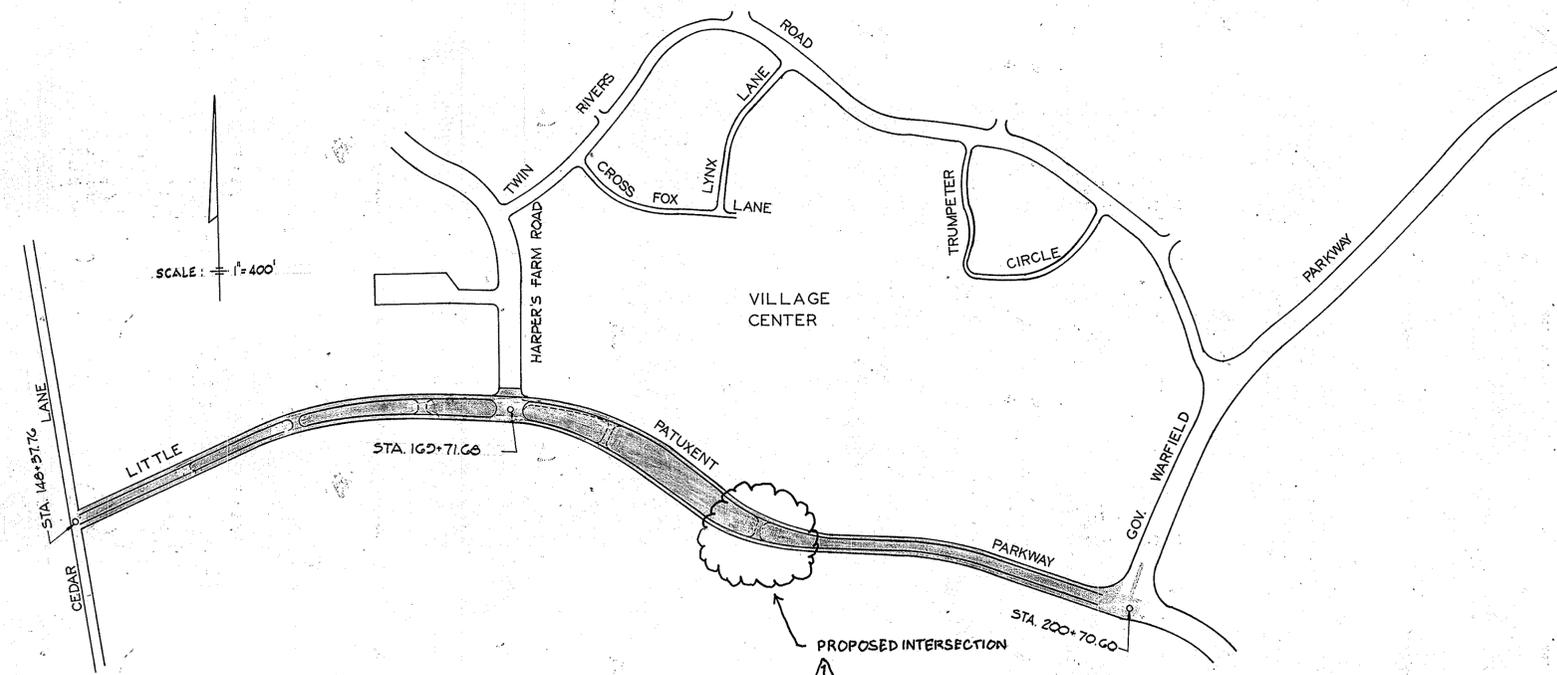
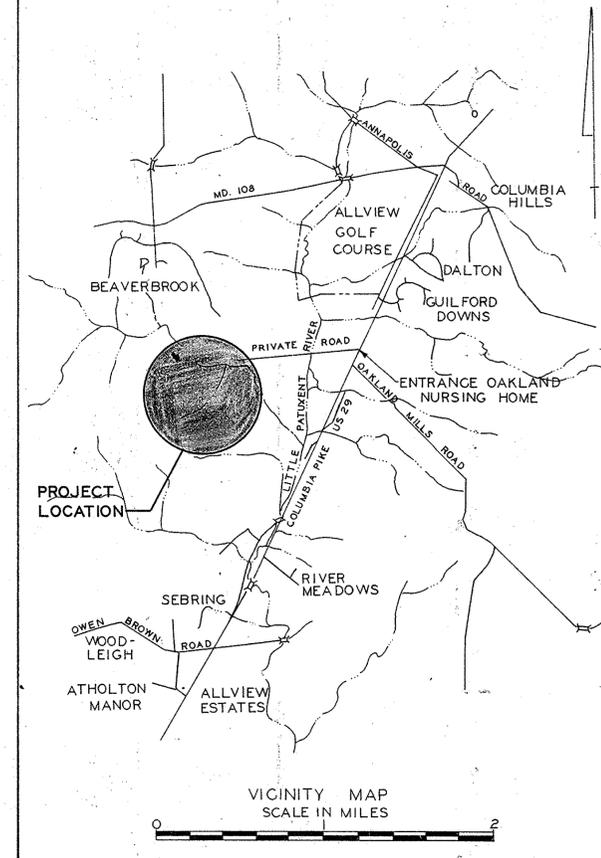


# COLUMBIA

ELECTION DISTRICT 5

## LITTLE PATUXENT PARKWAY

HOWARD RESEARCH & DEVELOPMENT CORP.  
HOWARD COUNTY, MARYLAND



**APPROVED**  
PLANNING COMMISSION  
OF HOWARD COUNTY  
DATE: \_\_\_\_\_

INDEX		
DESCRIPTION	STREET NAME	DRAWING NO.
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SITE DETAILS		
SITE DETAILS		
SEDIMENT & EROSION CONTROL PLAN		
SEDIMENT & EROSION CONTROL NOTES		
SEDIMENT & EROSION CONTROL NOTES		
SEDIMENT & EROSION CONTROL NOTES		
SIGNING AND STRIPING PLAN		
TRAFFIC CONTROL PLAN - PHASE 1		
TRAFFIC CONTROL PLAN - PHASE 2		
TRAFFIC SIGNAL PLAN		
TRAFFIC SIGNAL PLAN		

Jan 2, 1968  
DATE

Date	Revision
12/2/2015	Proposed Intersection

Approved: Howard County Planning Commission  
Senior Engineer  
Date: 5-20-68

Approved: Howard County Roads Department  
Road Superintendent  
Date: April 18, 1968

Approved: Howard County Metropolitan Commission  
Chief Engineer  
Date: 4-23-68

*[Signature]*  
12/2/15  
FOR REVISION

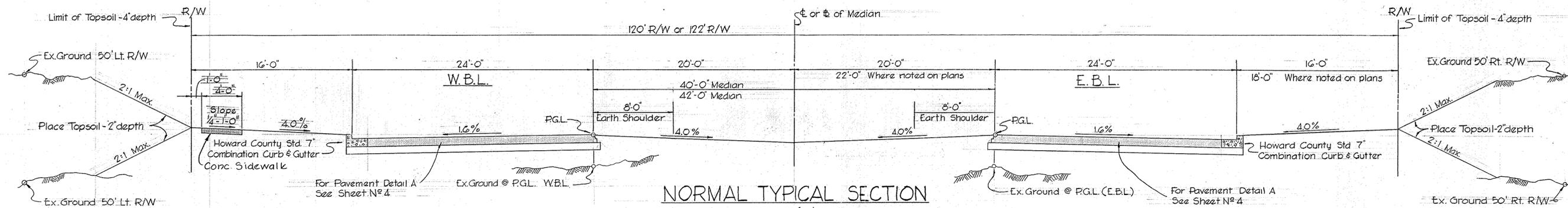
33772  
6/16/17

**PURDUM & JESCHKE**  
CONSULTING ENGINEERS  
& LAND SURVEYORS  
1023 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

**CONVENTIONAL SIGNS & SYMBOLS**

362.51 Finished Grade Elevation  
0.0% Drainage Flow - Typical Section, Gutter, and Grading  
Sta. 25+51 Superlevation Transition Locations & Pavement Slope in %  
Top of Slope  
Toe of fill  
Existing Topography Lines  
Right of Way

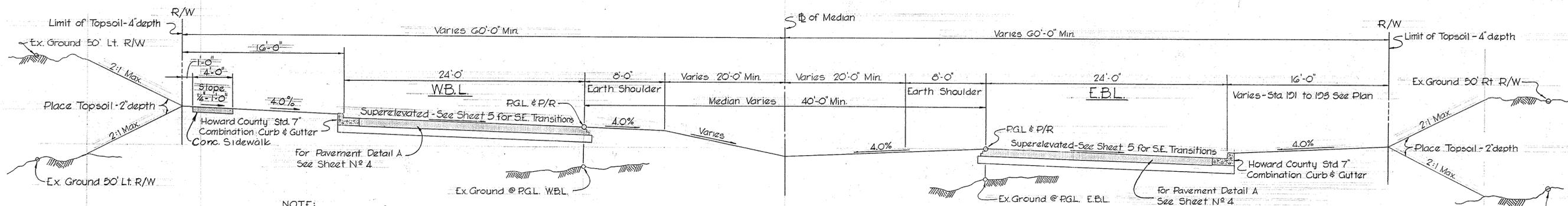
APPROVED  
 PLANNING COMMISSION  
 OF HOWARD COUNTY  
 DATE: MAY 20 1968  
*J. J. C.*



**NORMAL TYPICAL SECTION**

SCALE: 1"=5'

STA 148 to STA 154  
 STA 189  
 STA 196 to STA 200



**SUPERELEVATED TYPICAL SECTION**

SCALE: 1"=5'

STA 157 to STA 166  
 STA 184  
 STA 191 to STA 193

NOTE:  
 Super-elevation cross slope shown  
 on Plan under curve data

FOR GENERAL NOTES SEE SHEET N<sup>o</sup> 4

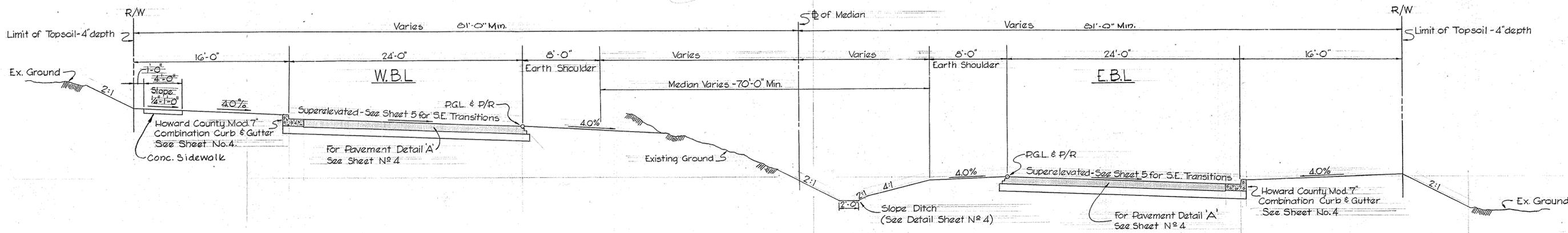
**ABBREVIATIONS**

- P.G.L. = Profile Grade Line
- P/R = Point of Rotation
- E.B.L. = East Bound Lane
- W.B.L. = West Bound Lane
- R/W = Right of Way
- ⊕ = Center Line
- ⊖ = Base Line
- S.E. = Super-elevation

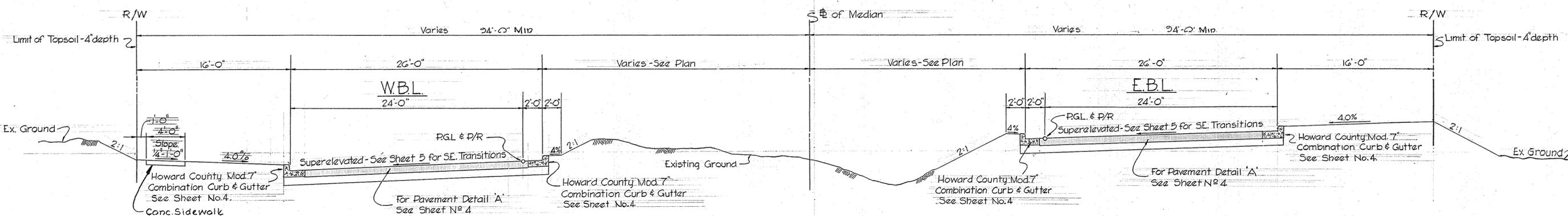
<b>COLUMBIA</b>		
THE ROUSE COMPANY		
<b>TYPICAL SECTIONS</b>		
<b>LITTLE PATUXENT PKWY.</b>		
DES: E.L.B.	SCALE: 1"=5'	SHT NO: 2 of 25
DRAWN: F.T.	DATE: 12-27-67	CCF. NO:
CHK: B.M.J.		

PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 1023 N. CALVERT St.  
 BALTIMORE 21202 Md.

162



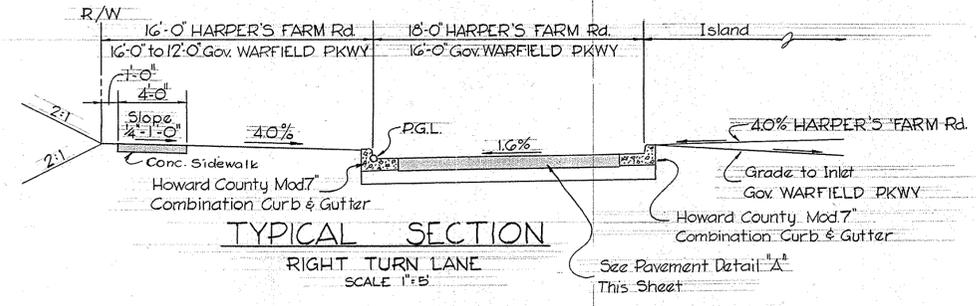
SUPERELEVATED TYPICAL SECTION  
 SCALE 1"=5'  
 STA 170 to STA 174



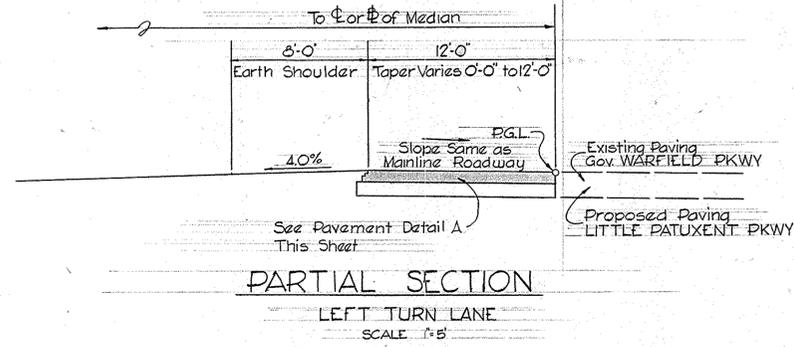
SUPERELEVATED TYPICAL SECTION  
 SCALE 1"=5'  
 STA 174+ to STA 183+      STA 160 to STA 162      STA 175+ to STA 179+

  
*Purdum & Jeschke*  
 PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE 21202 Md.

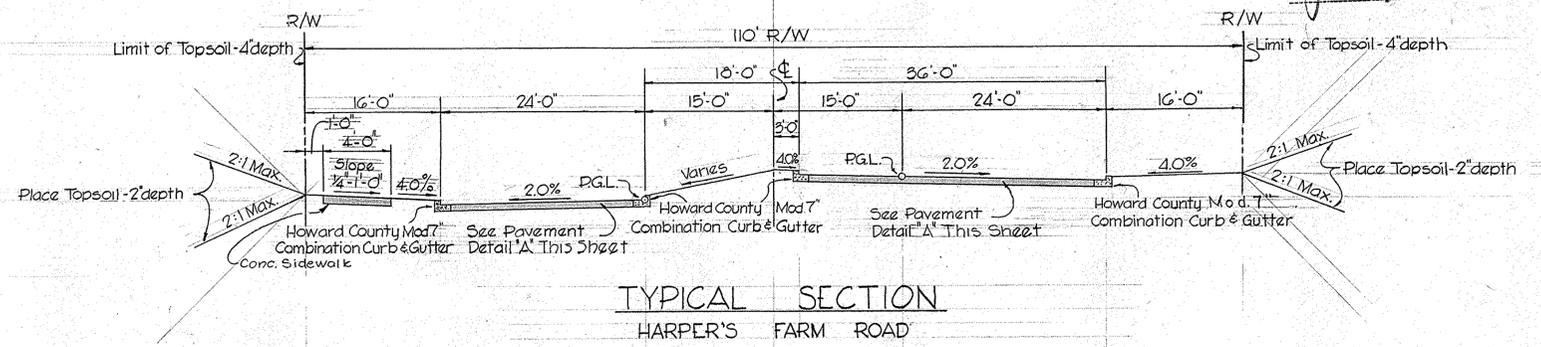
COLUMBIA THE ROUSE COMPANY		
TYPICAL SECTIONS LITTLE PATUXENT PKWY.		
DES: E.L.B.	SCALE: 1"=5'	SHT NO: 3 of 25
DRAWN: F.T.	DATE: 12-27-67	C.C.F. NO:
CHK: B.M.J.		



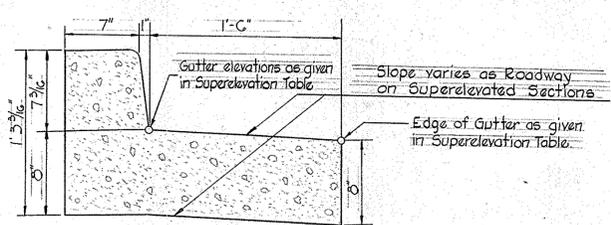
TYPICAL SECTION  
 RIGHT TURN LANE  
 SCALE: 1"=5'



PARTIAL SECTION  
 LEFT TURN LANE  
 SCALE: 1"=5'

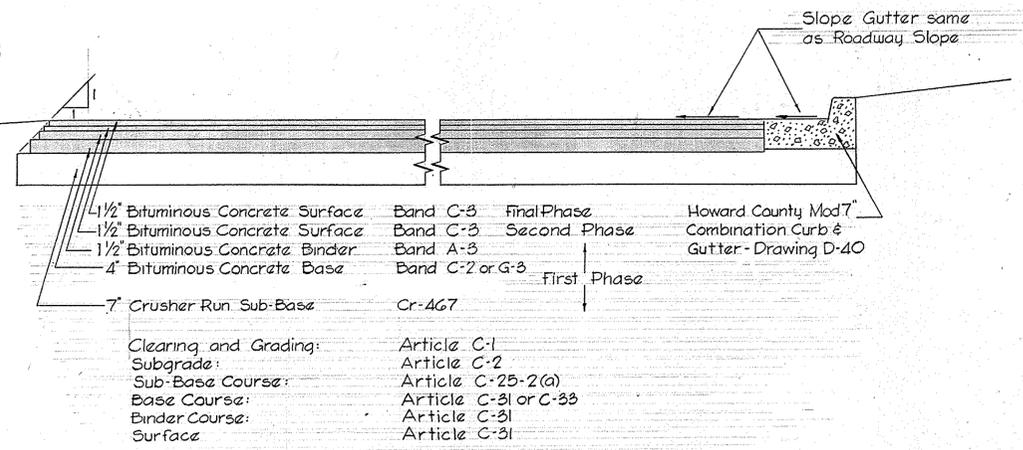


TYPICAL SECTION  
 HARPER'S FARM ROAD

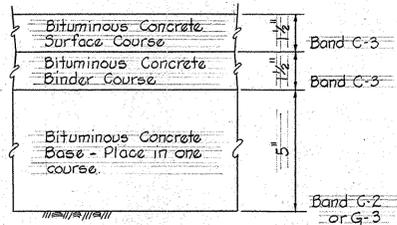


DETAIL - MODIFIED COMBINATION  
 CURB & GUTTER  
 SCALE: 1 1/2"=10'

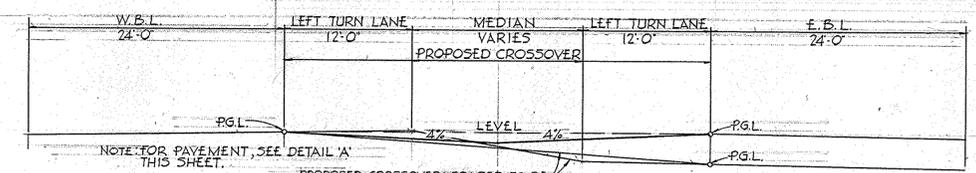
- GENERAL NOTES**
- Coordinates: Coordinates shown are based on the Maryland State Grid System
  - Datum: U.S.G.S.
  - Standards: Reference made to Standard Drawing Numbers are Howard County Road Construction Code and Standard Specifications
  - Topsail: Place 4" Topsail on all slopes less than 4:1; Place 2" Topsail on all slopes 4:1 or greater
  - Seeding: Not part of this Contract
  - Crossovers: Use Paving Detail A for all crossovers
  - Top of Structure Elevations:
    - "K" Inlet top elevations given at top of wall
    - "S" Combination Inlet top elevations given at top of curb
    - "C" Endwall top elevations given at top of wall
    - Manhole top elevations given at top of casting



PAVEMENT DETAIL A  
 MAIN ARTERIAL STREET  
 SCALE: 1/2"=1'

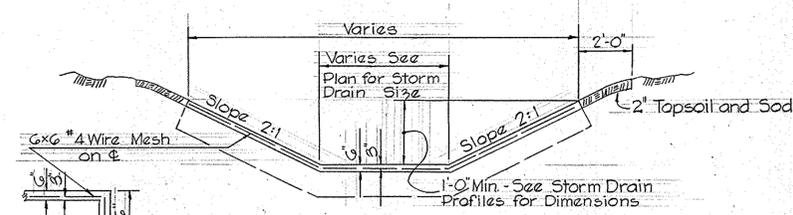


PAVEMENT DETAIL B  
 CEDAR LANE  
 NO SCALE

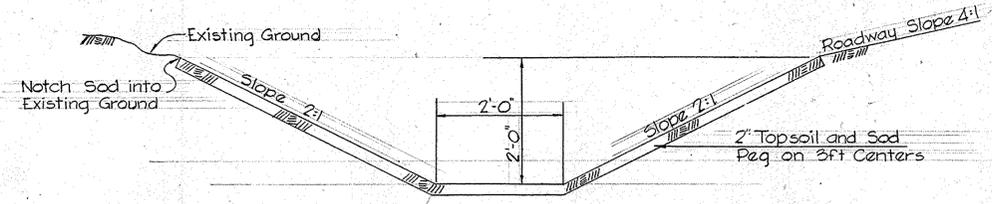


TYPICAL CROSS-OVER DETAIL  
 NO SCALE

STA. 159+85 ; STA. 169+168 ; (STA. 154+00 ; STA. 165+50 ; STA. 174+50 ; STA. 182+75 FUTURE)



CONCRETE CHANNEL  
 NO SCALE



SOD CHANNEL  
 NO SCALE  
 LEFT OF EAST BOUND LANE  
 STA. 170+ to 174+  
 STA. 181+ to 182+

PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 1023 N CALVERT ST.  
 BALTIMORE 21202 Md.

TOE WALL  
 DETAIL  
 NO SCALE

COLUMBIA  
 THE ROUSE COMPANY

STANDARD DETAILS  
 LITTLE PATUXENT PKWY

DES: E.L.B.	SCALE: as shown	SHT NO: 4 of 25
DRAWN: F.T.	DATE: 12-27-67	C.C.F. NO:
CHK: B.M.J.		

# TRANSITION SCHEDULES

## WEST BOUND LANE

## EAST BOUND LANE

24' TRAFFIC LANE					12' DECELERATION LANE					24' TRAFFIC LANE								
Left Gutter	Left Corr.	Rate	P.G.L. Elev.	Station	Slope	Distance Rt. P.G.L.	Right Corr.	Decel. La. Edg. Elev.	Left Edg. Elev.	Left Corr.	Rate	P.G.L. Elev.	Station	Lt. Edge of Gutter	Rt. Edge of Gutter	Station	Lt. Edge of Gutter	Rt. Edge of Gutter
479.29	-0.38	.0048	479.57	154+79.88					411.60	-1.44	.0048	413.04	106+00	411.69		154+79.88	411.69	
479.51	-0.28		479.67	155+00					411.08	-1.32		412.40	106+25	411.16		155+00	411.16	
479.65	-0.16		479.69	155+25					410.51	-1.20		411.71	106+50	410.58		155+25	410.58	
	0.00		479.69	155+50					409.87	-1.08		410.75	106+75	409.74		155+50	409.74	
479.71	+0.07		479.64	156+00					409.17	-0.96		410.13	107+00	409.23		156+00	409.23	
479.71	+0.19		479.52	156+25					408.41	-0.84		409.25	107+25	408.47		156+25	408.47	
479.64	+0.31		479.33	156+50					408.04	-0.80		408.84	107+50	408.09		156+50	408.09	
479.33	+0.31		479.07	157+00					407.59	-0.72		408.31	108+00	407.64		157+00	407.64	
479.49	+0.43		479.06	157+25					407.34	-0.60		407.34	108+25	407.78		157+25	407.78	
479.28	+0.55		478.73	157+50					406.89	-0.48		406.87	108+50	405.92		157+50	405.92	
478.99	+0.67		478.32	158+00					406.40	-0.36		406.40	109+00	405.07		158+00	405.07	
478.63	+0.79		477.64	158+25					404.19	-0.24		404.43	109+25	404.21		158+25	404.21	
	+0.84		477.04	158+50					403.94	-0.12		403.46	109+50	403.35		158+50	403.35	
	+0.84		477.04	159+00					403.00	0.00		402.49	109+00	401.70		159+00	401.70	
472.52	+0.70		471.74	167+25					401.71	+0.12		401.59	109+25	401.70		167+25	401.70	
472.22	+0.69		471.93	167+50					400.86	+0.24		400.62	109+50	400.84		167+50	400.84	
472.12	+0.66		471.46	168+00					400.01	+0.36		399.65	110+00	399.28		168+00	399.28	
471.70	+0.54		471.16	168+25					399.16	+0.48		399.66	110+25	399.13		168+25	399.13	
471.23	+0.42		470.81	168+50					398.31	+0.60		398.81	110+50	398.27		168+50	398.27	
	+0.38		469.56	169+00	1.6%	3.4	-0.05		397.81	+0.67		397.14	110+00	397.77		169+00	397.77	
469.99	+0.43		469.56	169+25	1.8%	8.0	-0.14	469.42	397.50	+0.72		396.78	110+25	397.45		169+25	397.45	
469.22	+0.55		469.08	169+50	2.2%	12.0	-0.28	468.80	396.43	+0.84		395.94	110+50	396.73		169+50	396.73	
469.22	+0.67		468.85	170+00	2.6%	12.0	-0.34	468.21	396.14	+0.96		395.18	111+00	396.08		170+00	396.08	
469.25	+0.77		468.48	170+25	3.2%	12.0	-0.38	468.10	395.58	+1.08	.0048	394.50	111+25	395.51		170+25	395.51	
468.78	+0.84		467.99	170+50	3.5%	12.0	-0.42	467.59	394.87	+1.08	.0048	393.87	111+50	394.87		170+50	394.87	
	+0.84		457.44	173+00	3.5%	9.5	-0.33		393.42	+1.07	.0048	392.35	112+00	393.55		173+00	393.55	
458.36	+0.92		456.37	173+25	3.6%	8.0	-0.30	457.14	392.55	+0.95		392.60	112+25	392.49		173+25	392.49	
457.41	+1.04		456.02	173+50	4.3%	6.9	-0.30	456.07	392.76	+0.83		392.93	112+50	392.70		173+50	392.70	
457.10	+1.08		456.02	174+00	4.3%	6.3	-0.28	455.74	392.05	+0.71		392.34	113+00	392.40		174+00	392.40	
456.43	+1.16		455.27	174+25	4.6%	5.6	-0.27	455.00	391.41	+0.60		391.81	113+25	391.36		174+25	391.36	
455.42	+1.28		454.14	174+50	5.3%	5.3	-0.28	453.86	390.84	+0.59		391.42	113+50	390.82		174+50	390.82	
	+1.32		454.14	175+00	5.5%	5.0	-0.28		390.89	+0.47		390.06	114+00	390.02		175+00	390.02	
	+1.32		438.68	177+25					390.53	+0.35		389.58	114+25	389.67		177+25	389.67	
438.68	+1.20		437.49	177+50					390.16	0.00		389.67	114+50	389.77		177+50	389.77	
437.38	+1.08		436.30	178+00					389.76	-0.01		389.75	115+00	389.75		178+00	389.75	
436.07	+0.96		435.11	178+25					389.31	-0.13		389.29	115+25	389.17		178+25	389.17	
434.76	+0.84		433.92	178+50					388.86	-0.25		389.01	115+50	388.73		178+50	388.73	
433.45	+0.72		432.73	179+00					388.41	-0.37		388.56	116+00	388.23		179+00	388.23	
432.14	+0.60		431.54	179+25					387.96	-0.49		388.11	116+25	387.62		179+25	387.62	
430.83	+0.48		430.35	179+50					387.51	-0.61		387.26	116+50	387.15		179+50	387.15	
430.43	+0.44		429.99	180+00					387.06	-0.73		386.81	117+00	386.75		180+00	386.75	
429.52	+0.36		429.16	180+25					386.67	-0.85		386.57	117+25	386.67		180+25	386.67	
428.21	+0.24		428.77	180+50					386.22	-0.97		386.17	117+50	386.22		180+50	386.22	
426.90	+0.12		428.78	181+00					385.77	-1.09		385.83	118+00	385.83		181+00	385.83	
	0.00		425.59	181+25					385.32	-1.21		385.38	118+25	385.44		181+25	385.44	
424.92	-0.12		424.44	181+50					384.87	-1.33		384.93	118+50	384.99		181+50	384.99	
423.13	-0.24		423.37	182+00					384.42	-1.45		384.48	119+00	384.54		182+00	384.54	
422.02	-0.36		422.38	182+25					383.97	-1.57		384.03	119+25	384.09		182+25	384.09	
421.05	-0.47		421.52	182+50					383.52	-1.69		383.58	119+50	383.64		182+50	383.64	
420.99	-0.48		421.47	183+00					383.07	-1.81		383.13	120+00	383.19		183+00	383.19	
420.08	-0.60		420.63	183+25					382.62	-1.93		382.68	120+25	382.74		183+25	382.74	
419.16	-0.72		419.88	183+50					382.17	-2.05		382.23	120+50	382.29		183+50	382.29	
418.36	-0.84		419.20	184+00					381.72	-2.17		381.78	121+00	381.84		184+00	381.84	
417.65	-0.96		418.61	184+25					381.27	-2.29		381.33	121+25	381.39		184+25	381.39	
417.01	-1.08		418.09	184+50					380.82	-2.41		380.88	121+50	380.94		184+50	380.94	
416.45	-1.20		417.65	185+00					380.37	-2.53		380.43	122+00	380.49		185+00	380.49	
415.97	-1.32		417.29	185+25					379.92	-2.65		379.98	122+25	379.04		185+25	379.04	
	-1.44		417.29	185+50					379.47	-2.77		379.53	122+50	379.09		185+50	379.09	

12' DECELERATION LANE					24' TRAFFIC LANE					24' TRAFFIC LANE				
Decel. La. Edg. Elev.	Left Corr.	Distance Left P.G.L.	Slope	Station	P.G.L. Elev.	Rate	Right Corr.	Right Edge	Station	Lt. Edge of Gutter	Rt. Edge of Gutter	Station	Lt. Edge of Gutter	Rt. Edge of Gutter
				155+41.94	479.69	.0048	-0.38	479.27	155+41.94	479.30	479.30	104+65.47	413.28	413.28
				155+50	479.52		-0.48	479.25	155+50	479.28	479.28	104+75	412.09	412.09
				156+00	479.65		-0.54	479.10	156+00	479.14	479.14	104+85	411.92	411.92
				156+25	479.32		-0.66	478.86	156+25	478.90	478.90	104+95	412.54	412.54
				156+50	479.71	.0048	-0.78	478.54	156+50	478.58	478.58	105+05	411.58	411.58
				157+00	479.70				157+00	479.74	479.74	105+15	411.24	411.24
				157+25	479.62				157+25	479.66	479.66	105+25	410.88	410.88
				157+50	479.36				157+50	479.40	479.40	105+35	411.58	411.58
				158+00	479.46				158+00	479.50				

APPROVED  
 PLANNING COMMITTEE  
 OF BALTIMORE  
 DATE: MAY 20 1968

*J. H. C.*

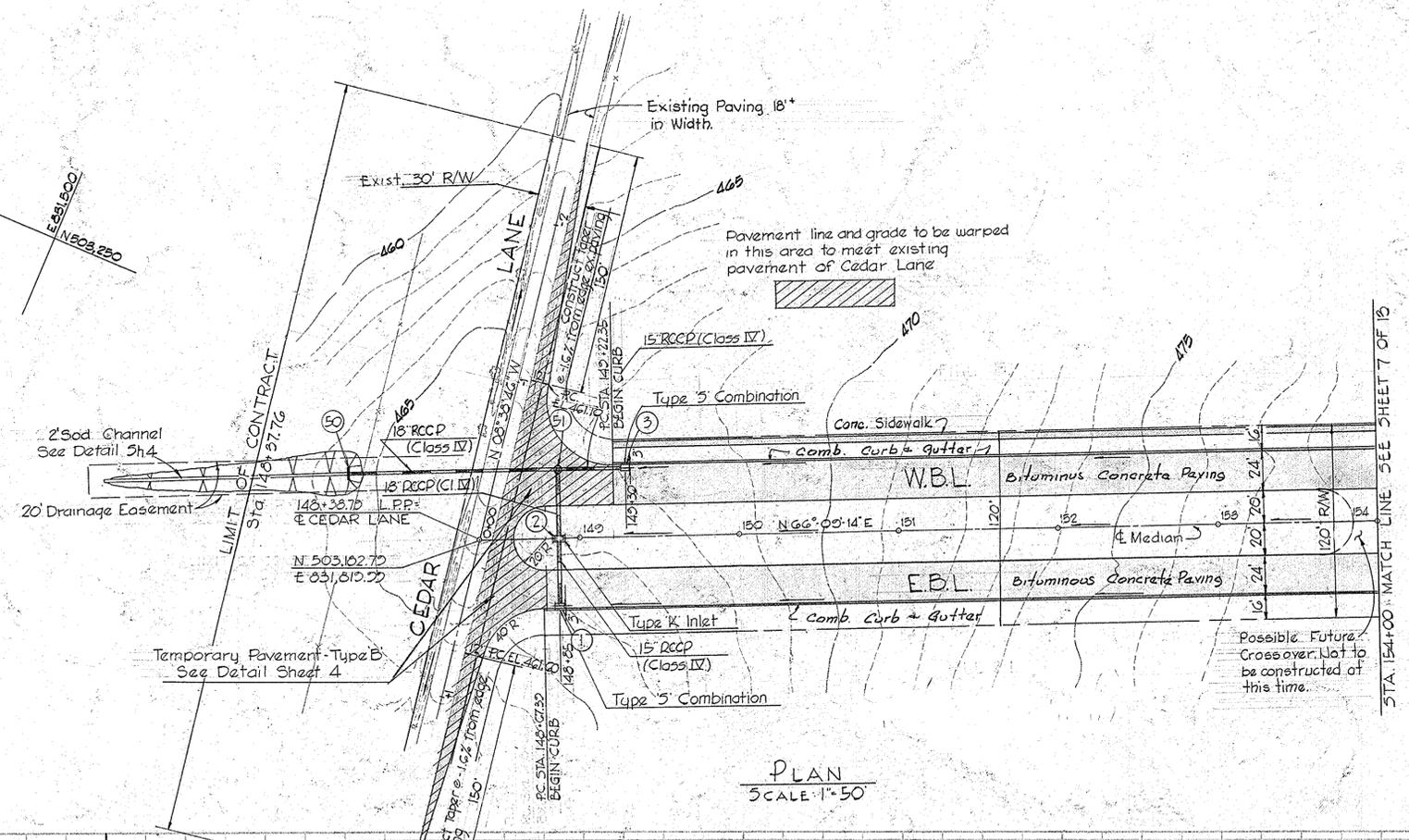
STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	REMARKS
1	S COMB.	466.02	Std. Drwg. D-22 for 15" D See Struct. Notes Sht. 3
2	"K"	465.27	Std. Drwg. D-28 for 18" D See Struct. Notes Sht. 3
3	S COMB.	467.12	Std. Drwg. D-22 for 15" D See Struct. Notes Sht. 3
50	C	460.85	Howard Co. Standard Endwall Drwg. D-52
51	MH	465.45	Howard Co. Standard Manhole Drwg. D-103

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_



*Purdum & Jeschke*  
 PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE 21202 MD.

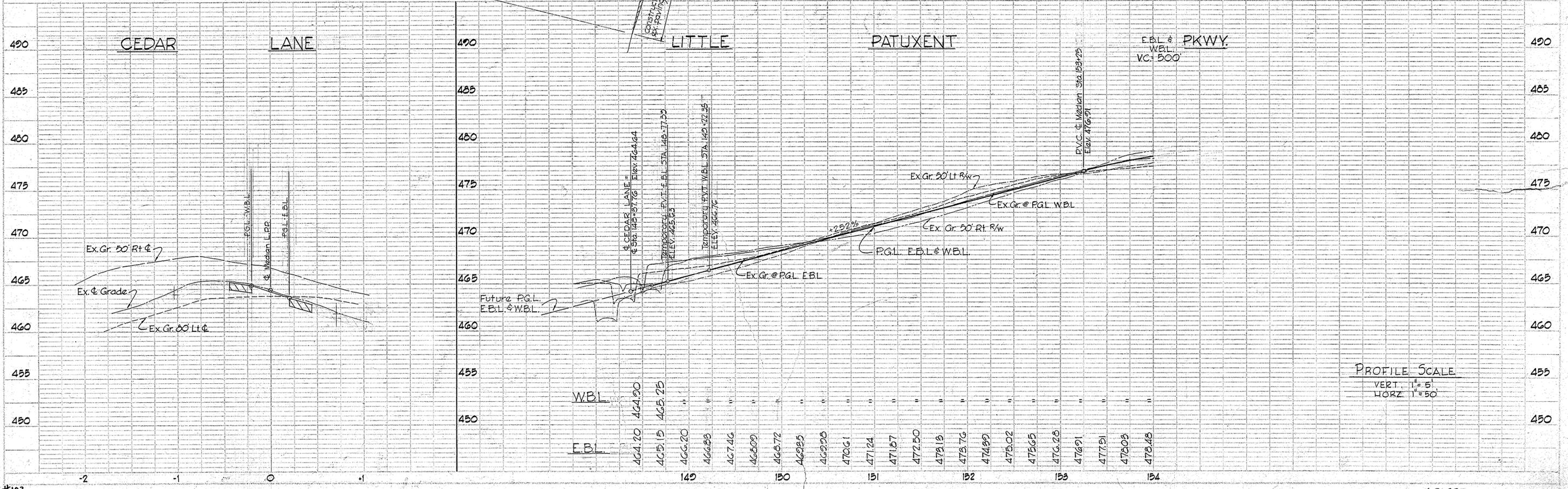


PLAN  
 SCALE: 1"=50'

**COLUMBIA**  
 THE ROUSE COMPANY

**LITTLE PATUXENT PARKWAY**  
 Sta. 148+37.76 to 154+00

DES: E.L.B.    SCALE: AS SHOWN    SHT NO: 6 of 25  
 DRAWN: F.T.    DATE: 12-27-67    C.C.F. NO.  
 CHK: B.M.J.



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

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

**APPROVED**  
 PLANNING COMMISSION  
 OF BALTIMORE COUNTY  
 DATE: MAY 20, 1968  
*J. H. J.*  
 APPROVED FOR REVISION  
 BY: *Francis H. Heiland*  
 DATE: 7/20/70  
 475

STRUCTURE SCHEDULE

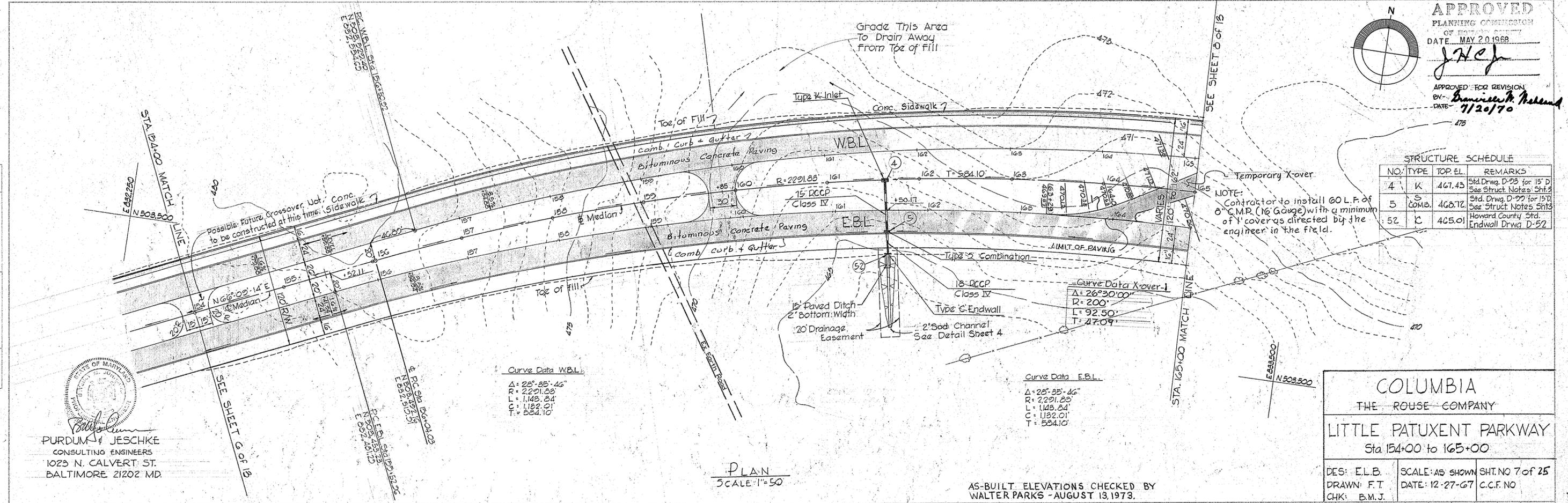
NO.	TYPE	TOP EL.	REMARKS
4	K	467.45	Std. Drawg. D-29 for 15" D See Struct. Notes Sht. 3
5	S	466.72	Std. Drawg. D-29 for 15" D See Struct. Notes Sht. 3
52	C	465.01	Howard County Std. Endwall Drawg. D-52

NOTE: Contractor to install 60 L.F. of 6" C.M.P. (16 Gauge) with a minimum of 1' cover as directed by the engineer in the field.

PLAN

NO.	DATE	BY	REVISION

PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE, 21202 MD.



Curve Data W.B.L.  
 $\Delta = 25^\circ 35' 46''$   
 $R = 2291.23'$   
 $L = 1148.24'$   
 $C = 584.10'$

Curve Data E.B.L.  
 $\Delta = 25^\circ 35' 46''$   
 $R = 2291.23'$   
 $L = 1148.24'$   
 $C = 584.10'$

PLAN  
 SCALE: 1" = 50'

AS-BUILT ELEVATIONS CHECKED BY  
 WALTER PARKS - AUGUST 13, 1973.

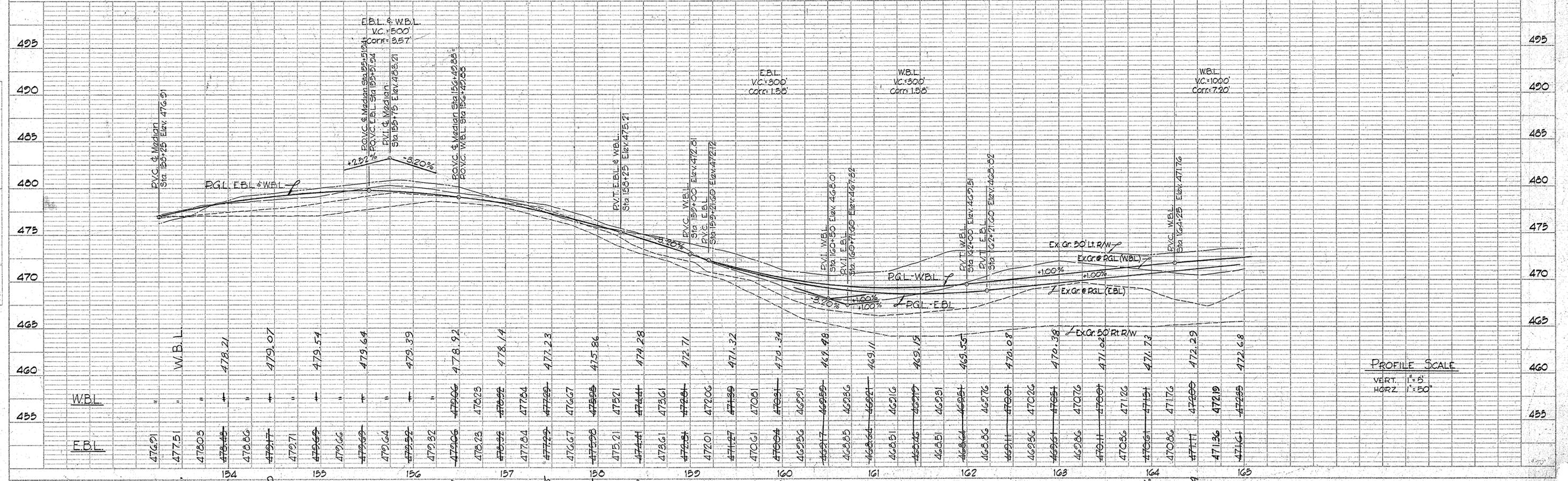
**COLUMBIA**  
 THE ROUSE COMPANY

**LITTLE PATUXENT PARKWAY**  
 Sta. 154+00 to 165+00

DES: E.L.B. SCALE: AS SHOWN SHT. NO. 7 of 25  
 DRAWN: F.T. DATE: 12-27-67 C.C.F. NO.  
 CHK: B.M.J.

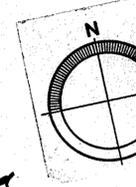
PROFILE

NO.	DATE	BY	REVISION

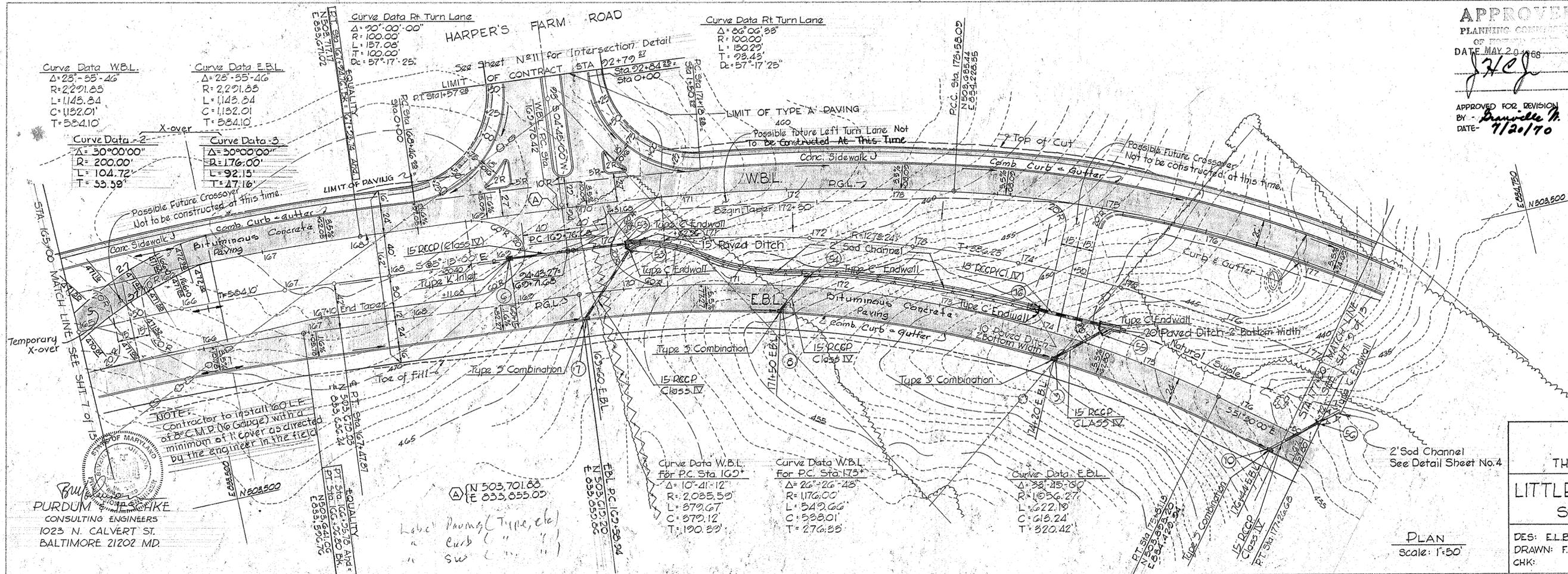


PROFILE SCALE  
 VERT. 1" = 5'  
 HORZ. 1" = 50'

APPROVED  
 PLANNING COMMISSION  
 OF THE CITY OF BALTIMORE  
 DATE: MAY 20, 1968  
 APPROVED FOR REVISION  
 BY: *Drumville H. Hebebrand*  
 DATE: 7/20/70



DATE	
BY	
REVISIONS	
NO.	
DESCRIPTION	
DATE	
BY	
NO.	
DESCRIPTION	
DATE	
BY	
NO.	
DESCRIPTION	



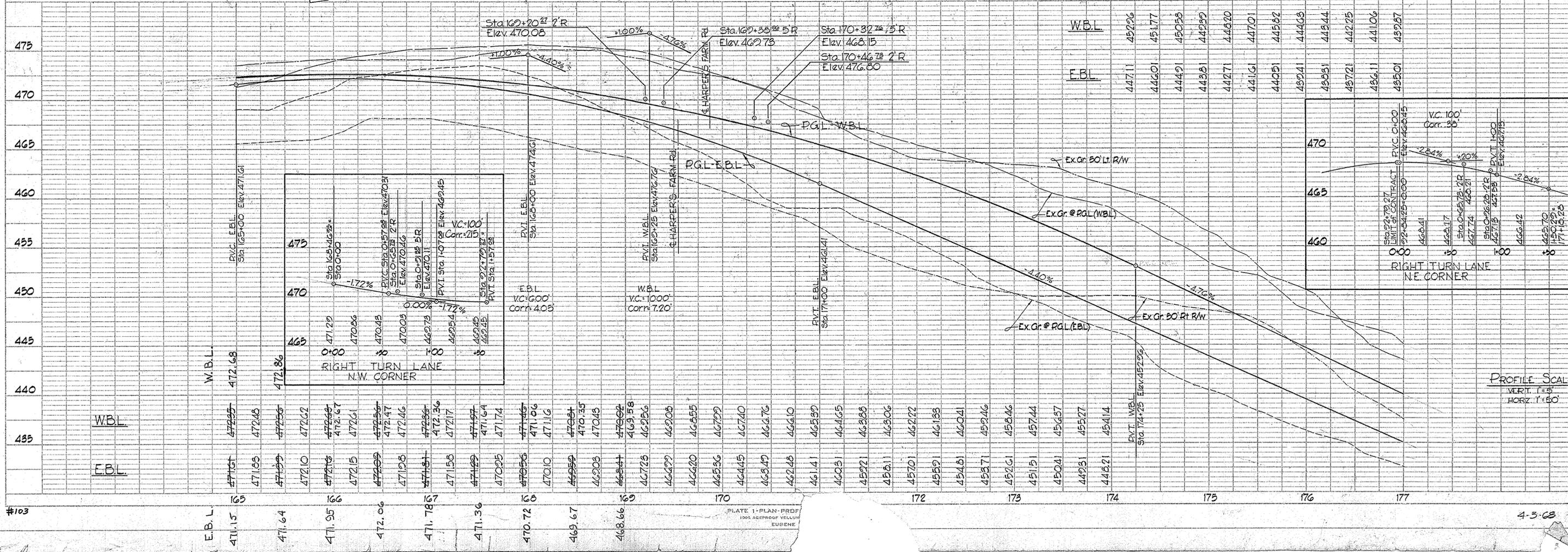
NO	TYPE	TOPEL	DEM.
6	K	468.10	Std. Driv. See Str.
7	3	465.96	Std. Driv. See Str.
8	3	458.49	Std. Driv. See Str.
9	3	446.61	Std. Driv. See Str.
16	C	447.60	Howard Endwall
10	3	437.60	Std. Driv. See Str.
53	C	462.92	Howard Endwall
54	C	456.33	Howard Endwall
55	C	443.64	Howard Endwall
56	C	434.00	Howard Endwall

COLUMBIA  
 THE ROUSE COMPANY  
 LITTLE PATUXENT PA  
 Sta. 165+00 to 177+26

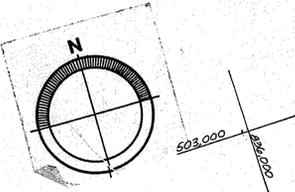
DES: E.L.B.  
 DRAWN: F.T.  
 CHK:

SCALE: AS SHOWN  
 DATE: 12-27-67  
 SHT. 1  
 C.C.F.

DATE	
BY	
REVISIONS	
NO.	
DESCRIPTION	
DATE	
BY	
NO.	
DESCRIPTION	
DATE	
BY	
NO.	
DESCRIPTION	



APPROVED  
 PLANNING COMMISSION  
 OF THE CITY OF BALTIMORE  
 DATE MAY 20 1968  
*J. J. [Signature]*



STRUCTURE SCHEDULE			
NO.	TYPE	TOPEL	REMARKS
11	3 COMB	430.15	Std. Drwg. D-99 for 21" D See Struct. Notes Sht. 3
12	'C'	425.15	Std. Drwg. D-98 for 21" D See Struct. Notes Sht. 3
13	'K'	410.10	Howard Co. Standard Endwall Drwg. D-52
14	3 COMB	415.21	Std. Drwg. D-99 for 18" D See Struct. Notes Sht. 3
17	3 COMB	415.61	Std. Drwg. D-99 for 15" D See Struct. Notes Sht. 3
18	'C'	412.76	Howard Co. Standard Endwall Drwg. D-52
60	'C'	405.50	Howard Co. Standard Endwall Drwg. D-52
57	MH	414.48	Howard Co. Standard Manhole Drwg. D-103

**COLUMBIA**  
 THE ROUSE COMPANY  
**LITTLE PATUXENT PARKWAY**  
 Sta 177+26.8 to 182+91.82

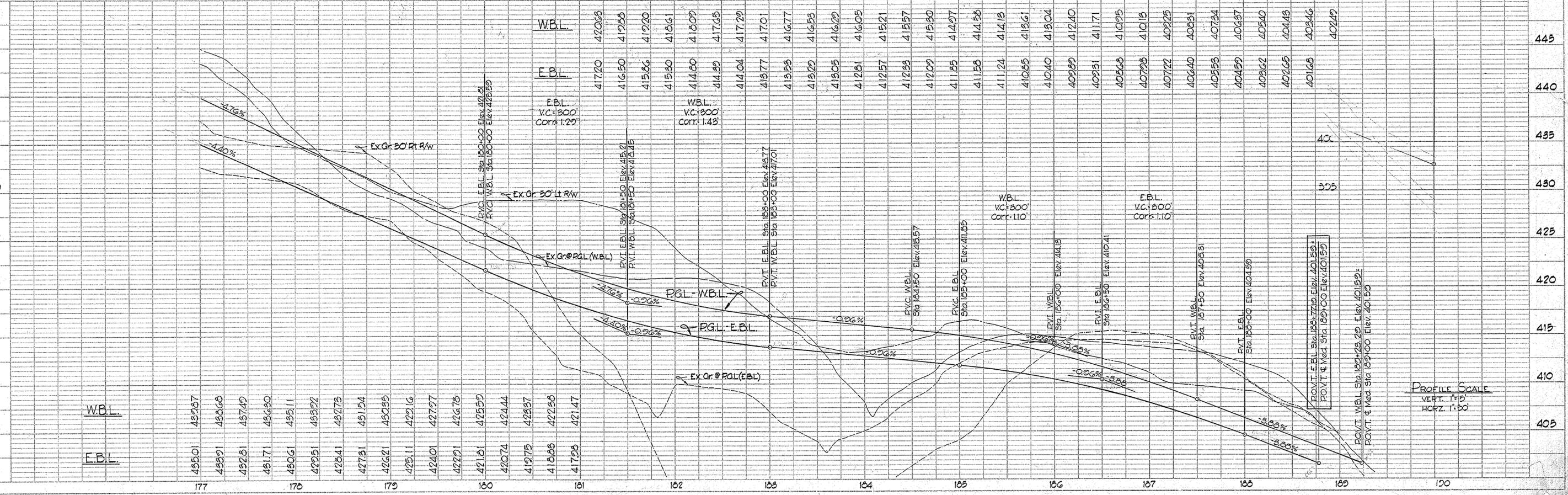
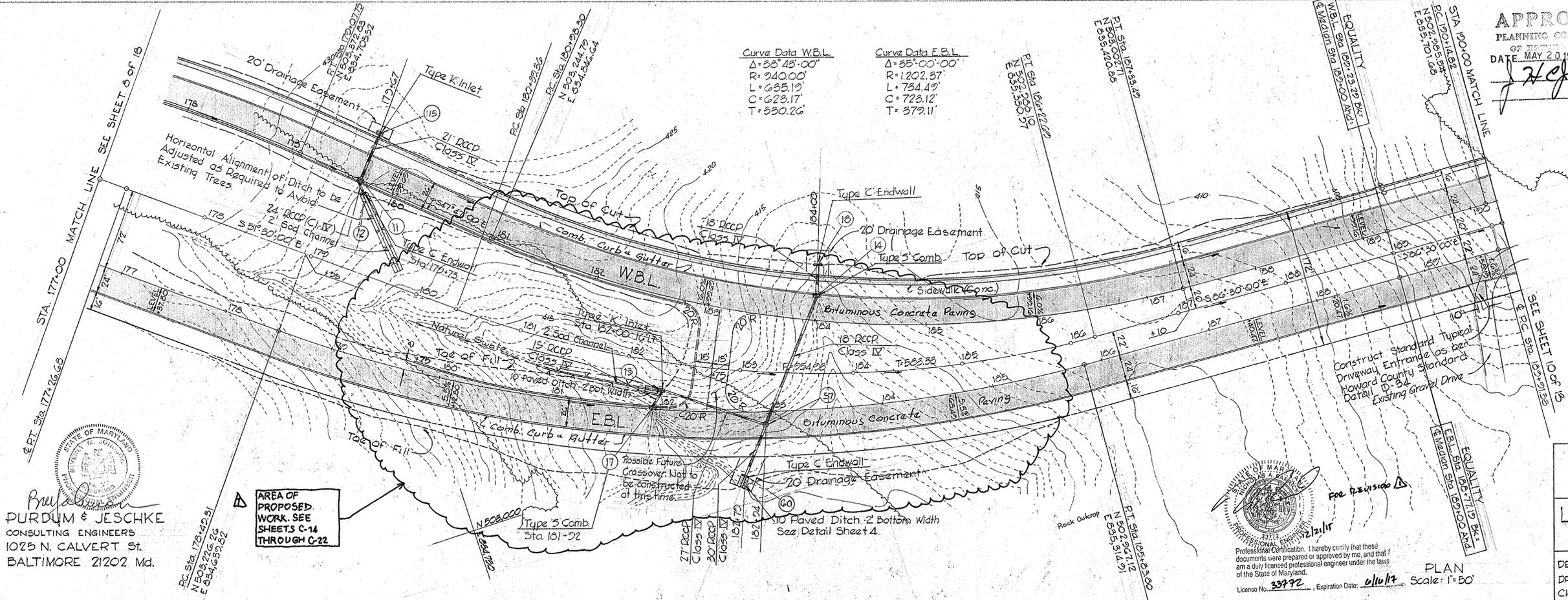
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 DRAWN: F.T. DATE: 12-27-67 C.C.F. NO.  
 CHK: B.M.J.

Curve Data W.B.L.  
 $\Delta = 38^\circ 48' 00''$   
 $R = 240.00'$   
 $L = 635.19'$   
 $C = 623.17'$   
 $T = 530.26'$

Curve Data E.B.L.  
 $\Delta = 35^\circ 00' 00''$   
 $R = 1202.37'$   
 $L = 734.49'$   
 $C = 723.12'$   
 $T = 579.11'$

PLAN	DATE	BY
SURVEYED		
PLOTTED		
CHECKED		
DATE		

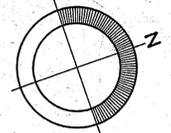
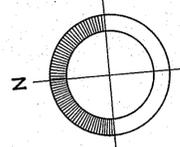
PROFILE	DATE	BY
SURVEYED		
PLOTTED		
CHECKED		
DATE		





DATE	
NO.	
BY	
FOR	
REVISIONS	
NO.	
DATE	
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FOR	

DATE	
NO.	
BY	
FOR	
REVISIONS	
NO.	
DATE	
BY	
FOR	



APPROVED  
PLANNING COMMISSION  
OF THE CITY OF BALTIMORE  
DATE: MAY 20 1968  
*[Signature]*

**PURDUM & JESCHKE**  
CONSULTING ENGINEERS  
1023 N. CALVERT ST.  
BALTIMORE, 21202 MD.

HARPER'S FARM Rd.

PARKWAY

PATUXENT

LITTLE

PARKWAY

PATUXENT

LITTLE

GOV

WARFIELD

PKWY

S.B.L.

N.B.L.

FUTURE CONSTRUCTION

FUTURE CONSTRUCTION

Existing Surface

N 29° 30' 00" E

L.R.W.

E 834,000

E 833,750

200+70.60 L.P.P.  
210+73.61 G.W.P.  
N 50° 26' 27" E  
E 836,733.73

P.C. 202+01.30  
P.T. 202+42.91  
E 836,556.43

Sta 128+77.02  
P.C. 0+00

P.T. 2+52.23  
P.C.C. 212+52.23

E 838,000

P.T. 214+00.57  
N 50° 26' 27" E  
E 836,556.43

Δ = 10° 00' 00"  
R.O.I. = 4' 00' 00"  
T = 125.82'  
L = 250.00'  
S = 4.0%

**COLUMBIA**  
THE ROUSE COMPANY  
INTERSECTION DETAILS

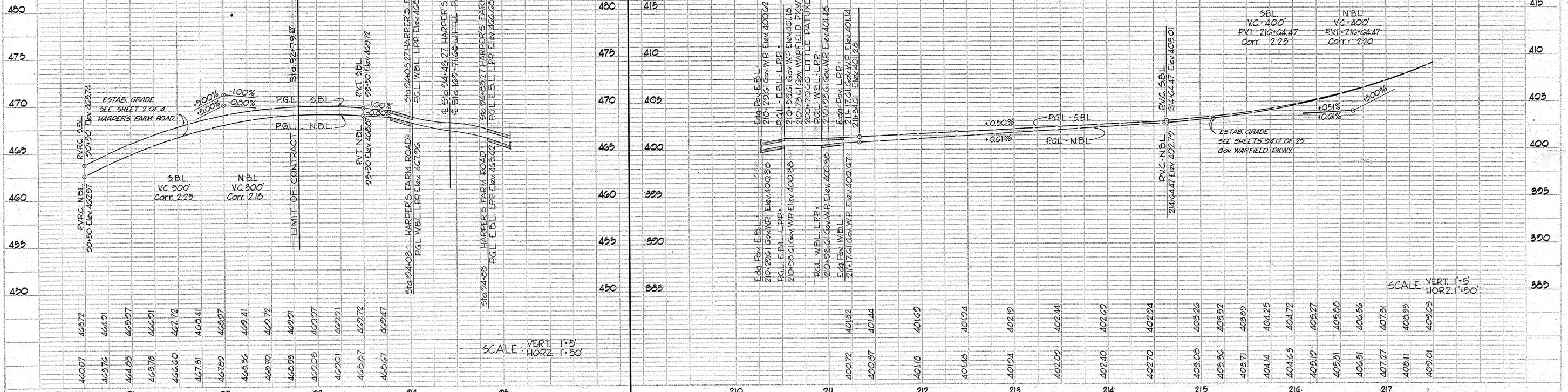
DES: E.L.B. SCALE: AS SHOWN SHT. NO: 11 OF 25  
DRAWN: F.T. DATE: 12-27-67 C.C.F. NO:  
CHK: B.M.J.

SCALE: 1" = 50'

SCALE: 1" = 50'

HARPER'S FARM ROAD

GOVERNOR WARFIELD PARKWAY



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

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

# COLUMBIA LITTLE PATUXENT PARKWAY

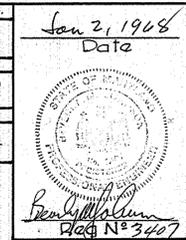
STORM DRAIN DETAIL SHEET NO. 12  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MD  
SCALE: HOR. 1"=50' & VERT. 1"=5'

THE HOWARD RESEARCH AND  
DEVELOPMENT CORP  
THE VILLAGE OF CROSS KEYS  
BALTIMORE, MARYLAND

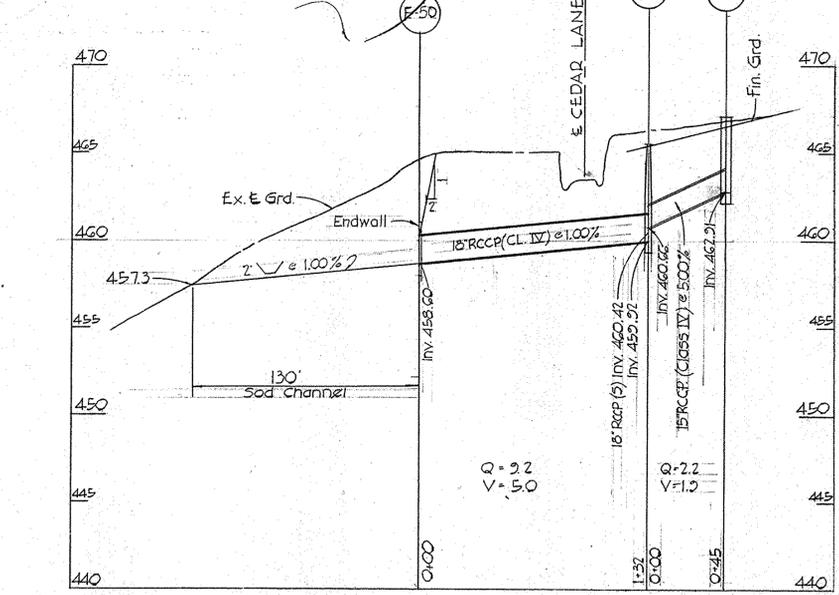
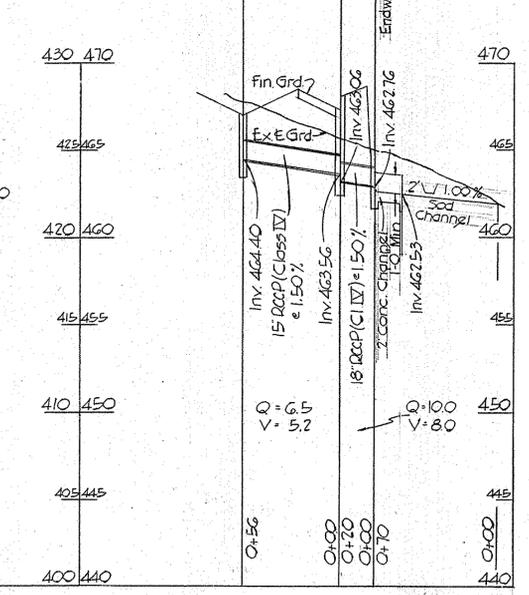
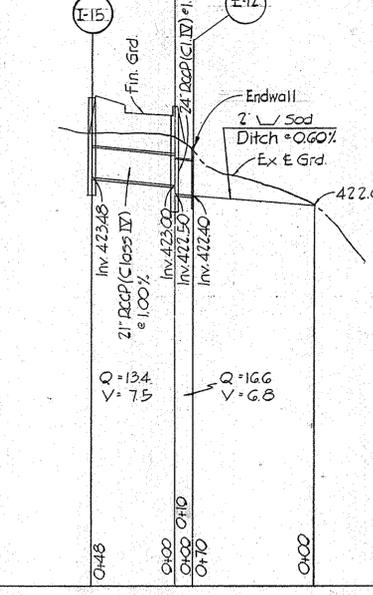
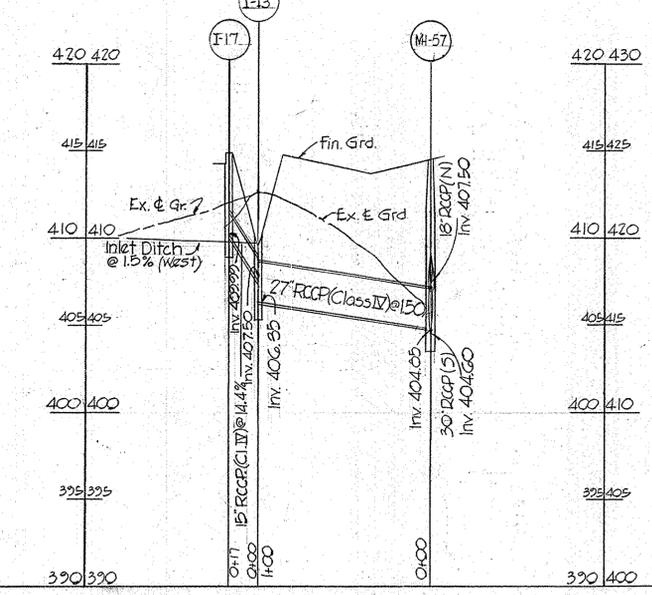
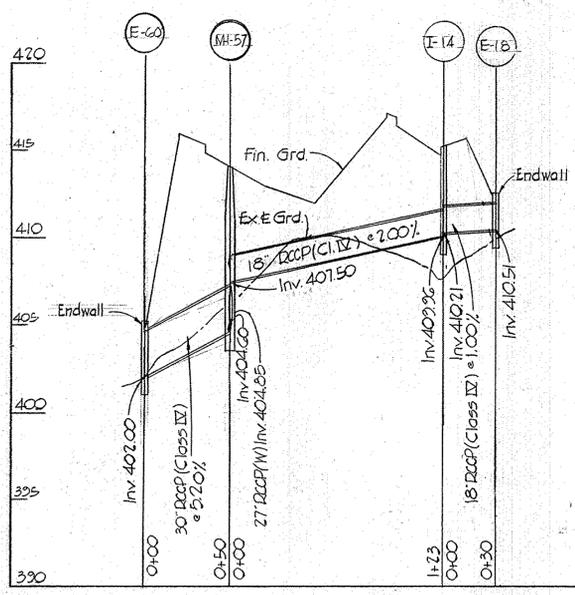
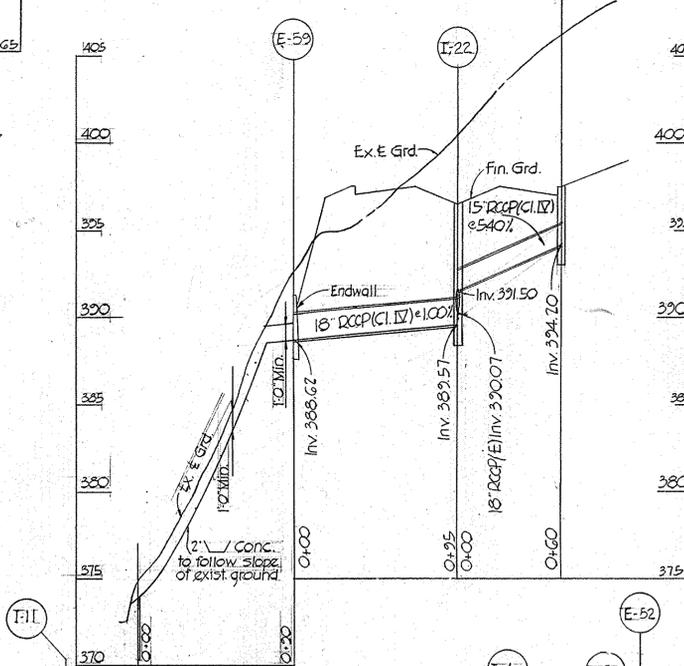
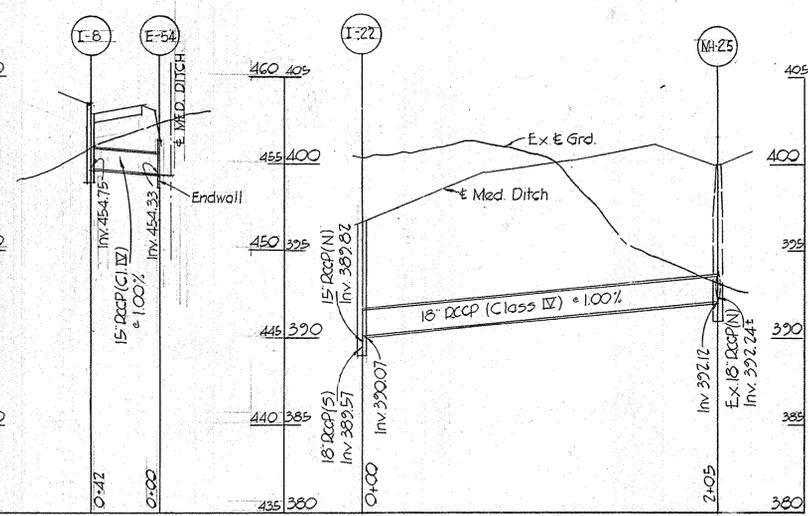
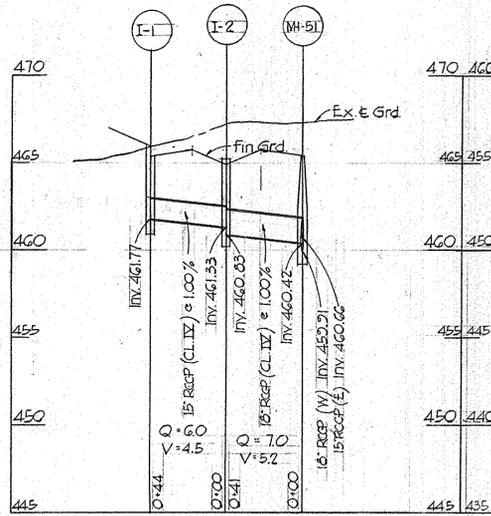
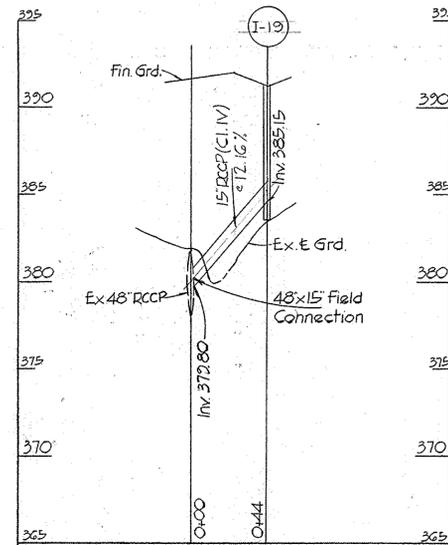
PURDUM & JESCHKE  
ENGINEERS & LAND SURVEYORS  
1023 NORTH CALVERT ST.  
BALTIMORE, MARYLAND

Approved: Howard County Planning Comm.

Senior Engineer \_\_\_\_\_ Date \_\_\_\_\_  
Approved: Howard County Roads Dept.  
*Norman S. O'Neill* 7-16-70  
Roads Engineer \_\_\_\_\_ Date \_\_\_\_\_  
Approved: Howard County Metro Comm.  
Chief Engineer \_\_\_\_\_ Date \_\_\_\_\_



APPROVED  
PLANNING COMMISSION  
OF MAY 20, 1968  
DATE  
*J. J. O.*



# COLUMBIA LITTLE PATUXENT PARKWAY

STORM DRAIN PROFILE & DETAIL SHEET 13  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MD  
SCALE: HOR.-1"=50' & VER.-1"=5'

THE HOWARD RESEARCH AND  
DEVELOPMENT CORP  
THE VILLAGE OF CROSS KEYS  
BALTIMORE, MARYLAND

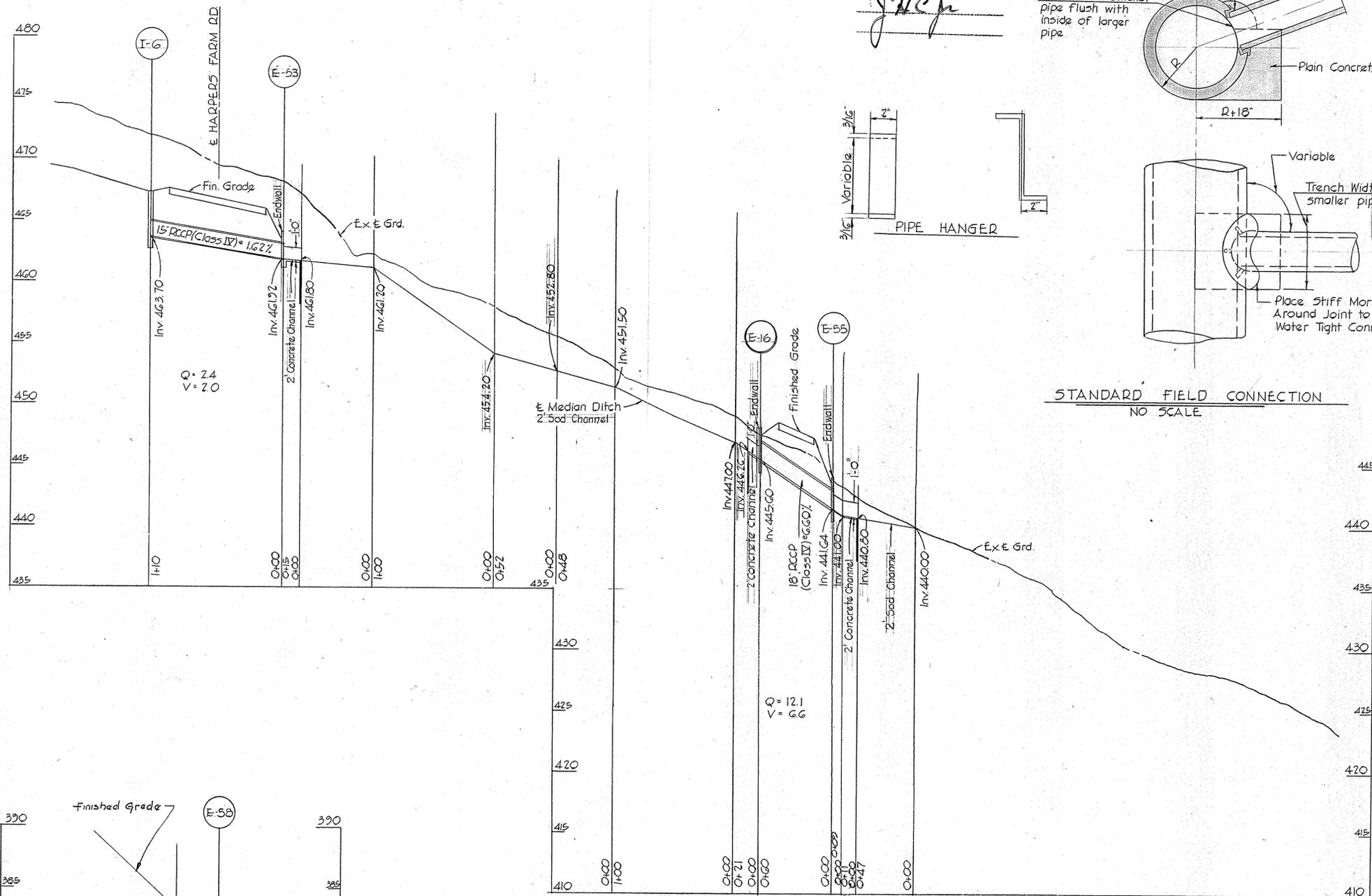
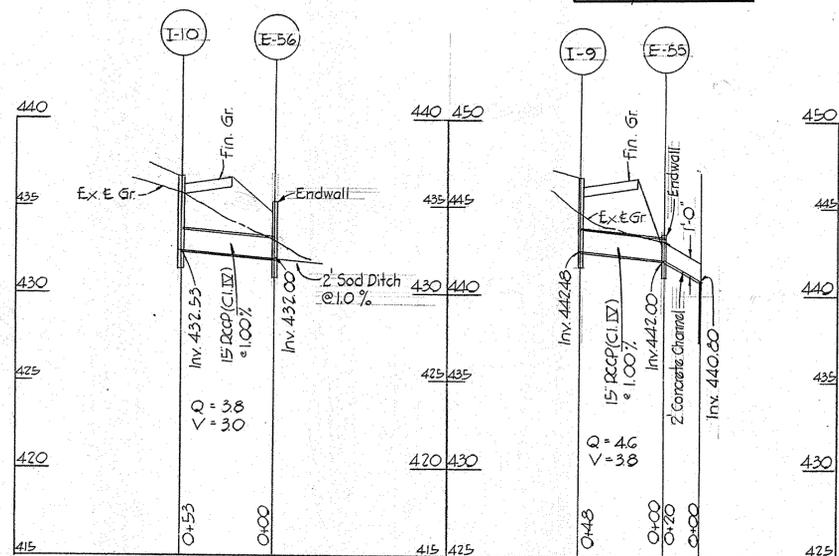
PURDUM & JESCHKE  
ENGINEERS & LAND SURVEYORS  
1023 NORTH CALVERT ST.  
BALTIMORE, MARYLAND

Approved: Howard County Planning Comm.

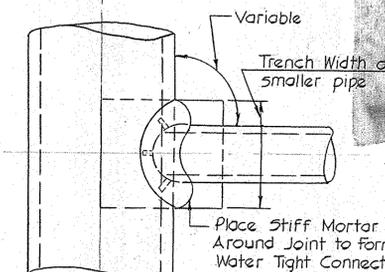
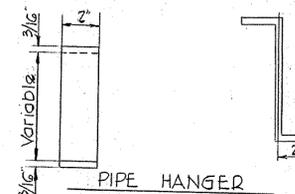
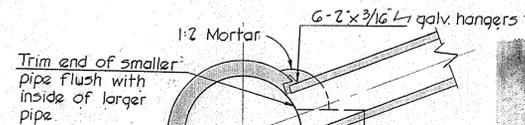
Senior Engineer	Date
Approved: Howard County Roads Dept.	
<i>Norman S. Mall</i>	7-16-70
Roads Engineer	Date
Approved: Howard County Maitro. Comm.	
Chief Engineer	Date

Jan 21, 1968  
Date

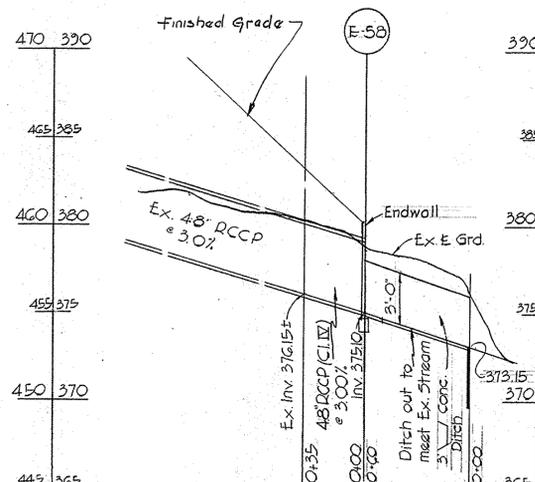
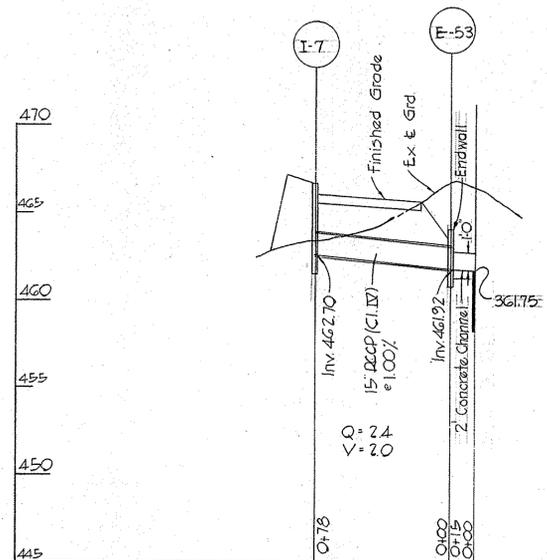
William B. Purdum  
Reg. No. 3467



APPROVED  
PLANNING COMMISSION  
OF  
DATE MAY 20 1968  
*J. J. [Signature]*



STANDARD FIELD CONNECTION  
NO SCALE



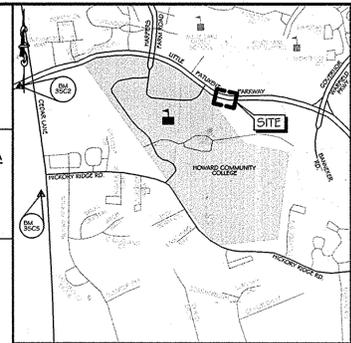
**BENCHMARK DATA**

HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) BASED ON GPS OBSERVATIONS, HOWARD COUNTY BENCH MARK NO.'S

POINT	DESCRIPTION	NORTHING	EASTING	ELEV.
35C2	HO.CO. MON	563920.830	1344204.150	464.133
35C5	HO.CO. MON	562148.450	1344554.472	452.267

**ONSITE BENCHMARK DATA**

POINT	NORTHING	EASTING	ELEV.
1	563780.582	1347460.485	413.44
2	563583.277	1347639.779	410.18
3	563566.366	1347910.272	408.93

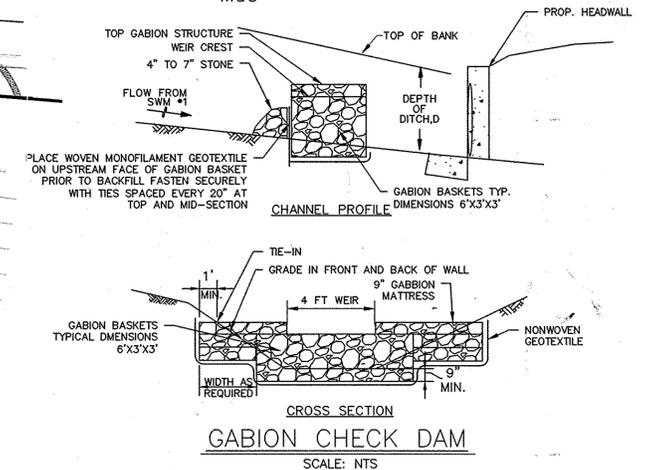


**VICINITY MAP**

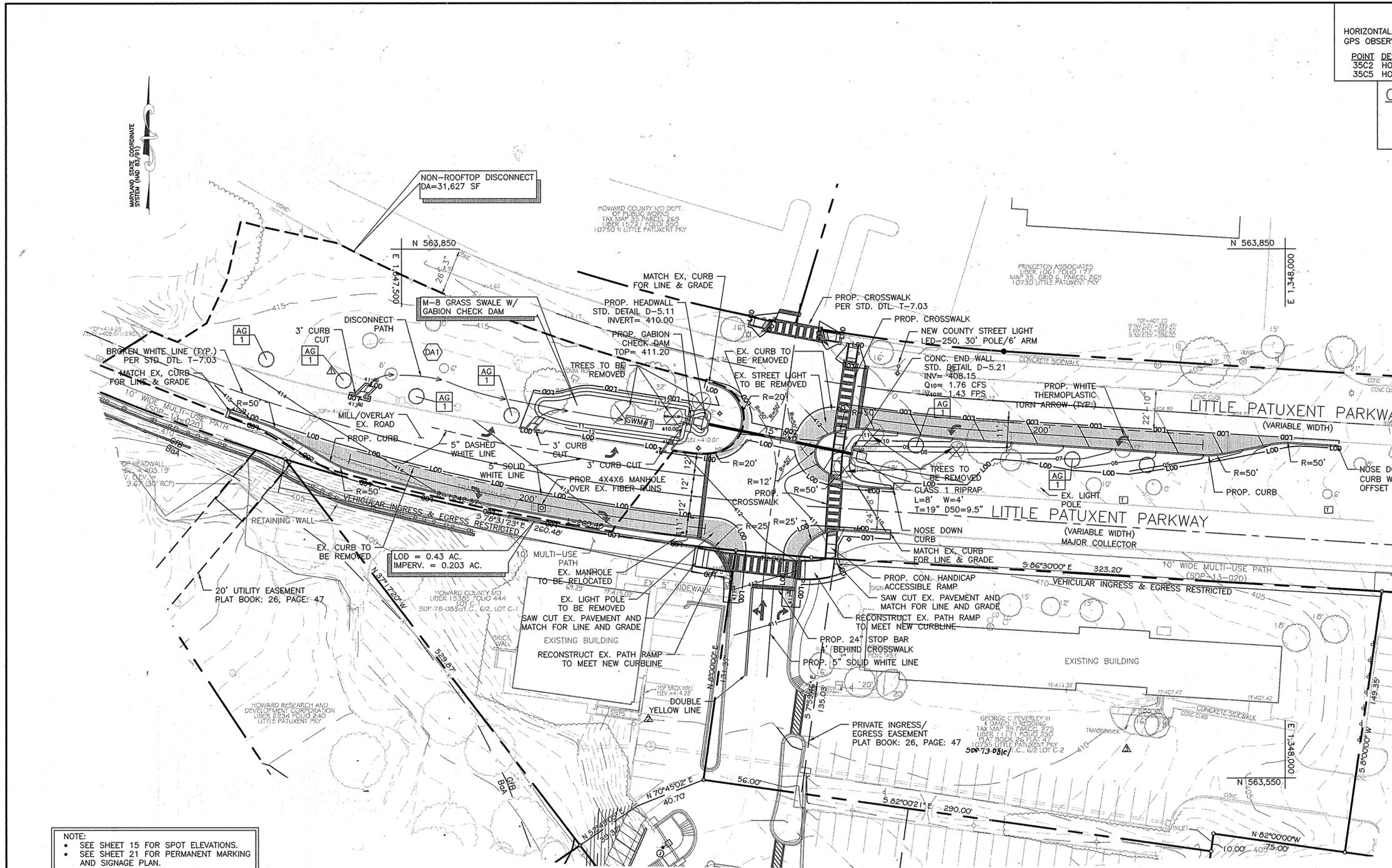
SCALE: 1"=2000'  
ADC MAP: 4934 GRID: K7

**LEGEND**

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- 410 --- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- 410 --- PROPOSED CONTOUR
- PROPOSED STORM DRAIN PIPE
- PROPOSED DRAINAGE AREA
- EXISTING LIGHT POLE
- PROPOSED PAVING
- MILL & OVERLAY
- ASPHALT PATH
- LOD --- LIMIT OF DISTURBANCE
- PROP. ELECTRIC LINES
- G<sub>n</sub>B --- SOILS LINE
- MaC --- SOILS LINE



**GABION CHECK DAM**  
SCALE: NTS



**SITE GRADING AND STORMWATER MANAGEMENT PLAN**  
SCALE: 1"=30'

**STORMWATER MANAGEMENT FACILITY TABLE**

FACILITY	DRAINAGE AREA (SF)	IMPERVIOUS AREA (S.F.)	%	PROVIDED	
				PE	ESD <sub>v</sub> (C.F.)
SWM #1 (M-8) GRASS SWALE W/ GABION CHECK DAM	31,627	13,361	42%	1.00"	1,522

**STORMWATER MANAGEMENT TABLE**

AREA OF DISTURBANCE (AC.)	PROPOSED IMPERVIOUS (AC.)	%	PE	QE	ESD <sub>v</sub> REQUIRED (CF)	ESD <sub>v</sub> PROVIDED (CF)
0.430	0.203	47%	1.80	0.90	1,405	1,522

**SOILS TABLE**

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP	K-VALUE
GfB	GLADSTONE-URBAN LAND COMPLEX, 0-8% SLOPES	B	0.20
BaA	BAILE SILT LOAM, 0 TO 3% SLOPES	D	0.32

SOIL SURVEY OF HOWARD COUNTY, MARYLAND MAP #24

**LANDSCAPING SCHEDULE**

SYMBOL	KEY	QUANTITY	NAME	SIZE	COND.	COMMENTS
AG	AG	7	ACER GRISEUM "PAPERBARK MAPLE"	2.5"-3" MIN. CAL.	B&B	FULL HEAD



SCALE: 1"=30'

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



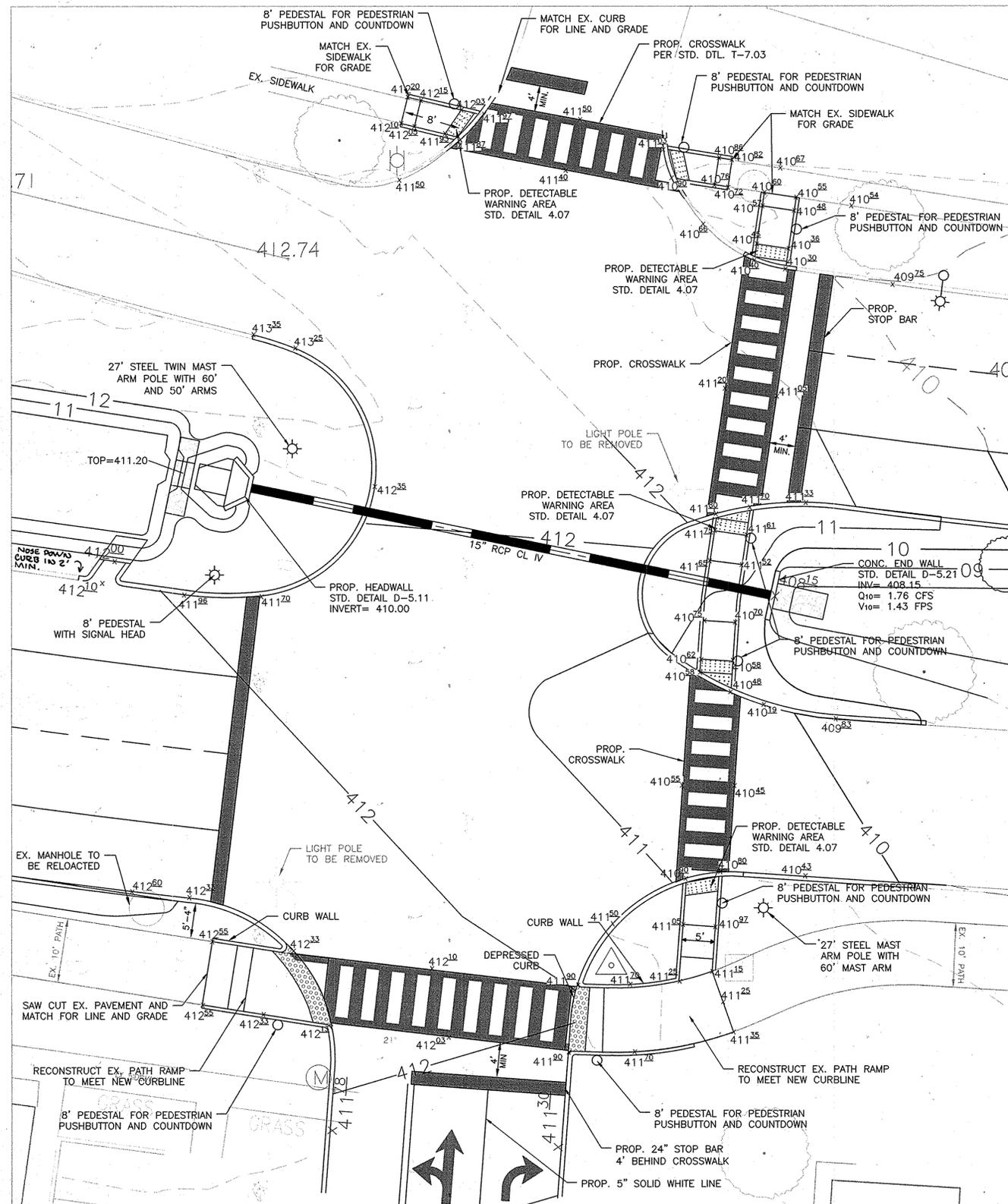
**COLUMBIA**  
THE ROUSE COMPANY

**LITTLE PATUXENT PARKWAY SITE GRADING, STORMWATER MANAGEMENT, AND LANDSCAPE PLAN**

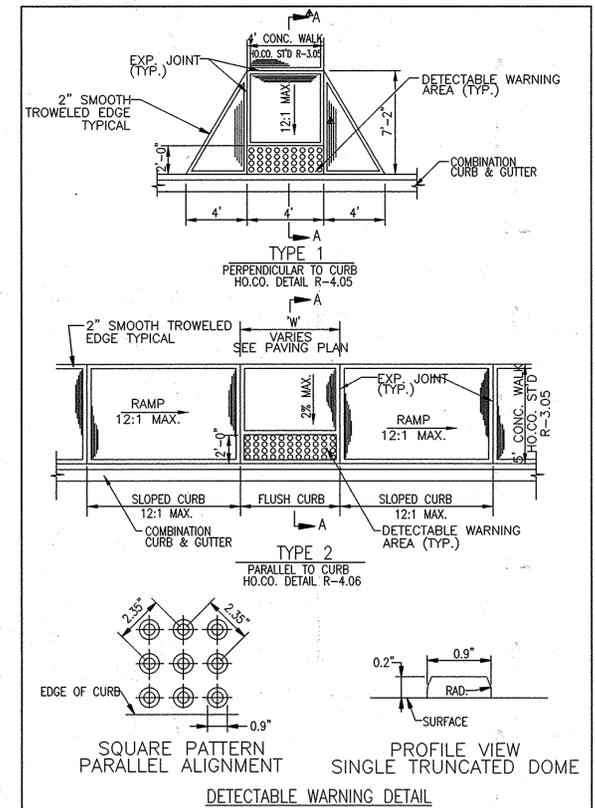
ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

DESIGN	DATE	PROJECT NO.	SHEET NO.
NAB	12/18/15	KCI PROJECT NO. 27146550	25
BRA	1/15/16	SHEET NO. 14 OF 25	C-01

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 1/15/16  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 1-24-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 1/15/16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



PEDESTRIAN RAMPS  
 SCALE: 1"=10'



- NOTES:
1. SURFACE TEXTURE OF RAMPS SHALL BE COARSE BRUING OR NON SKID SURFACE.
  2. DETECTABLE WARNINGS SHALL BE SQUARE PATTERN, PARALLEL ALIGNMENT.
  3. SEE DEPRESSED CURB AND GUTTER AT PEDESTRIAN RAMP DETAIL 9 FOR SECTION A-A.
  4. SEE PAVING PLAN, SHEET C-3, FOR TYPE 1 RAMP TAPERED CURB LENGTHS.
  5. A DETECTABLE WARNING IS A STANDARDIZED SURFACE FEATURE BUILT IN OR APPLIED TO WALKING SURFACES (OR OTHER ELEMENTS) TO WARN VISUALLY IMPAIRED PEOPLE OF HAZARDS ON A CIRCULATION PATH.
  6. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH NOMINAL DIMENSIONS AS SHOWN AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-DARK OR DARK-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE INTEGRAL WITH THE WALKING SURFACE.
  7. DETECTABLE WARNING AREAS SHALL EXTEND 24" BACK FROM THE REAR OF THE CURB WITHIN THE RAMP ITSELF. THEY SHALL NOT BE USED ELSEWHERE ON A PEDESTRIAN RAMP.
  8. DETECTABLE WARNINGS MAY BE APPLIED USING BRICK OR BLOCK PAVERS OR EXTRUDED TINTED CONCRETE.
  9. PAVERS MAY BE SPLAYED AS REQUIRED TO MATCH A CURVED CURB RADIUS.
  10. COMMERCIAL PRODUCTS MAY VARY IN SPACING, DIMENSION AND CONFIGURATION OF DOMES. CERTIFICATION OF COMPLIANCE WITH CURRENT A.D.A.A.S. (AMERICANS WITH DISABILITIES ACT) ACCESSIBILITY GUIDELINE REQUIREMENTS SHALL BE REQUIRED OF ALL PRODUCTS BEFORE INSTALLATION.
  11. MANUFACTURED PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
  12. SEE DETAIL 10 FOR SECTION A-A.
- \* FOR ADDITIONAL INFORMATION SEE H.C. STD DETAILS R-4.05 & R-4.06

① PEDESTRIAN RAMPS (R-4.05) (R-4.06)

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 1/2/2016  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 1-2-2016  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 1-15-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS		
NO.	DATE	BY

COLUMBIA  
 THE ROUSE COMPANY  
 LITTLE PATUXENT PARKWAY  
 SITE DETAILS 1

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

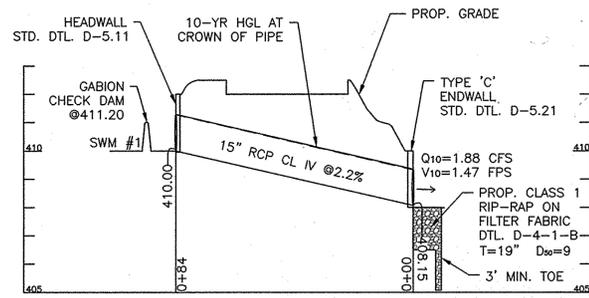
DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE	SHEET NO. 15 OF 25	C-02

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

**KCI**  
 TECHNOLOGIES

11850 WEST MARKET PLACE  
 SUITE A  
 FULTON, MD 20759  
 TELEPHONE: (410) 792-8086  
 FAX: (410) 792-7419



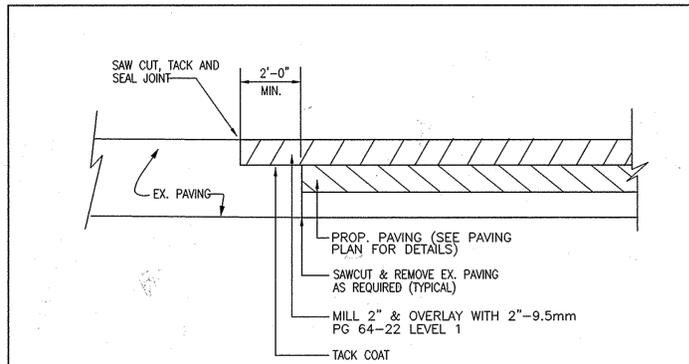


**STORM DRAIN PROFILE**

SCALE: HOR: 1"=30'  
VERT: 1"=3'

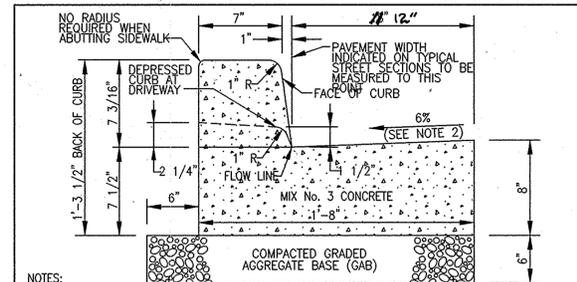
STRUCTURE TABLE				
NAME	INVERT	OUTVERT	NORTHING	EASTING
INLET	410.00	---	563750.57	1347673.47
OUTLET	---	408.15	563733.68	1347759.70

PIPE SUMMARY	
TYPE	LENGTH
15" RCP	84'



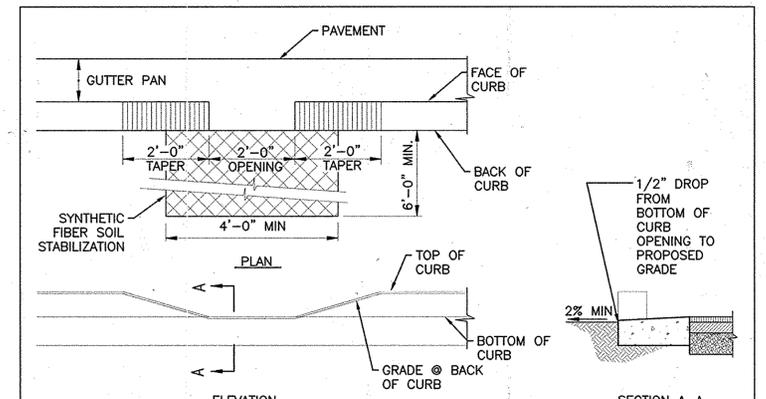
② PAVING TIE-IN DETAIL

SCALE: N.T.S.



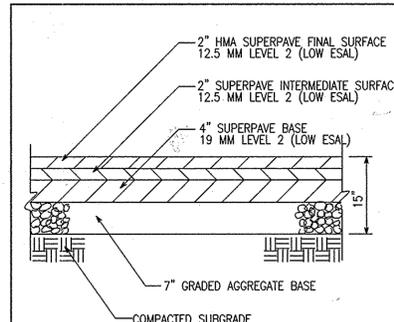
③ COMBINATION CURB AND GUTTER (R-3.01)

SCALE: N.T.S.



④ CURB CUT OPENING DETAIL

NOT TO SCALE



⑥ PAVING DETAIL

SCALE: N.T.S.

**LANDSCAPE MAINTENANCE**

- I. GENERAL
  - A. ALL PLANTING AREAS, INCLUDING LAWNS, BUFFERS, AND PARKING LOTS, SHALL BE PERIODICALLY INSPECTED A MINIMUM OF ONCE PER MONTH, EVERY TWO (2) WEEKS DURING THE GROWING SEASON, OR AFTER EACH MOWING SESSION, A FALL CLEAN-UP SHALL BE PERFORMED EACH YEAR.
  - B. REMOVE ALL LITTER, DEBRIS AND WEEDS.
  - C. MAINTAIN A MINIMUM OF A 2-INCH DEPTH OF ORGANIC HARDWOOD MULCH OR EQUAL IN ALL PLANTING BEDS.
- II. IRRIGATION (IF APPLICABLE)
  - A. AUTOMATIC SPRINKLERS SHALL BE CLEANED OUT AND TURNED OFF IN THE FALL PRIOR TO THE FIRST FROST, AND TESTED WHEN TURNED ON IN THE SPRING.
  - B. EVALUATE SUCCESS OF IRRIGATION SYSTEM AND MODIFY AS NECESSARY. WATER REQUIREMENTS:
    - NEW TURF: KEEP MOIST UNTIL ALL SEED GERMINATES AND BECOMES AN ESTABLISHED STAND OF TURF. EXISTING TURF: DURING DRY PERIODS, WATER TWICE A WEEK FOR 20 MINUTES AT A TIME, OR SET IRRIGATION FOR COVERAGE OF 1-2 INCHES OF WATER PER WEEK.
- III. SEASONAL FLOWERS
  - A. ANNUAL FLOWER BEDS SHALL BE PERIODICALLY MULCHED AND THE SOIL AMENDED ANNUALLY. NEW PLANTINGS SHALL BE PROVIDED IN MAY OF EACH YEAR, DURING THE GROWING SEASON. ALL BEDS SHALL RECEIVE PERIODIC INSPECTIONS PER INC. 1, IRRIGATION AND WEEDING TO MAINTAIN A NEAT APPEARANCE.
- IV. TURF
  - A. LAWN AREAS SHALL NOT EXCEED A HEIGHT OF 4 INCHES. APPROXIMATELY 12-15 MOWINGS PER YEAR WILL BE REQUIRED.
  - B. FERTILIZER AND SOIL AMENDMENTS SHOULD BE ADDED A NECESSARY AND/OR ON A SEASONAL BASIS. FERTILIZER IS OPTIMALLY APPLIED TO LAWN AND TURF AREAS THREE TIMES PER SEASON. TIMING, FREQUENCY, AND RATE OF APPLICATION SHALL BE ADJUSTED ACCORDING TO WEATHER AND TO HORTICULTURAL AND SOIL TEST CONDITIONS FOR EACH SPECIFIC SITE. FERTILIZER SHALL BE APPLIED BY ACCEPTED METHODS ONLY. SAFETY SHALL BE OF PRIME CONSIDERATION. CARE SHALL BE TAKEN NOT TO APPLY FERTILIZER WHEN THE GROUND IS WET.
  - C. SOIL AMENDMENTS SUCH AS LIME, GYPSUM OR PEAT MOSS MAY BE TO BE ADDED TO THE SOILS OF LAWNS, TURF OR PLANTING AREAS PERIODICALLY. THE NEED FOR SUCH SOIL AMENDMENTS SHALL BE ANALYZED DURING THE PERIODIC INSPECTIONS AND IN CONJUNCTION WITH SOIL TESTS.
  - D. SOIL AMENDMENTS SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS OR BASED UPON SOIL TEST RESULTS.

APPLY A 3-1-2 (21-7-14, 10-4-6, OR 24-4-8) 50% ORGANIC FERTILIZER TWICE A YEAR BETWEEN MARCH 15 TO APRIL 15 AND SEPTEMBER 1 TO OCTOBER 1. IF NECESSARY, TWO ADDITIONAL APPLICATIONS MAY BE MADE IN MAY AND NOVEMBER. DO NOT APPLY FERTILIZER OR SOIL AMENDMENTS WHILE TURF IS EITHER WET OR UNDER EXTREME STRESS, IN WINDY CONDITIONS, OR WHEN CHILDREN ARE PRESENT.

- V. PRUNING
  - A. REMOVAL OF DEAD, DISEASED, INSECT INFESTED OR WEAK WOOD SHALL TAKE PLACE IN THE DORMANT SEASON.
  - B. OR AFTER FLOWERING. EXCESSIVE SHOOTS AND SUCKERS SHALL BE REMOVED.
  - C. SHRUB MATERIAL USED AS A SCREEN SHALL BE PRUNED AS A MASS TO ENHANCE THEIR NATURAL FORM, HEDGES.
  - D. ROOT PRUNING OF TREES ADJACENT TO CURBS OR SIDEWALKS SHALL OCCUR DURING PERIODIC INSPECTIONS.
  - E. WITH KNOWLEDGE OF MOST RECENT PRUNING, NO MORE THAN 1/3 OF ROOT SYSTEM SHALL BE PRUNED DURING A YEAR.
- VI. INSECT AND DISEASE CONTROL
  - A. THE CONTROL OF INSECTS AND DISEASE ASSOCIATED WITH ALL PLANTING AREAS SHALL ALWAYS BE A MAINTENANCE PRIORITY. ALL PLANTINGS, INCLUDING EXISTING MATURE TREES, SHALL BE PERIODICALLY INSPECTED FOR INSECT OR DISEASE INFESTATION. METHODS UTILIZED TO CONTROL INSECTS OR DISEASE MAY RANGE FROM SPRAYING AND PRUNING TO PLANT REMOVAL. WHATEVER METHOD IS UTILIZED, SAFETY AND CONTROL SHALL BE OF PRIME CONCERN. TRAINED AND CERTIFIED PERSONNEL SHALL PERFORM THESE TASKS.
- VII. RENOVATION
  - A. RENOVATION INCLUDES THE RESEEDING OR REPLANTING OF LANDSCAPE AREAS DAMAGED, DESTROYED OR FAILING DUE TO INSECTS, DISEASE, WEATHER OR PHYSICAL DAMAGE.
  - B. LAWN - ALL AREAS WHERE SOIL HAS BEEN EXPOSED SHALL BE RENOVATED DURING THE NEXT PLANNING SEASON. PROPER HORTICULTURAL AND SOIL EROSION PREVENTION METHODS SHALL BE UTILIZED. IF SOIL EROSION HAS OCCURRED, THE AREA SHALL BE REPAIRED WITH A SEED MIXTURE COMPATIBLE TO EXISTING PLANTINGS SHALL BE UTILIZED.
  - C. PLANTINGS - ALL PLANTINGS WHICH ARE DAMAGED OR DESTROYED SHALL BE REPLACED DURING THE NEXT GROWING SEASON. A FAILING, DAMAGED OR DESTROYED LANDSCAPE SCREEN OR BUFFER MUST BE RENOVATED OR REPLACED WITHIN A REASONABLE PERIOD OF TIME, BUT NOT TO EXCEED THE SUBSEQUENT ROWING SEASON.
- VIII. SITE AMENITIES
  - A. BENCHES, PATHS, BICYCLE RACKS, TRASH RECEPTACLES AND SIGNS SHALL BE INSPECTED AT LEAST TWICE A YEAR, ONCE IN MARCH AND ONCE IN AUGUST, TO DETERMINE THEIR CONDITION. ANY DAMAGED, WORN OR UNSAFE CONDITIONS SHALL BE RECTIFIED IMMEDIATELY.
- IX. PAVED SURFACES
  - A. ALL PAVED SURFACES, CONCRETE SIDEWALKS, ASPHALT PAVEMENT AND DECORATIVE PAVEMENT SHALL BE INSPECTED ON A REGULAR BASIS. ALL SUCH SURFACES SHALL BE INSPECTED AT LEAST ONCE PER MONTH.
  - B. TRASH, STAINS AND/OR OBSTRUCTIONS SHALL BE REMOVED IMMEDIATELY. PAVEMENT SHALL BE INSPECTED FOR DAMAGE, CRACKS, AND/OR POT HOLES, AND RETURNED TO THEIR ORIGINAL CONDITIONS.
  - C. SNOW SHALL BE REMOVED DURING AND FOLLOWING EVERY STORM. SIDEWALKS AND PARKING AREAS SHALL BE KEPT CLEAR OF ICE AND SNOW DURING BUSINESS HOURS.

**PLANTING NOTES**

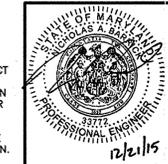
1. PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED, INCLUDING ALL LABOR, MATERIALS, PLANTS, EQUIPMENT, INCIDENTALS, AND CLEAN-UP.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT. LAYOUT TO BE APPROVED BY OWNERS' REPRESENTATIVE PRIOR TO INSTALLATION.
3. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS, WELL-DEVELOPED DENSELY FOLIATED BRANCHES, AND VIGOROUS ROOT SYSTEMS; AND BE FREE FROM DEFECTS AND INJURIES.
4. CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO GROWTH OF PLANT MATERIAL.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISION SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE FOR TREES AND SHRUBS. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.
6. PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY IF WHEN PRACTICAL. IN THE EVENT THAT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD SHALL BE REJECTED, UNLESS OWNER AND CONTRACTOR PROVIDE OTHERWISE BY WRITTEN AGREEMENT.
7. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF ROOTBALL SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF ANSI Z60 "AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
8. ALL PLANTS SHALL BE PLANTED IN AMENDED TOP SOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK-FILLING PROGRESSES. PLANTING MIX TO BE AS SHOWN ON PLANTING DETAILS. LARGE PLANTING AREAS TO INCORPORATE FERTILIZER AND SOIL CONDITIONERS AS STATED IN PLANTING SPECIFICATIONS.
9. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.
10. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOP SOIL THAT IS IN A MUDDY OR FROZEN CONDITION. ALL PLANT MATERIAL SHALL BE SPRAYED WITH "WILT-PROOF" OR EQUAL AS PER MANUFACTURERS' INSTRUCTIONS.
11. NO PLANT, EXCEPT GROUNDCOVERS, SHALL BE PLANTED LESS THAN TWO FEET FROM EXISTING STRUCTURES AND SIDEWALKS.
12. SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT A NORMAL OR NATURAL RELATIONSHIP TO THE GROUND IF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE THE PLANT IN THE CENTER OF THE PIT.
13. ALL INJURED ROOTS SHALL BE PRUNED TO MAKE CLEAN ENDS BEFORE PLANTING UTILIZING CLEAN, SHARP TOOLS. IT IS ADVISABLE TO PRUNE APPROXIMATELY 1/3 OF THE GROWTH OF LARGE TREES (2" CALIPER AND GREATER) BY THE REMOVAL OF SUPERFLUOUS BRANCHES, THOSE WHICH CROSS, THOSE WHICH RUN PARALLEL, ETC. MAIN LEADER OF TREES SHALL NOT BE CUT BACK. LONG SIDES BRANCHES SHALL BE SHORTENED.
14. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE THE NATURAL CHARACTER OF PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
15. TREES SHALL BE SUPPORTED IMMEDIATELY AFTER PLANTING. ALL TREES 6" AND GREATER IN CALIPER SHALL BE GUYED. SMALLER TREES SHALL BE STAKED. GUYS AND STAKES SHALL BE INSTALLED AS INDICATED. THE LANDSCAPE CONTRACTOR SHALL REMOVE STAKING, GUYING AND TREE WRAP AT THE END OF ONE YEAR MAINTENANCE AND GUARANTEE PERIOD.
16. ALL PLANTING BEDS SHALL BE MULCHED WITH 3" LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH.
17. NEW PLANTING AREAS AND SOD SHALL BE ADEQUATELY IRRIGATED OR WATERED TO ESTABLISH THE PROPOSED PLANTS AND LAWN.
18. ALL PLANTS SHOWN ON THE APPROVED LANDSCAPE PLAN SHALL BE INSTALLED, INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE. THE LANDSCAPE ARCHITECT SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD. TREES, SHRUBS, VINES AND GROUNDCOVER AS REQUIRED BY OR ASSOCIATED WITH A SUBDIVISION SITE PLAN APPROVED BY THE PLANNING AUTHORITIES SHALL BE INSTALLED DURING THE FOLLOWING PLANTING SEASONS:
 

TYPE	DATES
PLANTS	03/15 TO 12/15
LAWNS	03/15 TO 06/15
	09/15 TO 12/01

THE FOLLOWING TREE VARIETIES SHALL NOT BE PLANTED DURING THE FALL PLANTING SEASON DUE TO THE HAZARDS ASSOCIATED WITH PLANTING THESE TREES IN THIS SEASON:

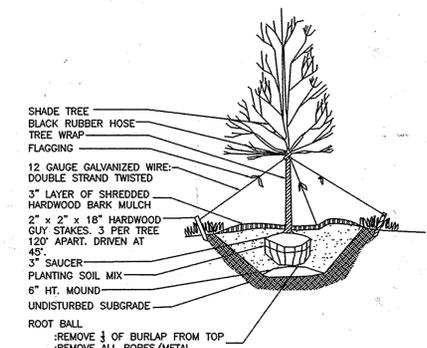
ACER RUBRUM	POPULUS SPP.
BETULA SPP.	PRUNUS SPP.
CORNUS SPP.	PYRUS SPP.
CRATEGEUS SPP.	QUERCUS SPP.
KOELREUTERIA PANICULATA	SALIX SPP.
LIQUIDAMBAR STRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA
PLATANUS ACERIFOLIA	

ANY PLANTING INSTALLED IN CONFLICT WITH THIS REQUIREMENT MUST RECEIVE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. FAILURE TO COMPLY WITH THESE REQUIREMENTS WILL REQUIRE THE REMOVAL OF THE PLANTING IN QUESTION. THIS REQUIREMENT DOES NOT APPLY TO SEEDING OR SODDING OR PLANTINGS SPECIFICALLY FOR SOIL STABILIZATION PURPOSES. PLANTINGS ASSOCIATED WITH ANY LOT GIVEN A CERTIFICATE OF OCCUPANCY OUTSIDE THESE PERIODS SHALL BE PROVIDED DURING THE PREVIOUS OR NEXT APPROPRIATE SEASON.



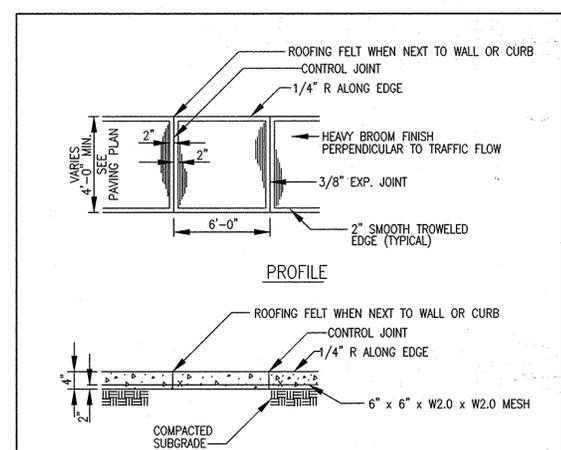
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

19. ALL DISTURBED AREAS SHALL BE TREATED WITH 4" TOP SOIL AND SEEDING IN ACCORDANCE WITH PERMANENT STABILIZATION METHODS INDICATED ON SOIL EROSION AND SEDIMENT CONTROL SHEET.
20. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING.
21. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS.
22. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL BY PROVIDING SEVEN STREET TREES. NO SURETY IS REQUIRED SINCE THIS PROJECT IS PART OF THE HOWARD COMMUNITY COLLEGE ACCESS UPDATES (SDP-16-003).



① TREE GUYING PLANTING DETAIL

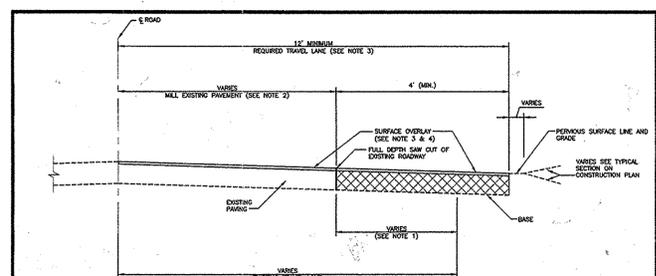
SCALE: N.T.S.



⑤ CONCRETE SIDEWALK (R-3.05)

SCALE: N.T.S.

- NOTE: PROVIDE 2% CROSS-SLOPE FOR POSITIVE DRAINAGE AS REQUIRED
- SECTION**
1. PROVIDE EXPANSION JOINTS 20' C.C. MAX. AND SCORE JOINTS 5' C.C. (UNLESS MANUFACTURED BY SUPERIOR FEATHERWEIGHT TOOLS (OR APPROVED EQUIVALENT) OTHERWISE NOTED). EXPANSION JOINTS SHALL BE ZIP STRIP CONTROL JOINTS WITH 1/2" PREMOULDED BITUMINOUS JOINT MATERIAL. ALL CONTROL JOINTS SHALL BE SEALED WITH A POLYURETHANE SEALANT.
  2. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH ROOFING FELT SATURATED ON BOTH SIDES WITH ASPHALTIC MATERIAL BETWEEN THEM. ROOFING PAPER SHALL NOT WEIGH LESS THAN 39.8 LBS. PER S.F.
- \* SEE ST'D. DETAIL R-3.05 FOR SIDEWALK ADJACENT TO CURB.



- NOTES:**
1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1" FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4" OF WORKING FROM FACE OF GUTTER PAV.
  2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).
  3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
  4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Howard County, Maryland  
 Department of Public Works  
 Existing Roadway  
 Widening Strip  
 Detail  
 R-1.08

REVISIONS		
NO.	DATE	BY

**COLUMBIA THE ROUSE COMPANY**

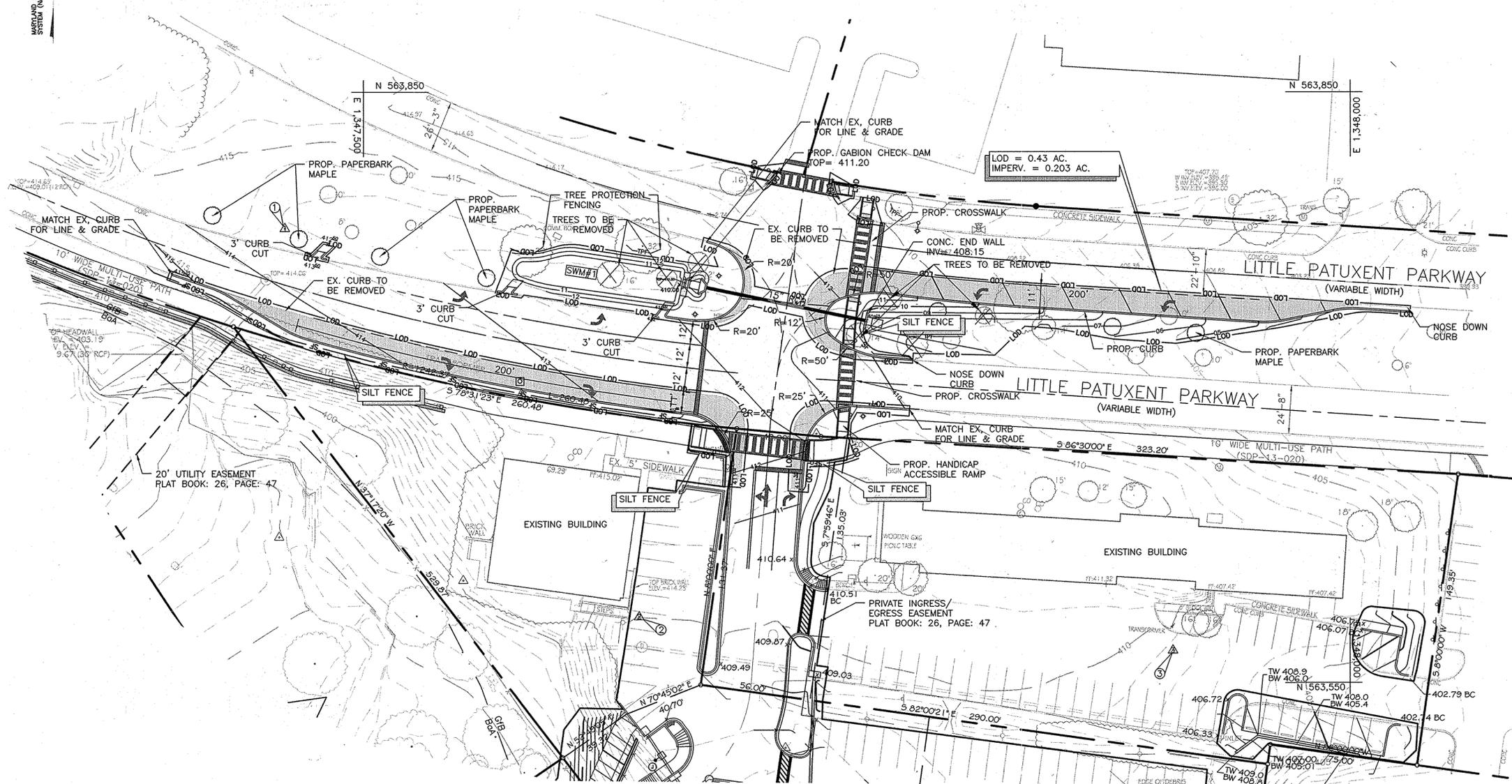
**LITTLE PATUXENT PARKWAY**

**SITE DETAILS 2**

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE	SHEET NO. 16 OF 25	<b>C-03</b>

EASTMAN KODAK CORPORATION  
 SYSTEM 1000 112200



**LEGEND**

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- BUILDING OUTLINE
- 260 --- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- LOD --- LIMIT OF DISTURBANCE
- GnB --- SOILS LINE
- MaC ---
- SF --- SILT FENCE
- TPF --- TREE PROTECTION FENCE
- PROPOSED PAVING

**SEDIMENT CONTROL NARRATIVE**

THE PROJECT CONSISTS OF EXPANDING AN EXISTING INTERSECTION AND INSTALLING A TRAFFIC SIGNAL TO AID TRAFFIC FLOW TO A NEWLY CONSTRUCTED PARKING GARAGE ON THE HOWARD COMMUNITY COLLEGE CAMPUS. A GABION CHECK DAM WILL BE CONSTRUCTED BETWEEN THE EAST AND WESTBOUND LANES OF LITTLE PATUXENT PARKWAY. THE FACILITY WILL OVERFLOW TO A 15" CONCRETE PIPE THAT WILL BE LOCATED UNDERNEATH THE INTERSECTION. THIS PIPE WILL REPLACE AN EXISTING STEEL PIPE THAT TRAVELS UNDER THE ROAD.

THE SITE WILL HAVE SILT FENCE ALONG THE SOUTHERN SIDE OF THE ROADWAY AND AROUND THE OUTLET OF THE PROPOSED STORM DRAIN. MOST OF THE RUNOFF FROM THE SITE WILL BE CONVEYED TOWARD THE GRASSY MEDIAN EAST OF THE INTERSECTION WHERE THE STORM DRAIN PIPE OUTFALLS.

**SEDIMENT & EROSION CONTROL PLAN**

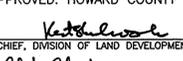
SCALE: 1"=30'

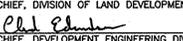

**KCI**  
 TECHNOLOGIES  
ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS  
 11850 WEST MARKET PLACE  
 SUITE A  
 FULTON, MD 20759  
 TELEPHONE: (410) 792-8086  
 FAX: (410) 792-7419

REVISIONS		
NO.	DATE	BY

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY  
 THE HOWARD SOIL CONSERVATION DISTRICT

APPROVED - DEPARTMENT OF PUBLIC WORKS  
  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 1/21/16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 1-21-16

  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 1-15-16

**SOILS TABLE**

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP	K-VALUE
GfB	GLADSTONE-URBAN LAND COMPLEX, 0-8% SLOPES	B	0.20
BaA	BAILE SILT LOAM, 0 TO 3% SLOPES	D	0.32

SOIL SURVEY OF HOWARD COUNTY, MARYLAND MAP #24



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

**COLUMBIA**  
 THE ROUSE COMPANY  
**LITTLE PATUXENT PARKWAY**  
**SEDIMENT & EROSION**  
**CONTROL PLAN**  
 ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE 1"=30'	SHEET NO. 17 OF 25	<b>C-04</b>

**STANDARDS AND SPECIFICATIONS FOR LAND GRADING**

**DESIGN CRITERIA**

THE GRADING PLAN SHOULD BE BASED ON THE INCORPORATION OF BUILDING DESIGNS AND STREET LAYOUTS THAT FIT AND UTILIZE EXISTING TOPOGRAPHY AND DESIRABLE NATURAL SURROUNDINGS TO AVOID EXTREME GRADE MODIFICATIONS. INFORMATION SUBMITTED MUST PROVIDE SUFFICIENT TOPOGRAPHIC SURVEYS AND SOIL INVESTIGATIONS TO DETERMINE LIMITATIONS THAT MUST BE OBSERVED ON THE GRADING OPERATION RELATED TO SOIL STABILITY, ADJACENT PROPERTIES, DRAINAGE PATTERNS, MEASURES FOR WATER REMOVAL, AND VEGETATIVE TREATMENT, ETC.

MANY JURISDICTIONS HAVE REGULATIONS AND DESIGN PROCEDURES ALREADY ESTABLISHED FOR LAND GRADING THAT MUST BE FOLLOWED. THE PLAN MUST SHOW EXISTING AND PROPOSED CONTOURS FOR THE AREAS(S) TO BE GRADED INCLUDING PRACTICES FOR EROSION CONTROL, SLOPE STABILIZATION, AND SAFE CONVEYANCE OF RUNOFF (E.G., WATERWAYS, LINED CHANNELS, REVERSE BENCHES, GRADE STABILIZATION STRUCTURES). THE GRADING/CONSTRUCTION PLANS ARE TO INCLUDE THE PHASING OF THESE PRACTICES AND CONSIDERATION OF THE FOLLOWING:

- PROVISIONS TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS.
- CUT AND FILL SLOPES, STABILIZED WITH GRASSES, NO STEEPER THAN 2:1 (WHERE THE SLOPE IS TO BE MOWED, THE SLOPE SHOULD BE NO STEEPER THAN 3:1, BUT 4:1 IS PREFERRED BECAUSE OF SAFETY FACTORS RELATED TO MOWING STEEP SLOPES). SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL DESIGN AND STABILIZATION CONSIDERATIONS TO BE SHOWN ON THE PLANS.
- BENCHING PER DETAIL B-3-1 WHENEVER THE VERTICAL INTERVAL (HEIGHT) OF ANY 2:1 SLOPE EXCEEDS 20 FEET; FOR 3:1 SLOPES, WHEN IT EXCEEDS 30 FEET; AND FOR 4:1 SLOPES, WHEN IT EXCEEDS 40 FEET. LOCATE BENCHES TO DIVIDE THE SLOPE FACE AS EQUALLY AS POSSIBLE AND TO CONVEY THE WATER TO A STABLE OUTLET, SWALES, SEEPS, ROCK OUTCROPS, ETC. ARE TO BE TAKEN INTO CONSIDERATION WHEN DESIGNING BENCHES.
  - DESIGN BENCHES WITH A MINIMUM WIDTH OF SIX FEET FOR EASE OF MAINTENANCE.
  - DESIGN BENCHES WITH A REVERSE SLOPE OF 6:1 OR FLATTER TO THE TOE OF THE UPPER SLOPE AND WITH A MINIMUM OF ONE FOOT IN DEPTH. GRADE THE LONGITUDINAL SLOPE OF THE BENCH BETWEEN 2 PERCENT AND 3 PERCENT, UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
  - THE MAXIMUM ALLOWABLE FLOW LENGTH WITHIN A BENCH IS 800 FEET UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
- DIVERSION OF SURFACE WATER FROM THE FACE OF ALL CUT AND FILL SLOPES USING EARTH DIKES OR SWALES. CONVEY SURFACE WATER DOWN SLOPE USING A DESIGN STRUCTURE, AND:
  - PROTECT THE FACE OF ALL GRADED SLOPES FROM SURFACE RUNOFF UNTIL THEY ARE STABILIZED.
  - DO NOT SUBJECT THE SLOPE'S FACE TO ANY CONCENTRATED FLOW OF SURFACE WATER SUCH AS FROM NATURAL DRAINAGE WAYS, GRADED SWALES, DOWNSPOTS, ETC.
  - PROTECT THE FACE OF THE SLOPE BY SPECIAL EROSION CONTROL MATERIALS TO INCLUDE, BUT NOT BE LIMITED TO, APPROVED VEGETATIVE STABILIZATION PRACTICES, RIPRAP OR OTHER APPROVED STABILIZATION METHODS.
- SERRATED SLOPE AS SHOWN IN DETAIL B-3-2. THE STEEPEST ALLOWABLE SLOPE FOR RIPABLE ROCK IS 1.5:1. FOR NON ROCK SURFACES, THE SLOPES ARE TO BE 2:1 OR FLATTER. THESE STEPS WILL WEATHER AND ACT TO HOLD MOISTURE, LIME, FERTILIZER AND SEED THUS PRODUCING A MUCH QUICKER AND LONGER LIVED VEGETATIVE COVER AND BETTER SLOPE STABILIZATION.
- SUBSURFACE DRAINAGE PROVISIONS. PROVIDE SUBSURFACE DRAINAGE WHERE NECESSARY TO INTERCEPT SEEPAGE THAT WOULD OTHERWISE ADVERSELY AFFECT SLOPE STABILITY OR CREATE EXCESSIVELY WET SITE CONDITIONS.
- PROXIMITY TO ADJACENT PROPERTY. SLOPES MUST NOT BE CREATED CLOSE TO PROPERTY LINES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED DAMAGES.
- QUALITY OF FILL MATERIAL. FILL MATERIAL MUST BE FREE OF BRUSH, RUBBISH, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIAL. DO NOT PLACE FROZEN MATERIALS IN THE FILL NOR PLACE THE FILL MATERIAL ON A FROZEN FOUNDATION.
- STABILIZATION. STABILIZE ALL DISTURBED AREAS STRUCTURALLY OR VEGETATIVELY IN COMPLIANCE WITH SECTION B-4 STANDARDS AND SPECIFICATIONS FOR STABILIZATION PRACTICES.

**MAINTENANCE**

THE LINE, GRADE, AND CROSS SECTION OF BENCHING AND SERRATED SLOPES MUST BE MAINTAINED. BENCHES AND SERRATED SLOPES MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

**STOCKPILE AREA**

**PURPOSE**

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

**CRITERIA**

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE PLAN.
- EROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERVIOUS SHEETING.

**MAINTENANCE**

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

**REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS**

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

HOWARD SOIL CONSERVATION DISTRICT DATE

**DEVELOPER'S CERTIFICATE**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF SEDIMENT AND EROSION CONTROL AND THAT ALL 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER DATE

**ENGINEER'S CERTIFICATE**

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

ENGINEER DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

**PURPOSE**

TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

**CONDITIONS WHERE PRACTICE APPLIES**

ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

**EFFECTS ON WATER QUALITY AND QUANTITY**

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS. PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH. VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE. SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

**ADEQUATE VEGETATIVE ESTABLISHMENT**

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

- ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUND COVER.
- IF AN AREA HAS LESS THAN 40 PERCENT GROUND COVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
- IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUND COVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
- MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

**STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION**

**PURPOSE**

TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

**CONDITIONS WHERE PRACTICE APPLIES**

ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

**CRITERIA**

- INCREMENTAL STABILIZATION - CUT SLOPES
  - EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH AS THE WORK PROGRESSES.
  - CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
    - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
    - PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
    - PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
    - PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDBED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

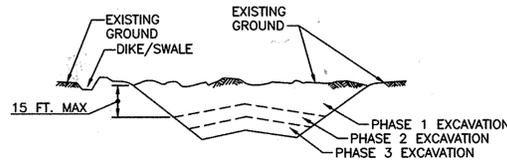


FIGURE B.1: INCREMENTAL STABILIZATION - CUT

- INCREMENTAL STABILIZATION - FILL SLOPES
  - CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
  - STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
  - AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
  - CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
    - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
    - AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
    - PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
    - PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
    - PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDBED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

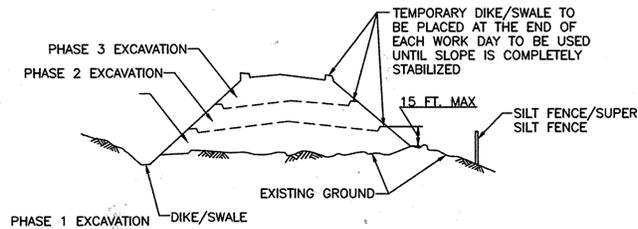


FIGURE B.2: INCREMENTAL STABILIZATION - FILL

**STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

**PURPOSE**

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

**CONDITIONS WHERE PRACTICE APPLIES**

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

**CRITERIA**

- SOIL PREPARATION
  - TEMPORARY STABILIZATION
    - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
    - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
  - PERMANENT STABILIZATION
    - SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      - SOIL PH BETWEEN 6.0 AND 7.0.
      - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
    - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
    - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
    - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
    - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRAGILE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- TOPSOILING
  - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS 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.
  - TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED 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-NRCS.
  - TOPSOILING 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.
    - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
  - TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
    - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
    - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
    - TOPSOIL SUBSTITUTES OR 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.
  - TOPSOIL APPLICATION
    - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
    - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO 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 MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
    - TOPSOIL MUST NOT BE PLACED IF 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.
- 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 OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
  - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
  - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
  - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

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REVISIONS			
NO.	DATE	BY	

**COLUMBIA THE ROUSE COMPANY**

**LITTLE PATUXENT PARKWAY  
SEDIMENT AND EROSION  
CONTROL NOTES**

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO. C-05
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 18 OF 25	

**STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

**PURPOSE**  
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

**CONDITIONS WHERE PRACTICE APPLIES**  
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

**CRITERIA**

- SEEDING
  - SPECIFICATIONS
    - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SOIL LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
    - MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
    - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED IN THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE 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 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
    - SOD OR SEED MUST NOT 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.
  - APPLICATION
    - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
    - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
    - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDING AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
    - DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
    - CULTIPACKING: SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
    - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
    - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
    - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
    - 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.
    - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
    - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
- MULCHING
  - MULCH MATERIALS (IN ORDER OF PREFERENCE)
    - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLLY, CAVED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
    - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
    - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
    - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
    - WCFM MATERIALS ARE TO 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 MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
    - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
    - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
  - APPLICATION
    - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
    - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
    - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
  - ANCHORING
    - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
      - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
      - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
      - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK, OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
      - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE

DEVELOPER'S CERTIFICATE  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL OBTAIN 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER DATE

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

ENGINEER DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION**

**PURPOSE**  
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

**CONDITIONS WHERE PRACTICE APPLIES**  
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

**CRITERIA**

- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4--3A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING TABLE

HARDNESS ZONE (FROM FIGURE B.3): 6B		FERTILIZER RATE (10-20-20)		LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS
1	BARLEY	96	3/1-5/31 8/1-10/15	1.0"
2	CEREAL RYE	112	3/1-5/15 8/1-11/15	1.0"
3	FOXTAIL MILLET	30	5/16-7/31	0.5"

436 LB/AC (10LB/1000SF) 2 TONS/AC (90LB/1000SF)

**STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION**

**PURPOSE**  
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

**CONDITIONS WHERE PRACTICE APPLIES**  
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

**CRITERIA**

- SEED MIXTURES
  - GENERAL USE
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
    - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
    - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
    - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
  - TURFGRASS MIXTURES
    - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
    - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT, IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
    - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
    - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 90 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
    - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.
- IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
  - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDNESS ZONES: 5B, 6A)
  - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONE: 6B)
  - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7A, 7B)

- TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING TABLE

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P2O5	K2O	
4	DEERTONGUE CREEPING RED FESCUE VIRGINIA WILD RYE	15 20 5	3/1-5/15 5/16-6/15	0.5"				
6	TALL FESCUE PERENNIAL RYEGRASS WHITE CLOVER	40 25 5	3/1-5/15 8/1-10/15	0.5"	45LB/AC (1LB/1000SF)	90LB/AC (2LB/1000SF)	90LB/AC (2LB/1000SF)	2 TONS/AC (90LB/1000SF)
9	TALL FESCUE KENTUCKY BLUEGRASS	60 40	3/1-5/15 8/1-10/15	0.5"				

- SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
  - GENERAL SPECIFICATIONS
    - CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
    - SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 1/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
    - STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
    - SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
    - SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
  - SOD INSTALLATION
    - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
    - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
    - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
    - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
- SOD MAINTENANCE
  - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
  - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
  - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

ALL NUMERIC VALUES EXCEPT APPARENT OPENING SIZE (AOS) REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV). MARV IS CALCULATED AS THE TYPICAL MINUS TWO STANDARD DEVIATIONS. MD IS MACHINE DIRECTION; CD IS CROSS DIRECTION.

VALUES FOR AOS REPRESENT THE AVERAGE MAXIMUM OPENING.

GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTEPE) AND CONFORM TO THE VALUES IN TABLE H.1.

THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDWE RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES.

WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACE. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

GEOTEXTILE FABRICS

PROPERTY	TEST METHOD	WOVEN SILT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MD	CD	MD	CD	MD	CD
GRAB TENSILE STRENGTH	ASTM D-4632	200 LB	200 LB	370 LB	250 LB	200 LB	200 LB
GRAB TENSILE ELONGATION	ASTM D-4632	15%	10%	15%	15%	50%	50%
TRAPEZOIDAL TEAR STRENGTH	ASTM D-4533	75 LB	75 LB	100 LB	60 LB	80 LB	80 LB
PUNCTURE STRENGTH	ASTM D-6241	450 LB		900 LB		450 LB	
APPARENT OPENING SIZE <sup>2</sup>	ASTM D-4751	U.S. SIEVE 30 (0.59 mm)		U.S. SIEVE 70 (0.21 mm)		U.S. SIEVE 70 (0.21 mm)	
PERMITTIVITY	ASTM D-4491	0.05 SEC <sup>-1</sup>		0.28 SEC <sup>-1</sup>		1.1 SEC <sup>-1</sup>	
ULTRAVIOLET RESISTANCE RETAINED AT 500 HOURS	ASTM D-4355	70% STRENGTH		70% STRENGTH			

TABLE H.2: STONE SIZE

TYPE	SIZE RANGE	D50	D100	AASHTO	MIDSIZE WEIGHT <sup>3</sup>
NUMBER 57 <sup>1</sup>	3/8 TO 1-1/2 INCH	1/2 IN	1-1/2 IN	M-43	N/A
NUMBER 1	2 TO 3 INCH	2-1/2 IN	3 IN	M-43	N/A
RIPRAP <sup>2</sup> (CLASS 0)	4 TO 7 INCH	5-1/2 IN	7 IN	N/A	N/A
CLASS I	N/A	9-1/2 IN	15 IN	N/A	40 LB
CLASS II	N/A	16 IN	24 IN	N/A	200 LB
CLASS III	N/A	23 IN	34 IN	N/A	600 LB

1 THIS CLASSIFICATION IS TO BE USED ON THE UPSTREAM FACE OF STONE OUTLETS AND CHECK DAMS.

2 THIS CLASSIFICATION IS TO BE USED FOR GABIONS.

3 OPTIMUM GRADATION IS 50 PERCENT OF THE STONE BEING ABOVE AND 50 PERCENT BELOW THE MIDSIZE.

STONE MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SIZED SO THAT FIFTY (50) PERCENT OF THE PIECES BY WEIGHT ARE LARGER THAN THE SIZE DETERMINED BY USING THE CHARTS. A WELL GRADED MIXTURE, AS USED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE IN SUCH A MIXTURE MUST NOT EXCEED THE RESPECTIVE D100 SELECTED FROM TABLE H.2. THE D50 REFERS TO THE MEDIAN DIAMETER OF THE STONE. THIS IS THE SIZE FOR WHICH 50 PERCENT, BY WEIGHT, WILL BE SMALLER AND 50 PERCENT WILL BE LARGER.

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS FOR TEMPORARY CONTROL MEASURES ONLY. CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, CONTAINING NO STEEL REINFORCEMENT, AND HAVING A MINIMUM DENSITY OF 150 POUNDS PER CUBIC FOOT MAY BE USED AS AN EQUIVALENT.

REVISIONS

NO.	DATE	BY

COLUMBIA THE ROUSE COMPANY

LITTLE PATUXENT PARKWAY  
SEDIMENT AND EROSION CONTROL NOTES

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 19 OF 25	C-06

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



# SEQUENCE OF CONSTRUCTION

CONTRACTOR TO NOTIFY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, FIVE (5) DAYS PRIOR TO CONTRACTOR'S ANTICIPATED DATE TO BEGIN CONSTRUCTION.

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES GREATER THAN 3:1, AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE.

1. NOTIFY MISS UTILITY AT LEAST 48 HOURS IN ADVANCE OF WORK ON SITE. 1 DAY
2. CLEAR FOR AND INSTALL SEDIMENT CONTROL MEASURES (IE. SILT FENCE, TREE PROTECTION FENCE). NOTIFY INSPECTOR UPON COMPLETION OF SEDIMENT CONTROL MEASURES INSTALLATION. 7 DAYS
3. UPON INSTALLATION OF THE SEDIMENT AND EROSION CONTROL DEVICES, CONTRACTOR SHALL BEGIN DEMOLISHING EXISTING STRUCTURES AND CLEARING AND GRUBBING. 14 DAYS
4. CONTRACTOR TO BEGIN TO ROUGH GRADE THE SITE. EXCAVATE FOR AND INSTALL DRAIN AS SHOWN ON THE PLAN. 30 DAYS
5. CONTRACTOR TO FINE GRADE FOR AND INSTALL PROPOSED SIDEWALKS AND ROAD PAVING AND CURBING. 90 DAYS
6. ONCE CONSTRUCTED, AND DRAINAGE AREAS STABILIZED, CONTRACTOR TO EXCAVATE & INSTALL MICRO-BIORETENTION FACILITY AND LANDSCAPING. PERMANENTLY STABILIZE ALL DISTURBED AREAS. 14 DAYS
7. EROSION AND SEDIMENT CONTROL PRACTICES AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT, BY THE CONTRACTOR, OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY. ON-GOING
8. ONCE 95% GRASS COVER IS ATTAINED, REMOVE SEDIMENT CONTROLS. 3 DAYS
9. SEDIMENT AND EROSION CONTROLS CANNOT BE REMOVED UNTIL THE SITE HAS ADEQUATE STABILIZATION. ONCE VEGETATION HAS BEEN ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED AND THE SEDIMENT CONTROL INSPECTOR HAVE APPROVED SUCH REMOVAL. ALL AREAS WHERE SEDIMENT AND EROSION CONTROL DEVICES HAVE BEEN REMOVED SHALL BE STABILIZED IMMEDIATELY WITH SEED AND MULCH. 1 DAY

## STANDARD SEDIMENT CONTROL NOTES

1. 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 (313-1655).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
5. 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.
6. SITE ANALYSIS:  
 TOTAL AREA OF SITE 0.367 ACRES  
 AREA DISTURBED 0.43 ACRES  
 AREA TO BE ROOFED OR PAVED 0.203 ACRES  
 AREA TO BE VEGETATIVELY STABILIZED 0.227 ACRES  
 TOTAL CUT 140 CU. YDS.  
 TOTAL FILL 0 CU. YDS.  
 OFFSITE WASTE/BORROW ARE LOCATION N/A
7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. 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.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BE STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE: 12/18/15

DEVELOPER'S CERTIFICATE  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

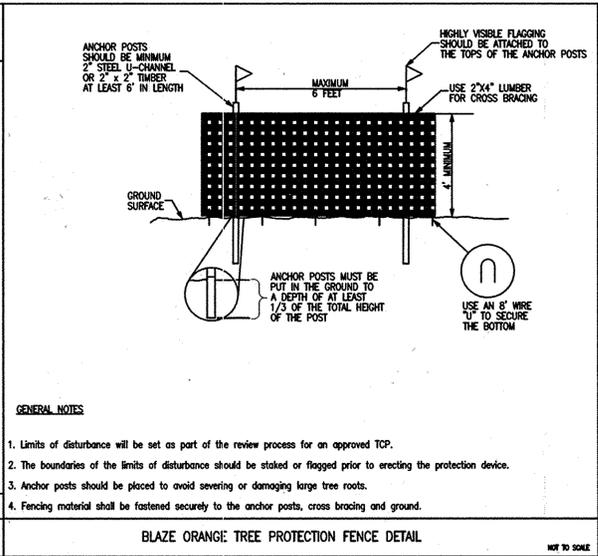
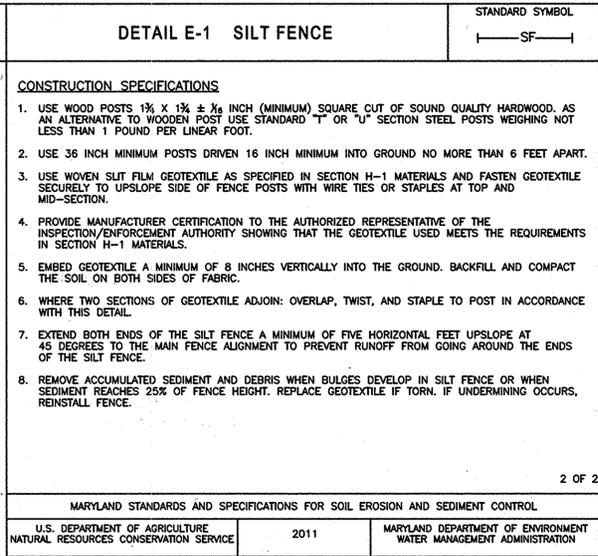
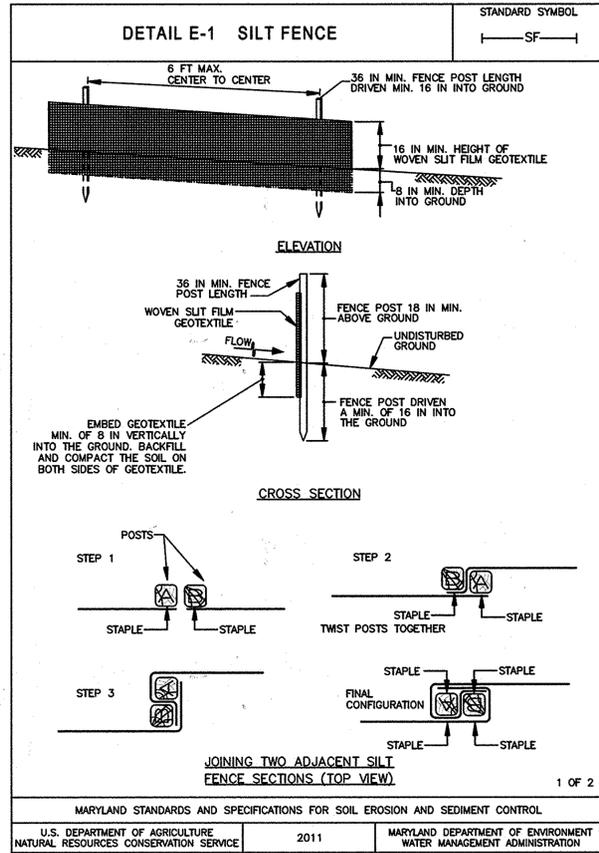
DEVELOPER: [Signature] DATE: 12/18/15

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

ENGINEER: [Signature] DATE: 12/21/15

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS DATE: 1/16/16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 1-21-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 1-15-16



REVISIONS			
NO.	DATE	BY	



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772 EXP. DATE: 06/16/2017

COLUMBIA THE ROUSE COMPANY

LITTLE PATUXENT PARKWAY  
 SEDIMENT AND EROSION CONTROL NOTES

ELECTION DISTRICT NO. 05 -- HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO. C-07
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 20 OF 25	



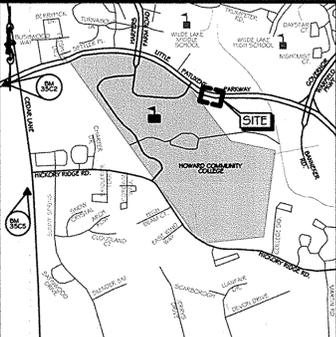
**BENCHMARK DATA**  
 HORIZONTAL NAD83/91 AND VERTICAL (NGVD29) BASED ON GPS OBSERVATIONS, HOWARD COUNTY BENCH MARK NO.'S

POINT	DESCRIPTION	NORTHING	EASTING	ELEV.
35C2	HO.CO. MON	563920.830	1344204.150	464.133
35C5	HO.CO. MON	562148.450	1344554.472	452.267

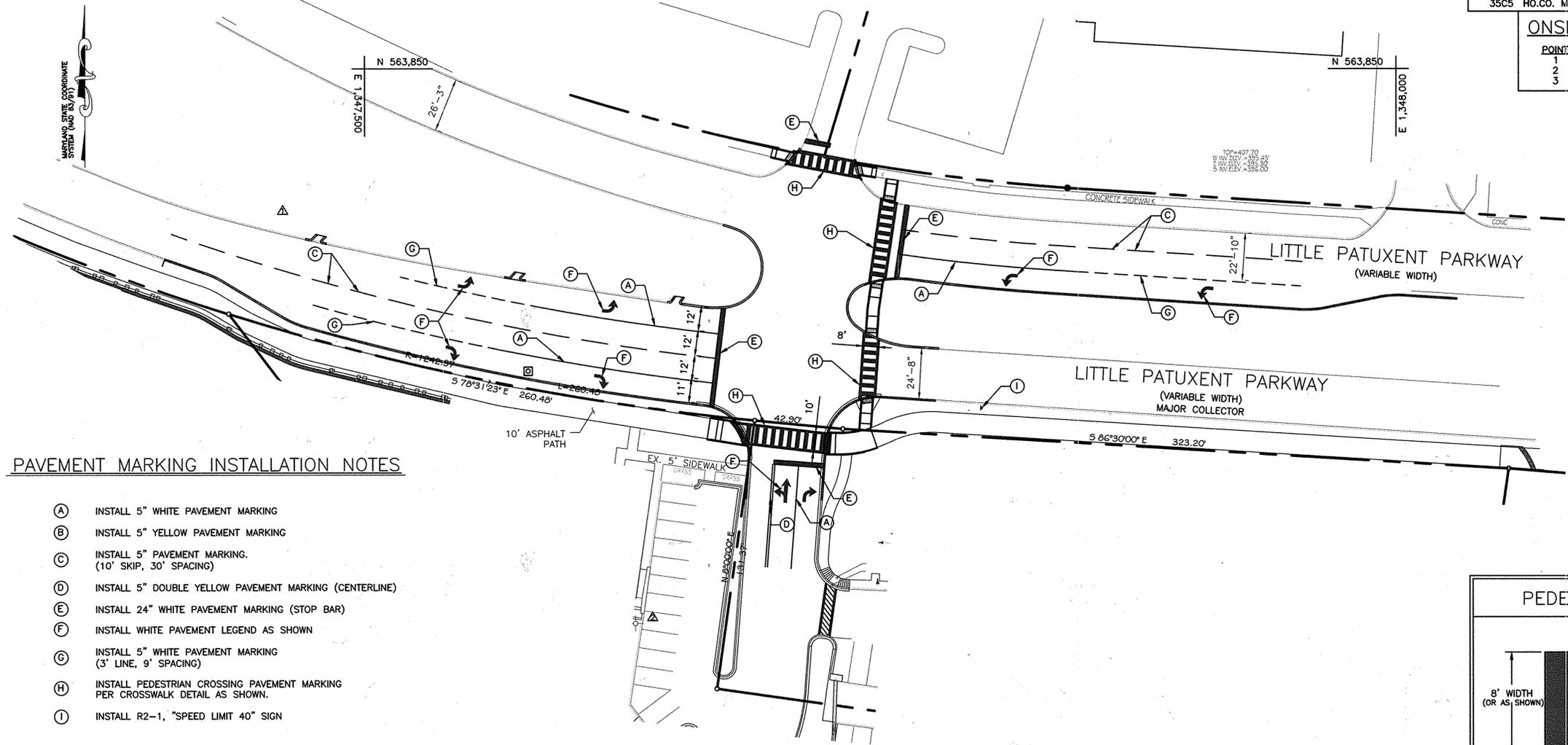
  

**ONSITE BENCHMARK DATA**

POINT	NORTHING	EASTING	ELEV.
1	563780.582	1347460.485	413.44
2	563583.277	1347639.779	410.18
3	563566.366	1347910.272	408.93



**VICINITY MAP**  
 SCALE: 1"=2000'  
 ADC MAP: 4934 GRID: K7



**PAVEMENT MARKING INSTALLATION NOTES**

- (A) INSTALL 5" WHITE PAVEMENT MARKING
- (B) INSTALL 5" YELLOW PAVEMENT MARKING
- (C) INSTALL 5" PAVEMENT MARKING. (10' SKIP, 30' SPACING)
- (D) INSTALL 5" DOUBLE YELLOW PAVEMENT MARKING (CENTERLINE)
- (E) INSTALL 24" WHITE PAVEMENT MARKING (STOP BAR)
- (F) INSTALL WHITE PAVEMENT LEGEND AS SHOWN
- (G) INSTALL 5" WHITE PAVEMENT MARKING (3' LINE, 9' SPACING)
- (H) INSTALL PEDESTRIAN CROSSING PAVEMENT MARKING PER CROSSWALK DETAIL AS SHOWN.
- (I) INSTALL R2-1, "SPEED LIMIT 40" SIGN

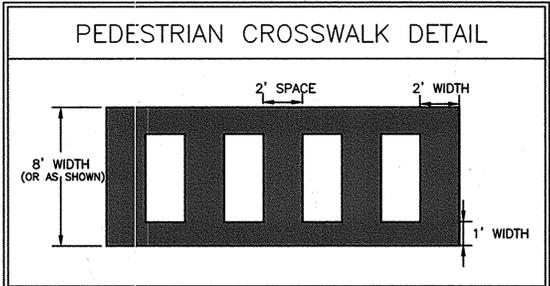
**PAVEMENT MARKING NOTES**

1. ALL LONG LINES MARKINGS TO BE APPLIED WITH WATER BORNE PAINT.
2. THE CROSSWALK AND ARROWS TO BE INSTALLED USING PREFORMED HEAT APPLIED TAPE OR THERMOPLASTIC.
3. ALL PAVEMENT MARKINGS ARE TO BE LOCATED OR APPROVED BY THE TRAFFIC DIVISION PRIOR TO THE PLACEMENT OF ANY MARKINGS.
4. ALL EXISTING PAVEMENT MARKING IN CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS ARE TO BE REMOVED BY GRINDING ONLY. HOWARD TRAFFIC (410-313-5752) WILL DETERMINE WHICH EXISTING MARKINGS SHALL BE REMOVED.

**SIGNING NOTES**

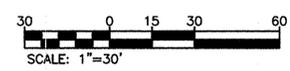
1. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE)-3' LONG. A GALVANIZED STEEL POLE SHALL BE MOUNTED ON TOP OF EACH POST. THAN ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE THE GROUND.
2. ALL SIGNS LOCATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION

**SIGNALING AND STRIPING PLAN**  
 SCALE: 1"=30'



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* DATE: 12-21-16  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* DATE: 1-15-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



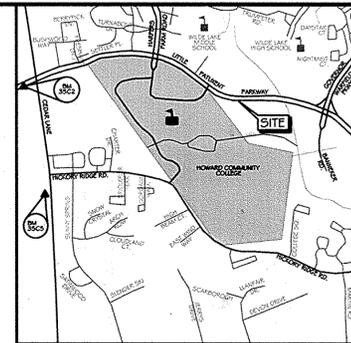
**KCI TECHNOLOGIES**  
 ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
 11850 WEST MARKET PLACE  
 SUITE A  
 FREDERICK, MD 20715  
 TELEPHONE: (410) 792-8086  
 FAX: (410) 792-7419

REVISIONS		
NO.	DATE	BY

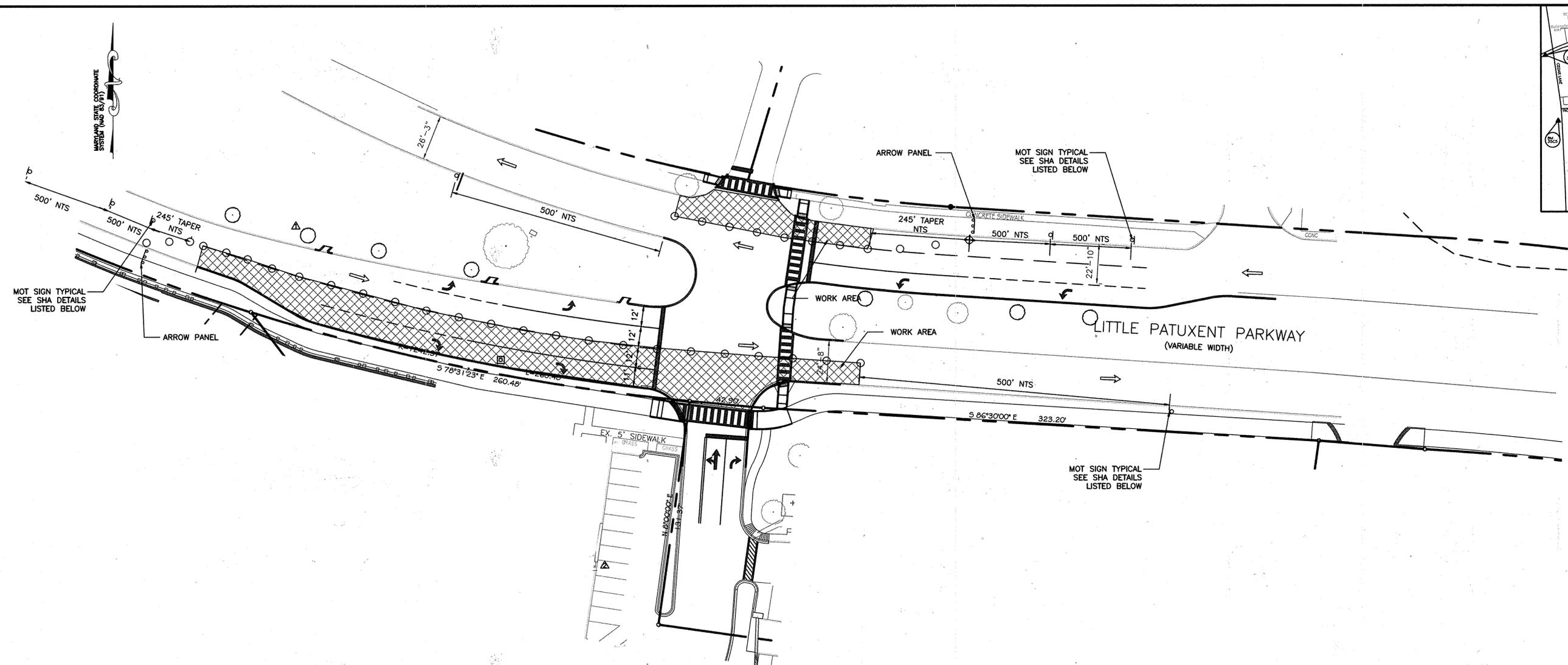
**COLUMBIA THE ROUSE COMPANY**  
**LITTLE PATUXENT PARKWAY**  
**SIGNALING AND STRIPING PLAN**

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE 1"=30'	SHEET NO. 21 OF 25	<b>C-08</b>



VICINITY MAP  
SCALE: 1"=2000'  
ADC MAP: 4934 GRID: K7



TEMPORARY TRAFFIC CONTROL PLAN - PHASE 1  
SCALE: 1"=30'

MARYLAND MOT PLAN STANDARDS

- MD 104.04-05 (RIGHT LANE CLOSURE)
- MD 104.04-01 (SHOULDER WORK)
- MD 104.02-10 (FLAGGER OPERATION - FOR SIDE ROADS)

SEQUENCE OF CONSTRUCTION

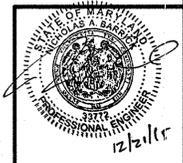
1. INSTALL TRAFFIC CONTROL DEVICES AS SHOWN ON PLAN AND IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS AND REQUIREMENTS. OR AS DIRECTED BY THE COUNTY ENGINEER IN FIELD.
2. BEGIN WORK ON NORTH AND SOUTH SIDE OF LITTLE PATUXENT PARKWAY.
3. CONTRACTOR IS TO MAINTAIN ALL ENTRANCES DURING ALL PHASES OF CONSTRUCTION.
4. INSTALLATION OF STOP BARS ON LITTLE PATUXENT PARKWAY WILL HAVE TO BE COORDINATED WITH HOWARD COUNTY'S TRAFFIC SIGNAL ENGINEER.

LEGEND

- CHANNELING DEVICE
- ▭ ARROW PANEL
- SIGN
- ▨ WORK AREA

**KCI TECHNOLOGIES**  
ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS  
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FULTON, MD 20759  
TELEPHONE: (410) 792-8086  
FAX: (410) 792-7419

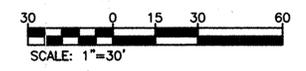
REVISIONS		
NO.	DATE	BY



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

**COLUMBIA THE ROUSE COMPANY**  
**LITTLE PATUXENT PARKWAY**  
**TEMPORARY TRAFFIC CONTROL**  
**PLAN - PHASE 1**  
ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

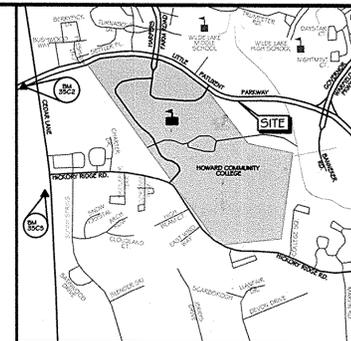
DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE 1"=30'	SHEET NO. 22 OF 25	<b>C-09</b>



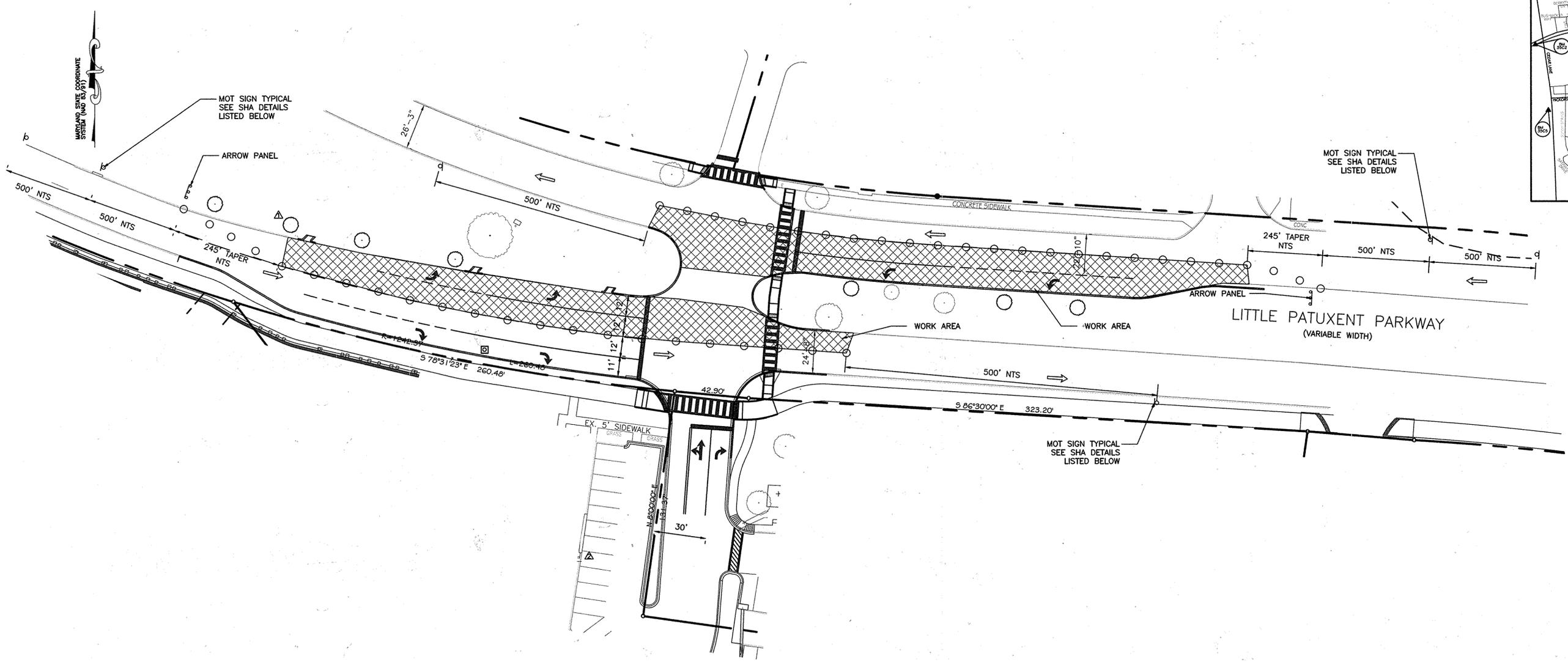
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 1/21/16  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 1-21-16  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 1-15-16  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



VICINITY MAP  
SCALE: 1"=2000'  
ADC MAP: 4934 GRID: K7



TEMPORARY TRAFFIC CONTROL PLAN - PHASE 2  
SCALE: 1"=30'

**MARYLAND MOT PLAN STANDARDS**

- MD 104.04-03 (LEFT LANE CLOSURE)
- MD 104.04-01 (SHOULDER WORK)
- MD 104.02-10 (FLAGGER OPERATION - FOR SIDE ROADS)

**SEQUENCE OF CONSTRUCTION**

1. INSTALL TRAFFIC CONTROL DEVICES AS SHOWN ON PLAN AND IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS AND REQUIREMENTS. OR AS DIRECTED BY THE COUNTY ENGINEER IN FIELD.
2. BEGIN WORK IN THE MEDIAN OF LITTLE PATUXENT PARKWAY.
3. CONTRACTOR IS TO MAINTAIN ALL ENTRANCES DURING ALL PHASES OF CONSTRUCTION.

**LEGEND**

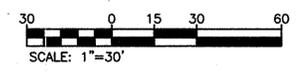
- CHANNELING DEVICE
- ARROW PANEL
- SIGN
- ▨ WORK AREA

**KCI TECHNOLOGIES**  
ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS  
11850 WEST MARKET PLACE  
SUITE A  
FULTON, MD 20759  
TELEPHONE: (410) 792-8086  
FAX: (410) 792-7419

REVISIONS		
NO.	DATE	BY



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 1/21/16  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 1/15/16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**COLUMBIA**  
THE ROUSE COMPANY

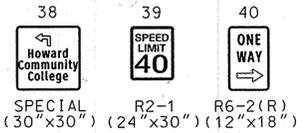
**LITTLE PATUXENT PARKWAY  
TEMPORARY TRAFFIC CONTROL  
PLAN - PHASE 2**

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

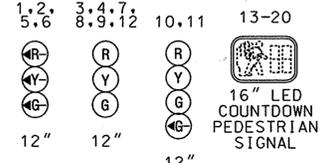
DESIGN NAB	DATE 12/18/15	KCI PROJECT NO. 27146550	SHEET NO.
DRAWN BRA	SCALE 1"=30'	SHEET NO. 23 OF 25	<b>C-10</b>

LITTLE PATUXENT PARKWAY IS CONSIDERED TO RUN IN AN EAST-WEST DIRECTION

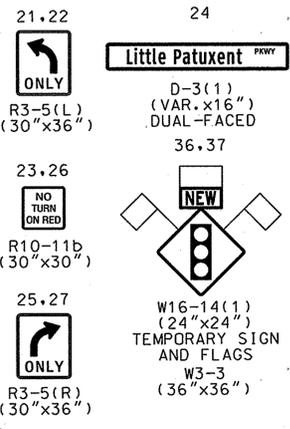
EXISTING SIGNS



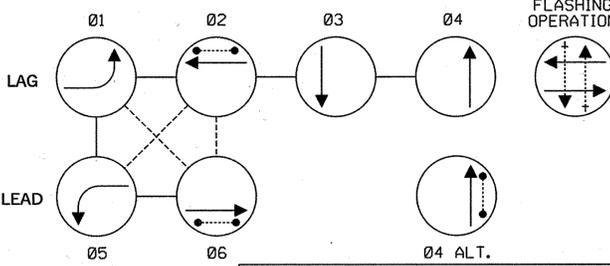
PROPOSED LED SIGNALS



PROPOSED SIGNS



NEMA PHASING

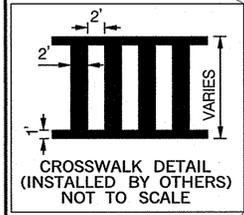


NOTE: PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

LEGEND: PROPOSED and EXISTING symbols for Mast Arm, Traffic Signal Head, Pedestrian Signal Head, Street Light, Handbox, Conduit, Pedestrian Pushbutton and Sign, Loop Detector, Controller with Pad, Signal Pole, Fire Hydrant, Manhole, Water Valve, Gas Valve, Geometrics, Video Detection, Video Detection Zone.

BENCHMARK DATA table with columns: POINT, DESCRIPTION, NORTHING, EASTING, ELEV. Includes points 35C2, 35C5 and on-site benchmarks 1-3.

PROPOSED SIGNS CONT'D: Diagrams for push buttons to cross driveway, Little Patuxent, and shared-use paths.



EXISTING (TO BE REMOVED) AND PROPOSED UNDERGROUND INTERCONNECT TO HARPER'S FARM RD.

CONSTRUCTION DETAILS:

- A. INSTALL BASE MOUNTED CABINET AND CONTROLLER, UPS SYSTEM, CONCRETE FOUNDATION, GROUND RODS, AND ALL NECESSARY EQUIPMENT FOR AN ELECTRICAL SERVICE...
B. THERMAL VIDEO DETECTION ZONE.
C. INSTALL 27 FT. STEEL TWIN MAST ARM POLE WITH 60 FT. AND 50 FT. MAST ARMS, SIGNAL HEADS, SIGNS, THERMAL VIDEO DETECTION CAMERAS, OPTICOM CAMERA, 20 FT. LUMINAIRE ARM, AND L.E.D. LUMINAIRE...
D. INSTALL 27 FT. STEEL MAST ARM POLE WITH 60 FT. MAST ARM, SIGNAL HEADS, SIGNS, THERMAL VIDEO DETECTION CAMERA, OPTICOM CAMERA, 10 FT. LUMINAIRE ARM, AND L.E.D. LUMINAIRE...
E. INSTALL 8 FT. PEDESTAL POLE WITH BREAKAWAY COUPLING BASE AND SIGNAL HEAD...
F. INSTALL 8 FT. PEDESTAL POLE WITH BREAKAWAY COUPLING BASE, COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE PEDESTRIAN PUSHBUTTON, AND PEDESTRIAN INSTRUCTIONAL SIGN...
G. INSTALL HANDBOX WITH CONCRETE COLLAR.
H. INSTALL 1 IN. FLEXIBLE CONDUIT FOR LOOP DETECTOR LEAD-IN.
I. INSTALL GROUND MOUNTED SIGNS ON TWO STEEL PERFORATED TUBE POSTS WITH SLEEVE.
J. INSTALL 2 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
K. INSTALL 3 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
L. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
M. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
N. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - SLOTTED.
O. INSTALL 4 IN. PVC SCHEDULE 80 CONDUIT WITH PULL STRING FOR ELECTRICAL SERVICE FROM CABINET TO ELECTRICAL TRANSFORMER #30030.
P. CROSSWALK PAVEMENT MARKINGS TO BE INSTALLED BY OTHERS.
Q. INSTALL 24 IN. HEAT APPLIED, WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING FOR STOP LINES.
R. INSTALL 6 FT. X 6 FT. LOOP DETECTOR (4 TURNS).
S. USE EXISTING HANDBOX.
T. USE EXISTING CONDUIT.
U. PULL BACK AND REROUTE EXISTING INTERCONNECT CABLE TO CABINET.
V. REMOVE EXISTING HANDHOLE AND BACKFILL WITH APPROPRIATE MATERIAL.
W. CAP AND ABANDON EXISTING CONDUIT.
X. REMOVE EXISTING PAVEMENT MARKING.
Y. REMOVE EXISTING PAVEMENT MARKING.
Z. CONNECT EXISTING CONDUIT TO PROPOSED HANDBOX.

GENERAL NOTES:

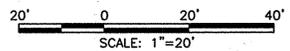
- 1. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS. TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 816.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
2. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS WITH THE COUNTY ENGINEER PRIOR TO INSTALLATION. CONTACT JENN BIDDLE AT 410-313-5753.
3. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY ENGINEER 48 HOURS PRIOR TO INSTALLING FOUNDATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLES TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
5. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
6. ALL HANDHOLES SHALL BE INSTALLED AT FINAL GRADE. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING SIDEWALKS CAUSED BY THE INSTALLATION OF SIGNAL EQUIPMENT AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL VERIFY PROPOSED GEOMETRICS PRIOR TO INSTALLING SIGNAL EQUIPMENT.
8. REFER TO SHEET NOS. 14 AND 15 FOR INTERSECTION DESIGN AND CURB RAMP DETAILS.

GENERAL NOTES CONT'D

- 10. ALL SIGNAL IMPROVEMENTS SHALL MEET APPLICABLE HOWARD COUNTY OR MDSA SPECIFICATIONS AND DETAILS.
11. VIDEO CAMERA LOCATION/ALIGNING SHALL BE COORDINATED WITH THE COUNTY ENGINEER.
12. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH COUNTY STANDARDS.
13. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18 INCHES FROM A 60 INCH X 60 INCH LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
14. THE 10 FOOT SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
15. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
16. THE LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.08 AND 4E.10 AND FIGS. 4E-3 AND 4E-4 AND NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICES". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED.

SPECIAL NOTES:

- 1. THE CONTRACTOR SHALL USE CAUTION WHEN INSTALLING SIGNAL EQUIPMENT TO AVOID DISTURBANCE OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL TEST PIT TO DETERMINE EXACT LOCATION AND DEPTH OF UNDERGROUND UTILITIES PRIOR TO INSTALLING SIGNAL EQUIPMENT.
3. IF EXISTING CONDUIT TO REMAIN IS UNUSABLE THE CONTRACTOR SHALL CONTACT THE ENGINEER.
4. CONTRACTOR SHALL CONTACT HOWARD COUNTY'S UNDERGROUND UTILITY PERMIT DIVISION AT (410)313-4207 AT LEAST 5 BUSINESS DAYS PRIOR TO STARTING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
5. CONTRACTOR SHALL CONTACT HOWARD COUNTY'S TRAFFIC DIVISION AT LEAST 72 HOURS PRIOR TO STARTING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
6. REFER TO PLAN SHEET NO. C-01 - SITE GRADING AND STORMWATER MANAGEMENT PLAN FOR INTERSECTION SIGNING AND PAVEMENT MARKINGS.
7. ALL SIGNAL POLES, PEDESTAL POLES, SIGNAL MAST ARMS, LIGHT POLES, AND LUMINAIRE ARMS SHALL BE PAINTED BROWN.



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16303 EXP. DATE: 12/21/2016

APPROVED: DEPARTMENT OF PUBLIC WORKS (Signature) DATE: 1-21-16
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING (Signature) DATE: 1-15-16

REVISIONS table with columns: NO., DATE, BY.

UTILITY LEGEND table: SD - STORM DRAIN, G - GAS MAIN, W - WATER MAIN, S - SEWER MAIN, E - ELECTRIC CABLES, A - AERIAL CABLES, T - TELEPHONE CABLES, F - FIBER-OPTIC

KCI TECHNOLOGIES logo and contact information: 11850 WEST MARKET PLACE, SUITE A, FULFORD, MD 20759, Telephone: (410) 792-8086, Fax: (410) 792-7419

COLUMBIA THE ROUSE COMPANY

LITTLE PATUXENT PARKWAY TRAFFIC SIGNAL PLAN SHEET

ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND

Design/Drawn/Job/Scale table: DESIGN DATE 12/17/15, DRAWN SCALE 1"=20', SHEET NO. 24 OF 25, SHEET NO. C-11

**PROJECT DESCRIPTION**  
 THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE INTERSECTION OF LITTLE PATUXENT PARKWAY AT HOWARD COMMUNITY COLLEGE EAST ACCESS IN HOWARD COUNTY, MARYLAND. LITTLE PATUXENT PARKWAY IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**  
 A CONTROLLER HOUSED IN A BASE MOUNTED CABINET WITH UPS SHALL BE INSTALLED AT THIS LOCATION. THE INTERSECTION WILL OPERATE IN A 6 NEMA PHASE FULLY ACTUATED MODE. THERE WILL BE A LEAD LEFT/THROUGH PHASE FOR THE WESTBOUND MOVEMENT OF LITTLE PATUXENT PARKWAY. THE LITTLE PATUXENT PARKWAY THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY WITH CONCURRENT PEDESTRIAN MOVEMENTS ACROSS THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THERE WILL BE A LAG LEFT/THROUGH PHASE FOR THE EASTBOUND MOVEMENT OF LITTLE PATUXENT PARKWAY. THE DRIVEWAY MOVEMENTS WILL OPERATE IN A SPLIT PHASE OPERATION WITH AN ACTUATED PEDESTRIAN MOVEMENT ACROSS THE EAST LEG OF THE INTERSECTION.

**APS WILL FUNCTION AS FOLLOWS:**  
 FOR LITTLE PATUXENT PARKWAY AT DRIVEWAY  
 A. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS LITTLE PATUXENT AT DRIVEWAY. WAIT."  
 B. WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR DRIVEWAY AT LITTLE PATUXENT  
 A. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS DRIVEWAY AT LITTLE PATUXENT. WAIT."  
 B. WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

**EQUIPMENT LIST**

A. EQUIPMENT TO BE FURNISHED BY THE COUNTY AND INSTALLED BY THE TRAFFIC SIGNAL CONTRACTOR.

QUANTITY	UNITS	DESCRIPTION
1	EA	TRAFFIC SIGNAL CONTROLLER, BASE MOUNTED CABINET, AND VIDEO DETECTION INTERFACE
1	EA	UPS CABINET
10	EA	12 IN., ONE-WAY, THREE SECTION L.E.D. (R,Y,G) ADJUSTABLE YELLOW FACED TRAFFIC SIGNAL HEAD WITH MAST ARM MOUNTING HARDWARE AND TUNNEL VISORS
2	EA	12 IN., ONE-WAY, FOUR SECTION L.E.D. (R,Y,G,GA) ADJUSTABLE YELLOW FACED TRAFFIC SIGNAL HEAD WITH MAST ARM MOUNTING HARDWARE AND TUNNEL VISORS
8	EA	16 IN., ONE-WAY, ONE SECTION L.E.D. (COUNTDOWN INDICATIONS) ADJUSTABLE PEDESTRIAN SIGNAL HEAD WITH POST TOP MOUNTING HARDWARE AND CUT-AWAY VISORS
4	EA	THERMAL VIDEO DETECTION CAMERA
661	LF	THERMAL VIDEO DETECTION CABLE
2	EA	OPTICOM DETECTOR CAMERA
320	LF	OPTICOM DETECTION CABLE
8	EA	AUDIBLE PEDESTRIAN PUSHBUTTON ASSEMBLY WITH PUSHBUTTON SIGN
1	EA	APS 2-WIRE CENTRAL CONTROL UNIT
2	EA	L.E.D. LAMP AND LUMINAIRE
1	EA	VAR. X 16 IN. D-3(1) SIGN WITH MAST ARM MOUNTING HARDWARE (DUAL-FACED)
2	EA	30 IN. X 36 IN. R3-5(L) SIGN WITH MAST ARM MOUNTING HARDWARE
2	EA	30 IN. X 36 IN. R3-5(R) SIGN WITH MAST ARM MOUNTING HARDWARE
2	EA	30 IN. X 30 IN. R10-11b SIGN WITH MAST ARM MOUNTING HARDWARE
2	EA	36 IN. X 36 IN. W3-3 & 24 IN. X 24 IN. W16-14(1) SIGNS FOR GROUND MOUNTING
8	EA	9 IN. X 15 IN. R10-3(1) SIGN FOR PEDESTAL POLE

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE TRAFFIC SIGNAL CONTRACTOR.

QUANTITY	UNITS	DESCRIPTION
LUMP SUM	LS	MOT - HWY
7	CY	TEST PIT EXCAVATION
13	CY	CONCRETE FOUNDATION
30	LF	1 IN. LIQUID TIGHT FLEXIBLE CONDUIT FOR DETECTOR SLEEVE
130	LF	2 IN. CONDUIT PVC SCHED 80 - TRENCHED
120	LF	3 IN. CONDUIT PVC SCHED 80 - TRENCHED
60	LF	4 IN. CONDUIT PVC SCHED 80 - TRENCHED
380	LF	4 IN. CONDUIT PVC SCHED 80 - SLOTTED
1	EA	METER SOCKET
2	EA	DISCONNECT SWITCH NEMA 4 - 30 AMP STAIN STEEL
9	EA	GROUND ROD WITH CLAMP
500	LF	LOOP WIRE 14 AWG THWN
2000	LF	2-COND. 14 AWG ALUMINUM SHIELDED CABLE
170	LF	2-COND. 14 AWG IMSA 19-1
620	LF	5-COND. 14 AWG IMSA 19-1
850	LF	7-COND. 14 AWG IMSA 19-1
330	LF	3-COND. 12 AWG COPPER TYPE TC
30	LF	1-COND. 8 AWG THWN - COPPER
520	LF	1-COND. 6 AWG - SOLID BARE COPPER
52	LF	GROUND MOUNT SIGN SUPPORTS (SEE SPECIAL NOTE THIS SHEET)
11	EA	INSTALL SIGN > 5 TO < 25 SF
130	LF	24 IN. WHITE THERMOPLASTIC PAVEMENT MARKING - STOP LINE
320	LF	REMOVE EXISTING PAVEMENT MARKING
20	EA	INSTALL SIGNAL HEAD
8	EA	INSTALL PEDESTRIAN PUSHBUTTON & R10-3(1) SIGN
4	EA	INSTALL THERMAL VIDEO CAMERA DETECTOR WITH COUNTY SUPPLIED CLAMP
2	EA	INSTALL OPTICOM DETECTOR WITH COUNTY SUPPLIED CLAMP
1	EA	INSTALL CONTROL CABINET - BASE MOUNTED
6	EA	TRAFFIC SIGNAL HANDBOX WITH CONCRETE COLLAR
170	LF	SAW CUT 4 1/2 IN. DEPTH
1	EA	TROUGH FOR ELECTRICAL SERVICE
1800	LF	12-PAIR COMMUNICATION CABLE (SELF-SUPPORTING OR JELLY-FILLED/UNDERGROUND)
2090	LF	DISCONNECT, PULL-BACK & REROUTE CABLES
9	EA	8 FT. ALUMINUM PEDESTAL POLE (PAINTED BROWN) WITH BREAKAWAY COUPLING BASE
1	EA	27 FT. STEEL TWIN MAST ARM POLE (PAINTED BROWN) WITH 60 FT. AND 50 FT. MAST ARMS (PAINTED BROWN)
1	EA	27 FT. STEEL MAST ARM POLE (PAINTED BROWN) WITH 60 FT. MAST ARM (PAINTED BROWN)
1	EA	10 FT. LUMINAIRE ARM (PAINTED BROWN)
1	EA	20 FT. LUMINAIRE ARM (PAINTED BROWN)

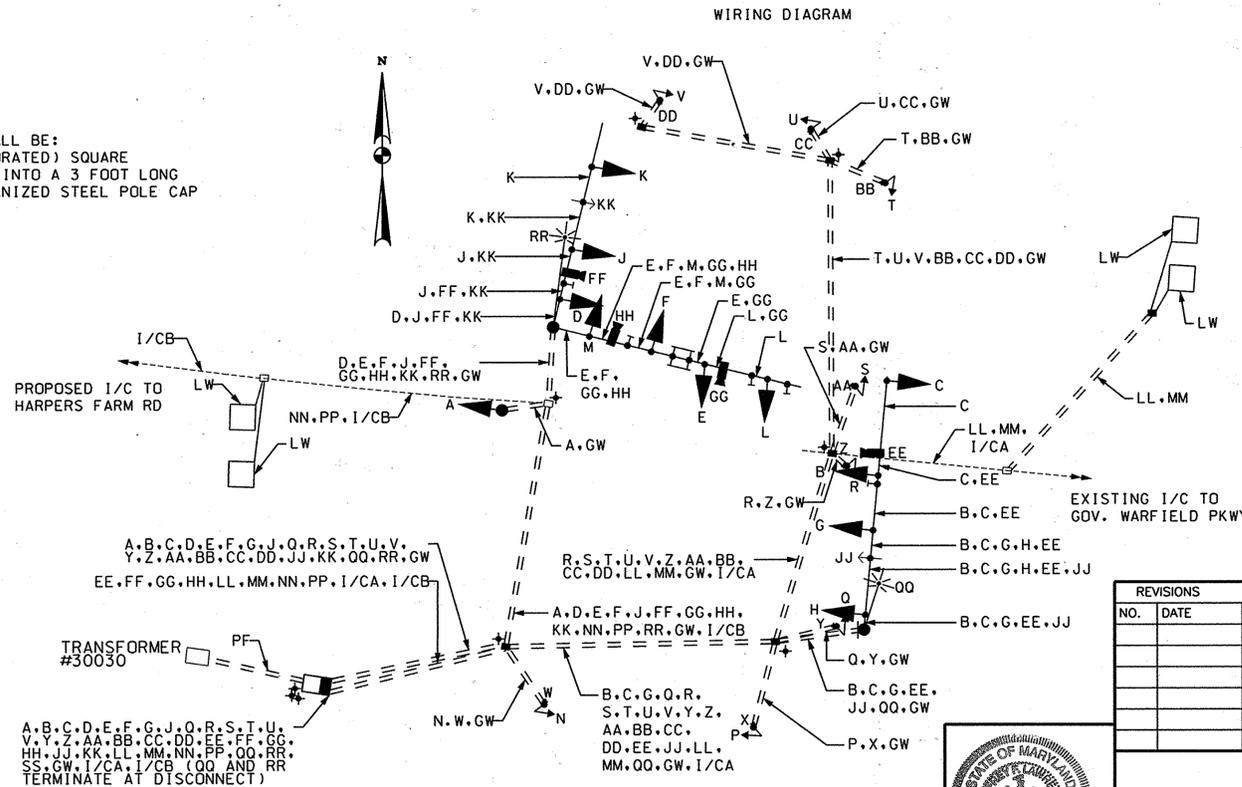
**SPECIAL NOTE:**  
 GROUND MOUNT SIGN SUPPORTS SHALL BE:  
 2 INCH GALVANIZED STEEL (PERFORATED) SQUARE  
 TUBE POST (14 GAUGE) INSERTED INTO A 3 FOOT LONG  
 SLEEVE (12 GAUGE) WITH A GALVANIZED STEEL POLE CAP  
 MOUNTED ON TOP OF THE POST.

PHASE CHART

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
(R)																			
(Y)																			
(G)																			

PHASE 1 AND 6	←G-	←G-	G	G	←R-	←R-	R	R	R	R	R	R	DW							
1 AND 6 CHANGE	←Y-	←Y-	Y	Y	←R-	←R-	R	R	R	R	R	R	DW							
PHASE 2 AND 6	←R-	←R-	G	G	←R-	←R-	G	G	R	R	R	R	WK	WK	DW	DW	DW	DW	WK	WK
PED CLEARANCE	←R-	←R-	G	G	←R-	←R-	G	G	R	R	R	R	FLDW	FLDW	DW	DW	DW	DW	FLDW	FLDW
2 AND 6 CHANGE	←R-	←R-	Y	Y	←R-	←R-	Y	Y	R	R	R	R	DW							
PHASE 2 AND 5	←R-	←R-	R	R	←G-	←G-	G	G	R	R	R	R	DW							
2 AND 5 CHANGE	←R-	←R-	R	R	←Y-	←Y-	Y	Y	R	R	R	R	DW							
PHASE 3	←R-	←R-	R	R	←R-	←R-	R	R	R	R	←G-G	G	DW							
PHASE 3 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	R	R	Y	Y	DW							
PHASE 4	←R-	←R-	R	R	←R-	←R-	R	R	G	←G-G	R	R	DW							
PHASE 4 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	Y	Y	R	R	DW							
PHASE 4 ALT	←R-	←R-	R	R	←R-	←R-	R	R	G	←G-G	R	R	DW	DW	WK	WK	WK	WK	DW	DW
PED CLEARANCE	←R-	←R-	R	R	←R-	←R-	R	R	G	←G-G	R	R	DW	DW	FLDW	FLDW	FLDW	FLDW	DW	DW
4 ALT CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	Y	Y	R	R	DW							
FLASHING OPERATION	←FL/R	←FL/R	FL/Y	FL/Y	←FL/R	←FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK							

A D B E C F	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
G P H Q J R K S L T M U N V	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
W A A X B B Y C C Z D D	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
E E F F G G H H	THERMAL VIDEO DETECTOR CABLE
J J K K	OPTICOM DETECTOR CABLE
L L M M N N P P	2-CONDUCTOR CABLE (NO. 14 A.W.G., ALUMINUM SHIELDED)
Q Q R R	3-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
S S	1-CONDUCTOR (NO. 8 A.W.G.) (3 PIECES) FOR TRAFFIC SIGNAL ELECTRICAL SERVICE
L W	LOOP DETECTOR WIRE (NO. 14 A.W.G.) IN FLEXIBLE TUBING
G W	THWN GREEN COPPER GROUND WIRE (NO. 6 A.W.G.)
P F	PROPOSED UNDERGROUND ELECTRICAL SERVICE BY BGE
I / C A	EXISTING 12-PAIR COMMUNICATION CABLES - PULLED BACK AND REROUTED
I / C B	12-PAIR COMMUNICATION CABLES, SELF-SUPPORTING, JELLY-FILLED/UNDERGROUND
	PROPOSED GROUND ROD



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 Fax: (410) 792-7419

REVISIONS

NO.	DATE	BY



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16303 EXP. DATE: 12/21/2016

DESIGN JAB	DATE 12/17/15	KCI PROJECT NO. 27146550	SHEET NO. C-12
DRAWN JE	SCALE 1"=20'	SHEET NO. 25 OF 25	

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] DATE 6/6/16  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] DATE 1-21-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: [Signature] DATE 1-15-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**COLUMBIA THE ROUSE COMPANY**  
**LITTLE PATUXENT PARKWAY TRAFFIC SIGNAL PLAN SHEET**  
 ELECTION DISTRICT NO. 05 - HOWARD COUNTY MARYLAND