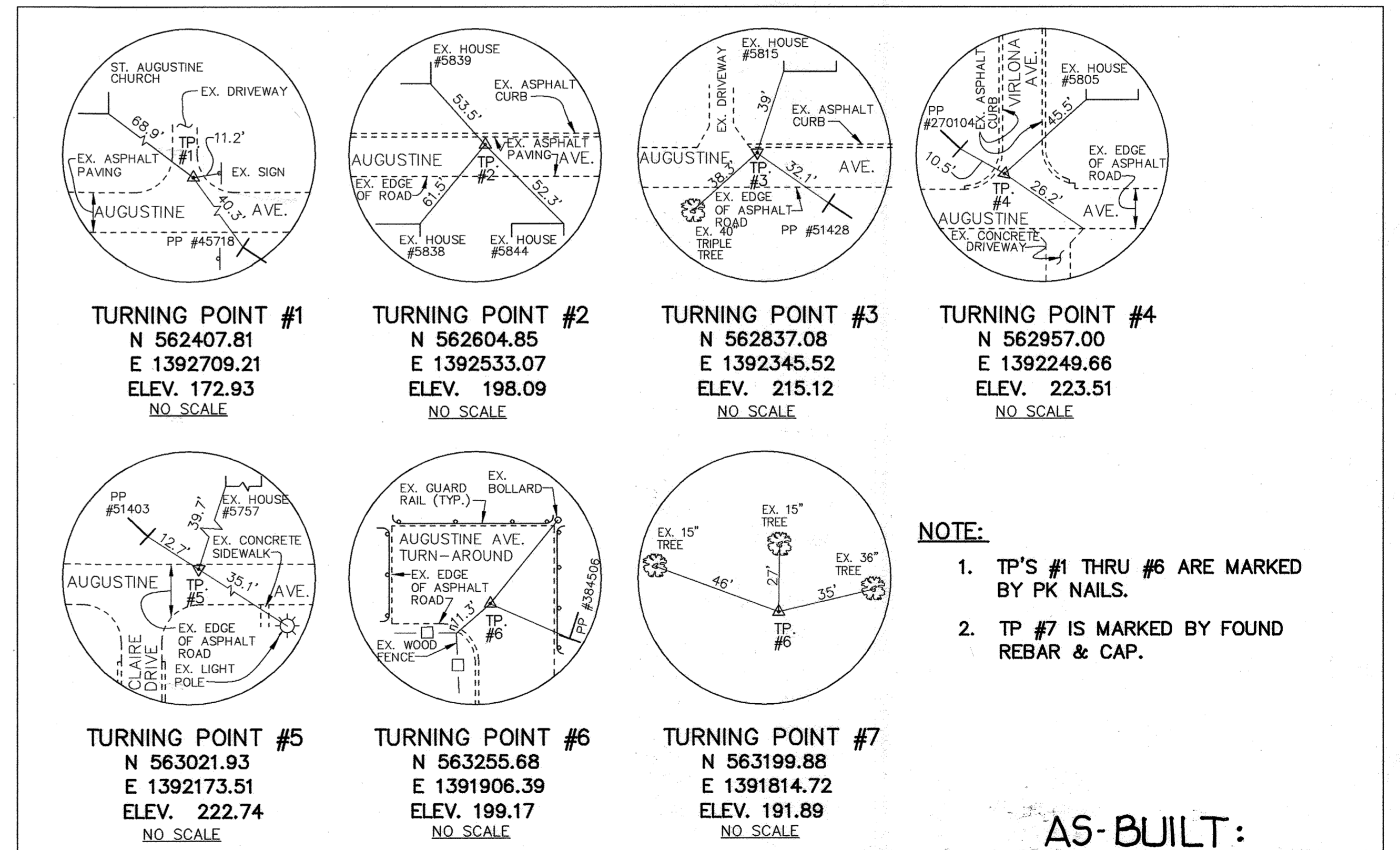


SEQUENCE OF CONSTRUCTION FOR MONTGOMERY ROAD

- THE FOLLOWING SEQUENCE OF CONSTRUCTION IS NOT A COMPLETE LIST OF TASKS OR WORK REQUIRED TO COMPLETE THE CONTRACT REQUIREMENTS. THE SEQUENCE OF CONSTRUCTION MAY BE MODIFIED OR REVISED AT THE REQUEST OF THE CONTRACTOR WITH THE APPROVAL OF THE COUNTY PRIOR TO THE START OF CONSTRUCTION.
- INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-13 AT INTERSECTION OF OLD WASHINGTON ROAD AND MONTGOMERY ROAD. INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-10 ALONG MONTGOMERY ROAD.
 - INSTALL 8" TAPPING SLEEVE AND VALVE AT OLD WASHINGTON ROAD AS SHOWN ON THE PLANS AND SPECIFICATIONS. CLOSE NEW 8" INSTALLED VALVE. ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES. REMOVE NON-REQUIRED TRAFFIC CONTROL DEVICES.
 - INSTALL 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES IN MONTGOMERY ROAD UP TO STATION 5+32 AS SHOWN ON THE PLANS AND SPECIFICATIONS.
 - INSTALL TEMPORARY TRAFFIC CONTROL PER STANDARD DETAIL MD104.02-13 AT INTERSECTION OF U.S. ROUTE 1 AND MONTGOMERY ROAD.
 - CLOSE NEW 8" VALVE (D) AT INTERSECTION OF MONTGOMERY ROAD & U.S. ROUTE 1.
 - PRESSURE TEST, CHLORINATE AND DISINFECT NEW WATER MAIN.
 - TRANSFER SERVICE OF HOUSE CONNECTIONS FROM EXISTING WATER MAIN TO NEW 8" WATER MAIN.
 - CLOSE EXISTING VALVE (A) AT THE INTERSECTION OF MONTGOMERY ROAD AND OLD WASHINGTON ROAD.
 - CLOSE EXISTING VALVES (B) AND (C), (SEE DETAIL 1 THIS SHEET), AT THE INTERSECTION OF MONTGOMERY RD. & U.S. ROUTE 1.
 - CONNECT NEW 8" WATER MAIN TO EXISTING WATER MAIN THROUGH REMOVAL OF EX. 6"-1/8" BEND AND REPLACEMENT WITH NEW 8"x6" REDUCER. CAP EX. 6" WATER MAIN.
 - CAP EXISTING 12"x6" TEE AT INTERSECTION OF OLD WASHINGTON ROAD AND MONTGOMERY ROAD. PLUG OLD WATER MAIN AND ABANDON PIPE IN PLACE.
 - OPEN EXISTING VALVES (B), (C) AND (D).
 - RESTORE DISTURBED AREA TO ORIGINAL CONDITION.



TRAVERSE POINTS FOR MONTGOMERY ROAD



TRAVERSE POINTS FOR AUGUSTINE AVENUE JANUARY, 2007

AS-BUILT:

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *Janet...* 4-26-05
Chief, Bureau of Engineering: *Paul...* 4/27/05

Chief, Bureau of Utilities: *John...* 4-27-05
Chief, Utility Design Division: *Op...* 4-27-05

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHRA
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

FRANK DONALDSON
PE #8146

DES:	R.J.S.B.
DRN:	R.J.C.
CHK:	G.C.L.
DEC.	2004
BY	NO.
REVISION	DATE

PLAN AND PROFILE MONTGOMERY ROAD

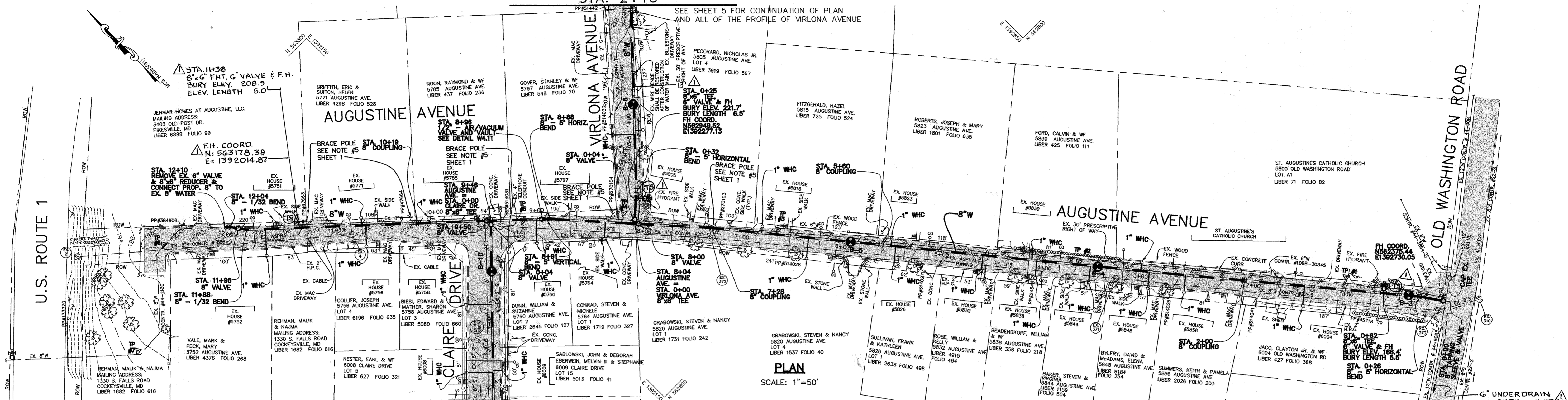
600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT
CAPITAL PROJECT NO. W-8241
CONTRACT NO. 44-4204
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 18

MATCH LINE - SHT 5
STA. 2+15

SEE SHEET 5 FOR CONTINUATION OF PLAN AND ALL OF THE PROFILE OF VIRLONA AVENUE



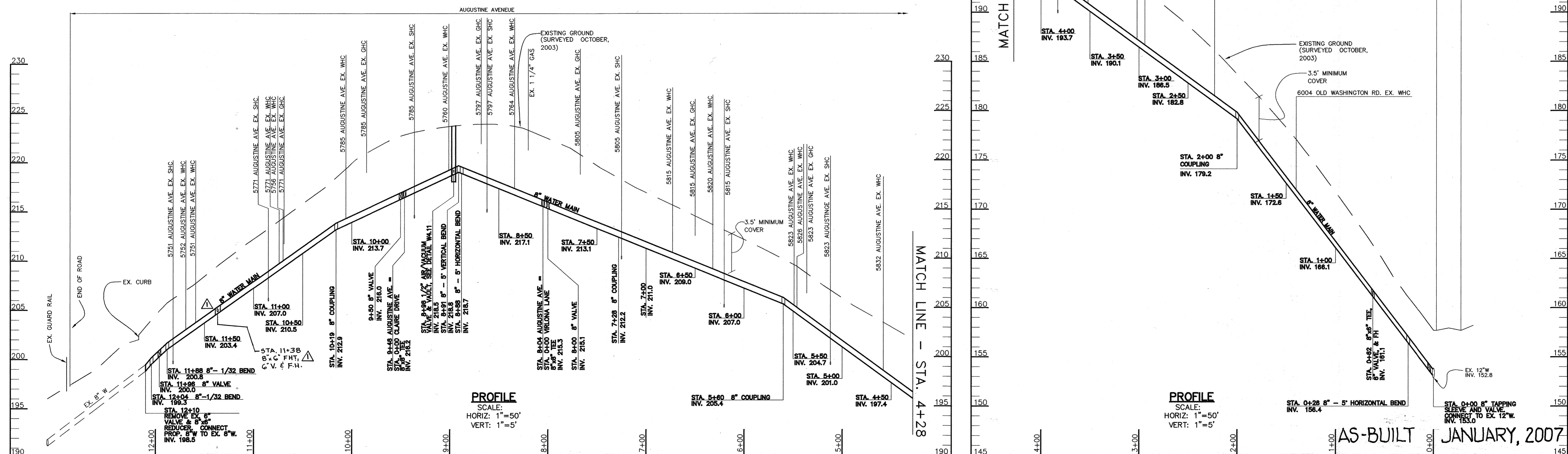
PLAN
SCALE: 1"=50'

NOTES:

- EXISTING FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED TO THE HOWARD COUNTY BUREAU OF UTILITIES AFTER THE NEW WATER MAIN IS CONSTRUCTED.
- SEE SHEET 17 FOR WATER MAIN STAKEOUT TABLE
- SEE SHEET 2 FOR TRAVERSE POINT REFERENCES.
- SEE SHEET 13 FOR SEQUENCE OF CONSTRUCTION FOR AUGUSTINE AVENUE, CLAIRE DRIVE AND VIRLONA AVENUE.
- ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.
- SEE SHEET 13 FOR TEMPORARY WATER SERVICE PLAN.
- EXISTING VALVES TO BE ABANDONED, SHALL BE ABANDONED IN PLACE BY REMOVAL OF ROADWAY BOX AND BACKFILLED.

MATCH LINE - SHT 4
STA. 1+78

SEE SHEET 4 FOR CONTINUATION OF PLAN AND ALL OF THE PROFILE OF CLAIRE DRIVE



PROFILE
SCALE:
HORIZ: 1"=50'
VERT: 1"=5'

PROFILE
SCALE:
HORIZ: 1"=50'
VERT: 1"=5'

AS-BUILT JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 4/26/05
 Chief, Bureau of Engineering: *[Signature]* 4/27/05
 Chief, Bureau of Utilities: *[Signature]* 4-27-05
 Chief, Utility Design Division: *[Signature]* 4-27-05

Patton Hurrys Rust & Associates, p.c.
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

Professional Engineer
 FRANK DONALDSON
 PE #8146

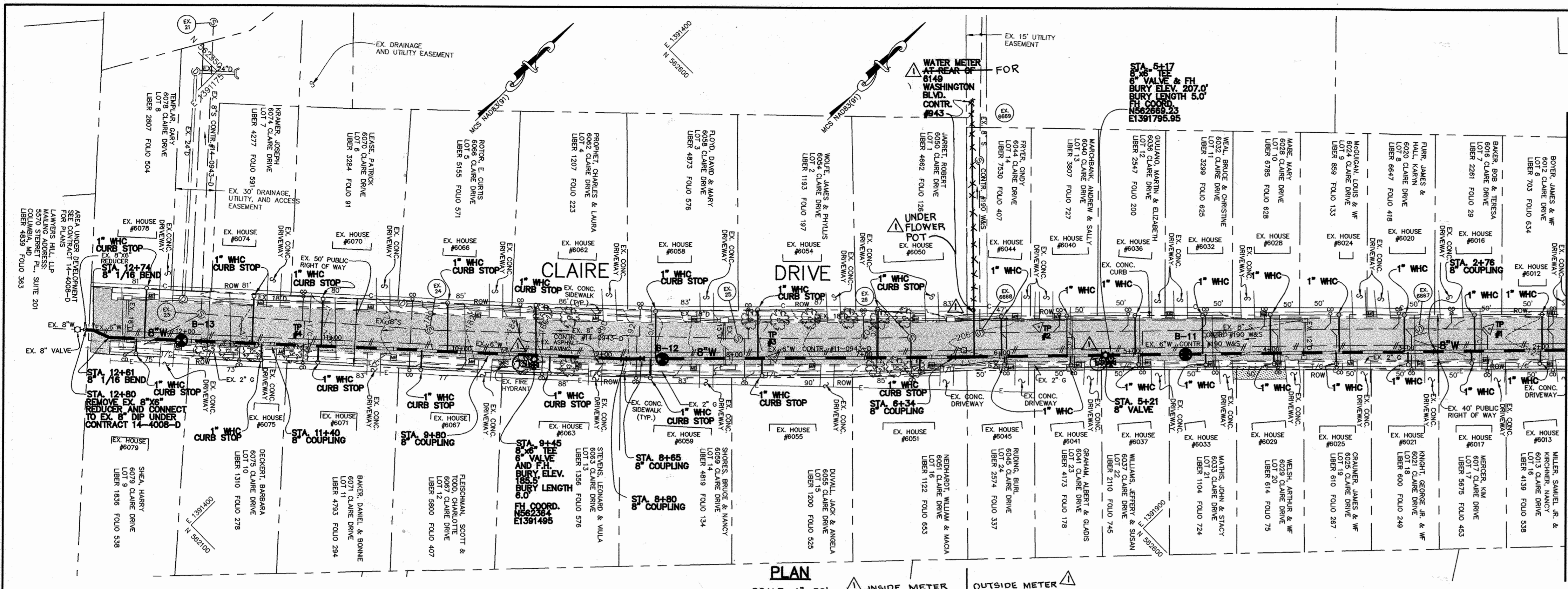
DES: R.J.S.B.	RJC	AS-BUILT	1/07
DRN: R.J.C.			
CHK: G.C.L.			
DATE: DEC., 2004			
BY: NO.	REVISION	DATE	

PLAN AND PROFILE
AUGUSTINE AVENUE

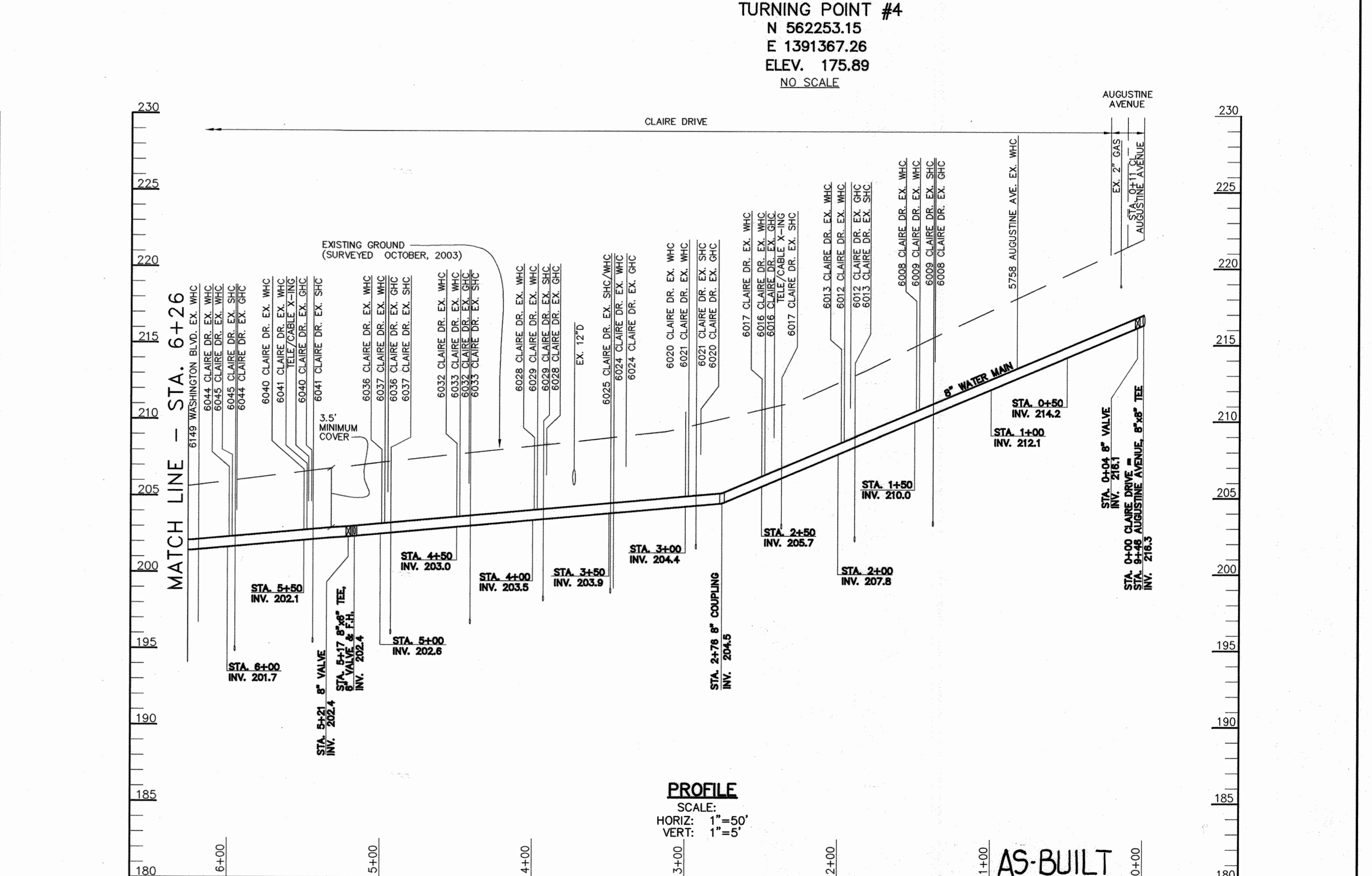
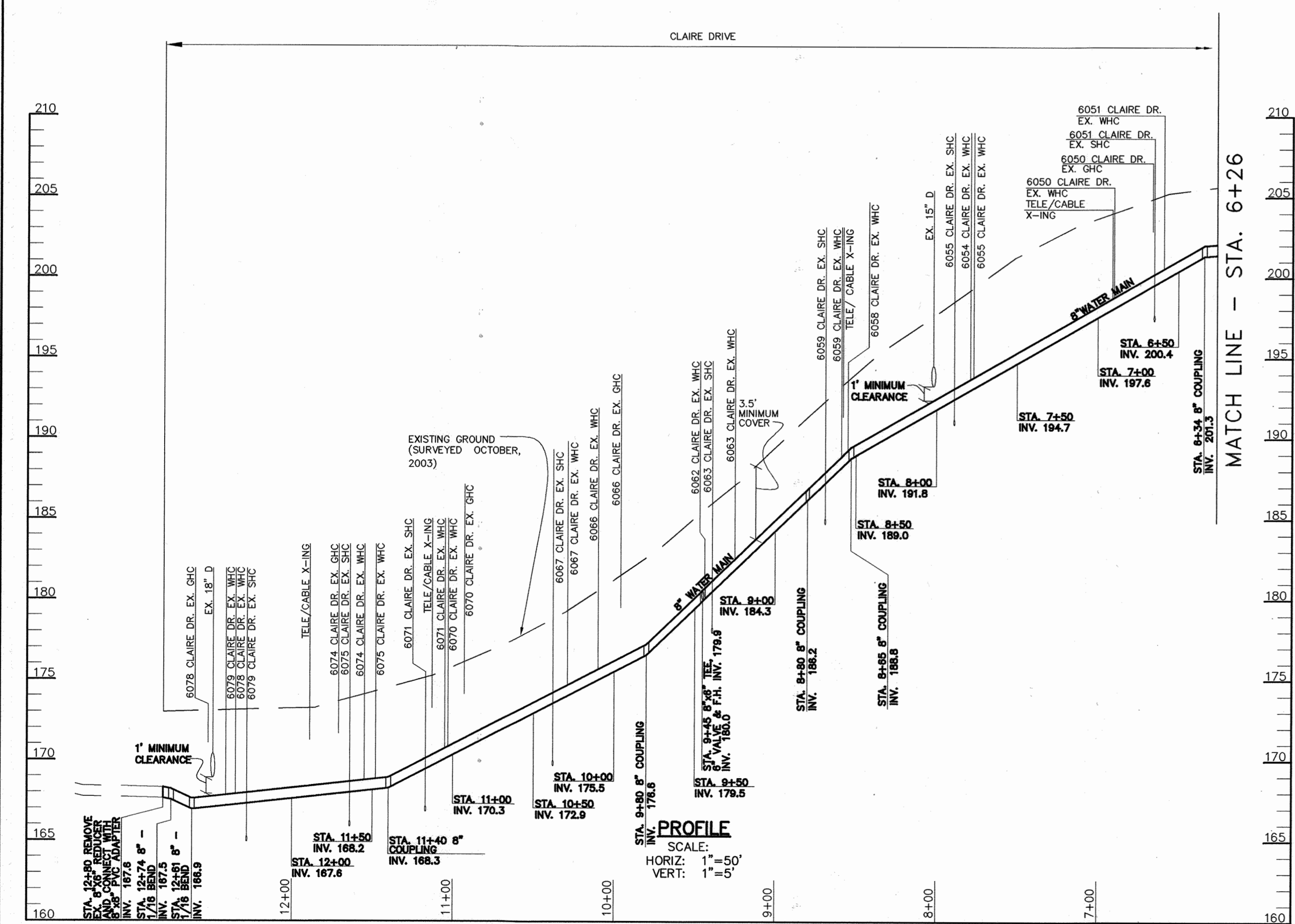
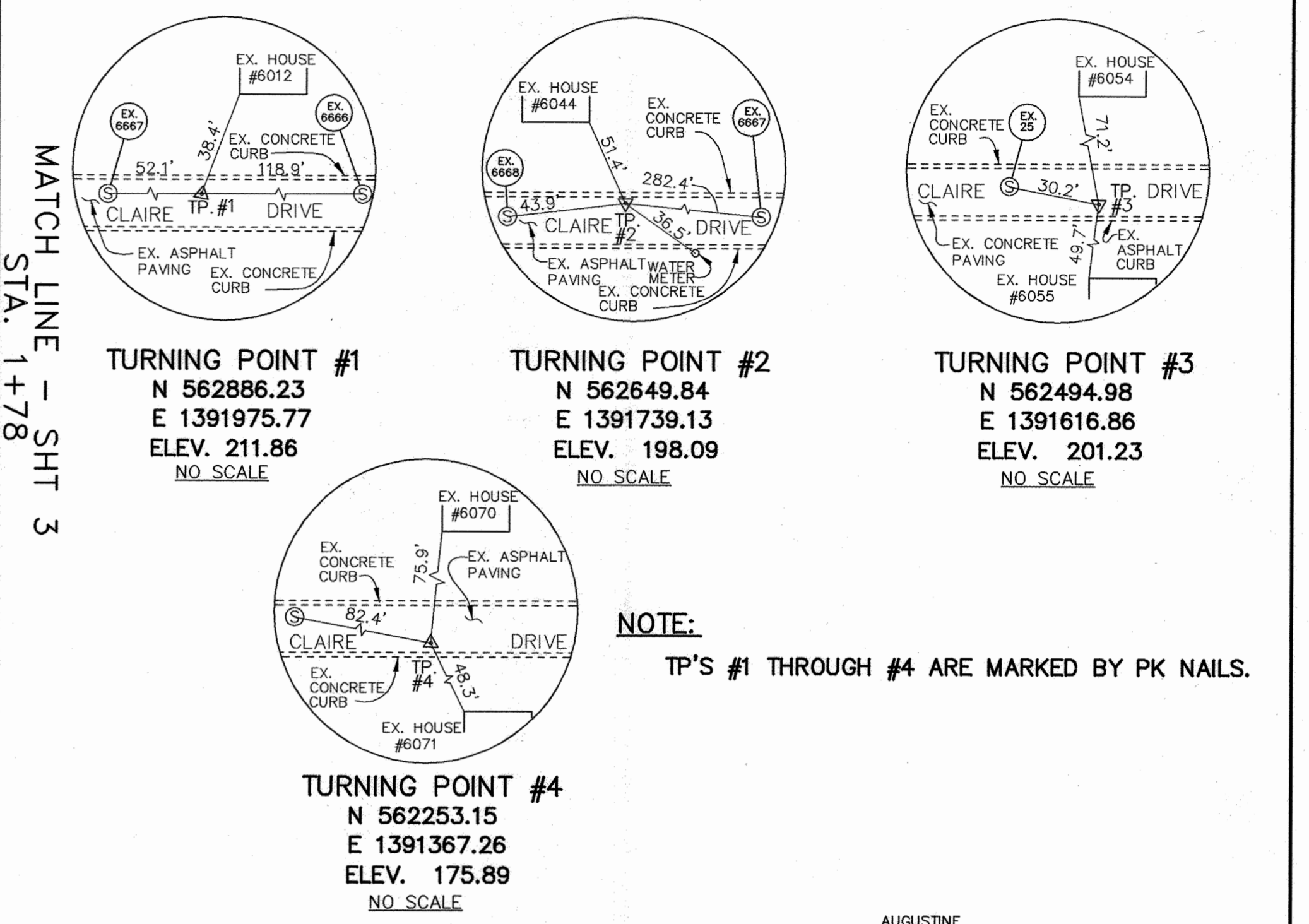
600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

ELKRIDGE HEIGHTS
 WATER MAIN REPLACEMENT
 CAPITAL PROJECT NO. W-8241
 CONTRACT NO. 44-4204
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 3 OF 18



- NOTES:**
- EXISTING FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED TO THE HOWARD COUNTY BUREAU OF UTILITIES AFTER THE NEW WATER MAIN IS CONSTRUCTED.
 - SEE SHEET 17 FOR WATER MAIN STAKEOUT TABLE
 - ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT UNLESS OTHERWISE NOTED.
 - EXISTING VALVES TO BE ABANDONED, SHALL BE ABANDONED IN PLACE BY REMOVAL OF ROADWAY BOX AND BACKFILLED.



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Liam M. ... 4/26/05
 DIRECTOR OF PUBLIC WORKS DATE

Paul J. ... 4/27/05
 CHIEF, BUREAU OF ENGINEERING DATE

R. ... 4-27-05
 CHIEF, BUREAU OF UTILITIES DATE

... 4-27-05
 CHIEF, UTILITY DESIGN DIVISION DATE

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.

PHRA

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STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 FRANK DONALDSON
 PE #8146

DES: R.J.S.B.	R&C	AS-BUILT	I/07
DRN: R.J.C.			
CHK: G.C.L.			
DEC., 2004			
BY NO.	REVISION	DATE	

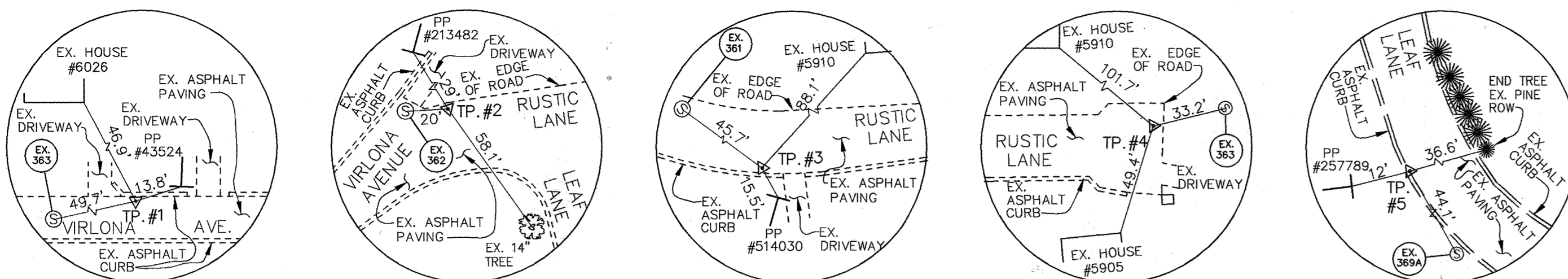
**PLAN AND PROFILE
 CLAIRE DRIVE**

600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

**ELKRIDGE HEIGHTS
 WATER MAIN REPLACEMENT
 CAPITAL PROJECT NO. W-8241
 CONTRACT NO. 44-4204
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND**

SCALE AS SHOWN
 SHEET 4 OF 18

project117171-01env\Plans\CLAIRES-LN_PLAN-AND-PROFILE.dwg, Layout1, 04/20/2005 07:13:41 AM, camichae, HP750C(36).pc3, Arch D - 24 x 36 in. (landscape), 11



TURNING POINT #1
 N 563173.26
 E 1392437.75
 ELEV. 215.22
 NO SCALE

TURNING POINT #2
 N 563386.56
 E 1392658.05
 ELEV. 200.74
 NO SCALE

TURNING POINT #3
 N 563435.82
 E 1392872.34
 ELEV. 187.26
 NO SCALE

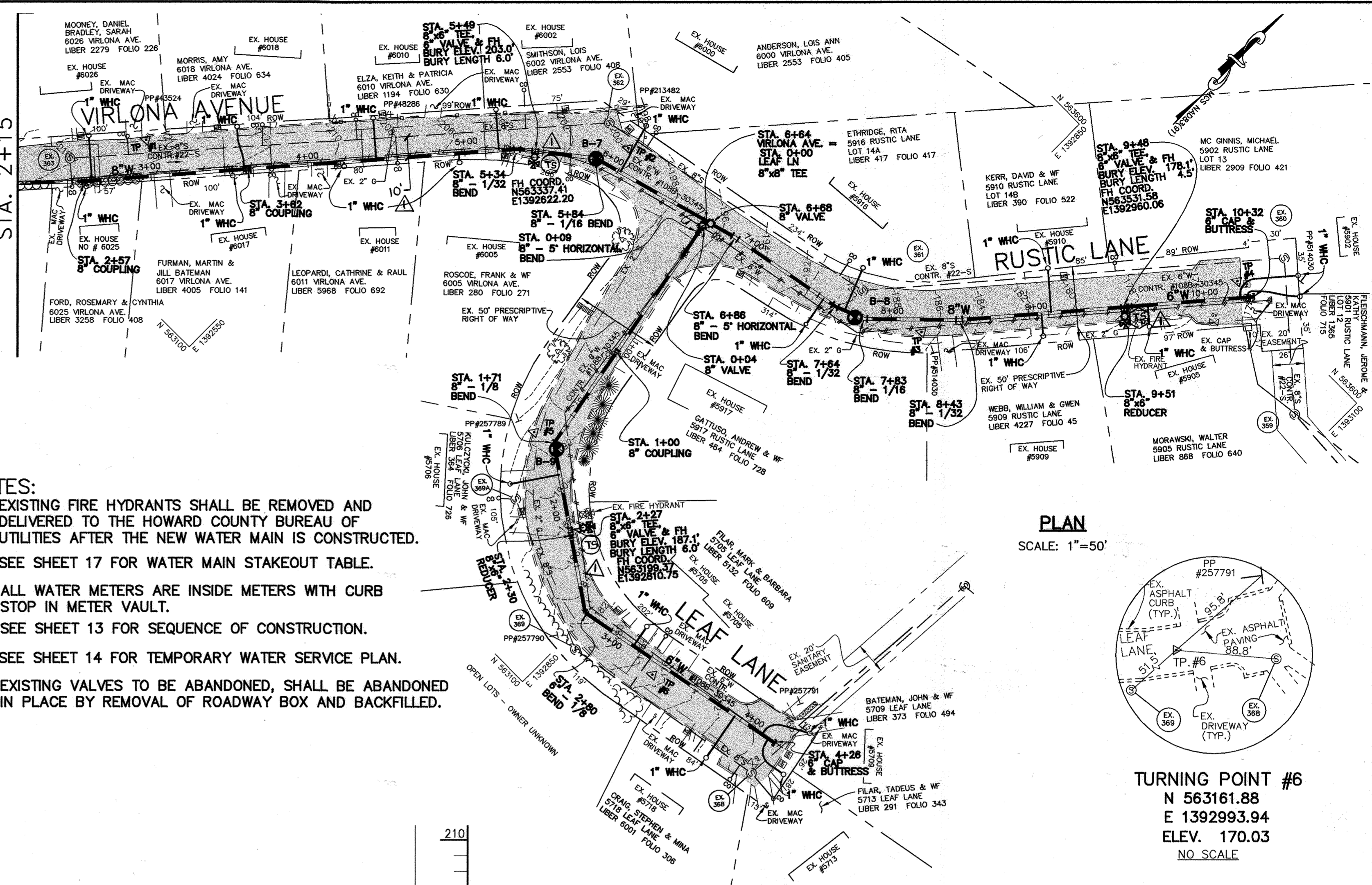
TURNING POINT #4
 N 562253.15
 E 1391367.26
 ELEV. 175.89
 NO SCALE

TURNING POINT #5
 N 563216.97
 E 1392743.26
 ELEV. 193.76
 NO SCALE

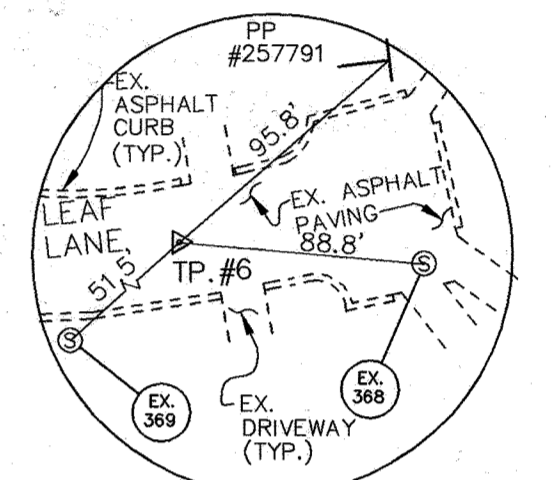
NOTE:
 TP'S #1 THROUGH #6 ARE MARKED BY PK NAILS.

MATCH LINE - SHT 3
 STA. 2+15

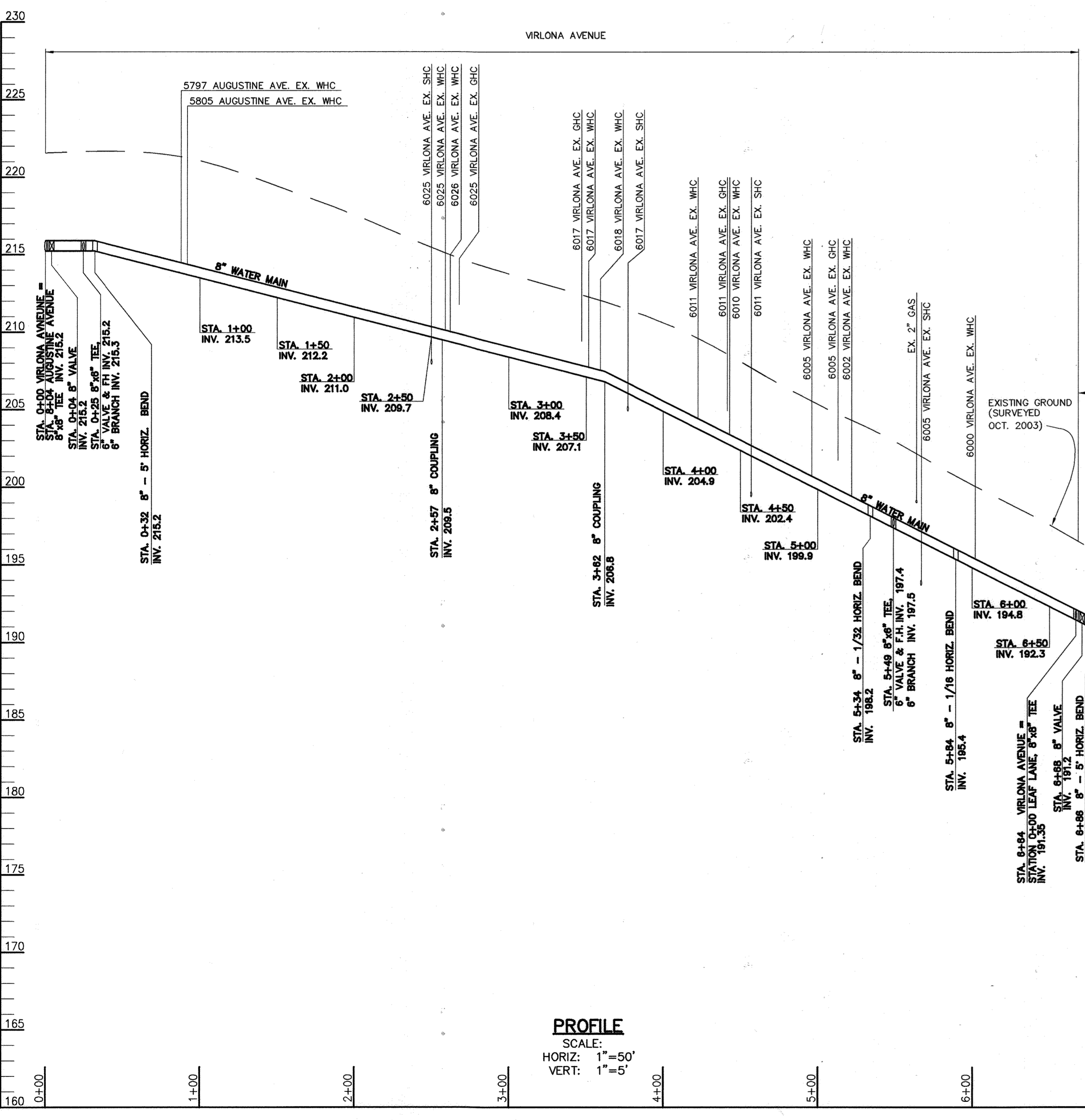
- NOTES:**
- EXISTING FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED TO THE HOWARD COUNTY BUREAU OF UTILITIES AFTER THE NEW WATER MAIN IS CONSTRUCTED.
 - SEE SHEET 17 FOR WATER MAIN STAKEOUT TABLE.
 - ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.
 - SEE SHEET 13 FOR SEQUENCE OF CONSTRUCTION.
 - SEE SHEET 14 FOR TEMPORARY WATER SERVICE PLAN.
 - EXISTING VALVES TO BE ABANDONED, SHALL BE ABANDONED IN PLACE BY REMOVAL OF ROADWAY BOX AND BACKFILLED.



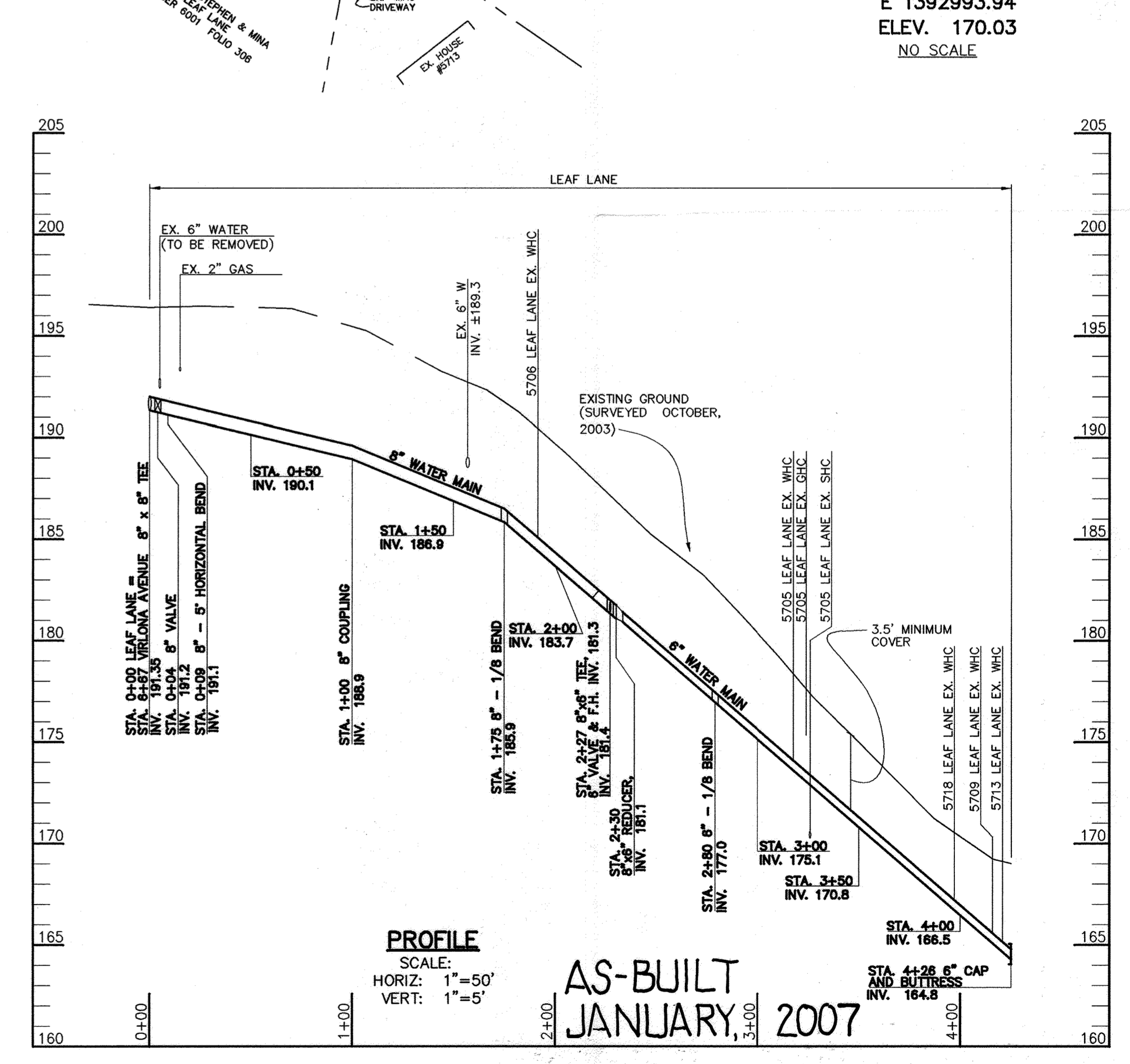
PLAN
 SCALE: 1"=50'



TURNING POINT #6
 N 563161.88
 E 1392993.94
 ELEV. 170.03
 NO SCALE



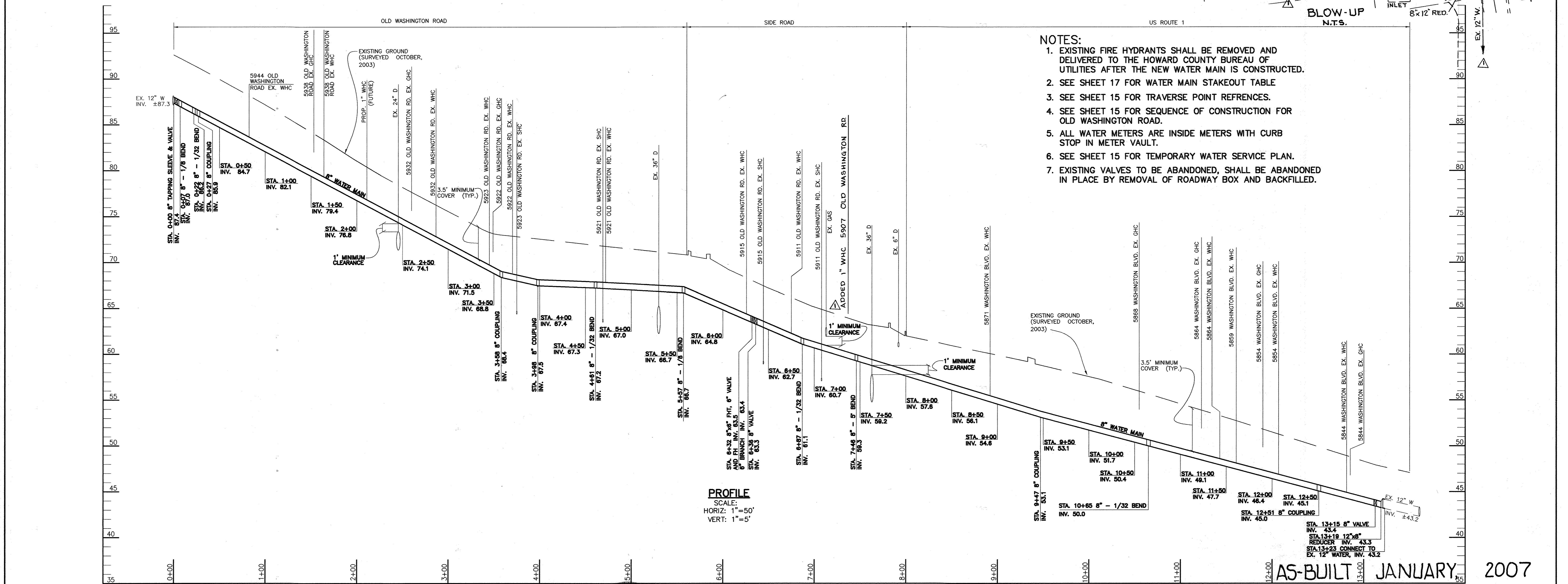
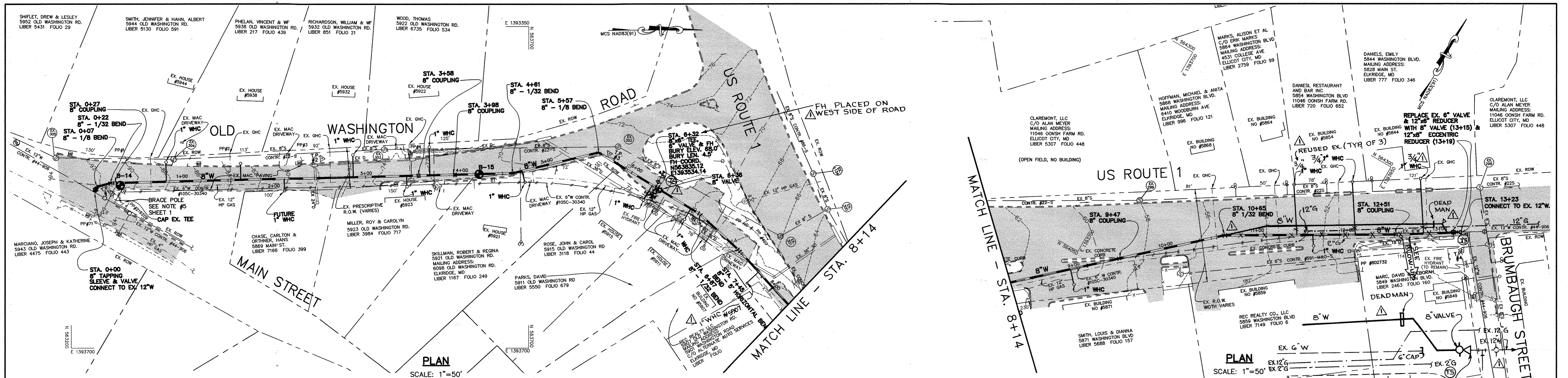
PROFILE
 SCALE:
 HORIZ: 1"=50'
 VERT: 1"=5'



PROFILE
 SCALE:
 HORIZ: 1"=50'
 VERT: 1"=5'

AS-BUILT
JANUARY, 2007

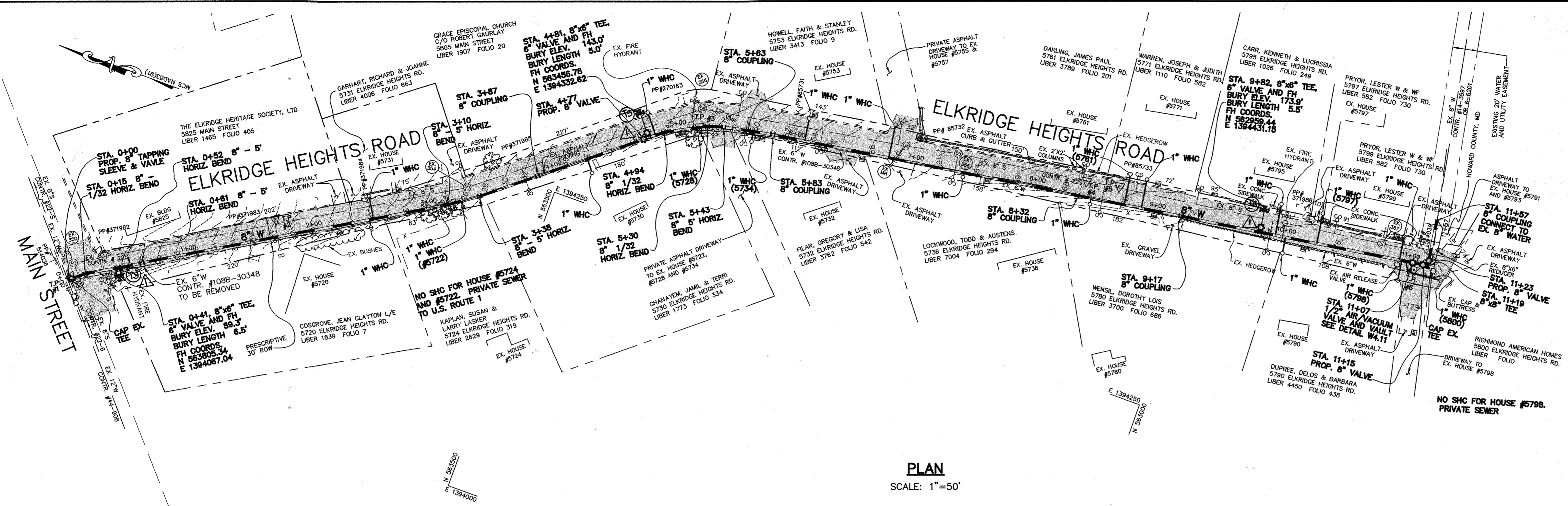
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>John P. Chen</i> 4/26/05 Chief, Bureau of Engineering: <i>Robert Seaman</i> 4/27/05 Chief, Bureau of Utilities: <i>Rita...</i> 4-27-05 Chief, Utility Design Division: <i>...</i> 4-27-05		Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 FRANK DONALDSON PE #8146		DES: R.J.S.B. RJC AS-BUILT 1/07 DRN: R.J.C. CHK: G.C.L. DEC., 2004		PLAN AND PROFILE VIRLONA AVENUE, RUSTIC LANE AND LEAF LANE 600' SCALE MAP NO. 38 BLOCK NO. 3 & 9		ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4204 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 5 OF 18	
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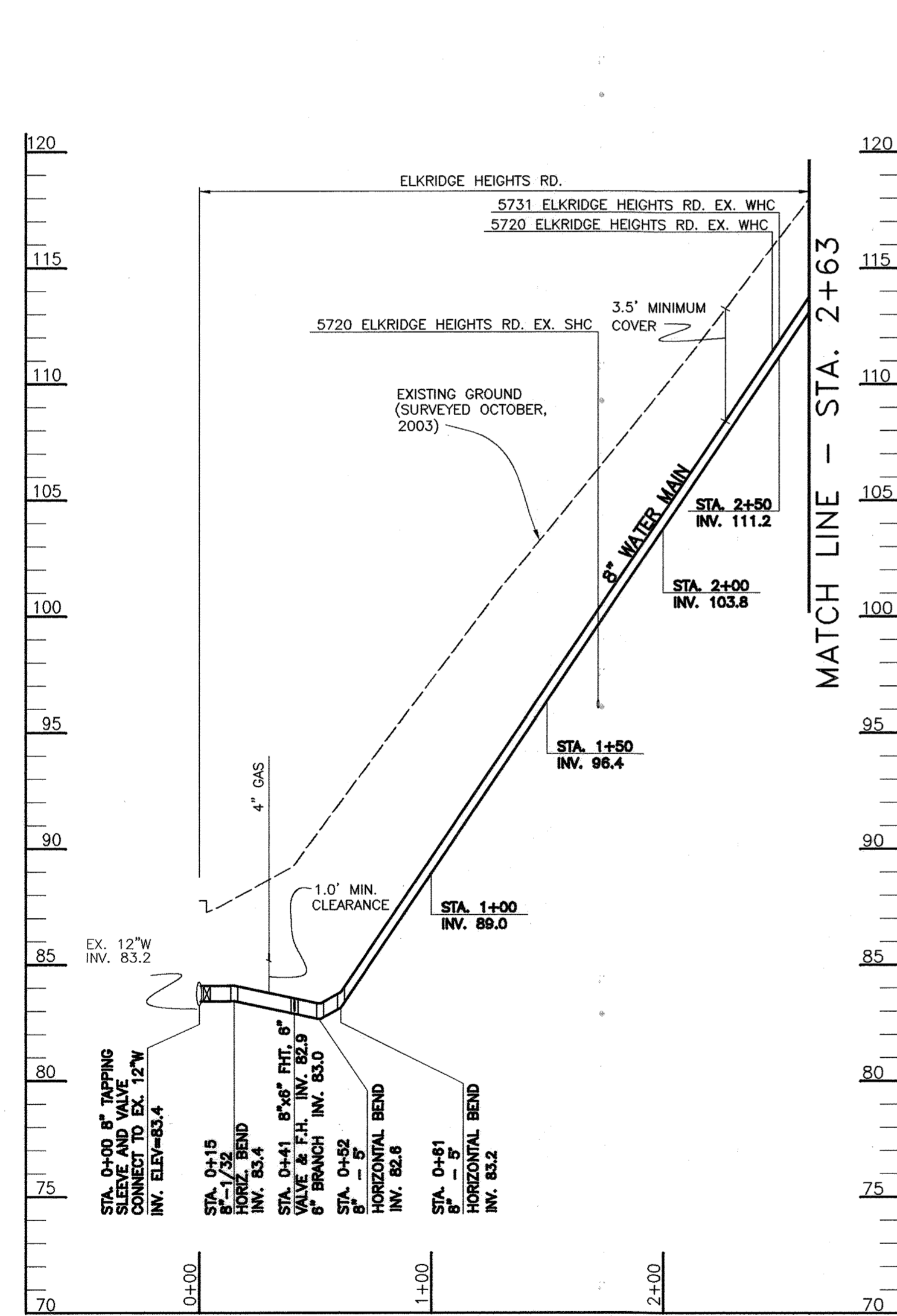
- NOTES:**
1. EXISTING FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED TO THE HOWARD COUNTY BUREAU OF UTILITIES AFTER THE NEW WATER MAIN IS CONSTRUCTED.
 2. SEE SHEET 17 FOR WATER MAIN STAKEOUT TABLE
 3. SEE SHEET 15 FOR TRAVERSE POINT REFERENCES.
 4. SEE SHEET 15 FOR SEQUENCE OF CONSTRUCTION FOR OLD WASHINGTON ROAD.
 5. ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.
 6. SEE SHEET 15 FOR TEMPORARY WATER SERVICE PLAN.
 7. EXISTING VALVES TO BE ABANDONED, SHALL BE ABANDONED IN PLACE BY REMOVAL OF ROADWAY BOX AND BACKFILLED.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>Jan G. Clark</i> 4/26/05 Chief, Bureau of Engineering: <i>Paul J. Spon</i> 4/27/05 Chief, Bureau of Utilities: <i>R. L. B.</i> 4-27-05 Chief, Utility Design Division: <i>O. J. ...</i> 4-27-05		Patton Harris Rust & Associates, p.c. Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 Professional Engineer: <i>Frank Donaldson</i> 4/20/05 PE #8146		DES: R.J.S.B. RJC DWN: K.L.B. CHK: G.C.L. DEC. 2004 AS-BUILT		1/07 PLAN AND PROFILE OLD WASHINGTON ROAD AND US ROUTE 1 600' SCALE MAP NO. 38 BLOCK NO. 3 & 9		ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4204 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 6 OF 18
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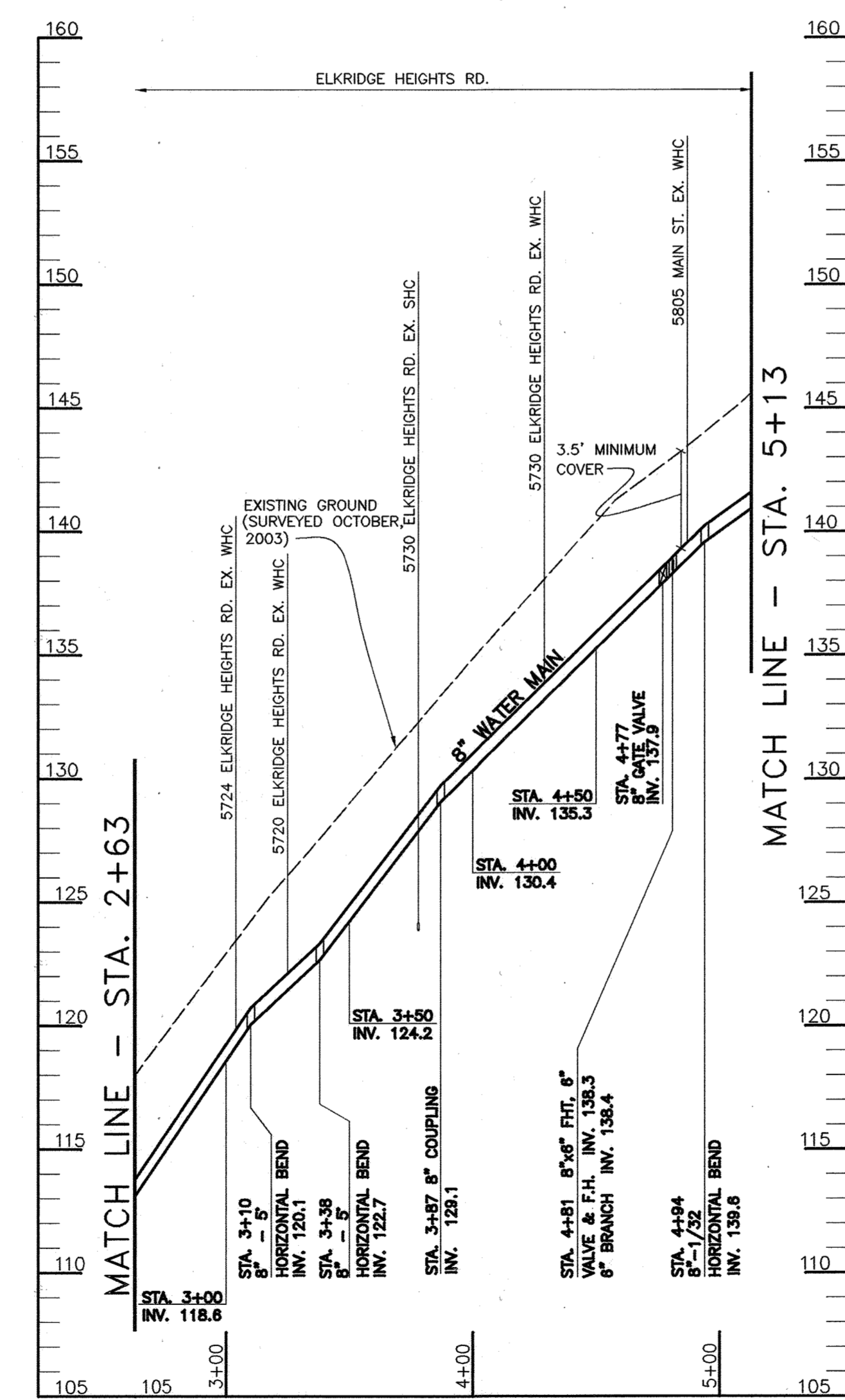
- NOTES:**
- EXISTING FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED TO THE HOWARD COUNTY BUREAU OF UTILITIES AFTER THE NEW WATER MAIN IS CONSTRUCTED.
 - SEE SHEET 17 FOR WATER MAIN STAKEOUT TABLE
 - SEE SHEET 16 FOR TRAVERSE POINT REFERENCES.
 - SEE SHEET 16 FOR SEQUENCE OF CONSTRUCTION FOR ELKCRIDGE HEIGHTS ROAD.
 - ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.
 - SEE SHEET 15 FOR TEMPORARY WATER SERVICE PLAN.
 - EXISTING VALVES TO BE ABANDONED, SHALL BE ABANDONED IN PLACE BY REMOVAL OF ROADWAY BOX AND BACKFILLED.



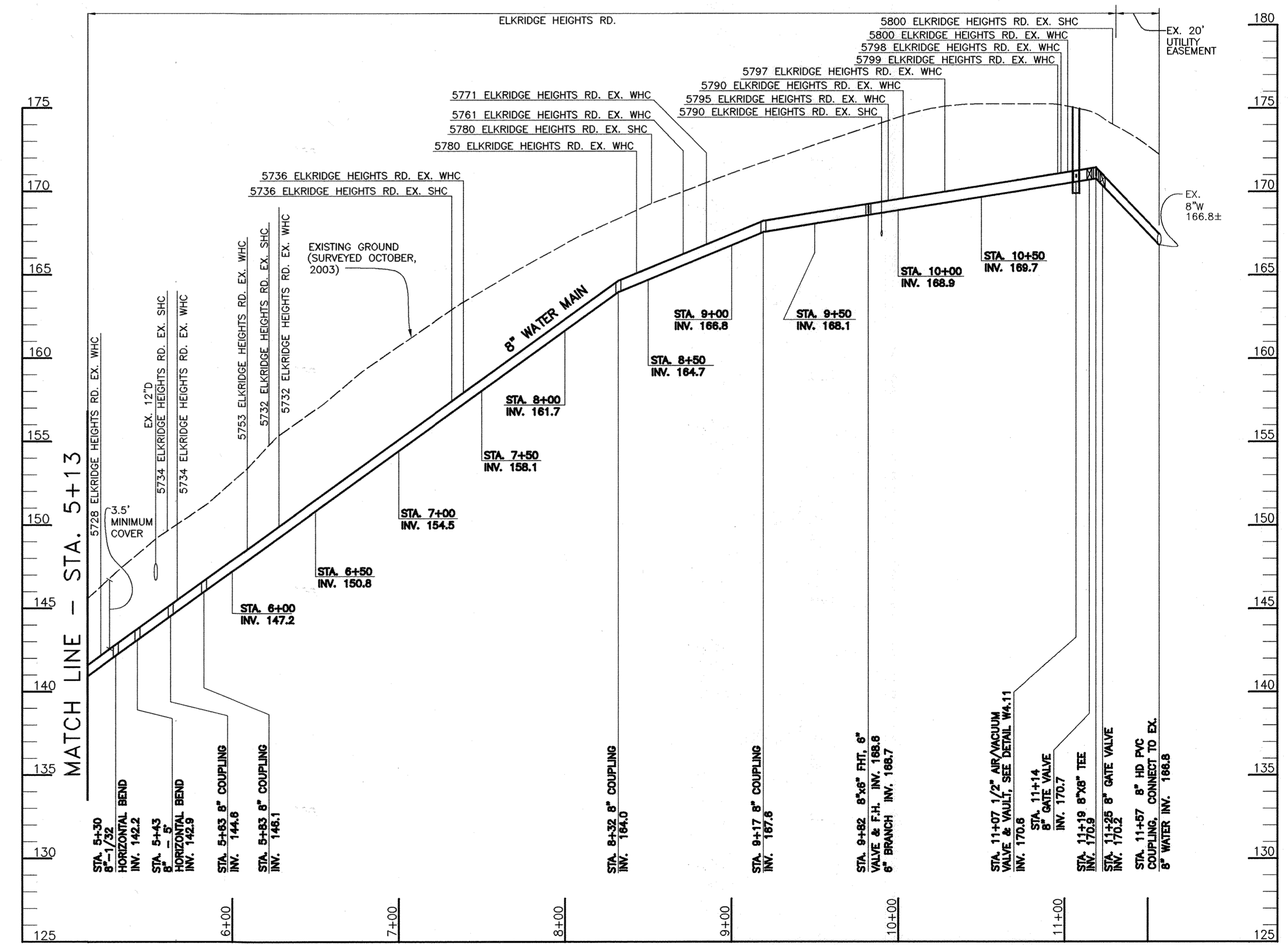
PLAN
SCALE: 1"=50'



PROFILE
SCALE:
HORIZ: 1"=50'
VERT: 1"=5'



PROFILE
SCALE:
HORIZ: 1"=50'
VERT: 1"=5'



PROFILE
SCALE:
HORIZ: 1"=50'
VERT: 1"=5'

AS-BUILT
JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>Janet Chu</i> DIRECTOR OF PUBLIC WORKS	<i>Robert Johnson</i> CHIEF, BUREAU OF ENGINEERING
DATE: 4-27-05	DATE: 4-27-05
<i>Rita W. Bunn</i> CHIEF, BUREAU OF UTILITIES	<i>Clayton L. ...</i> CHIEF, UTILITY DESIGN DIVISION
DATE: 4-27-05	DATE: 4-27-05

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHRA

8818 Centre Park Drive
Columbia, MD 21045
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F 410.997.9282

STATE OF MARYLAND
FRANK DONALDSON
PROFESSIONAL ENGINEER
PE #8146

DES: R.J.S.B.
DRN: K.L.B.
CHK: G.C.L.
DEC., 2004

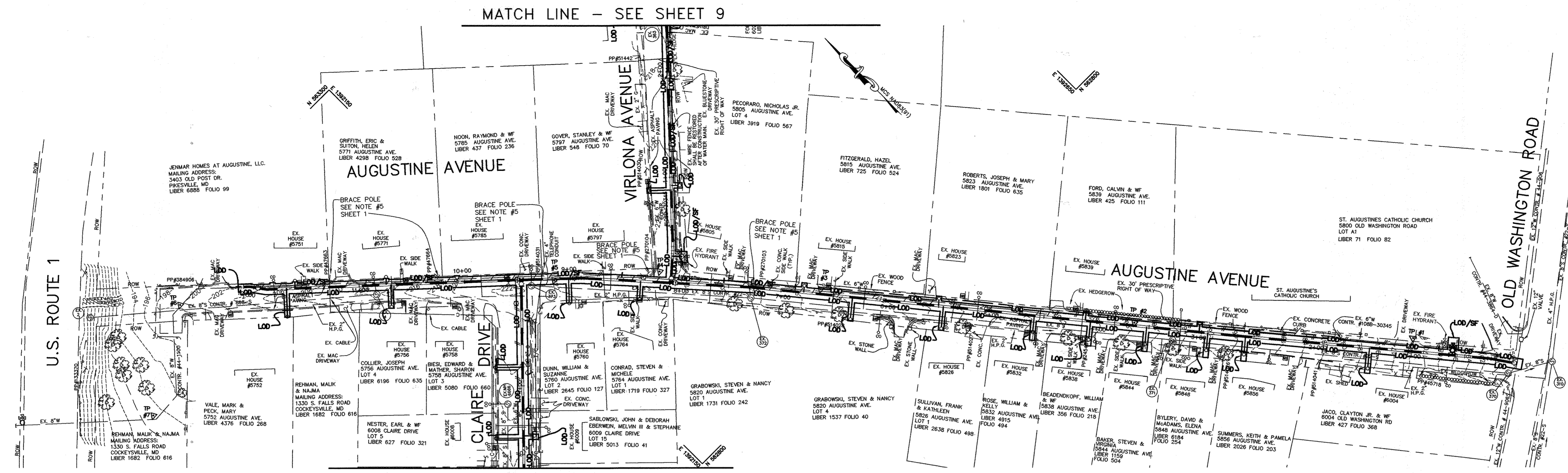
AS-BUILT	BY	NO.	REVISION	DATE

PLAN AND PROFILE
ELKCRIDGE HEIGHTS ROAD

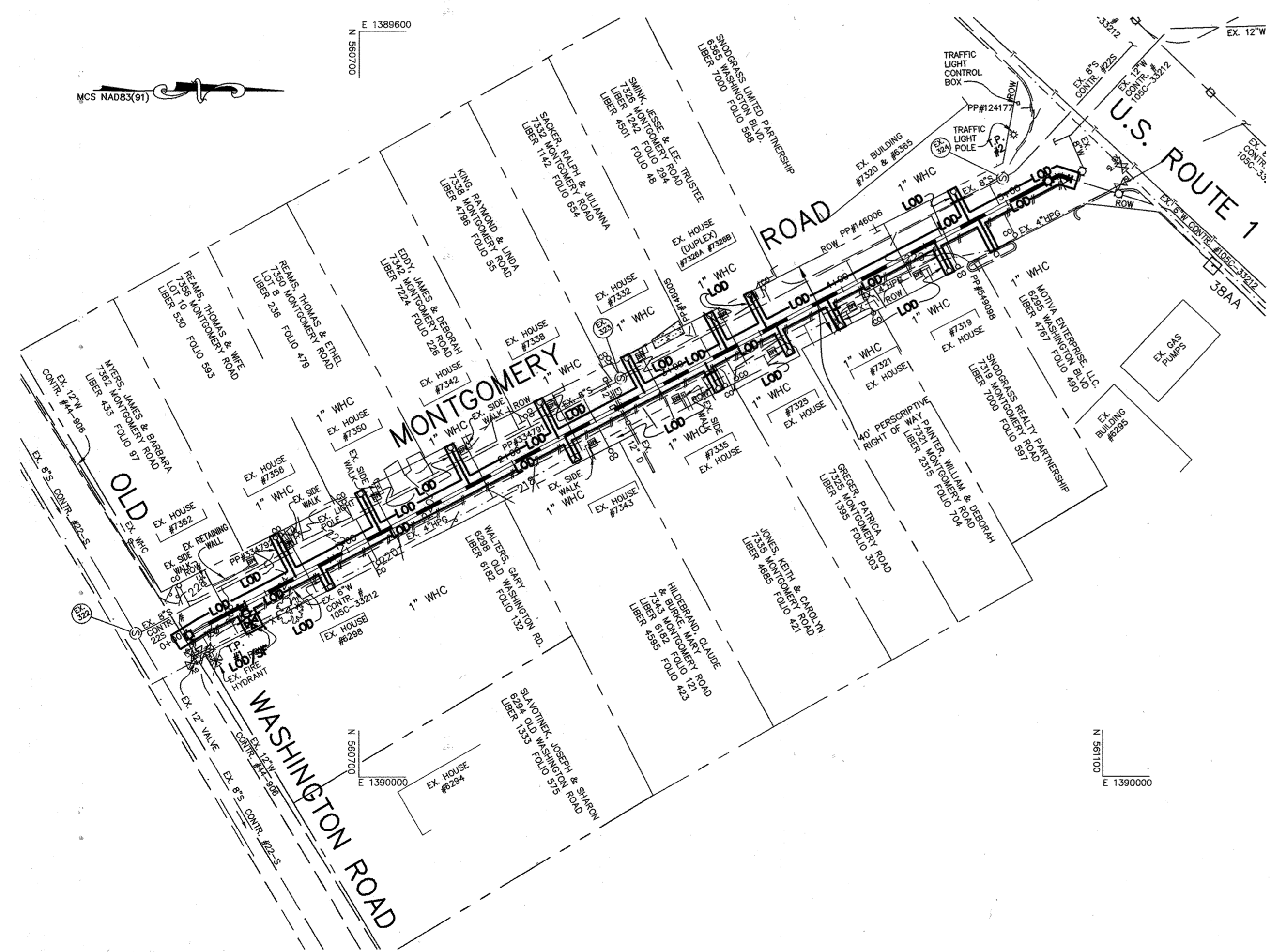
600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

ELKCRIDGE HEIGHTS
WATER MAIN REPLACEMENT
CAPITAL PROJECT NO. W-8241
CONTRACT NO. 44-4204
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 7 OF 18



PLAN
AUGUSTINE AVENUE
SCALE: 1"=50'



PLAN
MONTGOMERY ROAD
SCALE: 1"=50'

AS-BUILT
JANUARY, 2007

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul J. Seaman 4/27/05
DEVELOPER DATE

BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Rust 4/27/05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

John R. Rust 5/14/05
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Rust 5/14/05
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John R. Rust 4/27/05 *Paul J. Seaman* 4/27/05
DIRECTOR OF PUBLIC WORKS DATE CHIEF, BUREAU OF ENGINEERING DATE

John R. Rust 4-27-05 *John R. Rust* 4-27-05
CHIEF, BUREAU OF UTILITIES DATE CHIEF, UTILITY DESIGN DIVISION DATE

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHRA

8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

Frank Donaldson 4/27/05
FRANK DONALDSON DATE
PE #8146

DES: R.J.S.B.	RJC	AS-BUILT	1/07
DRN: R.J.C.			
CHK: G.C.L.			
DEC., 2004			
BY NO.	REVISION	DATE	

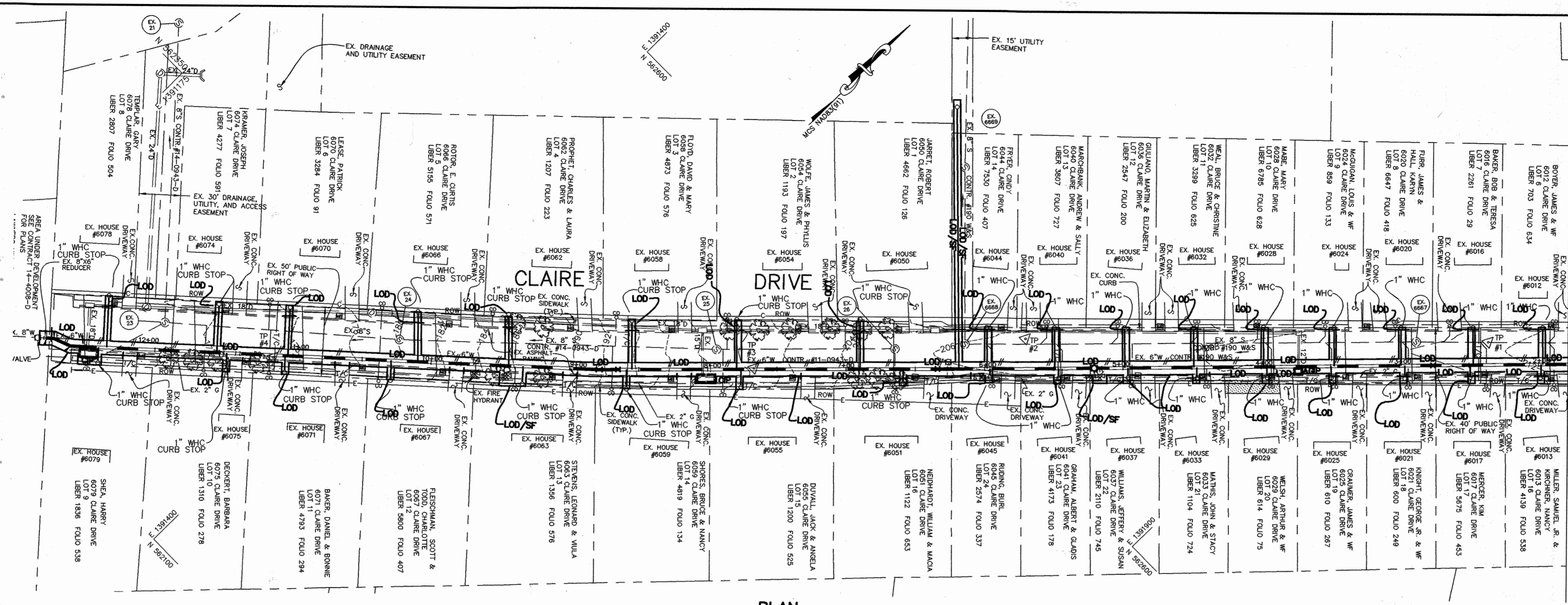
SEDIMENT & EROSION CONTROL
PLAN
MONTGOMERY ROAD AND
AUGUSTINE AVENUE

600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

ELKRIDGE HEIGHTS
WATER MAIN REPLACEMENT
CAPITAL PROJECT NO. W-8241
CONTRACT NO. 44-4204
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

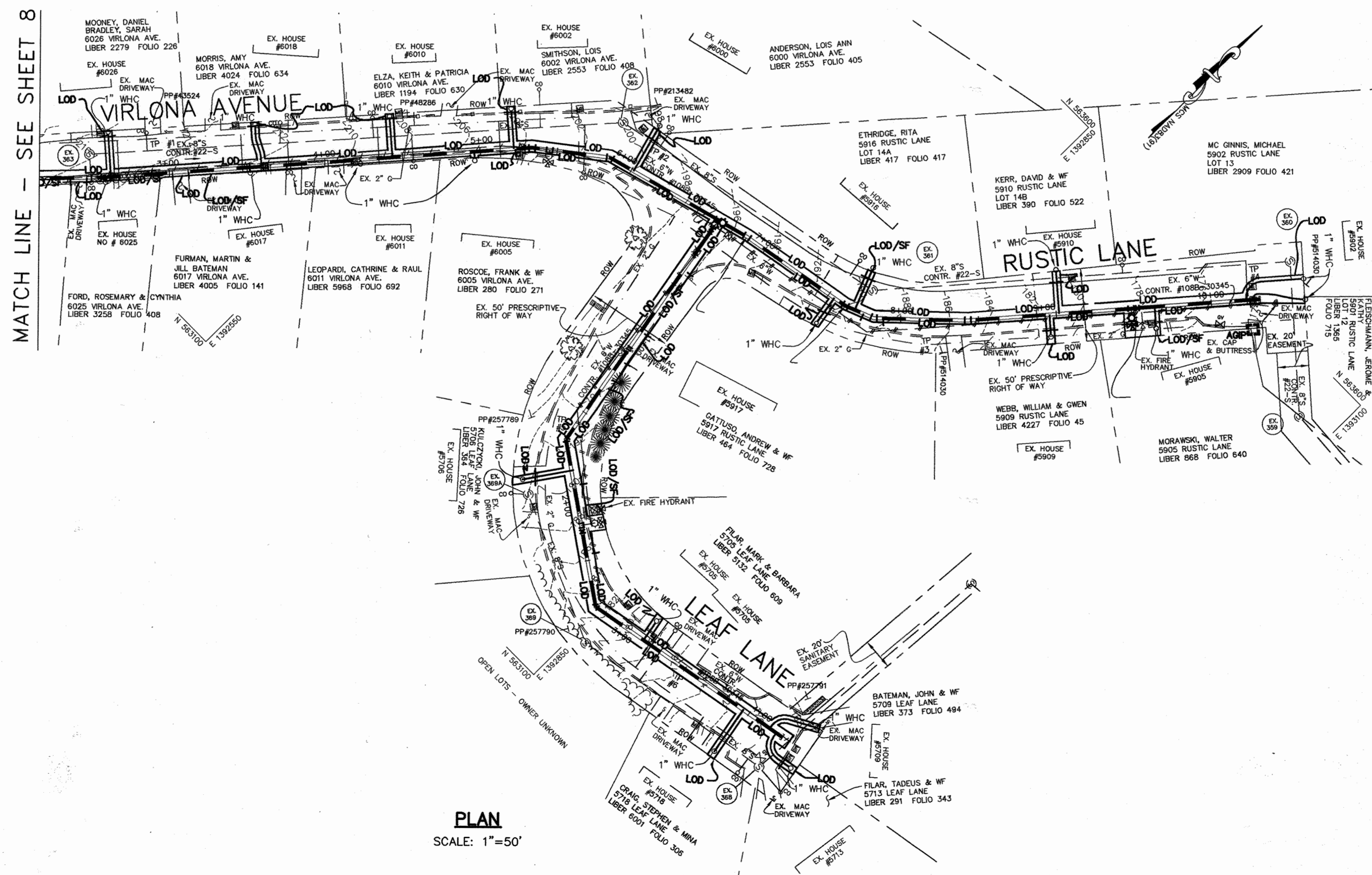
SCALE AS SHOWN
SHEET 8 OF 18

project:17741-0-EnvPlans\MONTGOMERY_RD_SEC-PLAN.dwg, Layout:1, 04/20/2005 08:54:29 AM, camichael, HP750C(95).pc3, Arch D - 24 x 36 in. (landscape), 1:1



PLAN
SCALE: 1"=50'

MATCH LINE - SEE SHEET 8



PLAN
SCALE: 1"=50'

MATCH LINE - SEE SHEET 8

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Robert S. Jenson 4/27/05
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Frank D. Johnson 4/27/05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Murray 5/14/05
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John K. Robertson 5/14/05
HOWARD SOIL CONSERVATION DISTRICT DATE

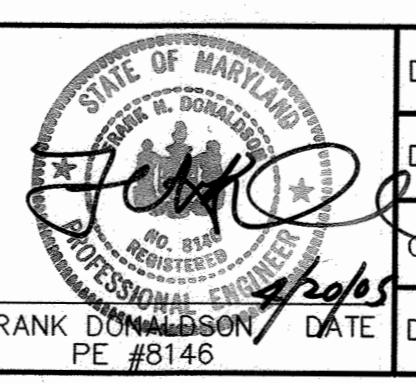
AS-BUILT JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>John K. Robertson</i> 4-27-05 DIRECTOR OF PUBLIC WORKS DATE	<i>Robert S. Jenson</i> 4/27/05 CHIEF, BUREAU OF ENGINEERING DATE
<i>John K. Robertson</i> 4-27-05 CHIEF, BUREAU OF UTILITIES DATE	<i>John K. Robertson</i> 4-27-05 CHIEF, UTILITY DESIGN DIVISION DATE

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHRA

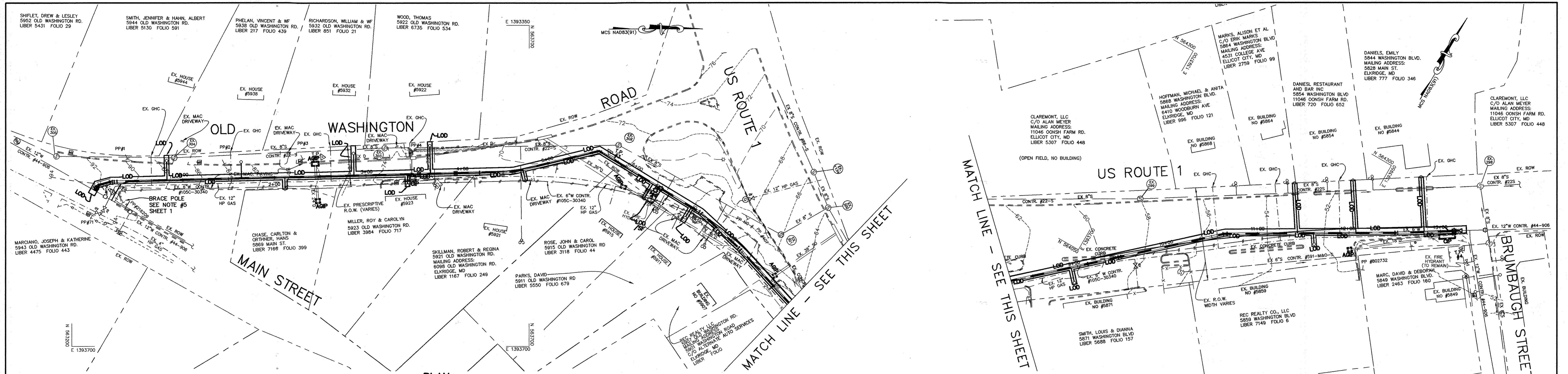
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282



DES: R.J.S.B.	RJC	AS-BUILT	1/07
DRN: R.J.C.			
CHK: G.C.L.			
DEC, 2004			
BY NO.		REVISION	DATE

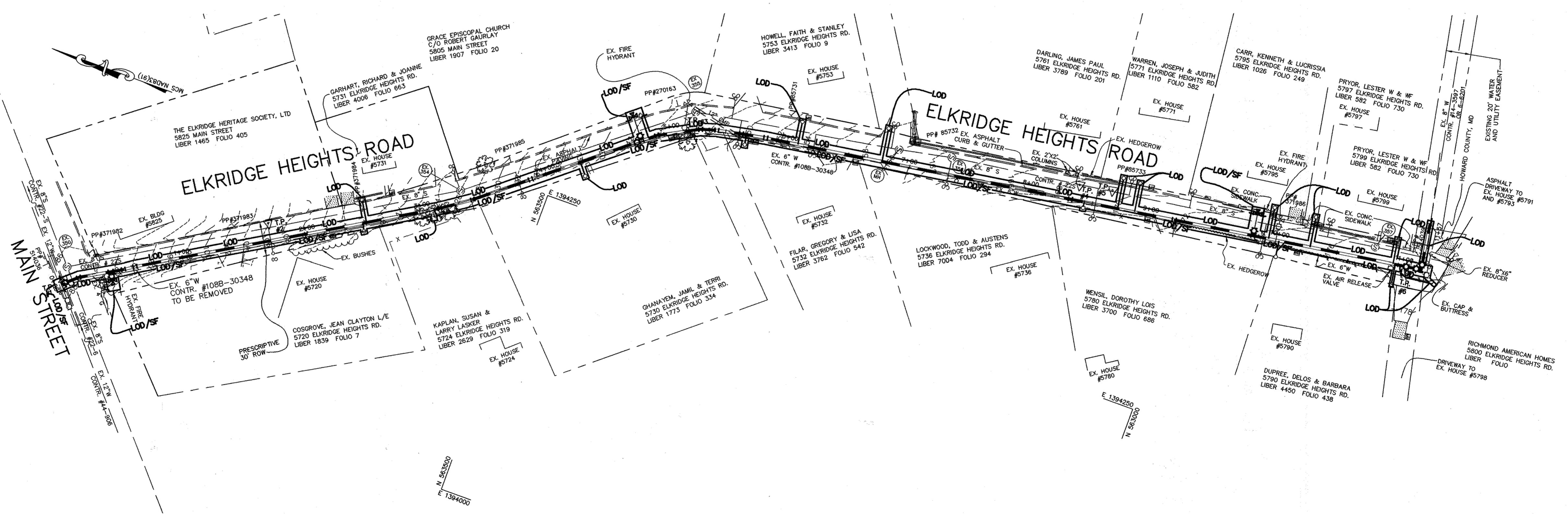
SEDIMENT & EROSION CONTROL PLAN	
CLAIRE DRIVE, VIRLONA AVENUE, RUSTIC LANE AND LEAF LANE	
600' SCALE MAP NO. 38	BLOCK NO. 3 & 9

ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT	
CAPITAL PROJECT NO. W-8241	
CONTRACT NO. 44-4204	
1ST ELECTION DISTRICT	
HOWARD COUNTY, MARYLAND	
SCALE AS SHOWN	SHEET 9 OF 18



**PLAN
OLD WASHINGTON ROAD**
SCALE: 1"=50'

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



**PLAN
ELKRIDGE HEIGHTS ROAD**
SCALE: 1"=50'

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Robert J. Spon 4/27/05
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

J. C. A. Dault 4/27/05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 5/4/05
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John K. Blanton 5/4/05
HOWARD SOIL CONSERVATION DISTRICT DATE

AS-BUILT JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>John J. Dwyer</i> 4/26/05 DIRECTOR OF PUBLIC WORKS DATE <i>Robert J. Spon</i> 4/27/05 CHIEF, BUREAU OF ENGINEERING DATE <i>John K. Blanton</i> 5/4/05 CHIEF, BUREAU OF UTILITIES DATE <i>John K. Blanton</i> 4-27-05 CHIEF, UTILITY DESIGN DIVISION DATE		Patton Harris Rust & Associates, p.c. Engineers, Surveyors, Planners, Landscape Architects. P.H.R.A. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 <i>Frank Donaldson</i> 4/27/05 PROFESSIONAL ENGINEER DATE FRANK DONALDSON PE #8146		DES: R.J.S.B. DRN: K.L.B. CHK: G.C.L. DEC., 2004 RUC <input checked="" type="checkbox"/> AS-BUILT <input type="checkbox"/> V07		SEDIMENT & EROSION CONTROL PLAN OLD WASHINGTON ROAD, US RT. 1 AND ELKRIDGE HEIGHTS ROAD 600' SCALE MAP NO. 38 BLOCK NO. 3 & 9		ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4204 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 10 OF 18
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Project: 17741-01-Env/Plans/OLD-WASHINGTON-ELKRIDGE-HEIGHTS_SEC-PLAN.dwg, Layout: 04/20/2005 06:56:50 AM, camichael, HPT60C(38).pc3, Arch D - 24 x 36 in. (landscape), 1:1

SEQUENCE OF CONSTRUCTION
SEDIMENT AND EROSION CONTROL

- OBTAIN GRADING PERMIT (1 DAY)
- CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION, INSPECTION DIVISION (410-313-1810) PRIOR TO STARTING WORK. (1 DAY)
- INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV. (13 DAYS)
- INSTALL TEMPORARY WATER SERVICE CONNECTIONS. (30 DAYS)
- EXCAVATE AND INSTALL PROPOSED 8" AND 6" WATER MAINS AND WATER HOUSE CONNECTIONS. (210 DAYS)
- TEST AND DISINFECT PROPOSED WATER MAIN. (15 DAYS)
- RESTORE TRENCHES TO THEIR ORIGINAL CONDITION WITH TEMPORARY PAVING AS PER HOWARD COUNTY STANDARDS AND SPECIFICATIONS. (20 DAYS)
- CONNECT WATER HOUSE CONNECTIONS (WHC) TO EXISTING METERS. (25 DAYS)
- REMOVE TEMPORARY SERVICE CONNECTION PIPING. (15 DAYS)
- INSTALL PERMANENT PAVING PATCH OVER TRENCH. (25 DAYS)
- UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTION, REMOVE SEDIMENT CONTROL DEVICES. (10 DAYS)

21.0 STANDARD AND SPECIFICATIONS
FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTATION STATION.

- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SILTY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CONDIMERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE SUBSOIL IS EITHER HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

- FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

- FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
 - ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 - TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 900 PARTS PER MILLION SHALL NOT BE USED.
 - NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

- NOTE: TOPSOIL SUBSTITUTES TO AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY MAY BE USED IN LIEU OF NATURAL TOPSOIL.

- PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

- TOPSOIL APPLICATION
 - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER PONDING.
 - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
 - ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
 - COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

- REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

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SECTION I VEGETATIVE STABILIZATION METHODS AND MATERIALS

- SITE PREPARATION
 - INSTALL SEDIMENT AND EROSION CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS OR SEDIMENT CONTROL BASINS.
 - PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.
 - SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES.

- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS):
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.
 - FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIAL SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE AND 98-100% WILL PASS THROUGH A #20 MESH SIEVE.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

- SEEDBED PREPARATION:
 - TEMPORARY SEEDING
 - SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL, AT A DEPTH OF 3-6" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPER MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED IT SHOULD NOT BE ROLLED OR DRAGGED TO THE LEFT IN THE ROUGHEST CONDITION. SLOPED AREA (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

- SEED SPECIFICATIONS
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.

NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.
 - INOCULANT - THE INOCULANT FOR TREATING LEGUME SEEDS IN THE MIXTURE SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75-80F CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

- METHODS OF SEEDING:
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION AMOUNTS WILL NOT EXCEED THE FOLLOWING: NITROGEN, MAXIMUM OF 100 LB TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS); 200 LBS/AC. K2O (POTASSIUM); 200 LBS/AC.
 - LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING) NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

- MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)
 - STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE, OR OAT STRAW. REASONABLY BRIGHT IN COLOR AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY, AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.
 - WOOD CELLULOSE FIBER MULCH (WCFM)
 - WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN A PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS WHAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM. DIAMETER APPROXIMATELY 1MM. PH RANGE OF 4.0 TO 8.5. ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREA WHERE ONE SPECIES OF GRASS IS DESIRED.

- MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - IF GRADING IS COMPLETED OUTSIDE THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.
 - WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 25 TONS/ACRE.
 - WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

- SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

- PERMANENT SEEDING.
 - MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
 - SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IF LOVEGRASS OR SEEDING LOVEGRASS IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARDS AND SPECIFICATIONS FOR TOPSOIL.
 - AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARRIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3-5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.
 - APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.
 - MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS SUCH AS STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (GREATER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1-3" OF SOIL SHOULD BE LOOSE AND FREED. SEEDING LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

- SEED SPECIFICATIONS
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.

NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.
 - INOCULANT - THE INOCULANT FOR TREATING LEGUME SEEDS IN THE MIXTURE SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75-80F CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

- METHODS OF SEEDING:
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION AMOUNTS WILL NOT EXCEED THE FOLLOWING: NITROGEN, MAXIMUM OF 100 LB TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS); 200 LBS/AC. K2O (POTASSIUM); 200 LBS/AC.
 - LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING) NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

- MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)
 - STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE, OR OAT STRAW. REASONABLY BRIGHT IN COLOR AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY, AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.
 - WOOD CELLULOSE FIBER MULCH (WCFM)
 - WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN A PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS WHAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM. DIAMETER APPROXIMATELY 1MM. PH RANGE OF 4.0 TO 8.5. ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREA WHERE ONE SPECIES OF GRASS IS DESIRED.

- MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - IF GRADING IS COMPLETED OUTSIDE THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.
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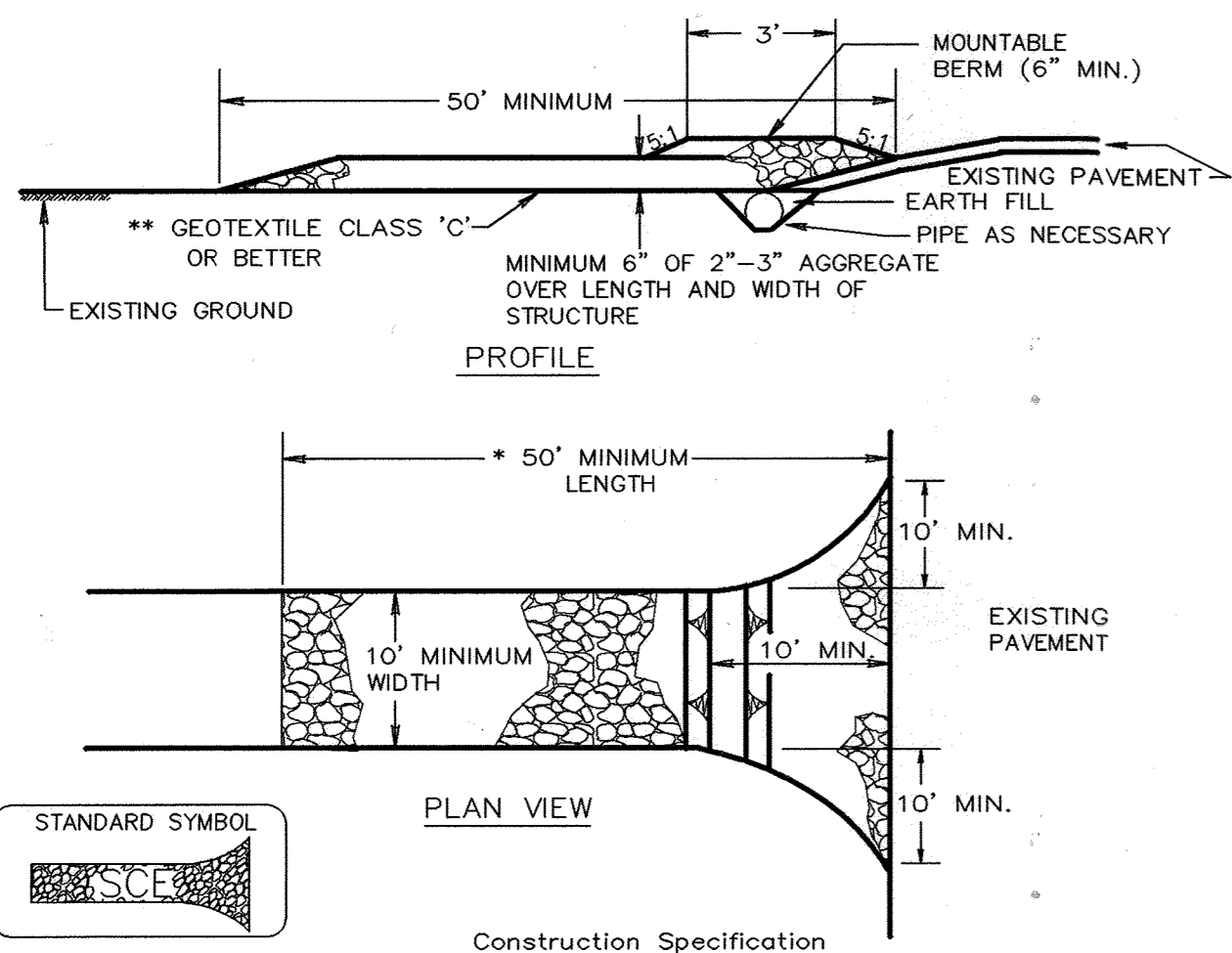
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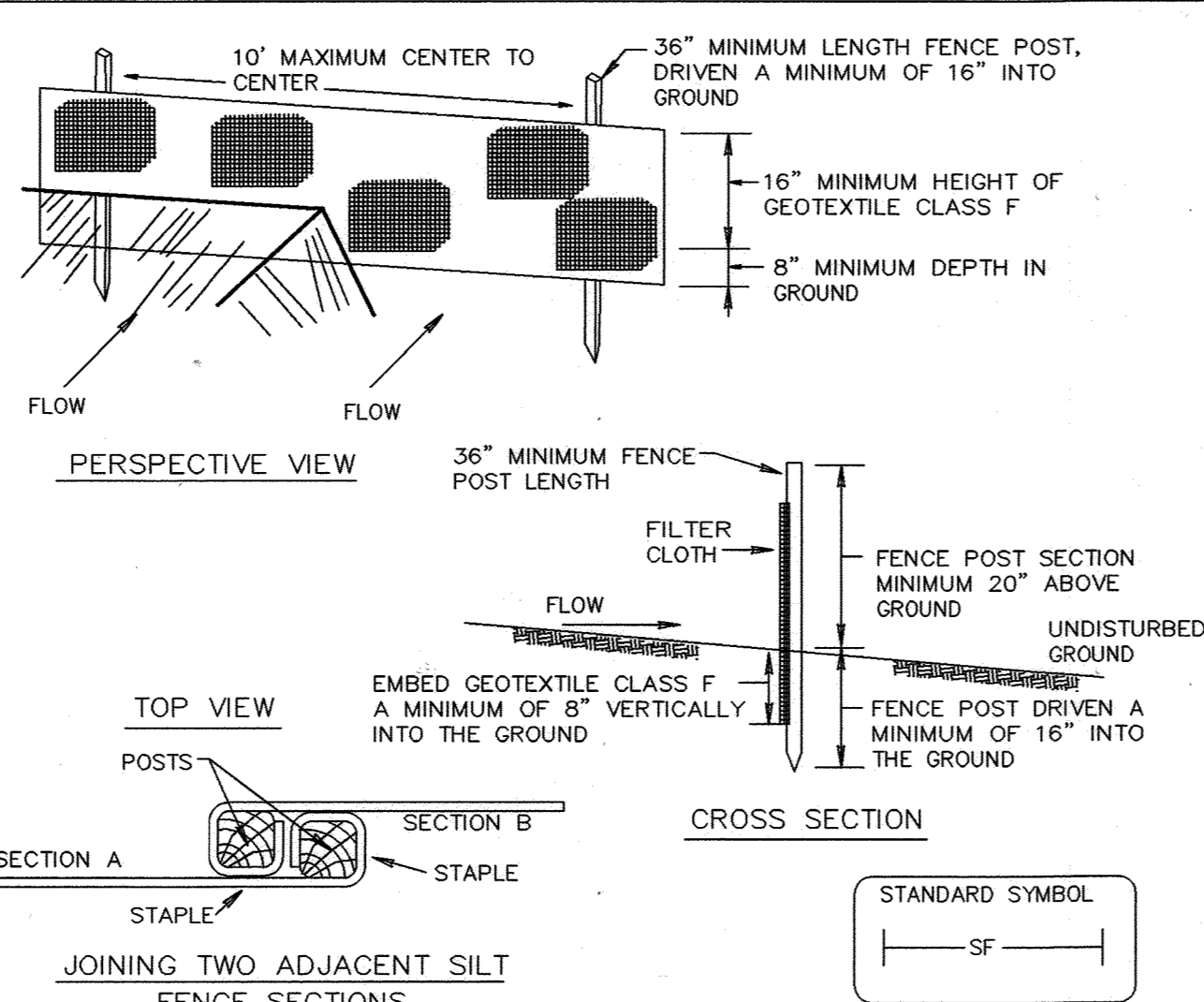
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



- Length - minimum of 50' (*30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mounded berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ² / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE

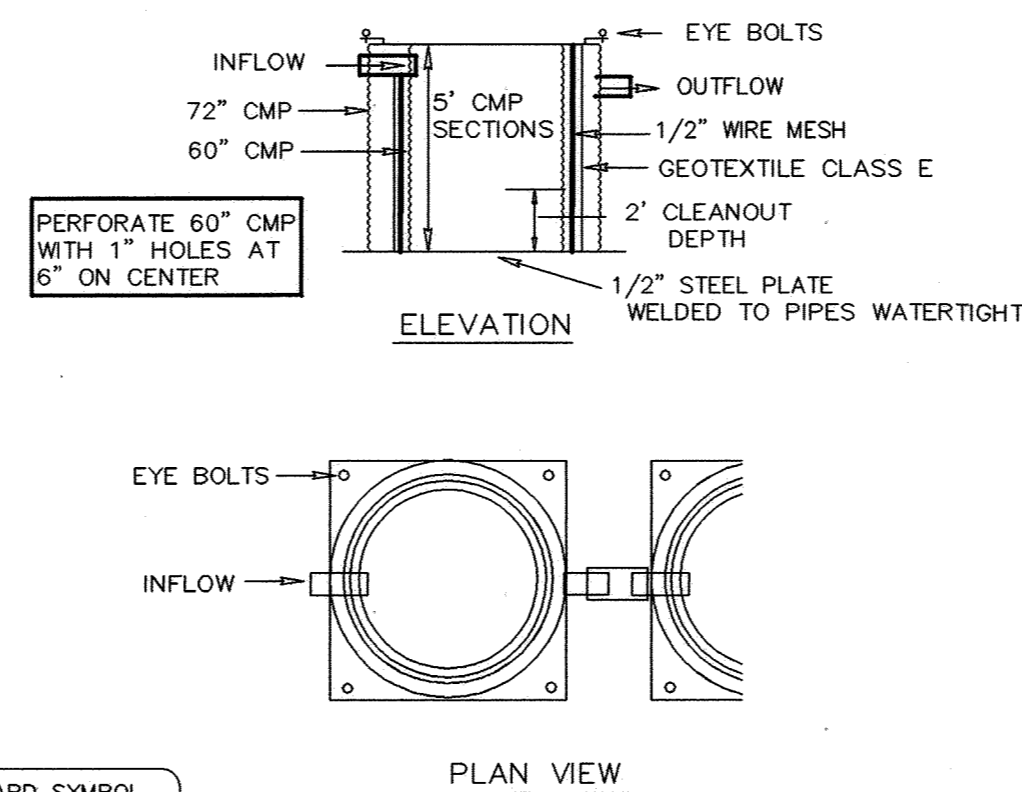
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

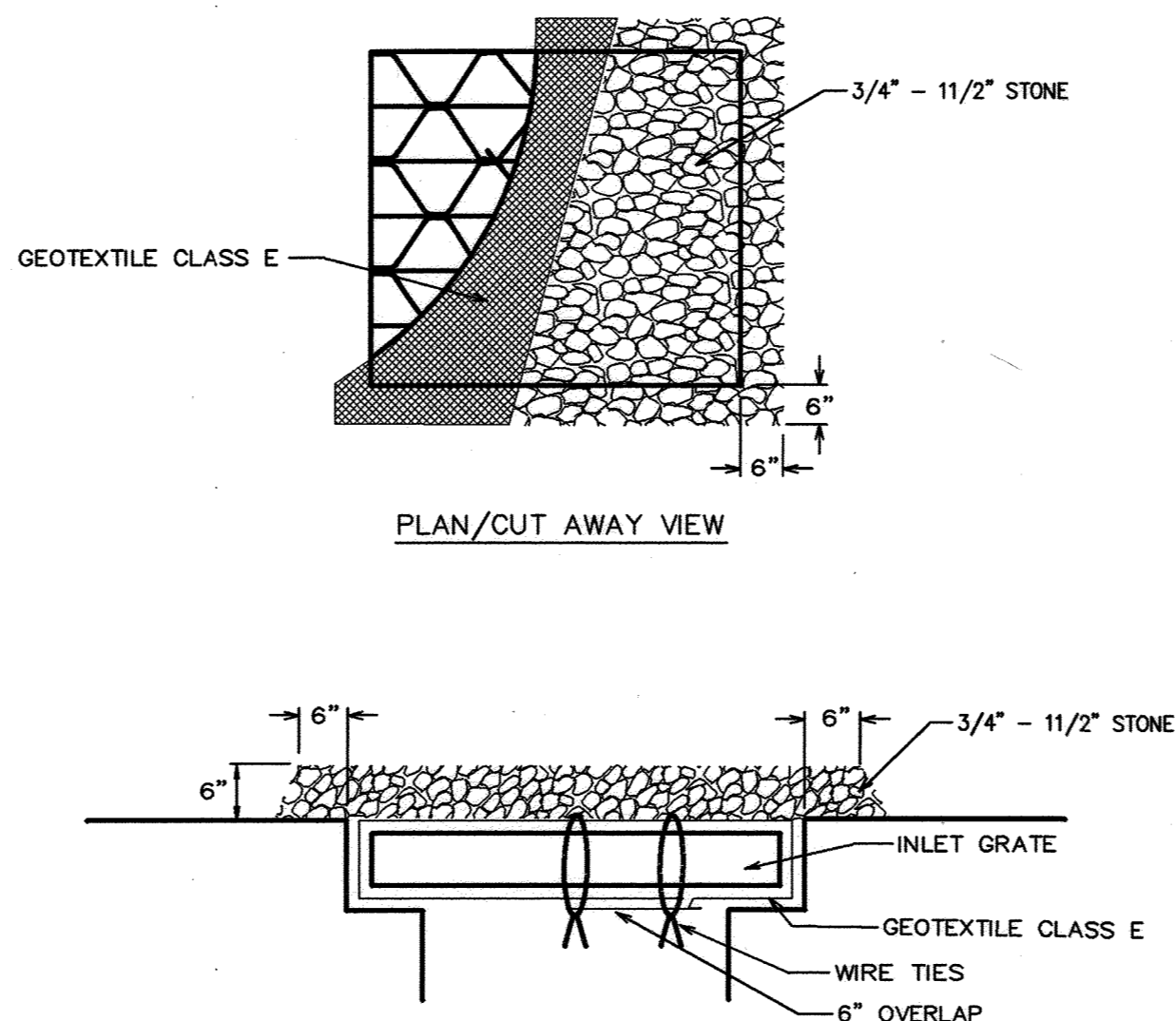
DETAIL 21 - PORTABLE SEDIMENT TANK



- The following formula should be used in determining the storage volume of the sediment tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity.
- An example of a typical sediment tank is shown above. Other container designs can be used if the storage volume is adequate and approval is obtained from the local approving agency.
- Tanks may be connected in series.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE D-14-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23B - AT GRADE INLET PROTECTION



- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

AREA DISTURBED	1.38 ACRES
AREA TO BE ROOFED OR PAVED (RESTORATION OF EXISTING PAVEMENT)	1.19 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.19 ACRES
TOTAL CUT	3,642 CU. YARDS
TOTAL FILL	3,642 CU. YARDS
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
- SPOIL FROM TRENCHING OPERATIONS SHALL BE PLACED ON UPHILL SIDE OF TRENCHES.
- A STABILIZED CONSTRUCTION ENTRANCE (SCE) MAY BE REQUIRED IF DEEMED NECESSARY BY THE SOIL CONSERVATION DISTRICT INSPECTOR. (FOR DETAIL SEE SHEET 4.)

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul Sapon 4/23/05
 DEVELOPER DATE

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

J. H. Daulton 4/23/05
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 5/14/05
 NATURAL RESOURCES SERVICE DATE

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

John Roberts 5/14/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John Roberts 4/23/05
 DIRECTOR OF PUBLIC WORKS DATE

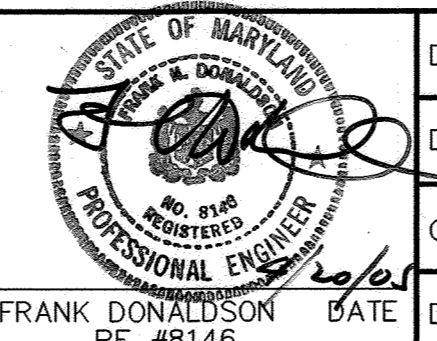
Paul Sapon 4/27/05
 CHIEF, BUREAU OF ENGINEERING DATE

Ruth Berman 4-27-05
 CHIEF, BUREAU OF UTILITIES DATE

Clayton 4-27-05
 CHIEF, UTILITY DESIGN DIVISION DATE

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.

PHR+A
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282



DES: R.J.S.B. RJC AS-BUILT 1/07

DRN: R.J.C.

CHK: G.C.L.

DEC., 2004

BY NO. REVISION DATE

SEDIMENT AND EROSION CONTROL
 DETAILS

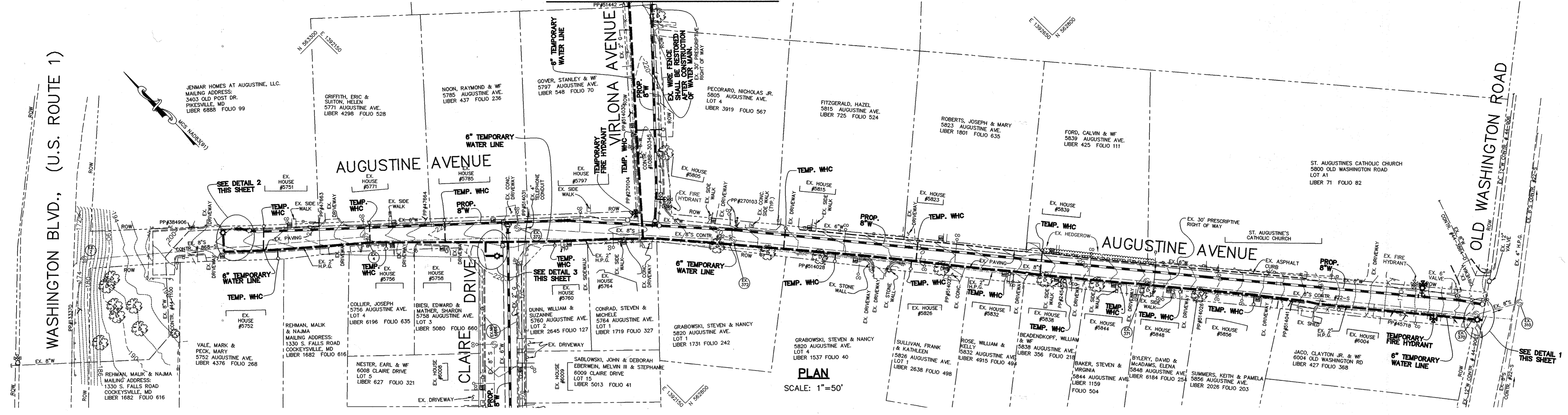
600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

AS-BUILT JANUARY, 2007

ELKRIDGE HEIGHTS
 WATER MAIN REPLACEMENT
 CAPITAL PROJECT NO. W-8241
 CONTRACT NO. 44-4204
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN

SHEET
 12 OF 18



PLAN
SCALE: 1"=50'

**SEQUENCE OF CONSTRUCTION FOR AUGUSTINE AVENUE
CLAIRE DRIVE, VIRLONA AVENUE, RUSTIC LANE AND LEAF LANE**

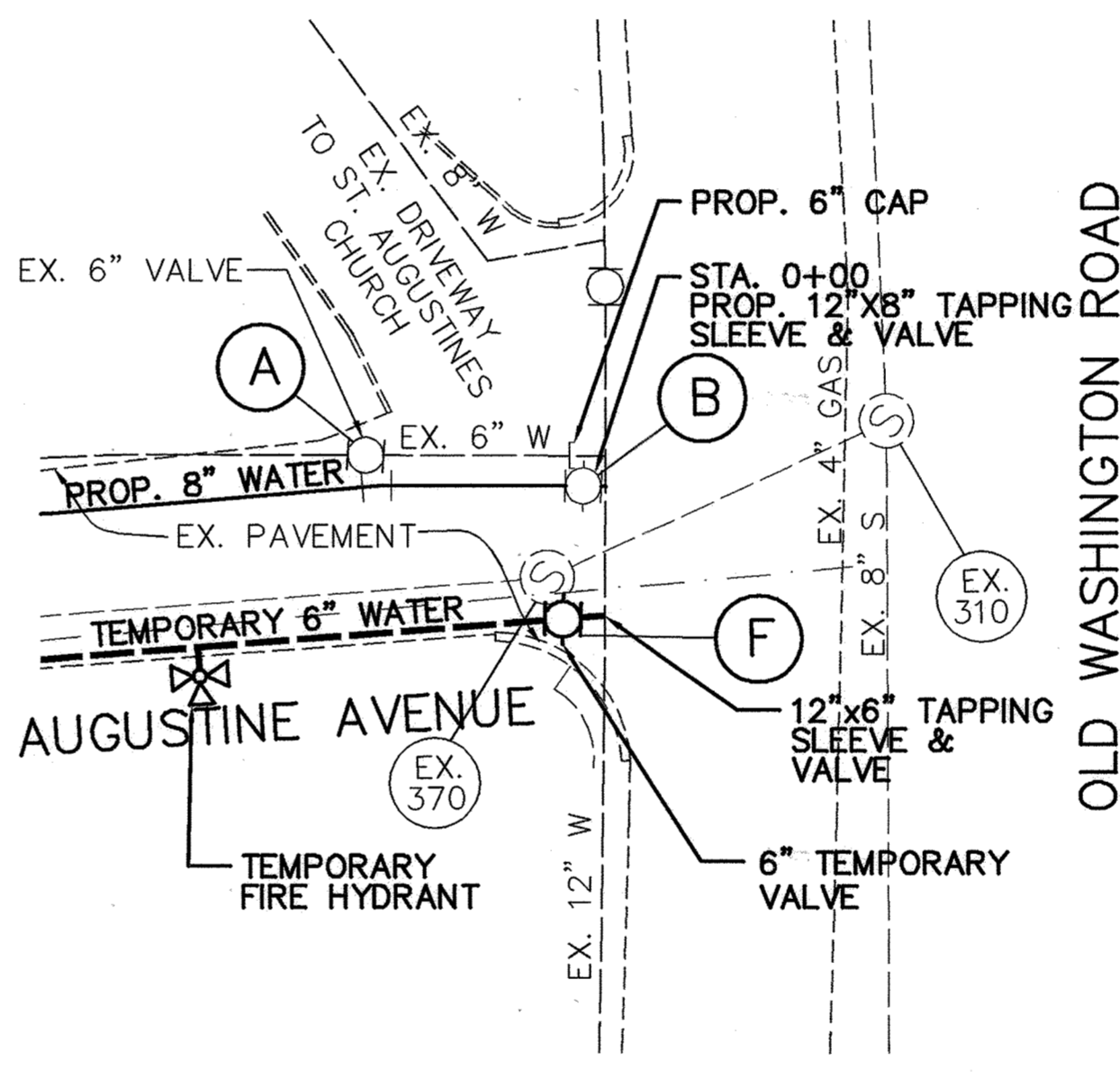
THE FOLLOWING SEQUENCE OF CONSTRUCTION IS NOT A COMPLETE LIST OF TASKS OR WORK REQUIRED TO COMPLETE THE CONTRACT REQUIREMENTS. THE SEQUENCE OF CONSTRUCTION MAY BE MODIFIED OR REVISED AT THE REQUEST OF THE CONTRACTOR WITH THE APPROVAL OF THE COUNTY PRIOR TO THE START OF CONSTRUCTION.

- INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-13 AT INTERSECTION OF OLD WASHINGTON ROAD AND AUGUSTINE AVENUE, AND INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-10 ALONG AUGUSTINE AVENUE.
- INSTALL TEMPORARY 6" CONNECTION AT OLD WASHINGTON ROAD AND AUGUSTINE AVENUE WITH 12"x6" TAPPING SLEEVE AND VALVE (F) ON EXISTING 12" WATER MAIN IN OLD WASHINGTON ROAD (SEE DETAIL 1, THIS SHEET). CLOSE TEMPORARY 6" VALVE (F) (SEE DETAIL 1, THIS SHEET). REMOVE NON-REQUIRED TRAFFIC CONTROL DEVICES.
- INSTALL THE 6" TEMPORARY BYPASS WATER MAIN IN AUGUSTINE AVENUE FROM OLD WASHINGTON ROAD TO THE DEAD END OF AUGUSTINE AVENUE. INSTALL THE 6" TEMPORARY BYPASS WATER MAIN IN VIRLONA AVENUE, RUSTIC LANE AND LEAF LANE AS SHOWN ON THIS SHEET AND SHEET 14.
- INSTALL TEMPORARY TRAFFIC CONTROL DEVICES PER SHA STANDARD DETAIL MD104.02-10 AT THE EXISTING 6" VALVE (C) (SEE DETAIL 2, THIS SHEET) ACROSS FROM 5752 AUGUSTINE AVENUE.
- INSTALL TEMPORARY 6" CONNECTION AT THE EXISTING WATER MAIN ACROSS FROM 5752 AUGUSTINE AVENUE WITH AN 8"x6" TAPPING SLEEVE AND VALVE (G) AS SHOWN ON DETAIL 2, THIS SHEET. CLOSE TEMPORARY 6" VALVE (G).
- INSTALL TEMPORARY 6" CONNECTION APPROXIMATELY 10' WEST OF THE 6" EXISTING VALVE (E) IN CLAIR DRIVE (SEE DETAIL 3, THIS SHEET).
- CHLORINATE AND DISINFECT THE 6" TEMPORARY BYPASS WATER MAIN.
- CONNECT THE TEMPORARY BYPASS WATER MAIN TO THE TWO TEMPORARY 6" WATER CONNECTIONS AT EACH END OF AUGUSTINE AVENUE.
- CONNECT THE EXISTING WATER HOUSE CONNECTIONS (WHCs) TO THE TEMPORARY 6" WATER MAIN THROUGH THE CURB STOPS OR OUTSIDE METER SETTINGS AS SHOWN ON THE PLAN AND DETAIL ON SHEET 18.
- CLOSE EXISTING 6" VALVES (A & C). ACTIVATE THE TEMPORARY 4" WATER MAIN BY OPENING THE TWO TEMPORARY 6" VALVES (F AND G) IN AUGUSTINE AVENUE.
- INSTALL NEW 8" TAPPING SLEEVE AND VALVE AT OLD WASHINGTON ROAD AND AUGUSTINE AVENUE. CLOSE NEW 8" VALVE (B) (SEE DETAIL 1, THIS SHEET).
- CLOSE TEMPORARY 6" VALVE (G) ACROSS FROM 5752 AUGUSTINE AVENUE. REMOVE EXISTING 8"x6" REDUCER AND 6" VALVE AND REPLACE WITH NEW 8" WATER MAIN, FITTINGS AND APPURTENANCES UP TO NEW 8" VALVE (D). CLOSE NEW 8" VALVE (D). OPEN TEMPORARY 4" VALVE ACROSS FROM 5752 AUGUSTINE AVENUE. THIS WORK MUST BE COMPLETED WITHIN A MAXIMUM OF 6 HOUR SHUT DOWN OF TEMPORARY VALVE.
- INSTALL 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES AS SHOWN ON THE PLANS AND SPECIFICATIONS IN AUGUSTINE AVENUE TO STATION 7+00. ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES. FLAGGING AND TEMPORARY TRAFFIC CONTROL OPERATIONS SHALL BE IN ACCORDANCE WITH SHA STANDARD DETAIL MD104.02-10.
- REMOVE AND REPLACE EXISTING 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES IN AUGUSTINE AVENUE WITH 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES FROM STATION 7+00 TO TERMINUS AT EXISTING 8" VALVE APPROXIMATELY 550 FEET NORTH AS SHOWN ON THE PLANS AND SPECIFICATIONS.

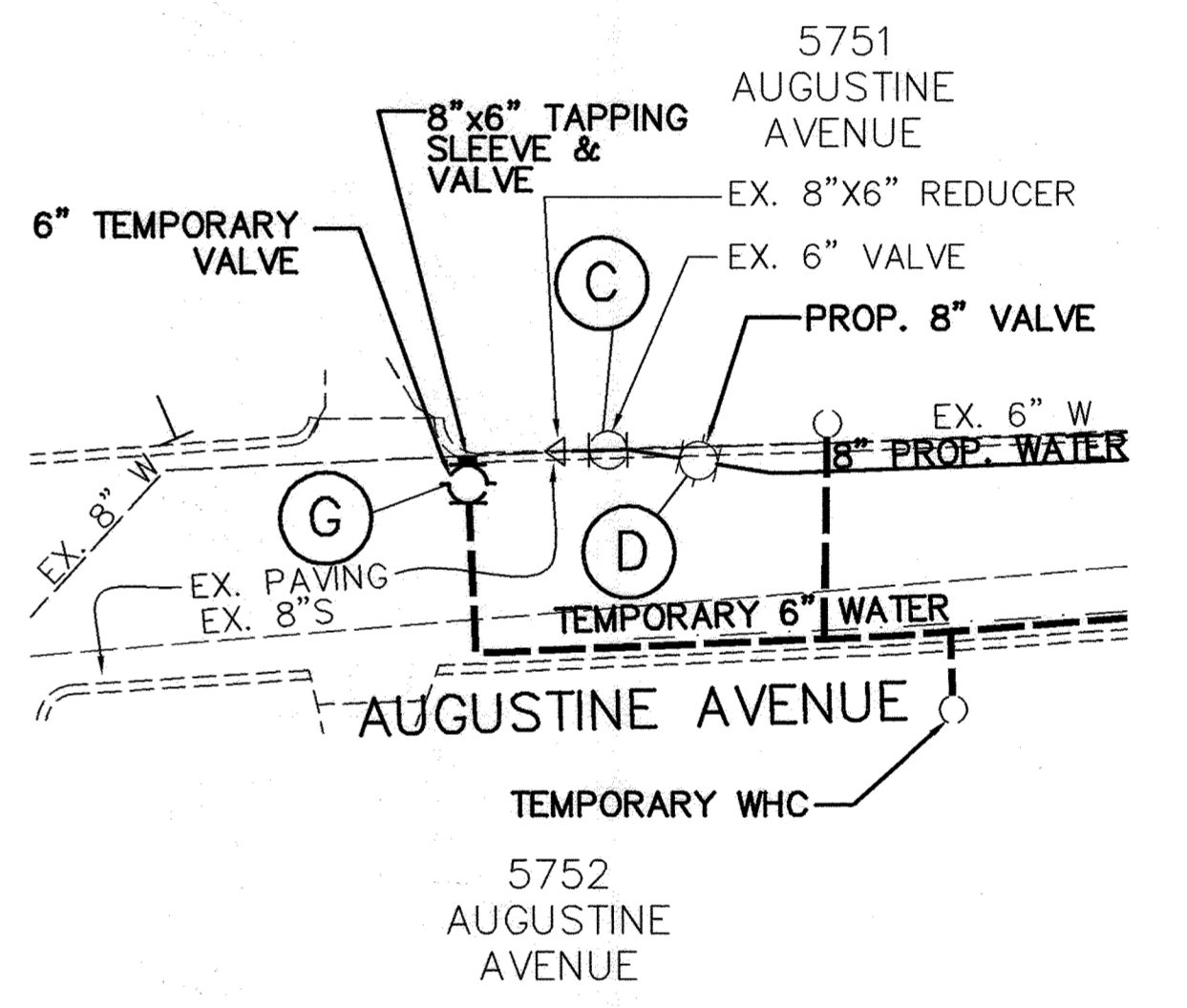
NOTE: WATER METERS

UNLESS OTHERWISE NOTED, ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.

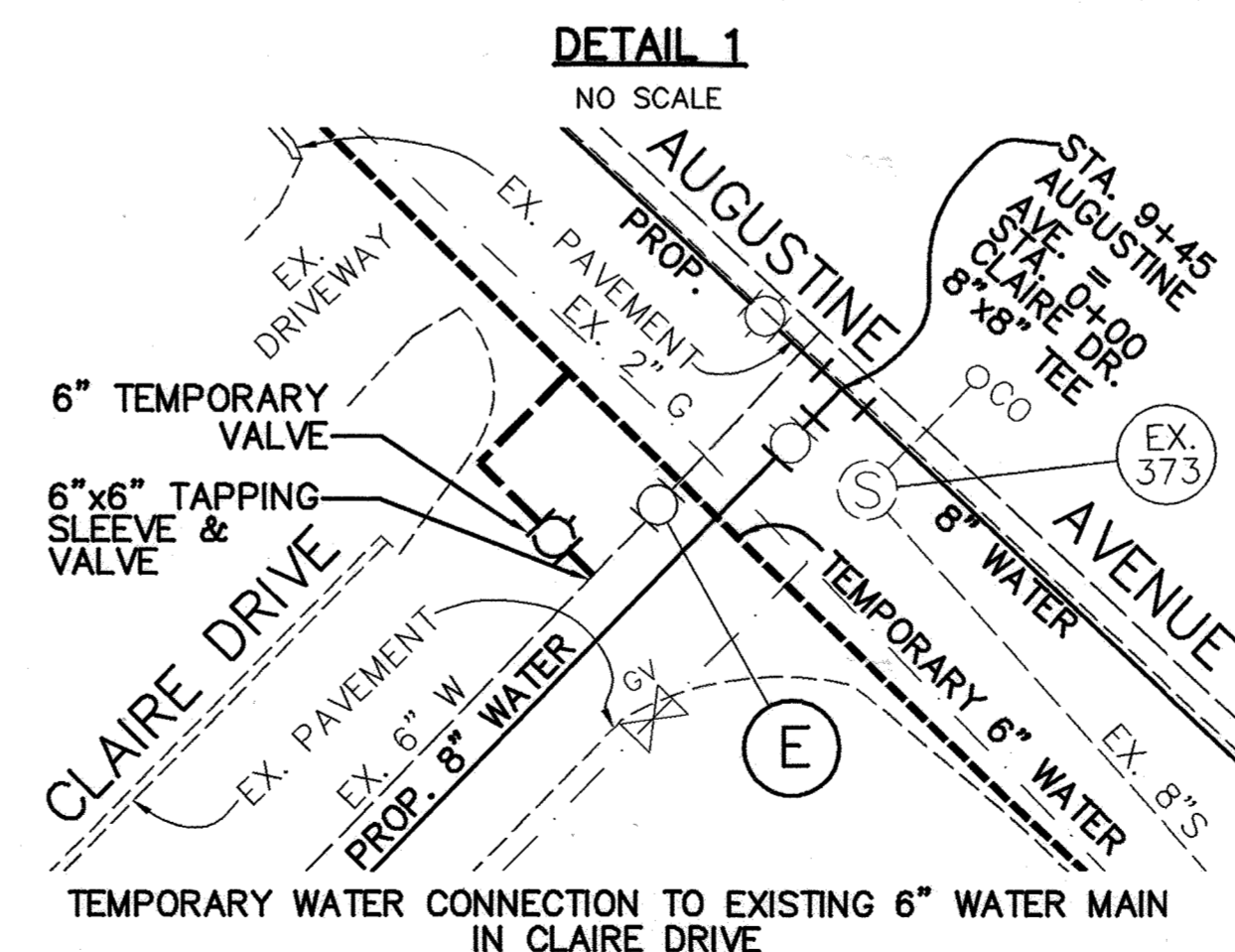
- INSTALL 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES IN VIRLONA AVENUE FROM 8"x8" TEE AT INTERSECTION OF AUGUSTINE AVENUE AND VIRLONA AVENUE EAST TO STATION 1+50 AS SHOWN ON THE PLANS AND SPECIFICATIONS. ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES. FLAGGING AND TEMPORARY TRAFFIC CONTROL OPERATIONS SHALL BE IN ACCORDANCE WITH SHA STANDARD DETAIL MD104.02-10.
- REMOVE AND REPLACE EXISTING 6" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES IN VIRLONA AVENUE AND RUSTIC LANE WITH NEW 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES FROM STATION 1+50 TO 8"x6" REDUCER AT STATION 9+51.
- INSTALL 6" WATER MAIN AND APPURTENANCES FROM 8"x6" REDUCER TO TERMINUS APPROXIMATELY 80 FEET EAST.
- INSTALL NEW 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES IN LEAF LANE FROM 8"x8" TEE TO 8"x6" REDUCER AT STATION 2+30 AS SHOWN ON THE PLANS AND SPECIFICATIONS. ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES. FLAGGING AND TEMPORARY TRAFFIC CONTROL OPERATIONS SHALL BE IN ACCORDANCE WITH SHA STANDARD DETAIL MD104.02-10.
- INSTALL 6" WATER MAIN AND APPURTENANCES IN LEAF LANE FROM 8"x6" REDUCER TO THE TERMINUS APPROXIMATELY 200 FEET EAST.
- INSTALL 8" WATER MAIN, FITTINGS, VALVE, HYDRANTS AND APPURTENANCES IN CLAIR DRIVE FROM 8"x8" TEE AT INTERSECTION OF AUGUSTINE AVENUE AND CLAIR DRIVE.
- PRESSURE TEST, CHLORINATE AND DISINFECT NEW WATER MAINS.
- CLOSE EXISTING 8" VALVE (H, SEE DETAIL 4 THIS SHEET) AT END OF CLAIR DRIVE.
- CONNECT NEW 8" WATER MAIN TO THE EXISTING WATER MAIN AT VALVES (B, D & H).
- FOR OUTSIDE METER SETTINGS, INSTALL NEW 1" WATER HOUSE CONNECTIONS FROM NEW 8" MAIN TO EXISTING OUTSIDE METER SETTINGS. FOR INSIDE METER SETTINGS, INSTALL NEW 1" WATER HOUSE CONNECTIONS FROM NEW 8" MAIN TO CURB STOP INCLUDING NEW CURB STOP AND BOXES. CAP THE TEMPORARY BYPASS TEES AT THE SERVICE LINE. SEE SHEET 18 FOR WATER HOUSE CONNECTION DETAILS.
- CLOSE THE 6" TEMPORARY VALVE (F) AT OLD WASHINGTON ROAD AND THE 6" TEMPORARY VALVE (G) ACROSS FROM 5752 AUGUSTINE AVENUE. REMOVE TEMPORARY WATER MAIN AND WATER SERVICES. CAP AND BUTTRISS THE TEMPORARY 6" VALVES AND ABANDON 6" VALVES IN PLACE. RESTORE DISTURBED AREA TO ORIGINAL CONDITION.



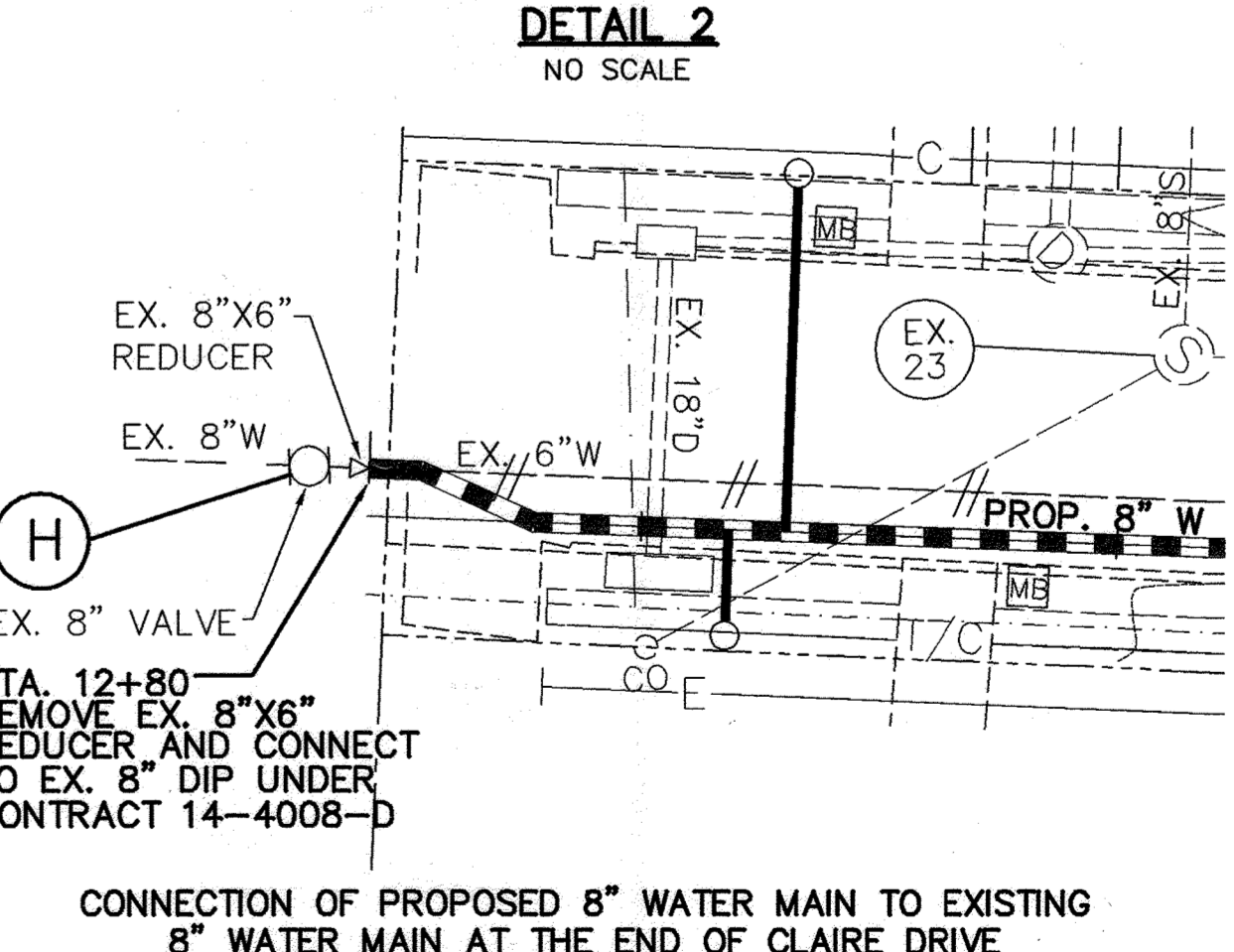
TEMPORARY WATER CONNECTION TO EXISTING 12" WATER MAIN AT INTERSECTION OF AUGUSTINE AVENUE & OLD WASHINGTON ROAD



TEMPORARY WATER CONNECTION TO EXISTING 8" WATER MAIN ACROSS FROM 5752 AUGUSTINE AVENUE



TEMPORARY WATER CONNECTION TO EXISTING 6" WATER MAIN IN CLAIR DRIVE



CONNECTION OF PROPOSED 8" WATER MAIN TO EXISTING 8" WATER MAIN AT THE END OF CLAIR DRIVE

AS-BUILT JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR OF PUBLIC WORKS	4-26-05 DATE
<i>[Signature]</i> CHIEF, BUREAU OF ENGINEERING	4-27-05 DATE
<i>[Signature]</i> CHIEF, BUREAU OF UTILITIES	4-27-05 DATE
<i>[Signature]</i> CHIEF, UTILITY DESIGN DIVISION	4-27-05 DATE

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHR+A

8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

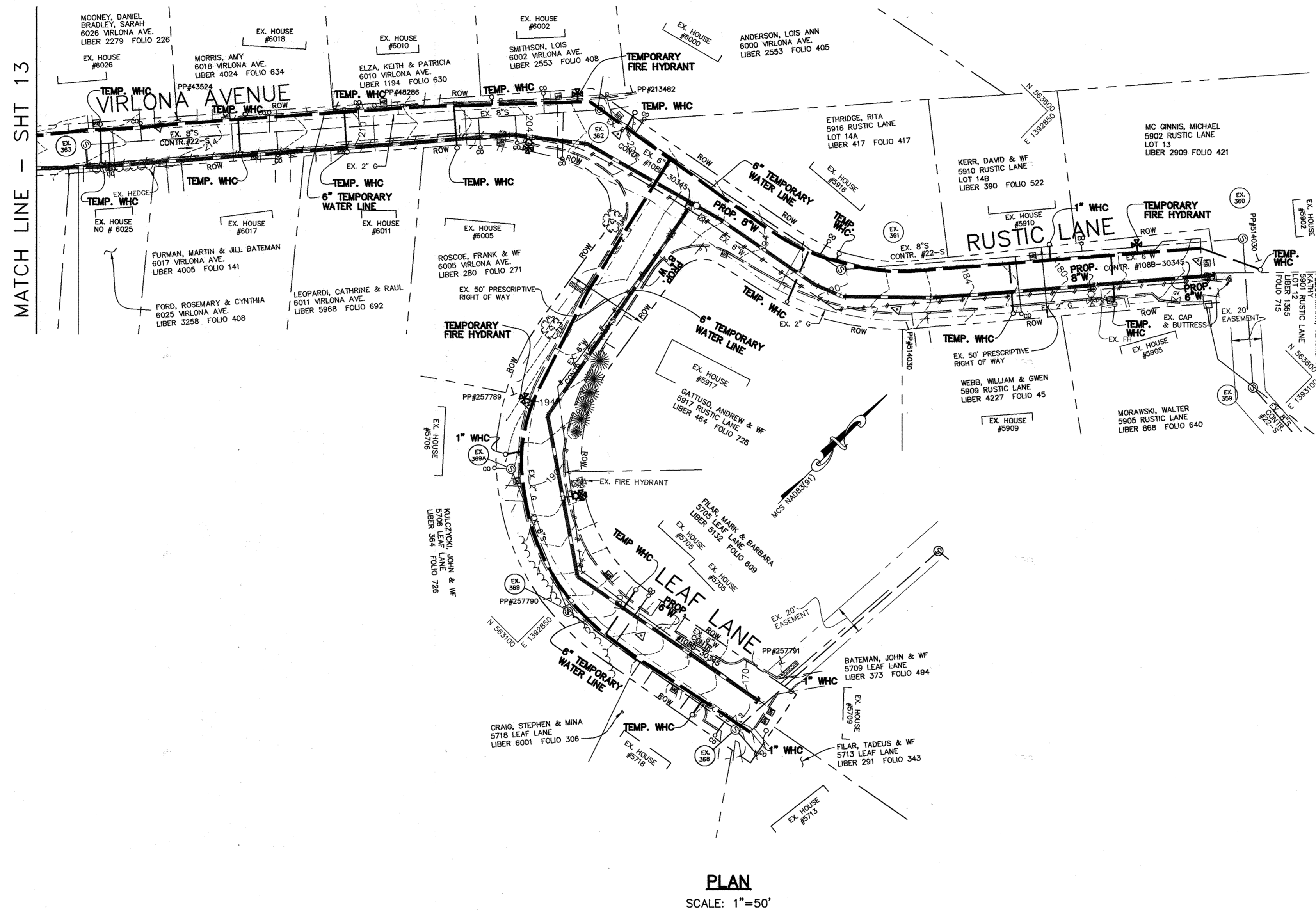
STATE OF MARYLAND
FRANK DONALDSON
PROFESSIONAL ENGINEER
PE #8146

DES: R.J.S.B.	RJC	AS-BUILT	1/07
SRN: R.J.C.			
CHK: G.C.L.			
DEC. 2004			
BY NO.	REVISION	DATE	

TEMPORARY WATER SERVICE CONNECTION PLAN AUGUSTINE AVENUE	600' SCALE MAP NO. 38	BLOCK NO. 3 & 9
--	-----------------------	-----------------

ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4204 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 13 OF 18
--	----------------------------------

NOTE: WATER METERS
 UNLESS OTHERWISE NOTED,
 ALL WATER METERS ARE INSIDE
 METERS WITH CURB STOP IN
 METER VAULT.



AS-BUILT JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

[Signature] 4/27/05
 DIRECTOR OF PUBLIC WORKS DATE

[Signature] 4-27-05
 CHIEF, BUREAU OF UTILITIES DATE

[Signature] 4/27/05
 CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 4-27-05
 CHIEF, UTILITY DESIGN DIVISION DATE

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PHRA

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STATE OF MARYLAND
 PROFESSIONAL ENGINEER
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DRN: R.J.C.			
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DEC., 2004			
BY NO.		REVISION	DATE

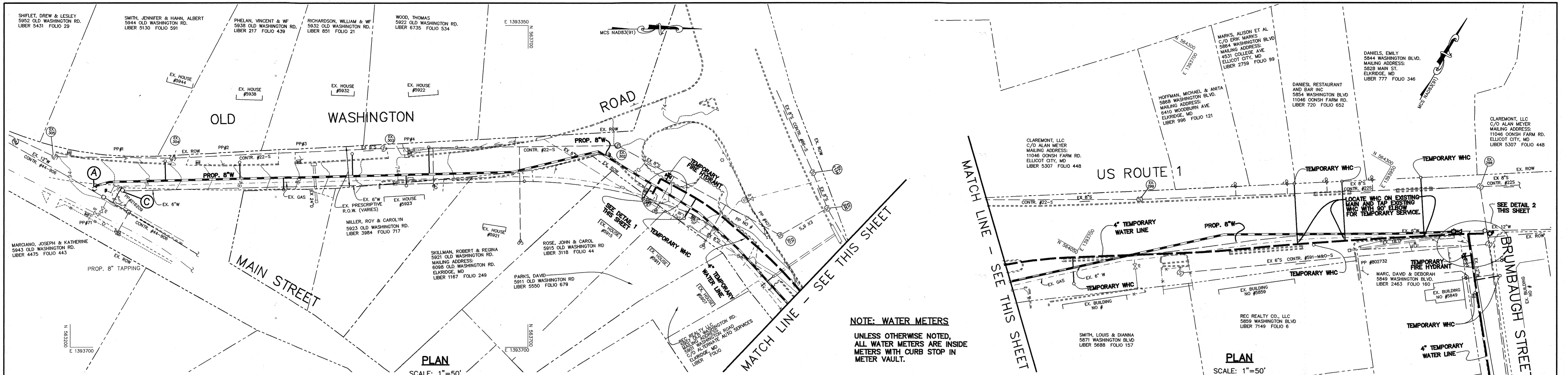
TEMPORARY WATER SERVICE
 CONNECTION PLAN
 VIRLONA AVENUE, RUSTIC LANE
 AND LEAF LANE

600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

ELKRIDGE HEIGHTS
 WATER MAIN REPLACEMENT
 CAPITAL PROJECT NO. W-8241
 CONTRACT NO. 44-4204
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

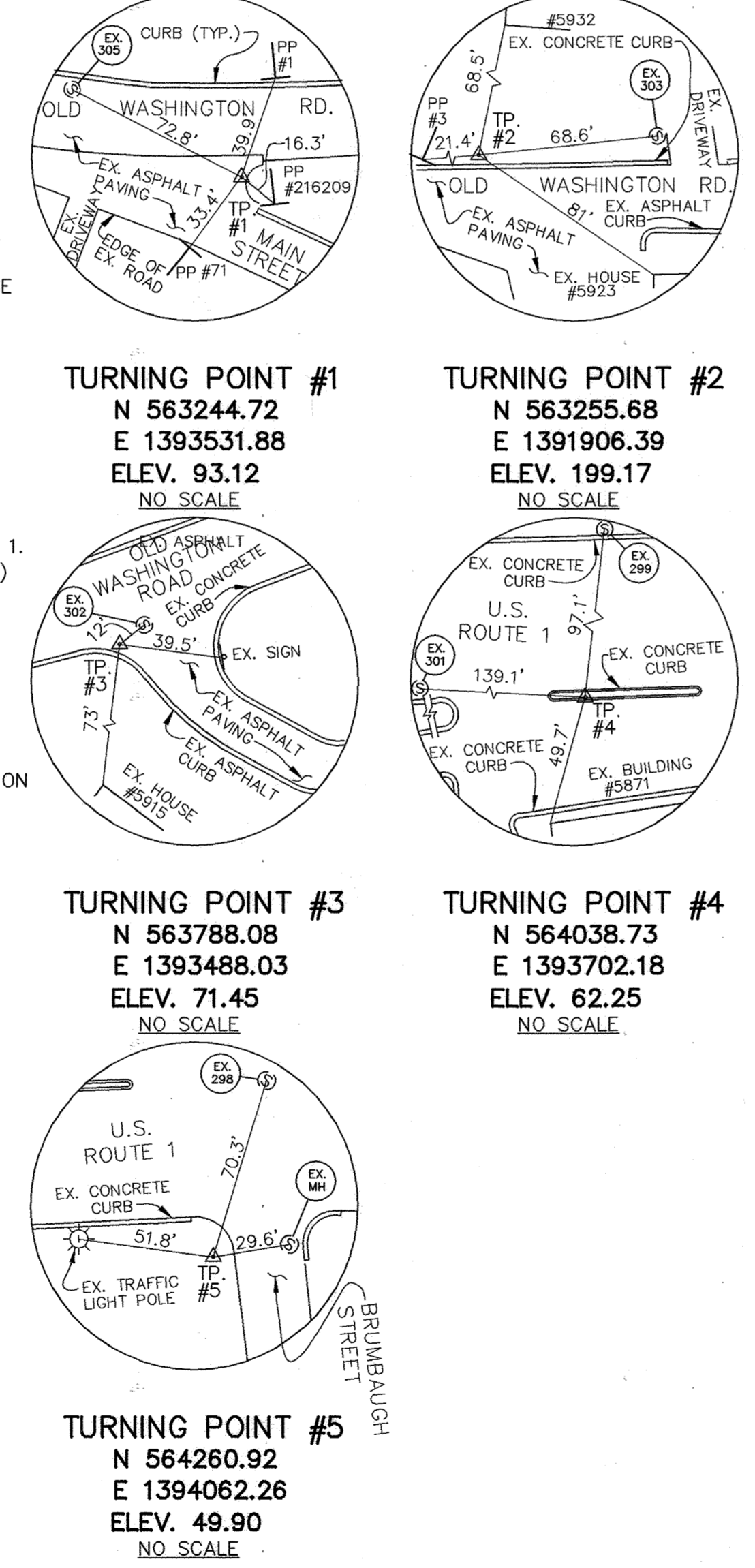
SHEET 14 OF 18



**SEQUENCE OF CONSTRUCTION
OLD WASHINGTON ROAD AND U.S. ROUTE 1**

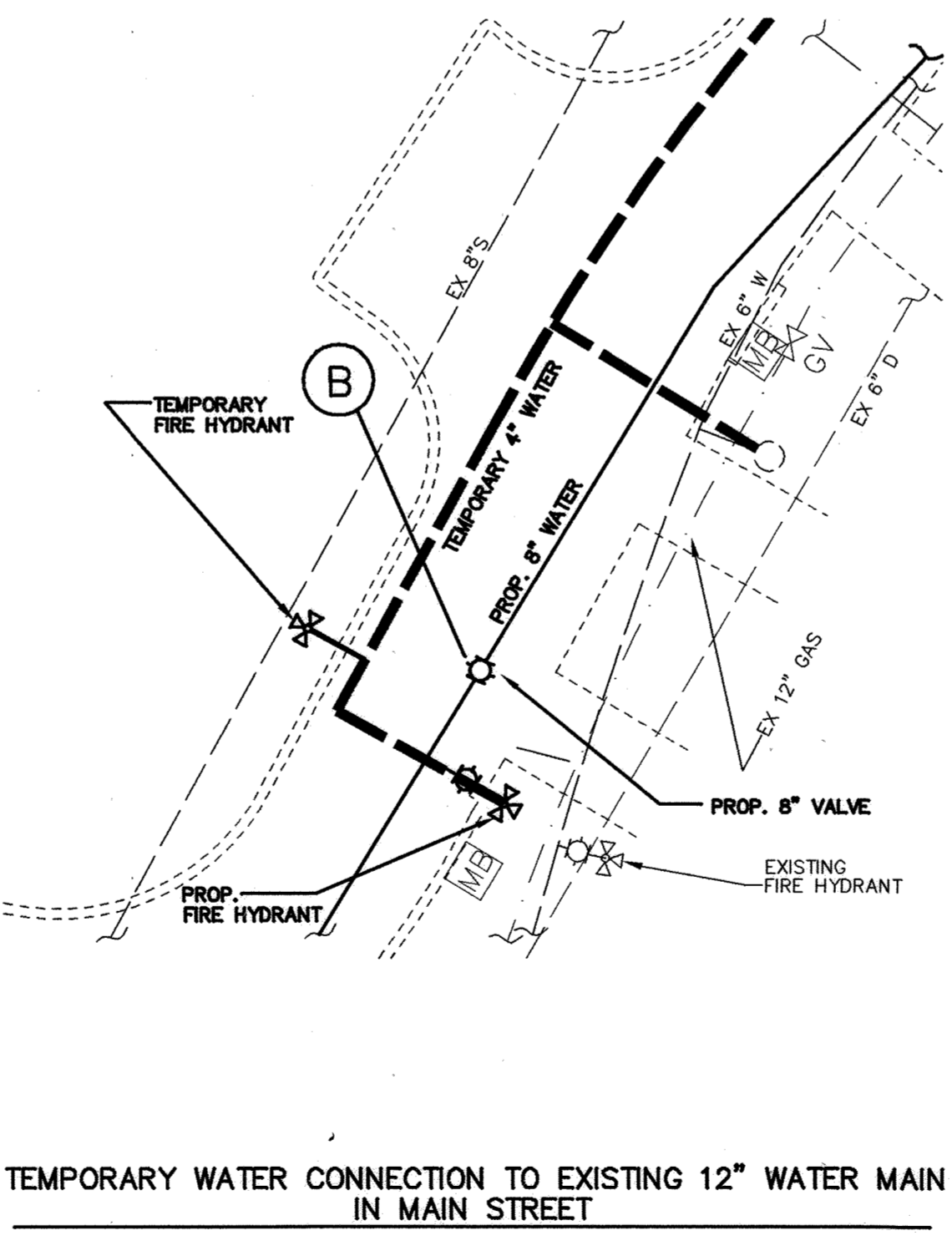
THE FOLLOWING SEQUENCE OF CONSTRUCTION IS NOT A COMPLETE LIST OF TASKS OR WORK REQUIRED TO COMPLETE THE CONTRACT REQUIREMENTS. THE SEQUENCE OF CONSTRUCTION MAY BE MODIFIED OR REVISED AT THE REQUEST OF THE CONTRACTOR WITH THE APPROVAL OF THE COUNTY PRIOR TO START OF CONSTRUCTION.

- INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-13 ALONG OLD WASHINGTON ROAD AND MAIN STREET. INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-10 ALONG OLD WASHINGTON ROAD AND SIDE ROAD NEAR US ROUTE 1 INTERSECTION.
- INSTALL 8" TAPPING SLEEVE AND VALVE (A) AT OLD WASHINGTON ROAD AND MAIN STREET AND CLOSE NEW VALVE.
- INSTALL 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES IN OLD WASHINGTON ROAD AS SHOWN ON THE PLANS AND SPECIFICATIONS TO VALVE (B) AT STATION 6+25 (SEE DETAIL 1). ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES. FLAGGING AND TEMPORARY TRAFFIC CONTROL OPERATIONS SHALL BE IN ACCORDANCE WITH SHA STANDARD DETAIL MD104.02-10.
- PRESSURE TEST, CHLORINATE AND DISINFECT NEW WATER MAIN UP TO VALVE (B) AT STATION 6+25.
- CLOSE NEW 8" VALVE (B) AND OPEN NEW 8" VALVE (A).
- INSTALL TEMPORARY 4" BYPASS WATER MAIN FROM NEW FIRE HYDRANT AT STATION 6+21 (SEE DETAIL 1. THIS SHEET), TO THE INTERSECTION OF BRUMBAUGH STREET AND U.S. ROUTE 1 (SEE DETAIL 2, THIS SHEET) AND DOWN BRUMBAUGH STREET (SEE DETAIL 3, THIS SHEET).
- CHLORINATE, DISINFECT AND FLUSH THE 4" TEMPORARY BYPASS WATER MAIN.
- INSTALL TEMPORARY 4" BYPASS WATER MAIN CONNECTIONS AT NEW FIRE HYDRANT AT STATION 6+21 AND THE 12"x4" TAPPING SLEEVE AND VALVE (F) AT THE INTERSECTION OF BRUMBAUGH STREET AND U.S. ROUTE 1.
- CONNECT THE TEMPORARY 4" BYPASS WATER MAIN TO THE TEMPORARY 4" WATER CONNECTION INSTALLED AT NEW FIRE HYDRANT AND TO THE 12"x4" TAPPING SLEEVE AND VALVE (F) AT THE INTERSECTION OF BRUMBAUGH STREET AND U.S. ROUTE 1. ACTIVATE THE TEMPORARY 4" BYPASS WATER MAIN BY OPENING THE TWO TEMPORARY 4" VALVES.
- CONNECT THE EXISTING WATER HOUSE CONNECTIONS (WHCs) TO THE TEMPORARY 4" WATER MAIN THROUGH THE CURB STOPS OR OUTSIDE METER SETTINGS AS SHOWN ON THE PLAN AND DETAILS ON SHEET 18.
- CLOSE EXISTING VALVES (C), (D) AND (E). (SEE PLAN VIEW, DETAIL 2 AND DETAIL 3 RESPECTIVELY).
- INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.03-05 FOR US ROUTE 1 AND PER SHA STANDARD DETAIL MD104.02-13 FOR INTERSECTION OF US ROUTE 1 AND BRUMBAUGH.
- REMOVE AND REPLACE EXISTING 6" WATER MAIN, FITTINGS, VALVES AND APPURTENANCES WITH NEW 8" WATER MAIN, FITTINGS, VALVES AND APPURTENANCE FROM STATION 6+25 TO THE TERMINUS AS SHOWN ON THE PLANS AND SPECIFICATIONS.
- PRESSURE TEST, CHLORINATE AND DISINFECT NEW WATER MAIN.
- CONNECT NEW 8" WATER MAIN TO EXISTING WATER MAIN AT NEW 12"x8" REDUCER (SEE DETAIL 2, THIS SHEET).
- OPEN EXISTING VALVES (C), (D) AND (E).
- FOR OUTSIDE METER SETTINGS, INSTALL NEW 1" WATER HOUSE CONNECTIONS FROM NEW 8" MAIN TO EXISTING OUTSIDE METER SETTINGS. FOR INSIDE METER SETTINGS, INSTALL NEW 1" WATER HOUSE CONNECTIONS FROM NEW 8" MAIN TO CURB STOP INCLUDING NEW CURB STOP AND BOXES, CAP THE TEMPORARY BYPASS TEES AT THE SERVICE LINE. SEE SHEET 18 FOR WATER HOUSE CONNECTION DETAILS.
- CLOSE THE 4" TEMPORARY VALVE AT NEW FIRE HYDRANT AND THE 4" TEMPORARY VALVE (F) AT INTERSECTION OF BRUMBAUGH STREET AND US ROUTE 1. REMOVE THE TEMPORARY WATER MAIN AND WATER HOUSE SERVICE CONNECTIONS RESTORE DISTURBED AREA TO ORIGINAL CONDITION.

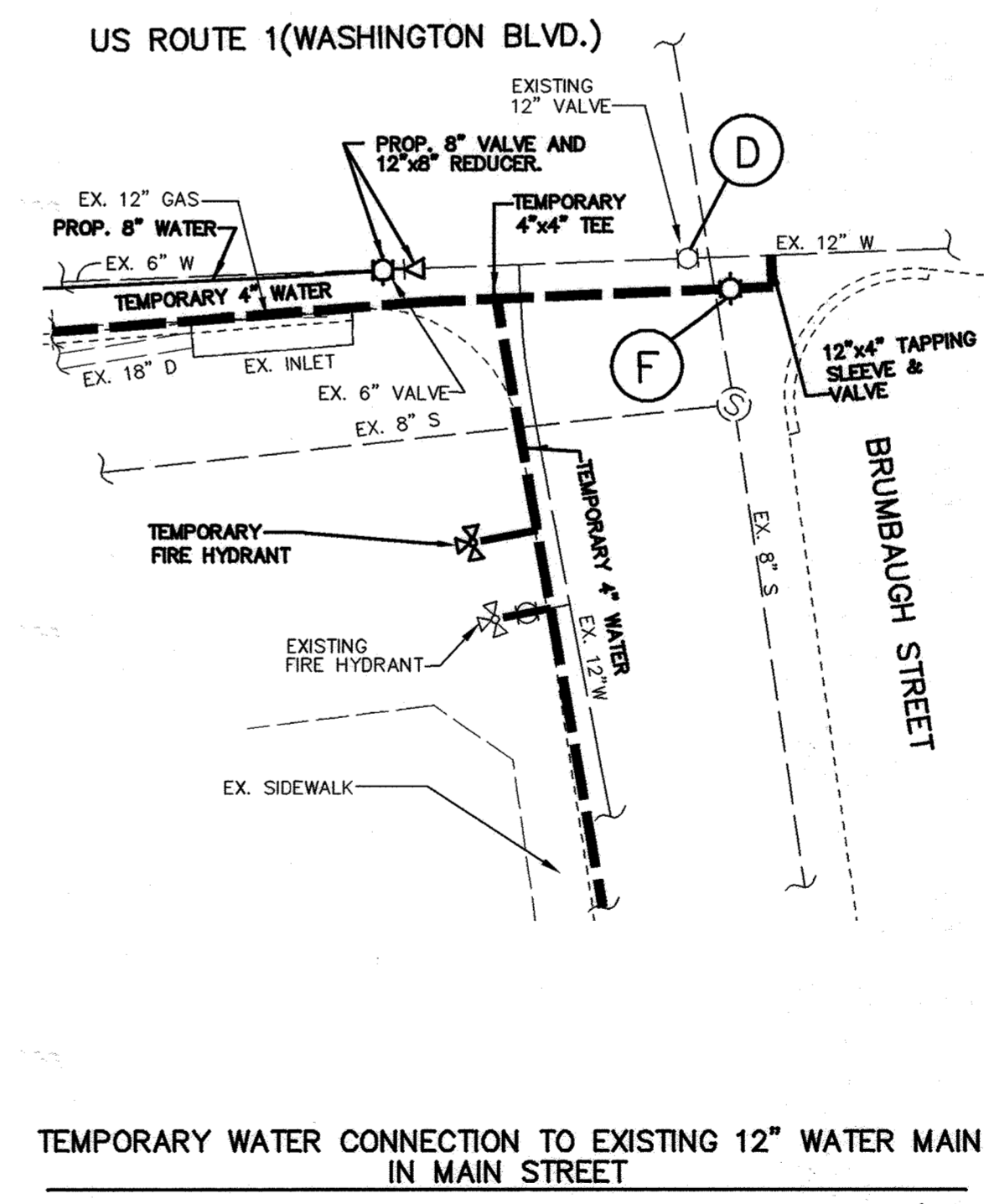


NOTE:
1. TP'S #1 THROUGH #5 ARE MARKED BY PK NAILS.

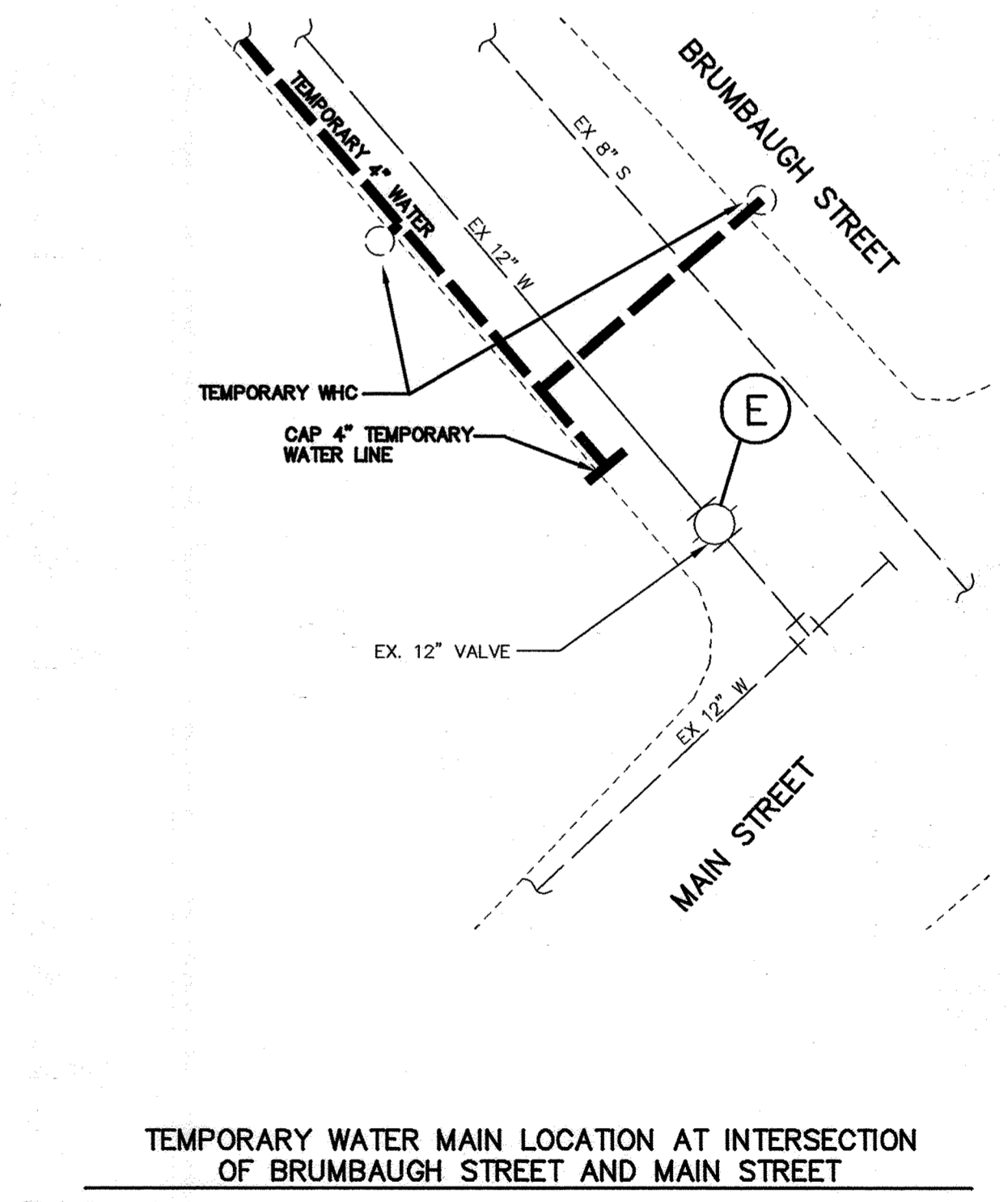
NOTE: WATER METERS
UNLESS OTHERWISE NOTED, ALL WATER METERS ARE INSIDE METERS WITH CURB STOP IN METER VAULT.



DETAIL 1
NO SCALE



DETAIL 2
NO SCALE



DETAIL 3
NO SCALE

**AS-BUILT
JANUARY, 2007**

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>Janet Chu</i> DIRECTOR OF PUBLIC WORKS	<i>Richard Sapan</i> CHIEF, BUREAU OF ENGINEERING
DATE: 4-26-05	DATE: 4-27-05
<i>Rita B...</i> CHIEF, BUREAU OF UTILITIES	<i>Clayton...</i> CHIEF, UTILITY DESIGN DIVISION
DATE: 4-27-05	DATE: 4-27-05

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHR+A

8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

STATE OF MARYLAND
FRANK DONALDSON
PROFESSIONAL ENGINEER
PE #8146

DES: R.J.S.B.	RJC	AS-BUILT	1/07
DRN: R.J.C.			
CHK: G.C.L.			
DEC: 2004			
BY NO.	REVISION	DATE	

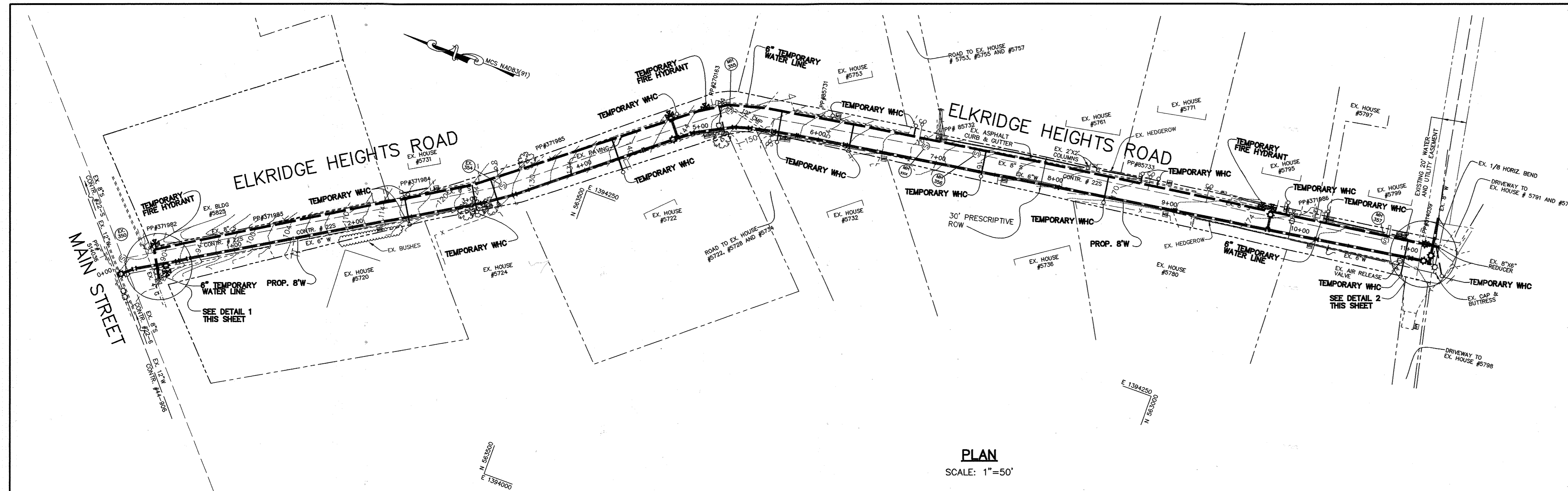
TEMPORARY WATER SERVICE
CONNECTION PLAN
OLD WASHINGTON ROAD
AND US ROUTE 1

600' SCALE MAP NO. 38 BLOCK NO. 3 & 9

ELKRIDGE HEIGHTS
WATER MAIN REPLACEMENT
CAPITAL PROJECT NO. W-8241
CONTRACT NO. 44-4204
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

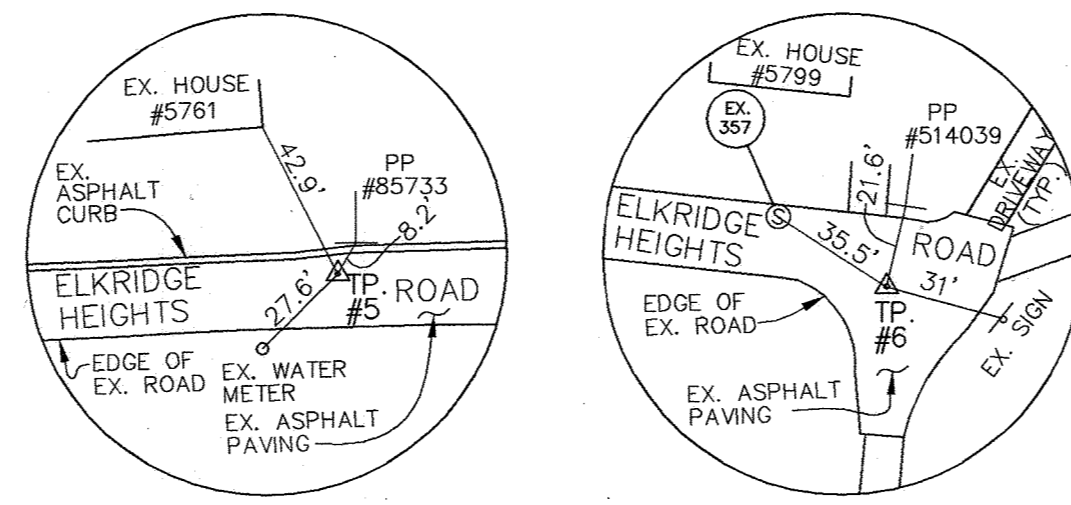
SCALE
AS SHOWN

SHEET
15 OF 18



PLAN
SCALE: 1"=50'

NOTE: WATER METERS
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METER VAULT.



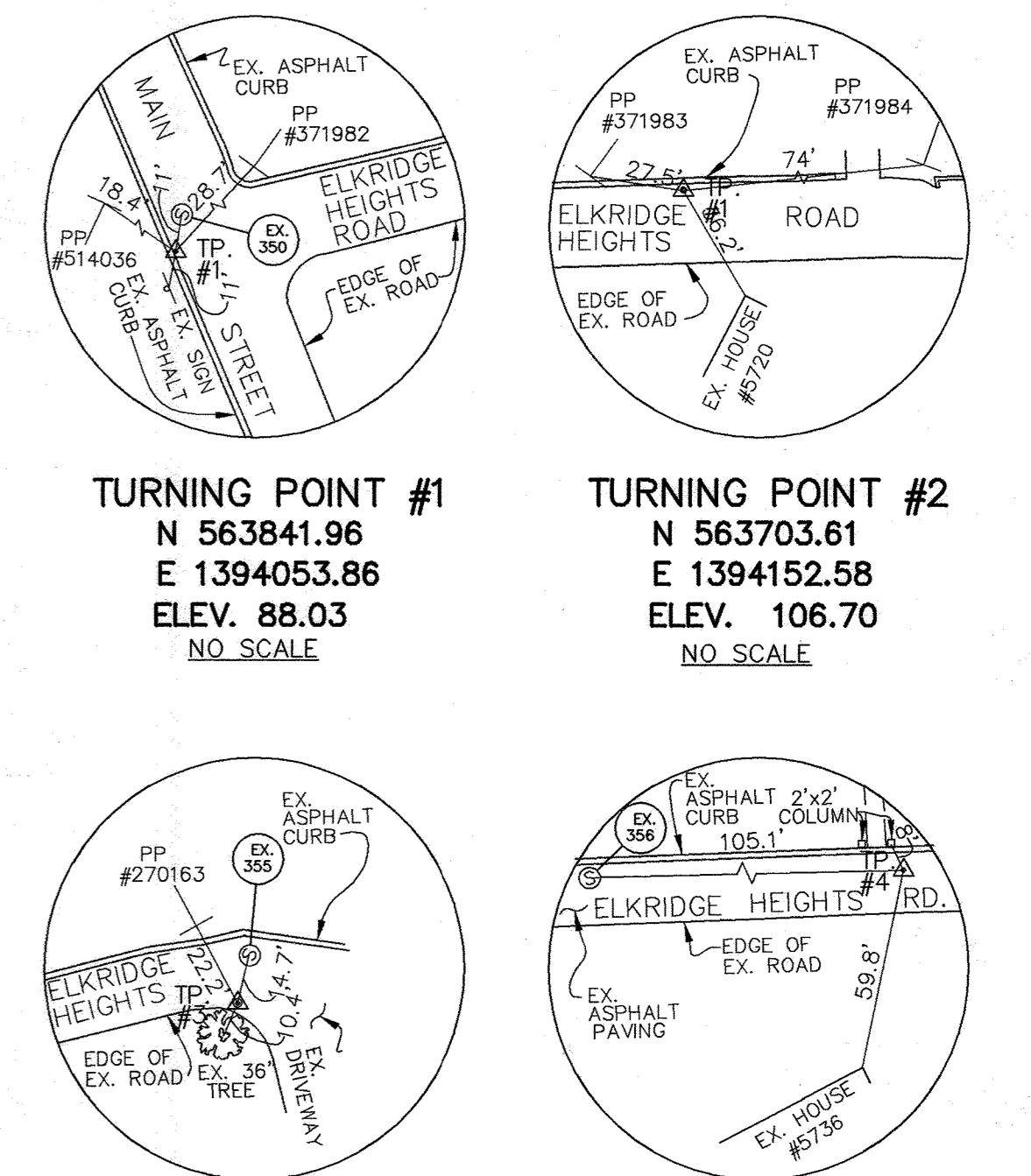
TURNING POINT #5
N 563075.17
E 1394409.01
ELEV. 170.08
NO SCALE

TURNING POINT #6
N 562829.94
E 1394427.18
ELEV. 177.98
NO SCALE

NOTE:
TP'S #1 THROUGH #6 ARE MARKED BY PK NAILS.

**SEQUENCE OF CONSTRUCTION
ELKRIDGE HEIGHTS ROAD**

1. INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-13 AT THE INTERSECTION OF MAIN STREET AND THE ELKRIDGE HEIGHTS ROAD. INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-10 FOR ELKRIDGE HEIGHTS ROAD.
2. INSTALL TEMPORARY 6" CONNECTION AT THE END OF ELKRIDGE HEIGHTS ROAD THROUGH A 8"x8" TAPPING SLEEVE AND VALVE (F) ON EXISTING 8" WATER MAIN IN ELKRIDGE HEIGHTS ROAD (SEE DETAIL 2, THIS SHEET). CLOSE TEMPORARY 6" VALVE. REMOVE NON-REQUIRED TRAFFIC CONTROL DEVICES.
3. INSTALL TEMPORARY BYPASS WATER MAIN IN ELKRIDGE HEIGHTS ROAD FROM THE FIRE HYDRANT AT THE INTERSECTION OF MAIN STREET AND ELKRIDGE HEIGHTS ROAD (SEE DETAIL 1, THIS SHEET) TO THE TEMPORARY 6" VALVE (F) AT THE END OF ELKRIDGE HEIGHTS ROAD.
4. CHLORINATE, DISINFECT AND FLUSH THE FIRE HYDRANT AND LEAD AT THE INTERSECTION OF MAIN STREET AND ELKRIDGE HEIGHTS ROAD, AND THE TEMPORARY BYPASS WATER MAIN.
5. CONNECT THE TEMPORARY BYPASS WATER MAIN TO THE EXISTING FIRE HYDRANT AT THE INTERSECTION OF MAIN STREET AND ELKRIDGE HEIGHTS ROAD (SEE DETAIL 1, THIS SHEET) AND TO THE TEMPORARY 6" WATER CONNECTION INSTALLED AT THE END OF ELKRIDGE HEIGHTS ROAD. ACTIVATE THE TEMPORARY 6" WATER MAIN BY OPENING THE TEMPORARY 6" VALVE (F) AT ELKRIDGE HEIGHTS ROAD AND THE FIRE HYDRANT VALVE (B) AT INTERSECTION OF MAIN STREET AND ELKRIDGE HEIGHTS ROAD.
6. CONNECT THE EXISTING WATER HOUSE CONNECTIONS (WHCS) TO THE TEMPORARY 6" WATER MAIN THROUGH THE CURB STOP OR OUTSIDE METER SETTINGS AS SHOWN ON THE PLAN AND DETAIL ON SHEET 18.
7. CLOSE EXISTING 6" VALVE (D) (SEE DETAIL 1, THIS SHEET) AND EXISTING 6" VALVE (E) (SEE DETAIL 2, THIS SHEET).
8. INSTALL NEW TIE-IN AT MAIN STREET (SEE DETAIL 1, THIS SHEET). INSTALL TEMPORARY TRAFFIC CONTROL PER SHA STANDARD DETAIL MD104.02-13 ALONG MAIN STREET AND ELKRIDGE HEIGHTS ROAD. INSTALL NEW 12"x8" TAPPING SLEEVE AND VALVE. CLOSE NEW 8" VALVE (C). INSTALL NEW 8" WATER MAIN, FITTINGS, VALVES, HYDRANTS AND APPURTENANCES AS SHOWN ON THE PLANS AND SPECIFICATION. ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES. REMOVE NON-REQUIRED TRAFFIC CONTROL DEVICES.
9. PRESSURE TEST, CHLORINATE AND DISINFECT NEW WATER MAIN.
10. CLOSE TEMPORARY 6" VALVE (F) AT THE END OF ELKRIDGE HEIGHTS ROAD.
11. CONNECT NEW 8" WATER MAIN TO EXISTING 8" WATER MAIN THROUGH THE REMOVAL OF THE EXISTING 1/8 BEND AND REPLACE WITH NEW 8" DIP SOLID SLEEVE.
12. FOR OUTSIDE METER SETTINGS, INSTALL NEW 1" WATER HOUSE CONNECTIONS FROM NEW 8" MAIN TO EXISTING OUTSIDE METER SETTINGS. FOR INSIDE METER SETTINGS, INSTALL NEW 1" WATER HOUSE CONNECTIONS FROM NEW 8" MAIN TO CURB STOP INCLUDING NEW CURB STOP AND BOXES, CAP THE TEMPORARY BYPASS TEES AT THE SERVICE LINE. SEE SHEET 18 FOR WATER HOUSE CONNECTION DETAILS.
13. CLOSE FIRE HYDRANT VALVE (B) AT INTERSECTION OF MAIN STREET AND ELKRIDGE HEIGHTS ROAD. OPEN NEW 8" VALVE (C). REMOVE TEMPORARY WATER MAIN AND WATER SERVICES, CAP AND BUTTRESS THE TEMPORARY 6" VALVE (F) AT THE END OF ELKRIDGE HEIGHTS ROAD AND ABANDON 6" VALVE (F) IN PLACE.
14. CAP EX. 12" X 6" TEE AT INTERSECTION OF MAIN STREET AND ELKRIDGE HEIGHTS ROAD. REMOVE EXISTING FIRE HYDRANT AND VALVE. RESTORE DISTURBED AREA TO ORIGINAL CONDITION.

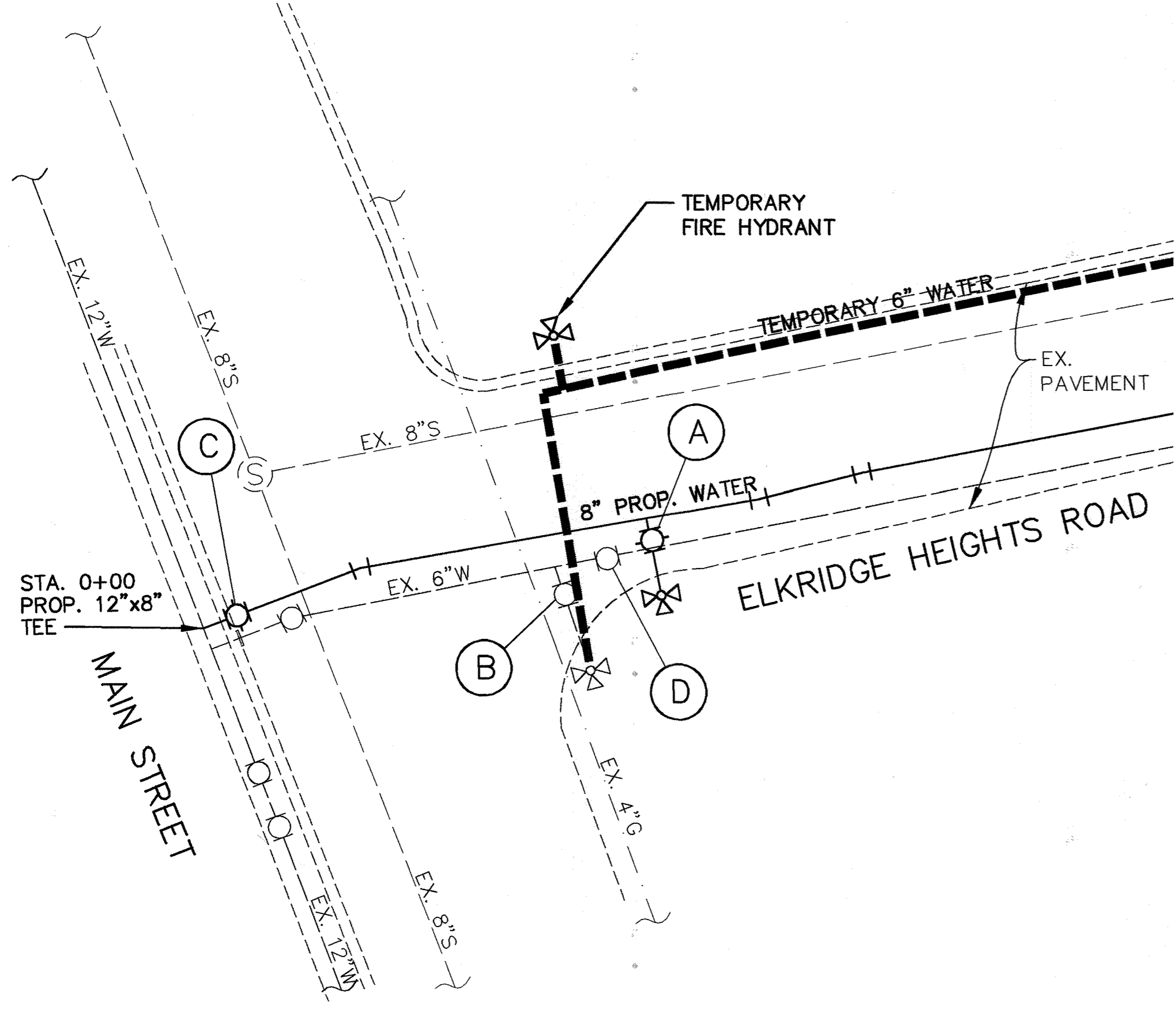


TURNING POINT #1
N 563841.96
E 1394053.86
ELEV. 88.03
NO SCALE

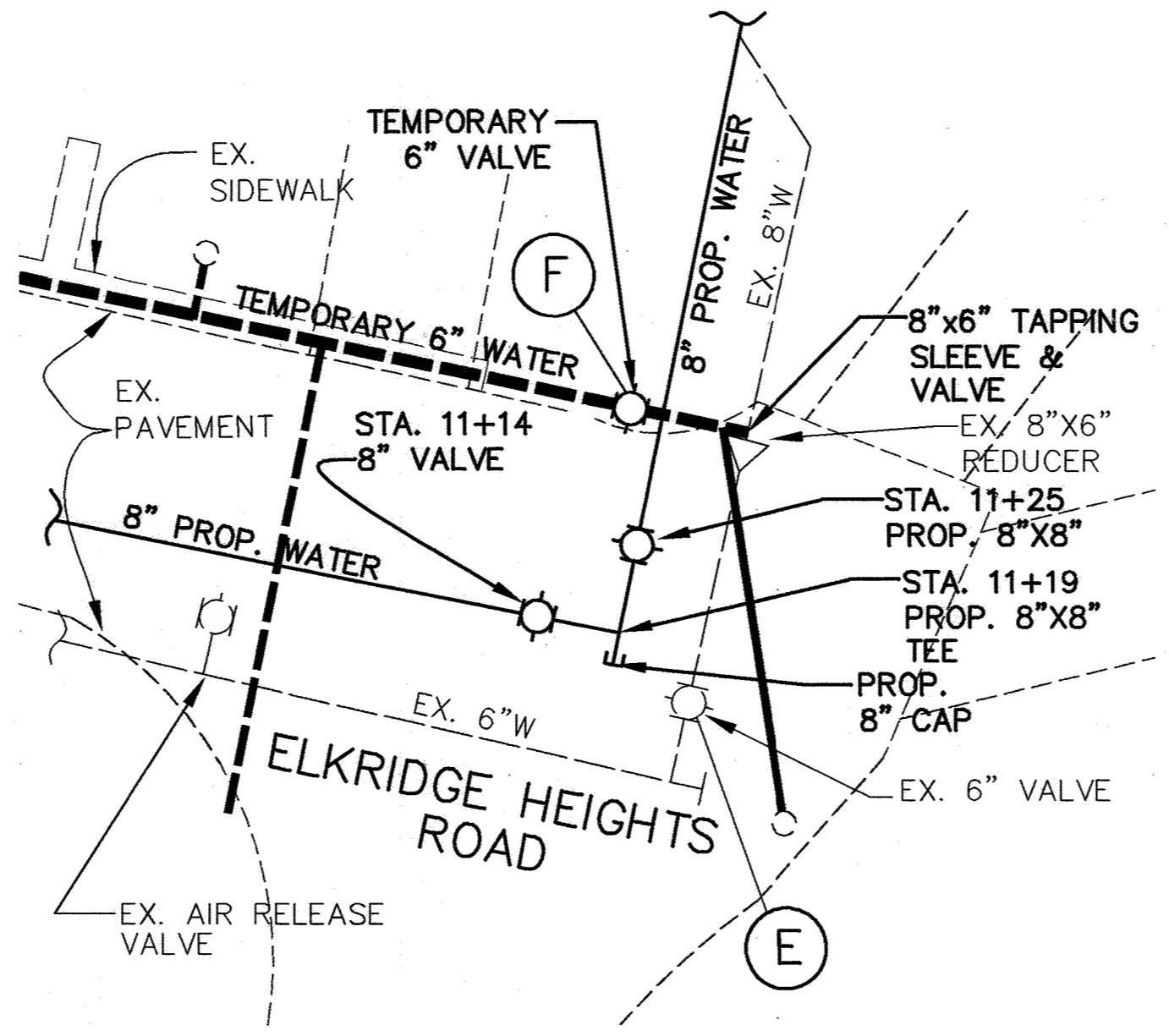
TURNING POINT #2
N 563703.61
E 1394152.58
ELEV. 106.70
NO SCALE

TURNING POINT #3
N 563408.70
E 1394338.85
ELEV. 147.29
NO SCALE

TURNING POINT #4
N 563101.37
E 1394403.99
ELEV. 169.13
NO SCALE



**TEMPORARY WATER CONNECTION TO EXISTING 12" WATER MAIN
AT INTERSECTION OF ELKRIDGE HEIGHTS ROAD & MAIN STREET**
DETAIL 1
NO SCALE



**TEMPORARY WATER CONNECTION TO EXISTING 8" WATER MAIN
IN ELKRIDGE HEIGHTS ROAD**
DETAIL 2
NO SCALE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> 4/27/05 Chief, Bureau of Engineering: <i>[Signature]</i> 4/27/05 Chief, Bureau of Utilities: <i>[Signature]</i> 4-27-05 Chief, Utility Design Division: <i>[Signature]</i> 4-27-05		Patton Harris Rust & Associates, PC Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 <i>[Signature]</i> FRANK DONALDSON PE #8146		DES: R.J.S.B. DRN: R.J.C. CHK: G.C.L. DEC.: 2004		RJC AS-BUILT 1/07		TEMPORARY WATER SERVICE CONNECTION PLAN ELKRIDGE HEIGHTS ROAD 600' SCALE MAP NO. 38 BLOCK NO. 3 & 9		ELKRIDGE HEIGHTS WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4204 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 16 OF 18
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AS-BUILT JANUARY, 2007

MONTGOMERY ROAD WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
MONTGOMERY ROAD				
0+00	8"x12" TAPPING SLEEVE AND VALVE	560605.87	1389925.27	
0+12	8" 5" HORIZ. BEND	560615.86	1389919.04	
0+36	8"x6" TEE (FH)	560637.08	1389907.96	
0+90	8" COUPLING (VD)	560685.16	1389882.75	3.33' UP
2+65	8" COUPLING (VD)	560840.14	1389801.47	1.56' UP
5+25	8" VALVE	561070.52	1389680.66	
5+32	8" 1/8 HB	5561076.33	1389677.61	
5+38	12"x8" ECCENTRIC REDUCER	561081.17	1389679.12	

AUGUSTINE AVENUE WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
AUGUSTINE AVENUE				
0+00	8"x12" TAPPING SLEEVE AND VALVE	562321.41	1392761.72	
0+26	8" 5" HORIZONTAL BEND	562342.79	1392746.88	
0+62	8"x6" TEE (FH)	562370.38	1392723.91	
2+00	8" COUPLING (VD)	562476.49	1392635.57	3.17' DOWN
5+60	8" COUPLING (VD)	562754.70	1392407.10	1.94' DOWN
7+28	8" COUPLING (HD)	562884.70	1392300.69	2.44' CCW
8+00	8" VALVE	562938.62	1392252.58	
8+04 AUGUSTINE AVE = 0+00 VIRLONA AVE.	8"x8" TEE	562941.82	1392249.72	
8+90	8" 5" HORIZONTAL BEND	563005.48	1392192.93	
8+96	8" 5" VERTICAL BEND	563009.68	1392188.46	
9+46 AUGUSTINE AVE. = 0+00 CLAIRE DRIVE	8"x8" TEE	563044.16	1392151.91	
9+50	8" VALVE	563046.90	1392148.90	
10+19	8" COUPLING (VD)	563093.65	1392098.58	1.37' DOWN
11+88	8" 1/32 BEND	563208.40	1391974.91	1.06' DOWN
11+96	8" VALVE	563215.18	1391970.01	
12+04	8" 1/32 BEND	563221.57	1391965.38	3.07' DOWN
12+10	CONNECTION WITH EXISTING 8" WATER MAIN	563225.59	1391961.09	

CLAIRE DRIVE WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
CLAIRE DRIVE				
0+00 CLAIRE DRIVE = 9+46 AUGUSTINE AVE.	8"x8" TEE	563044.16	1392151.91	
0+04	8" VALVE	563041.29	1392149.03	
2+76	8" COUPLING (VD)	562846.08	1391959.62	1.83' UP
5+17	8"x6" TEE (FH)	562673.19	1391791.87	
5+21	8" VALVE	562670.31	1391789.08	
6+34	8" COUPLING (VD)	562589.19	1391710.28	2.69' DOWN
8+65	8" COUPLING (VD)	562424.42	1391548.37	2.22' DOWN
8+80	8" COUPLING (HD)	562414.75	1391538.86	2.64' CW
9+45	8"x6" TEE (FH)	562369.40	1391489.99	
9+80	8" COUPLING (VD)	562345.75	1391464.51	2.51' UP
11+40	8" COUPLING (VD)	562236.92	1391347.23	2.30' UP
12+61	8" 1/16 BEND	562154.48	1361258.39	2.67' UP
12+74	8" 1/16 BEND	562149.95	1391246.17	
12+80	CONNECT TO EX. 8" WATER CONT. 14-4008-D	562146.27	1391242.19	

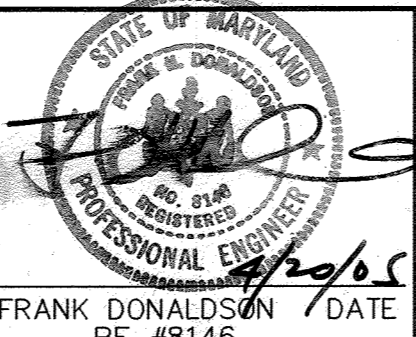
VIRLONA AVE. & RUSTIC AVE. WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
VIRLONA AVENUE AND RUSTIC LANE				
0+00 VIRLONA AVE. = 8+04 AUGUSTINE AVE.	8"x8" TEE	562941.61	1392249.91	
0+04	8" VALVE	562944.33	1392252.84	
0+25	8"x6" TEE (FH)	562958.66	1392268.59	
0+32	8" 5" HORIZONTAL BEND	562963.40	1392273.91	
2+57	8" COUPLING (HD)	563126.36	1392428.28	2.80' CCW
3+62	8" COUPLING (VD)	563206.11	1392496.76	1.37' DOWN
5+34	8" 1/32 BEND	563336.26	1392608.52	
5+49	8"x6" TEE (FH)	563343.38	1392617.59	
5+84	8" 1/16 BEND	563367.46	1392648.28	
6+64 VIRLONA AVE. = 0+00 LEAF LANE	8"x8" TEE	563388.79	1392725.11	
6+68	8" VALVE	563389.86	1392728.96	
6+86	8" 5" HORIZONTAL BEND	563394.63	1392746.16	1.32' DOWN
7+64	8" 1/32 BEND	563408.65	1392821.98	1.04' UP
7+83	8" 1/16 BEND	563416.11	1392840.62	
8+43	8" 1/32 BEND	563458.28	1392883.79	
9+48	8"x6" TEE (FH)	563538.33	1392952.15	
9+51	8"x6" REDUCER	563540.61	1392954.10	
10+32	6" CAP	563601.51	1393006.10	

OLD WASHINGTON RD. & U.S. ROUTE 1 WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
OLD WASHINGTON ROAD/U.S. ROUTE 1				
0+00	8"x12" TAPPING SLEEVE AND VALVE	563225.33	1393530.27	
0+07	8" -1/8 HORIZONTAL BEND	563228.56	1393524.59	
0+22	8" -1/32 HORIZONTAL BEND (VD)	563243.09	1393520.58	
0+27	8" COUPLING (HD)	563248.10	1393520.46	2.75' CW
3+58	8" COUPLING (VD)	563579.74	1393512.27	1.63' UP
3+98	8" COUPLING (VD)	563619.57	1393511.28	1.02' UP
4+61	8" -1/32 HORIZONTAL BEND	563682.74	1393509.72	
5+57	8" -1/8 HORIZONTAL BEND (VD)	563776.32	1393487.02	2.34' DOWN
6+32	8"x6" TEE (FH)	563840.24	1393526.09	
6+36	8" VALVE	563843.63	1393528.07	
6+87	8" -1/32 HORIZONTAL BEND (VD)	563886.90	12393554.40	0.62' UP
7+45	8" 5" HORIZONTAL BEND	563929.91	1393593.97	0.10' UP
9+47	8" COUPLING (VD)	564065.51	1393742.85	0.12' CCW
10+65	8" -1/32 HORIZONTAL BEND (HD)	564144.89	1393830.00	
12+51	8" COUPLING (HD)	564239.12	1393991.36	1.59' CCW
13+15	8" VALVE	564272.63	1394044.79	
13+19	8" ECCENTRIC REDUCER	564275.00	1394048.69	
13+23	CONNECTION WITH EXISTING 8" WATER MAIN	1394052.11	564277.07	

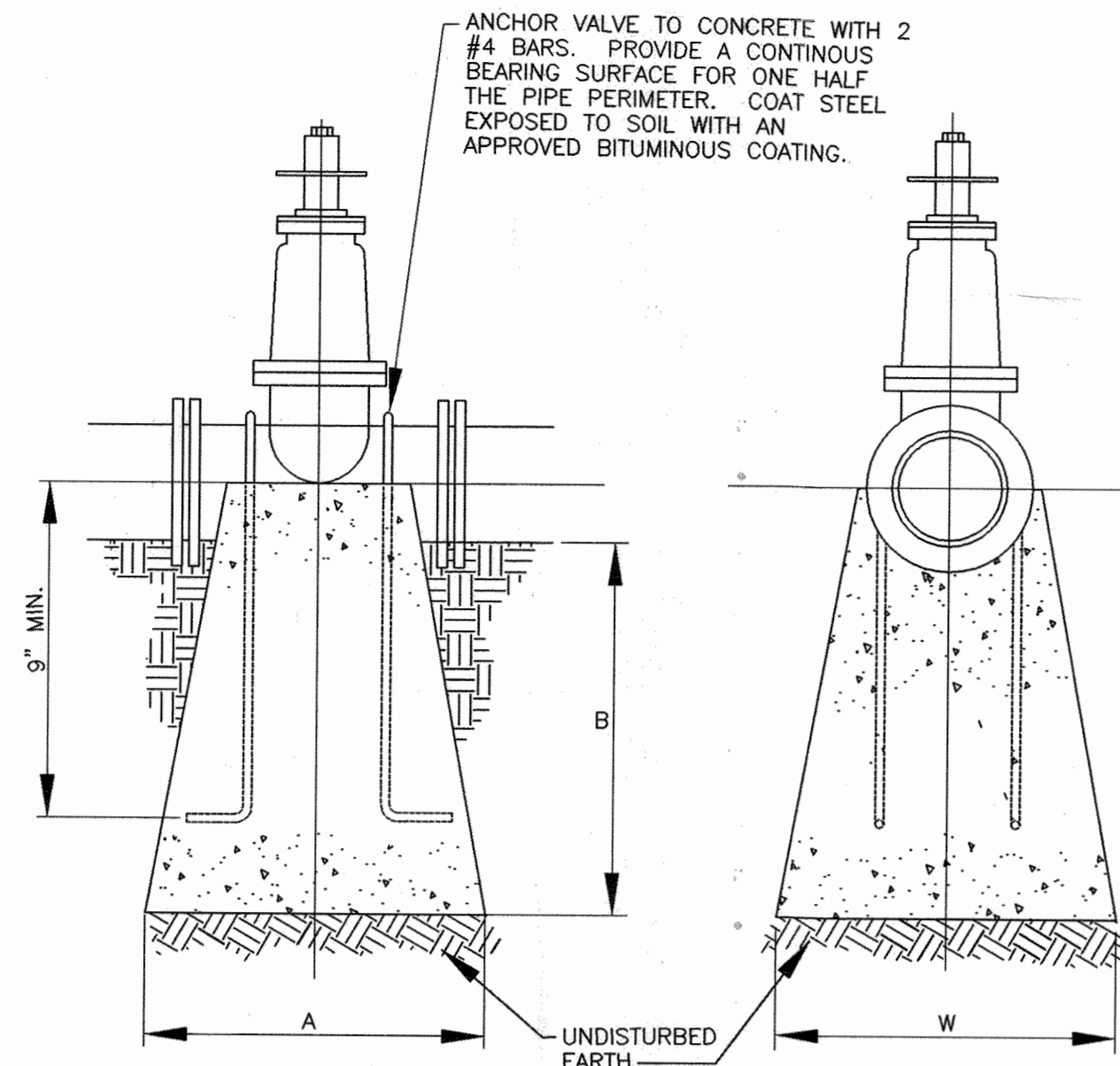
ELK RIDGE HEIGHTS ROAD WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
ELK RIDGE HEIGHTS ROAD				
0+00	8"x12" TAPPING SLEEVE AND VALVE	563843.17	1394050.12	
0+15	8" 1/32 BEND	563831.72	1394060.08	1.43' DOWN
0+41	8"x6" TEE (FH)	563809.18	1394073.01	
0+52	8" 5" HORIZONTAL BEND	563800.07	1394078.23	
0+61	8" 5" HORIZONTAL BEND	563792.11	1394083.64	
3+10	8" 5" HORIZONTAL BEND	563578.30	1394210.75	3.16' DOWN
3+38	8" 5" HORIZONTAL BEND	563555.55	1394226.35	2.28' UP
3+87	8" COUPLING (VD)	563517.22	1394257.49	1.95' DOWN
4+77	8" VALVE	563447.13	1394314.42	
4+81	8"x6" TEE (FH)	563444.03	1394316.94	
4+94	8" 1/32 BEND	563433.89	1394325.18	1.45' DOWN
5+30	8" 1/32 BEND	563402.76	1394341.65	1.57' DOWN
5+43	8" 5" HORIZONTAL BEND	563390.16	1394345.44	0.69' UP
5+63	8" COUPLING (HD)	563370.82	1394349.47	1.44' CW
5+83	8" COUPLING (HD)	563351.15	1394353.05	1.65' CW
8+32	8" COUPLING (VD)	563104.49	1394390.73	1.71' DOWN
9+17	8" COUPLING (VD)	563020.47	1394403.56	1.54' DOWN
9+82	8"x6" TEE (FH)	562956.70	1394413.30	
11+15	8" VALVE	562824.50	1394433.49	
11+19	8"x8" TEE	562820.54	1394434.10	
11+23	8" VALVE	562821.15	1394438.05	
11+57	CONNECTION WITH EXISTING 8" WATER MAIN	1394471.00	562826.18	

LEAF LANE WATER MAIN STAKEOUT TABLE				
WATER MAIN STATION	DESCRIPTION	NORTHING	EASTING	VERTICAL ROTATION
LEAF LANE				
0+00 LEAF LANE = 6+64 VIRLONA AVE.	8"x8" TEE	563388.79	1392725.11	
0+09	8" VALVE	563384.93	1392726.18	
0+09	8" 5" HORIZONTAL BEND	563380.23	1392727.48	
1+00	8" COUPLING (VD)	563290.66	1392744.18	0.92' DOWN
1+71	8" 1/8 BEND	563220.90	1392757.18	0.95' UP
2+27	8"x6" TEE (FH)	563189.19	1392803.41	
2+30	8"x6" REDUCER	563187.50	1392805.87	
2+80	8" 1/8 BEND	563159.22	1392847.10	
4+26	6" CAP	563185.98	1392991.06	

AS-BUILT JANUARY, 2007

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> 4/27/05 Chief, Bureau of Engineering: <i>[Signature]</i> 4/27/05 Chief, Bureau of Utilities: <i>[Signature]</i> 4-27-05 Chief, Utility Design Division: <i>[Signature]</i> 4-27-05		Patton Harris Rust & Associates, P.C. Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282  FRANK DONALDSON PE #8146		DES: R.J.S.B. RJC DRN: R.J.C. CHK: G.C.L. DEC: 2004		AS-BUILT 1/07 WATER MAIN STAKE-OUT TABLES 600' SCALE MAP NO. 38 BLOCK NO. 3 & 9		ELK RIDGE HEIGHTS WATER MAIN REPLACEMENT CAPITAL PROJECT NO. W-8241 CONTRACT NO. 44-4204 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 12 OF 18
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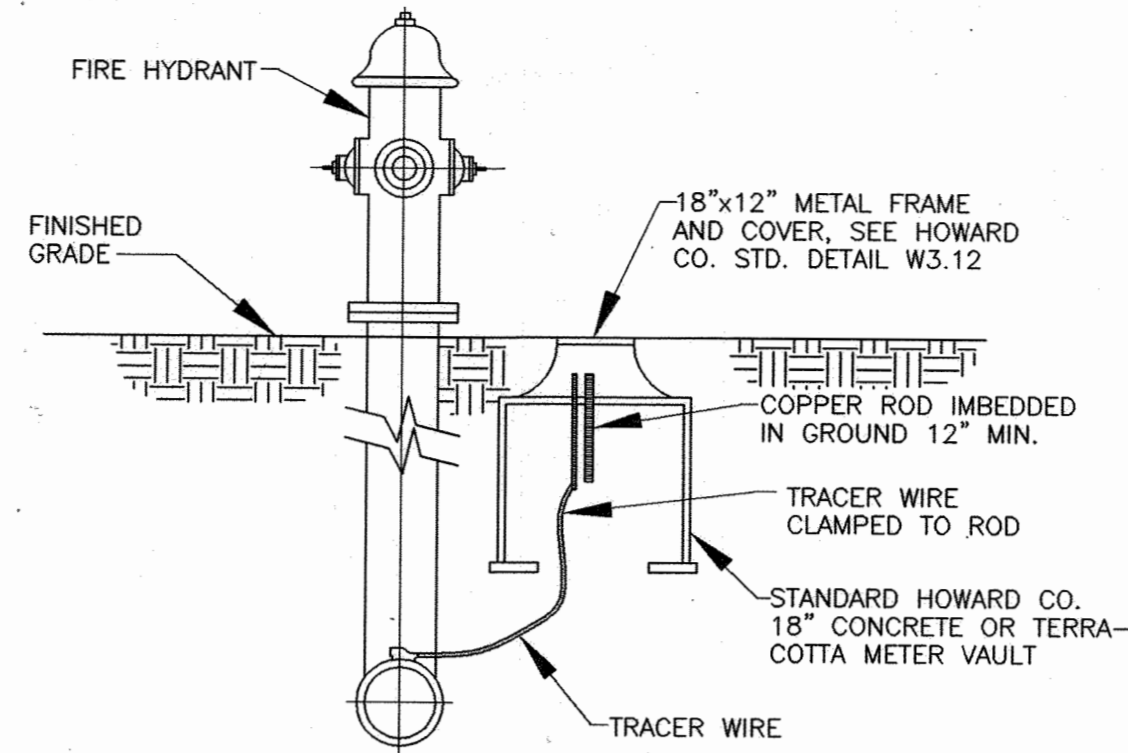
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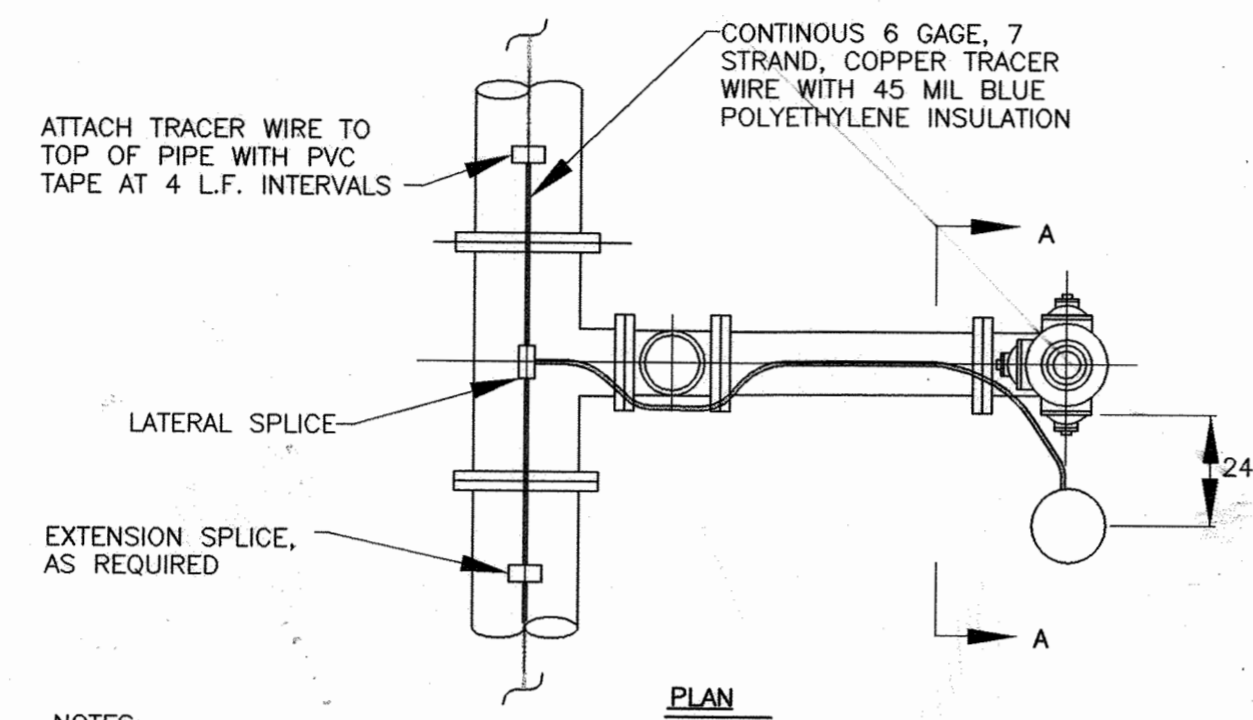
PIPE SIZE	A	B	W
4"	9"	1'-0"	1'-0"
6"	10"	1'-6"	1'-0"
8"	1'-0"	2'-0"	2'-0"
12"	1'-0"	2'-0"	3'-0"

ANCHORAGES FOR VALVES WITH PVC PIPE

NOTE: USED ONLY WHEN VALVE DOES NOT ABUT TEE.
NOT TO SCALE



SECTION A-A

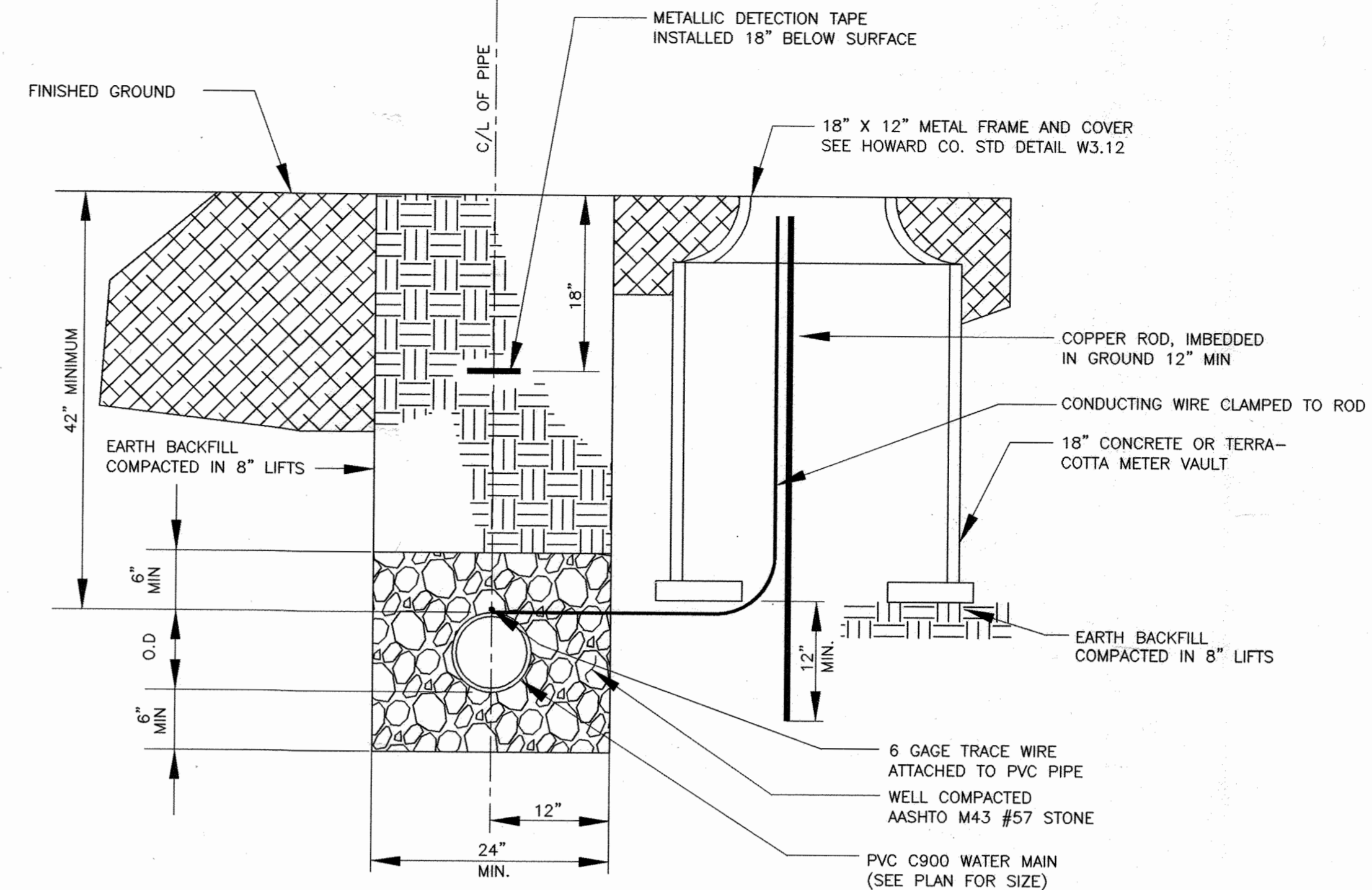


NOTES:

1. TEST STATION MUST BE PLACED TO THE RIGHT OR LEFT SIDE OF THE FIRE HYDRANT.
2. VALVE VAULT AND FRAME TO BE SET FLUSH WITH FINAL GRADE.
3. BUTTRESSES AND STRAPPING NOT SHOWN FOR CLARITY.

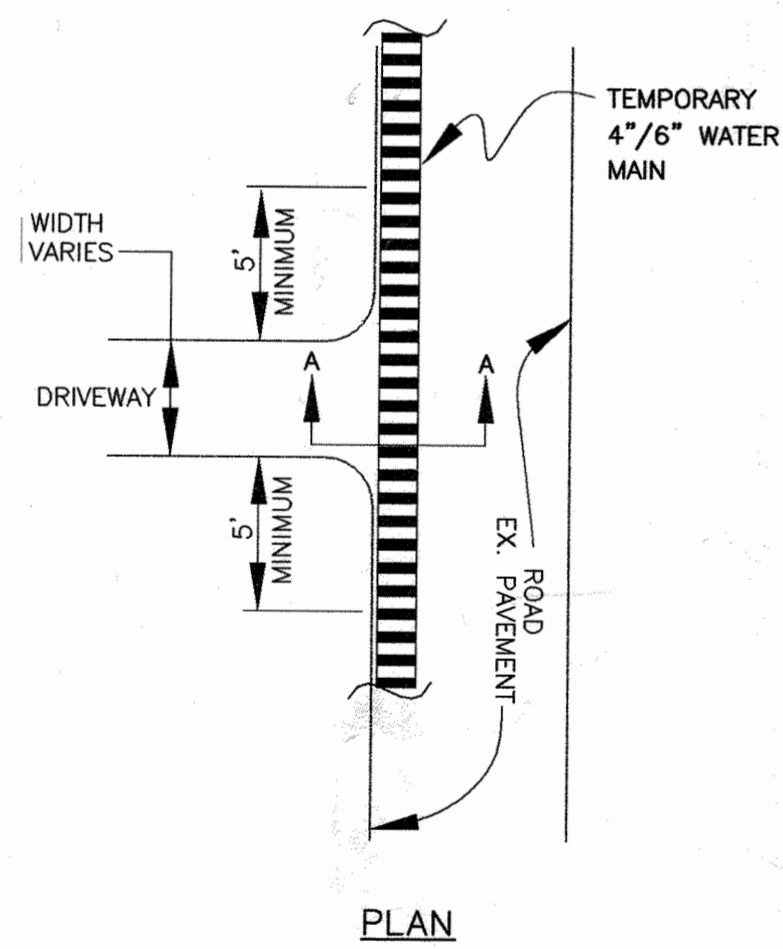
CONTINUITY TEST STATION AT FIRE HYDRANT

NOT TO SCALE

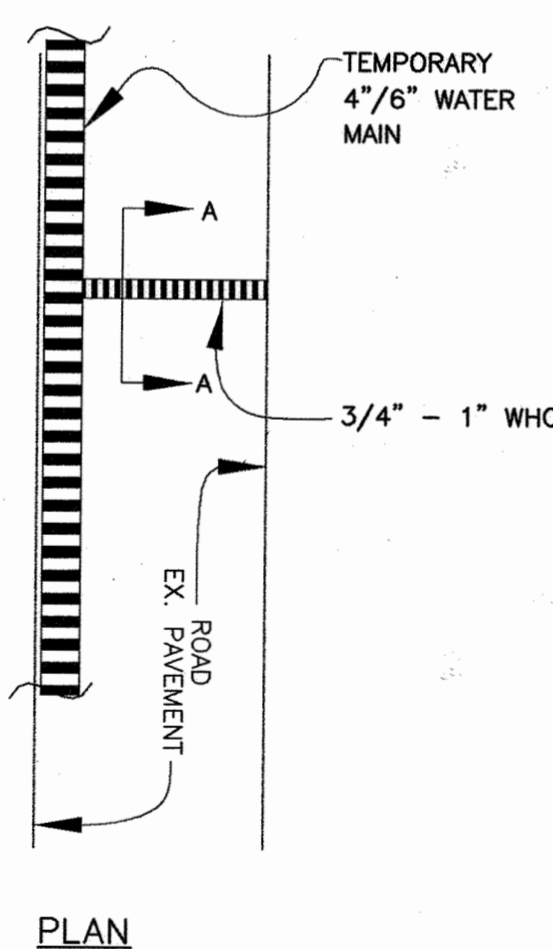


TRENCH FOR PVC PIPE AND CONTINUITY TEST STATION DETAIL

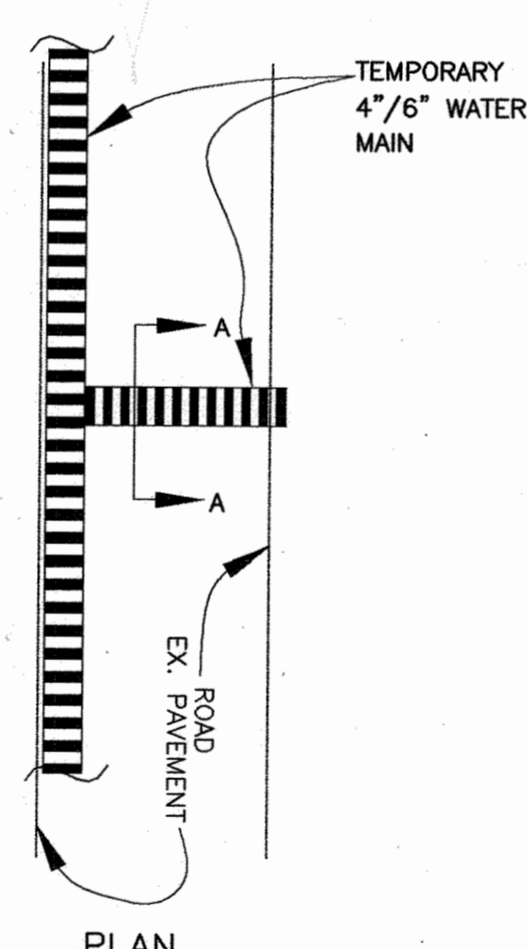
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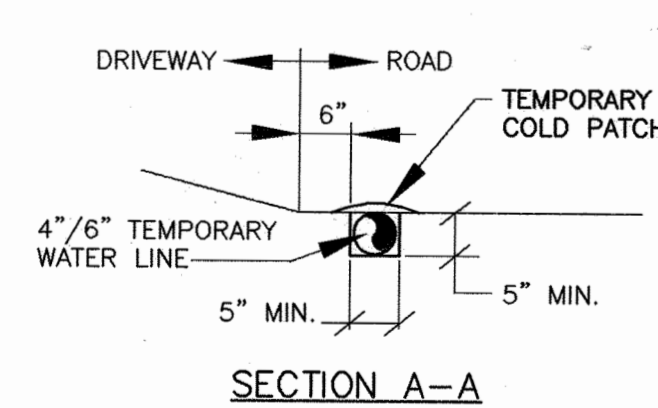
PLAN



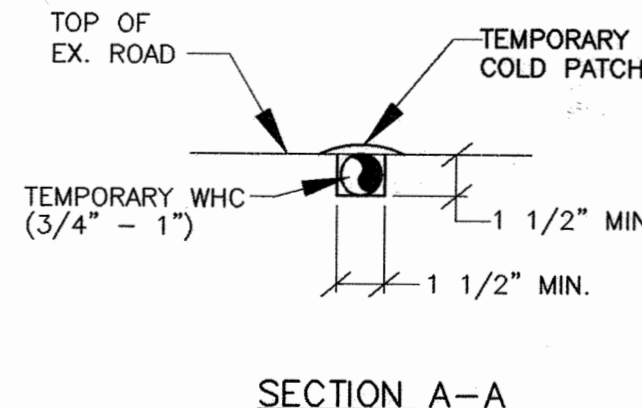
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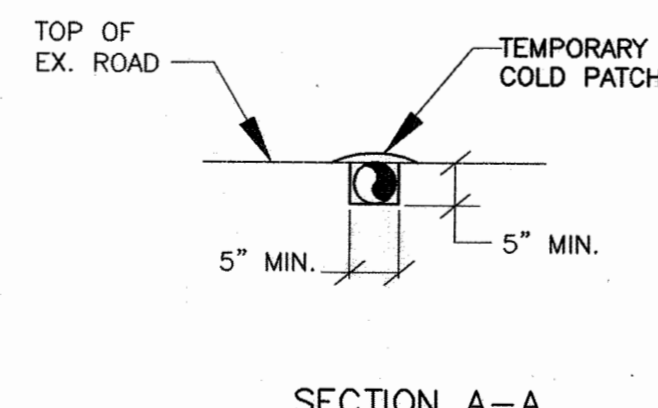
PLAN



SECTION A-A



SECTION A-A



SECTION A-A

TRENCH FOR TEMPORARY WATER CROSSING DRIVEWAYS

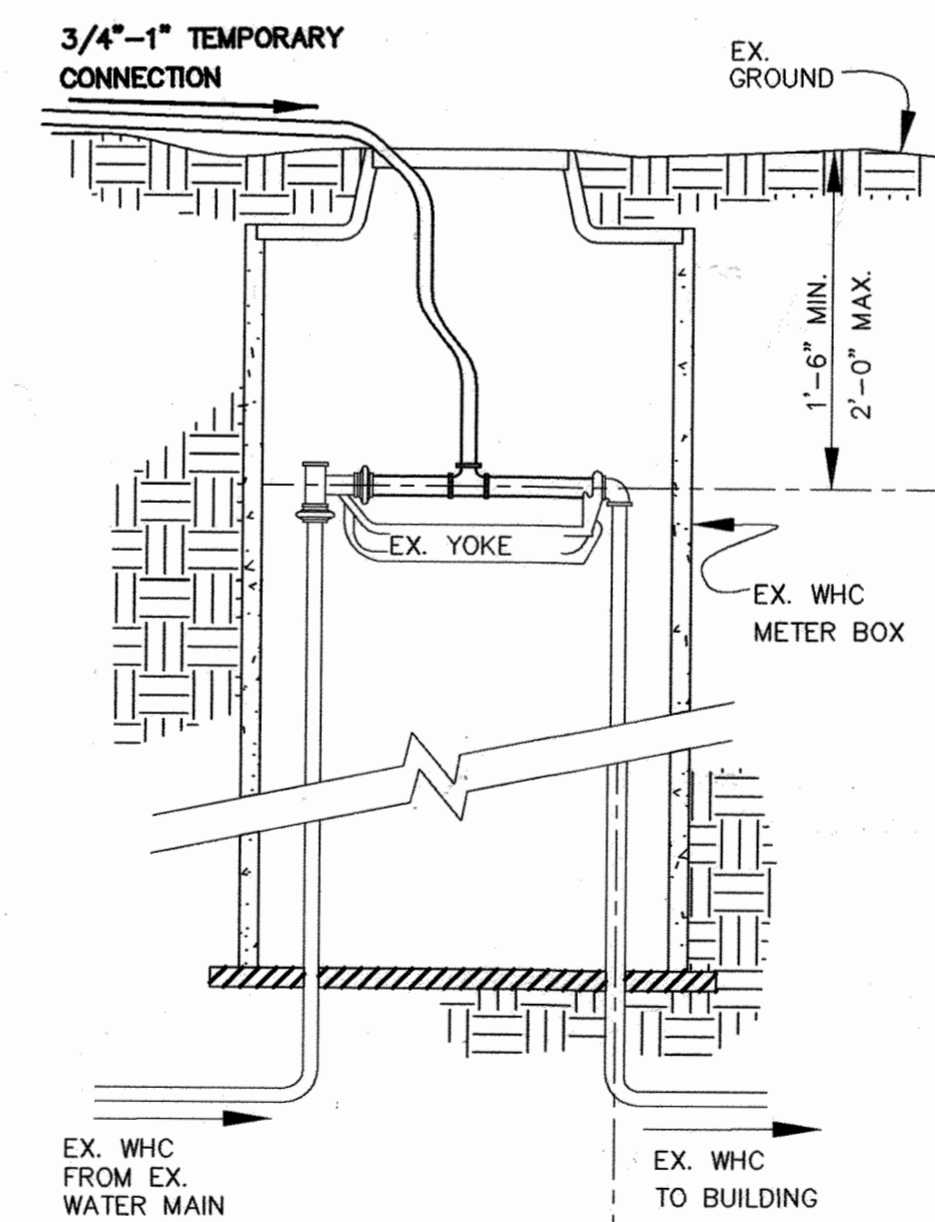
NOT TO SCALE

TRENCH FOR TEMPORARY WHC CROSSING ROAD

NOT TO SCALE

TRENCH FOR TEMPORARY WATER CROSSING ROAD

NOT TO SCALE



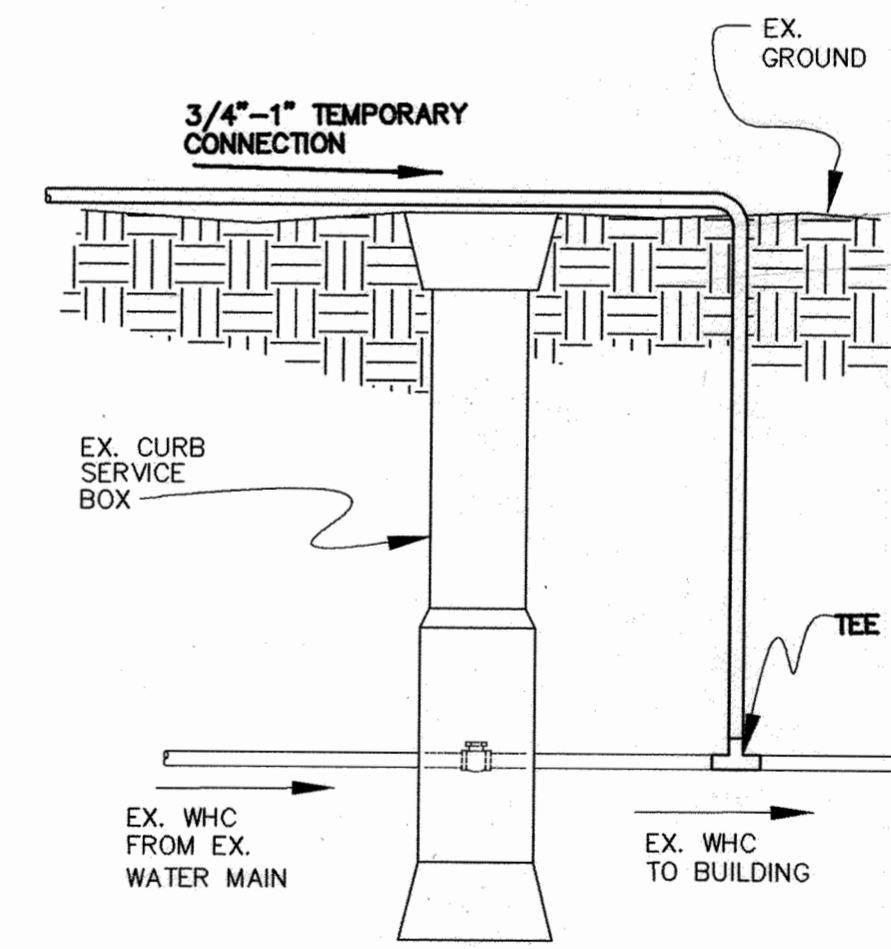
NOTES:

1. REMOVE METER FROM WHC VAULT, STORE AND REPLACE UPON COMPLETION OF JOB
2. INSTALL TEE TO YOKE AND CONNECT TEMPORARY PIPE TO TEE.
3. INSTALL TEMPORARY METER COVER WITH KNOCKOUT FOR BYPASS PIPING.

TEMPORARY WHC CONNECTION FOR OUTSIDE METER OR INSIDE METER WITH CURB STOP IN METER VAULT

DETAIL

NO SCALE



NOTES:

1. EXCAVATE TO CONNECT TEMPORARY WHC CONNECTION.
2. SHUT-OFF CURB STOP VALVE/METER.
3. INSTALL TEE ON BUILDING SIDE OF CURB SERVICE BOX AND CONNECT TEMPORARY WATER LINE TO TEE.
4. BACKFILL EXCAVATION.

TEMPORARY WHC CONNECTION FOR INSIDE METER WITH CURB STOP

DETAIL

NO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 4/26/05
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 4/27/05
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 4-27-05
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 4-27-05
CHIEF, UTILITY DESIGN DIVISION DATE

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

P-H-R+A

8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

STATE OF MARYLAND
FRANK DONALDSON
PE #8146

DES: R.J.S.B. RJC
DRN: R.J.C.
CHK: G.C.L.
DEC., 2004

BY	NO.	REVISION	DATE

600' SCALE MAP NO.	38	BLOCK NO.	3 & 9

AS-BUILT JANUARY, 2007

ELKRIDGE HEIGHTS
WATER MAIN REPLACEMENT
CAPITAL PROJECT NO. W-8241
CONTRACT NO. 44-4204
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 18 OF 18