



# HOWARD COUNTY, MARYLAND

## OFFICE OF PURCHASING

6751 Columbia Gateway Drive, Suite 226, Columbia, MD 21046

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**ADDENDUM NO. 1**  
**ISSUED MAY 3, 2019**  
**EXPRESSIONS OF INTEREST**

**EOI-09-2019**  
**PATUXENT BRANCH TRAIL DESIGN**  
**OPENING: JUNE 5, 2019 AT 11:00 A.M.**

<https://www.howardcountymd.gov/Departments/County-Administration/Purchasing>

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This addendum is hereby made a part of EOI-09-2019. Please note the following information and questions received thus far. Addendum no. 2 will be issued after the pre-submittal meeting.

### Clarifications/Changes

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1. Page 5, Item 2 “Project Description” sentence number three, change “Exhibit III” to “Exhibit I”.
2. Please see the concept plan attached, which is referred to as “Exhibit I”

### Questions/Answers

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1. **Question:** Who is the current design firm that developed the TAP application and concept plan?  
**Answer:** There is no “current design firm” for this project.
2. **Question:** Is the current design firm allowed to pursue the design for this TAP project?  
**Answer:** There is no “current design firm” for this project.
3. **Question:** What is the anticipated design fee for this project?  
**Answer:** This is a qualifications-based selection. Therefore, the most qualified firm will be invited to submit a cost proposal.
4. **Question:** What is the anticipated construction cost as per the TAP application?  
**Answer:** The TAP application is not a publicly available document.
5. **Question:** Can a copy of the TAP application be made available?  
**Answer:** No.
6. **Question:** Section 8.3 of the EOI lists “All projects listed must have been managed by the project manager proposed for this project.” Do the projects have to be current firm PM project experience or can projects be submitted that the PM managed while employed with a previous firm?

**Answer:** All projects described in SF330 Section F, “Example Projects Which Best Illustrate Proposed Team’s Qualifications for this Contract”, as well as all projects listed for the proposed project manager in Section E must have been managed by the proposed project manager. Projects listed in Section E for the project manager need not have been with the current firm.

7. **Question:** Does the County want the trail rated for driving on (vehicle)?

**Answer:** Yes.

8. **Question:** Is the Part II of the SF330 format needed?

**Answer:** Yes.

9. **Question:** Item 2.1.6 refers to “Development of Maintenance of traffic design.” Is the County asking for MOT because the trail will be open to pedestrians during construction?

**Answer:** The trail will be closed to pedestrians during construction, but MOT will still be required for heavy vehicle access, storage locations, and pedestrian detours.

10. **Question:** Under Section 7 for Technical Submittal, part 8.3, “All projects listed must have been managed by the project manager proposed for this project” would be almost impossible for many companies, is this absolutely necessary?

**Answer:** Yes.

All other specifications, terms and conditions remain the same.

Please acknowledge addenda by signing below and returning with the submittal. Failure to acknowledge this addendum may be cause for rejection of the submittal.

**ADDENDUM RECEIVED BY:**

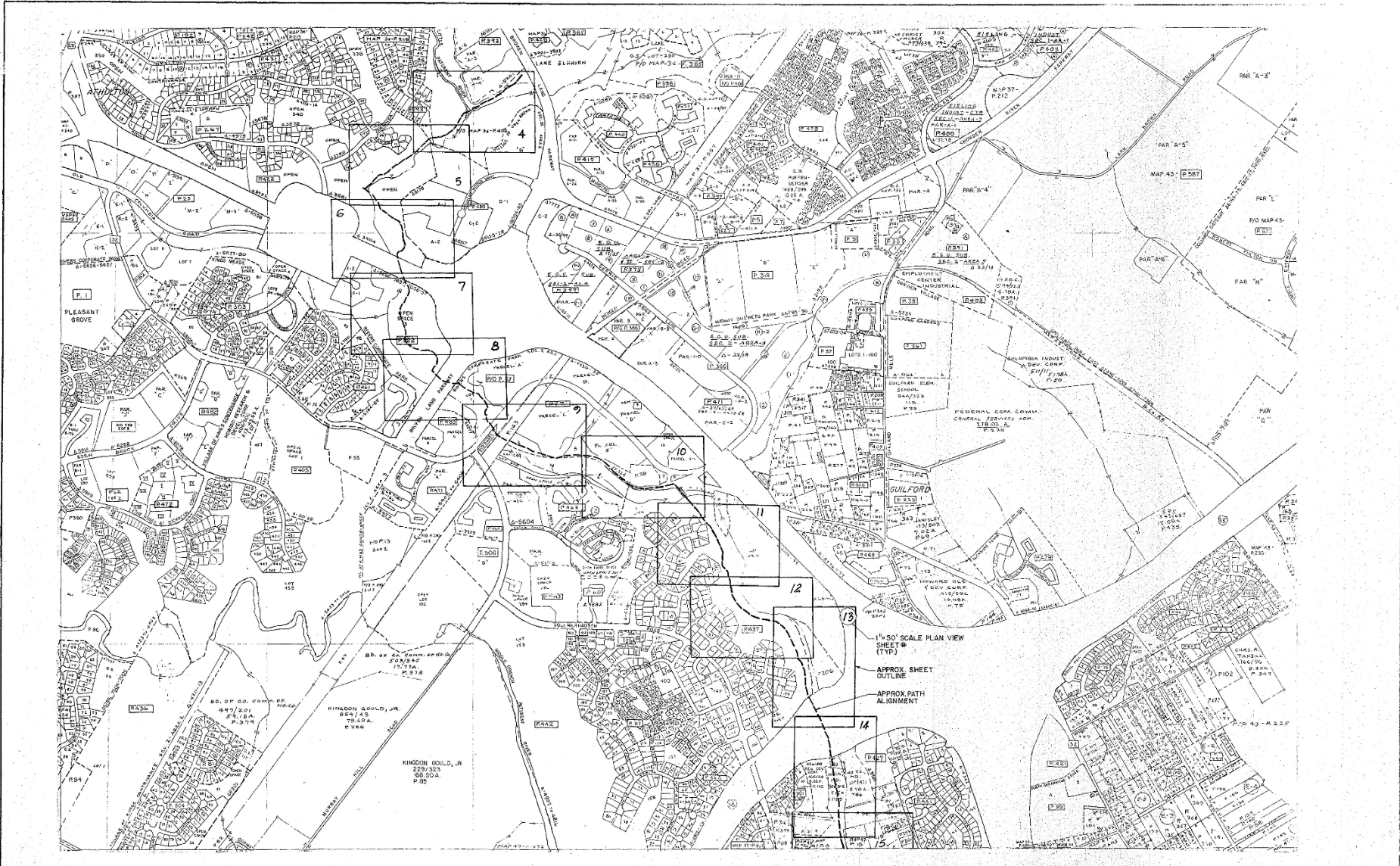
\_\_\_\_\_  
Signature

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Title

EHB



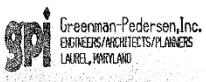


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|---|--------------------------------------|--|--|-------------------------------------|---|--|
| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND |                                      |  |  | DES: D.P.<br>DRN: A.K.<br>CHK: P.S. | HOWARD CO. PATHWAY SYSTEM - PHASE 3<br>CAPITAL PROJECT NO. N-3906J<br>HOWARD COUNTY, MARYLAND | SCALE<br>1" = 600'<br>SHEET<br>2 OF 20 |
| DIRECTOR OF PUBLIC WORKS<br>DATE                      | CHIEF, BUREAU OF ENGINEERING<br>DATE |  |  | DATE:                               |   | BY: NO. REVISION DATE                  |



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

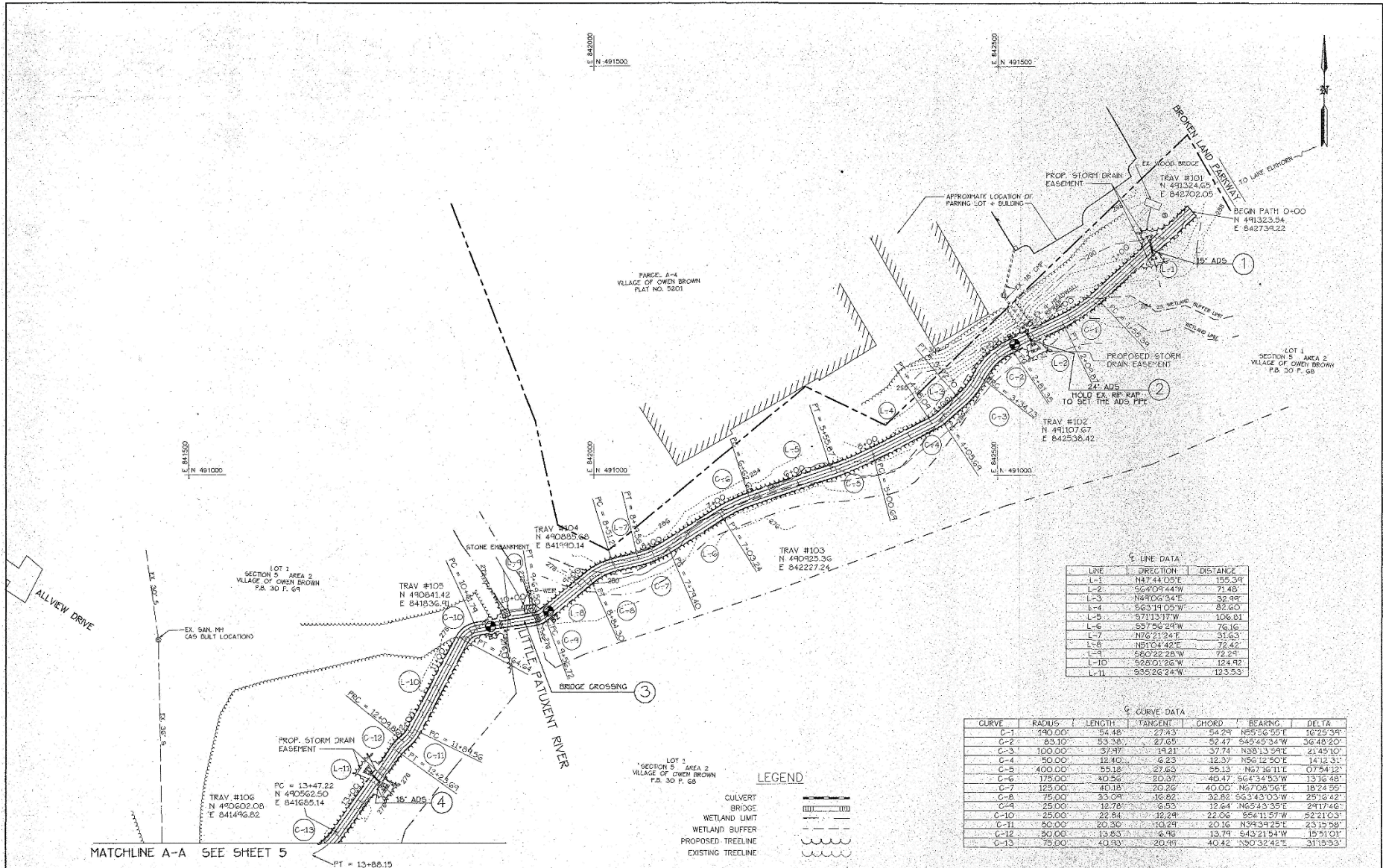
DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF BUREAU OF HIGHWAYS \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF DIVISION OF SIGNALS, BRIDGES & ELEVATION DRAWING \_\_\_\_\_ DATE \_\_\_\_\_



|           |     |      |           |       |                    |
|-----------|-----|------|-----------|-------|--------------------|
| DES. D.D. |     |      |           |       |                    |
| DWN. A.K. |     |      |           |       |                    |
| CHK. K.C. |     |      |           |       |                    |
| DATE:     | BY: | NO.: | REVISION: | DATE: | 600 SCALE MAP NO.: |
|           |     |      |           |       | BLOCK NO.:         |

HOWARD CO. PATHWAY SYSTEM - PHASE 3  
 CAPITAL PROJECT NO. N-3906JJ  
 HOWARD COUNTY, MARYLAND

SCALE  
 1" = 600'  
 SHEET  
 2 OF 20



**E-LINE DATA**

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | N47°41'05"E | 159.34'  |
| L-2  | S64°09'44"W | 71.48'   |
| L-3  | N48°06'34"E | 32.94'   |
| L-4  | S63°14'05"W | 82.60'   |
| L-5  | S71°13'17"W | 106.81'  |
| L-6  | S57°56'24"W | 76.16'   |
| L-7  | N76°21'24"E | 31.63'   |
| L-8  | N61°04'42"E | 72.42'   |
| L-9  | S60°52'25"W | 72.24'   |
| L-10 | S69°01'56"W | 124.82'  |
| L-11 | S35°26'24"W | 123.53'  |

**G-CURVE DATA**

| CURVE | RADIUS  | LENGTH | TANGENT | CHORD  | BEARING     | DELTA      |
|-------|---------|--------|---------|--------|-------------|------------|
| C-1   | 190.00' | 54.48' | 27.43'  | 54.29' | N55°56'55"E | 16°25'34"  |
| C-2   | 83.10'  | 53.38' | 27.65'  | 52.47' | S45°45'34"W | 36°48'20"  |
| C-3   | 100.00' | 37.97' | 19.21'  | 37.74' | N88°13'54"E | 21°45'10"  |
| C-4   | 50.00'  | 12.40' | 6.23'   | 12.37' | N56°12'50"E | 141°2'31"  |
| C-5   | 400.00' | 55.18' | 27.66'  | 55.13' | N67°16'11"E | 07°54'12"  |
| C-6   | 175.00' | 40.56' | 20.37'  | 40.47' | S64°34'53"W | 133°16'48" |
| C-7   | 125.00' | 40.15' | 20.26'  | 40.00' | N67°06'56"E | 18°24'55"  |
| C-8   | 75.00'  | 35.97' | 16.82'  | 35.82' | S53°43'03"W | 251°5'42"  |
| C-9   | 25.00'  | 16.78' | 8.39'   | 16.64' | N65°34'33"E | 211°7'46"  |
| C-10  | 25.00'  | 22.84' | 12.24'  | 22.06' | S54°11'57"W | 52°21'03"  |
| C-11  | 50.00'  | 20.30' | 10.24'  | 20.16' | N34°34'25"E | 23°15'58"  |
| C-12  | 50.00'  | 13.83' | 6.96'   | 13.79' | S43°21'54"W | 15°11'01"  |
| C-13  | 75.00'  | 14.93' | 7.46'   | 14.82' | N50°52'42"E | 31°15'53"  |

**LEGEND**

- CULVERT
- BRIDGE
- WETLAND LIMIT
- WETLAND SUFFER
- PROPOSED TREELINE
- EXISTING TREELINE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, BUREAU OF UTILITIES \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, LAND DEVELOPMENT DIVISION \_\_\_\_\_ DATE \_\_\_\_\_

**spi**  
GREENMAN-PEDERSEN INC.  
ENGINEERS/ARCHITECTS/PLANNERS  
LAUREL, MARYLAND

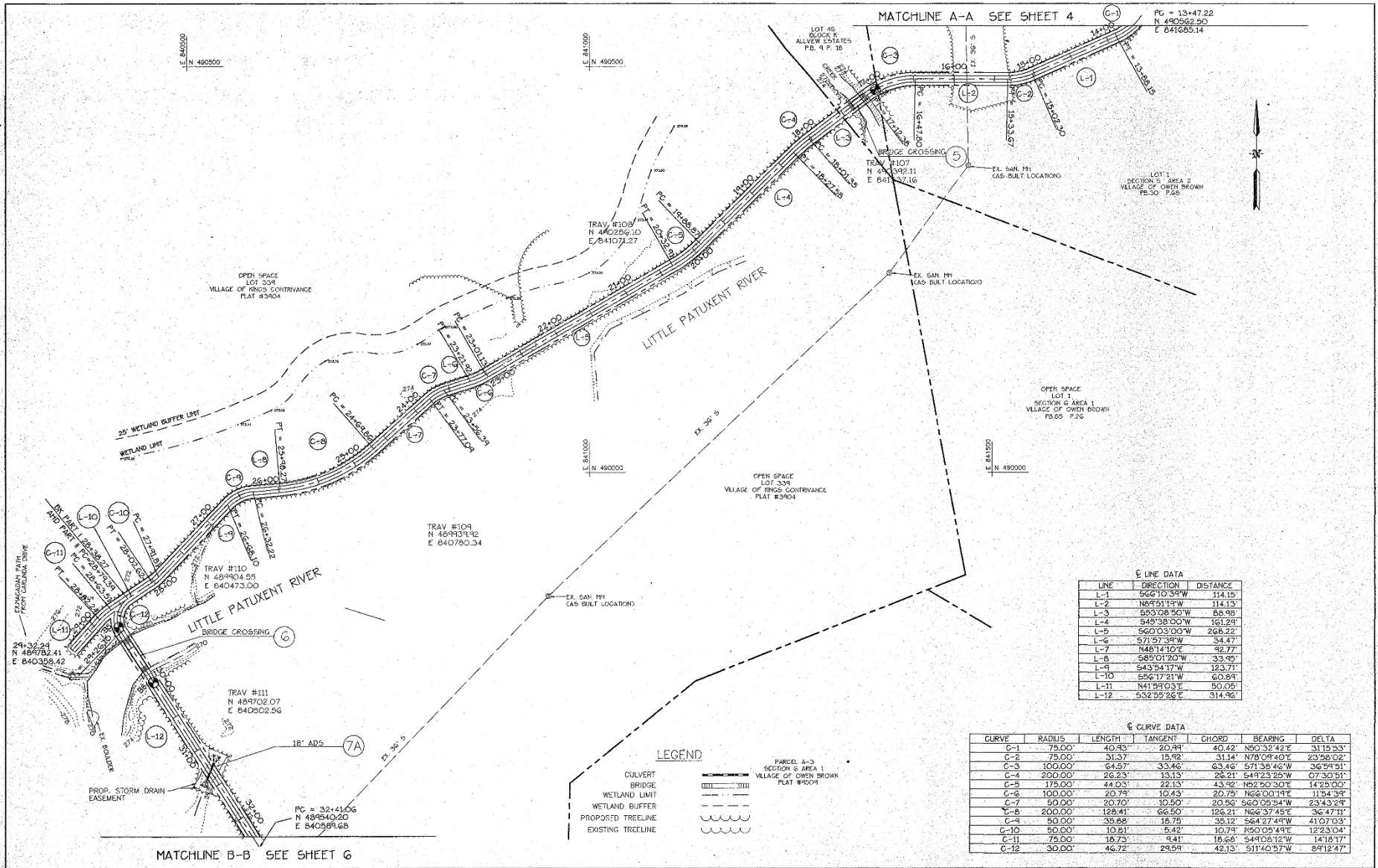


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|----------------|--------------|---------|----------|------|
| DES: KP        | DATE: 3/3/94 | BY: NO. | REVISION | DATE |
| DRAWN: AAP/RAM |              |         |          |      |
| CHECKED: DJM   |              |         |          |      |

**SITE PLAN**  
STA 0+00 - STA 13+47.22

**HOWARD COUNTY PATHWAY SYSTEM - PHASE 2**  
CAPITAL PROJECT N-3906JJ  
HOWARD COUNTY, MARYLAND

SCALE  
1"=50'  
SHEET  
4 OF 20



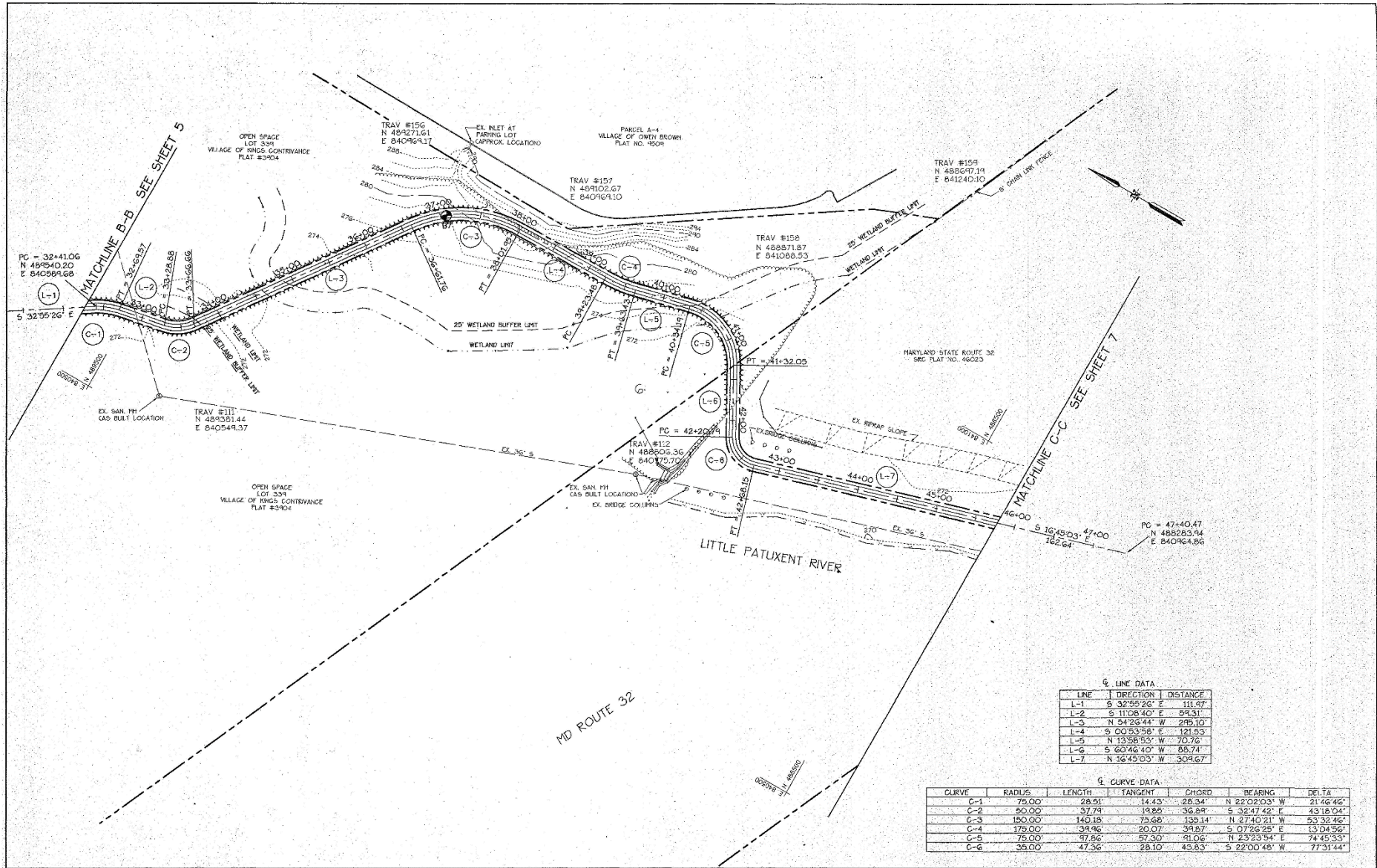
**E LINE DATA**

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | S62°10'34"W | 114.15   |
| L-2  | N89°51'12"W | 114.15   |
| L-3  | S53°08'50"W | 88.98    |
| L-4  | S45°38'00"W | 161.24   |
| L-5  | S60°03'00"W | 268.22   |
| L-6  | S71°57'38"W | 34.47    |
| L-7  | N48°14'10"E | 42.77    |
| L-8  | S8°01'20"W  | 33.95    |
| L-9  | S43°54'17"W | 123.71   |
| L-10 | S52°17'21"W | 60.84    |
| L-11 | N41°34'03"E | 50.05    |
| L-12 | S32°55'26"E | 314.96   |

**E CURVE DATA**

| CURVE | RADIUS  | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|-------|---------|---------|---------|---------|-------------|-----------|
| C-1   | 75.00'  | 40.93'  | 20.44'  | 40.42'  | N80°37'42"E | 311°5'33" |
| C-2   | 75.00'  | 31.37'  | 15.92'  | 31.14'  | N78°09'40"E | 23°58'02" |
| C-3   | 100.00' | 64.57'  | 33.46'  | 63.46'  | S71°38'46"W | 36°54'51" |
| C-4   | 200.00' | 26.23'  | 13.13'  | 26.21'  | S44°23'25"W | 07°30'51" |
| C-5   | 175.00' | 44.03'  | 22.13'  | 43.92'  | N50°50'30"E | 14°28'00" |
| C-6   | 100.00' | 20.75'  | 10.43'  | 20.75'  | N62°00'18"E | 11°54'34" |
| C-7   | 50.00'  | 20.70'  | 10.50'  | 20.56'  | S60°05'54"W | 23°43'24" |
| C-8   | 200.00' | 128.41' | 66.50'  | 126.21' | N66°37'45"E | 36°47'11" |
| C-9   | 50.00'  | 35.88'  | 18.75'  | 35.12'  | S64°27'45"W | 41°07'03" |
| C-10  | 50.00'  | 10.81'  | 5.42'   | 10.79'  | N50°05'48"E | 12°23'04" |
| C-11  | 75.00'  | 18.73'  | 9.41'   | 18.68'  | S49°08'12"W | 14°18'17" |
| C-12  | 30.00'  | 46.72'  | 23.54'  | 42.13'  | S11°40'57"W | 8°12'47"  |

|   |      |  |  |                              |      |          |              |         |          |   |  |                                       |
|---|------|--|--|------------------------------|------|----------|--------------|---------|----------|---|--|---------------------------------------|
| <b>DEPARTMENT OF PUBLIC WORKS</b><br><b>HOWARD COUNTY, MARYLAND</b> |      | <br><b>GREENMAN-PEDERSEN INC.</b><br>ENGINEERS/ARCHITECTS/PLANNERS<br>LAUREL, MARYLAND |  | DES: KP                      |      |          |              |         |          | <b>SITE PLAN</b><br>STA 13+47.22 - STA 32+41.06 | <b>HOWARD COUNTY PATHWAY SYSTEM - PHASE 2</b><br>CAPITAL PROJECT N-3906JJ<br>HOWARD COUNTY, MARYLAND | SCALE<br>1" = 50'<br>SHEET<br>9 OF 22 |
| DIRECTOR OF PUBLIC WORKS  | DATE |  |  | CHIEF, BUREAU OF ENGINEERING | DATE | CHK: DAN | DATE: 3/3/13 | BY: NO. | REVISION |   |  |                                       |



LINE DATA

| LINE | DIRECTION     | DISTANCE |
|------|---------------|----------|
| L-1  | S 32°55'26" E | 111.97   |
| L-2  | S 110°8'40" E | 59.31    |
| L-3  | N 54°26'44" W | 295.10   |
| L-4  | S 00°33'58" E | 121.53   |
| L-5  | N 13°58'53" W | 70.76    |
| L-6  | S 60°46'40" W | 88.74    |
| L-7  | N 36°45'03" W | 309.67   |

CURVE DATA

| CURVE | RADIUS | LENGTH | TANGENT | CHORD  | BEARING       | DELTA     |
|-------|--------|--------|---------|--------|---------------|-----------|
| C-1   | 75.00  | 28.51  | 14.43   | 28.34  | N 22°02'03" W | 21°42'46" |
| C-2   | 50.00  | 37.74  | 19.85   | 36.89  | S 32°47'42" E | 43°18'04" |
| C-3   | 150.00 | 140.18 | 75.68   | 135.14 | N 27°40'21" W | 53°32'46" |
| C-4   | 175.00 | 39.46  | 20.07   | 39.67  | S 07°26'25" E | 13°04'56" |
| C-5   | 75.00  | 27.86  | 14.06   | 27.30  | N 23°23'54" E | 74°45'33" |
| C-6   | 35.00  | 47.36  | 28.10   | 45.83  | S 22°00'48" W | 77°31'44" |

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS      DATE  
 CHIEF, BUREAU OF ENGINEERING      DATE  
 CHIEF, BUREAU OF UTILITIES      DATE  
 CHIEF, LAND DEVELOPMENT DIVISION      DATE

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ENGINEERS/ARCHITECTS/PLANNERS  
LAUREL, MARYLAND

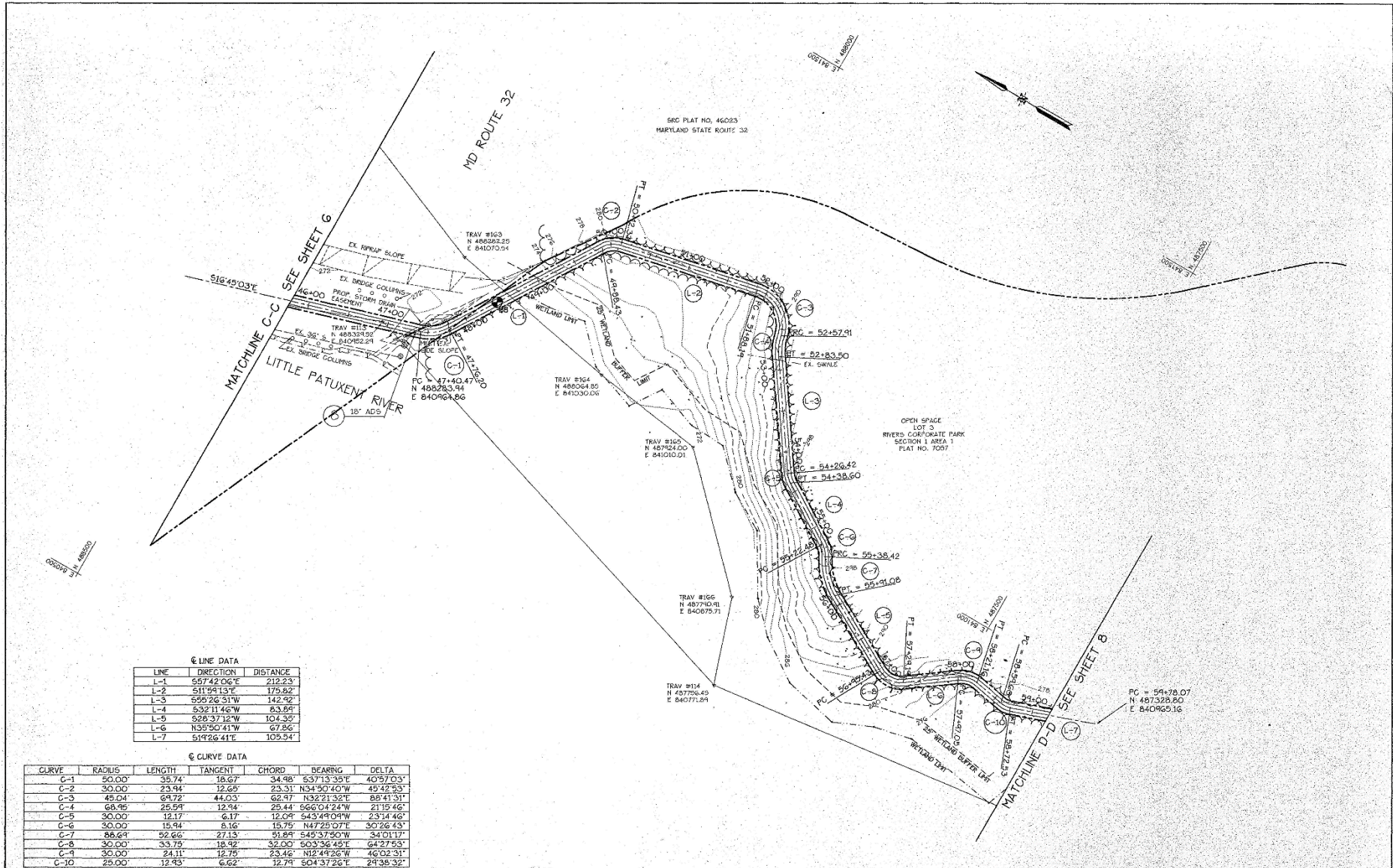


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 DRN: AAP/RAK  
 CHK: DJM  
 DATE: 3/3/84

**SITE PLAN**  
 STA 32+41.06 - STA 47+40.47

**HOWARD COUNTY PATHWAY SYSTEM - PHASE 2**  
 CAPITAL PROJECT N-3906JJ  
 HOWARD COUNTY, MARYLAND

SCALE  
 1" = 50'  
 SHEET  
 6 OF 20



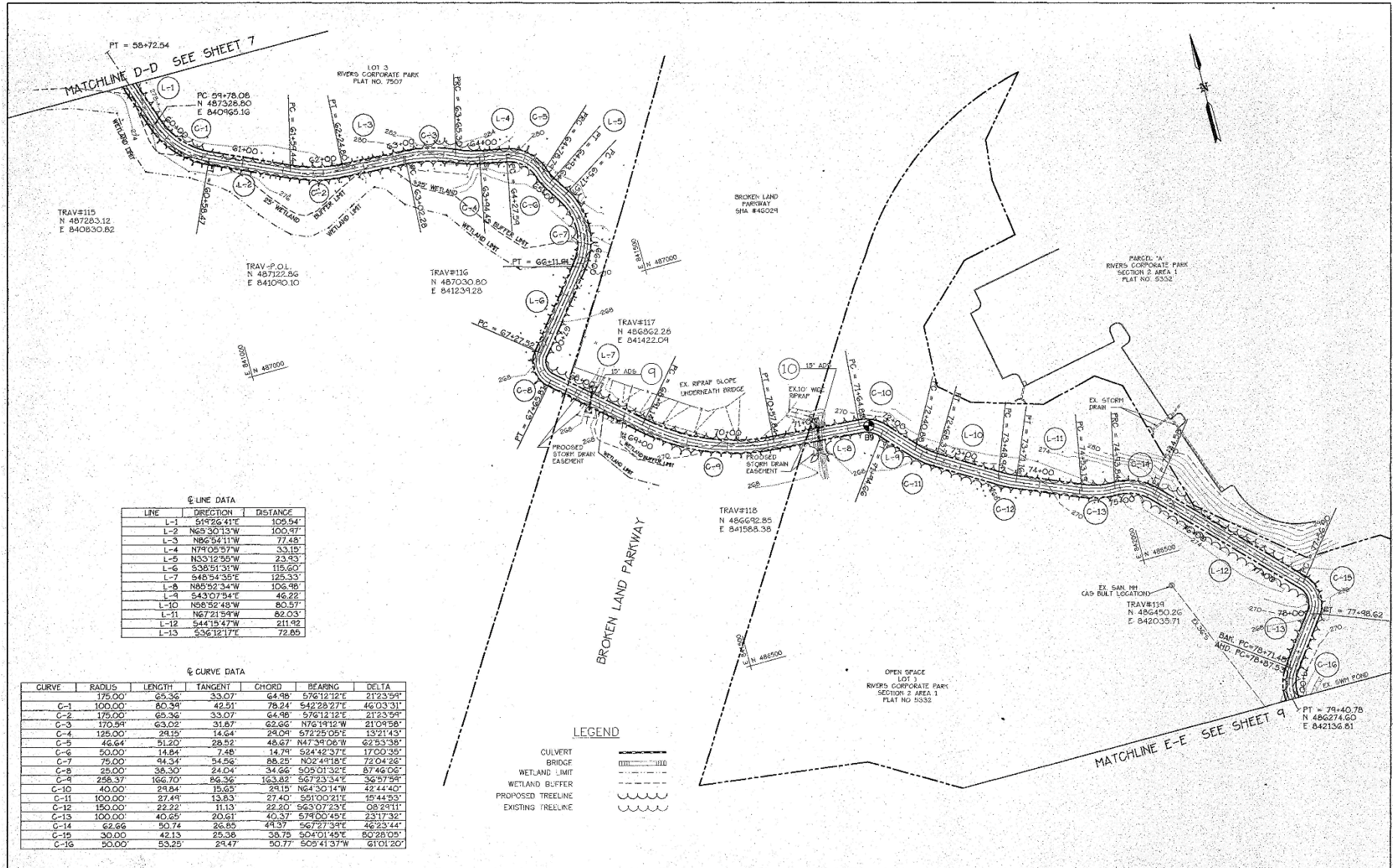
LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | S57°42'06"E | 212.23'  |
| L-2  | S11°58'13"E | 175.52'  |
| L-3  | S55°26'31"W | 142.92'  |
| L-4  | S32°11'46"W | 83.59'   |
| L-5  | S28°37'12"W | 104.35'  |
| L-6  | N35°50'41"W | 67.56'   |
| L-7  | S19°26'41"E | 109.54'  |

CURVE DATA

| CURVE | RADIUS | LENGTH | TANGENT | CHORD  | BEARING     | DELTA     |
|-------|--------|--------|---------|--------|-------------|-----------|
| C-1   | 50.00' | 35.74' | 18.67'  | 34.98' | S37°13'39"E | 40°57'03" |
| C-2   | 30.00' | 23.94' | 12.65'  | 23.31' | N54°50'40"W | 49°12'53" |
| C-3   | 45.04' | 69.72' | 44.03'  | 62.57' | N32°21'32"E | 85°41'31" |
| C-4   | 68.95' | 25.59' | 12.94'  | 25.44' | S66°04'24"W | 21°15'46" |
| C-5   | 30.00' | 12.17' | 6.17'   | 12.09' | S43°49'04"W | 2°31'46"  |
| C-6   | 30.00' | 15.94' | 8.16'   | 15.75' | N47°25'07"E | 30°26'43" |
| C-7   | 86.69' | 52.66' | 27.13'  | 51.59' | S45°37'50"W | 34°01'17" |
| C-8   | 30.00' | 33.75' | 18.92'  | 32.00' | S03°36'45"E | 64°27'53" |
| C-9   | 30.00' | 24.11' | 12.75'  | 23.46' | N12°49'26"W | 46°02'31" |
| C-10  | 25.00' | 12.93' | 6.62'   | 12.79' | S04°37'26"E | 24°35'32" |

|  |  |  |  |  |   |   |  |
|--|--|--|--|--|---|---|--|
| <p><b>DEPARTMENT OF PUBLIC WORKS</b><br/>HOWARD COUNTY, MARYLAND</p> <p>DIRECTOR OF PUBLIC WORKS    DATE: _____    CHIEF, BUREAU OF ENGINEERING    DATE: _____</p> <p>CHIEF, BUREAU OF UTILITIES    DATE: _____    CHIEF, LAND DEVELOPMENT DIVISION    DATE: _____</p> |  | <p>GREENMAN-PEDERSEN, INC.<br/>ENGINEERS/ARCHITECTS/PLANNERS<br/>LABEL, MARYLAND</p> |  | <p>DES: KP</p> <p>DRN: AAP, BAY</p> <p>CHK: DM</p> <p>DATE: 3/3/94</p> | <p><b>SITE PLAN</b><br/>STA 47+40.47 - STA 59+78.07</p> | <p><b>HOWARD COUNTY PATHWAY SYSTEM - PHASE 2</b><br/>CAPITAL PROJECT N-3906JJ<br/>HOWARD COUNTY, MARYLAND</p> | <p>SCALE<br/>1" = 50'<br/>SHEET<br/>7 OF 7</p> |
|--|--|--|--|--|---|---|--|



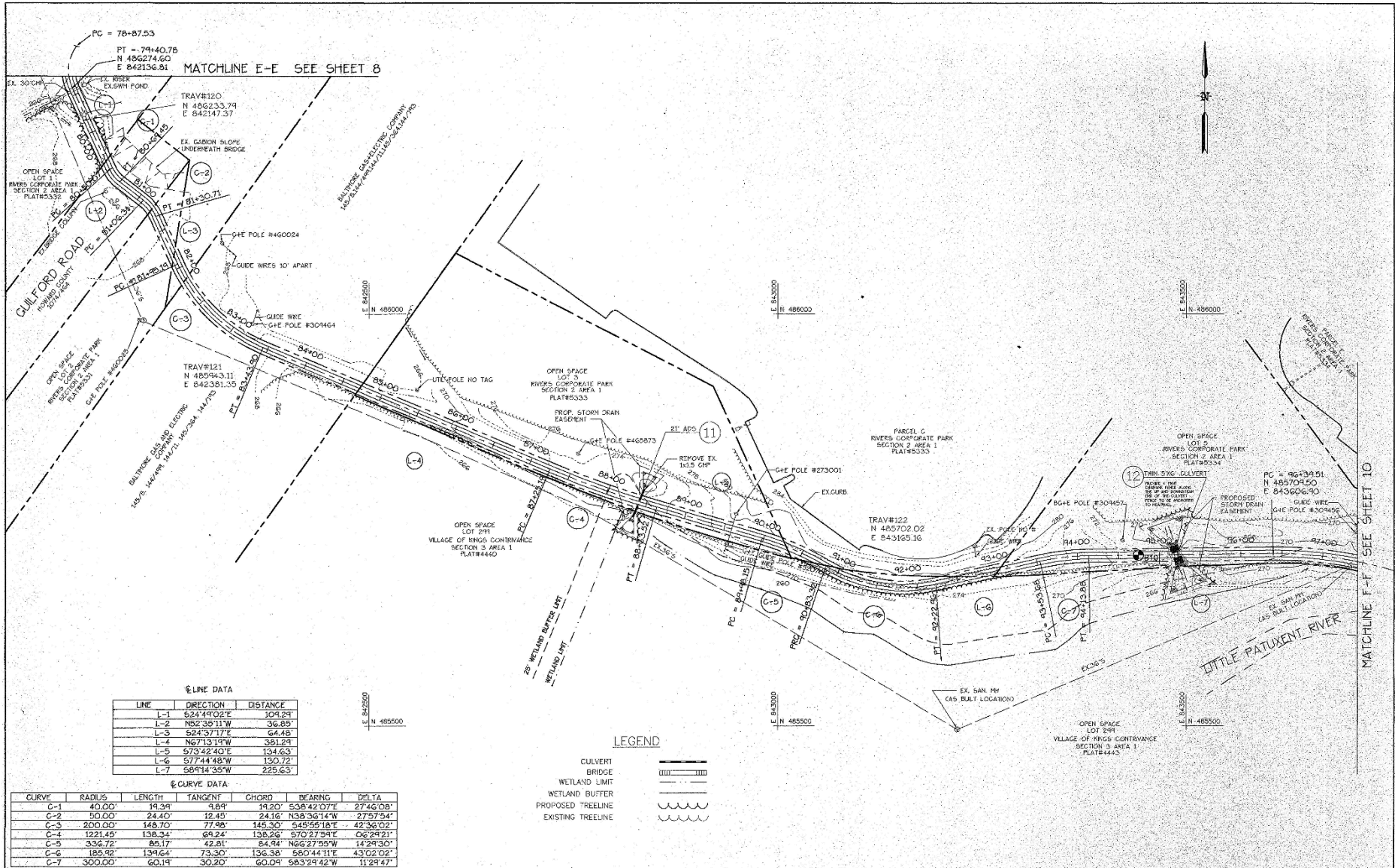
LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | S14°26'41"E | 105.54'  |
| L-2  | N65°30'13"W | 100.47'  |
| L-3  | N86°54'11"W | 77.48'   |
| L-4  | N71°05'37"W | 33.15'   |
| L-5  | N33°12'55"W | 23.43'   |
| L-6  | S38°51'31"W | 115.60'  |
| L-7  | S48°54'36"E | 125.33'  |
| L-8  | N83°52'34"W | 106.48'  |
| L-9  | S43°07'34"E | 46.22'   |
| L-10 | N58°52'48"W | 80.57'   |
| L-11 | N67°21'54"W | 82.03'   |
| L-12 | S44°19'47"W | 211.42'  |
| L-13 | S36°12'17"E | 72.85'   |

CURVE DATA

| CURVE | RADIUS  | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|-------|---------|---------|---------|---------|-------------|-----------|
| C-1   | 175.00' | 65.36'  | 33.07'  | 64.48'  | S76°12'12"E | 21°23'59" |
| C-2   | 100.00' | 80.36'  | 42.51'  | 78.24'  | S42°28'27"E | 46°03'31" |
| C-3   | 175.00' | 65.36'  | 33.07'  | 64.48'  | S76°12'12"E | 21°23'59" |
| C-4   | 170.59' | 63.02'  | 31.87'  | 62.66'  | N76°19'12"W | 21°09'58" |
| C-5   | 125.00' | 24.15'  | 14.64'  | 24.09'  | S72°25'05"E | 13°21'43" |
| C-6   | 46.64'  | 51.20'  | 28.52'  | 48.67'  | N47°34'06"W | 62°53'38" |
| C-7   | 50.00'  | 14.84'  | 7.48'   | 14.79'  | S24°42'37"E | 17°00'39" |
| C-8   | 75.00'  | 44.34'  | 24.56'  | 48.25'  | N02°49'18"E | 72°04'26" |
| C-9   | 25.00'  | 38.30'  | 24.04'  | 34.66'  | S09°01'32"E | 87°46'06" |
| C-10  | 258.37' | 166.70' | 86.36'  | 163.82' | S67°23'34"E | 36°57'59" |
| C-11  | 40.00'  | 24.84'  | 15.55'  | 24.19'  | N64°30'14"W | 42°44'40" |
| C-12  | 100.00' | 27.49'  | 13.83'  | 27.40'  | S51°00'21"E | 19°44'53" |
| C-13  | 150.00' | 22.22'  | 11.13'  | 22.20'  | S63°07'23"E | 08°29'11" |
| C-14  | 100.00' | 40.65'  | 20.61'  | 40.37'  | S74°00'45"E | 23°17'32" |
| C-15  | 62.66'  | 52.74'  | 26.85'  | 44.37'  | S67°23'34"E | 46°23'44" |
| C-16  | 50.00'  | 42.13'  | 28.38'  | 33.75'  | S04°01'45"E | 80°28'00" |
| C-17  | 50.00'  | 53.25'  | 29.47'  | 50.77'  | S09°41'37"W | 61°01'20" |

|   |  |   |  |  |  |   |                                     |
|---|--|---|--|--|--|---|-------------------------------------|
| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND |  | <br>GREENMAN-PEDERSEN INC.<br>ENGINEERS/ARCHITECTS/PLANNERS<br>LAUREL, MARYLAND |  | DES: KP<br>DRN: AMP,BAK<br>CHK: DJM<br>DATE: 3/3/94                                      | SITE PLAN<br>STA 59+78.07 - STA 79+40.78 | HOWARD COUNTY PATHWAY SYSTEM - PHASE 2<br>CAPITAL PROJECT N-3906JJ<br>HOWARD COUNTY, MARYLAND | SCALE<br>1"=50'<br>SHEET<br>B OF 20 |
| DIRECTOR OF PUBLIC WORKS<br>_____ DATE _____          | CHIEF, BUREAU OF ENGINEERING<br>_____ DATE _____ | CHIEF, BUREAU OF UTILITIES<br>_____ DATE _____                                  | CHIEF, LAND DEVELOPMENT DIVISION<br>_____ DATE _____ | DATE: 3/3/94 BY: NO. _____ REVISION _____ DATE: 600' SCALE MAP NO. _____ BLOCK NO. _____ |  |   |                                     |

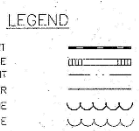


LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | S24°49'02"E | 109.29'  |
| L-2  | N52°35'11"W | 36.85'   |
| L-3  | S24°37'17"E | 64.48'   |
| L-4  | N67°13'19"W | 381.29'  |
| L-5  | S70°42'40"E | 134.63'  |
| L-6  | S77°44'48"W | 130.72'  |
| L-7  | S89°14'35"W | 225.63'  |

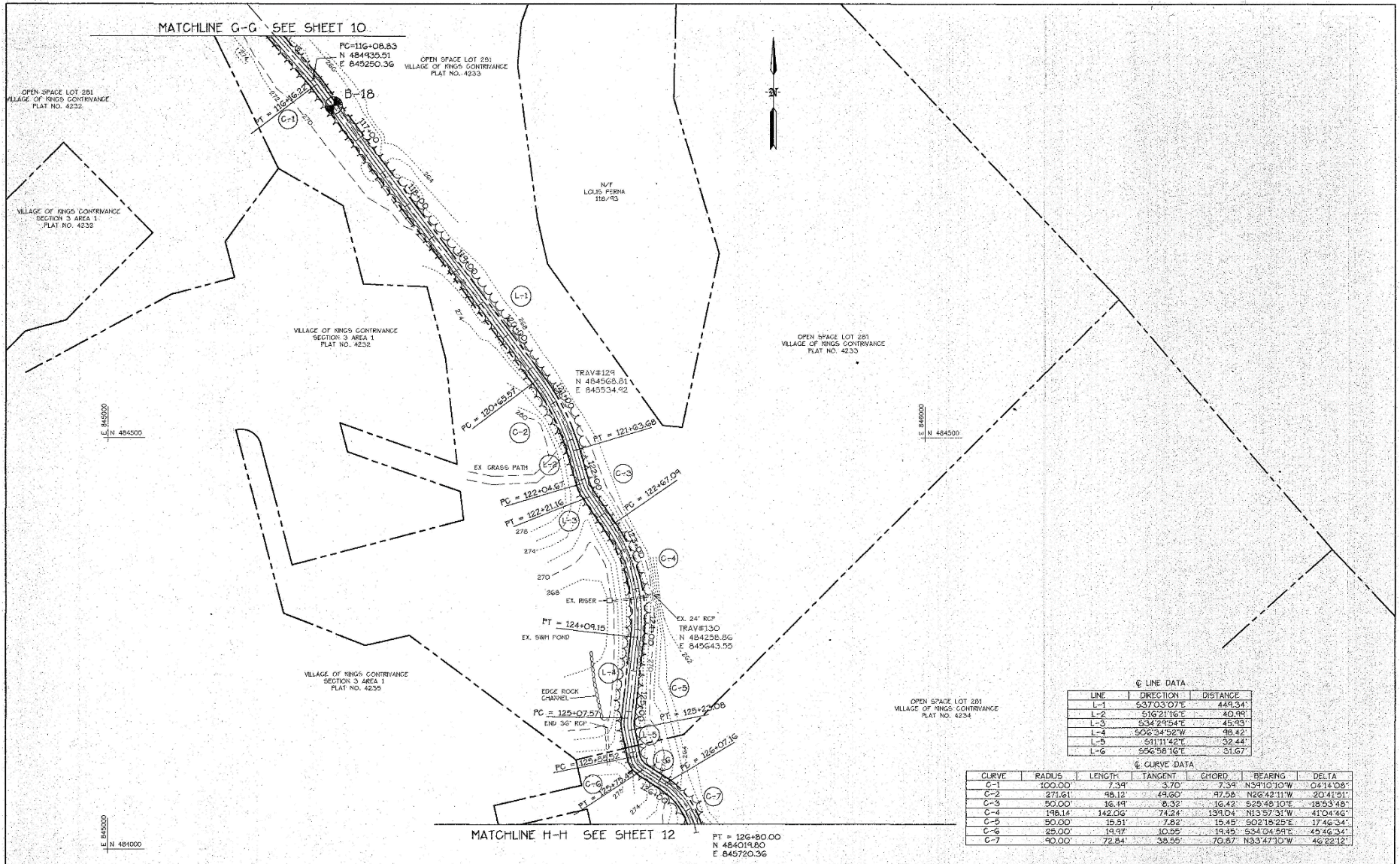
CURVE DATA

| CURVE | RADIUS   | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|-------|----------|---------|---------|---------|-------------|-----------|
| C-1   | 40.00'   | 19.39'  | 9.89'   | 19.20'  | S38°42'07"E | 27°46'08" |
| C-2   | 50.00'   | 24.40'  | 12.45'  | 24.16'  | N38°36'14"W | 27°57'54" |
| C-3   | 200.00'  | 148.70' | 77.98'  | 145.30' | S45°55'18"E | 42°36'02" |
| C-4   | 1221.45' | 138.34' | 69.24'  | 138.26' | S70°27'59"E | 06°29'21" |
| C-5   | 336.72'  | 85.17'  | 42.81'  | 84.94'  | N66°27'55"W | 14°29'30" |
| C-6   | 185.92'  | 139.64' | 73.30'  | 136.38' | S80°44'11"E | 43°02'02" |
| C-7   | 300.00'  | 60.19'  | 30.20'  | 60.09'  | S83°29'42"W | 11°29'47" |



|   |   |  |   |   |  |                                       |
|---|---|--|---|---|--|---------------------------------------|
| <b>DEPARTMENT OF PUBLIC WORKS</b><br>HOWARD COUNTY, MARYLAND  |   |  | DES: KP<br>DRN: AAP/BAK<br>CHK: DJM<br>DATE: 3/3/04 | <b>SITE PLAN</b><br>STA 79+40.78 - STA 96+39.51 | <b>HOWARD COUNTY PATHWAY SYSTEM - PHASE 2</b><br>CAPITAL PROJECT N-3906JJ<br>HOWARD COUNTY, MARYLAND | SCALE<br>1" = 50'<br>SHEET<br>9 OF 20 |
| DIRECTOR OF PUBLIC WORKS: _____ DATE: _____<br>CHIEF, BUREAU OF ENGINEERING: _____ DATE: _____<br>CHIEF, BUREAU OF UTILITIES: _____ DATE: _____ | GREENMAN-PEDERSEN INC.<br>ENGINEERS/ARCHITECTS/PLANERS<br>LABEL: MARYLAND |  | BY: NO. _____ REVISION _____ DATE: _____            | 600' SCALE MAP NO. _____ BLOCK NO. _____        |  |                                       |





☉ LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | S37°03'07"E | 449.54'  |
| L-2  | S18°21'16"E | 40.99'   |
| L-3  | S34°29'54"E | 45.93'   |
| L-4  | S06°34'52"W | 46.42'   |
| L-5  | S11°11'42"E | 32.44'   |
| L-6  | S56°58'16"E | 31.67'   |

☉ CURVE DATA

| CURVE | RADIUS  | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|-------|---------|---------|---------|---------|-------------|-----------|
| C-1   | 100.00' | 7.39'   | 3.70'   | 7.39'   | N3°10'10"W  | 0°41'08"  |
| C-2   | 271.61' | 46.12'  | 49.60'  | 47.56'  | N26°42'11"W | 20°41'51" |
| C-3   | 50.00'  | 16.49'  | 8.32'   | 16.42'  | S25°48'10"E | 18°53'48" |
| C-4   | 198.14' | 142.06' | 74.24'  | 199.04' | N13°57'31"W | 41°04'46" |
| C-5   | 90.00'  | 15.91'  | 7.82'   | 15.45'  | S02°18'25"E | 17°46'34" |
| C-6   | 25.00'  | 19.97'  | 10.55'  | 19.45'  | S34°04'59"E | 45°46'34" |
| C-7   | 90.00'  | 72.84'  | 38.55'  | 70.87'  | N33°47'10"W | 46°22'12" |

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, BUREAU OF UTILITIES \_\_\_\_\_ DATE \_\_\_\_\_

CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, LAND DEVELOPMENT DIVISION \_\_\_\_\_ DATE \_\_\_\_\_

**spi**  
GREENMAN-PEDERSEN INC.  
ENGINEERS/ARCHITECTS/PLANNERS  
LAUREL, MARYLAND



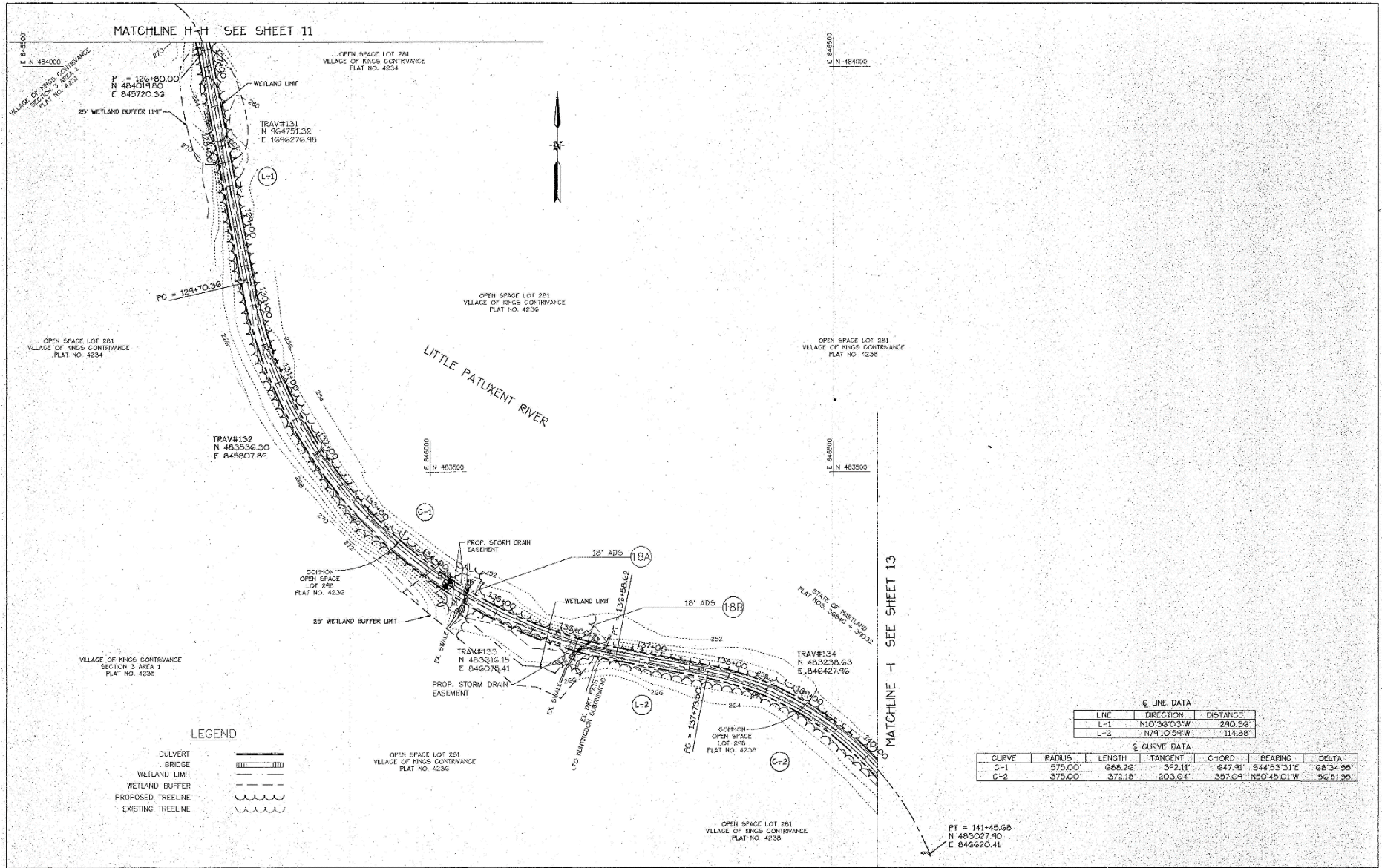
DES: KP  
 DRN: AAP/RAK  
 CHK: DJM  
 DATE: 3/3/94

BY: NO. \_\_\_\_\_ REVISION \_\_\_\_\_ DATE \_\_\_\_\_

**SITE PLAN**  
 STA 116+08.83 -- STA 126+80.00

**HOWARD COUNTY PATHWAY SYSTEM - PHASE 2**  
 CAPITAL PROJECT N-3906JJ  
 HOWARD COUNTY, MARYLAND

SCALE:  
 1"=50'  
 SHEET  
 11 OF 20



|   |      |  |  |                              |      |              |          |              |         |   |  |                  |
|---|------|--|--|------------------------------|------|--------------|----------|--------------|---------|---|--|------------------|
| <b>DEPARTMENT OF PUBLIC WORKS</b><br><b>HOWARD COUNTY, MARYLAND</b> |      | <br><b>GREENMAN-PEDERSEN INC.</b><br>ENGINEERS/ARCHITECTS/PLANNERS<br>LAUREL, MARYLAND |  | DES: KP                      |      |              |          |              |         | <b>SITE PLAN</b><br>STA 126+80.00 - STA 141+45.68 | <b>HOWARD COUNTY PATHWAY SYSTEM - PHASE 2</b><br>CAPITAL PROJECT N-3906JJ<br>HOWARD COUNTY, MARYLAND | SCALE:<br>1"=50' |
| DIRECTOR OF PUBLIC WORKS  | DATE |  |  | CHIEF, BUREAU OF ENGINEERING | DATE | DRN: AAP,RAK | CHK: DJM | DATE: 3/3/94 | BY: NO. |   |  | REVISION:        |

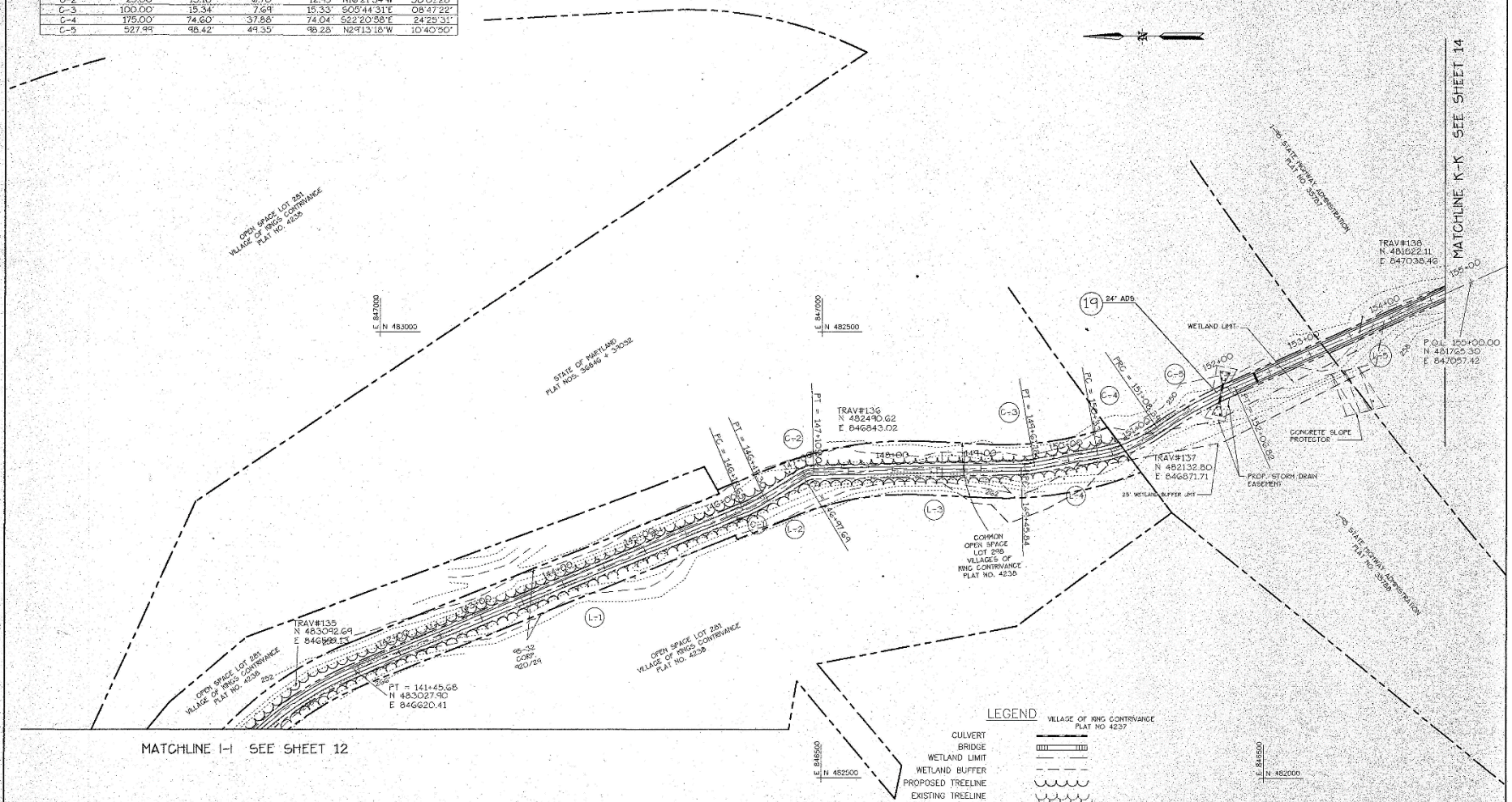
LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | N22°19'04"W | 473.97'  |
| L-2  | N31°22'38"W | 50.34'   |
| L-3  | S02°20'50"E | 239.08'  |
| L-4  | N10°06'12"W | 72.61'   |
| L-5  | N23°52'53"W | 336.15'  |

CURVE DATA

| CURVE | RADIUS  | LENGTH | TANGENT | CHORD  | BEARING     | DELTA     |
|-------|---------|--------|---------|--------|-------------|-----------|
| C-1   | 175.00' | 27.65' | 13.86'  | 27.63' | S26°50'41"E | 09°03'15" |
| C-2   | 25.00'  | 13.10' | 6.70'   | 12.95' | N16°21'34"W | 30°01'28" |
| C-3   | 100.00' | 18.34' | 7.64'   | 18.33' | S05°44'31"E | 08°47'22" |
| C-4   | 175.00' | 74.60' | 37.88'  | 74.04' | S22°20'38"E | 24°25'31" |
| C-5   | 527.94' | 98.42' | 49.35'  | 98.28' | N2°13'18"W  | 10°40'50" |

MARYLAND ROUTE 32  
PLAT NO. 55/54 TR83 33762



MATCHLINE I-I SEE SHEET 12

MATCHLINE K-K SEE SHEET 14

LEGEND

|  |   |
|--|---|
|  | VILLAGES OF RING CONTRIVANCE<br>FLAT NO. 4237 |
|  | CULVERT                                       |
|  | BRIDGE  |
|  | WETLAND LIMIT                                 |
|  | WETLAND BUFFER                                |
|  | PROPOSED TREE LINE                            |
|  | EXISTING TREE LINE                            |

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

|                            |      |                                  |      |
|----------------------------|------|----------------------------------|------|
| DIRECTOR OF PUBLIC WORKS   | DATE | CHIEF, BUREAU OF ENGINEERING     | DATE |
| CHIEF, BUREAU OF UTILITIES | DATE | CHIEF, LAND DEVELOPMENT DIVISION | DATE |

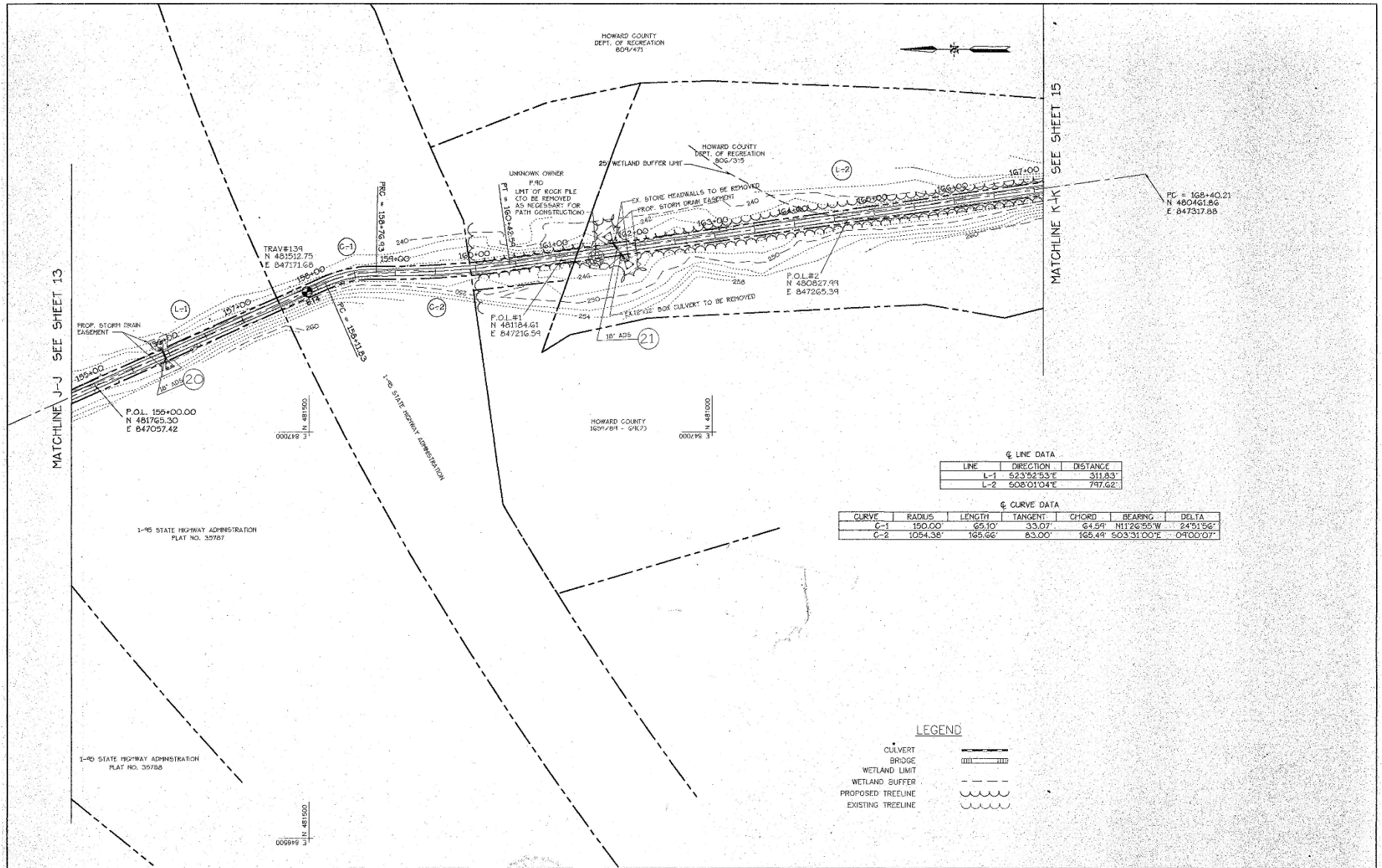
**spi**  
GREENMAN-PEDERSEN INC.  
ENGINEERS/ARCHITECTS/PLANNERS  
LAUREL, MARYLAND

|              |        |          |      |
|--------------|--------|----------|------|
| DES: KP      |        |          |      |
| DRN: AAP/RAK |        |          |      |
| CHK: DJM     |        |          |      |
| DATE: 3/3/94 | BY NO. | REVISION | DATE |

**SITE PLAN**  
STA 141+45.68 - STA 155+00.00

**HOWARD COUNTY PATHWAY SYSTEM - PHASE 2**  
CAPITAL PROJECT N-3906JJ  
HOWARD COUNTY, MARYLAND

SCALE  
1"=50'  
SHEET  
13 OF 29

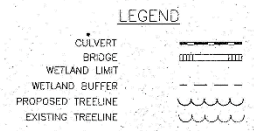


LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | S23°52'53"E | 311.83'  |
| L-2  | S08°01'04"E | 797.62'  |

CURVE DATA

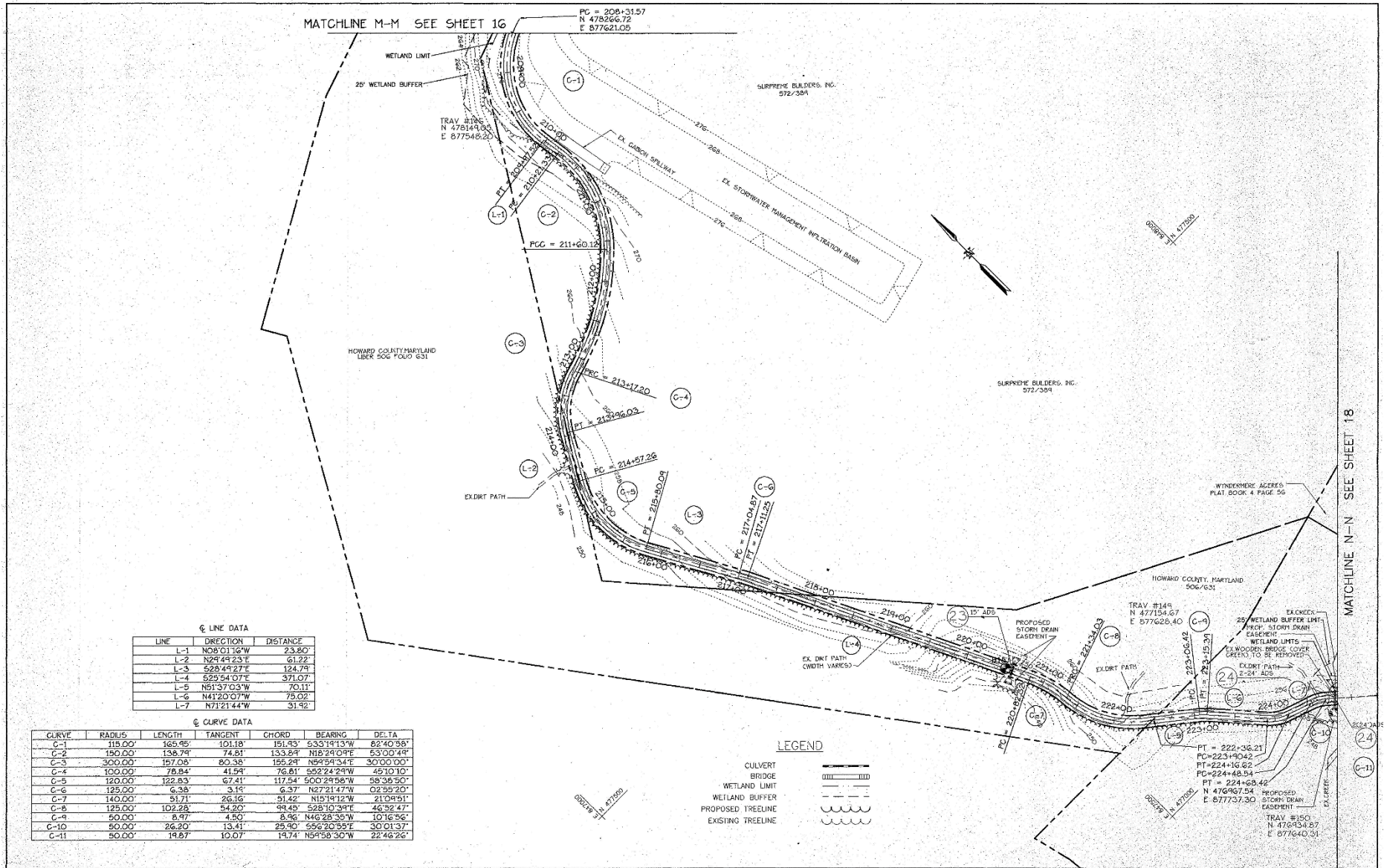
| CURVE | RADIUS   | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|-------|----------|---------|---------|---------|-------------|-----------|
| C-1   | 150.00'  | 65.10'  | 33.07'  | 64.59'  | N112°55'W   | 24°51'56" |
| C-2   | 1054.38' | 165.66' | 83.00'  | 166.44' | S03°31'00"E | 0°40'07"  |



|   |  |  |  |  |   |   |
|---|--|--|--|--|---|---|
| <p>DEPARTMENT OF PUBLIC WORKS<br/>HOWARD COUNTY, MARYLAND</p> <p>DIRECTOR OF PUBLIC WORKS DATE _____</p> <p>CHIEF, BUREAU OF SURVEYS DATE _____</p> <p>CHIEF, BUREAU OF ENGINEERING DATE _____</p> <p>CHIEF, LAND DEVELOPMENT DIVISION DATE _____</p> | <p><b>spi</b></p> <p>GREENMAN - PEDERSEN INC.<br/>ENGINEERS/ARCHITECTS/PLANNERS<br/>LAUREL, MARYLAND</p> |  | <p>DES: KP</p> <p>DRN: AAP,RAK</p> <p>CHK: DJM</p> <p>DATE: 3/3/94</p> | <p><b>SITE PLAN</b></p> <p>STA 155+00.00 - STA 168+40.21</p> | <p><b>HOWARD COUNTY PATHWAY SYSTEM - PHASE 2</b></p> <p>CAPITAL PROJECT N-3906JJ</p> <p>HOWARD COUNTY, MARYLAND</p> | <p>SCALE<br/>1"=50'</p> <p>SHEET<br/>14 OF 20</p> |
|---|--|--|--|--|---|---|





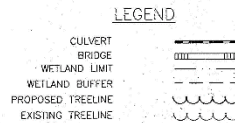


LINE DATA

| LINE | DIRECTION   | DISTANCE |
|------|-------------|----------|
| L-1  | N08°01'16"W | 23.80'   |
| L-2  | N29°49'23"E | 61.22'   |
| L-3  | S28°49'27"E | 124.74'  |
| L-4  | S29°54'07"E | 371.07'  |
| L-5  | N51°57'03"W | 70.11'   |
| L-6  | N41°20'07"W | 78.02'   |
| L-7  | N71°21'44"W | 31.92'   |

CURVE DATA

| CURVE | RADIUS  | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|-------|---------|---------|---------|---------|-------------|-----------|
| C-1   | 119.00' | 165.45' | 101.18' | 151.43' | S33°14'13"W | 82°40'58" |
| C-2   | 150.00' | 138.74' | 74.81'  | 133.84' | N18°24'04"E | 53°00'48" |
| C-3   | 300.00' | 197.06' | 80.38'  | 155.28' | N52°54'34"E | 30°00'00" |
| C-4   | 100.00' | 78.84'  | 41.94'  | 76.61'  | S52°24'24"W | 49°10'10" |
| C-5   | 120.00' | 122.83' | 67.41'  | 117.54' | S00°24'58"W | 58°39'50" |
| C-6   | 125.00' | 6.38'   | 3.14'   | 6.37'   | N27°21'47"W | 02°59'20" |
| C-7   | 140.00' | 51.71'  | 26.16'  | 51.42'  | N15°14'12"W | 21°04'51" |
| C-8   | 125.00' | 102.28' | 54.20'  | 99.45'  | S28°10'34"E | 46°52'47" |
| C-9   | 50.00'  | 8.47'   | 4.50'   | 8.56'   | N46°28'35"W | 10°16'52" |
| C-10  | 50.00'  | 26.20'  | 13.41'  | 25.90'  | S52°20'35"E | 30°01'37" |
| C-11  | 50.00'  | 14.87'  | 10.07'  | 14.74'  | N54°58'30"W | 22°46'26" |



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHIEF, BUREAU OF ENGINEERING: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHIEF, BUREAU OF UTILITIES: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHIEF, LAND DEVELOPMENT DIVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

**gpi**  
GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS  
LAUREL, MARYLAND

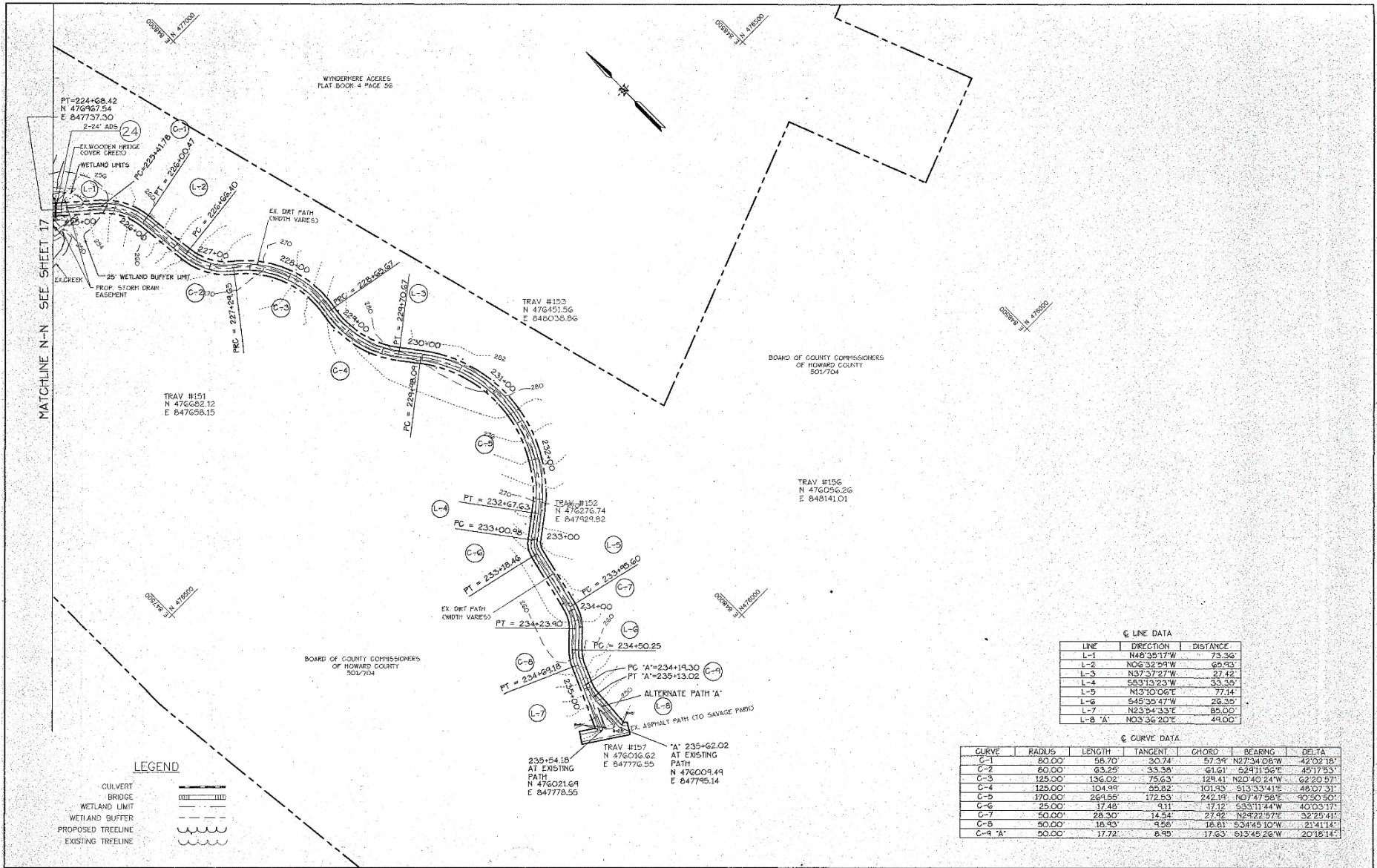


DES. KP  
 DRN. AAP/BAK  
 CHK. DJM  
 DATE: 3/3/04 BY: NO. REVISION DATE 800' SCALE MAP NO. BLOCK NO.

**SITE PLAN**  
 STA 208+31.57 - STA 224+68.42

**HOWARD COUNTY PATHWAY SYSTEM - PHASE 2**  
 CAPITAL PROJECT N-3906JJ  
 HOWARD COUNTY, MARYLAND

SCALE: 1"=50'  
 SHEET 17 OF 20



LINE DATA

| LINE    | DIRECTION   | DISTANCE |
|---------|-------------|----------|
| L-1     | N48°35'17"W | 73.36'   |
| L-2     | N06°32'59"W | 65.93'   |
| L-3     | N37°37'27"W | 27.42'   |
| L-4     | S53°13'23"W | 53.35'   |
| L-5     | N13°10'06"E | 77.14'   |
| L-6     | S45°35'47"W | 26.35'   |
| L-7     | N23°38'33"E | 85.00'   |
| L-8 'A' | N03°36'20"E | 44.06'   |

CURVE DATA

| CURVE   | RADIUS  | LENGTH  | TANGENT | CHORD   | BEARING     | DELTA     |
|---------|---------|---------|---------|---------|-------------|-----------|
| C-1     | 80.00'  | 58.70'  | 30.74'  | 57.39'  | N27°34'08"W | 42°02'18" |
| C-2     | 80.00'  | 63.25'  | 33.38'  | 61.61'  | S24°11'36"E | 45°17'53" |
| C-3     | 125.00' | 136.02' | 75.63'  | 128.41' | N20°40'24"W | 62°20'57" |
| C-4     | 125.00' | 104.99' | 55.82'  | 101.93' | S13°33'41"E | 48°07'31" |
| C-5     | 170.00' | 269.55' | 172.53' | 242.19' | N07°47'58"E | 90°50'50" |
| C-6     | 25.00'  | 17.48'  | 9.11'   | 17.12'  | S53°11'44"W | 40°03'17" |
| C-7     | 50.00'  | 28.30'  | 14.54'  | 27.45'  | N42°22'57"E | 32°25'41" |
| C-8     | 50.00'  | 16.43'  | 8.56'   | 16.81'  | S34°45'10"W | 21°41'14" |
| C-9 'A' | 50.00'  | 17.72'  | 8.95'   | 17.63'  | S13°45'26"W | 20°18'14" |

**LEGEND**

- CULVERT
- BRIDGE
- WETLAND LIMIT
- WETLAND BUFFER
- PROPOSED TREELINE
- EXISTING TREELINE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, BUREAU OF UTILITIES \_\_\_\_\_ DATE \_\_\_\_\_

CHIEF, BUREAU OF ENGINEERING \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, LAND DEVELOPMENT DIVISION \_\_\_\_\_ DATE \_\_\_\_\_

**spi**  
GREENMAN-PEDERSEN INC.  
ENGINEERS/ARCHITECTS/PLANNERS  
LAUREL, MARYLAND



DES: KP  
 DRN: ANP/BAK  
 CHK: QJM  
 DATE: 3/3/19

BY: \_\_\_\_\_ NO. \_\_\_\_\_ REVISION \_\_\_\_\_ DATE \_\_\_\_\_

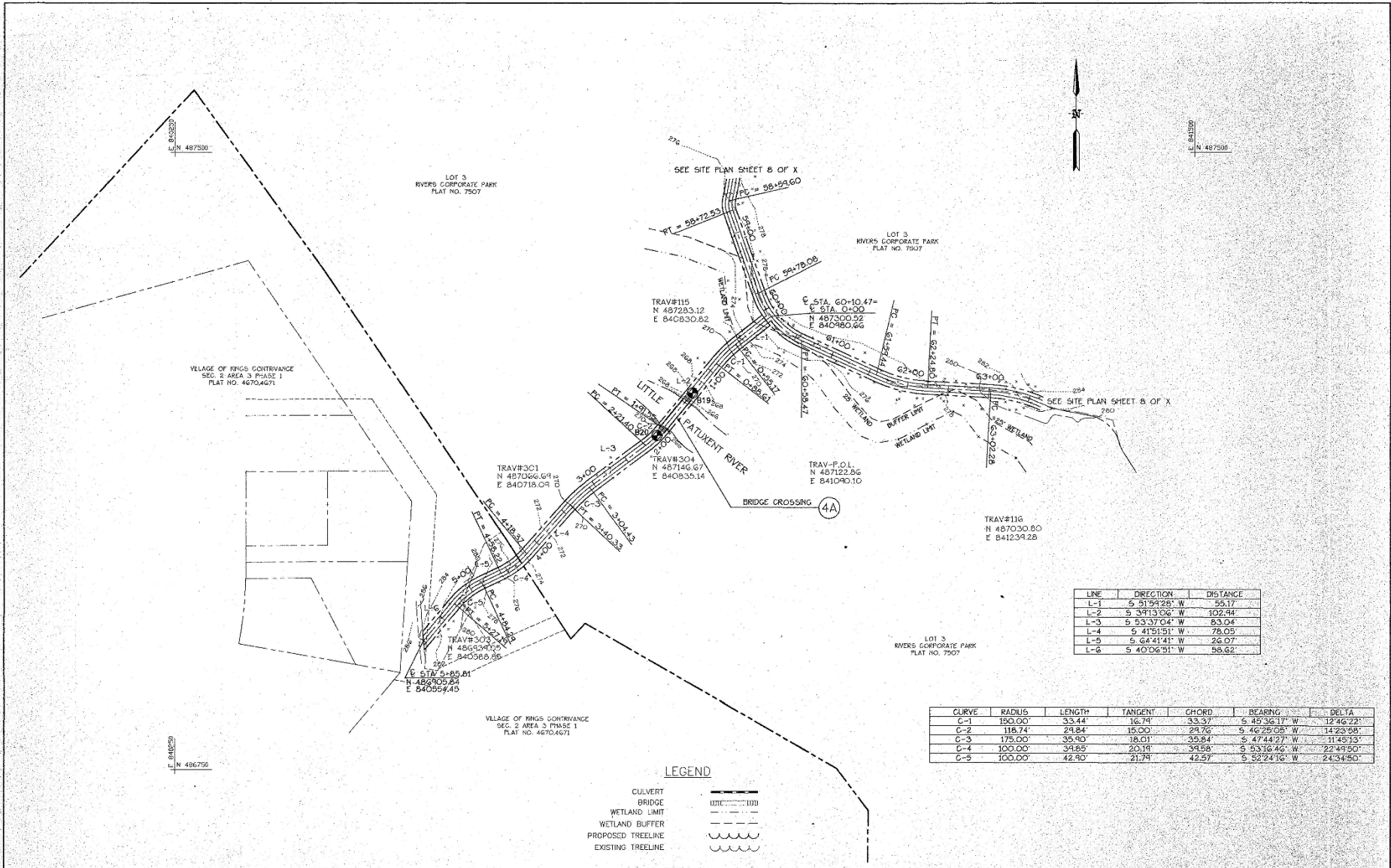
**SITE PLAN**  
 STA 224+68.42 - STA 235+54.17

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**HOWARD COUNTY PATHWAY SYSTEM - PHASE 2**  
 CAPITAL PROJECT N-3906JJ  
 HOWARD COUNTY, MARYLAND

SCALE  
 1" = 50'

SHEET  
 18 of 20



| LINE | DIRECTION     | DISTANCE |
|------|---------------|----------|
| L-1  | S 91°19'28" W | 55.17'   |
| L-2  | S 39°13'06" W | 102.44'  |
| L-3  | S 53°37'04" W | 63.04'   |
| L-4  | S 47°51'51" W | 78.05'   |
| L-5  | S 64°41'41" W | 26.07'   |
| L-6  | S 40°06'51" W | 58.62'   |

| CURVE | RADIUS  | LENGTH | TANGENT | CHORD  | BEARING       | DELTA      |
|-------|---------|--------|---------|--------|---------------|------------|
| C-1   | 190.00' | 33.44' | 16.74'  | 33.37' | S 45°36'17" W | 124°22'00" |
| C-2   | 116.74' | 24.84' | 18.00'  | 28.76' | S 46°25'05" W | 114°23'58" |
| C-3   | 178.00' | 35.90' | 18.01'  | 35.84' | S 47°44'27" W | 114°31'53" |
| C-4   | 100.00' | 34.25' | 20.18'  | 34.58' | S 53°16'46" W | 224°49'50" |
| C-5   | 100.00' | 42.90' | 21.74'  | 42.57' | S 52°24'16" W | 243°34'50" |

**LEGEND**

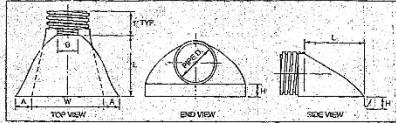
- CULVERT
- BRIDGE
- WETLAND LIMIT
- WETLAND BUFFER
- PROPOSED TREELINE
- EXISTING TREELINE

|  |   |  |  |  |  |                                      |
|--|---|--|--|--|--|--------------------------------------|
| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND  | <br><b>gpi</b><br>GREENMAN-PEDERSEN INC.<br>ENGINEERS/ARCHITECTS/PLANNERS<br>LAUREL, MARYLAND |  | DES: KP<br>DRN: C.NER<br>CHK: DJM<br>DATE: 1/3/05      | <b>SITE PLAN</b><br>STA 0+00 - STA 5+85.81 | <b>HOWARD COUNTY PATHWAY SYSTEM - PHASE 2</b><br>CAPITAL PROJECT N-3906JJ<br>HOWARD COUNTY, MARYLAND | SCALE<br>1"=50'<br>SHEET<br>19 OF 20 |
| DIRECTOR OF PUBLIC WORKS: _____ DATE: _____<br>CHIEF, BUREAU OF ENGINEERING: _____ DATE: _____<br>CHIEF, BUREAU OF UTILITIES: _____ DATE: _____<br>CHIEF, LAND DEVELOPMENT DIVISION: _____ DATE: _____ |   |  | BY NO. _____ DATE: _____<br>REVISION _____ DATE: _____ | 500' SCALE MAP NO. _____ BLOCK NO. _____   |  |                                      |

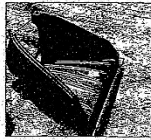
| Str. No. | Inv. A | Inv. B | DIAMETER  | SLOPE  | K   | R/W        | N |
|----------|--------|--------|-----------|--------|-----|------------|---|
| 1        | 288.01 | 286.95 | 15"       | 5.03%  | 20' | 6'8"       | 1 |
| 2        | 282.58 | 281.68 | 24"       | 5.00%  | 18' | 10'12"     | 1 |
| 4        | 275.54 | 275.16 | 18"       | 2.11%  | 18' | 9.5'11"    | 1 |
| 7A       | 277.64 | 271.49 | 18"       | 0.75%  | 22' | 7.0'10.0"  | 1 |
| 8        | 269.91 | 269.04 | 18"       | 3.35%  | 25' | 9.5'11.0"  | 1 |
| 9        | 266.45 | 266.18 | 15"       | 1.50%  | 18' | 9.0'10.5"  | 1 |
| 10       | 262.82 | 262.58 | 15"       | 1.33%  | 18' | 12.0'16.0" | 1 |
| 11       | 268.05 | 266.97 | 24"       | 2.92%  | 37' | 16.0'18.0" | 1 |
| 12*      | 262.40 | 261.40 | 60" X 72" | 4.35%  | 23' | 30.0'42.0" | 2 |
| 13       | 265.28 | 263.41 | 15"       | 4.25%  | 44' | 13.0'14.5" | 1 |
| 14       | 266.0  | 265.14 | 30"       | 3.44%  | 30' | 16.0'18.5" | 1 |
| 16       | 267.64 | 266.36 | 15"       | 4.74%  | 27' | 9.0'10.0"  | 1 |
| 18A      | 256.38 | 256.00 | 18"       | 4.39%  | 20' | 7.0'10.0"  | 1 |
| 18B      | 259.30 | 256.73 | 18"       | 11.18% | 23' | 7.0'10.0"  | 1 |
| 19       | 253.50 | 250.90 | 24"       | 10.8%  | 24' | 10.0'12.0" | 1 |
| 20       | 242.66 | 242.18 | 18"       | 4.00%  | 18' | 10.0'11.5" | 1 |
| 21       | 243.31 | 242.82 | 18"       | 1.88%  | 26' | 9.5'11.0"  | 1 |
| 22       | 234.19 | 233.71 | 15"       | 2.00%  | 24' | 9.0'20.5"  | 2 |
| 23       | 244.45 | 244.05 | 15"       | 2.22%  | 18' | 9.0'10.5"  | 1 |
| 24       | 253.05 | 252.51 | 24"       | 3.00%  | 18' | 10.0'24.0" | 2 |

- NOTES:
- Inverts are to be adjusted as deemed necessary by the Contractor to match existing grades.
  - All storm drain culverts to be ADS-N12 unless otherwise noted.
  - Storm drain culvert #12 to be RCP (shop drawings to be supplied by the Contractor and approved by Howard County DPW).
  - See detail this sheet.

**ADS End Section Dimensions**



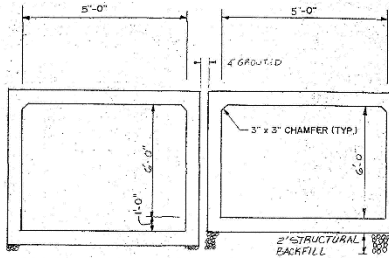
| Pipe Diameter | Part No. | A (ft) | B MAX | H (ft) | L (ft) | W (ft) |
|---------------|----------|--------|-------|--------|--------|--------|
| 12" and 15"   | E210 NP  | 6.5    | 10    | 8.5    | 21     | 25     |
| 18"           | F210 NP  | 7.5    | 15    | 6.5    | 22     | 35     |
| 24"           | G210 NP  | 7.5    | 18    | 6.5    | 25     | 45     |
| 30"           | H210 NP  | 10.5   | NA    | 7.0    | 23     | 55     |
| 36"           | I210 NP  | 10.5   | NA    | 7.0    | 23     | 65     |



**ADS END SECTION DETAIL**

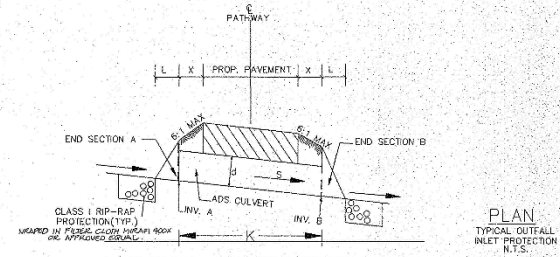
| STR. No. | END SECTION A STATION | OFF-SET | END SECTION B STATION | OFFSET |
|----------|-----------------------|---------|-----------------------|--------|
| 1        | 0+64                  | 6'      | 0+70                  | 6'     |
| 2        | 2+05                  | 6'      | 2+05                  | 6'     |
| 4        | 12+65                 | 6'      | 12+67                 | 6'     |
| 7A       | 31+24                 | 9'      | 31+37                 | 9'     |
| 8        | 47+47                 | 7'      | 47+28                 | 8'     |
| 9        | 68+17                 | 6'      | 68-20                 | 6'     |
| 10       | 71+14                 | 6'      | 71+13                 | 6'     |
| 11       | 88+42                 | 17'     | 88+39                 | 20'    |
| 12       | 95+16                 | 11'     | 95+23                 | 12'    |
| 13       | 97+76                 | 22'     | 97+73                 | 22'    |
| 14       | 101+30                | 6'      | 101+36                | 18'    |
| 16       | 108+56                | 11'     | 108+52                | 16'    |
| 18A      | 134+60                | 9'      | 134+55                | 11'    |
| 18B      | 136+10                | 9'      | 136+24                | 9'     |
| 19       | 151+83                | 10'     | 151+97                | 10'    |
| 20       | 155+94                | 5'      | 155+94                | 6'     |
| 21       | 161+85                | 13'     | 161+73                | 9'     |
| 22       | 180+89                | 11'     | 181+04                | 10'    |
| 23       | 220+58                | 6'      | 220+58                | 6'     |
| 24       |                       |         |                       |        |

- NOTES:
- All stations and offsets are within + or - 3'. Adjustments to be made in the field as necessary to accommodate existing conditions.



**TYPICAL SECTION STR. NO. 12 PRECAST TWIN BOX CULVERTS**  
NOT TO SCALE

- NOTES:
- CONTRACTOR SHALL SUBMIT DESIGN COMPUTATIONS AND SHOP DRAWINGS DULY SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER CURRENTLY PRACTICING IN THE STATE OF MARYLAND, AND HAVE THEM APPROVED BY THE HOWARD COUNTY DPW.
  - A 7" WALL THICKNESS HAS BEEN ASSUMED. CONTRACTOR HAS THE OPTION TO USE A LARGER WALL THICKNESS PROVIDED THE AFFECTED COMPONENTS OF THE CULVERT ARE REDESIGNED AND APPROVED THROUGH THE SHOP DRAWINGS REVIEW PROCESS. END SECTIONS DESIGN TO BE PART OF THE CULVERT DESIGN.

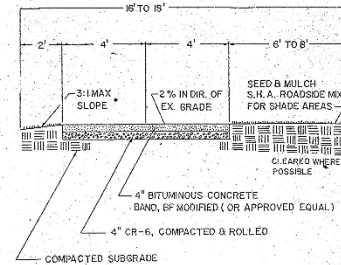


**TYPICAL CULVERT PROFILE**

N.T.S.

- NOT TO SCALE
- INV. A: UPSTREAM INV. OF CULVERT
  - INV. B: DOWNSTREAM INV. OF CULVERT
  - S: SLOPE OF CULVERT
  - D: DIAMETER OF CULVERT
  - L: LENGTH OF END SECTION (SEE DETAIL THIS SHEET)
  - N: NO. OF PARALLEL CULVERTS
  - K: LENGTH OF CULVERT
  - X: DISTANCE FROM EDGE OF PAVEMENT TO END OF PIPE

- NOTES:
- CONTRACTOR TO INSURE 1" OF COVER (MIN.) FOR ALL CULVERTS.
  - CONTRACTOR TO INSURE POSITIVE DRAINAGE TO ALL INLET STRUCTURES.



**TYPICAL SECTION**  
NO SCALE

**SEQUENCE OF CONSTRUCTION**

- Contact the Howard County Sediment Control Inspector 48 hours prior to start of work. Inform him of the starting date.
- Stabilized construction entrances to be installed at all access points to the path.
- Contractor to construct the path in 100 ft. segments. Each segment to be stabilized immediately and prior to the start of the next segment.
- Wood chips from cleared trees to be used to stabilize the disturbed areas in the wooded sections of the path. Seed, mulch and cortex to be used on the sections of the path exposed to sunlight.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE CHIEF, BUREAU OF ENGINEERING DATE

**spi**

GRIEGLMAN-PEDERSEN INC.  
ENGINEERS/ARCHITECTS/PLANNERS  
LAUREL, MARYLAND



|                |        |
|----------------|--------|
| DES: A.T.      |        |
| DRN: A.T.      |        |
| CHK: S.B.      |        |
| DATE: 12/23/19 | BY: NO |
| REVISION:      |        |

DETAIL SHEET

HOWARD COUNTY PATHWAY  
SYSTEM - PHASE 2  
CAPITAL PROJECT N-3906JJ  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 22 OF 20

HCPS16.DWG