

NOTE: ALL RAMPS AT THE FALLS/KERSEY INTERSECTION SHALL BE UPGRADED TO BE ADA-COMPLIANT, INCLUDING THE TWO ON THE EAST SIDE OF THE ROAD (STA. ±320+25 AND STA. ±320+65.) DETECTABLE WARNING SURFACES SHALL BE INSTALLED AT EACH RAMP. SEE NOTE 4 AND KEYNOTE 5 THIS SHEET.

# FALLS ROAD-MD ROUTE 189

**EXISTING STORM SEWER DATA:**

- ③ INV=396.22
- ④ INLET TOP=399.63 INV IN=395.00 INV OUT=392.52
- ⑤ DIRECTION ONLY

**EXISTING CONDITIONS LEGEND**

- BUSH
- TRAF. SIGNAL POLE
- △ SIGN
- ◇ TELEPHONE POLE
- ⊕ GUY WIRE
- ⊕ ELEC. JUNG. BOX
- ⊕ GROUND SHOT
- ⊕ GAS VALVE
- ⊕ STORM MANHOLE
- ⊕ POWER POLE
- ⊕ GUY POLE
- ⊕ FENCE
- ⊕ BENCHMARK
- UGT TELE. LINE PAINT MARK
- CTV TV CABLE PAINT MARK
- G GAS LINE PAINT MARK
- ▨ EDGE OF ASPHALT

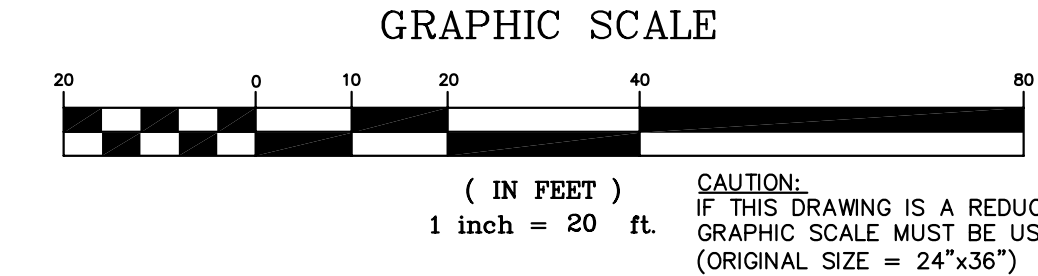
POINT NO.	STATION	NORTHING	EASTING
P.O.B.	317+75.14	509,612.064	1,262,755.920
P.C.	319+50.93	509,769.013	1,262,835.100
P.I.	320+61.71	509,867.918	1,262,884.998
P.T.	321+72.48	509,965.930	1,262,936.627
P.C.	322+12.75	510,001.557	1,262,955.393
P.I.	326+23.97	510,365.382	1,263,147.041
P.T.	330+21.31	510,609.893	1,263,477.666
P.C.	330+40.39	510,621.243	1,263,493.012
P.I.	331+85.41	510,707.468	1,263,609.605
P.T.	340+30.39	510,797.442	1,263,723.330
P.O.E.	339+23.16	511,165.232	1,264,188.206

DESCRIPTION	STATIONING	DETAIL
HC RAMP	STA. 319+92.50, 30' L	MD 655.12
HC RAMP	STA. 320+64.50, 36' L	MD 655.12
10' OPEN CHANNEL SECTION	STA. 324+36.15, 22' L	MD 374.68
CURB AND GUTTER	320+90.22 TO 330+40.39	MD 620.02-01 TYPE D

\*\* UNLESS OTHERWISE NOTED, FACE TO CURB TO BE LOCATED 12 FEET FROM CENTERLINE OF FALLS ROAD

**LEGEND**

- ▨ PROPOSED WALK
- ▨ PROPOSED CURB AND GUTTER
- LOD LIMIT OF DISTURBANCE
- PROPERTY LINE
- 402 PROPOSED CONTOUR
- x 400.5 PROPOSED SPOT GRADE
- ⊕ RELOCATED SIGN



- NOTES**
- ADJUST ALL FRAMES, COVERS, AND INLETS AS REQUIRED TO BRING COVER TO PROPER GRADE.
  - INSTALL TREE PROTECTION MEASURES IN ACCORDANCE WITH APPROVED FOREST CONSERVATION PLAN PRIOR TO ANY DEMOLITION/CONSTRUCTION.
  - ELEVATION OF NEW SIDEWALK SHALL MATCH EXISTING GRADE WHEREVER POSSIBLE UNLESS OTHERWISE NOTED.
  - ALL HC RAMPS BEING UPGRADED SHALL BE INSTALLED WITH MD-SHA STANDARD DETECTABLE WARNING SURFACES. DETECTABLE WARNING SURFACES SHALL BE INSTALLED IN ANY RAMP THAT CROSSES A NAMED ROADWAY OR SIGNALIZED ENTRANCE. SEE SHA STANDARD DETAILS 4 (MD-655.12) AND 7 (MD-655.40) ON SHEET TS-2.

- KEYNOTES**
- RELOCATE EXISTING SIGN AS SHOWN
  - CONNECT TO EXISTING SIDEWALK AT EXISTING GRADE
  - EXISTING UTILITY POLE
  - ADJUST GUY WIRE AWAY FROM PROPOSED SIDEWALK - COORDINATE WITH PEPCO
  - REPLACE HC RAMP TO COMPLY WITH CURRENT ADA STANDARDS - SEE SHEET TS-2 FOR DETAILS
  - OPEN CHANNEL DRAINAGE UNDER CURB SEE SHEET TS-2 FOR STD SHA DETAIL
  - PROPOSED CURB TRANSITION POINT FROM 12' LANE TO MEET EXISTING CURB

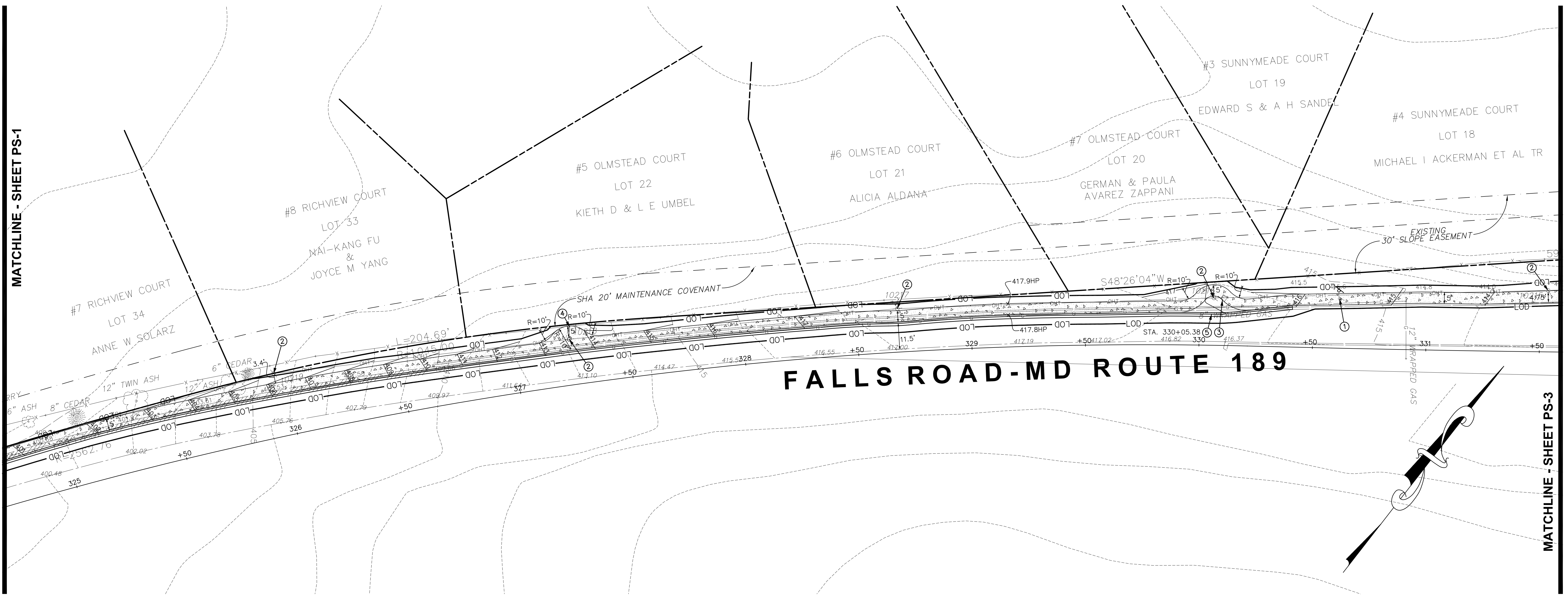
**PROFESSIONAL CERTIFICATION**

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 16872.

	DESIGNED_PDR	APPROVED _____ DATE _____	GRAD. _____	DEPARTMENT OF PUBLIC WORKS	DATE PROJECT STARTED _____	AS BUILT COMPLETED _____ DATE _____	<b>A. MORTON THOMAS and ASSOCIATES, INC.</b> <small>ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS          12750 THUNDERBOLT PARKWAY • ROCKVILLE, MARYLAND 20852 • (301) 881-2545</small>	<b>PAVING AND DRAINAGE SHEET 1</b> FALLS ROAD SIDEWALK IMPROVEMENTS KERSEY LANE TO WOOTTON PARKWAY ROCKVILLE, MARYLAND	NO.	REVISIONS	APP'D	DATE
	DRAWN_PDR		PAV. _____	CITY OF	DATE PROJECT COMPLETED _____	CHIEF INSPECTOR _____			DATE 06-15-2010	SCALE 1" = 20'	DRAWING NO. 4	FILE 107-390.006
	CHECKED_MXK		W _____	<b>ROCKVILLE</b>	DATE ACCEPTED BY CITY _____							
			S _____	ROCKVILLE, MARYLAND	DATE TRANS. TO FINANCE DEPT., W/R 9 FORM _____							
			OTHER _____									

MATCHLINE - SHEET PS-1

MATCHLINE - SHEET PS-3



# FALLS ROAD-MD ROUTE 189

### EXISTING CONDITIONS LEGEND

- BUSH
- TRAF. SIGNAL POLE
- △ SIGN
- TELEPHONE POLE
- × GUY WIRE
- ELEC. JUNG. BOX
- GROUND SHOT
- GAS VALVE
- STORM MANHOLE
- POWER POLE
- GUY POLE
- FENCE
- BENCHMARK
- UGT TELE. LINE PAINT MARK
- CTV TV CABLE PAINT MARK
- G GAS LINE PAINT MARK
- EDGE OF ASPHALT

### LEGEND

- PROPOSED WALK
- PROPOSED CURB AND GUTTER
- LOD LIMIT OF DISTURBANCE
- PROPERTY LINE
- 402 PROPOSED CONTOUR
- × 400.5 PROPOSED SPOT GRADE
- △ RELOCATED SIGN

### NOTES

1. ADJUST ALL FRAMES, COVERS, AND INLETS AS REQUIRED TO BRING COVER TO PROPER GRADE.
2. INSTALL TREE PROTECTION MEASURES IN ACCORDANCE WITH APPROVED FOREST CONSERVATION PLAN PRIOR TO ANY DEMOLITION/CONSTRUCTION.
3. ELEVATION OF NEW SIDEWALK SHALL MATCH EXISTING GRADE WHEREVER POSSIBLE UNLESS OTHERWISE NOTED.
4. WHERE NECESSARY, TRIM VEGETATION BEHIND PROPOSED SIDEWALK ALONG FENCE LINE
5. SEE SHEET PS-1 FOR GEOMETRY OF FALLS ROAD STATIONING LINE

### KEYNOTES

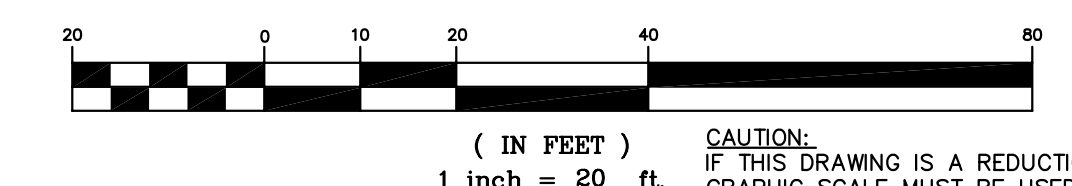
- ① RELOCATE EXISTING SIGN AS SHOWN
- ② EXISTING UTILITY POLE
- ③ ADJUST HANDBOX ELEVATION TO MATCH GRADE OF PROPOSED SIDEWALK
- ④ ADJUST GUY WIRE AWAY FROM PROPOSED SIDEWALK - COORDINATE WITH PEPCO
- ⑤ PROPOSED CURB TRANSITION POINT FROM 12' LANE TO MEET EXISTING CURB



### PROFESSIONAL CERTIFICATION

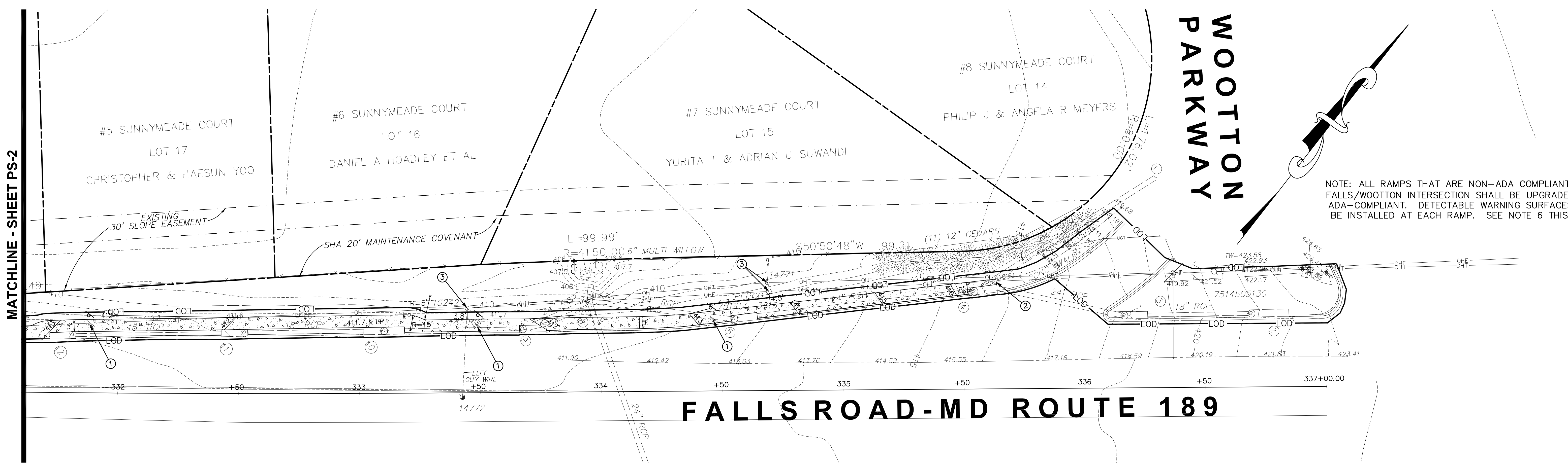
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### GRAPHIC SCALE



100% SUBMITTAL  
NOT FOR CONSTRUCTION

	DESIGNED <u>PDR</u>	APPROVED _____ DATE _____	GRAD. _____	DEPARTMENT OF PUBLIC WORKS	DATE PROJECT STARTED _____	AS BUILT COMPLETED _____ DATE _____	<b>A. MORTON THOMAS and ASSOCIATES, INC.</b> <small>ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS          12750 THUNDERBOLT PARKWAY • ROCKVILLE, MARYLAND 20852 • (301) 891-2545</small>	<b>PAVING AND DRAINAGE SHEET 2</b> FALLS ROAD SIDEWALK IMPROVEMENTS KERSEY LANE TO WOOTTON PARKWAY ROCKVILLE, MARYLAND		NO.	REVISIONS	APP'D	DATE
	DRAWN <u>PDR</u>		PAV. _____	CITY OF	DATE PROJECT COMPLETED _____			DATE 06-15-2010	SCALE 1" = 20'	DRAWING	FILE		
CHECKED <u>MXK</u>		DIRECTOR OF PUBLIC WORKS	SD _____	<b>ROCKVILLE</b>	DATE ACCEPTED BY CITY _____	CHIEF INSPECTOR _____			NO. 5	107-390.006			
			W _____	ROCKVILLE, MARYLAND	DATE TRANS. TO FINANCE _____				OF 9	<b>PS-2</b>			
			S _____		DEPT., W/R 9 FORM _____								
			OTHER _____										



NOTE: ALL RAMPS THAT ARE NON-ADA COMPLIANT AT THE FALLS/WOOTTON INTERSECTION SHALL BE UPGRADED TO BE ADA-COMPLIANT. DETECTABLE WARNING SURFACES SHALL BE INSTALLED AT EACH RAMP. SEE NOTE 6 THIS SHEET.

# FALLS ROAD-MD ROUTE 189

**EXISTING STORM SEWER DATA:**

- ① INLET  
TOP=411.94  
INV=411.94
- ② INLET  
TOP=421.86  
INV=415.35
- ③ INLET  
TOP=418.87  
INV IN=412.88  
INV OUT=412.58
- ④ INLET  
TOP=416.15  
a INV IN=410.69  
b INV IN=410.61  
INV OUT=410.32
- ⑤ INLET  
TOP=413.29  
INV IN=407.70  
INV OUT=407.68
- ⑥ MANHOLE  
TOP=411.07  
a INV IN=403.70  
b INV IN=403.69  
c INV IN=403.70  
INV OUT=403.67
- ⑦ OUTFALL  
INV=403.63
- ⑧ INV=406.02
- ⑨ INLET  
TOP=411.97  
INV IN=406.39  
INV OUT=406.21
- ⑩ INLET  
TOP=411.64  
INV IN=406.80  
INV OUT=406.62
- ⑪ INLET  
TOP=411.86  
INV IN=407.28  
INV OUT=407.12
- ⑫ INLET  
TOP=412.73  
INV=408.04

**INLET CALCULATIONS - INLETS IN SAG:**

Inlet ID	Sheet	C	I (in/hr)	A (ac.)	Q from Drainage Area (ft³/s)	Q from Bypass (ft³/s)	Discharge (ft³/s)	Spread (ft)	Gutter Width (ft)	Gutter Cross Slope (ft/ft)	Road Cross Slope (ft/ft)	Curb Opening Length (ft)	Opening Height (ft)	Opening Type	Local Depression (ft)	Local Depression Width (ft)	Throat Incline Angle (degrees)	Depth (ft)	Gutter Depression (ft)	Total Depression (ft)	Spread < 8 ft?
Existing Inlet #14 - Curb Opening In Sag	PS-1	0.78	5.38	0.73	3.06	N/A	3.06	5.26	1	0.04	0.02	10	0.5	Horizontal	1.5	10	90	0.15	0.02	0.15	OK
Proposed Inlet #14 - Curb Opening In Sag	PS-1	0.78	5.38	0.73	3.06	N/A	3.06	5.26	1	0.04	0.02	10	0.5	Horizontal	1.5	10	90	0.15	0.02	0.15	OK
Existing Curb Inlet #10 - In Sag	PS-3	0.70	5.38	0.08	0.29	0.08	0.37	3.51	1	0.04	0.02	15	0.5	Horizontal	1.5	15	90	0.04	0.02	0.15	OK
Proposed Curb Inlet #10 - In Sag	PS-3	0.70	5.38	0.08	0.29	0.14	0.43	3.56	1	0.04	0.02	15	0.5	Horizontal	1.5	15	90	0.06	0.02	0.15	OK

**INLET CALCULATIONS - INLETS ON GRADE:**

Inlet ID	Calculation	Sheet	C	I (in/hr)	A (ac.)	Q from Drainage Area (ft³/s)	Q from Bypass (ft³/s)	Discharge (ft³/s)	Efficiency (%)	Curb Opening Length (ft)	Local Depression (in)	Local Depression Width (ft)	Slope (ft/ft)	Gutter Width (ft)	Gutter Cross Slope (ft/ft)	Road Cross Slope (ft/ft)	Manning Coefficient	Intercepted Flow (ft³/s)	Bypass Flow (ft³/s)	Spread (ft)	Depth (ft)	Flow Area (ft²)	Gutter Depression (ft)	Total Depression (ft)	Velocity (ft/s)	Equivalent Cross Slope (ft/ft)	Length Factor	Total Interception Length (ft)	Efficiency > 80%?
Existing Curb Inlet #12	Existing	PS-3	0.69	5.38	0.17	0.63	N/A	0.63	71.3%	10	1.5	10	0.030	1	0.04	0.02	0.013	0.45	0.18	4.39	0.11	0.20	0.02	0.15	3.10	0.0280	0.50	19.98	No
Existing Curb Inlet #12	Proposed	PS-3	0.72	5.38	0.20	0.77	N/A	0.77	67.6%	10	1.5	10	0.030	1	0.04	0.02	0.013	0.52	0.25	4.63	0.12	0.23	0.02	0.14	3.28	0.0285	0.47	21.49	No
Existing Curb Inlet #11	Existing	PS-3	0.68	5.38	0.05	0.18	0.18	0.36	95.0%	10	1.5	10	0.014	1	0.04	0.02	0.013	0.34	0.02	4.11	0.10	0.18	0.02	0.15	2.01	0.0284	0.81	12.34	Yes
Existing Curb Inlet #11	Proposed	PS-3	0.71	5.38	0.06	0.23	0.25	0.48	89.0%	10	1.5	10	0.014	1	0.04	0.02	0.013	0.43	0.05	4.62	0.11	0.22	0.02	0.15	2.15	0.0277	0.71	14.16	Yes
Existing Curb Inlet #9	Existing	PS-3	0.70	5.38	0.09	0.34	0.23	0.57	89.1%	10	1.5	10	0.010	1	0.04	0.02	0.013	0.51	0.06	5.26	0.13	0.29	0.02	0.15	1.99	0.0269	0.71	14.12	Yes
Existing Curb Inlet #9	Proposed	PS-3	0.72	5.38	0.10	0.39	0.26	0.65	86.1%	10	1.5	10	0.010	1	0.04	0.02	0.013	0.56	0.09	5.54	0.13	0.32	0.02	0.15	2.05	0.0266	0.67	15.02	Yes
Existing Curb Inlet #5	Existing	PS-3	0.72	5.38	0.17	0.66	0.09	0.75	69.6%	10	1.5	10	0.025	1	0.04	0.02	0.013	0.52	0.23	4.89	0.12	0.25	0.02	0.15	3.01	0.0273	0.48	20.66	No
Existing Curb Inlet #5	Proposed	PS-3	0.73	5.38	0.18	0.71	0.09	0.80	68.1%	10	1.5	10	0.025	1	0.04	0.02	0.013	0.54	0.25	5.02	0.12	0.26	0.02	0.15	3.06	0.0271	0.47	21.30	No
Existing Curb Inlet #4	Existing	PS-3	0.82	5.38	0.10	0.44	N/A	0.44	78.5%	10	1.5	10	0.034	1	0.04	0.02	0.013	0.35	0.09	3.69	0.09	0.15	0.02	0.15	3.00	0.0291	0.57	17.41	No
Existing Curb Inlet #4	Proposed	PS-3	0.82	5.38	0.10	0.44	N/A	0.44	78.5%	10	1.5	10	0.034	1	0.04	0.02	0.013	0.35	0.09	3.69	0.09	0.15	0.02	0.15	3.00	0.0291	0.57	17.41	No

NOTE: ALL INLET CALCULATIONS WERE PERFORMED USING THE RATIONAL METHOD AND FLOWMASTER 8

**LEGEND**

- PROPOSED WALK (3/TS-2)
- LOD LIMIT OF DISTURBANCE
- PROPERTY LINE
- 402 PROPOSED CONTOUR
- x 400.5 PROPOSED SPOT GRADE
- RELOCATED SIGN

**EXISTING CONDITIONS LEGEND**

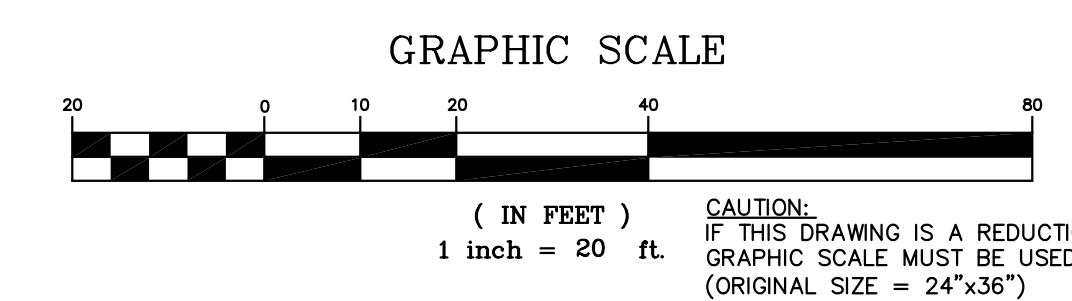
- BUSH
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**NOTES**

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3. ELEVATION OF NEW SIDEWALK SHALL MATCH EXISTING GRADE WHEREVER POSSIBLE UNLESS OTHERWISE NOTED.
4. WHERE NECESSARY, TRIM VEGETATION BEHIND PROPOSED SIDEWALK ALONG FENCE LINE.
5. SEE SHEET PS-1 FOR GEOMETRY OF FALLS ROAD STATIONING LINE.
6. ALL HC RAMPS BEING UPGRADED SHALL BE INSTALLED WITH MD-SHA STANDARD DETECTABLE WARNING SURFACES. DETECTABLE WARNING SURFACES SHALL BE INSTALLED IN ANY RAMP THAT CROSSES A NAMED ROADWAY OR SIGNALIZED ENTRANCE. SEE SHA STANDARD DETAILS 4 (MD-655.12) AND 7 (MD-655.40) ON SHEET TS-2.

**KEYNOTES**

- ① RELOCATE EXISTING SIGN AS SHOWN
- ② CONNECT TO EXISTING SIDEWALK AT EXISTING GRADE
- ③ EXISTING UTILITY POLE



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100% SUBMITTAL NOT FOR CONSTRUCTION

	DESIGNED_PDR	APPROVED _____ DATE	GRAD. _____	DEPARTMENT OF PUBLIC WORKS	DATE PROJECT STARTED _____	AS BUILT COMPLETED _____ DATE	<b>A. MORTON THOMAS and ASSOCIATES, INC.</b> <small>ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS          12750 THUNDERBOLT PARKWAY • ROCKVILLE, MARYLAND 20852 • (301) 881-2545</small>	<b>PAVING AND DRAINAGE SHEET 3</b> FALLS ROAD SIDEWALK IMPROVEMENTS KERSEY LANE TO WOOTTON PARKWAY ROCKVILLE, MARYLAND	NO.	REVISIONS	APP'D	DATE
	DRAWN_PDR	_____ DATE	PAV. _____	CITY OF	DATE PROJECT COMPLETED _____	CHIEF INSPECTOR _____			DATE	SCALE	DRAWING	FILE
CHECKED_MXK	_____	_____ DATE	SD _____	ROCKVILLE	DATE ACCEPTED BY CITY _____				1" = 20'	NO. 6	107-390.006	
	_____	DIRECTOR OF PUBLIC WORKS	W _____	ROCKVILLE, MARYLAND	DATE TRANS. TO FINANCE DEPT., W/R 9 FORM _____					OF 9		PS-3

