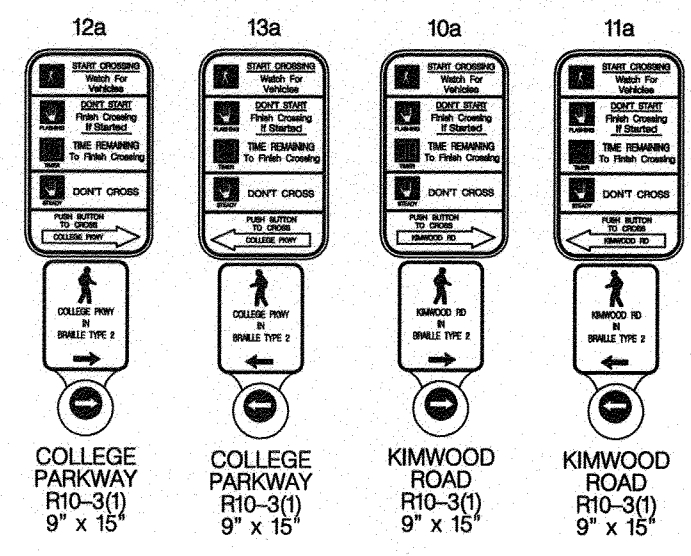
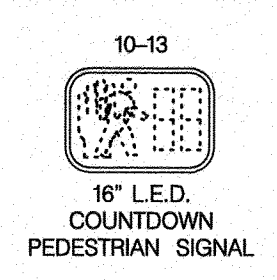


COLLEGE PARKWAY IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION

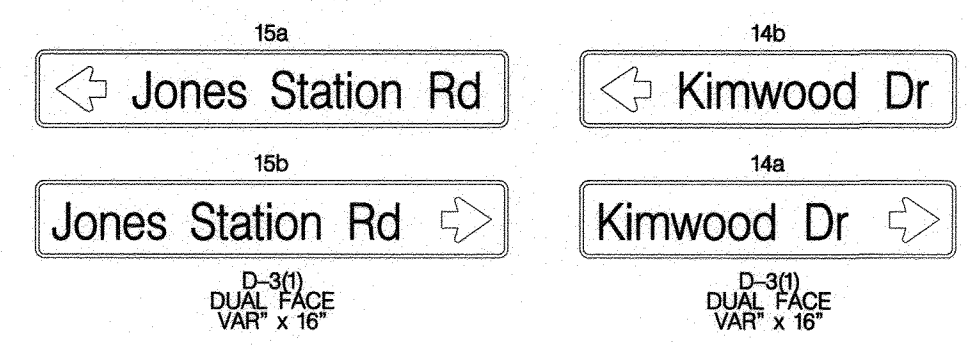
PROPOSED APS PEDESTRIAN PUSHBUTTONS AND SIGNS



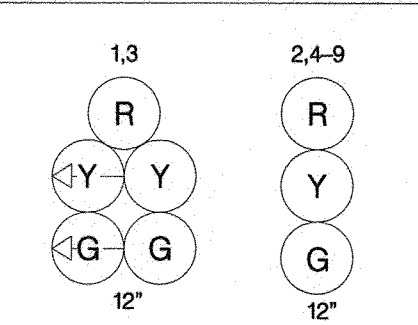
PROPOSED COUNTDOWN PEDESTRIAN SIGNAL HEADS



EXISTING SIGNS



EXISTING BLACKFACE L.E.D. TRAFFIC SIGNAL HEADS



PHASE CHART

NON-CONFLICTING PHASES MAY TIME CONCURRENTLY CL = CLEARANCE TO CONFLICTING PHASE	NOT USED								NOT USED							
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
1	GA	YA	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
2	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
3	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
4	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
5,6	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
7,8,9	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
10,11	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
12,13	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
NON-CONFLICT PHASE	5.6	5.6			8	12	12					4				
CONFLICT PHASE	2.4,8	1.4,8			1.2,5,6	4,6,8	4,5,8					1.2,5,6				

EQUIPMENT PURCHASE INFORMATION

- *CHAPEL HILL* TRAFFIC SIGNAL HEADS — TRAFFIC PARTS, TEXAS CONTACT MS. JONI FEXER 1-800-345-6329
- L.E.D.'S AND PEDESTRIAN COUNTDOWN SIGNALS — J.O. HERBERT COMPANY OF MIDLOTHIAN, VA CONTACT MR. JACK HERBERT (804)763-6480
- TRAFICON EQUIPMENT — CONTROL TECHNOLOGIES CONTACT MR. JIM LAMPE (703) 595-2980
- EAGLE EQUIPMENT — MOBOTREX CONTACT MR. WILLIAM LAMIE (804) 893-8413
- PHILIPS HADCO RX2 LEDGINE LED — BGE OUTDOOR LIGHTING CONTACT MR. NICK COSTA (410)470-8413

ANNE ARUNDEL COUNTY CONTACTS

- DESIGN CONTACT — MR. BO ZHOU, P.E., PTOE (410) 222 7331
- CONSTRUCTION CONTACT — MR. ERIC WINKELMEYER (410) 222-1940

CONSTRUCTION DETAILS

- A. INSTALL 2 IN. SCHEDULE 80, RIGID PVC, ELECTRICAL CONDUIT - TRENCHED
- B. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE
- C. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR STOP BAR LINE
- D. INSTALL 10 FT. BREAKAWAY PEDESTAL POLE ON MODIFIED BASE WITH PEDESTRIAN SIGNAL HEAD, PUSHBUTTON AND SIGN (NOTES: INSTALL 1-2 IN. SCHEDULE 80, RIGID PVC, 90 DEGREE CONDUIT BEND. SEE STD. MD-801.01-01 FOR FOUNDATION DETAIL)
- E. REMOVE EXISTING PAVEMENT MARKING LINE
- F. USE EXISTING CABINET AND CONTROLLER
- G. USE EXISTING HANDHOLE
- H. RELOCATE EXISTING SIGN AS SHOWN
- I. USE EXISTING CONDUIT
- J. USE EXISTING SPAN WIRE
- K. USE EXISTING SIGNAL STRAIN POLE

GENERAL NOTES

- THE UTILITIES ON THE CONSTRUCTION PLAN ARE SCHEMATIC ONLY AND ARE NOT TO BE CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN THE VICINITY OF THE UTILITIES. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AND OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE PLANS. MISS UTILITY AND ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING DIVISION 410-222-7331.
- 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 CLEARANCE AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- THE LOCATION OF THE PROPOSED GEOMETRICS MUST BE CONFIRMED PRIOR TO THE INSTALLATION OF SIGNAL EQUIPMENT. ADEQUATE CLEARANCE MUST BE MAINTAINED BETWEEN SIGNAL EQUIPMENT AND AERIAL UTILITY LINES.
- CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIAL (MDOT SHA JULY 2020) AND THE ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS AND DETAILS, 2001, AND ALL AMENDMENTS TO EACH SPECIFICATION.
- ALL NEW SIGNAL HEADS SHALL BE SECURELY WRAPPED AND OR BAGGED BY THE CONTRACTOR PRIOR TO THE SIGNAL BEING PLACED IN SERVICE.
- ALL POLE, SIGNAL HEAD, AND DETECTOR LOCATIONS ARE TO BE MARKED IN THE FIELD AND APPROVED BY THE TRAFFIC ENGINEERING DIVISION PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL FURNISH THREE (3) COPIES OF THE AS-BUILT PLANS TO THE TRAFFIC ENGINEERING DIVISION.
- THE SIGNAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PAVEMENT MARKINGS CALLED OUT TO BE INSTALLED ON THE PLAN.
- ADEQUATE CLEARANCE MUST BE MAINTAINED BETWEEN SIGNAL EQUIPMENT AND AERIAL UTILITY LINES.

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE MODIFICATION OF AN EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF COLLEGE PARKWAY AND KIMWOOD ROAD / JONES STATION ROAD IN ANNE ARUNDEL COUNTY. COLLEGE PARKWAY IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULLY-ACTUATED MODE WITH EXCLUSIVE-PERMISSIVE LEFT TURN PHASES FOR BOTH APPROACHES OF COLLEGE PARKWAY. A CONCURRENT PEDESTRIAN PHASE TO CROSS KIMWOOD ROAD AND AN ALTERNATE PEDESTRIAN PHASE TO CROSS THE WEST LEG OF COLLEGE PARKWAY.

CONTROLLER REQUIREMENTS

THE EXISTING EIGHT-PHASE, FULLY-ACTUATED CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED.

EQUIPMENT LIST

EQUIPMENT TO BE FURNISHED AND /OR INSTALLED BY CONTRACTOR. ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED AND APPROVED BY ANNE ARUNDEL COUNTY PRIOR TO INSTALLATION.

QUANTITY	DESCRIPTION
LS	MAINTENANCE OF TRAFFIC
4 CY	TEST PIT EXCAVATION
275 LF	12 IN. WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
1 CY	CONCRETE FOR SIGNAL FOUNDATION
3 EA	THIRD PARTY CONCRETE TESTING
120 LF	NO.6 AWG STRANDED BARE COPPER GROUND WIRE
120 LF	2 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
1 EA	RELOCATE EXISTING GROUND MOUNTED SIGN
4 EA	10 FT. BREAKAWAY PEDESTAL POLE
1 EA	GROUND ROD - 3 / 4 IN. DIAMETER X 10 FT. LENGTH
1105 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO.14 AWG)
1125 LF	ELECTRICAL CABLE - 3 CONDUCTOR (NO.14 AWG)
4 EA	POLARA BULLDOG PEDESTRIAN PUSHBUTTON WITH RAISED ARROW AND SIGN
4 EA	16 IN. COUNTDOWN PEDESTRIAN SIGNAL HEAD - POLE MOUNT
1 EA	POLARA CCU

APS PEDESTRIAN SIGNAL NOTES

- PUSHBUTTONS ARE TO BE LOCATED SO THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM THE FACE OF THE PUSHBUTTON TO THE FACE OF THE PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.08 + 4E.10 AND FIG. 4E-3 + 4E-4 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATION UNTIL A DESIGN WAIVER IS OBTAINED AND APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- ALL APS CENTRAL CONTROL UNITS SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR PROGRAMMING AND TESTING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7650 TO COORDINATE.

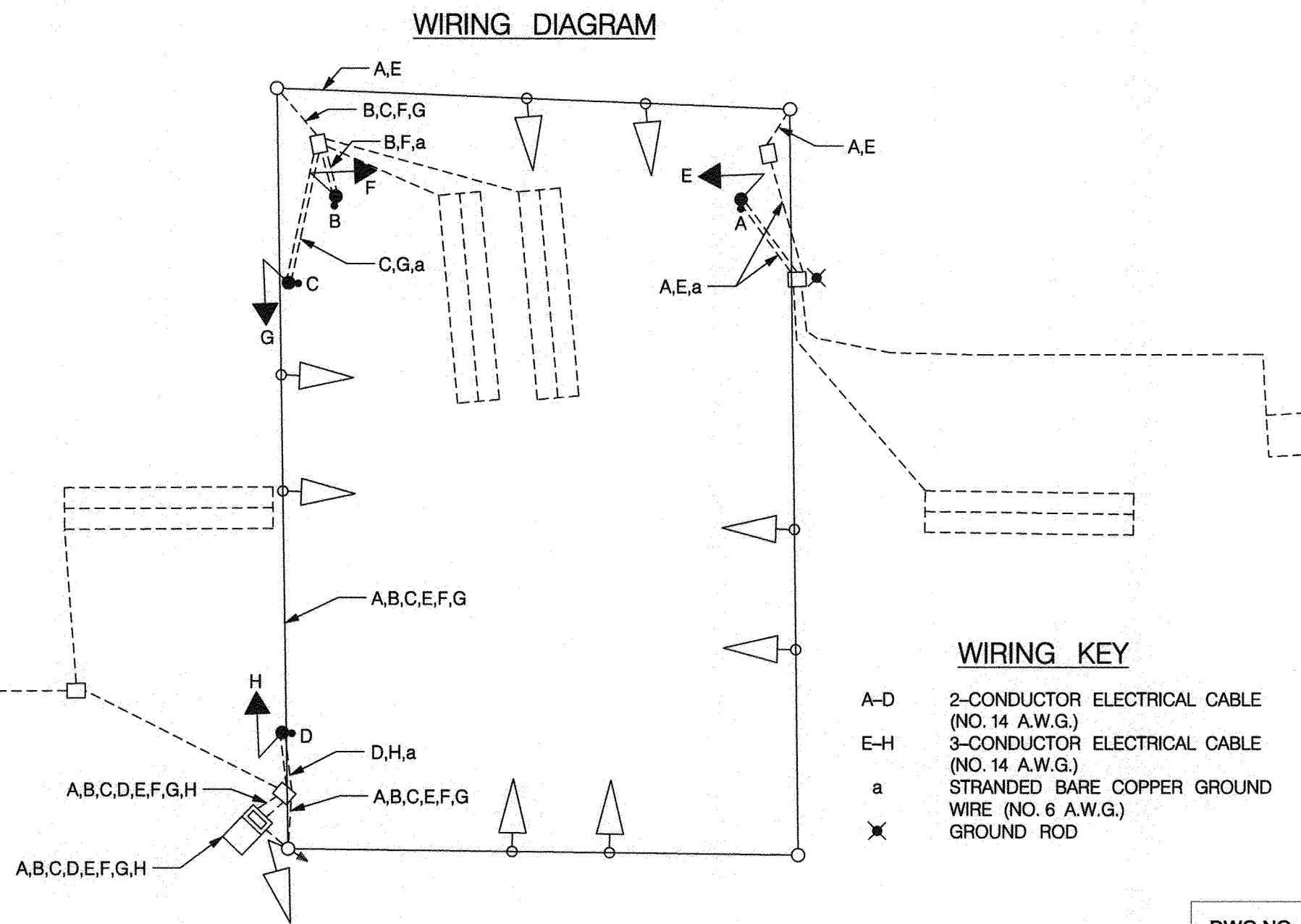
APS NOTES

- TO CROSS COLLEGE PARKWAY
- WHEN PEDESTRIAN LOCATES AND PASSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE "WAIT TO CROSS COLLEGE PARKWAY AT KIMWOOD, WAIT."
 - WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
- TO CROSS KIMWOOD ROAD
- WHEN PEDESTRIAN LOCATES AND PASSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE "WAIT TO CROSS KIMWOOD AT COLLEGE PARKWAY, WAIT."
 - WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

JONES STATION ROAD

Professional Certification: I, James Kyle Schmidt, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 (410) 760-2911
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 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM



DWG NO: DD13E

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97160

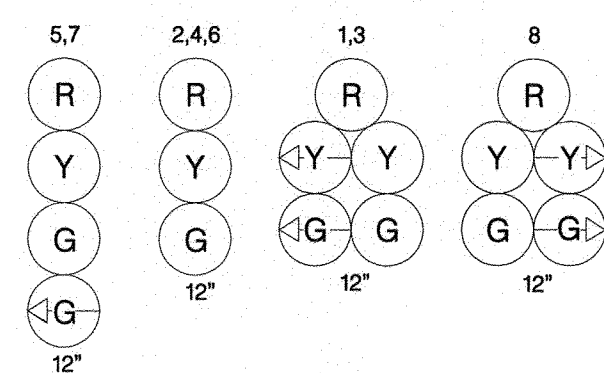
APPROVED	DATE	APPROVED	DATE	SCALE:	1" = 20'
<i>[Signature]</i>	5/16/21	<i>[Signature]</i>	4/15/21	DRAWN BY:	A. M. ROSEN
CHEF ENGINEER		PROJECT MANAGER		CHECKED BY:	J. K. SCHMID
APPROVAL	DATE	APPROVED	DATE	SHEET	92 of 137
<i>[Signature]</i>	4/16/21	<i>[Signature]</i>	4/16/21	PROJECT #:	PS04104
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		PROPOSAL #:	

TRAFFIC SIGNAL PLAN
COLLEGE PARKWAY & KIMWOOD ROAD
/JONES STATION ROAD
 TAX MAP 32.36 AND 40
 ARNOLD, MD ZIP CODE 2102 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

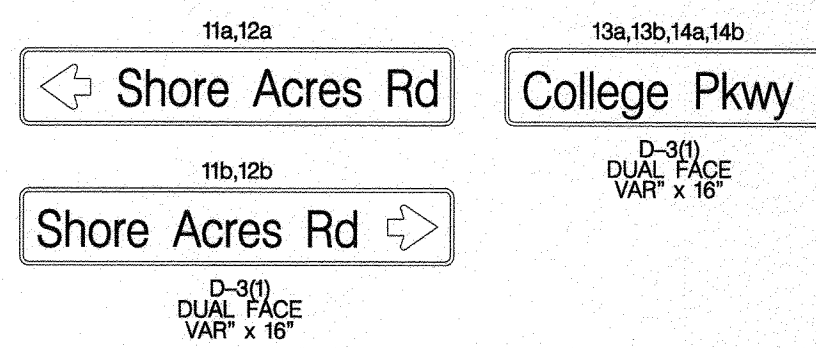
M:\34021\3489\SIGNAL\College Hwy @ Kimwood Dr\Kimwood Rd.dgn
 Monday, March 22, 2021 4:03:08 PM



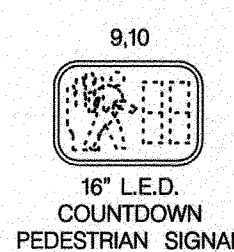
EXISTING BLACKFACE L.E.D. TRAFFIC SIGNAL HEADS



EXISTING SIGNS



PROPOSED COUNTDOWN PEDESTRIAN SIGNAL HEADS



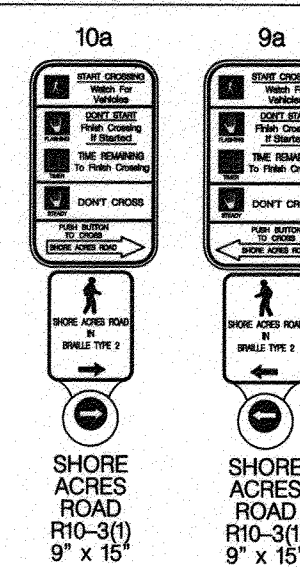
EXISTING VIDEO DETECTION CAMERAS



PROPOSED VIDEO DETECTION CAMERA



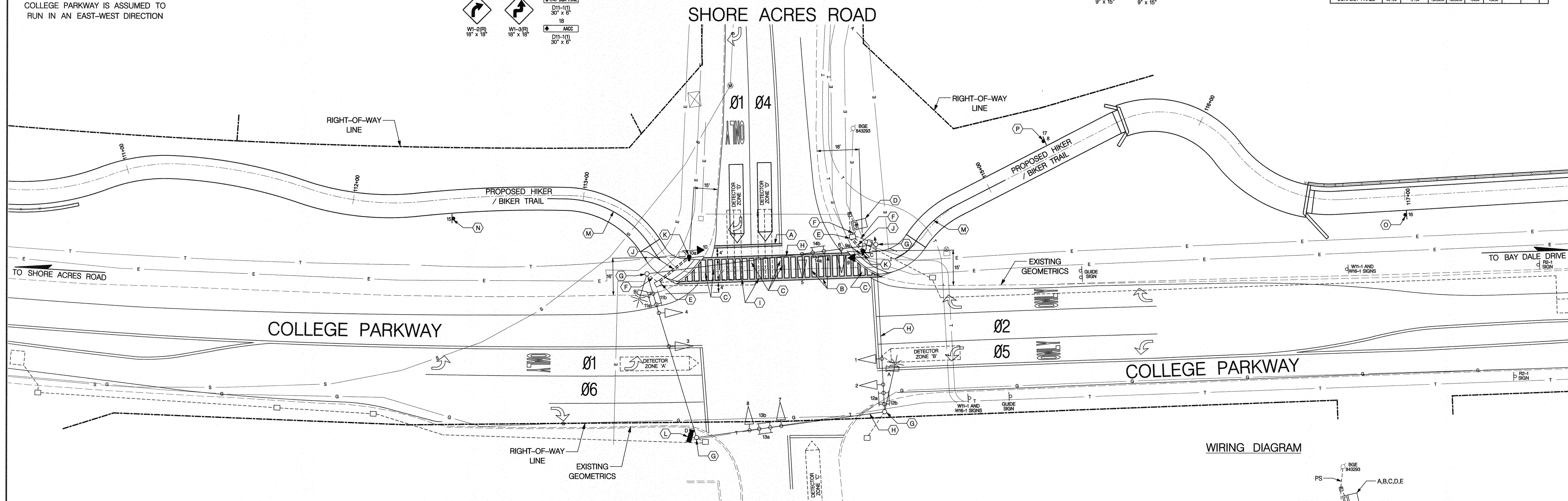
PROPOSED APS PEDESTRIAN PUSHBUTTONS AND SIGNS



PHASE CHART

SIGNAL NUMBER	PHASES								NOT USED	FLASH	
	Ø1	CL	Ø2	PD	CL	Ø3	CL	Ø4			
1	GA	YA	R	R	R	R	R	R	R	Y	Y
2	R	R	R	R	R	R	R	R	R	G	Y
3	R	R	G	Y	R	R	R	R	GA	YA	R
4	R	R	G	Y	R	R	R	R	R	R	Y
5	R	R	R	R	G	Y	R	R	R	R	R
6	R	R	R	R	G	Y	R	R	R	R	R
7	R	R	R	R	R	R	R	R	G	Y	R
8	GA	YA	R	R	R	R	R	R	R	R	R
NON-CONFLICT PHASE	5,6	5,6	NONE	NONE	1,2	1,2					
CONFLICT PHASE	2,4,8	1,4,8	1,2,5,6	1,2,5,6	4,6,8	4,5,8					

COLLEGE PARKWAY IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION

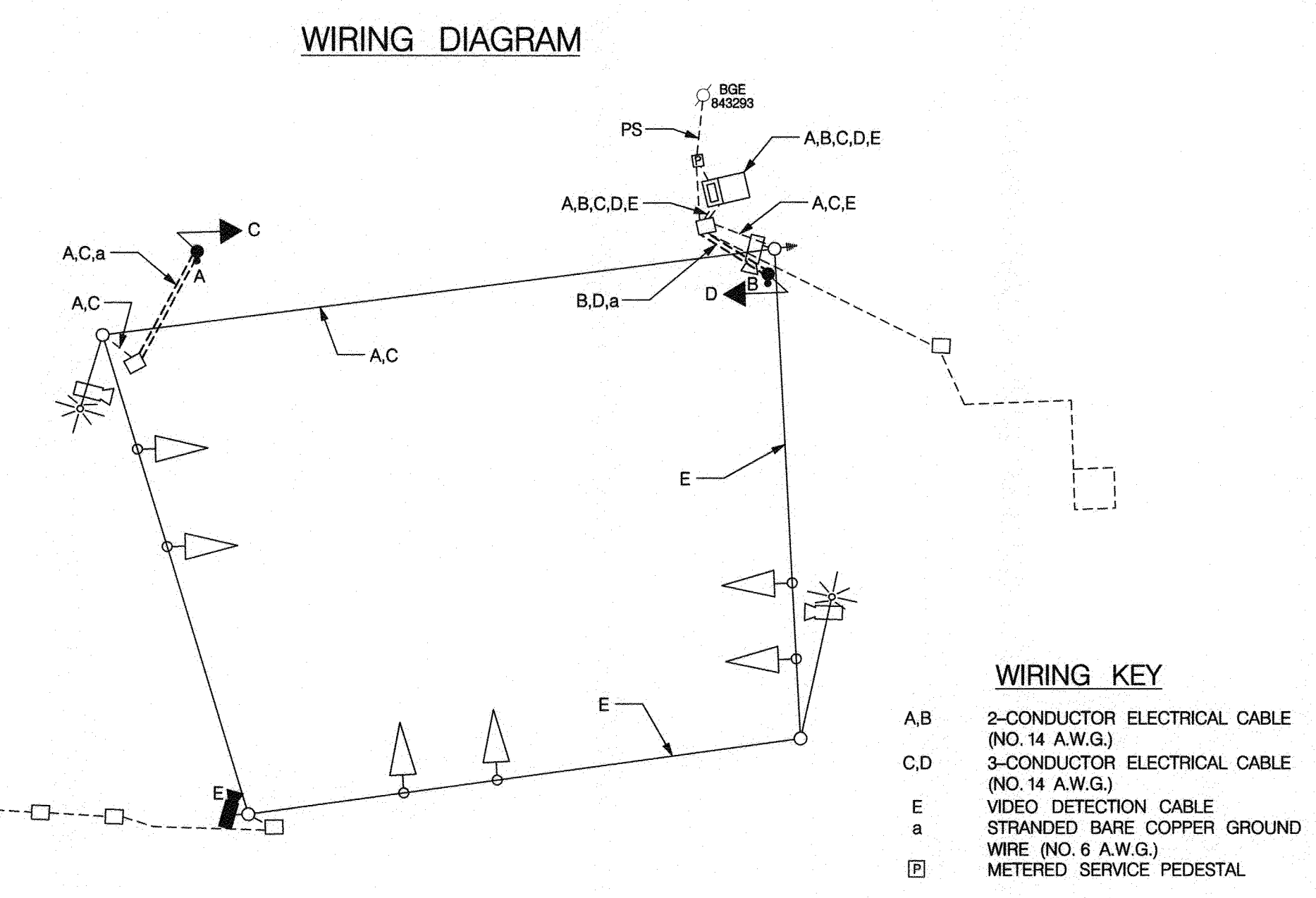


GENERAL NOTES

- THE UTILITIES ON THE CONSTRUCTION PLAN ARE SCHEMATIC ONLY AND ARE NOT TO BE CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN THE VICINITY OF THE UTILITIES. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AND OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE PLANS. MISS UTILITY AND ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING DIVISION 410-222-7331.
- 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 CLEARANCE AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- THE LOCATION OF THE PROPOSED GEOMETRICS MUST BE CONFIRMED PRIOR TO THE INSTALLATION OF SIGNAL EQUIPMENT.
- CONDUIT SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF PAVEMENT MARKINGS.
- CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIAL (MDOT SHA JULY 2020) AND THE ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS AND DETAILS, 2001, AND ALL AMENDMENTS TO EACH SPECIFICATION.
- ALL NEW SIGNAL HEADS SHALL BE SECURELY WRAPPED AND OR BAGGED BY THE CONTRACTOR PRIOR TO THE SIGNAL BEING PLACED IN SERVICE.
- ALL POLE, SIGNAL HEAD, AND DETECTOR LOCATIONS ARE TO BE MARKED IN THE FIELD AND APPROVED BY THE TRAFFIC ENGINEERING DIVISION PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL FURNISH THREE (3) COPIES OF THE AS-BUILT PLANS TO THE TRAFFIC ENGINEERING DIVISION.
- THE SIGNAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PAVEMENT MARKINGS CALLED OUT TO BE INSTALLED ON THE PLAN.
- ADEQUATE CLEARANCE MUST BE MAINTAINED BETWEEN SIGNAL EQUIPMENT AND AERIAL UTILITY LINES.
- ALL TRAIL STRIPING AND SIGNING SHALL BE RETROREFLECTORIZED.

CONSTRUCTION DETAILS

- INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR STOP BAR LINE
- INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE
- REMOVE EXISTING PAVEMENT MARKING LINE BY GRINDING
- USE EXISTING BASE MOUNTED CABINET AND CONTROLLER
- USE EXISTING HANDHOLE
- USE EXISTING CONDUIT
- USE EXISTING SIGNAL POLE
- USE EXISTING SPAN WIRE
- ABANDON EXISTING LOOP-DETECTOR
- INSTALL 2 IN. SCHEDULE 80, RIGID PVC, ELECTRICAL CONDUIT - TRENCHED
- INSTALL 10 FT. BREAKAWAY PEDESTAL POLE ON MODIFIED BASE WITH PEDESTRIAN SIGNAL HEAD, PUSHBUTTON AND SIGN (NOTES: INSTALL 1-3 IN. SCHEDULE 80, RIGID PVC, 90 DEGREE CONDUIT BEND. SEE STD MD-801.01-01 FOR FOUNDATION DETAIL)
- INSTALL VIDEO DETECTION CAMERA ON EXISTING SIGNAL POLE
- INSTALL 4 IN. SOLID YELLOW, LEAD FREE PAVEMENT MARKING FOR CENTER LINE
- INSTALL W1-2(R) SIGN ON ONE 4 IN. X 4 IN. WOOD SUPPORT
- INSTALL W1-3(R) SIGN ON ONE 4 IN. X 4 IN. WOOD SUPPORT
- INSTALL TWO D1-11(I) SIGNS ON ONE 4 IN. X 4 IN. WOOD SUPPORT



DWG NO: DD13F

Professional Certification: I, James Kyle Schmidt, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 (410) 760-2911
 FAX: (410) 760-2915
 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

Professional Engineer Seal: JAMES KYLE SCHMIDT, No. 42413, PROFESSIONAL ENGINEER

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

97161

TRAFFIC SIGNAL PLAN
 COLLEGE PARKWAY & SHORE ACRES ROAD / SITE ACCESS

TAX MAP 32, 39, AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	5/6/21	<i>[Signature]</i>	4/15/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVAL	DATE	APPROVED	DATE
<i>[Signature]</i>	4/24/21	<i>[Signature]</i>	4/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	

SCALE: 1" = 20'
 DRAWN BY: A. M. ROSEN
 CHECKED BY: J. K. SCHMIDT
 SHEET 93 of 137
 PROJECT #: P504104
 PROPOSAL #:

PROJECT DESCRIPTION

THIS PROJECT INVOLVES MODIFICATION OF AN EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF COLLEGE PARKWAY AND SHORE ACRES ROAD / SITE ACCESS IN ANNE ARUNDEL COUNTY. THE WORK IS NECESSITATED BY THE CONSTRUCTION OF A NEW TRAIL ACROSS SHORE ACRES ROAD. COLLEGE PARKWAY IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULLY-ACTUATED MODE WITH EXCLUSIVE-PERMISSIVE LEFT TURN PHASES FOR BOTH APPROACHES OF COLLEGE PARKWAY, A RIGHT TURN OVERAP PHASE FOR THE SHORE ACRES ROAD APPROACH, SIDE STREET SPLIT-PHASING AND A CONCURRENT PEDESTRIAN PHASE TO CROSS SHORE ACRES ROAD.

CONTROLLER REQUIREMENTS

THE EXISTING EIGHT-PHASE, FULLY-ACTUATED CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED.

APS PEDESTRIAN SIGNAL NOTES

1. PUSHBUTTONS ARE TO BE LOCATED SO THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
2. THE 10" SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM THE FACE OF THE PUSHBUTTON TO THE FACE OF THE PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
3. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
4. LOCATION OF ACCESSABLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.08 + 4E.10 AND FIG. 4E-3 + 4E-4 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATION UNTIL A DESIGN WAIVER IS OBTAINED AND APPROVED BY ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING.
5. ALL APS CENTRAL CONTROL UNITS SHALL BE DELIVERED TO ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR PROGRAMMING AND TESTING PRIOR TO INSTALLATION.

APS NOTES

- TO CROSS SHORE ACRES ROAD:
- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE, "WAIT TO CROSS SHORE ACRES AT COLLEGE PARKWAY, WAIT."
 - B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK

EQUIPMENT LIST "A"

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

QUANTITY	DESCRIPTION
NONE	

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND /OR INSTALLED BY CONTRACTOR. ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED AND APPROVED BY ANNE ARUNDEL COUNTY PRIOR TO INSTALLATION.

QUANTITY	DESCRIPTION
1S	MAINTENANCE OF TRAFFIC
2 CY	TEST PIT EXCAVATION
2 EA	THIRD PARTY CONCRETE TESTING
35 LF	2 IN. SCHEDULE 80 RIGID ELECTRICAL PVC CONDUIT - TRENCHED
1 CY	CONCRETE FOR SIGNAL FOUNDATION
35 LF	NO. 6 AWG STRANDED BARE COPPER WIRE
250 LF	ELECTRICAL CABLE 2-CONDUCTOR (NO. 14 A.W.G.)
280 LF	ELECTRICAL CABLE 3-CONDUCTOR (NO. 14 A.W.G.)
1 EA	"TRAFICON FLIR" VIDEO DETECTION CAMERA WITH THERMAL SENSOR AND CABLE
200 LF	12 IN. WHITE, LEAD FREE, HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING
2 EA	16 IN. COUNTDOWN PEDESTRIAN SIGNAL HEAD - POLE MOUNT
2 EA	POLARA BULLDOG PEDESTRIAN PUSHBUTTON WITH RAISED ARROW AND SIGN
2 EA	BREAKAWAY PEDESTAL POLE
115 LF	REMOVE EXISTING PAVEMENT MARKING LINE
1 EA	POLARA CCU
120 LF	4 IN. YELLOW, LEAD FREE PAVEMENT MARKING
1 EA	W1-2(R) SIGN (18" X 18") - GROUND MOUNT
1 EA	W1-3(R) SIGN (18" X 18") - GROUND MOUNT
2 EA	D11-1(I) SIGN (30" X 6") - GROUND MOUNT
45 LF	WOOD SIGN SUPPORTS 4 INCH X 4 INCH

EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE ANNE ARUNDEL COUNTY TRAFFIC MAINTENANCE SHOP LOCATED AT 409 BROADNECK RD., ANNAPOLIS MD 21401. THE CONTRACTOR SHALL NOTIFY MR. ERIC WINKELMEYER AT (410) 222-1940 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

QUANTITY	DESCRIPTION
NONE	

ALL SIGNAL EQUIPMENT TO BE REMOVED AND NOT RETURNED TO THE COUNTY SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

EQUIPMENT PURCHASE INFORMATION

CHAPEL HILL TRAFFIC SIGNAL HEADS	TRAFFIC PARTS, TEXAS CONTACT MS. JONI FEXER 1-800-345-6329
L.E.D.'S AND PEDESTRIAN COUNTDOWN SIGNALS	J.O. HERBERT COMPANY OF MIDLOTHIAN, VA CONTACT MR. JACK HERBERT (804)763-6480
TRAFICON EQUIPMENT	CONTROL TECHNOLOGIES CONTACT MR. JIM LAMPE (703) 595-2980
EAGLE EQUIPMENT	RGA, INC CONTACT MR. BOB SMITH (804) 794-1592
PHILIPS HADCO RX2 LEDGINE LED	BGE OUTDOOR LIGHTING CONTACT MR. NICK COSTA (410)470-8413

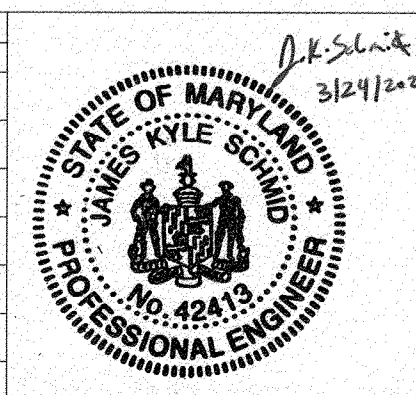
ANNE ARUNDEL COUNTY CONTACTS

DESIGN CONTACT	MR. BO ZHOU, P.E., PTOE (410) 222 7331
CONSTRUCTION CONTACT	MR. ERIC WINKELMEYER (410) 222-1940

DWG NO: DD13G

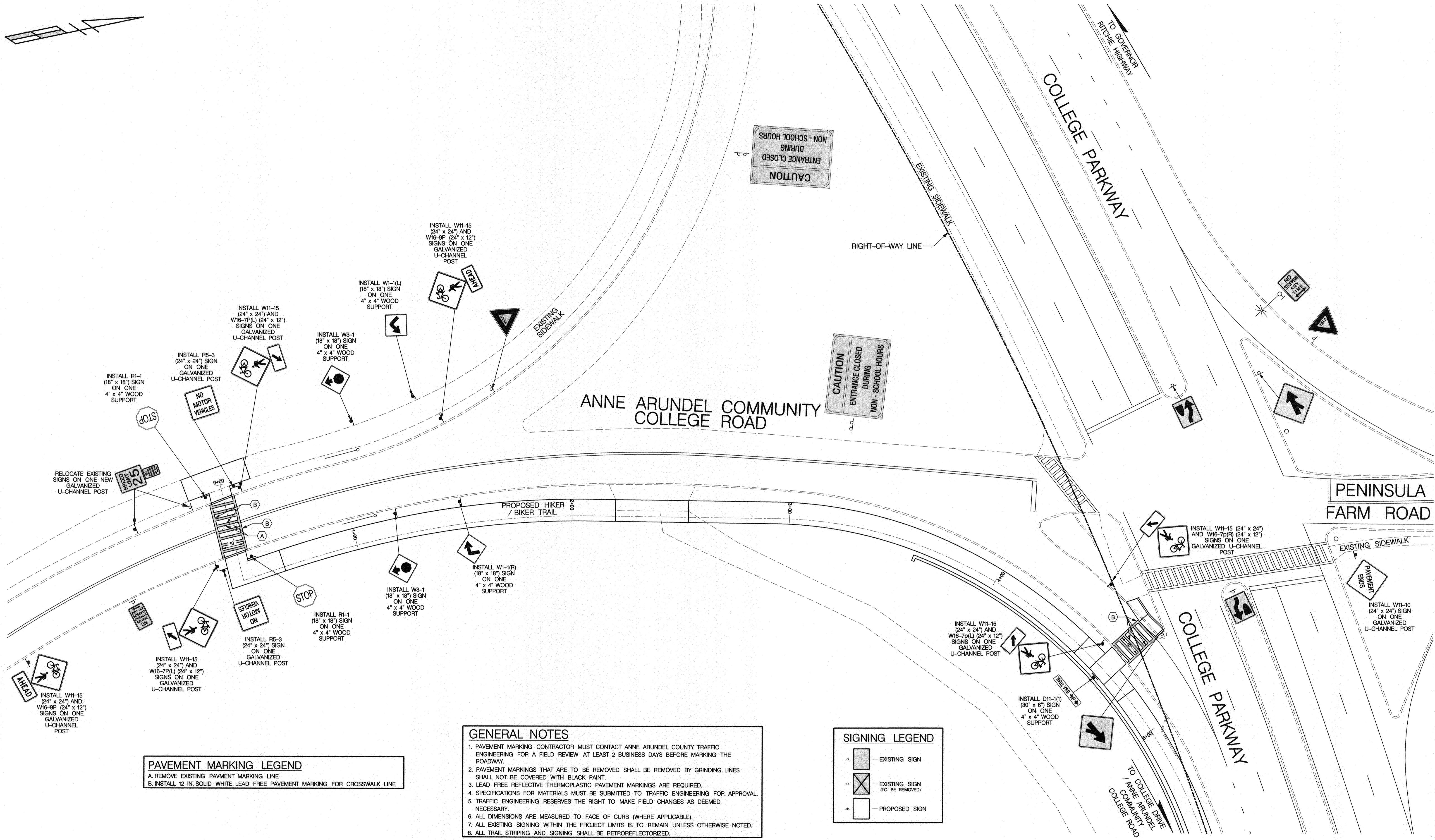
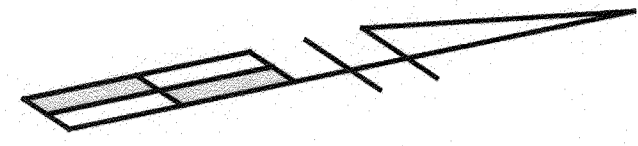
Professional Certification: I, James Kyle Schmid, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, MD 21076
(410) 760-2911
FAX: (410) 760-2915
EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS				97162	
APPROVED	DATE	APPROVED	DATE	SCALE:	NONE
<i>[Signature]</i>	4/15/24	<i>[Signature]</i>	4/15/24	DRAWN BY:	A. M. ROSEN
CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY:	J.K. SCHMID
APPROVAL	DATE	APPROVED	DATE	SHEET	94 of 137
<i>[Signature]</i>	4/24/24	<i>[Signature]</i>	4/14/24	PROJECT #:	P504104
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		PROPOSAL #:	
				GENERAL INFORMATION PLAN	
				COLLEGE PARKWAY & SHORE ACRES ROAD /SITE ACCESS	
				TAX MAP 32, 39, AND 40 ARNOLD, MD ZIP CODE 21012 SRD DISTRICT ANNE ARUNDEL COUNTY, MD	



PAVEMENT MARKING LEGEND
 A. REMOVE EXISTING PAVEMENT MARKING LINE
 B. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE

GENERAL NOTES

1. PAVEMENT MARKING CONTRACTOR MUST CONTACT ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR A FIELD REVIEW AT LEAST 2 BUSINESS DAYS BEFORE MARKING THE ROADWAY.
2. PAVEMENT MARKINGS THAT ARE TO BE REMOVED SHALL BE REMOVED BY GRINDING. LINES SHALL NOT BE COVERED WITH BLACK PAINT.
3. LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS ARE REQUIRED.
4. SPECIFICATIONS FOR MATERIALS MUST BE SUBMITTED TO TRAFFIC ENGINEERING FOR APPROVAL.
5. TRAFFIC ENGINEERING RESERVES THE RIGHT TO MAKE FIELD CHANGES AS DEEMED NECESSARY.
6. ALL DIMENSIONS ARE MEASURED TO FACE OF CURB (WHERE APPLICABLE).
7. ALL EXISTING SIGNING WITHIN THE PROJECT LIMITS IS TO REMAIN UNLESS OTHERWISE NOTED.
8. ALL TRAIL STRIPING AND SIGNING SHALL BE RETROREFLECTORIZED.

SIGNING LEGEND

- ◻ — EXISTING SIGN
- ◻ — EXISTING SIGN (TO BE REMOVED)
- ◻ — PROPOSED SIGN

Professional Certification: I, James Kyle Schmid, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

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ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

97163

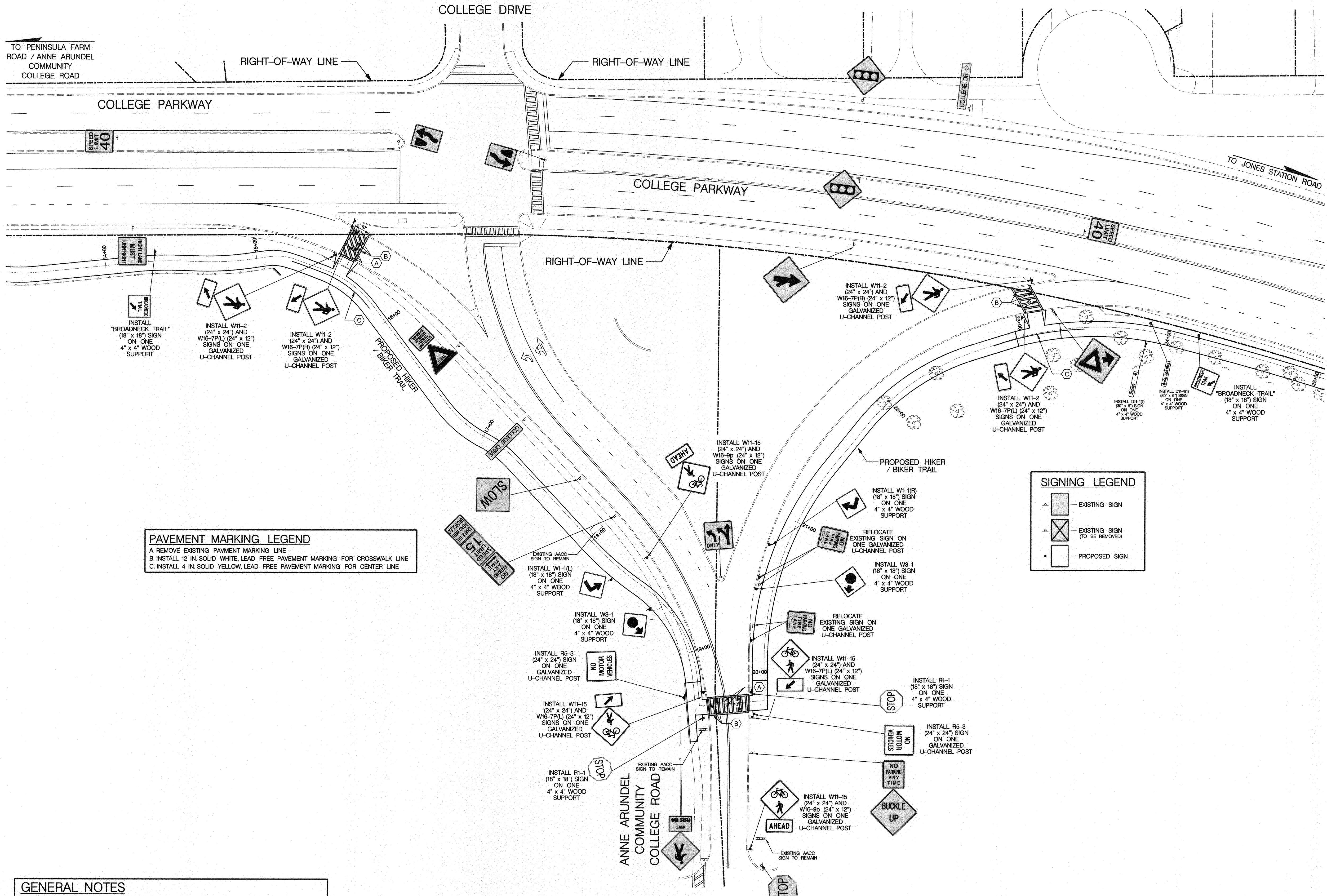
SIGNING AND PAVEMENT MARKING
 COLLEGE PARKWAY & ANNE ARUNDEL COMMUNITY COLLEGE ROAD / PENINSULA FARM ROAD

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 5/6/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 4/15/21
APPROVAL <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 4/21/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT OF WAY SERVICES	DATE 4/16/21

SCALE: 1" = 20'
 DRAWN BY: A. M. ROSEN
 CHECKED BY: J. K. SCHMID
 SHEET 95 OF 137
 PROJECT #: P604104
 PROPOSAL #:

TAX MAP 32.38 AND 41
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

COPY NO.:



PAVEMENT MARKING LEGEND
 A. REMOVE EXISTING PAVEMENT MARKING LINE
 B. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE
 C. INSTALL 4 IN. SOLID YELLOW, LEAD FREE PAVEMENT MARKING FOR CENTER LINE

SIGNING LEGEND
 [Symbol] - EXISTING SIGN
 [Symbol] - EXISTING SIGN (TO BE REMOVED)
 [Symbol] - PROPOSED SIGN

GENERAL NOTES
 1. PAVEMENT MARKING CONTRACTOR MUST CONTACT ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR A FIELD REVIEW AT LEAST 2 BUSINESS DAYS BEFORE MARKING THE ROADWAY.
 2. PAVEMENT MARKINGS THAT ARE TO BE REMOVED SHALL BE REMOVED BY GRINDING LINES SHALL NOT BE COVERED WITH BLACK PAINT.
 3. LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS ARE REQUIRED.
 4. SPECIFICATIONS FOR MATERIALS MUST BE SUBMITTED TO TRAFFIC ENGINEERING FOR APPROVAL.
 5. TRAFFIC ENGINEERING RESERVES THE RIGHT TO MAKE FIELD CHANGES AS DEEMED NECESSARY.
 6. ALL DIMENSIONS ARE MEASURED TO FACE OF CURB (WHERE APPLICABLE).
 7. ALL EXISTING SIGNING WITHIN THE PROJECT LIMITS IS TO REMAIN UNLESS OTHERWISE NOTED.
 8. ALL TRAIL STRIPING AND SIGNING SHALL BE RETROREFLECTORIZED.

Professional Certification: I, James Kyle Schmid, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

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 (410) 760-2911
 FAX: (410) 760-2915
 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

J. K. Schmid
 3/22/22
 JAMES KYLE SCHMID
 PROFESSIONAL ENGINEER
 NO. 42413
 STATE OF MARYLAND

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

APPROVED: [Signature] DATE: 3/22/22
 CHIEF ENGINEER

APPROVED: [Signature] DATE: 4/15/22
 PROJECT MANAGER

APPROVAL: [Signature] DATE: 4/16/22
 ASSISTANT CHIEF ENGINEER

APPROVED: [Signature] DATE: 4/16/22
 CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 30'
 DRAWN BY: A. M. ROSEN
 CHECKED BY: J. K. SCHMID
 SHEET 96 of 137
 PROJECT #: PSD4104
 PROPOSAL #:

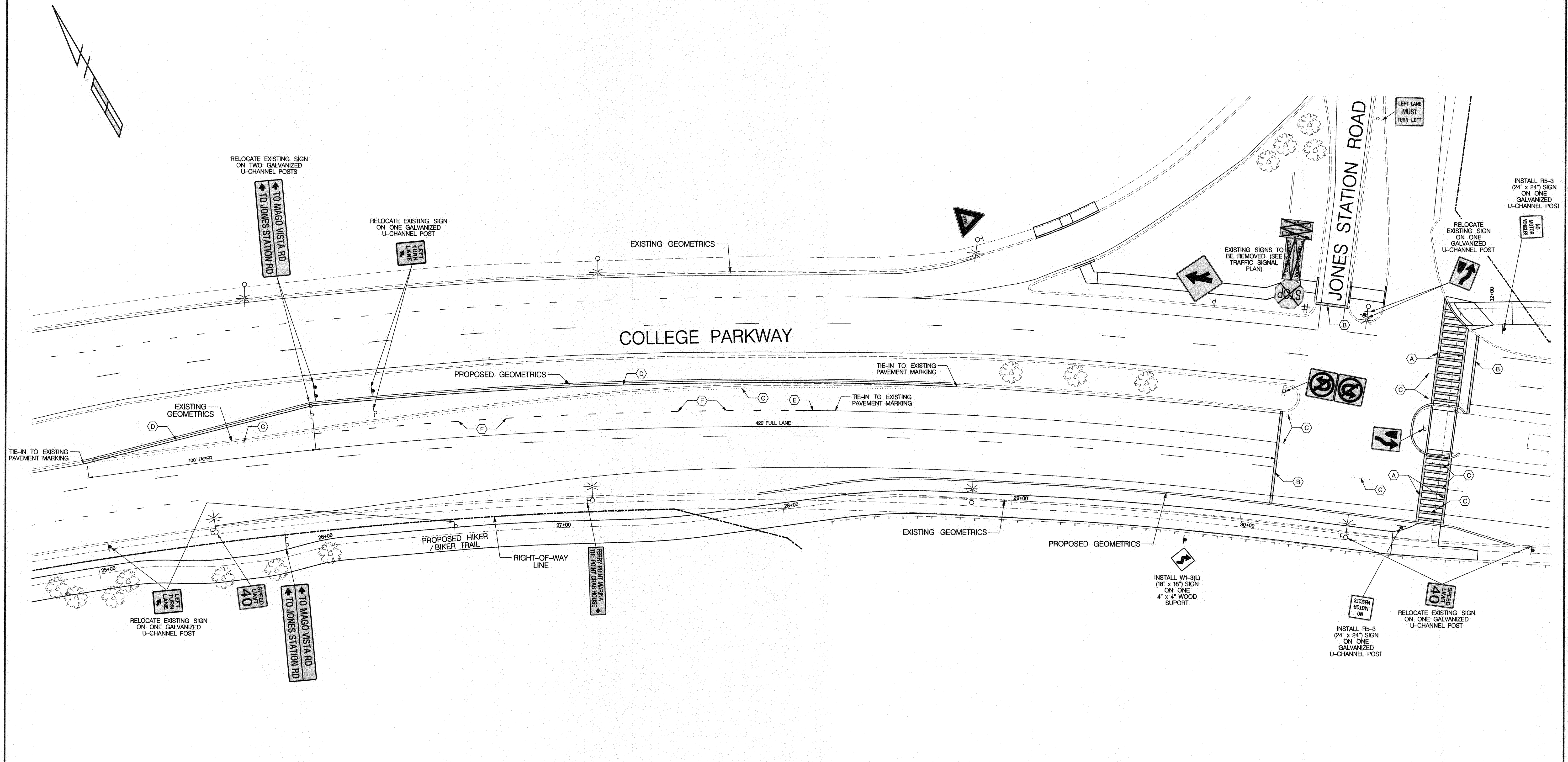
DWG NO: DD131

97164

SIGNING AND PAVEMENT MARKING
 COLLEGE PARKWAY & COLLEGE DRIVE / ANNE ARUNDEL COMMUNITY COLLEGE ROAD

TAX MAP 33.38 AND 40
 ARNOLD, MD ZFP CODE 2102 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

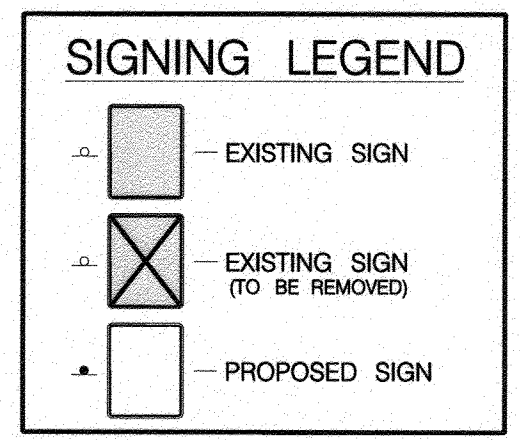
M:\34605\3465\Signing and Pavement Marking\Ring RI Crossing\Ring RI Crossing.dgn
 Monday, March 22, 2022 AT 03:27 PM



PAVEMENT MARKING LEGEND

A. 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE (SEE TRAFFIC SIGNAL PLAN)
 B. 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR STOPBAR LINE (SEE TRAFFIC SIGNAL PLAN)
 C. REMOVE EXISTING PAVEMENT MARKING LINE
 D. INSTALL 4 IN. SOLID YELLOW, LEAD FREE PAVEMENT MARKING EDGE LINE
 E. INSTALL 4 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR LANE LINE
 F. INSTALL 4 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR BROKEN (3 FT. SEGMENT - 9 FT. GAP) LANE LINES

- GENERAL NOTES**
- PAVEMENT MARKING CONTRACTOR MUST CONTACT ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR A FIELD REVIEW AT LEAST 2 BUSINESS DAYS BEFORE MARKING THE ROADWAY.
 - PAVEMENT MARKINGS THAT ARE TO BE REMOVED SHALL BE REMOVED BY GRINDING. LINES SHALL NOT BE COVERED WITH BLACK PAINT.
 - LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS ARE REQUIRED.
 - SPECIFICATIONS FOR MATERIALS MUST BE SUBMITTED TO TRAFFIC ENGINEERING FOR APPROVAL.
 - TRAFFIC ENGINEERING RESERVES THE RIGHT TO MAKE FIELD CHANGES AS DEEMED NECESSARY.
 - ALL DIMENSIONS ARE MEASURED TO FACE OF CURB (WHERE APPLICABLE).
 - FOR ADDITIONAL SIGNING AND PAVEMENT MARKINGS, SEE TRAFFIC SIGNAL PLAN.
 - ALL EXISTING SIGNING WITHIN THE PROJECT LIMITS IS TO REMAIN UNLESS OTHERWISE NOTED.
 - ALL TRAIL STRIPING AND SIGNING SHALL BE RETROREFLECTORIZED.



DPW No. 13-402(3485)Signal College Pkwy @ Jones Station Rd. (West Location) Jones Sta West.dgn
 Monday, March 22, 2021 AT 10:04 PM

Professional Certification: I, James Kyle Schmid, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

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TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
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 (410) 760-2911
 FAX: (410) 760-2915
 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

Professional Engineer Seal: JAMES KYLE SCHMID, No. 42413, PROFESSIONAL ENGINEER

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

97165

SIGNING AND PAVEMENT MARKING

COLLEGE PARKWAY & JONES STATION ROAD

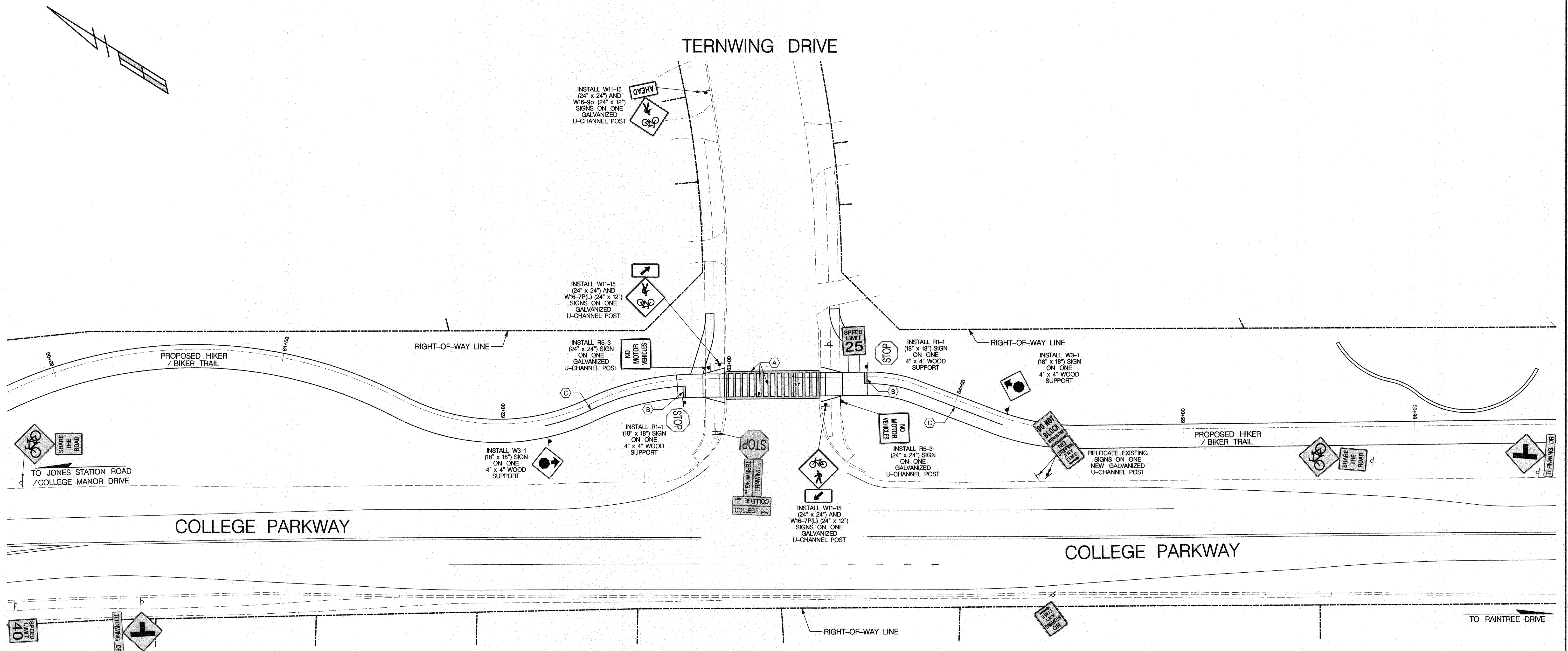
APPROVED: [Signature] 4/15/21
 APPROVED: [Signature] 4/16/21

APPROVAL: [Signature] 4/16/21
 ASSISTANT CHIEF ENGINEER

SCALE: 1" = 20'
 DRAWN BY: A. M. ROSEN
 CHECKED BY: J. K. SCHMID
 SHEET 97 of 137
 PROJECT #: P504104
 PROPOSAL #:

TAX MAP 35, 36, AND 40
 ARNOLD, MD 21P CODE 2100 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

DWG NO: DD13J



PAVEMENT MARKING LEGEND

- A. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE
- B. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR STOP BAR
- C. INSTALL 4 IN. SOLID YELLOW, LEAD FREE PAVEMENT MARKING FOR CENTER LINE

GENERAL NOTES

1. PAVEMENT MARKING CONTRACTOR MUST CONTACT ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR A FIELD REVIEW AT LEAST 2 BUSINESS DAYS BEFORE MARKING THE ROADWAY.
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8. ALL TRAIL STRIPING AND SIGNING SHALL BE RETROREFLECTORIZED.

SIGNING LEGEND

- ◻ — EXISTING SIGN
- ◻ — EXISTING SIGN (TO BE REMOVED)
- ◻ — PROPOSED SIGN

Professional Certification: I, James Kyle Schmid, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42413 Expiration Date 6-6-2022

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 Suite B
 Hanover, MD 21076
 (410) 760-2911
 FAX: (410) 760-2915
 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

DWG NO: DD13K

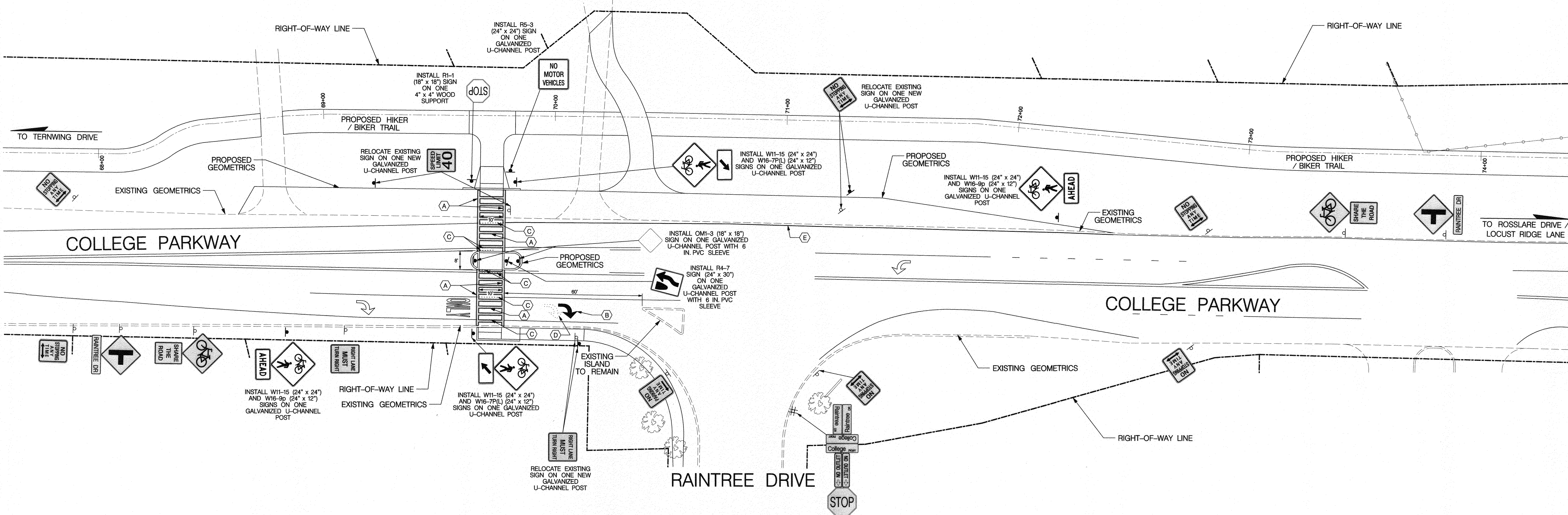
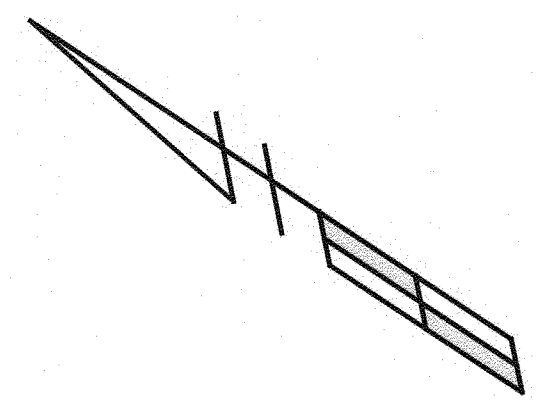
ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

97166

SIGNING AND PAVEMENT MARKING

APPROVED <i>[Signature]</i> DATE 5/16/21	APPROVED <i>[Signature]</i> DATE 4/15/21	SCALE: 1" = 20'
APPROVAL <i>[Signature]</i> DATE 4/21/21	APPROVED <i>[Signature]</i> DATE 4/16/21	DRAWN BY: A. M. ROSEN
ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY SERVICES	CHECKED BY: J. K. SCHMID
		SHEET 98 of 137
		PROJECT #: P504104
		PROPOSAL #:

COLLEGE PARKWAY
 & TERNWING ROAD
TAX MAP 32, 33, AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD



PAVEMENT MARKING LEGEND

- A. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE
- B. INSTALL WHITE, LEAD FREE PAVEMENT MARKING ARROW
- C. REMOVE EXISTING PAVEMENT MARKING LINE
- D. REMOVE EXISTING PAVEMENT MARKING ARROW
- E. INSTALL 4 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR EDGE LINE

- GENERAL NOTES**
1. PAVEMENT MARKING CONTRACTOR MUST CONTACT ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR A FIELD REVIEW AT LEAST 2 BUSINESS DAYS BEFORE MARKING THE ROADWAY.
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 6. ALL DIMENSIONS ARE MEASURED TO FACE OF CURB (WHERE APPLICABLE).
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 8. ALL TRAIL STRIPING AND SIGNING SHALL BE RETROREFLECTORIZED.

SIGNING LEGEND

- ◻ - EXISTING SIGN
- ⊗ - EXISTING SIGN (TO BE REMOVED)
- ◻ - PROPOSED SIGN

Professional Certification: I, James Kyle Schmid, certify that these documents were prepared by or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland License # 42415 Expiration Date 6-6-2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

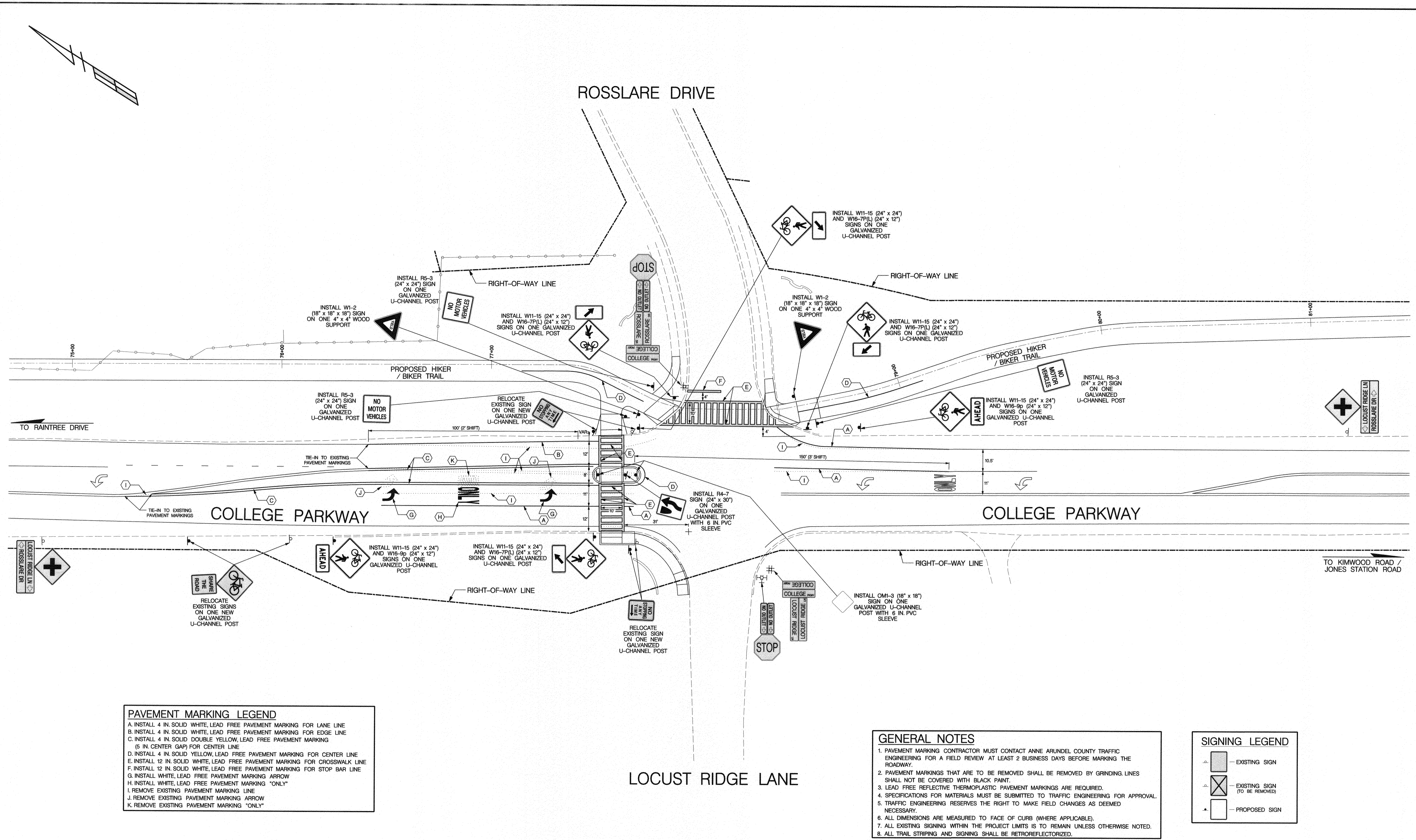
TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 (410) 760-2911
 FAX: (410) 760-2915
 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS
97167
 SIGNING AND PAVEMENT MARKING
 COLLEGE PARKWAY & RAIN TREE DRIVE

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 5/16/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 4/15/21
APPROVAL <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 4/24/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT OF WAY SERVICES	DATE 4/16/21

SCALE: 1" = 20'
 DRAWN BY: A. M. ROSEN
 CHECKED BY: J. K. SCHMID
 SHEET 99 of 137
 PROJECT #: P504104
 PROPOSAL #:

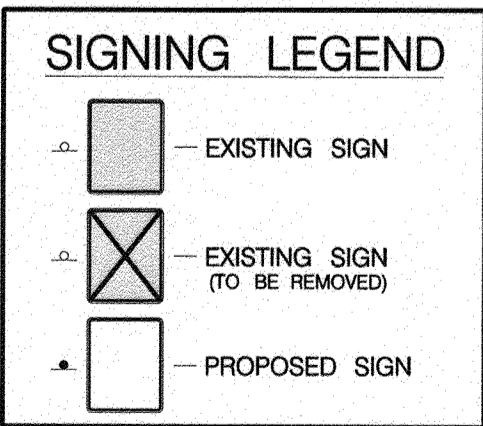
TAX MAP 33.20 AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD



PAVEMENT MARKING LEGEND

- A. INSTALL 4 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR LANE LINE
- B. INSTALL 4 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR EDGE LINE
- C. INSTALL 4 IN. SOLID DOUBLE YELLOW, LEAD FREE PAVEMENT MARKING (5 IN. CENTER GAP) FOR CENTER LINE
- D. INSTALL 4 IN. SOLID YELLOW, LEAD FREE PAVEMENT MARKING FOR CENTER LINE
- E. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR CROSSWALK LINE
- F. INSTALL 12 IN. SOLID WHITE, LEAD FREE PAVEMENT MARKING FOR STOP BAR LINE
- G. INSTALL WHITE, LEAD FREE PAVEMENT MARKING ARROW
- H. INSTALL WHITE, LEAD FREE PAVEMENT MARKING "ONLY"
- I. REMOVE EXISTING PAVEMENT MARKING LINE
- J. REMOVE EXISTING PAVEMENT MARKING ARROW
- K. REMOVE EXISTING PAVEMENT MARKING "ONLY"

- GENERAL NOTES**
1. PAVEMENT MARKING CONTRACTOR MUST CONTACT ANNE ARUNDEL COUNTY TRAFFIC ENGINEERING FOR A FIELD REVIEW AT LEAST 2 BUSINESS DAYS BEFORE MARKING THE ROADWAY.
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James Kyle Schmid
 3/24/2021
 PROFESSIONAL ENGINEER
 LICENSE NO. 42413

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]* 5/16/21
 CHIEF ENGINEER

APPROVED: *[Signature]* 4/15/21
 PROJECT MANAGER

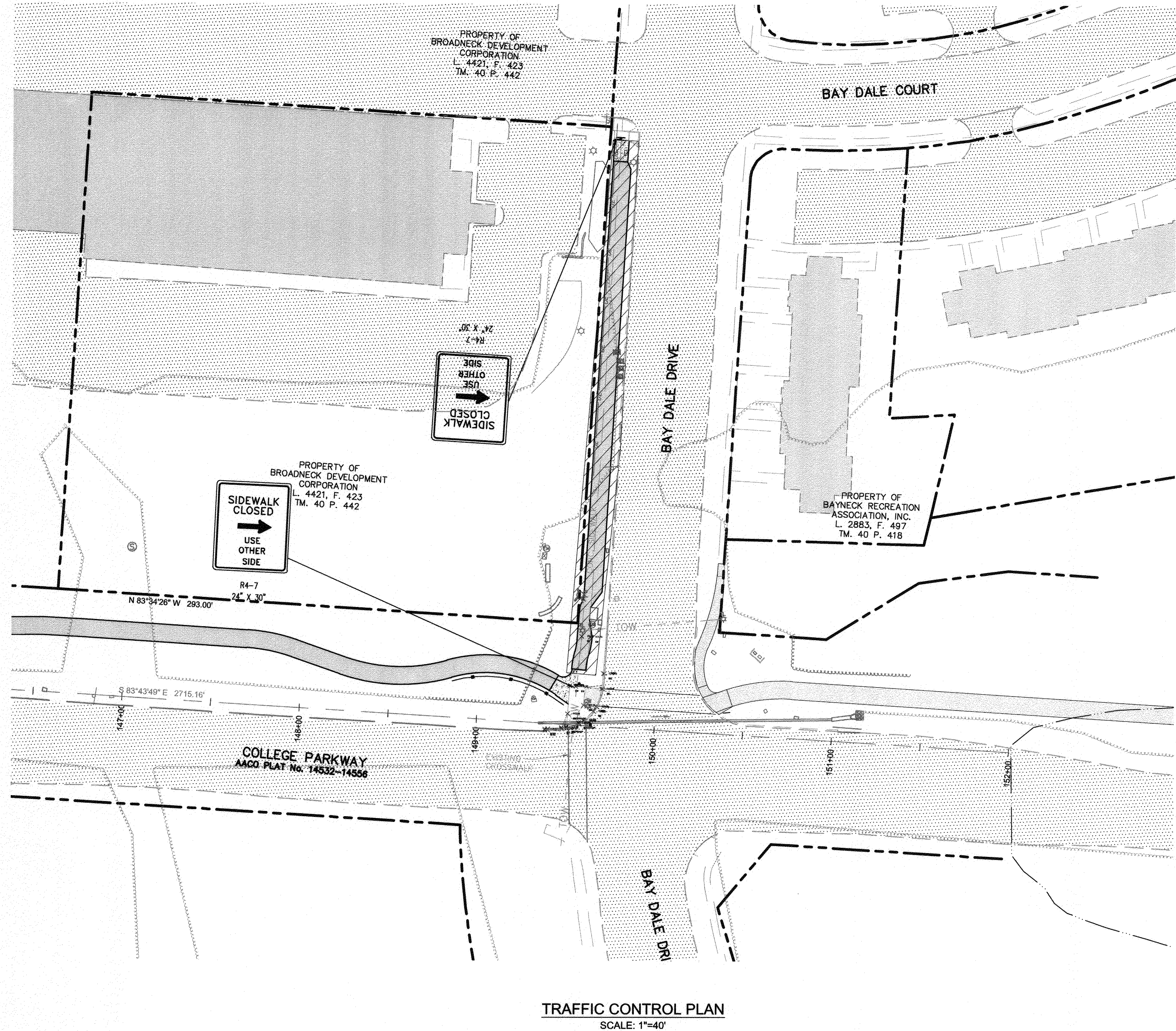
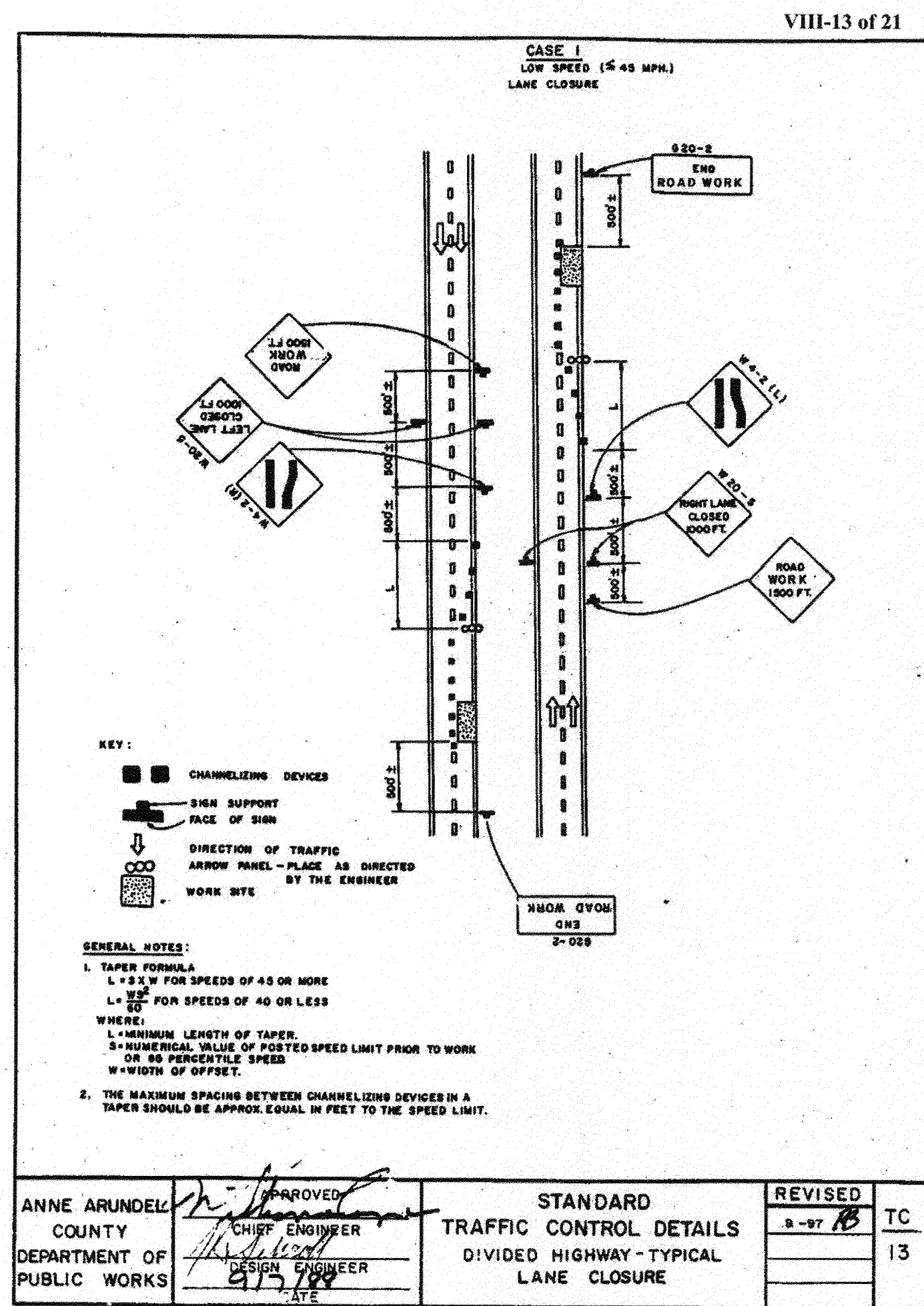
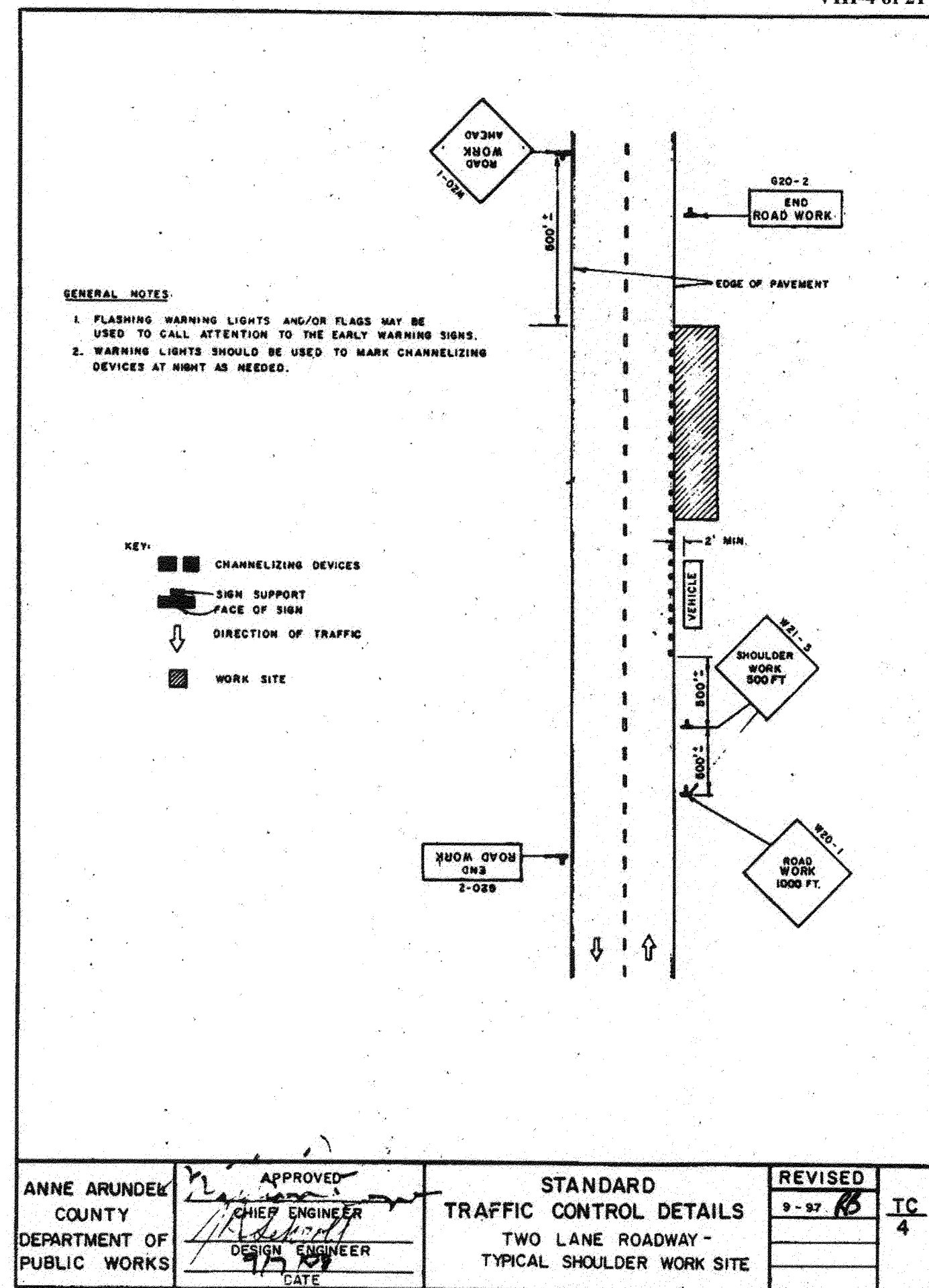
APPROVED: *[Signature]* 4/16/21
 CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 20'
 DRAWN BY: A. M. ROSEN
 CHECKED BY: J. K. SCHMID
 SHEET 100 of 137
 PROJECT #: P504104
 PROPOSAL #:

97168
 SIGNING AND PAVEMENT MARKING
 COLLEGE PARKWAY & LOCUST RIDGE LANE / ROSSLARE DRIVE
 TAX MAP 32, 38, AND 40
 ARNOLD, MD 21P CODE 2102 SPD DISTRICT
 ANNE ARUNDEL COUNTY, MD

DWG NO: DD13M

M:\34001\3485\Signing and Pavement Marking\College Parkw. @ Rosslare Dr. - Locust Ridge Lane\Rosslare Dr + Locust Ridge Ln.dwg
 Monday, March 22, 2021 AT 03:35 PM



ANNE ARUNDEL COUNTY - TRAFFIC ENGINEERING
TRAFFIC CONTROL PLAN GENERAL NOTES

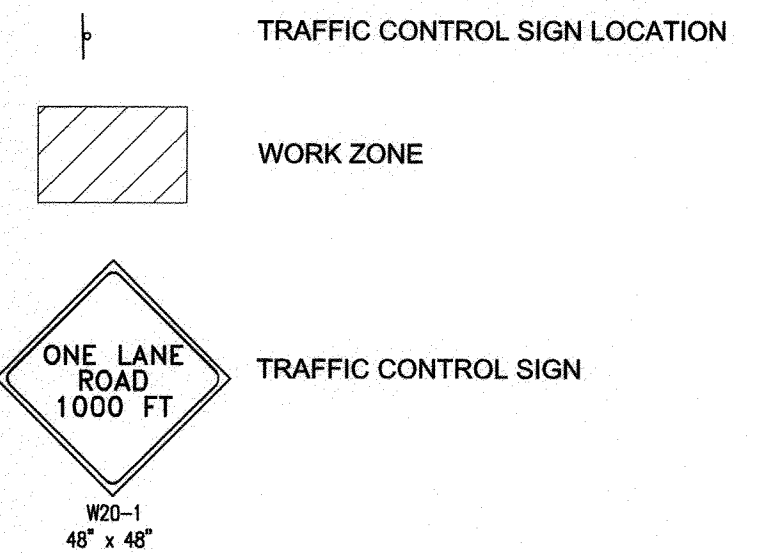
- ANNE ARUNDEL COUNTY SHALL BE NOTIFIED AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING ANY WORK IN ORDER TO SCHEDULE A FIELD INSPECTION OF TRAFFIC CONTROL DEVICES. NOTIFY INSPECTIONS AND PERMITS AT EITHER 410-222-7794 OR 410-222-7542.
- ALL CONSTRUCTION AND MATERIALS FOR THE TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE STANDARDS CONTAINED IN THE LATEST EDITION OF THE STATE OF MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- NO WORK SHALL BE PERFORMED IN THE ROADWAY FROM 7:00AM TO 9:00AM AND/OR FROM 4:00PM TO 6:00PM.
- TRAVEL LANES SHALL BE A MINIMUM OF TEN FEET IN WIDTH. WHEN ONLY ONE LANE IS OPEN, FLAGGERS AND THE APPROPRIATE SIGNING SHALL BE PROVIDED. THE ROADWAY SHOULD BE REOPENED TO TWO LANES AT NIGHT.
- REFLECTORIZED TRAFFIC DRUMS SHALL BE USED AS CHANNELIZING DEVICES AT NIGHT ALONG THE CONSTRUCTION AREA.
- IF A DROP-OFF MEASURES GREATER THAN 2", A BARRIER OR 2:1 SLOPE OF COMPACTED CRUSH-RUN GRAVEL WILL BE REQUIRED.
- PAVEMENT DISRUPTIONS OF ONE INCH (1") OR GREATER SHALL BE RAMPED WITH A BEVELED EDGE OF FOUR HORIZONTAL TO ONE VERTICAL (4:1).
- ALL OPEN TRENCHES SHALL BE CLOSED AT THE END OF EACH DAY. IF STEEL PLATES ARE TO BE USED, APPROPRIATE SIGNING WILL BE REQUIRED. STEEL PLATES MUST ADHERE TO DESIGN STANDARDS. STEEL PLATES MUST BE PINNED. STEEL PLATES ON ARTERIAL ROADWAYS MUST BE RECESSED, AS MUST ALL STEEL PLATES TO BE PLACED FOR MORE THAN 24 HOURS BETWEEN DECEMBER AND MARCH. ALL OTHER STEEL PLATES MUST BE RAMPED.
- CONTRACTOR SHALL INSTALL "CAUTION STEEL PLATES AHEAD" SIGNS IN ADVANCE OF STEEL PLATE BRIDGING.

- ALL TEMPORARY SIGNS THAT DO NOT APPLY SHALL BE COVERED OR REMOVED.
- CHANNELIZING DEVICES AND TEMPORARY STRIPING SHALL BE REMOVED AS SOON AS PRACTICAL.
- ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.
- ACCESS SHALL BE PROVIDED TO ALL EXISTING DRIVEWAYS AT ALL TIMES UNLESS COVERED BY THE APPROVED TRAFFIC CONTROL PLAN.
- ALL CONES AND FLAGMEN SHALL BE MOVED ACCORDINGLY AS CONSTRUCTION PROGRESSES.
- ALL CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE TYPICAL SIGN PLACEMENT SHOWN ON THESE PLANS AND SHALL NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
- ANY CHANGES TO THE TOP SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION FOR REVIEW AND APPROVAL. REQUESTS FOR DETOURS AND ROAD CLOSURES SHALL BE SUBMITTED TO RIGHT OF WAY MANAGEMENT SECTION.
- THE CONTRACTOR MUST CONTACT TRAFFIC ENGINEERING FOR APPROVAL PRIOR TO PLACEMENT OF ANY TEMPORARY PARKING RESTRICTIONS. IF RESTRICTIONS ARE APPROVED, THE CONTRACTOR MUST NOTIFY ALL AFFECTED RESIDENTS AT LEAST 48 HOURS IN ADVANCE AND MUST SUPPLY AND INSTALL ALL NECESSARY SIGNING.
- CONSTRUCTION & WORKER'S VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SIGHT DISTANCE. THESE VEHICLES SHOULD BE PARKED OFF-STREET ON THE CONSTRUCTION SITE OR ON A SIDE STREET NOT UNDER CONSTRUCTION.
- CONTRACTORS SHALL ADHERE TO ANNE ARUNDEL COUNTY'S, DEPARTMENT OF PUBLIC WORKS, DESIGN MANUAL AND STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, SECTION VLLL - TRAFFIC CONTROL.
- ALL WORK SHALL BE PERFORMED ON DAYS WHEN THE COUNTY'S DEPARTMENT OF PUBLIC WORKS IS OPEN FOR BUSINESS.

IN ADDITION TO THE COUNTY TRAFFIC CONTROL DETAILS SHOWN ON THIS SHEET, THE FOLLOWING SHA TRAFFIC CONTROL DETAILS SHALL BE UTILIZED:

- MD 104-01-28
 - MD 104-02-01
 - MD 104-02-05
 - MD 104-02-09
 - MD 104-02-14
 - MD 104-06-09A
 - MD 104-06-09B
 - MD 104-06-09C
- FOR ALL MDOT SHA STANDARDS REFERRED TO ON THE PLANS, THE CONTRACTOR MUST GO TO THE BOOK OF STANDARDS WHICH WILL HAVE THE MOST CURRENT VERSION. THE BOOK OF STANDARDS CAN BE ACCESSED AT:
[HTTPS://APPS.ROADS.MARYLAND.GOV/BUSINESSWITHSHA/BIZSTDSSPECS/DESMANUALSTD/PUB/PUBLICATIONSONLINE/OHD/BOOKSTD/INDEX.ASP](https://apps.roads.maryland.gov/businesswithsha/bizstdsspecs/desmanualstdpub/publicationsonline/ohd/bookstd/index.asp)

MAINTENANCE OF TRAFFIC LEGEND



MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTION:

- BAY DALE DRIVE (SIDEWALK CONSTRUCTION)
- TRAFFIC SIGNAGE IS TO BE INSTALLED PER THE PLAN.
 - DEMOLISH AND INSTALL NEW SIDEWALK PER PLANS.
 - MAINTAIN SIGNAGE UNTIL WORK IS COMPLETE.

DWG No.:

PROFESSIONAL CERTIFICATION: I, JAMES A. RUFF, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774. EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
 PENNONI ASSOCIATES INC.
 8890 McGraw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

GP# G02017905 DWG NO: DD14A

APPROVED: [Signature] DATE: 4/15/21
 CHIEF ENGINEER

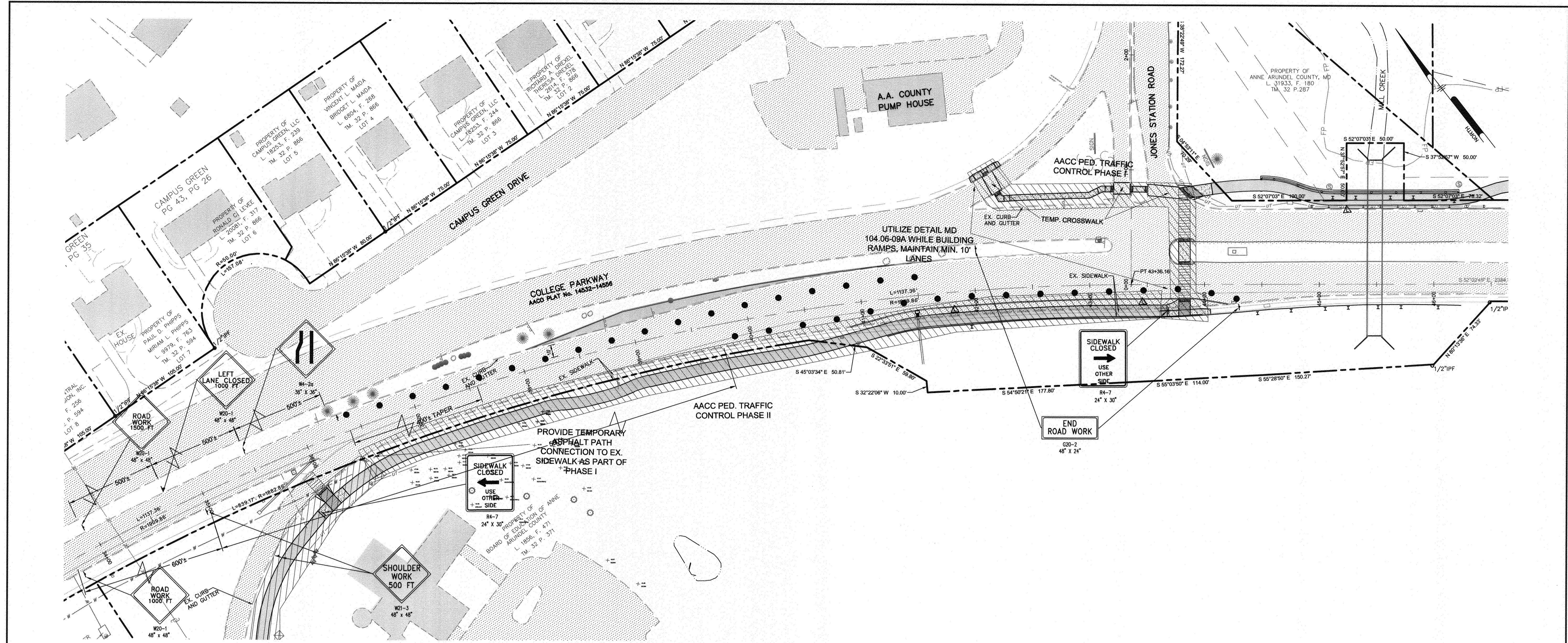
APPROVED: [Signature] DATE: 4/15/21
 PROJECT MANAGER

APPROVAL: [Signature] DATE: 4/21/21
 ASSISTANT CHIEF ENGINEER

APPROVED: [Signature] DATE: 4/16/21
 CHIEF, RIGHT OF WAY SERVICES

SCALE: AS SHOWN
 DRAWN BY: PAJ
 CHECKED BY: PJS/JAR
 SHEET 101 of 137
 PROJECT #: P504100
 PROPOSAL #:

97169 APRIL 5, 2021
 MAINTENANCE OF TRAFFIC DETAILS
 BROADNECK TRAIL - PHASE III
 CONSTRUCTION DOCUMENTS
 TAX MAP 32, 39, AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD
 NOVEMBER 2019



TRAFFIC CONTROL PLAN
SCALE: 1"=40'

MAINTENANCE OF TRAFFIC LEGEND

- CHANNELIZING DEVICES, 10-25' O.C
- ⊥ TRAFFIC CONTROL SIGN LOCATION
- FLAGGER
- ▨ WORK ZONE
- ⬠ TRAFFIC CONTROL SIGN

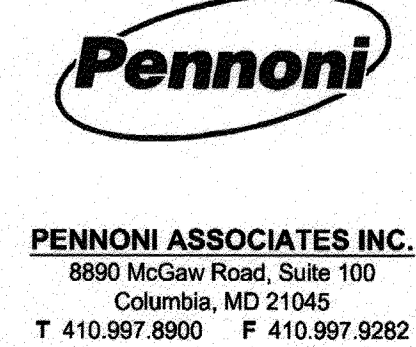
MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTION:

1. TRAFFIC SIGNAGE IS TO BE INSTALLED PER THE PLAN. TEMPORARY CHANNELIZING DEVICES AND SIGNAGE ARE TO BE PLACED SO THAT TRAFFIC CAN BE SAFELY DIVERTED AROUND THE PROPOSED WORK AREA IN ACCORDANCE WITH AA STD TC-4 AND TC-13.
2. INSTALL CHANNELIZING DEVICES AROUND WORK AREA AT 10' OC AT THE START OF EACH WORK DAY.
3. WIDEN ROAD PER APPROVED ROAD PLANS. COMPLETE PAVING.
4. WITH COMPLETION OF PAVING, MAINTAIN SIGNAGE AND TEMPORARY CHANNELIZING DEVICES ALONG ROAD WIDENING AREA.
5. INSTALL PERMANENT PAVEMENT MARKINGS AND SIGNS PER SIGNAGE AND MARKING PLAN.
6. REMOVE ALL REMAINING CHANNELIZING DEVICES AND TEMPORARY SIGNS.

DWG NO.

PROFESSIONAL CERTIFICATION: I, JAMES A. RUFF, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774 EXPIRATION DATE 11/10/2021

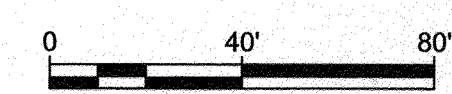
#	REVISIONS DESCRIPTION	APPROVED BY	DATE



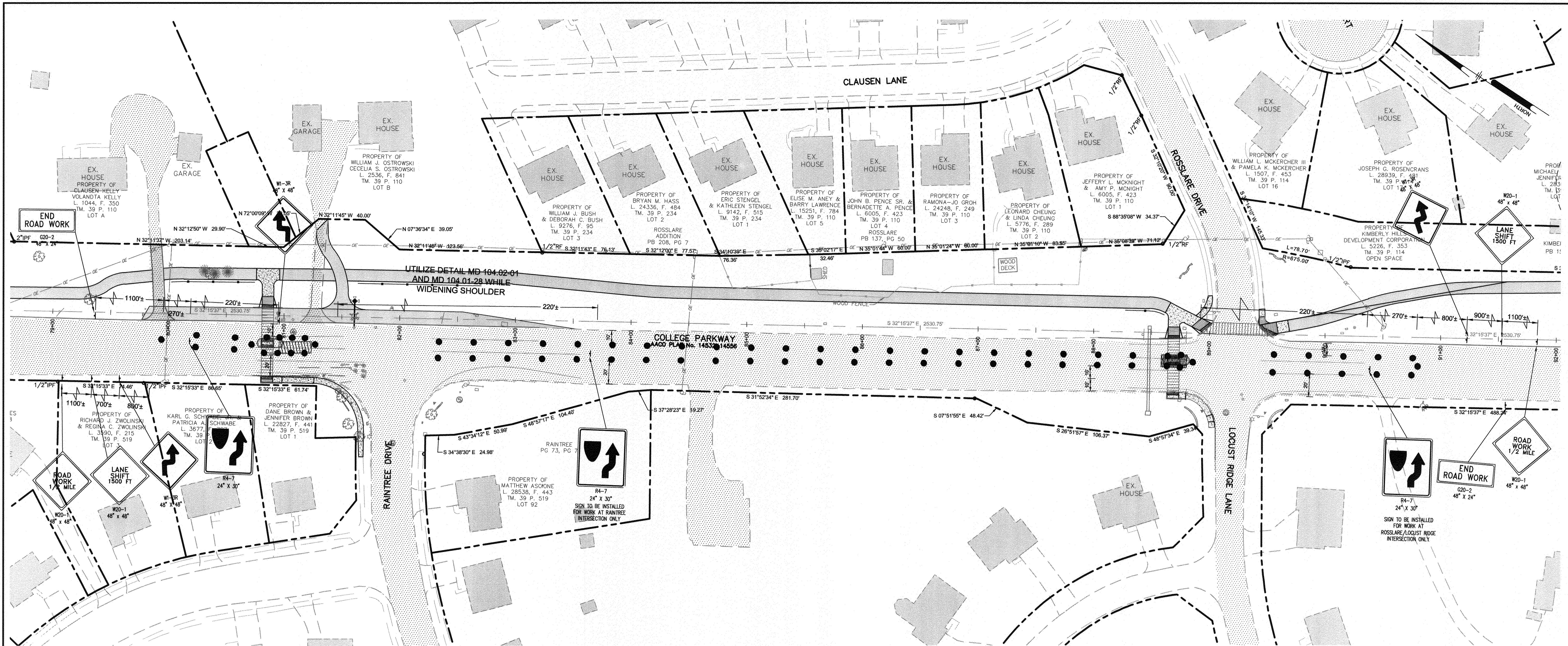
GP# G02017905		DWG NO: DD14B	
ANNE ARUNDEL COUNTY			
DEPARTMENT OF PUBLIC WORKS			
97170		APRIL 5, 2021	
TRAFFIC CONTROL PLAN			
BROADNECK TRAIL - PHASE III			
CONSTRUCTION DOCUMENTS			
TAX MAP 32, 39, AND 40			
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT			
ANNE ARUNDEL COUNTY, MD			
NOVEMBER 2019			

APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	5/4/21	<i>[Signature]</i>	4/15/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVAL	DATE	APPROVED	DATE
<i>[Signature]</i>	4/24/21	<i>[Signature]</i>	4/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	

SCALE: 1" = 40'	TRAFFIC CONTROL PLAN
DRAWN BY: PAI	
CHECKED BY: PJS/JAR	
SHEET 102 of 137	
PROJECT #: P504100	
PROPOSAL #:	



I:\PROJECTS\AA\G02017905-Broadneck_Pennoni Phase III\DESIGN_PUBLIC\1001 - CD SET\AA021701-20148.dwg



TRAFFIC CONTROL PLAN

SCALE: 1"=40'

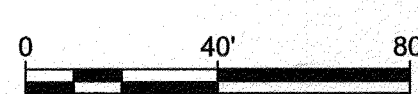
MAINTENANCE OF TRAFFIC LEGEND

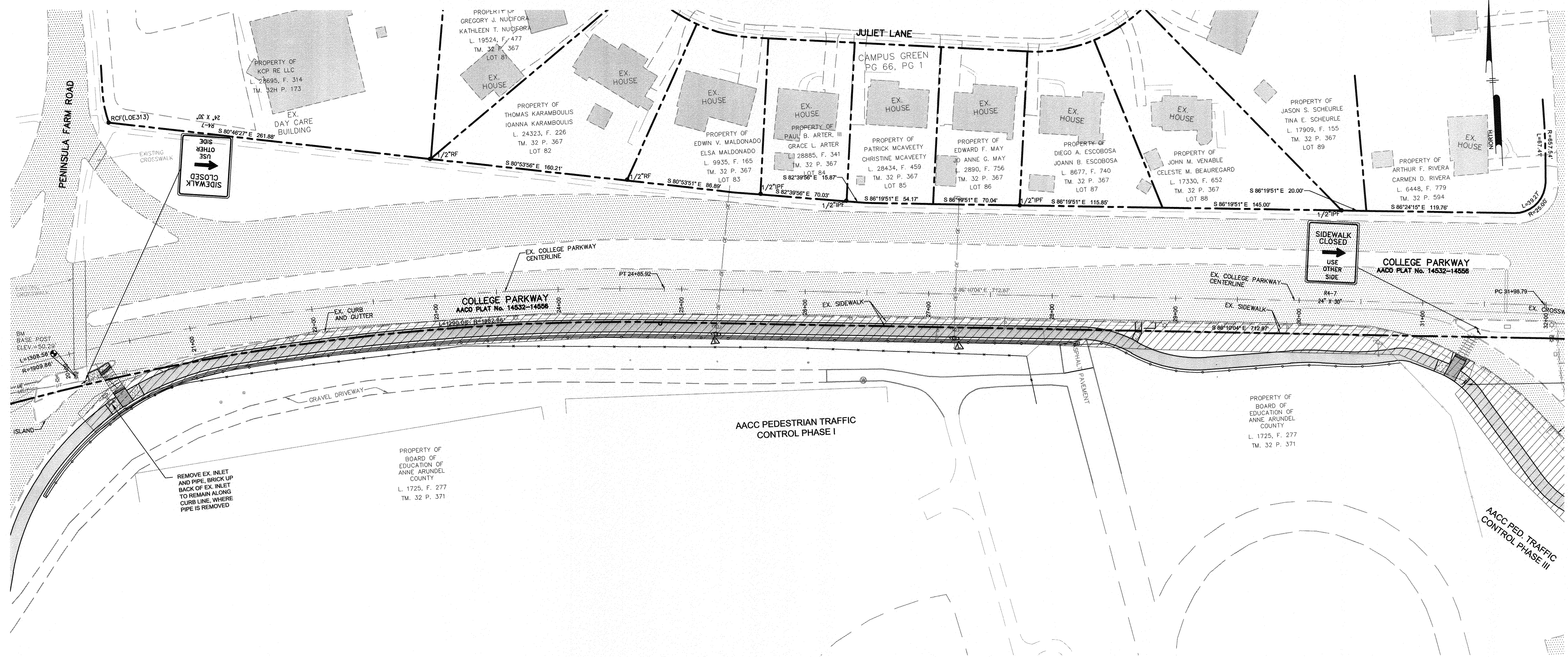
- CHANNELIZING DEVICES, 10-25' O.C
- ┆ TRAFFIC CONTROL SIGN LOCATION
- FLAGGER
- ▨ WORK ZONE
- ◇ ONE LANE ROAD 1000 FT
- ◇ TRAFFIC CONTROL SIGN

MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTION:


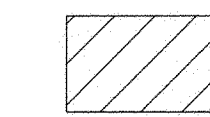

1. TRAFFIC SIGNAGE IS TO BE INSTALLED PER THE PLAN. TEMPORARY CHANNELIZING DEVICES AND SIGNAGE ARE TO BE PLACED SO THAT TRAFFIC CAN BE SAFELY DIVERTED AROUND THE PROPOSED WORK AREA IN ACCORDANCE WITH MD 104.02-05.
2. INSTALL CHANNELIZING DEVICES AROUND WORK AREA AT 10' OC AT THE START OF EACH WORK DAY.
3. INSTALL ISLANDS PER APPROVED PLAN. COMPLETE ALL PAVING AND CURB WORK.
4. WITH COMPLETION OF PAVING AND CURB, MAINTAIN SIGNAGE AND TEMPORARY CHANNELIZING DEVICES ALONG ROAD WIDENING AREA.
5. INSTALL PERMANENT PAVEMENT MARKINGS AND SIGNS PER SIGNAGE AND MARKING PLAN.
6. REMOVE ALL REMAINING CHANNELIZING DEVICES AND TEMPORARY SIGNS.

GP# G02017905		DWG NO: DD14C	
ANNE ARUNDEL COUNTY			
DEPARTMENT OF PUBLIC WORKS			
97171		APRIL 5, 2021	
TRAFFIC CONTROL PLAN			
BROADNECK TRAIL - PHASE III			
CONSTRUCTION DOCUMENTS			
TAX MAP 32, 38, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019			
PROFESSIONAL CERTIFICATION: I, <u>JAMES A. RUFF, PE</u> , CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # <u>21774</u> EXPIRATION DATE <u>11/10/2021</u>			
PENNONI ASSOCIATES INC. 8890 McGraw Road, Suite 100 Columbia, MD 21045 T 410.997.8900 F 410.997.9282		APPROVED DATE: <u>5/16/21</u> CHIEF ENGINEER: <u>[Signature]</u>	
APPROVED DATE: <u>4/15/21</u> PROJECT MANAGER: <u>[Signature]</u>		APPROVED DATE: <u>4/16/21</u> CHIEF, RIGHT OF WAY SERVICES: <u>[Signature]</u>	
REVISIONS: # _____ DESCRIPTION _____ APPROVED BY _____ DATE _____		SCALE: 1" = 40' DRAWN BY: PAI CHECKED BY: PJS/JAR SHEET 103 of 137 PROJECT #: P504100 PROPOSAL #: _____	





MAINTENANCE OF TRAFFIC LEGEND

-  TRAFFIC CONTROL SIGN LOCATION
-  WORK ZONE
-  TRAFFIC CONTROL SIGN



MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTION:

SEE SHEET DD14E

GP# G02017905 DWG NO: DD14D

PROFESSIONAL CERTIFICATION: I, JAMES A. RUFF, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774 EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

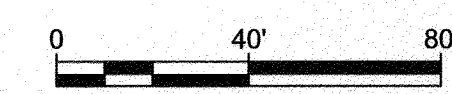
97172

APRIL 5, 2021

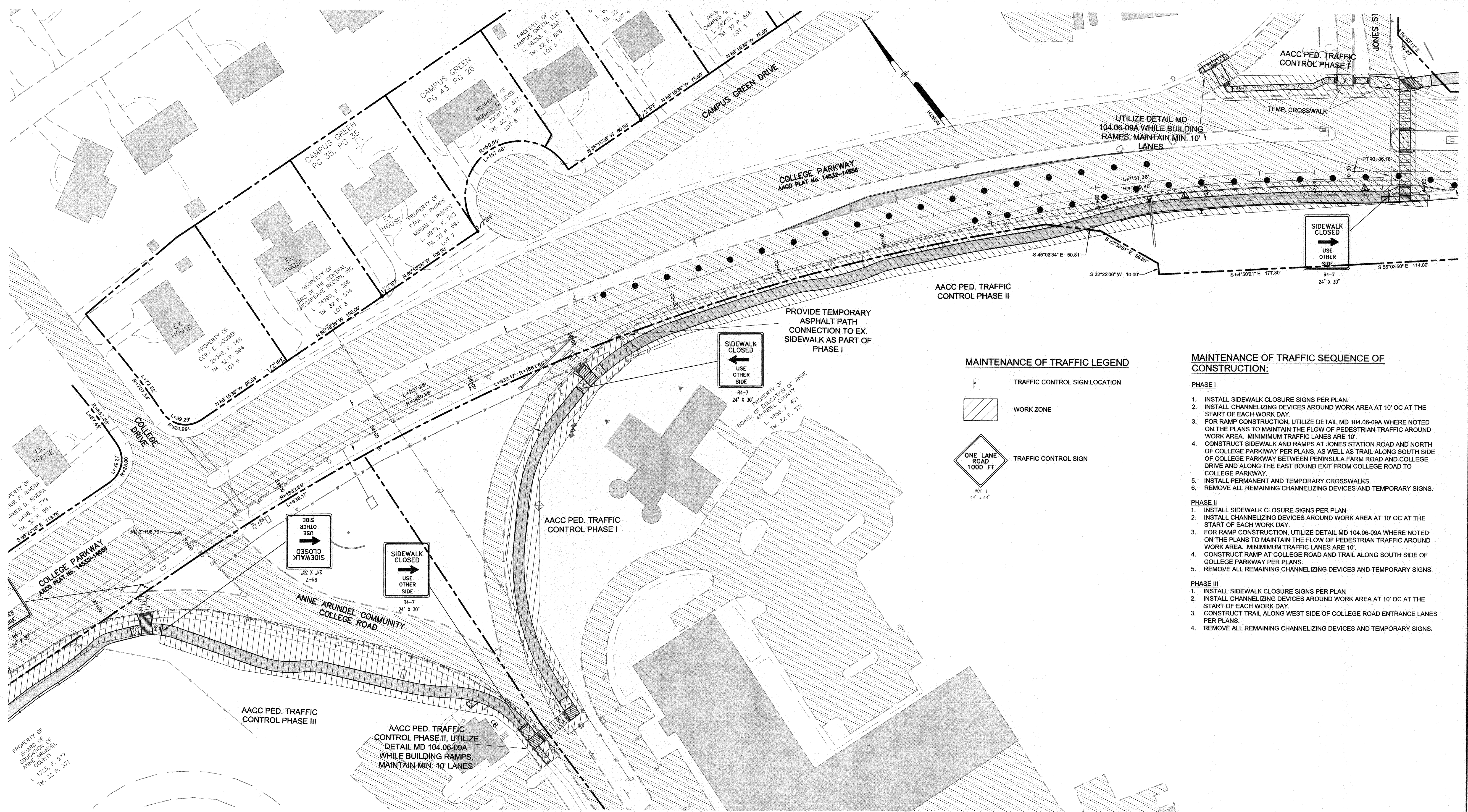
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CHECKED BY: PJS/JAR	CHECKED BY: PJS/JAR	DRAWN BY: PAI
APPROVAL DATE <i>[Signature]</i> 4/16/21	APPROVED DATE <i>[Signature]</i> 4/16/21	SHEET 104 of 137
ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY SERVICES	PROJECT #: P504100
		PROPOSAL #:

TRAFFIC CONTROL PLAN

BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 33, AND 4D
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019



DPW INC.



TRAFFIC CONTROL PLAN
SCALE: 1"=40'

MAINTENANCE OF TRAFFIC LEGEND

TRAFFIC CONTROL SIGN LOCATION

WORK ZONE

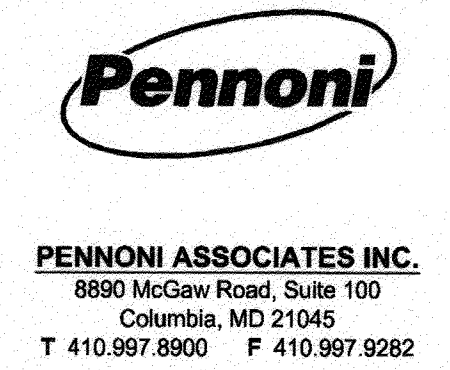
TRAFFIC CONTROL SIGN

ONE LANE ROAD 1000 FT

- MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTION:**
- PHASE I**
1. INSTALL SIDEWALK CLOSURE SIGNS PER PLAN.
 2. INSTALL CHANNELIZING DEVICES AROUND WORK AREA AT 10' OC AT THE START OF EACH WORK DAY.
 3. FOR RAMP CONSTRUCTION, UTILIZE DETAIL MD 104.06-09A WHERE NOTED ON THE PLANS TO MAINTAIN THE FLOW OF PEDESTRIAN TRAFFIC AROUND WORK AREA. MINIMUM TRAFFIC LANES ARE 10'.
 4. CONSTRUCT SIDEWALK AND RAMPS AT JONES STATION ROAD AND NORTH OF COLLEGE PARKWAY PER PLANS, AS WELL AS TRAIL ALONG SOUTH SIDE OF COLLEGE PARKWAY BETWEEN PENINSULA FARM ROAD AND COLLEGE DRIVE AND ALONG THE EAST BOUND EXIT FROM COLLEGE ROAD TO COLLEGE PARKWAY.
 5. INSTALL PERMANENT AND TEMPORARY CROSSWALKS.
 6. REMOVE ALL REMAINING CHANNELIZING DEVICES AND TEMPORARY SIGNS.
- PHASE II**
1. INSTALL SIDEWALK CLOSURE SIGNS PER PLAN.
 2. INSTALL CHANNELIZING DEVICES AROUND WORK AREA AT 10' OC AT THE START OF EACH WORK DAY.
 3. FOR RAMP CONSTRUCTION, UTILIZE DETAIL MD 104.06-09A WHERE NOTED ON THE PLANS TO MAINTAIN THE FLOW OF PEDESTRIAN TRAFFIC AROUND WORK AREA. MINIMUM TRAFFIC LANES ARE 10'.
 4. CONSTRUCT RAMP AT COLLEGE ROAD AND TRAIL ALONG SOUTH SIDE OF COLLEGE PARKWAY PER PLANS.
 5. REMOVE ALL REMAINING CHANNELIZING DEVICES AND TEMPORARY SIGNS.
- PHASE III**
1. INSTALL SIDEWALK CLOSURE SIGNS PER PLAN.
 2. INSTALL CHANNELIZING DEVICES AROUND WORK AREA AT 10' OC AT THE START OF EACH WORK DAY.
 3. CONSTRUCT TRAIL ALONG WEST SIDE OF COLLEGE ROAD ENTRANCE LANES PER PLANS.
 4. REMOVE ALL REMAINING CHANNELIZING DEVICES AND TEMPORARY SIGNS.

PROFESSIONAL CERTIFICATION: I, JAMES A. RUFF, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774 EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



GP# G02017905 DWG NO: DD14E

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97173 APRIL 5, 2021

TRAFFIC CONTROL PLAN

BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS

TAX MAP 32, 38, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	4/15/21	<i>[Signature]</i>	4/15/21
PROJECT MANAGER		CHIEF, RIGHT OF WAY SERVICES	
APPROVAL	DATE	APPROVED	DATE
<i>[Signature]</i>	4/15/21	<i>[Signature]</i>	4/15/21
ASSISTANT CHIEF ENGINEER			

SCALE: 1" = 40'

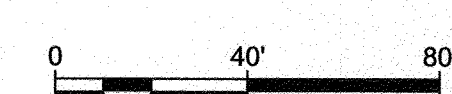
DRAWN BY: PAI

CHECKED BY: PJS/JAR

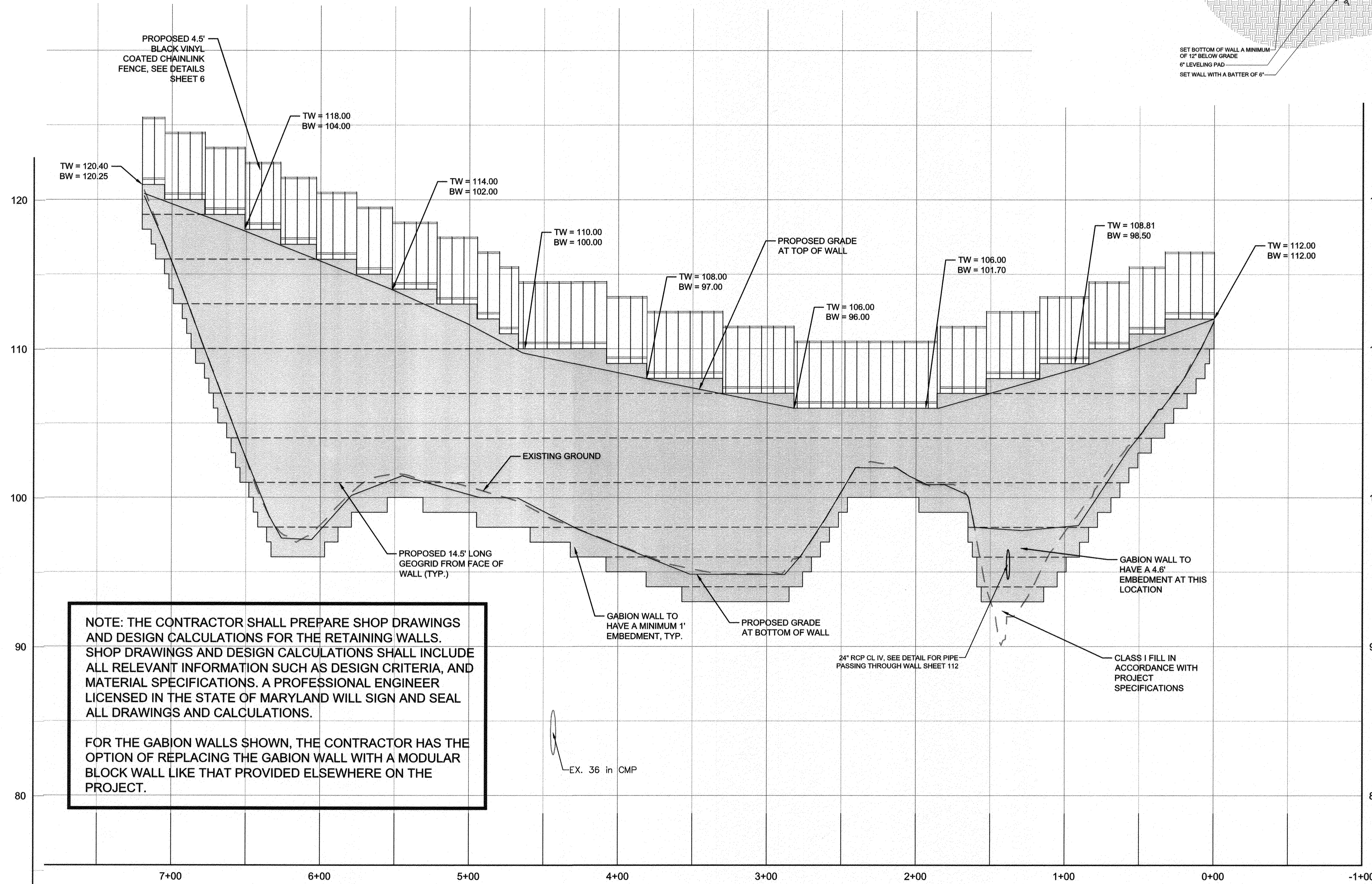
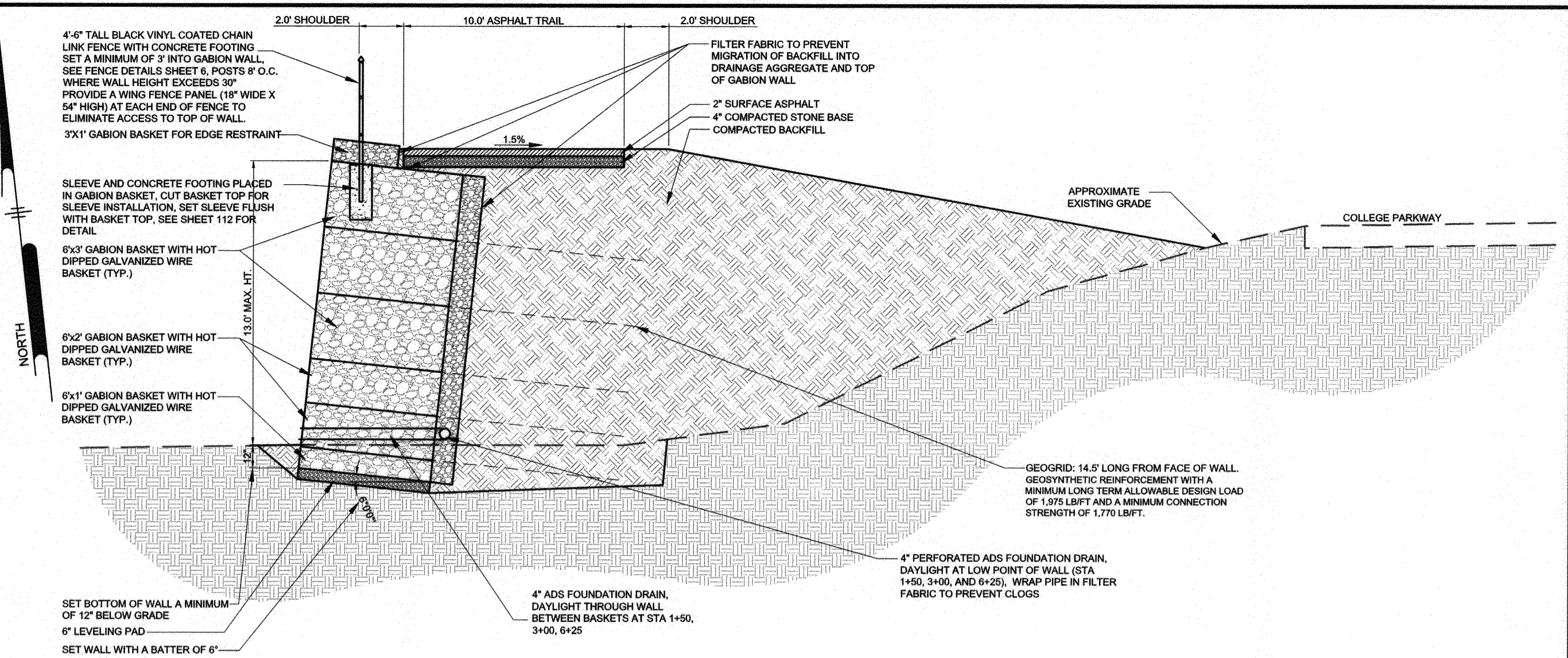
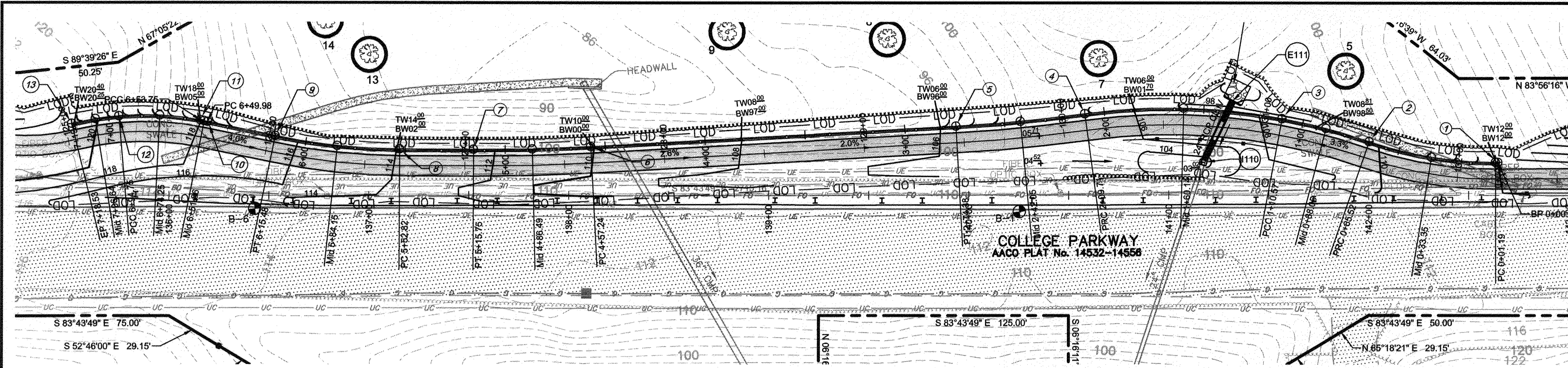
SHEET 105 of 137

PROJECT #: P504100

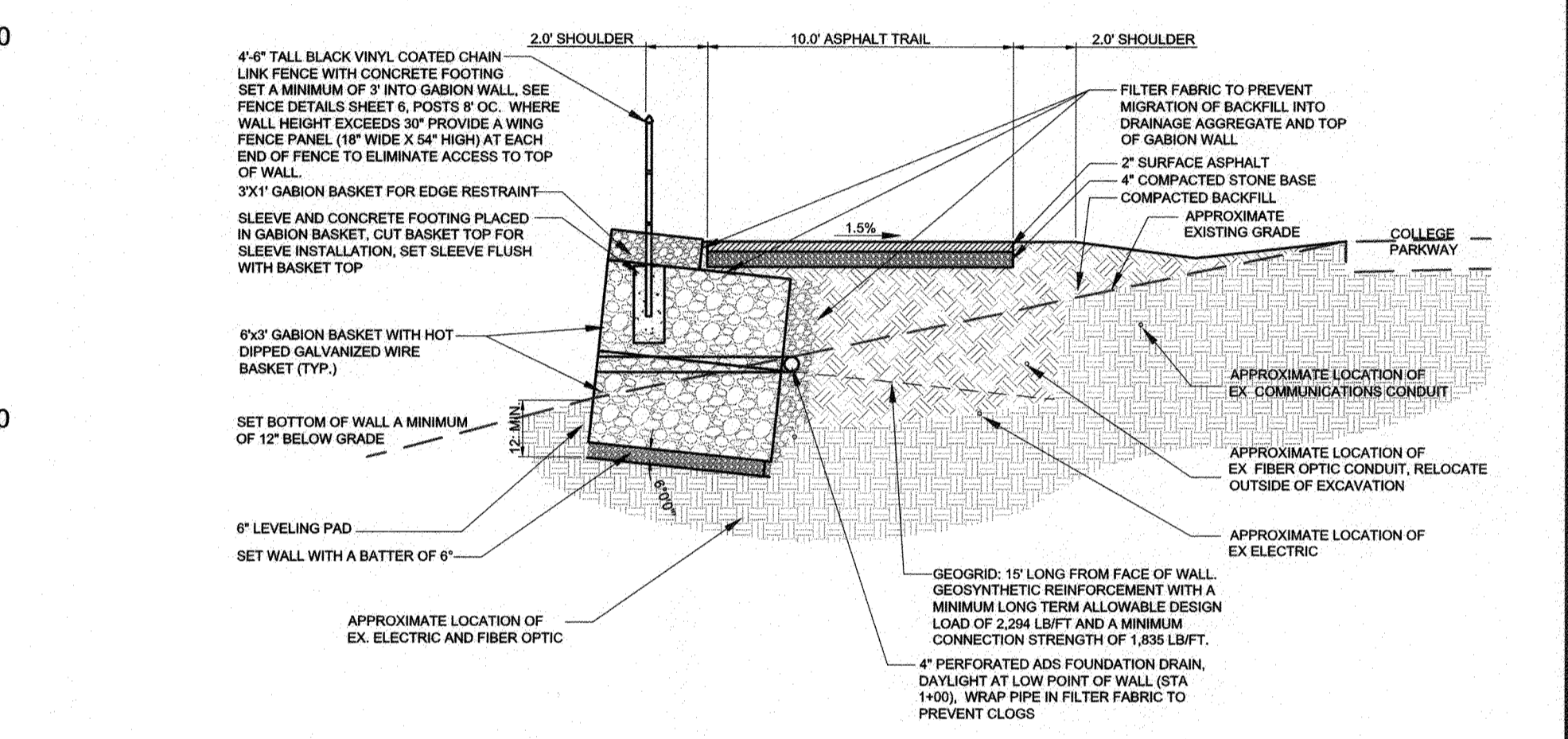
PROPOSAL #:



DRAWN BY: PAI



1
106 SCALE: 1" = 5'



1
107 SCALE: 1" = 5'

Retaining Wall A Stakeout Table			
Point #	Raw Description	Northing	Easting
1	0+00	499701.0467	1459475.4182
2	0+66	499718.4400	1459412.5759
3	1+11	499734.6206	1459370.5783
4	2+10	499747.7955	1459272.7455
5	2+74	499748.6934	1459208.0984
6	4+57	499758.6960	1459025.5158
7	5+16	499763.6173	1458967.2242
8	5+56	499767.8239	1458930.3941
9	6+15	499781.2210	1458869.2959
10	6+50	499792.0154	1458836.5023
11	6+54	499793.2222	1458832.8314
12	6+95	499799.6406	1458792.5694
13	7+19	499798.4120	1458768.8433

SEE SHEETS 6 AND 7 FOR RETAINING WALL AND FENCE DETAILS

NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

FOR THE GABION WALLS SHOWN, THE CONTRACTOR HAS THE OPTION OF REPLACING THE GABION WALL WITH A MODULAR BLOCK WALL LIKE THAT PROVIDED ELSEWHERE ON THE PROJECT.

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.). THIS SHALL BE DONE AT THE DIRECTION OF THE COUNTY'S CONSTRUCTION MANAGER AND PAYMENT FOR THIS SHALL BE BASED ON COUNTY UNIT PRICES FOR UNSUITABLE MATERIAL.

RETAINING WALL A 10+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

PROFESSIONAL CERTIFICATION: I, J. STEVEN DONAHUE, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 45177 EXPIRATION DATE 3/12/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

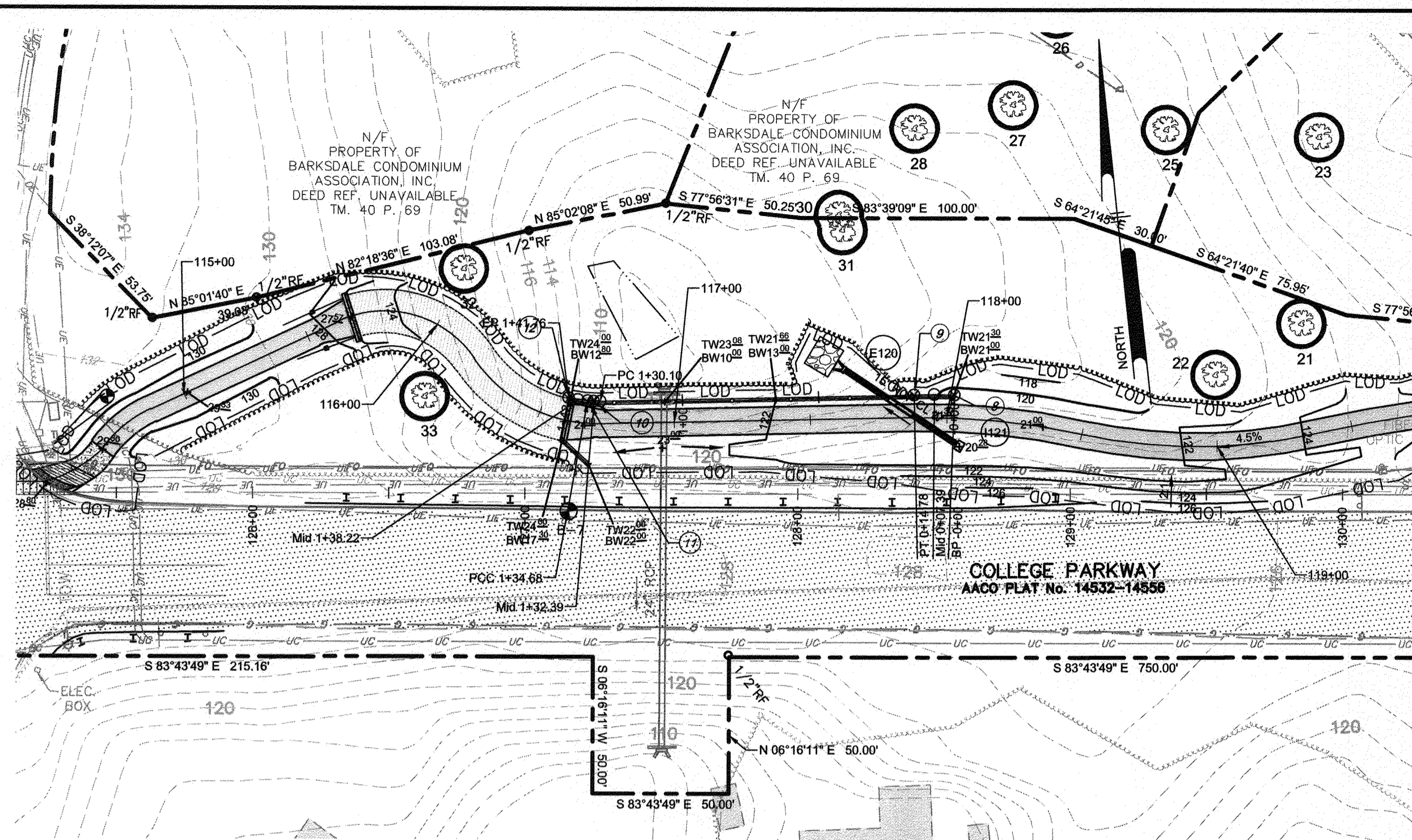
APPROVED DATE: 5/6/21
APPROVED DATE: 4/15/21
APPROVED DATE: 4/21/21
APPROVED DATE: 4/16/21

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
97174
APRIL 5, 2021

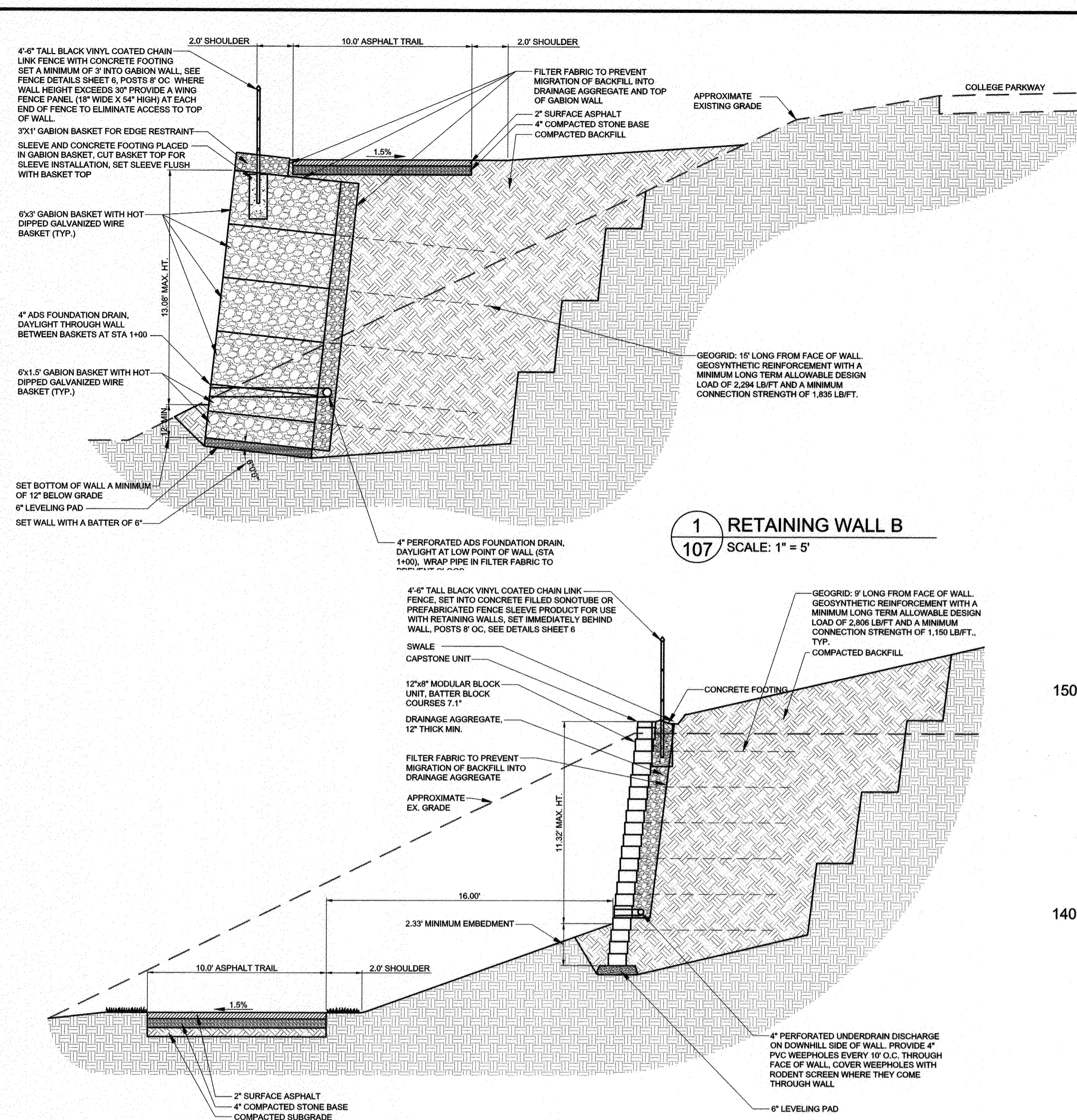
SCALE: 1" = 40'
DRAWN BY: PAI
CHECKED BY: PJS/JAR
PROJECT #: P504100
PROPOSAL #:

RETAINING WALL PLANS, ELEVATIONS AND DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

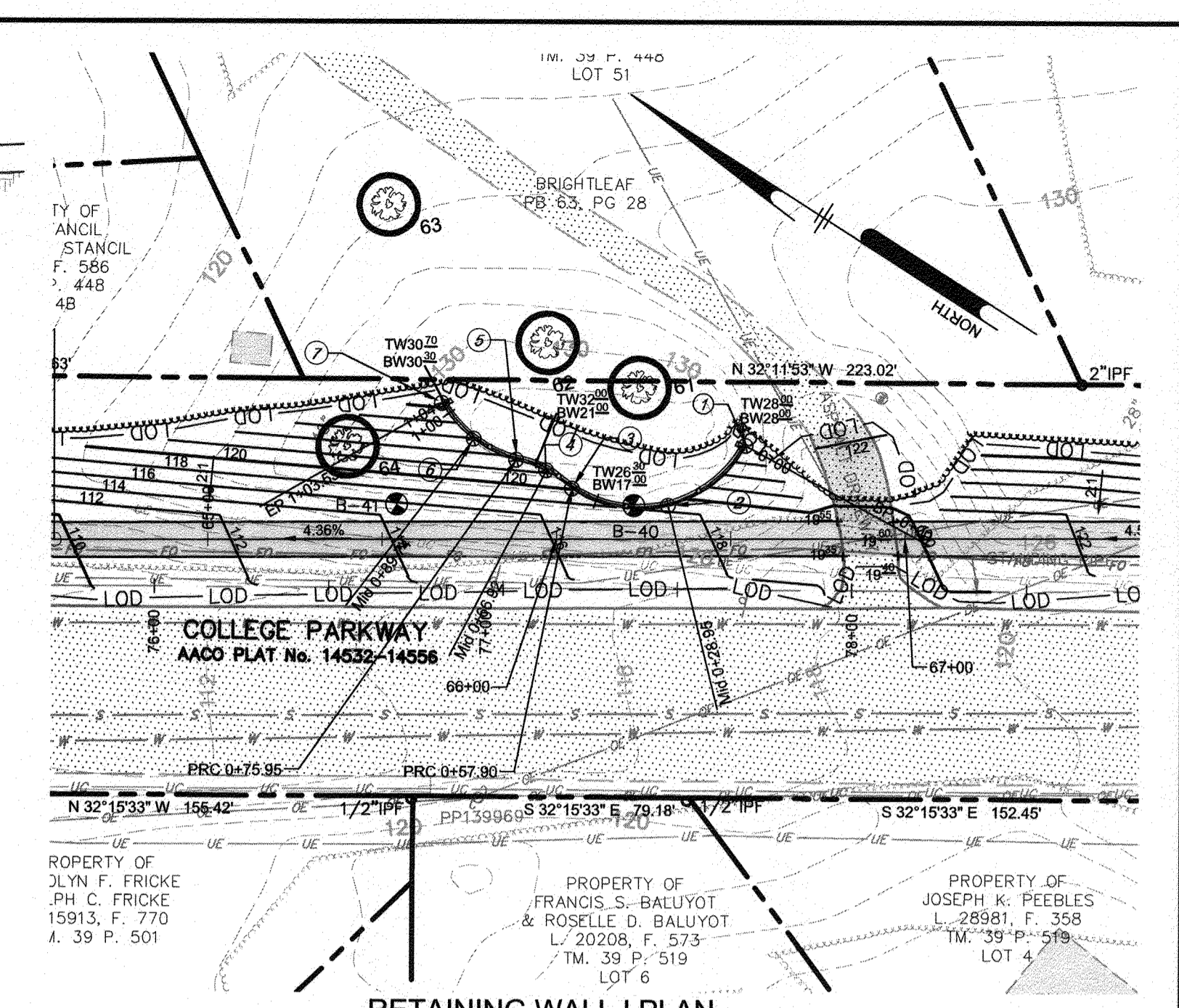
GP# G02017905 DWG NO: DD15A



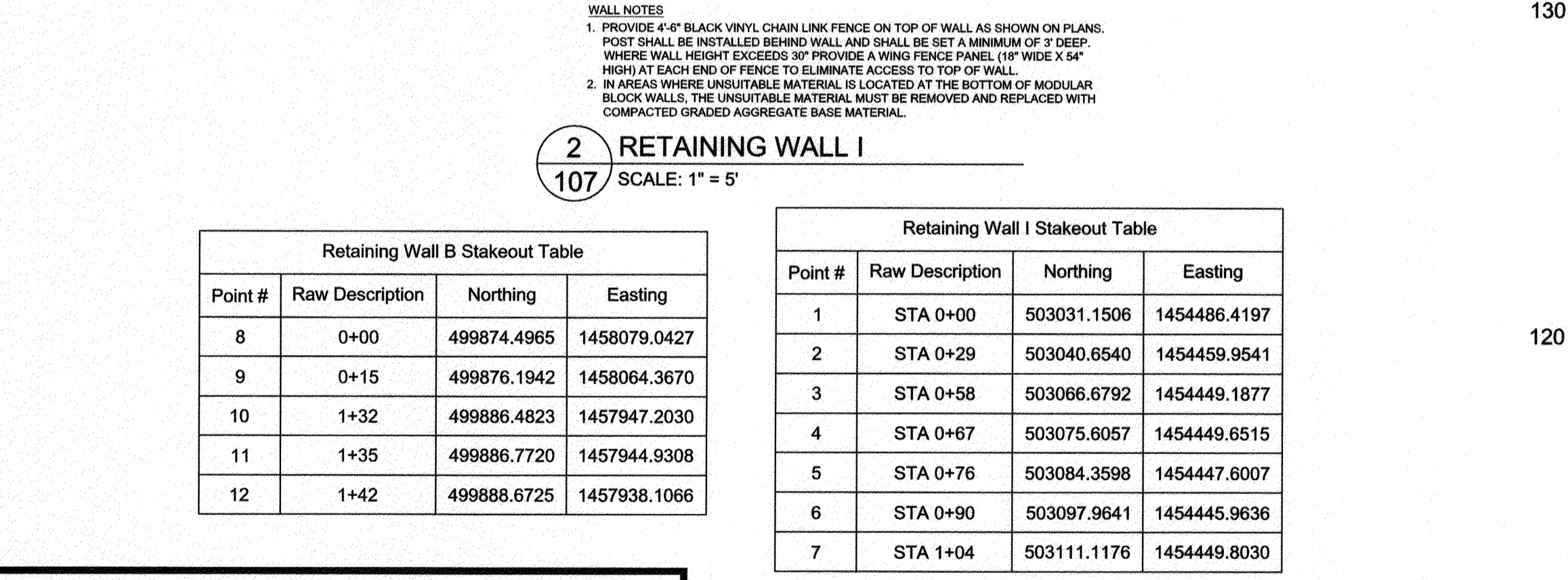
RETAINING WALL B PLAN
SCALE: 1" = 40'



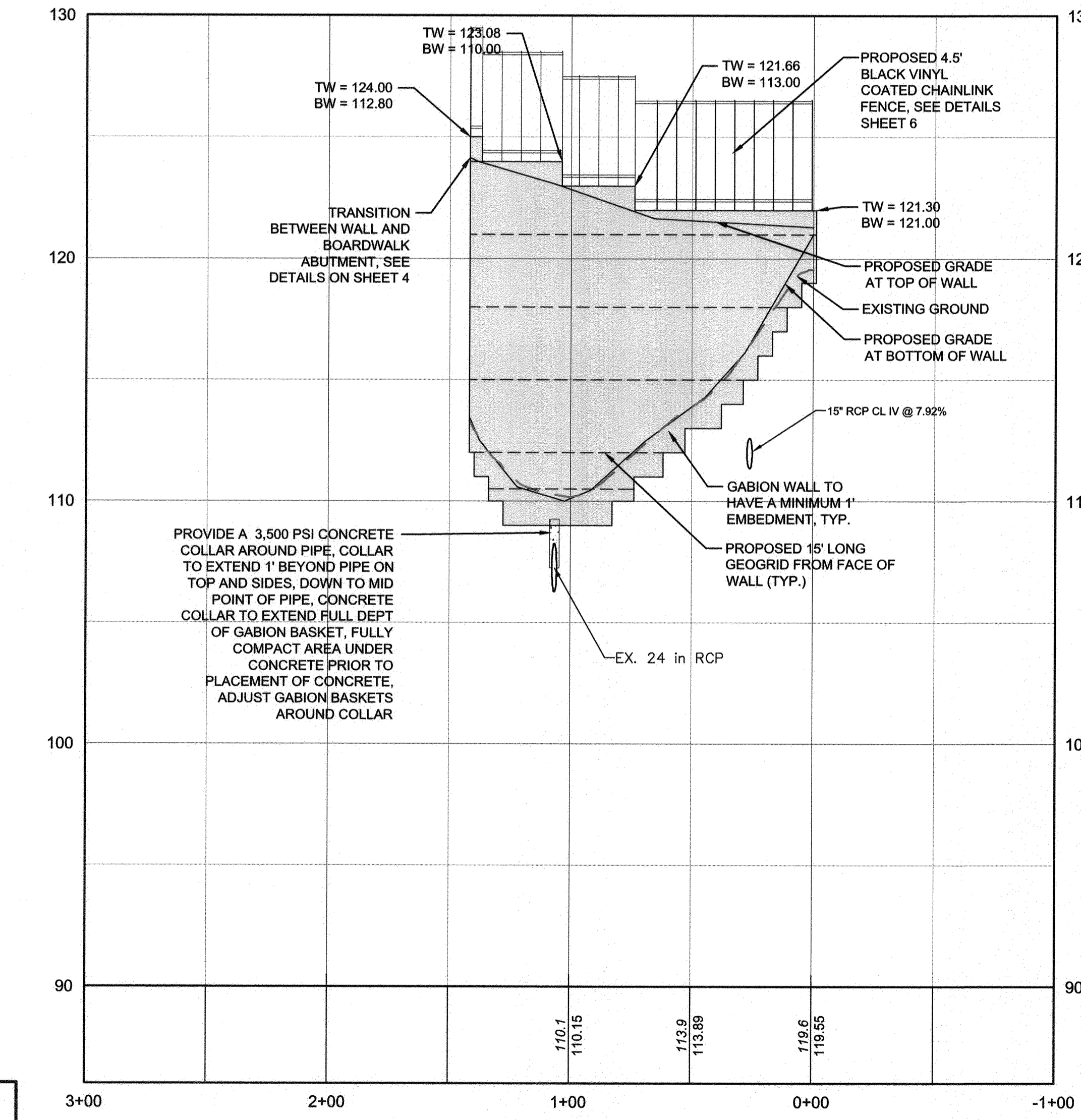
1 RETAINING WALL B
SCALE: 1" = 5'



RETAINING WALL I PLAN
SCALE: 1" = 40'



2 RETAINING WALL I
SCALE: 1" = 5'



RETAINING WALL B 5+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

SEE SHEETS 6 AND 7 FOR RETAINING WALL AND FENCE DETAILS

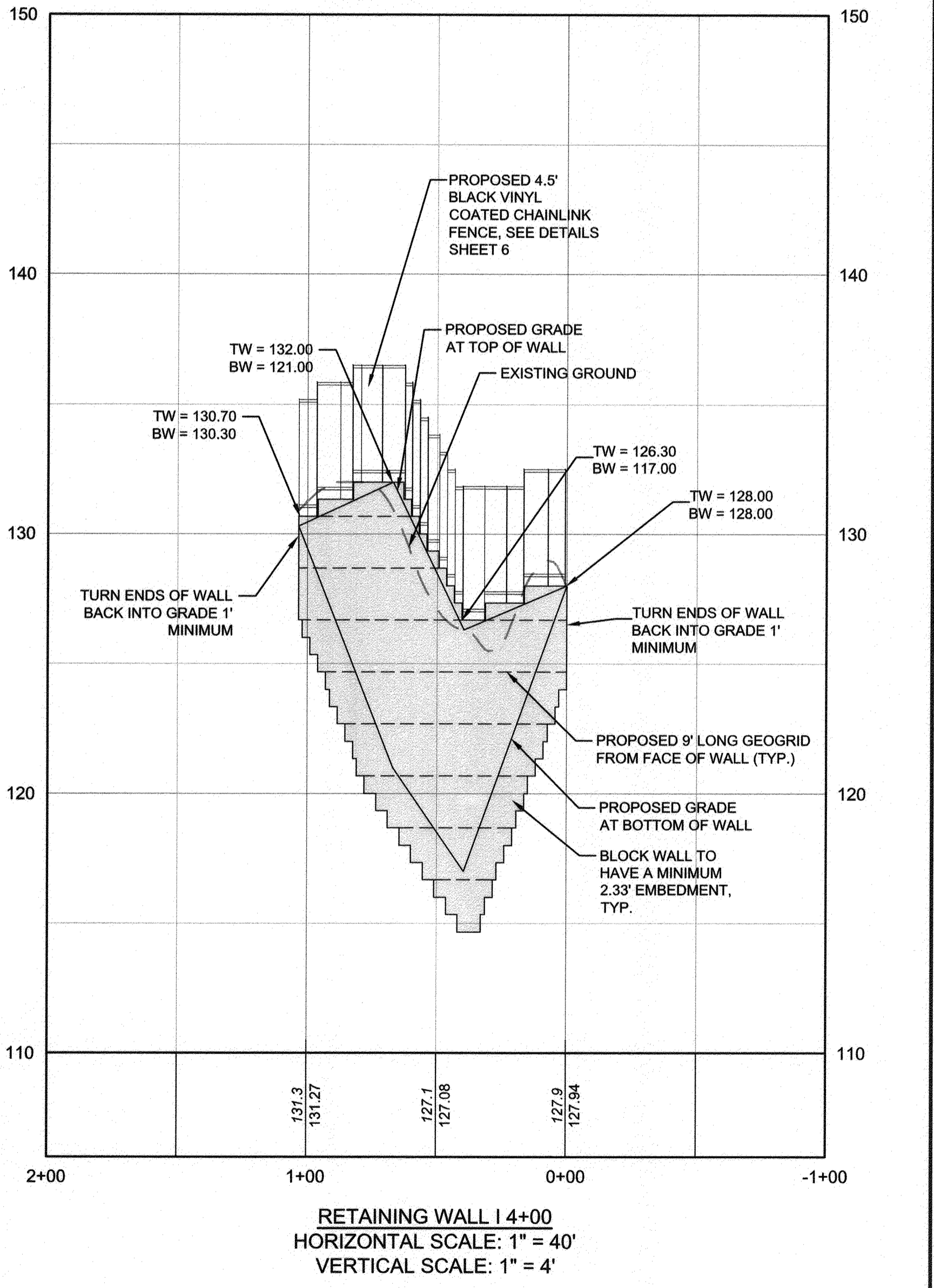
NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

FOR THE GABION WALLS SHOWN, THE CONTRACTOR HAS THE OPTION OF REPLACING THE GABION WALL WITH A MODULAR BLOCK WALL LIKE THAT PROVIDED ELSEWHERE ON THE PROJECT.

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.). THIS SHALL BE DONE AT THE DIRECTION OF THE COUNTY'S CONSTRUCTION MANAGER AND PAYMENT FOR THIS SHALL BE BASED ON COUNTY UNIT PRICES FOR UNSUITABLE MATERIAL.

Point #	Raw Description	Northing	Easting
8	0+00	499874.4965	1458079.0427
9	0+15	499876.1942	1458064.3670
10	1+32	499886.4823	1457947.2030
11	1+35	499886.7720	1457944.9308
12	1+42	499888.6725	1457938.1066

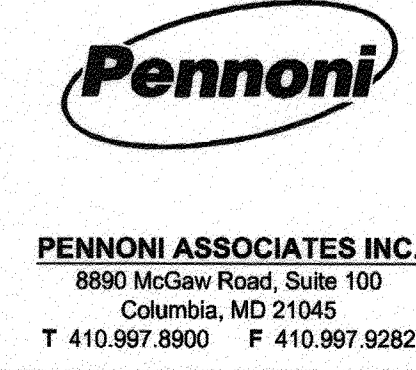
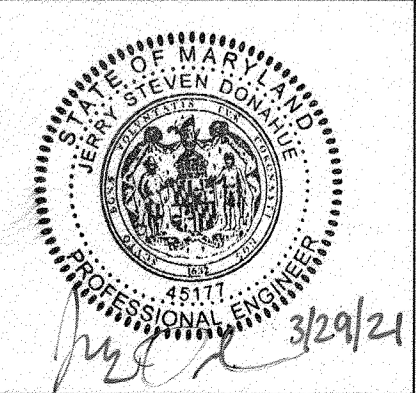
Point #	Raw Description	Northing	Easting
1	STA 0+00	503031.1506	1454486.4197
2	STA 0+29	503040.6540	1454459.9541
3	STA 0+58	503066.6792	1454449.1877
4	STA 0+67	503075.6057	1454449.6515
5	STA 0+76	503084.3598	1454447.6007
6	STA 0+90	503097.9641	1454445.9638
7	STA 1+04	503111.1176	1454449.8030



RETAINING WALL I 4+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

PROFESSIONAL CERTIFICATION: I, J. STEVEN DONAHUE, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 45177 EXPIRATION DATE 3/12/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



APPROVED DATE: *[Signature]* 5/6/21
CHIEF ENGINEER

APPROVAL DATE: *[Signature]* 4/24/21
ASSISTANT CHIEF ENGINEER

APPROVED DATE: *[Signature]* 4/15/21
PROJECT MANAGER

APPROVED DATE: *[Signature]* 4/16/21
CHIEF, RIGHT OF WAY SERVICES

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

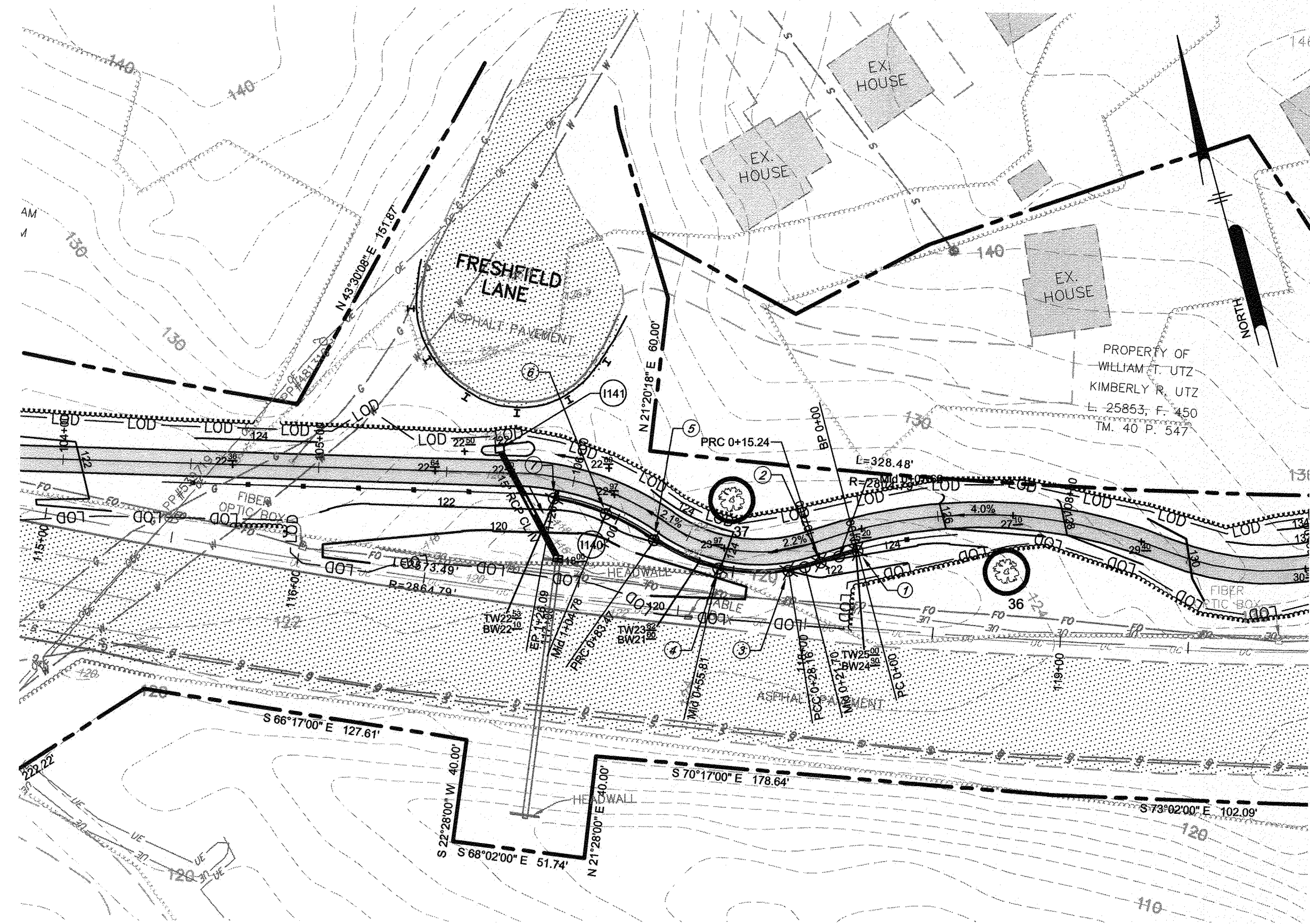
97175 APRIL 5, 2021

RETAINING WALL PLANS, ELEVATIONS AND DETAILS

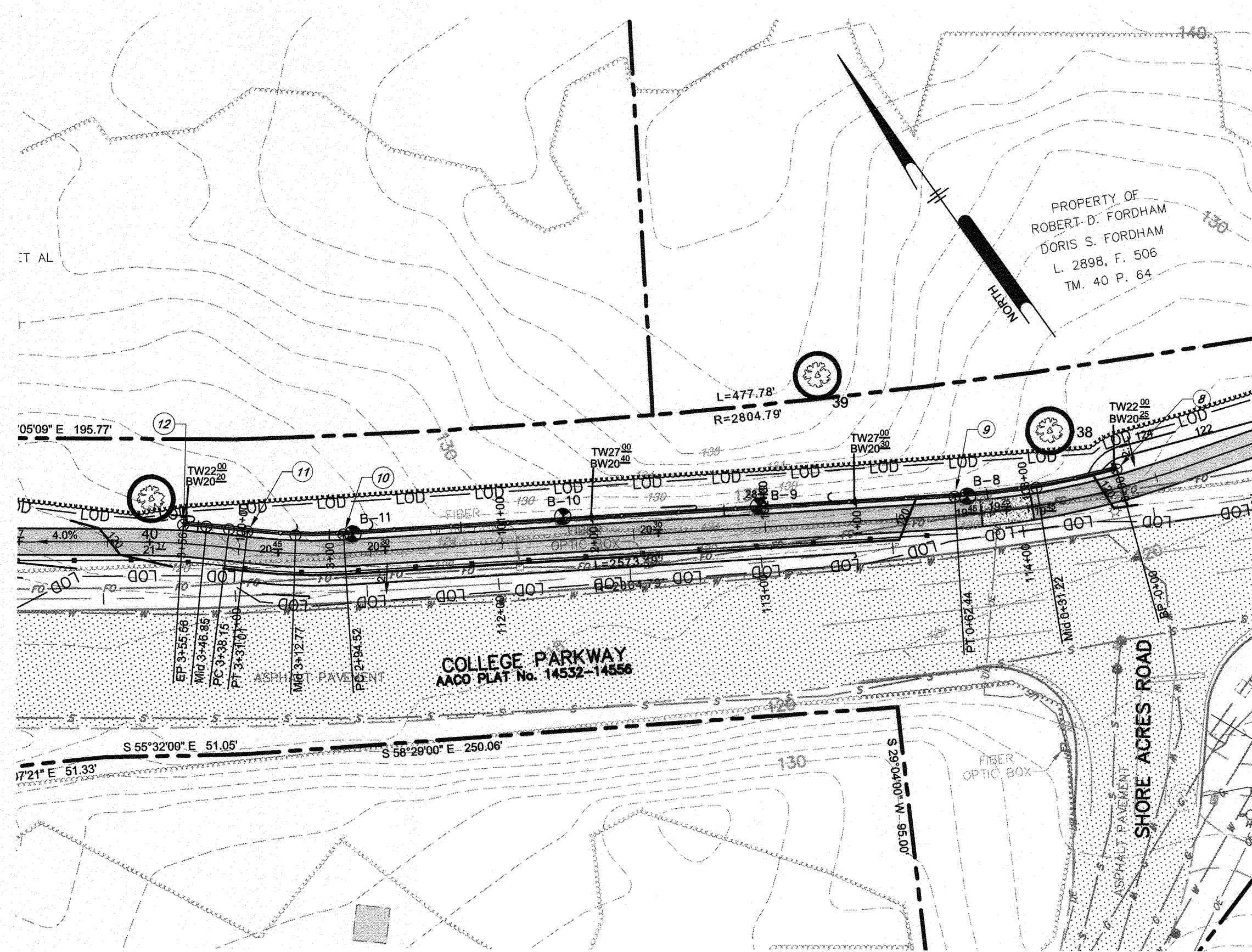
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

GP# G02017905 DWG NO: DD15B

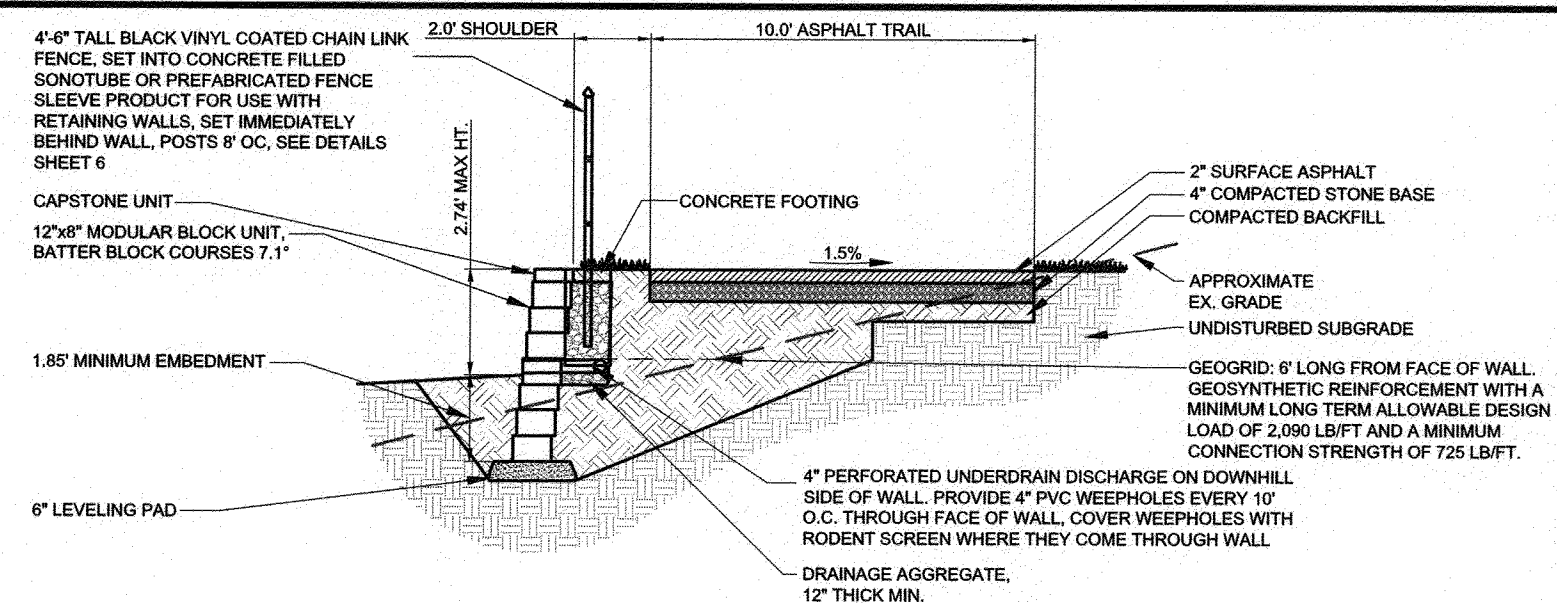
REV. NO.:



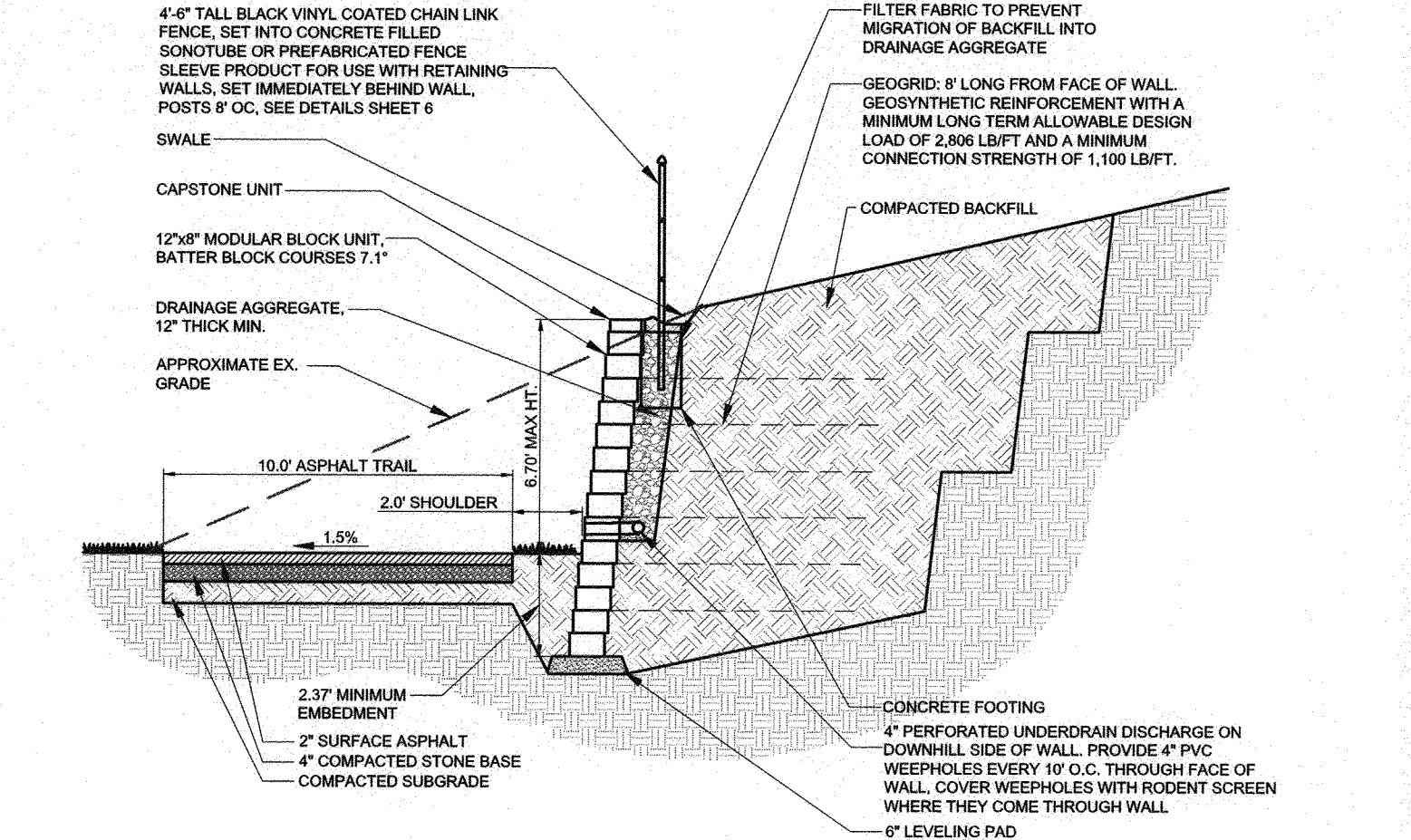
RETAINING WALL D PLAN
SCALE: 1" = 40'



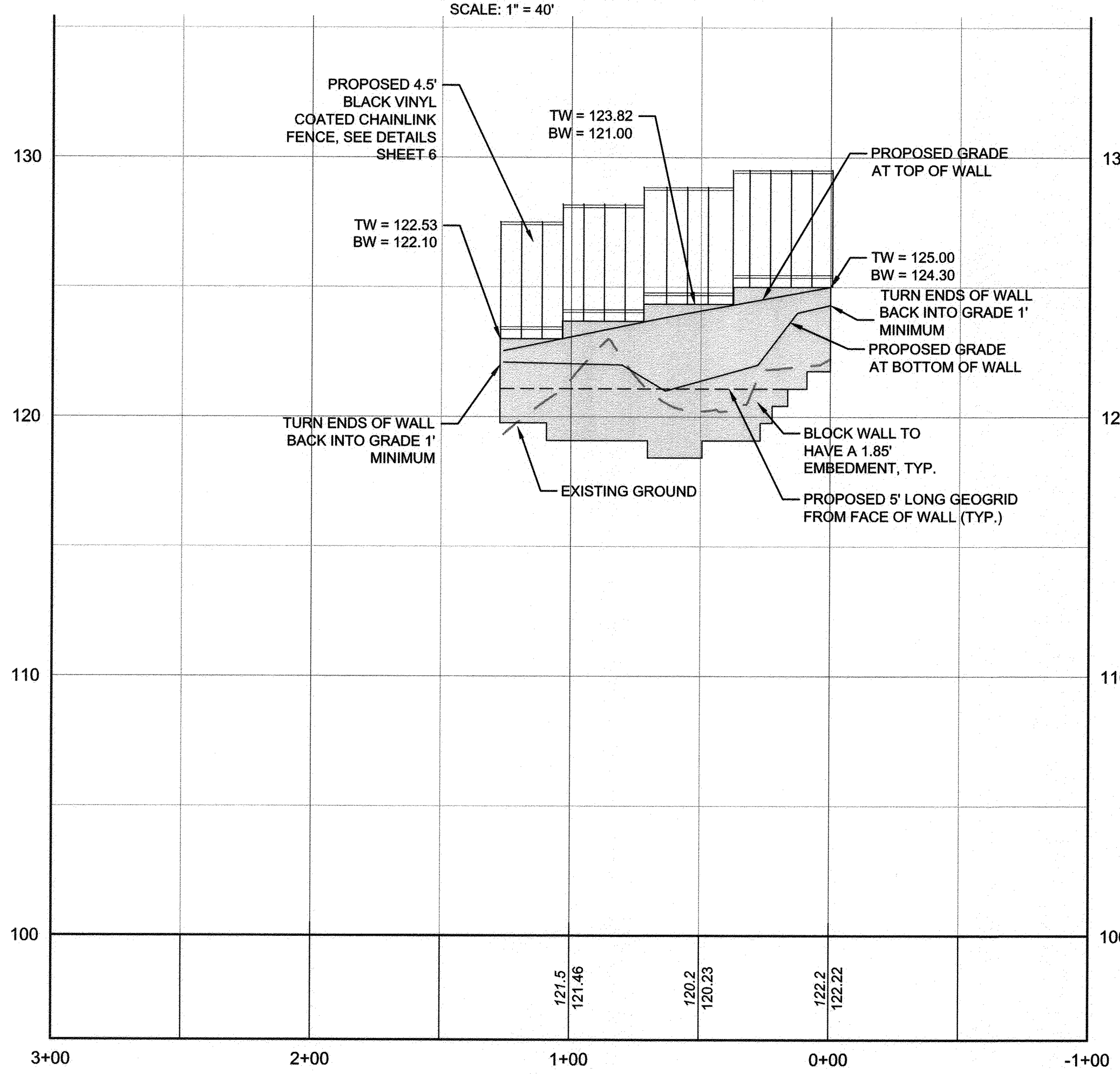
RETAINING WALL E PLAN
SCALE: 1" = 40'



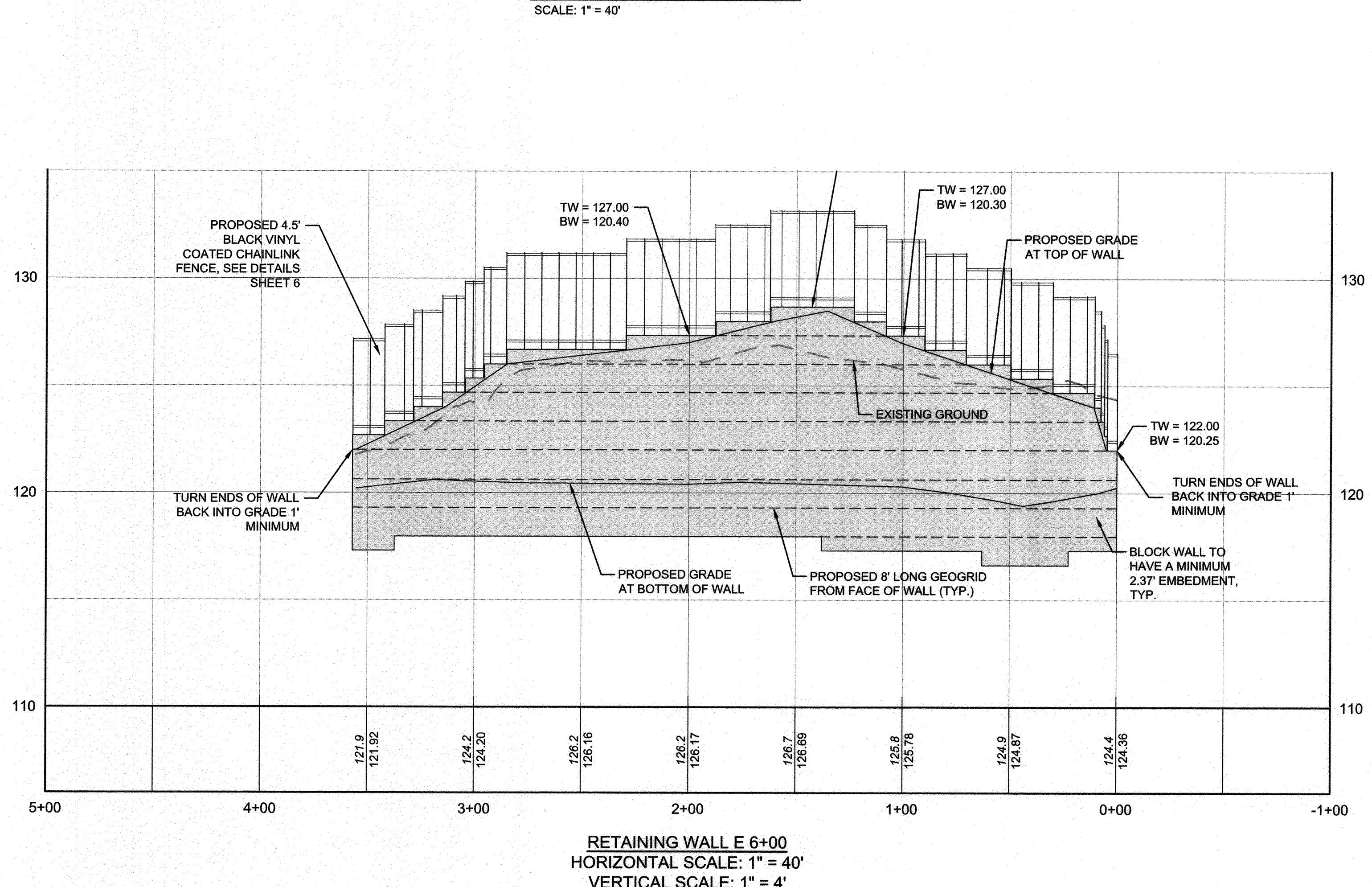
1 RETAINING WALL D
SCALE: 1" = 5'



2 RETAINING WALL E
SCALE: 1" = 5'



RETAINING WALL D 4+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



RETAINING WALL E 6+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

Retaining Wall D Stakeout Table			
Point #	Raw Description	Northing	Easting
1	STA 0+00	500056.0565	1457066.2637
2	STA 0+15	500055.4650	1457051.0364
3	STA 0+28	500055.5908	1457038.1353
4	STA 0+56	500063.4607	1457011.8022
5	STA 0+83	500080.5958	1456990.3079
6	STA 1+05	500095.2082	1456974.8559
7	STA 1+26	500106.2141	1456956.6545

Retaining Wall E Stakeout Table			
Point #	Raw Description	Northing	Easting
9	0+62	500222.6606	1456660.4406
8	0+00	500195.2530	1456716.4133
10	2+95	500345.9601	1456463.8195
11	3+31	500368.0787	1456434.8597
12	3+56	500384.3324	1456416.4757

NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

SEE SHEETS 6 AND 7 FOR RETAINING WALL AND FENCE DETAILS

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.). THIS SHALL BE DONE AT THE DIRECTION OF THE COUNTY'S CONSTRUCTION MANAGER AND PAYMENT FOR THIS SHALL BE BASED ON COUNTY UNIT PRICES FOR UNSUITABLE MATERIAL.

PROFESSIONAL CERTIFICATION: I, J. STEVEN DONAHUE, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 45177 EXPIRATION DATE 3/12/2022

REVISIONS: [Table with columns for #, DESCRIPTION, APPROVED BY, DATE]

APPROVED: [Signatures and Dates]

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
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T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97176 APRIL 5, 2021

RETAINING WALL PLANS, ELEVATIONS AND DETAILS

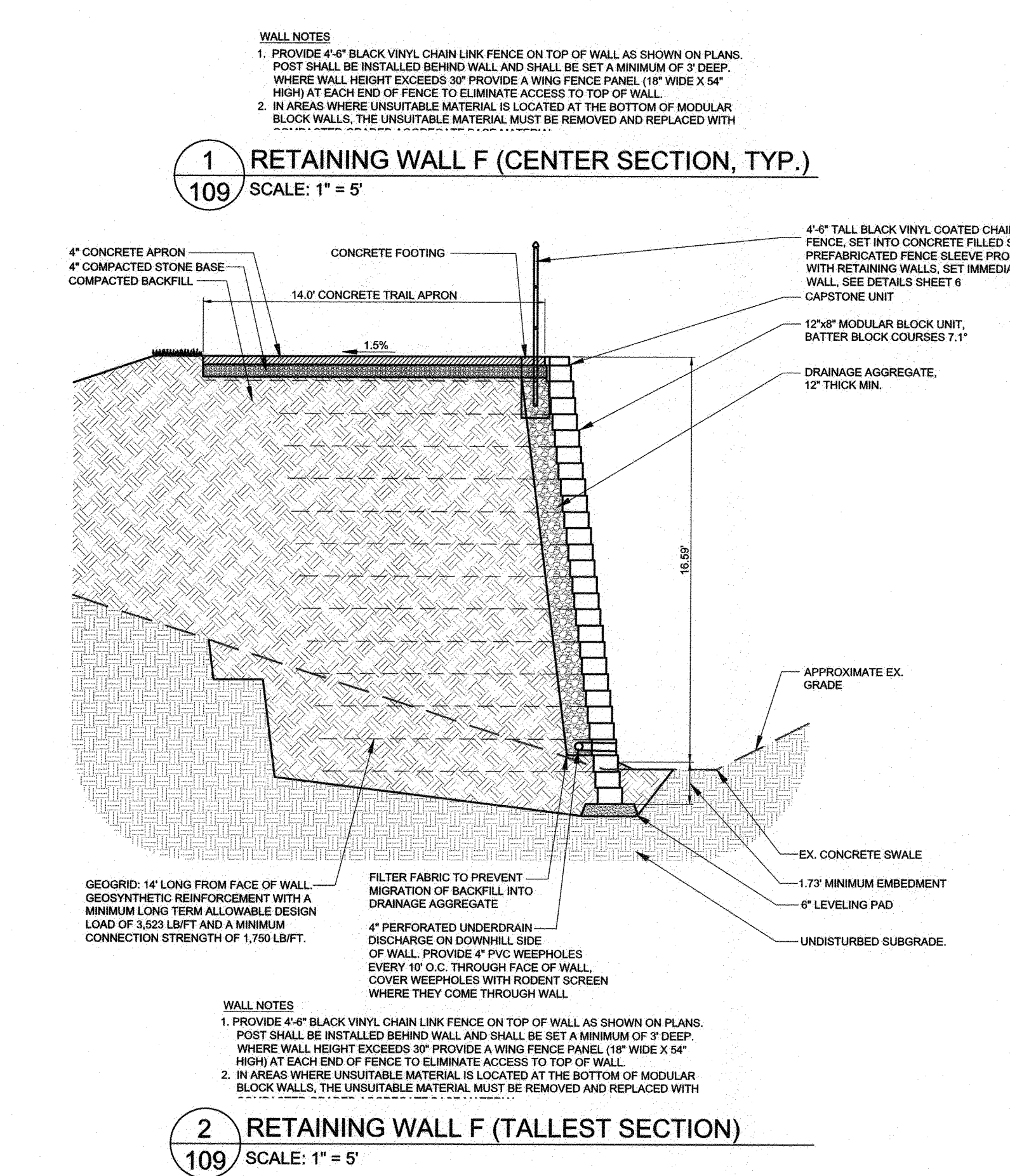
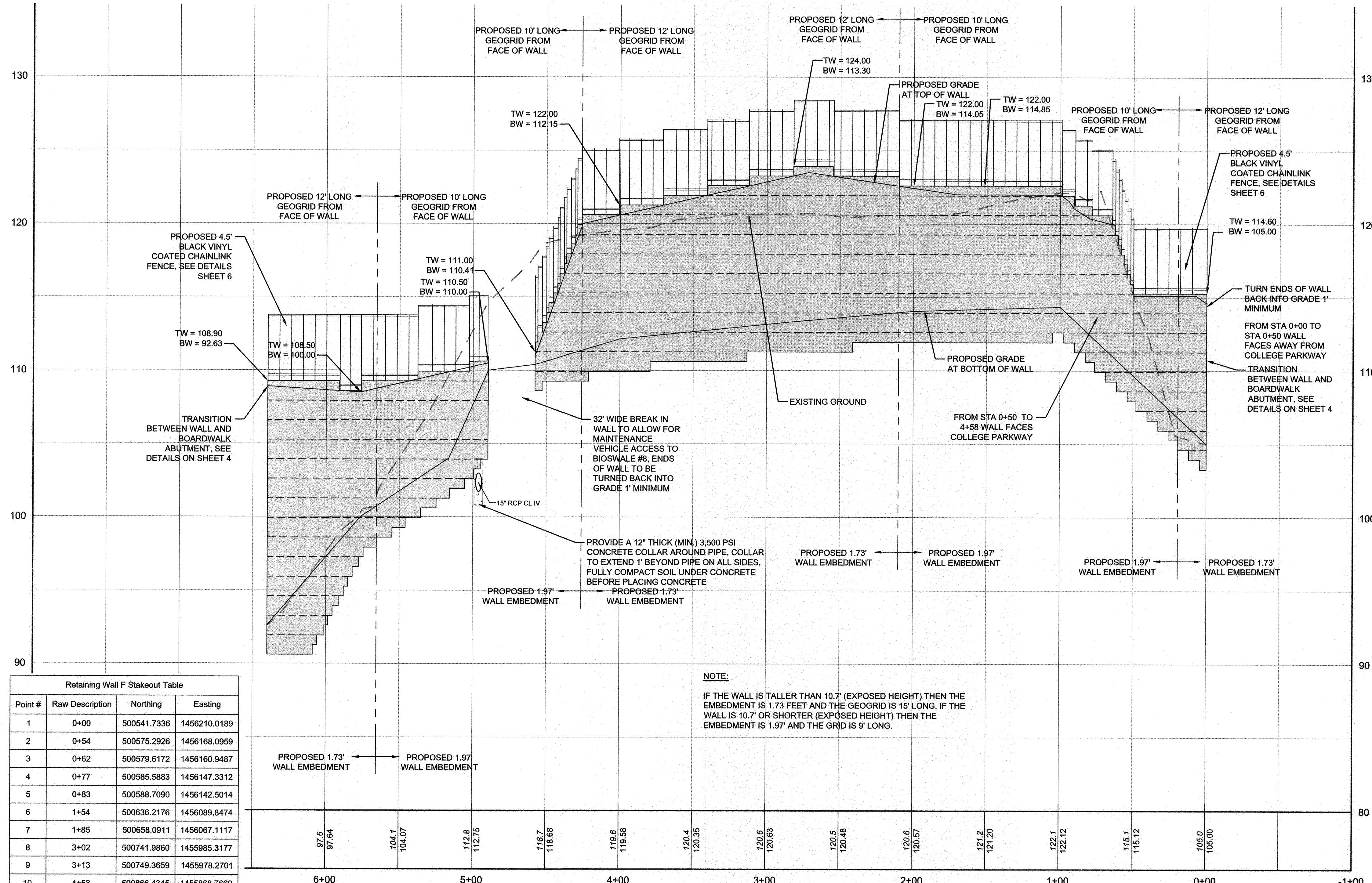
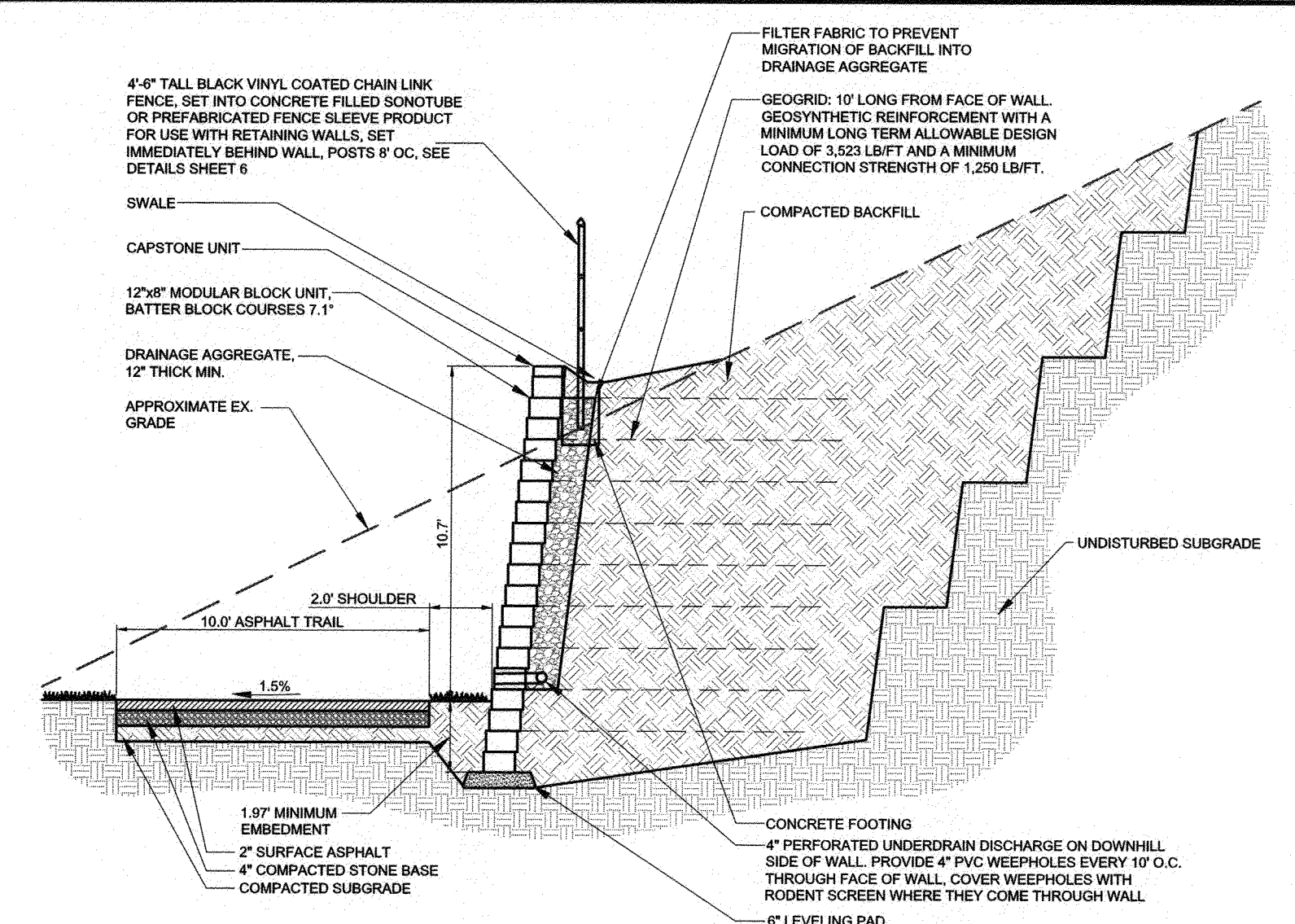
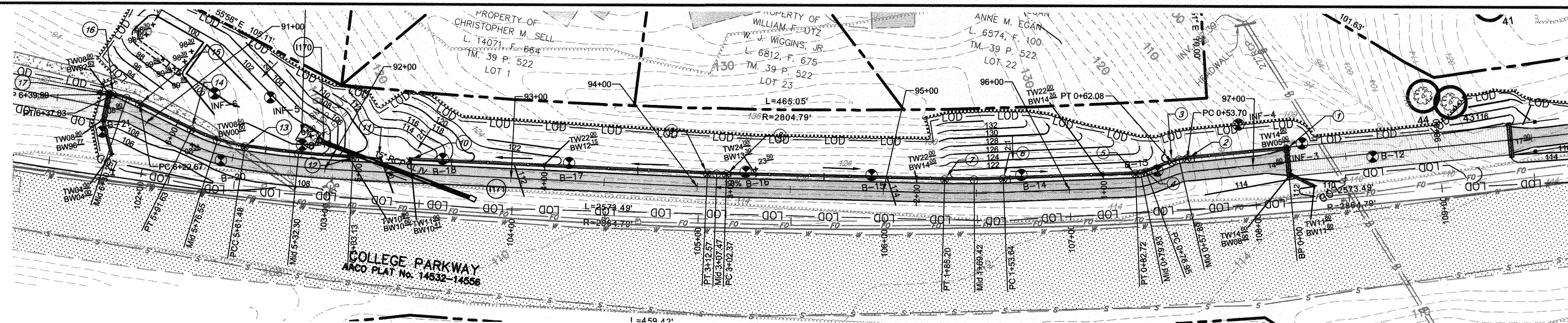
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS

ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

OP# 602017905 DWG NO: DD15C

SCALE: 1" = 40'

DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 108 of 137
PROJECT #: P504100
PROPOSAL #:



Point #	Raw Description	Northing	Easting
1	0+00	500541.7336	1456210.0189
2	0+54	500575.2926	1456168.0959
3	0+62	500579.6172	1456160.9487
4	0+77	500585.5883	1456147.3312
5	0+83	500588.7090	1456142.5014
6	1+54	500636.2176	1456089.8474
7	1+85	500658.0911	1456067.1117
8	3+02	500741.9860	1455985.3177
9	3+13	500749.3659	1455978.2701
10	4+58	500866.4345	1455868.7669
11	4+86	500878.3021	1455857.6663
12	5+03	500888.5344	1455848.0953
13	5+61	500933.1847	1455810.5796
14	5+92	500959.6592	1455796.4000
15	6+23	500988.9428	1455786.1111
16	6+38	501002.4139	1455779.2535
17	6+40	501004.1963	1455778.0240

NOTE:
IF THE WALL IS TALLER THAN 10.7' (EXPOSED HEIGHT) THEN THE EMBEDMENT IS 1.73 FEET AND THE GEOGRID IS 15' LONG. IF THE WALL IS 10.7' OR SHORTER (EXPOSED HEIGHT) THEN THE EMBEDMENT IS 1.97' AND THE GRID IS 9' LONG.

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.). THIS SHALL BE DONE AT THE DIRECTION OF THE COUNTY'S CONSTRUCTION MANAGER AND PAYMENT FOR THIS SHALL BE BASED ON COUNTY UNIT PRICES FOR UNSUITABLE MATERIAL.

SEE SHEETS 6 AND 7 FOR RETAINING WALL AND FENCE DETAILS

NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

PROFESSIONAL CERTIFICATION: I, **J. STEVEN DONAHUE, PE**, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 45177 EXPIRATION DATE 3/12/2022

REVISIONS

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Penioni
PENIONI ASSOCIATES INC.
8890 McGraw Road, Suite 100
Columbia, MD 21046
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE 5/6/21
CHECKED BY: PAJ/JAR
APPROVAL DATE 4/24/21
ASSISTANT CHIEF ENGINEER

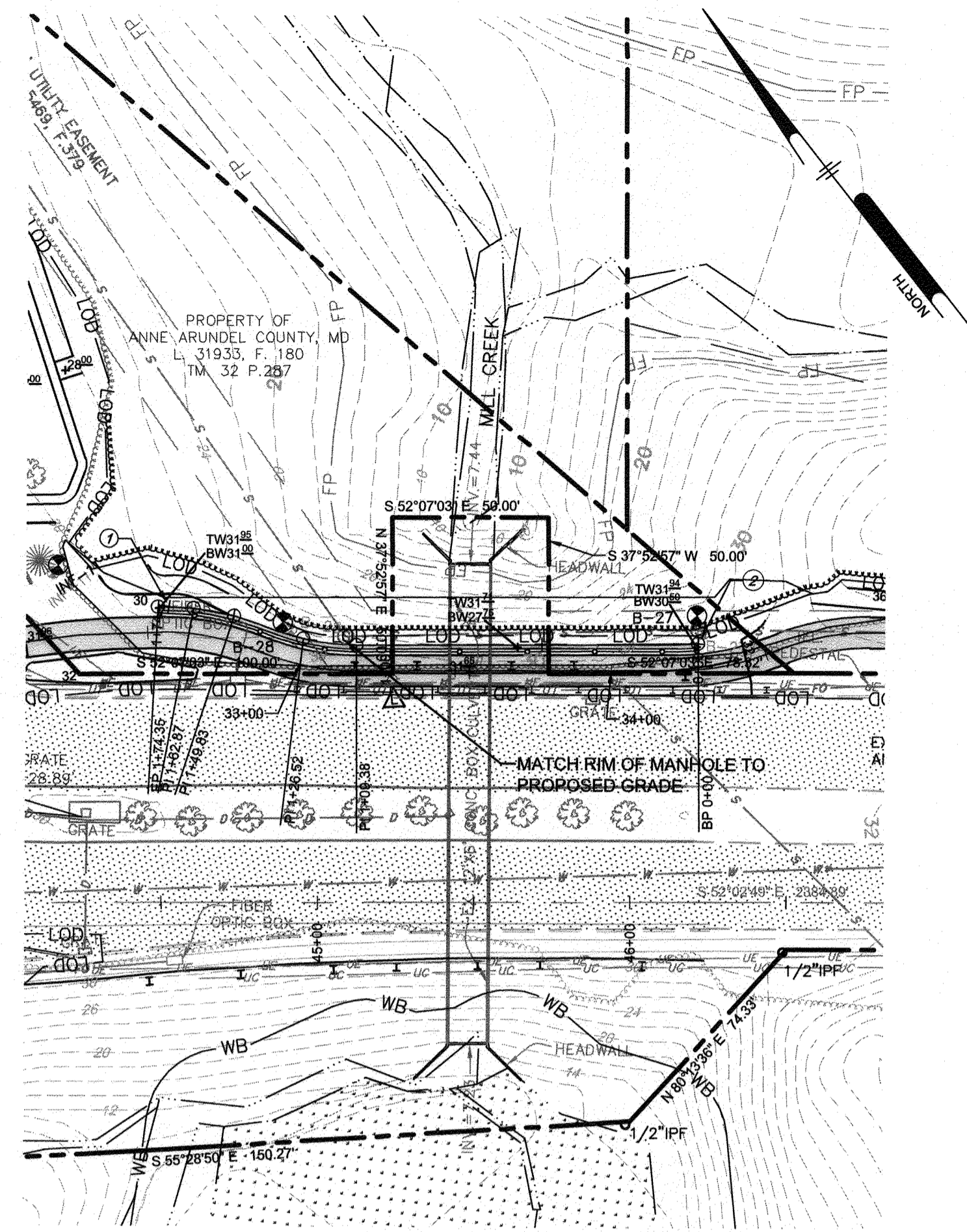
APPROVED DATE 4/15/21
CHECKED BY: PJS/JAR
APPROVED DATE 4/16/21
CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'
DRAWN BY: PAJ
SHEET 109 OF 137
PROJECT #: P504100
PROPOSAL #:

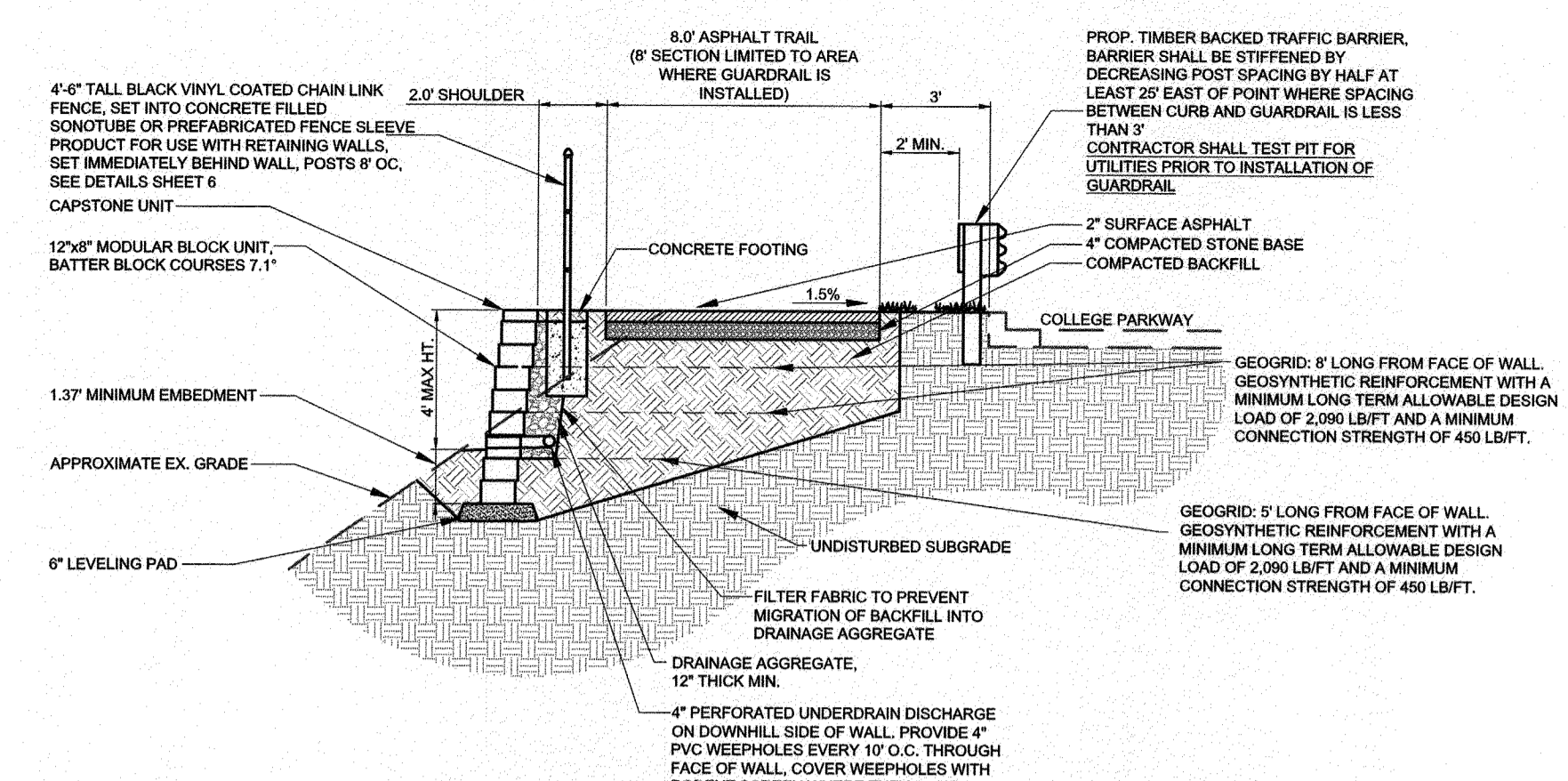
RETAINING WALL PLANS, ELEVATIONS AND DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

GP# G02017905 DWG NO: DD15D

DRAW NO.:



RETAINING WALL L
SCALE: 1" = 40'



WALL NOTES
1. PROVIDE 4'-6" BLACK VINYL COATED CHAIN LINK FENCE ON TOP OF WALL AS SHOWN ON PLANS. POST SHALL BE INSTALLED BEHIND WALL AND SHALL BE SET A MINIMUM OF 3" DEEP WHERE WALL HEIGHT EXCEEDS 30" PROVIDE A WING FENCE PANEL, 118" WIDE X 6" HIGH AT EACH END OF FENCE TO ELIMINATE ACCESS TO TOP OF WALL.
2. IN AREAS WHERE UNSUITABLE MATERIAL IS LOCATED AT THE BOTTOM OF MODULAR BLOCK WALLS, THE UNSUITABLE MATERIAL MUST BE REMOVED AND REPLACED WITH COMPACTED GRADED AGGREGATE BASE MATERIAL.
3. CONTRACTOR SHALL TEST PIT FOR UTILITIES PRIOR TO INSTALLATION OF GUARDRAIL.

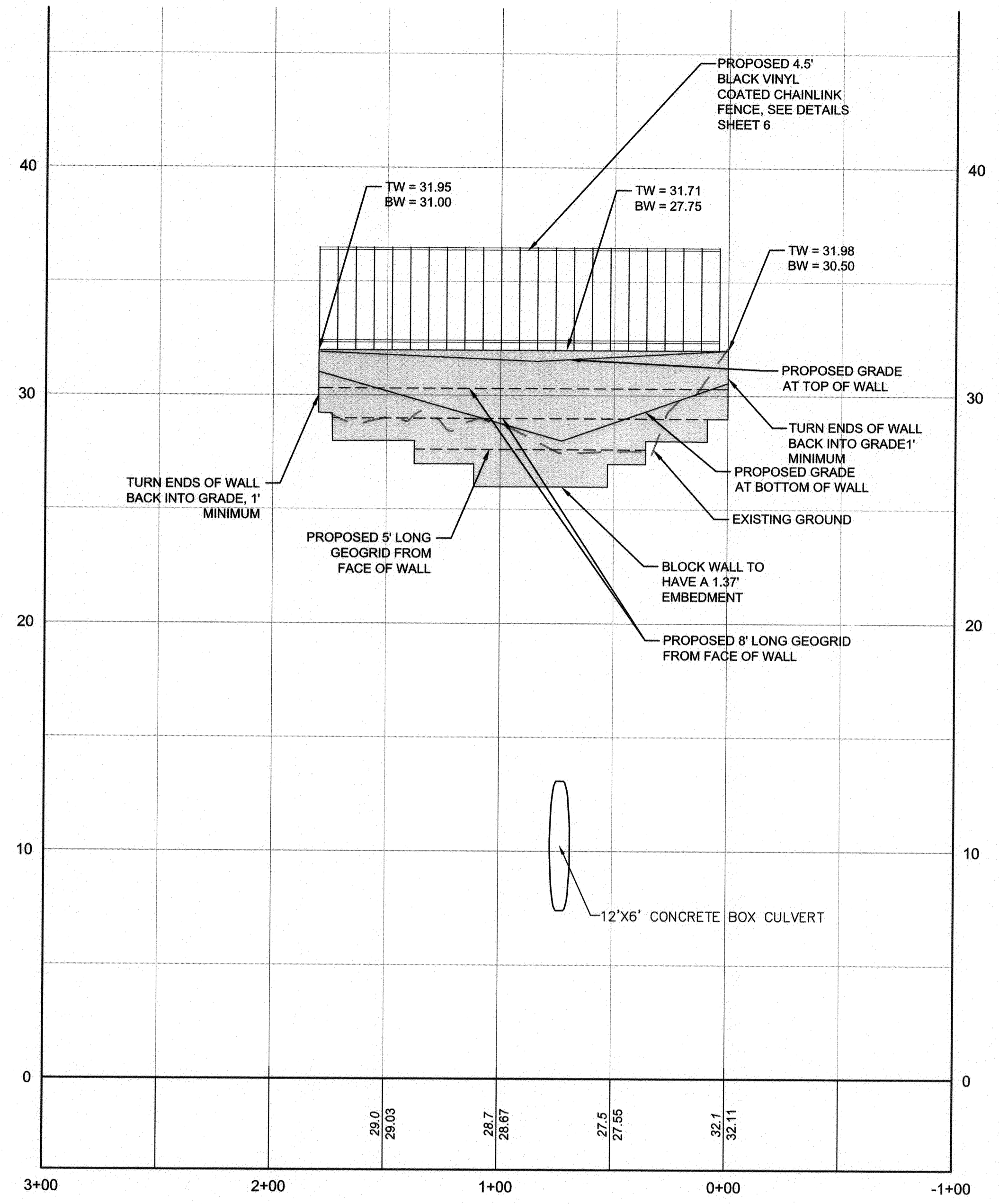
1 RETAINING WALL L
SCALE: 1" = 5'

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.). THIS SHALL BE DONE AT THE DIRECTION OF THE COUNTY'S CONSTRUCTION MANAGER AND PAYMENT FOR THIS SHALL BE BASED ON COUNTY UNIT PRICES FOR UNSUITABLE MATERIAL.

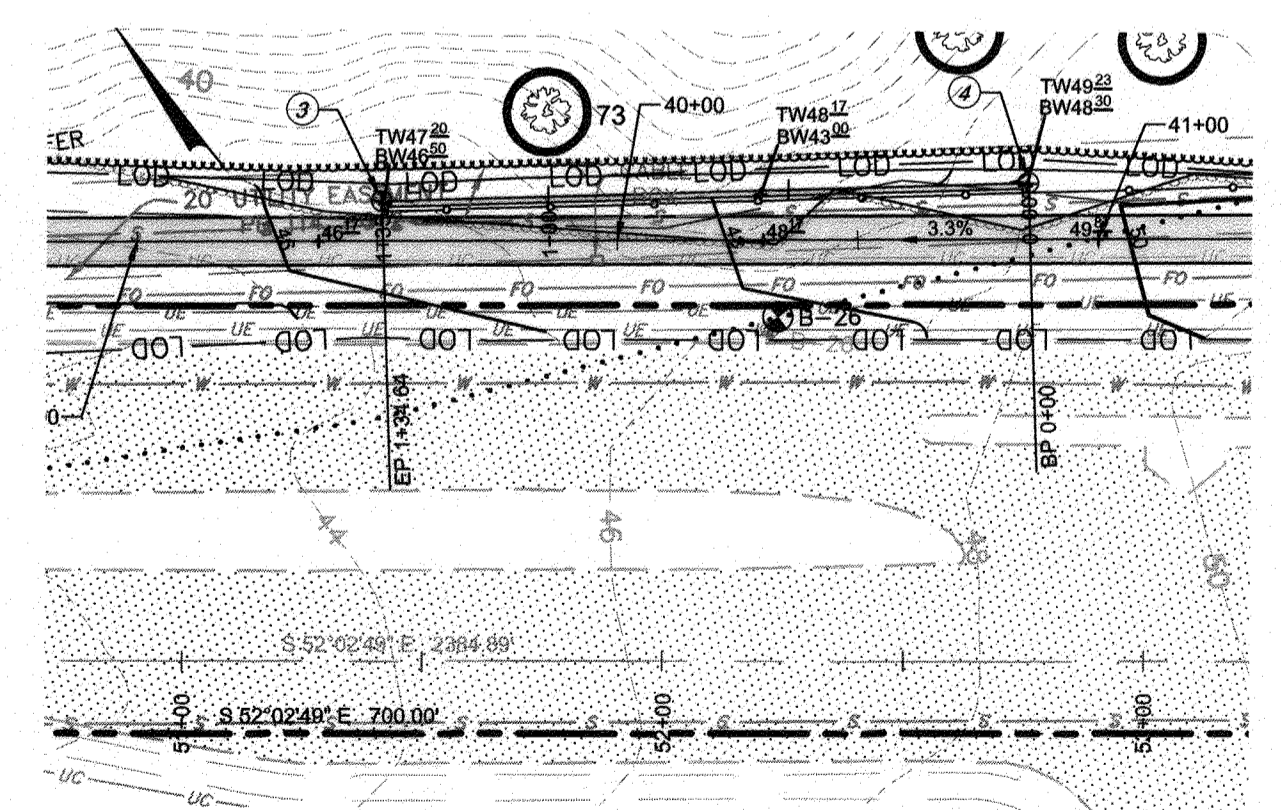
NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

Wall L Stakeout Table			
Point #	Raw Description	Northing	Easting
1	1+79	505294.1344	1452072.9980
2	0+00	505180.6362	1452199.1744

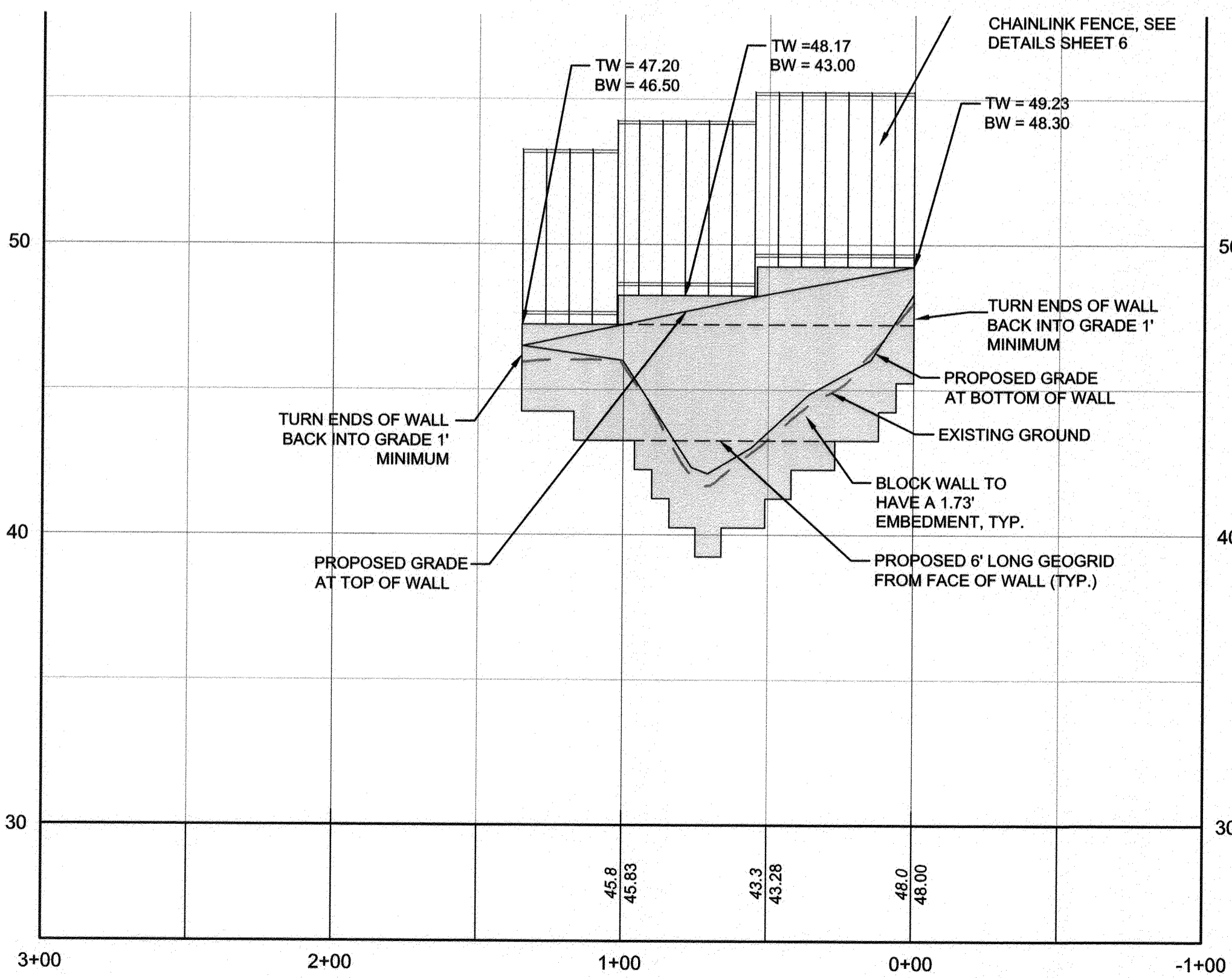
Wall J Stakeout Table			
Point #	Raw Description	Northing	Easting
3	1+35	504871.0891	1452616.9740
4	0+00	504791.3639	1452725.4765



RETAINING WALL L 4+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



RETAINING WALL J
SCALE: 1" = 40'



RETAINING WALL J 3+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

2 RETAINING WALL J
SCALE: 1" = 5'

PROFESSIONAL CERTIFICATION: I, J. STEVEN DONAHUE, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 45177 EXPIRATION DATE 3/12/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

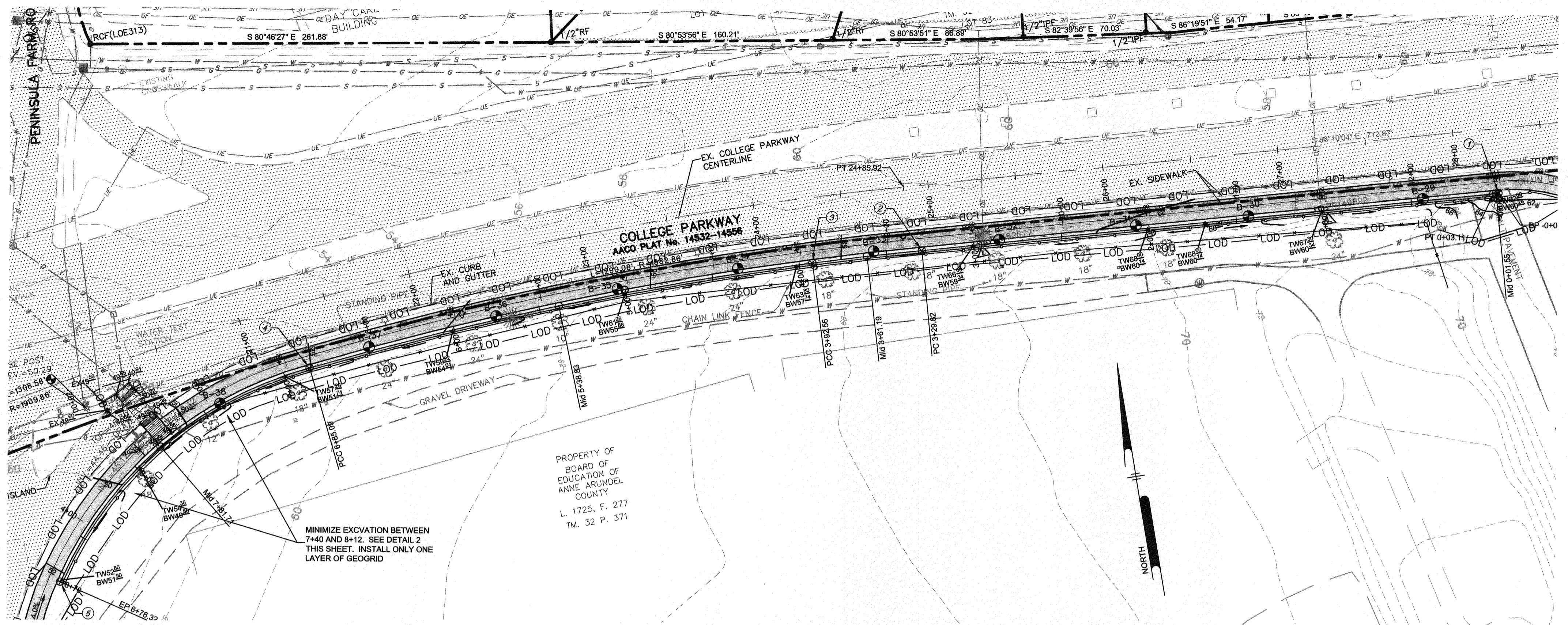
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ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
97178
APRIL 5, 2021

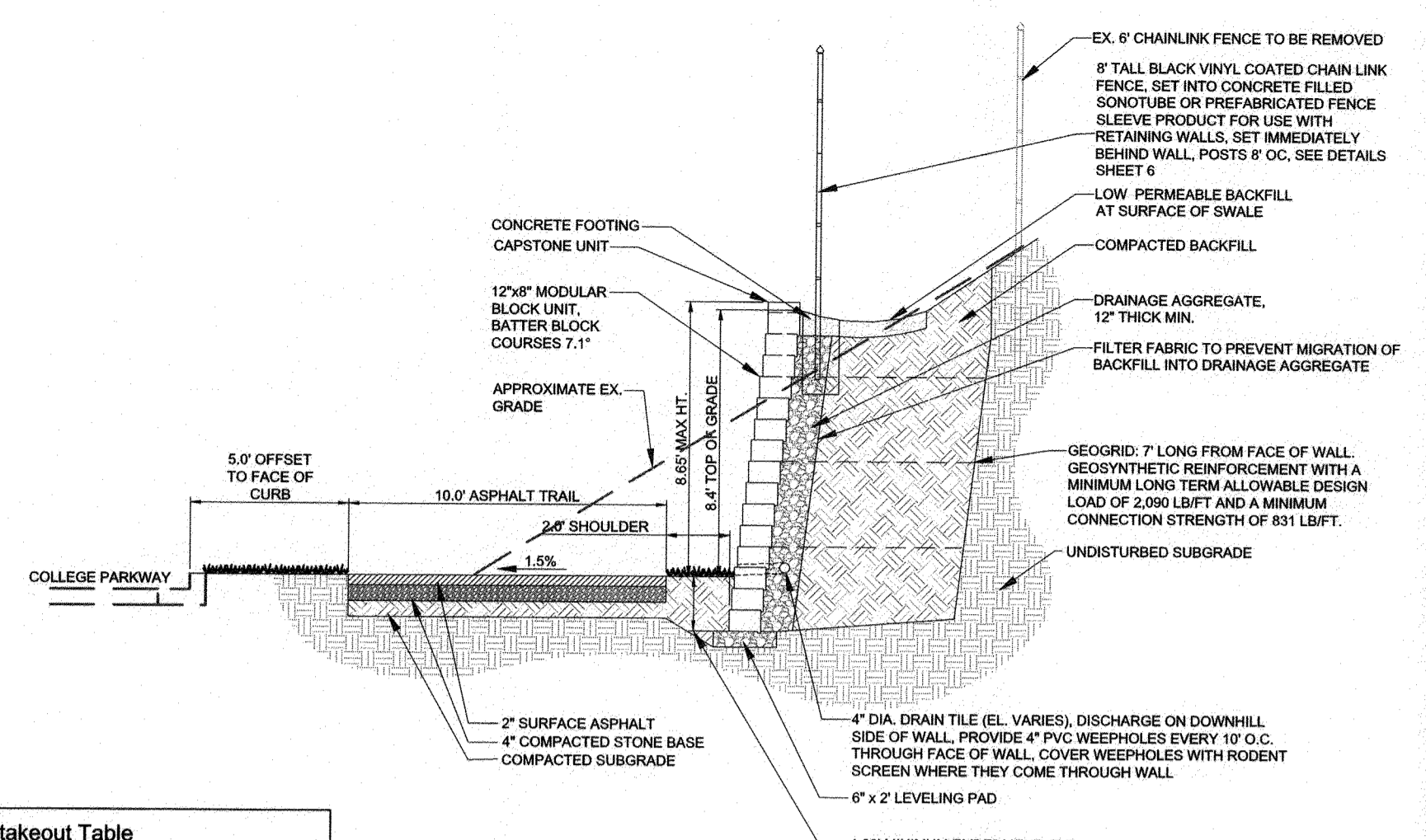
GP# G02017905 DWG NO: DD15E

SCALE: 1" = 40'
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 110 of 137
PROJECT #: P504100
PROPOSAL #:

RETAINING WALL PLANS, ELEVATIONS AND DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019



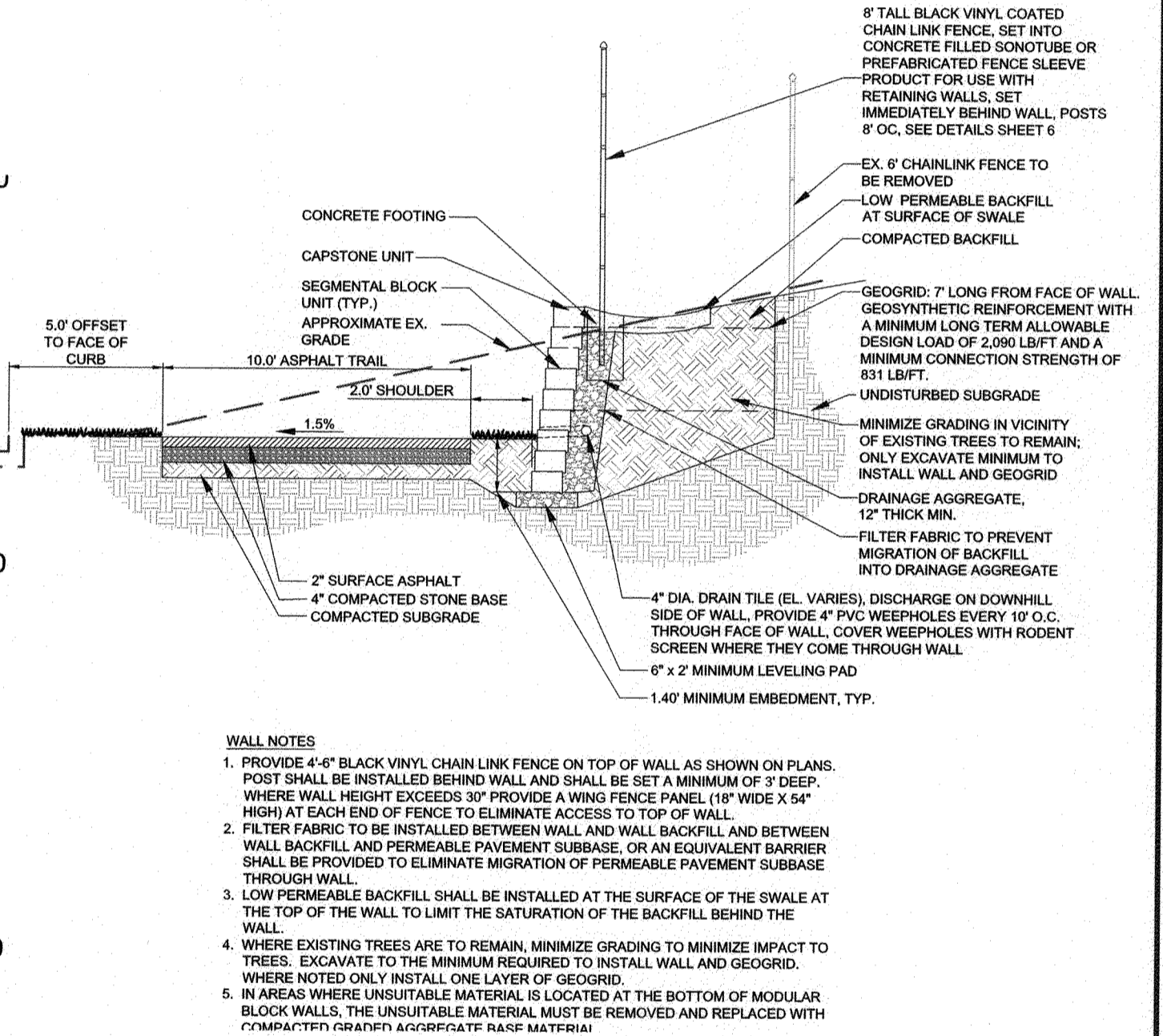
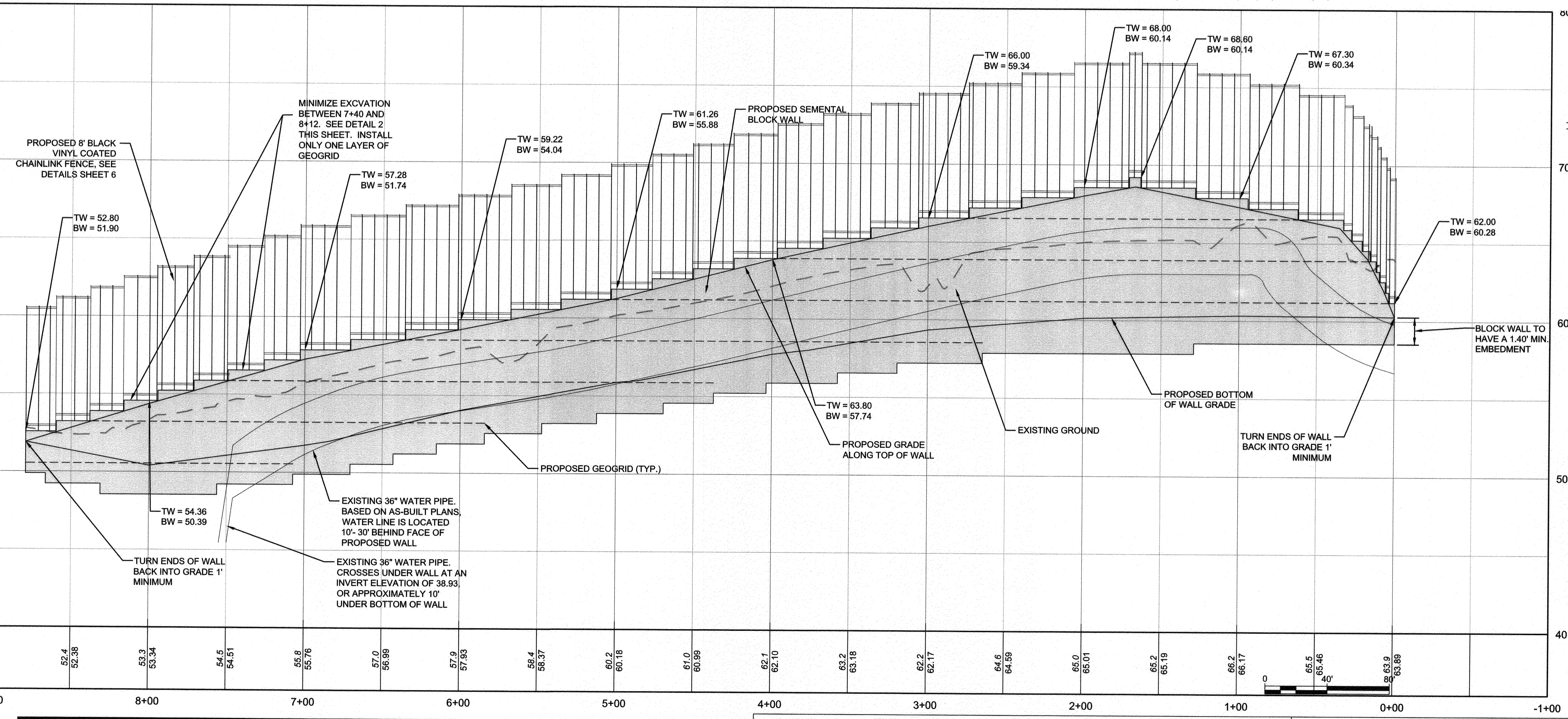
Point #	Raw Description	Northing	Easting
1	STA 0+00	505679.0569	1450498.5424
2	STA 3+30	505700.9451	1450169.4492
3	STA 3+93	505704.1919	1450106.7949
4	STA 6+85	505692.4878	1449814.7894
5	STA 8+79	505595.6833	1449654.9378



1 RETAINING WALL M
SCALE: 1" = 5'

WALL NOTES

- PROVIDE 4'-6" BLACK VINYL CHAIN LINK FENCE ON TOP OF WALL AS SHOWN ON PLANS. POST SHALL BE INSTALLED BEHIND WALL AND SHALL BE SET A MINIMUM OF 3" DEEP. WHERE WALL HEIGHT EXCEEDS 30' PROVIDE A WING FENCE PANEL (10" WIDE X 34" HIGH) AT EACH END OF FENCE TO ELIMINATE ACCESS TO TOP OF WALL.
- FILTER FABRIC TO BE INSTALLED BETWEEN WALL AND WALL BACKFILL AND BETWEEN WALL BACKFILL AND PERMEABLE PAVEMENT SUBBASE, OR AN EQUIVALENT BARRIER SHALL BE PROVIDED TO ELIMINATE MIGRATION OF PERMEABLE PAVEMENT SUBBASE THROUGH WALL.
- LOW PERMEABLE BACKFILL SHALL BE INSTALLED AT THE SURFACE OF THE SWALE AT THE TOP OF THE WALL TO LIMIT THE SATURATION OF THE BACKFILL BEHIND THE WALL.
- IN AREAS WHERE UNSUITABLE MATERIAL IS LOCATED AT THE BOTTOM OF MODULAR BLOCK WALLS, THE UNSUITABLE MATERIAL MUST BE REMOVED AND REPLACED WITH COMPACTED GRADED AGGREGATE BASE MATERIAL.



2 RETAINING WALL M STA 7+40 TO 8+12
SCALE: 1" = 5'

WALL NOTES

- PROVIDE 4'-6" BLACK VINYL CHAIN LINK FENCE ON TOP OF WALL AS SHOWN ON PLANS. POST SHALL BE INSTALLED BEHIND WALL AND SHALL BE SET A MINIMUM OF 3" DEEP. WHERE WALL HEIGHT EXCEEDS 30' PROVIDE A WING FENCE PANEL (10" WIDE X 34" HIGH) AT EACH END OF FENCE TO ELIMINATE ACCESS TO TOP OF WALL.
- FILTER FABRIC TO BE INSTALLED BETWEEN WALL AND WALL BACKFILL AND BETWEEN WALL BACKFILL AND PERMEABLE PAVEMENT SUBBASE, OR AN EQUIVALENT BARRIER SHALL BE PROVIDED TO ELIMINATE MIGRATION OF PERMEABLE PAVEMENT SUBBASE THROUGH WALL.
- LOW PERMEABLE BACKFILL SHALL BE INSTALLED AT THE SURFACE OF THE SWALE AT THE TOP OF THE WALL TO LIMIT THE SATURATION OF THE BACKFILL BEHIND THE WALL.
- WHERE EXISTING TREES ARE TO REMAIN, MINIMIZE GRADING TO MINIMIZE IMPACT TO TREES. EXCAVATE TO THE MINIMUM REQUIRED TO INSTALL WALL AND GEGRID.
- IN AREAS WHERE UNSUITABLE MATERIAL IS LOCATED AT THE BOTTOM OF MODULAR BLOCK WALLS, THE UNSUITABLE MATERIAL MUST BE REMOVED AND REPLACED WITH COMPACTED GRADED AGGREGATE BASE MATERIAL.

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.). THIS SHALL BE DONE AT THE DIRECTION OF THE COUNTY'S CONSTRUCTION MANAGER AND PAYMENT FOR THIS SHALL BE BASED ON COUNTY UNIT PRICES FOR UNSUITABLE MATERIAL.

SEE SHEETS 6 AND 7 FOR RETAINING WALL AND FENCE DETAILS

NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

RETAINING WALL M 10+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

PROFESSIONAL CERTIFICATION: I, J. STEVEN DONAHUE, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 45177 EXPIRATION DATE 3/12/2022

REVISIONS	APPROVED		
#	DESCRIPTION	BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

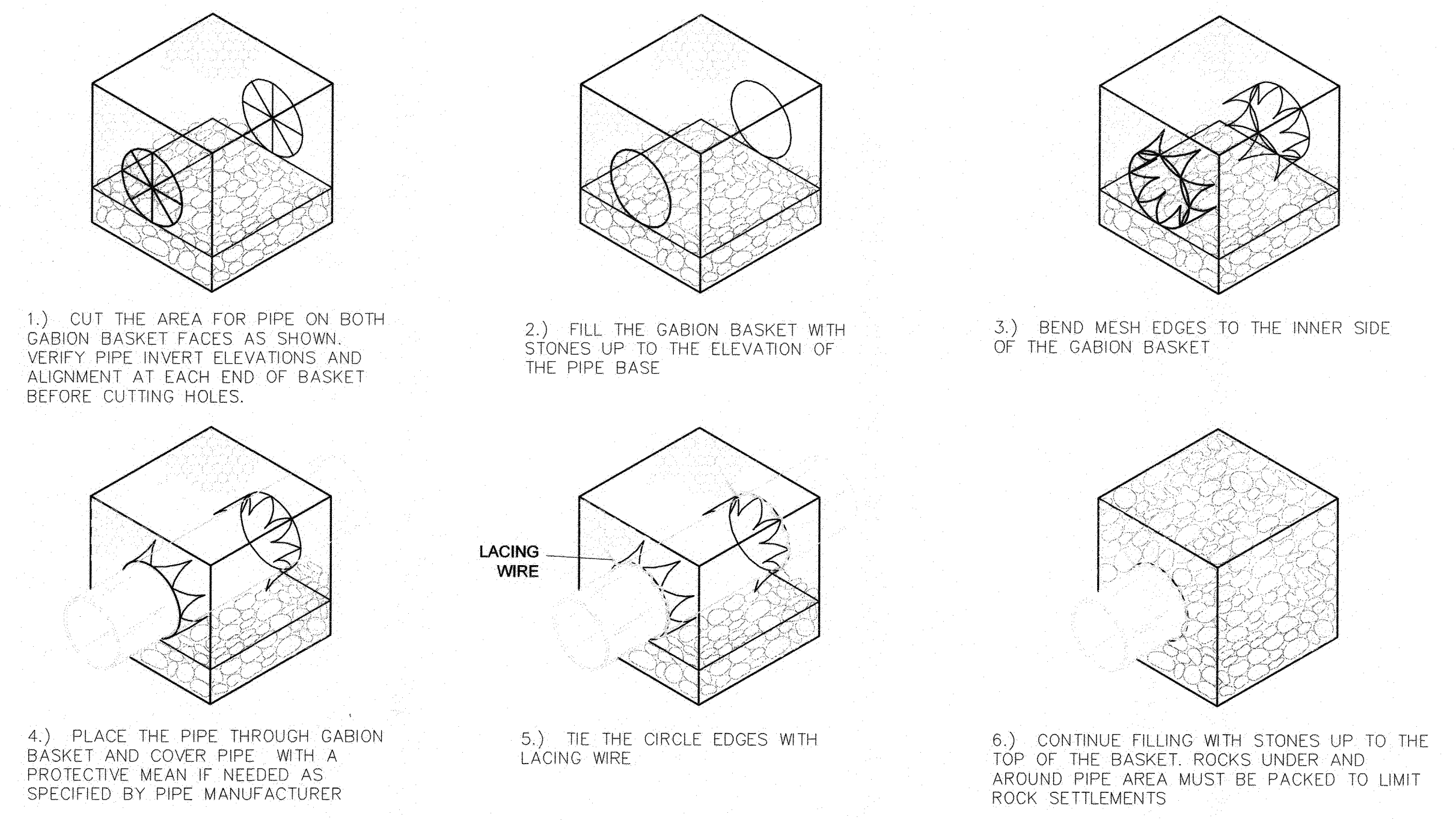
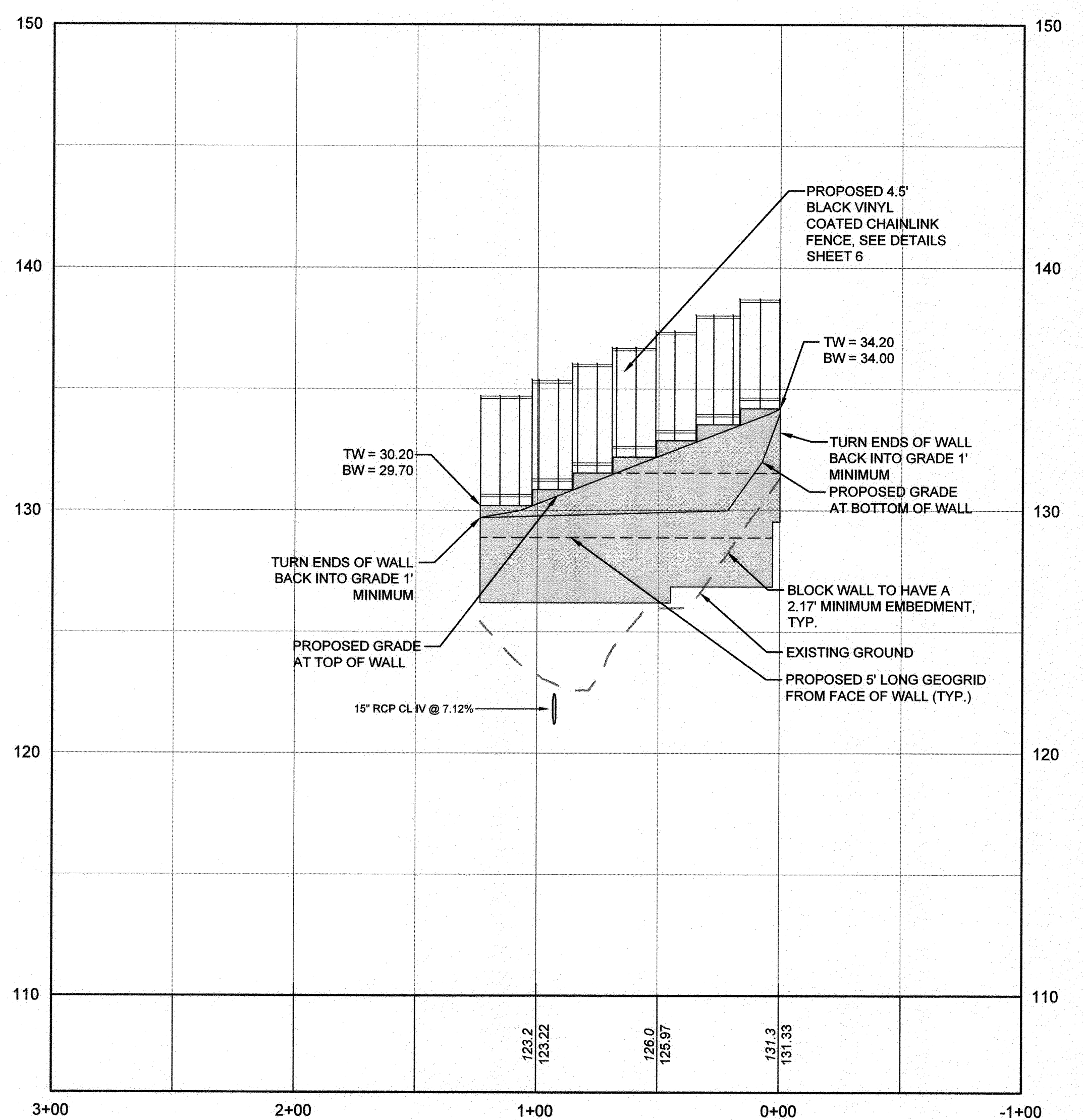
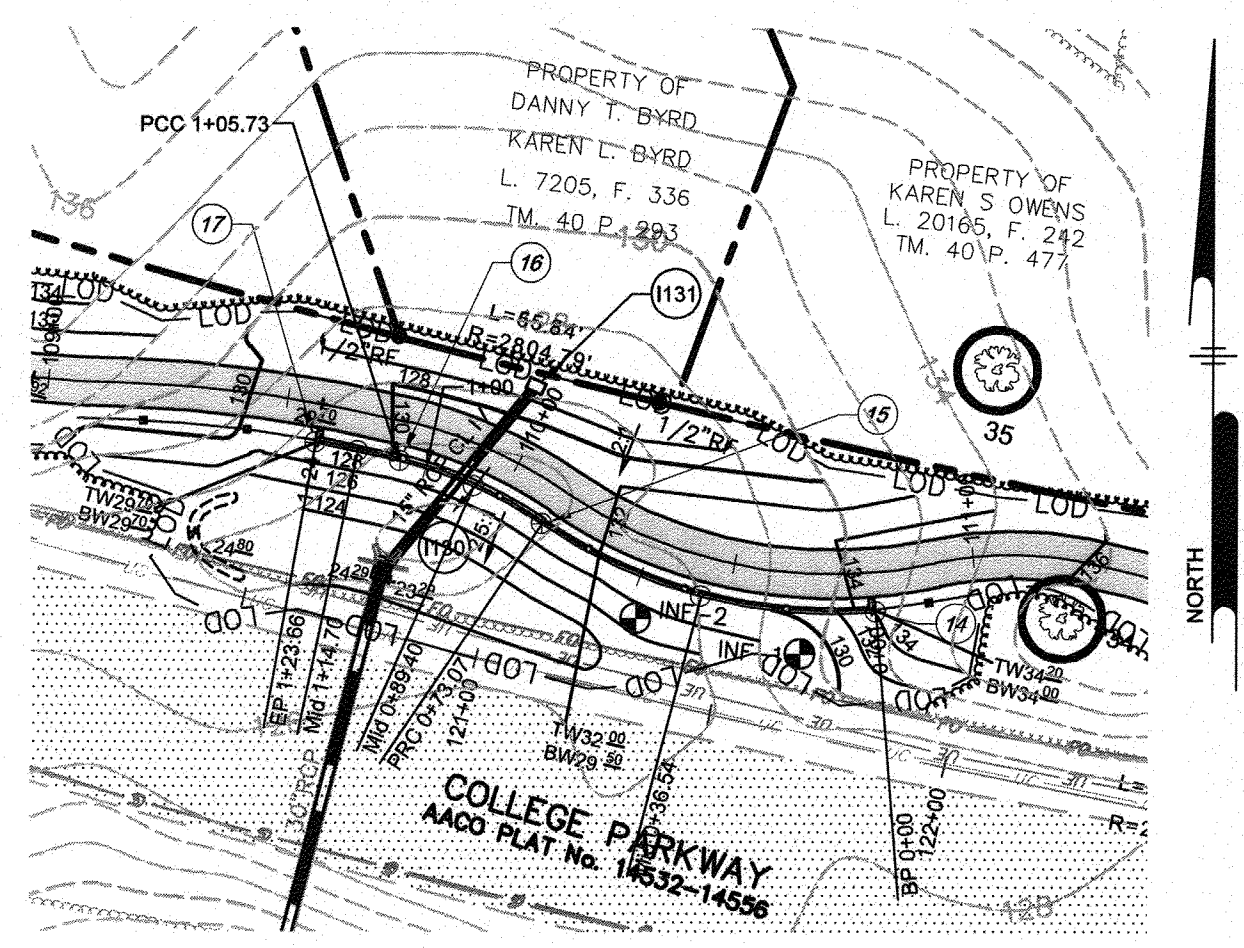
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE: [Signature] 5/15/21
APPROVED DATE: [Signature] 4/15/21

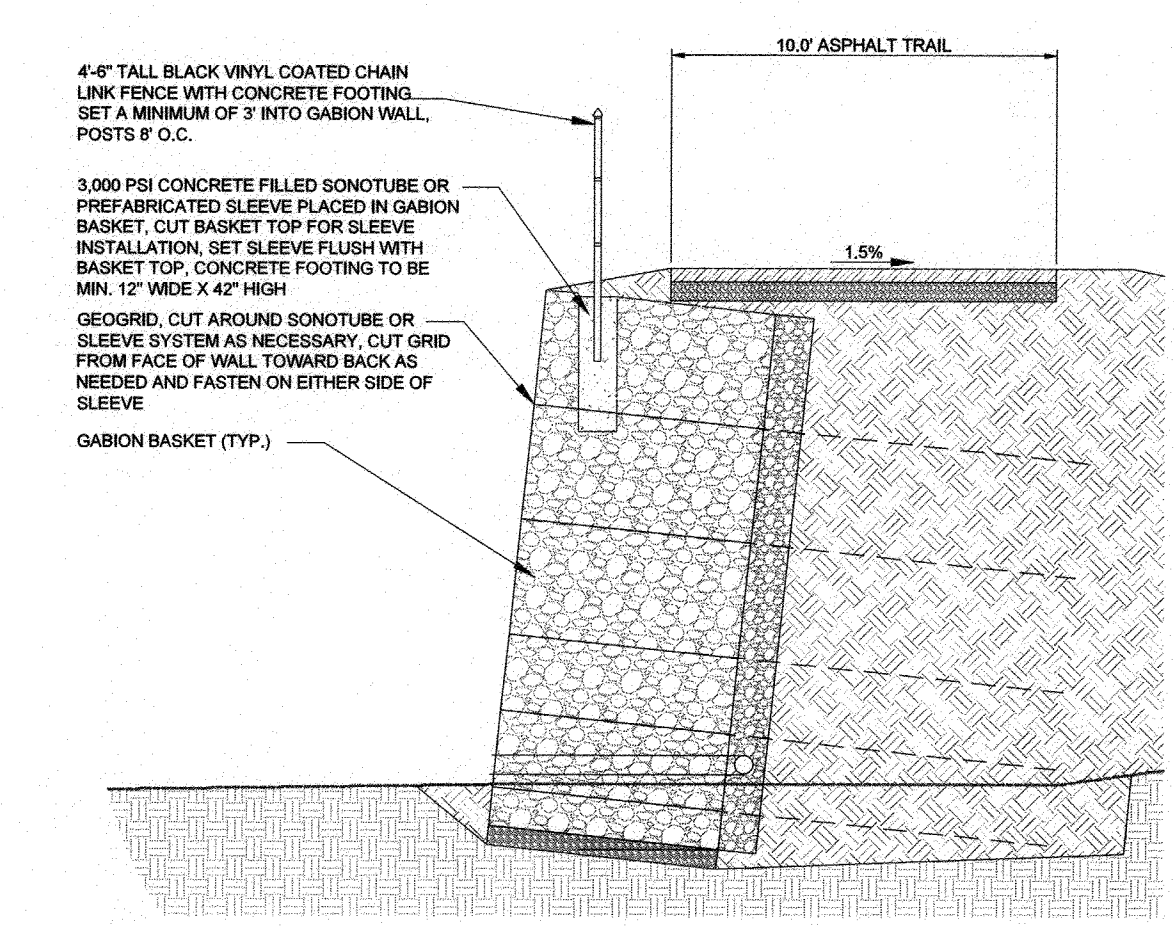
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CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 111 of 137
PROJECT #: P504100
PROPOSAL #:

97179
APRIL 5, 2021
RETAINING WALL PLANS, ELEVATIONS AND DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019



1 12-24" PIPE CROSSING THROUGH GABION WALL DETAIL
NOT TO SCALE

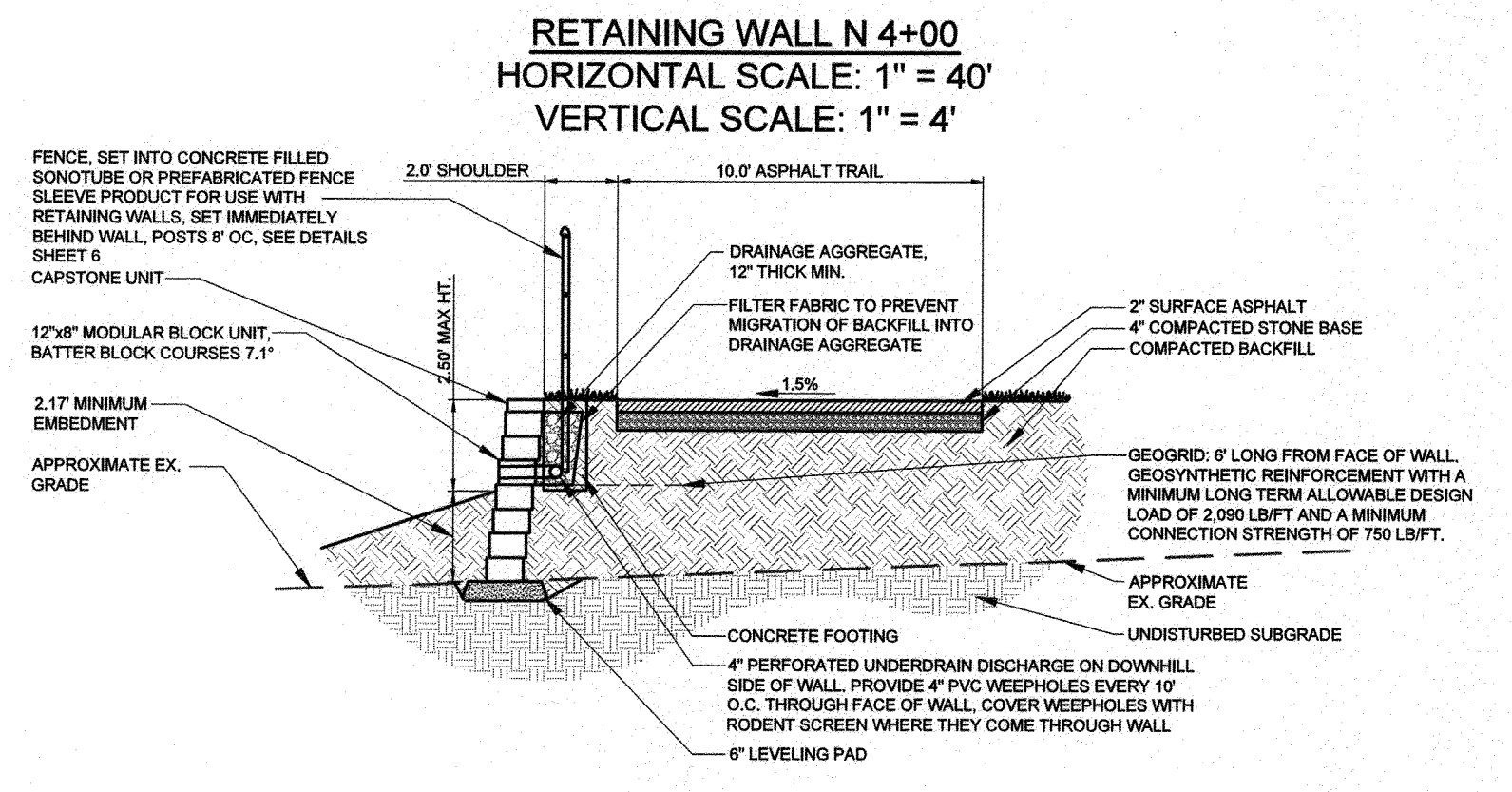


FENCE SLEEVE INSTALLATION NOTES
 1. SET SONOTUBE SLEEVE OR PREFABRICATED SLEEVE IN POSITION MIN. 10" BEHIND FACE OF BASKET WHILE BASKETS ARE BEING ASSEMBLED. SLEEVE SHALL BE SET FLUSH WITH TOP OF BASKET. BACKFILL BASKET WITH STONE.
 2. COVER SLEEVE DURING COMPLETION OF WALL CONSTRUCTION TO KEEP SLEEVE CLEAR.
 3. AS FENCE CONSTRUCTION STARTS, FILL SLEEVE WITH CONCRETE AND SET FENCE POST.
 4. PROVIDE SUBMITTAL FOR SLEEVE PRODUCTS PRIOR TO START OF CONSTRUCTION.

1 NOT TO SCALE
 2 FENCE SLEEVE IN GABION WALLS
 NOT TO SCALE

SEE SHEETS 6 AND 7 FOR RETAINING WALL AND FENCE DETAILS

Retaining Wall N Stakeout Table			
Point #	Raw Description	Northing	Easting
14	STA 0+00	499956.4434	1457409.0919
15	STA 0+73	499974.5871	1457339.7344
16	STA 1+06	499987.6972	1457310.0104
17	STA 1+24	499991.3669	1457292.4623



WALL NOTES
 1. PROVIDE 4.5' BLACK VINYL CHAINLINK FENCE ON TOP OF WALL AS SHOWN ON PLANS. POST SHALL BE INSTALLED BEHIND WALL AND SHALL BE SET A MINIMUM OF 3" DEEP WHERE WALL HEIGHT EXCEEDS 30". PROVIDE A WING FENCE PANEL (16" WIDE X 54" HIGH) AT EACH END OF FENCE TO ELIMINATE ACCESS TO TOP OF WALL.
 2. IN AREAS WHERE UNSUITABLE MATERIAL IS LOCATED AT THE BOTTOM OF MODULAR BLOCK WALLS, THE UNSUITABLE MATERIAL MUST BE REMOVED AND REPLACED WITH COMPACTED GRADED AGGREGATE BASE.

1 RETAINING WALL N
 SCALE: 1" = 5'

NOTE: IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE BOTTOM OF THE RETAINING WALLS, IT SHALL BE EXCAVATED AND REPLACED WITH A COMPACTED GRADED AGGREGATE BASE IN 6" LIFTS (MAX.)

NOTE: THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALLS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, AND MATERIAL SPECIFICATIONS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS.

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REVISIONS	APPROVED BY	DATE

Pennoni
 PENNONI ASSOCIATES INC.
 8890 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS
 97180
 APRIL 5, 2021

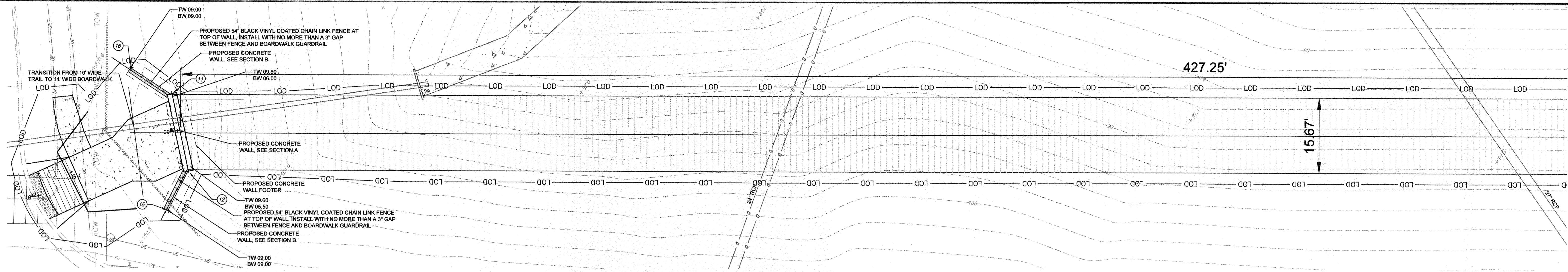
GP# G02017905 DWG NO: DD15G

SCALE: 1" = 40'
 DRAWN BY: PAI
 CHECKED BY: PJS/JAR
 SHEET 112 OF 137
 PROJECT #: P504100
 PROPOSAL #:

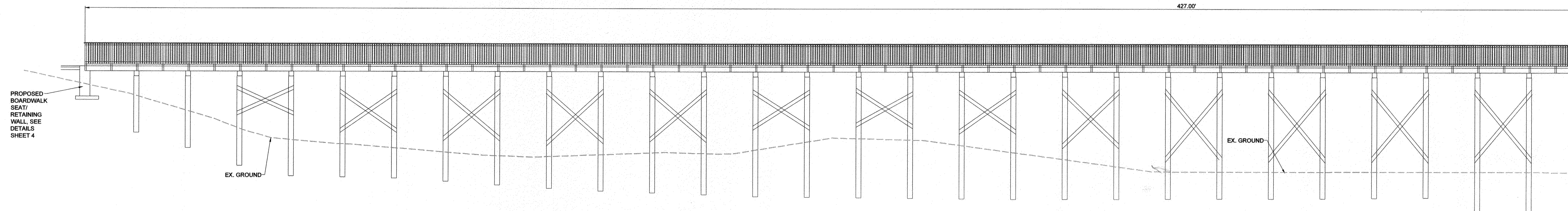
BROADNECK TRAIL - PHASE III
 CONSTRUCTION DOCUMENTS
 TAX MAP 32, 39, AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD
 NOVEMBER 2019

APPROVED DATE: 4/15/21
 APPROVED DATE: 4/16/21
 APPROVED DATE: 4/16/21
 APPROVED DATE: 4/16/21

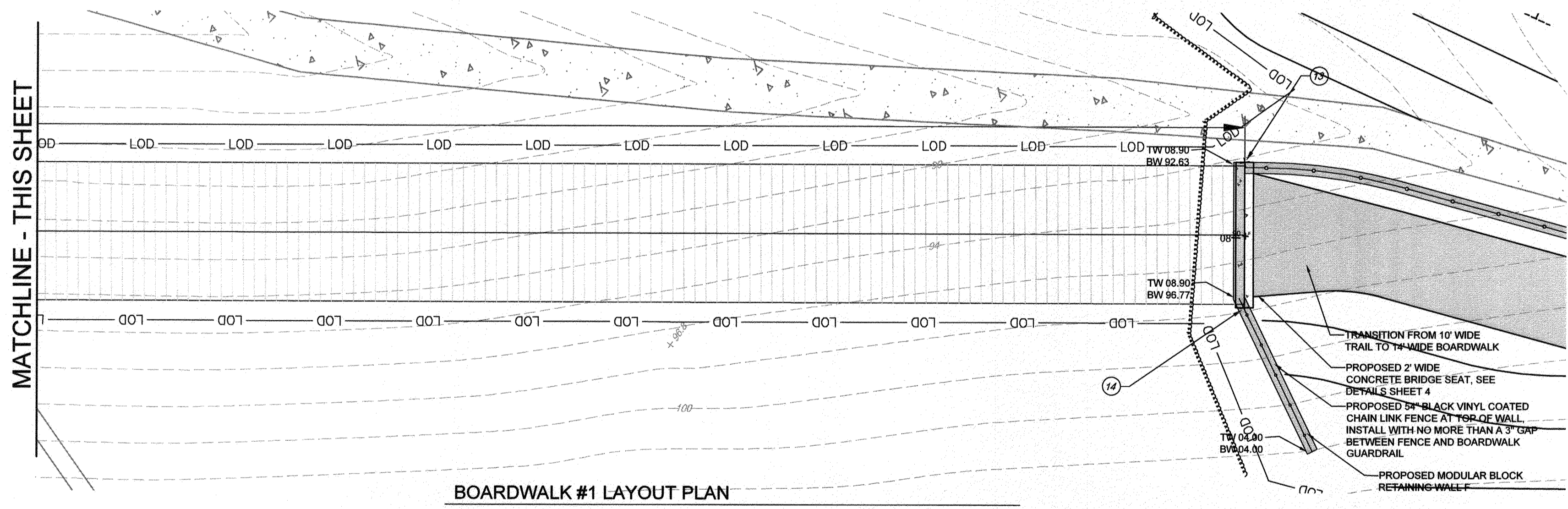
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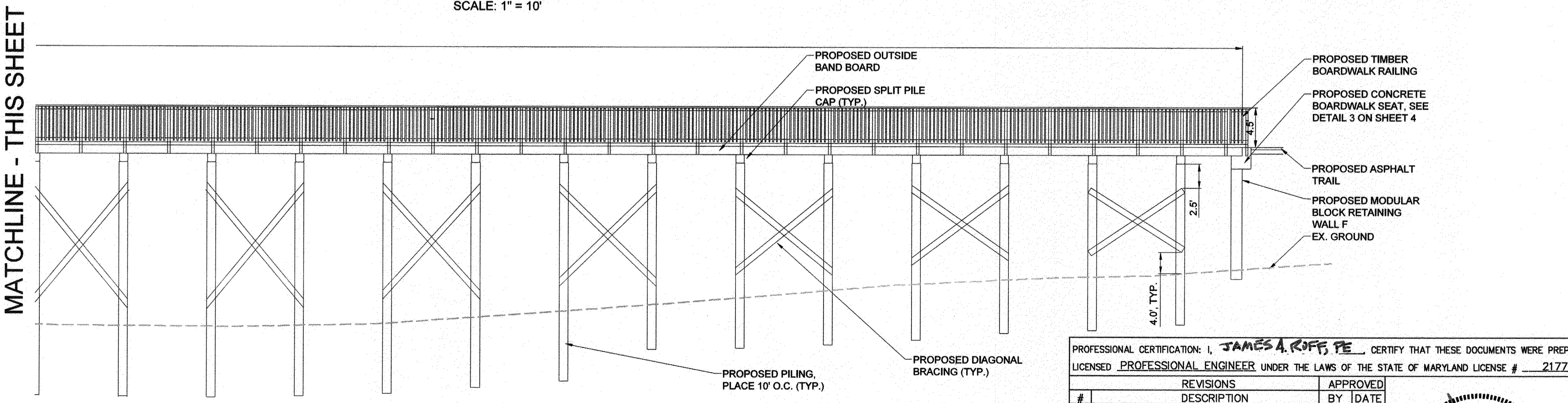
BOARDWALK #1 LAYOUT PLAN
SCALE: 1" = 10'



BOARDWALK #1 ELEVATION
SCALE: 1" = 10'



BOARDWALK #1 LAYOUT PLAN
SCALE: 1" = 10'



BOARDWALK #1 ELEVATION
SCALE: 1" = 10'

NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING SHOP DRAWINGS AND DESIGN CALCULATIONS FOR ANY REVISIONS TO THE BOARDWALK DESIGN SHOWN ON THESE PLANS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, MATERIAL SPECIFICATIONS, STRUCTURE FRAMING, FOUNDATIONS AND MEMBER SIZES, AND CONNECTION DETAILS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS TO SUPPORT SIZING OF STRUCTURAL COMPONENTS AND REQUIRED LOAD HANDLING.

BOARDWALK STAKEOUT TABLE				
Point #	Raw Description	Elevation	Northing	Easting
11	W END OF BDWLK	109.60	501358.0187	1455535.3687
12	W END OF BDWLK	109.60	501345.9633	1455524.1030
13	E END OF BDWLK	108.90	501004.9061	1455779.0529
14	E END OF BDWLK	108.90	500995.5370	1455765.4709
15	WEST WALL SOUTH	109.00	501344.7923	1455514.9670
16	WEST WALL NORTH	109.00	501368.1721	1455534.8541

GP# G02017905 DWG NO: DD16A

PROFESSIONAL CERTIFICATION: I, **JAMES A. ROFF, PE**, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774 EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97181
APRIL 5, 2021

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 5/15/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 4/15/21
APPROVAL <i>[Signature]</i> ASSISTANT CHIEF ENGINEER	DATE 4/24/21	APPROVED <i>[Signature]</i> CHIEF, RIGHT OF WAY SERVICES	DATE 4/16/21

SCALE: AS SHOWN	DRAWN BY: PAI
CHECKED BY: PJS/JAR	SHEET 113 of 137
PROJECT #: P504100	PROPOSAL #:

BOARDWALK DETAILS

BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

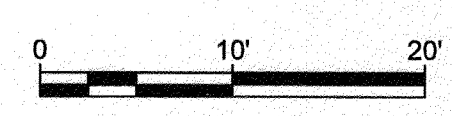
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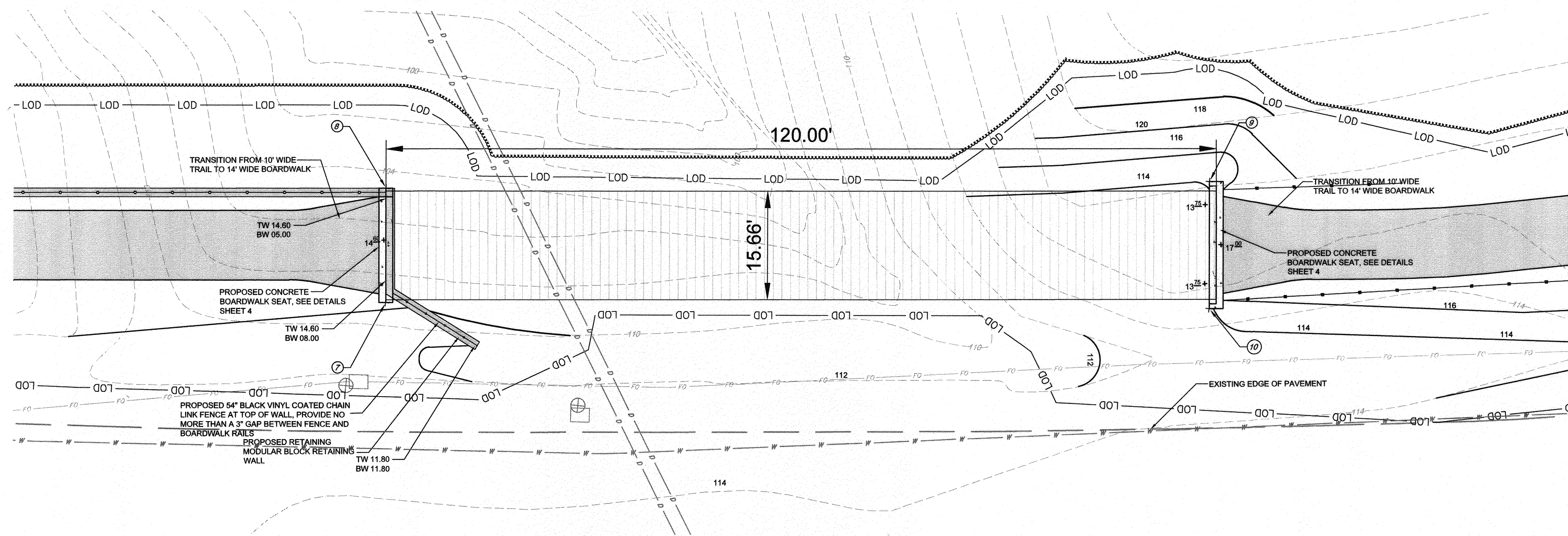
MATCHLINE - THIS SHEET

MATCHLINE - THIS SHEET

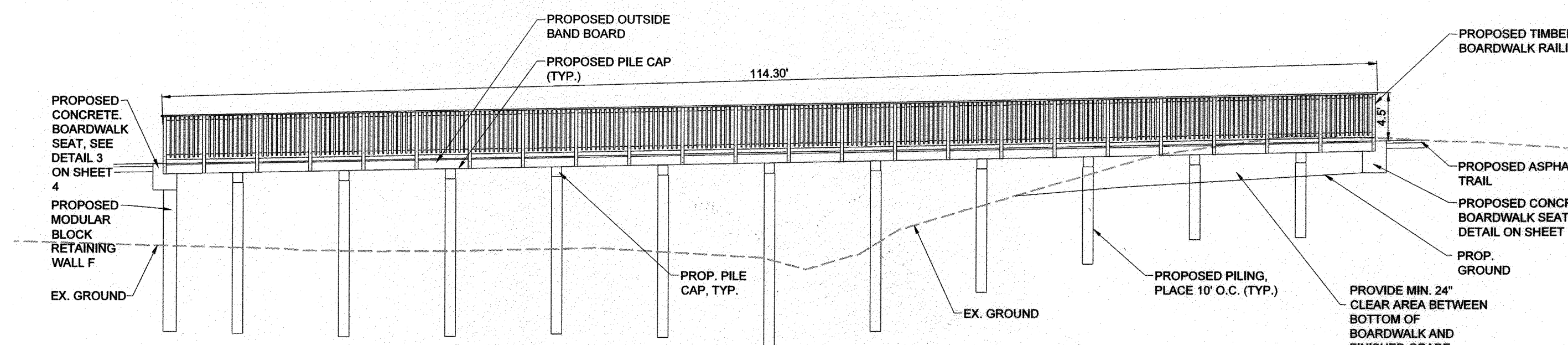
MATCHLINE - THIS SHEET

MATCHLINE - THIS SHEET



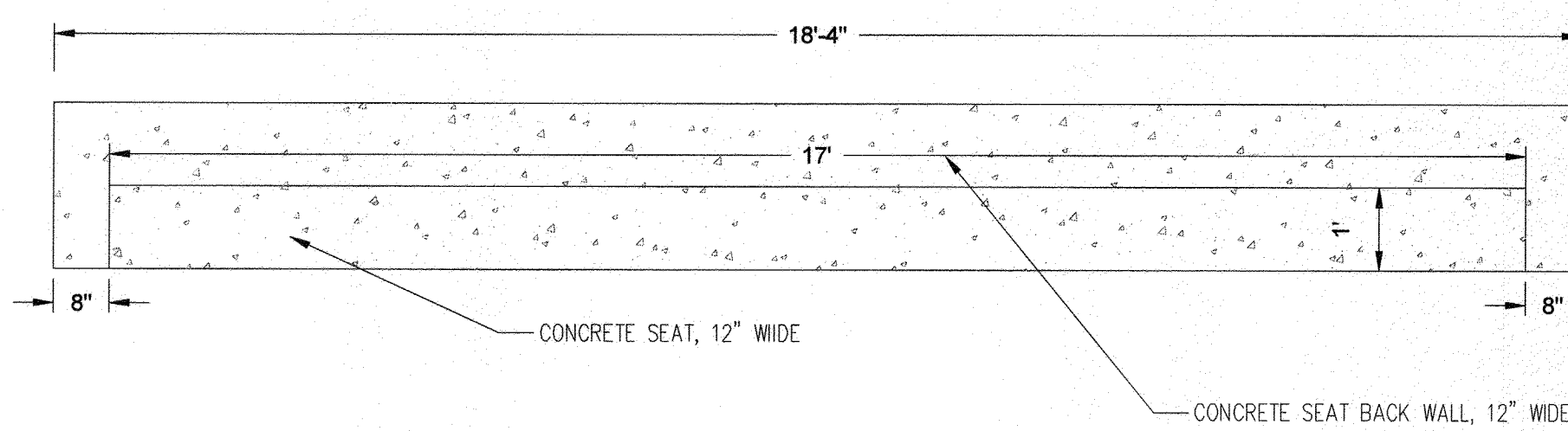
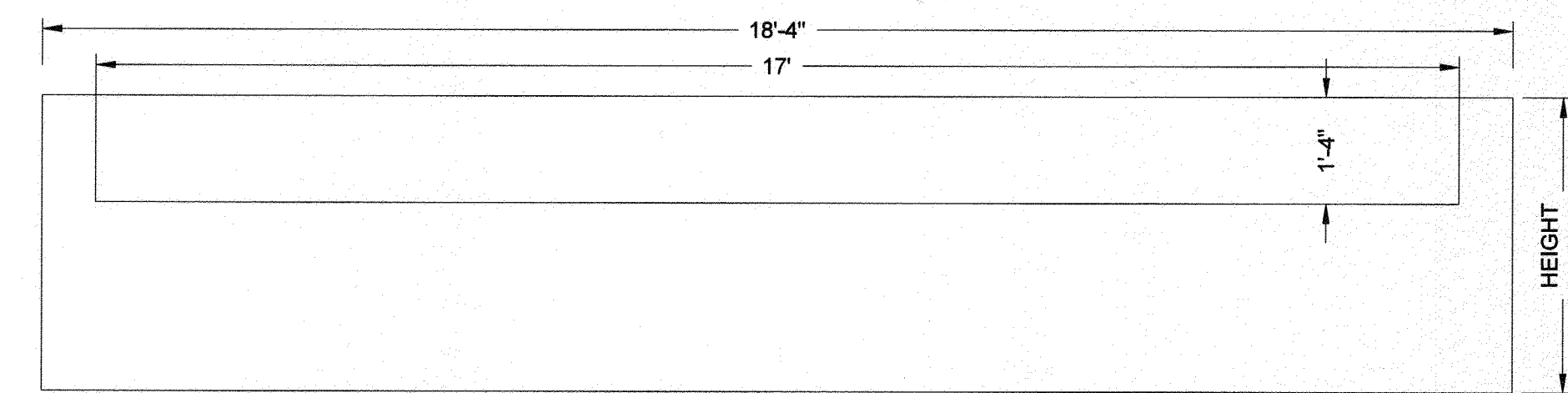


BOARDWALK #2 LAYOUT PLAN
SCALE: 1" = 10'



BOARDWALK #2 ELEVATION
SCALE: 1" = 10'

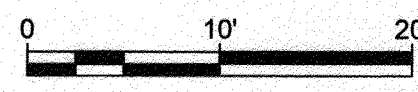
BOARDWALK STAKEOUT TABLE				
Point #	Raw Description	Elevation	Northing	Easting
9	E END OF BDWLK	117.00	500469.0375	1456304.3070
7	W END OF BDWLK	114.60	500529.8455	1456200.4671
8	W END OF BDWLK	114.60	500542.7095	1456210.8001
10	E END OF BDWLK	117.00	500454.7443	1456292.8248



SEAT WALL NOTES:
THIS DETAIL SHALL BE USED AT THE EAST END OF BOARDWALK #2. SEE SHEET 4 FOR DETAILS TO UTILIZE AT THE WEST END OF BOARDWALK #2.

1 BOARDWALK SEAT WALL PLAN AND ELEVATION
SCALE: 1" = 1'

NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING SHOP DRAWINGS AND DESIGN CALCULATIONS FOR ANY REVISIONS TO THE BOARDWALK DESIGN SHOWN ON THESE PLANS. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL INCLUDE ALL RELEVANT INFORMATION SUCH AS DESIGN CRITERIA, MATERIAL SPECIFICATIONS, STRUCTURE FRAMING, FOUNDATIONS AND MEMBER SIZES, AND CONNECTION DETAILS. A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND WILL SIGN AND SEAL ALL DRAWINGS AND CALCULATIONS TO SUPPORT SIZING OF STRUCTURAL COMPONENTS AND REQUIRED LOAD HANDLING.



PROFESSIONAL CERTIFICATION: I, **JAMES A. ROSE, PE**, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774 EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]* DATE: 5/14/21
CHIEF ENGINEER

APPROVED: *[Signature]* DATE: 4/15/21
PROJECT MANAGER

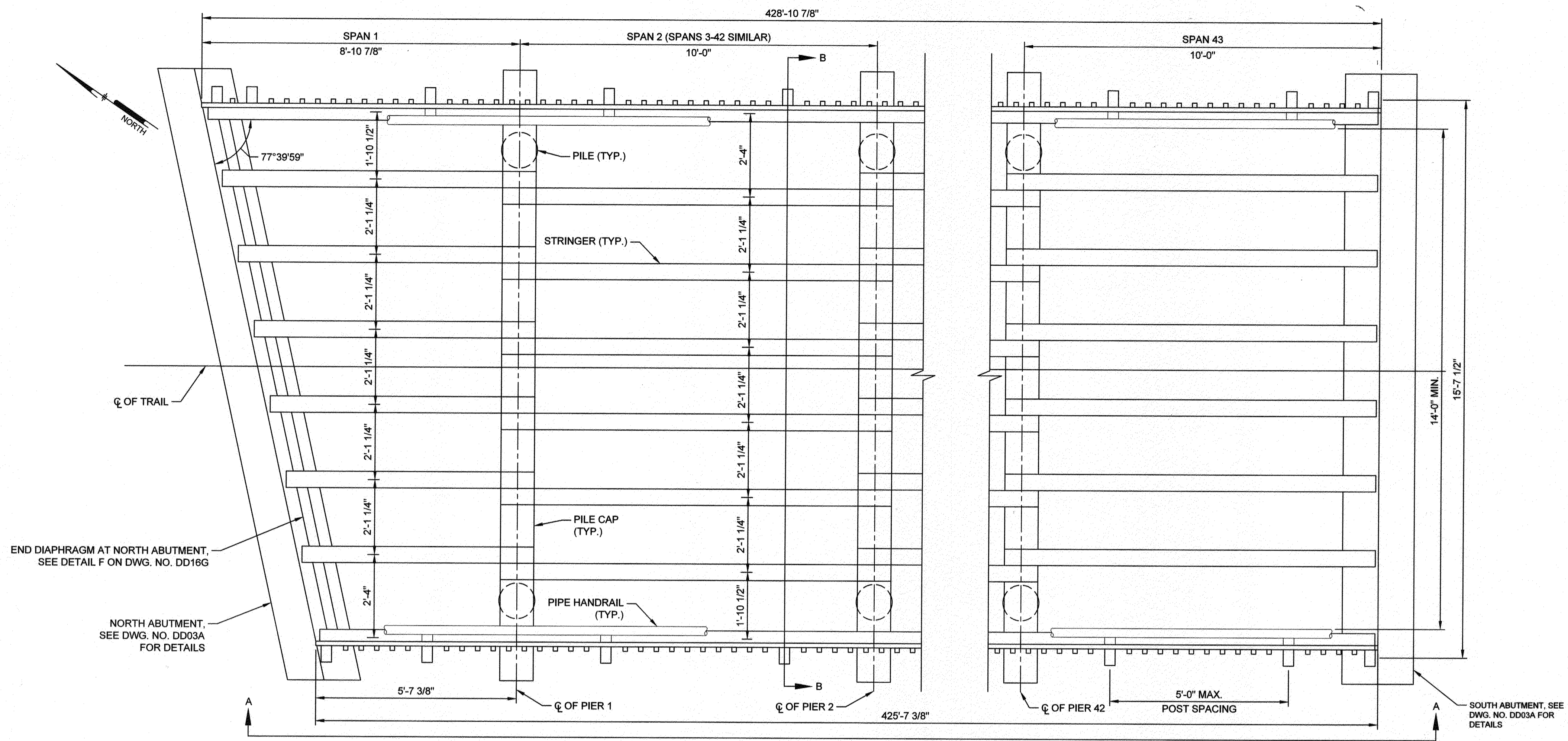
APPROVAL: *[Signature]* DATE: 4/15/21
ASSISTANT CHIEF ENGINEER

APPROVED: *[Signature]* DATE: 4/15/21
CHIEF, RIGHT OF WAY SERVICES

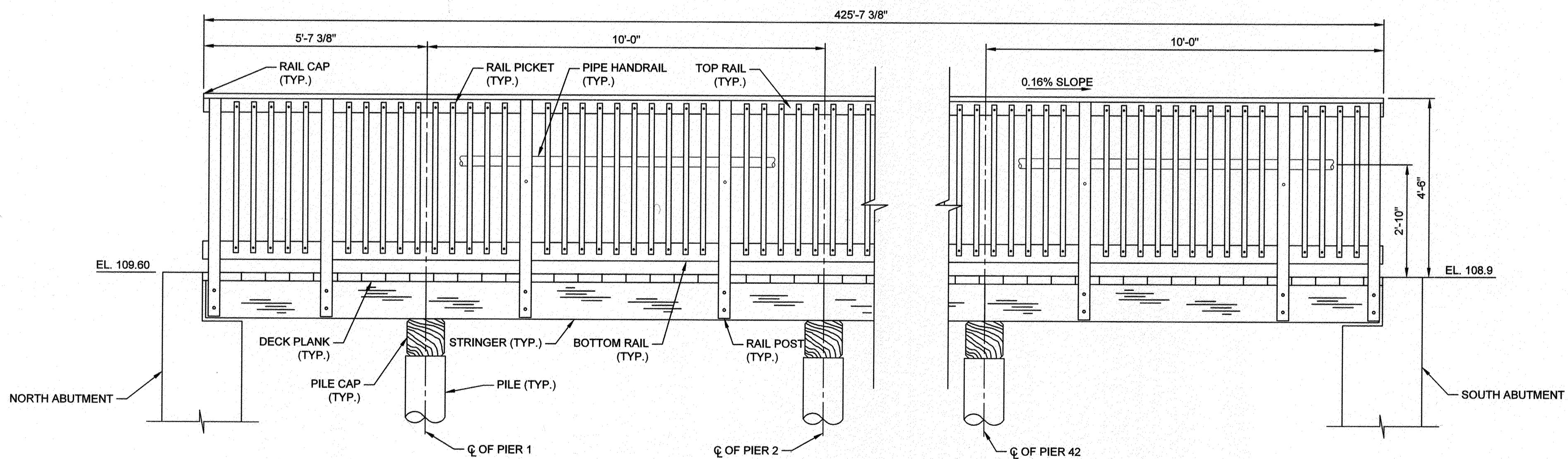
SCALE: AS SHOWN
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 114 of 137
PROJECT #: P504100
PROPOSAL #:

97182
APRIL 5, 2021
BOARDWALK DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012, 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

GP# G02017905 DWG NO: DD16B



BOARDWALK #1 FRAMING PLAN
SCALE: 1/2" = 1'-0"



SECTION A-A
SCALE: 1/2" = 1'-0"

GENERAL NOTES:

SPECIFICATIONS:

THE LATEST APPROVED MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA) "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS."

AASHTO LOAD AND RESISTANCE FACTOR GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, 2009

AASHTO LOAD AND RESISTANCE FACTOR DESIGN (LRFD) BRIDGE DESIGN SPECIFICATIONS, EIGHTH EDITION, 2017

LOADING:

PEDESTRIAN LOADING: 90 PSF
VEHICULAR LOAD: H-5 VEHICLE

TIMBER:

ALL TIMBER SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE, GRADES AS SHOWN IN TABLE OR BETTER.

MEMBER	GRADE	SIZE, IN	Fb, PSF	Fv, PSI	Fc, PSI	E, KSI
STRINGER	SELECT STRUCTURAL	6x12	1500	165	950	1500
PILE CAP	SELECT STRUCTURAL	12x12	1500	165	950	1500
DECKING	NO. 1	3x8	1250	175	1500	1600
RAIL POST	NO. 1	4x6	1350	175	1550	1600
RAIL CAP	NO. 1	2x6	1250	175	1500	1600
TOP RAIL AND BACK RAIL	NO. 1	2x4	1500	175	1650	1600
BOTTOM RAIL	NO. 1	3x8	1250	175	1500	1600
DIAGONAL BRACING	NO. 1	3x8	1250	175	1500	1600
RAIL PICKETS	NO. 2	2x2	1100	175	1450	1400

STRUCTURAL STEEL:

STRUCTURAL STEEL SHALL CONFORM TO ASTM A36

FASTENERS AND HARDWARE:

ASTM A307 THREADED RODS AND BOLTS
ASTM A563 HEX NUTS
ASTM F436 HARDENED WASHERS
ASTM A307A HEX LAG SCREWS
ASTM C1002 WOOD SCREWS
ASTM F1554 GRADE 36 ANCHOR RODS
SIMPSON STRONG-TIE HARDWARE AND FASTENERS AS INDICATED ON PLANS OR APPROVED EQUAL
ALL HARDWARE SHALL BE HOT-DIP GALVANIZED CONFIRMING TO ASTM A123

TIMBER PILING:

PRESSURE TREATED SOUTHERN PINE
12" DIAMETER FOUNDATION PILES
VALUES FOR WET CONDITION OF USE:
COMPRESSION (F_c) = 1,200 PSI
BENDING (F_b) = 2,400 PSI
HORIZONTAL SHEAR (F_v) = 110 PSI
MODULUS OF ELASTICITY (E) = 1,500,000 PSI
ALL TIMBER PILES SHALL HAVE A MINIMUM BUTT CIRCUMFERENCE OF 37 1/2" (12" MINIMUM BUTT DIAMETER) 3' FROM THE END. THE CORRESPONDING MINIMUM TIP CIRCUMFERENCE SHALL BE 25" (8" MINIMUM TIP DIAMETER).

FACTORED DESIGN LOAD PER PILE IS 9.0 TONS AND MIN. DRIVING LOAD SHALL BE 11.0 TONS. LRFD DRIVING LOAD TO BE COMPUTED FROM THE FOLLOWING FORMULAS:

**P_u = 6S/(S+0.8) FOR END OF DRIVING
**P_u = 5E/(S+1.0) FOR BEGINNING OF RESTRIKE

WHERE:

P_u = SAFETY LRFD LOAD IN POUNDS
E = APPROVED HAMMER ENERGY PER BLOW IN POUND-FEET
S = THE AVERAGE PENETRATION IN INCHES PER BLOW FOR THE LAST SEVERAL INCHES OF PENETRATION

**TO ACCOUNT FOR CAPACITY VARIABILITY IN THE PILE DRIVING, A FACTOR OF SAFETY IS INCORPORATED INTO THE FORMULAS TO VERIFY PILE CAPACITY.

THE MINIMUM SAFE BEARING VALUE AND MINIMUM PENETRATION SHOWN IN THE TABLE MUST BE ACHIEVED FOR EACH PILE. IF THE ESTIMATED TIP ELEVATION IS NOT REACHED OR IS EXCEEDED WHILE ACHIEVING THE MINIMUM SAFE BEARING VALUE AND THE MINIMUM PENETRATION, THE PILE WILL BE CONSIDERED SATISFACTORY.

BOARDWALK #	ESTIMATED TIP ELEVATION, FT.
1	58.00
2	75.00
3	86.00

HANDRAIL:

ADA COMPLIANT 2 1/2" SCH. 40 ALUMINUM PIPE HANDRAIL
HARDWARE AND CONNECTIONS PER MANUFACTURER'S RECOMMENDATIONS

NOTES:

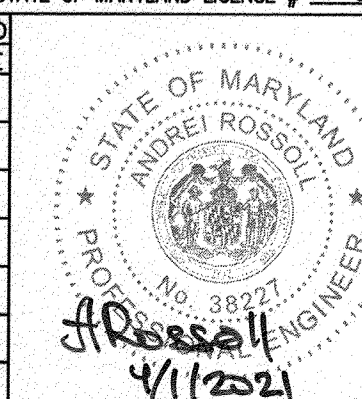
- FOR GENERAL PLAN AND ELEVATION, SEE DWG. NO. DD16A.
- FOR ABUTMENT AND ABUTMENT BEARING DETAILS, SEE DWG. NO. DD03A.
- FOR SECTION B-B, SEE DWG. NO. DD16E.
- FOR CONNECTION DETAILS, SEE DWG. NO. DD16G.
- FOR PILE BRACING DETAILS, SEE DWG. NO. DD16G.
- BACK RAILS NOT SHOWN FOR CLARITY. SEE DETAIL A ON DWG. NO. DD16E.

GP# G02017905

DWG NO: DD16D

PROFESSIONAL CERTIFICATION: I, ANDREI ROSSOLL, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 38227 EXPIRATION DATE 01/17/2023

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



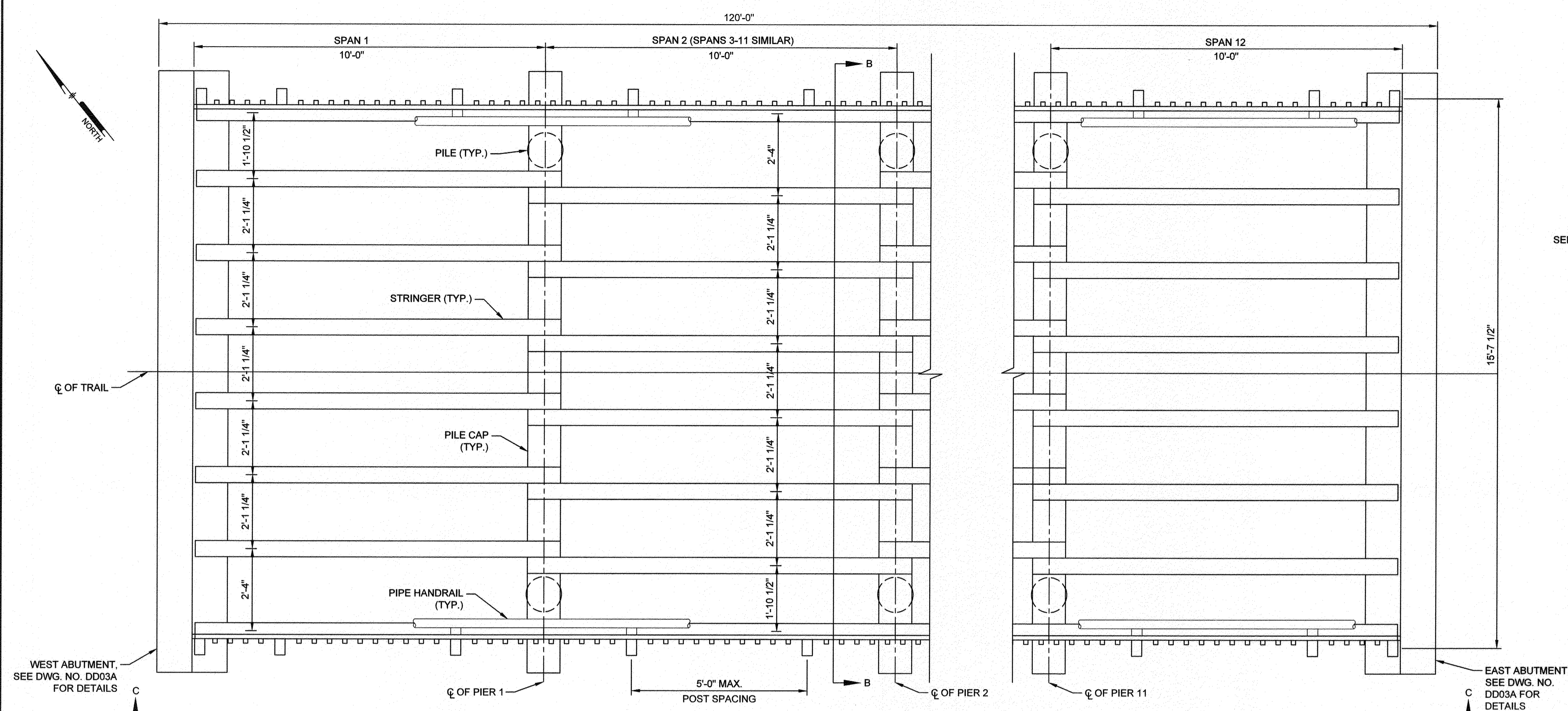
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

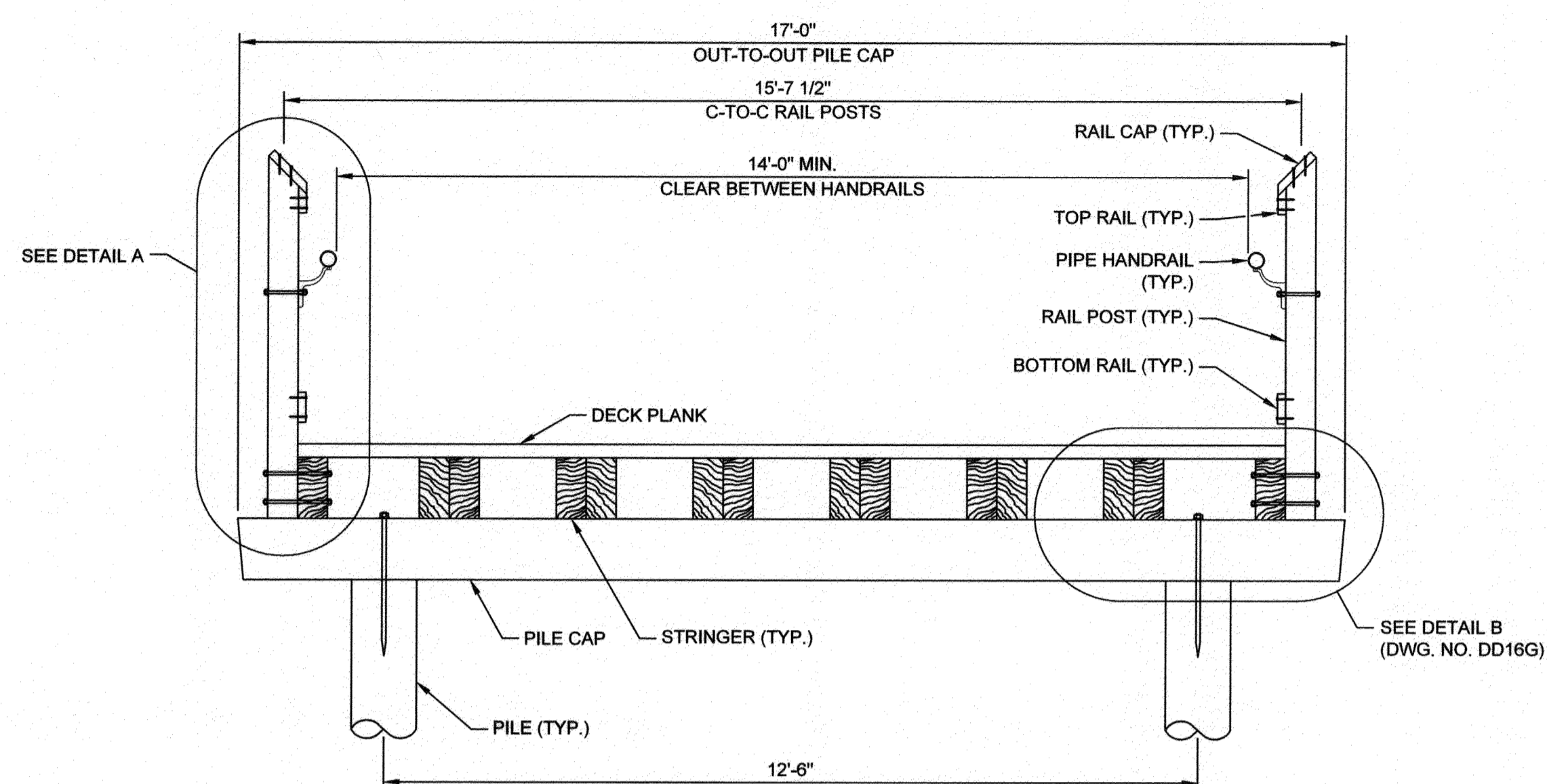
97184

APRIL 5, 2021

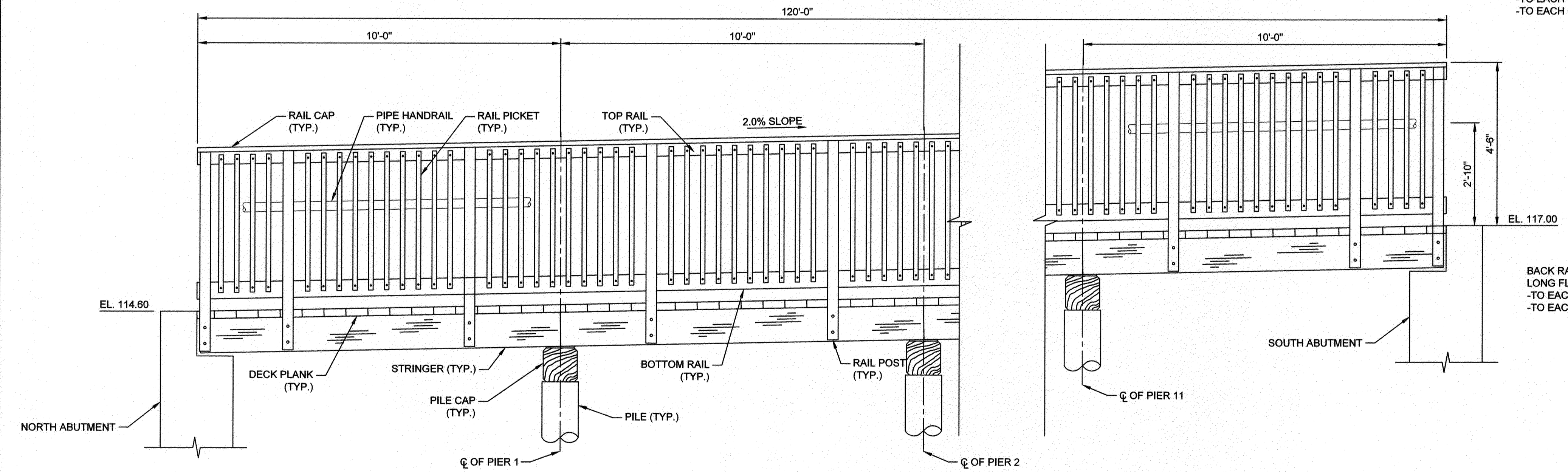
APPROVED <i>[Signature]</i> DATE <u>5/6/21</u> CHIEF ENGINEER	APPROVED <i>[Signature]</i> DATE <u>4/15/21</u> PROJECT MANAGER	SCALE: AS SHOWN DRAWN BY: PAI CHECKED BY: PJS/JAR	BOARDWALK #1 - FRAMING PLAN AND DETAILS
APPROVAL <i>[Signature]</i> DATE <u>4/24/21</u> ASSISTANT CHIEF ENGINEER	APPROVED <i>[Signature]</i> DATE <u>4/16/21</u> CHIEF, RIGHT OF WAY SERVICES	SHEET <u>116</u> OF <u>137</u> PROJECT # P504100 PROPOSAL #	BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS TAX MAP 32, 39, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019



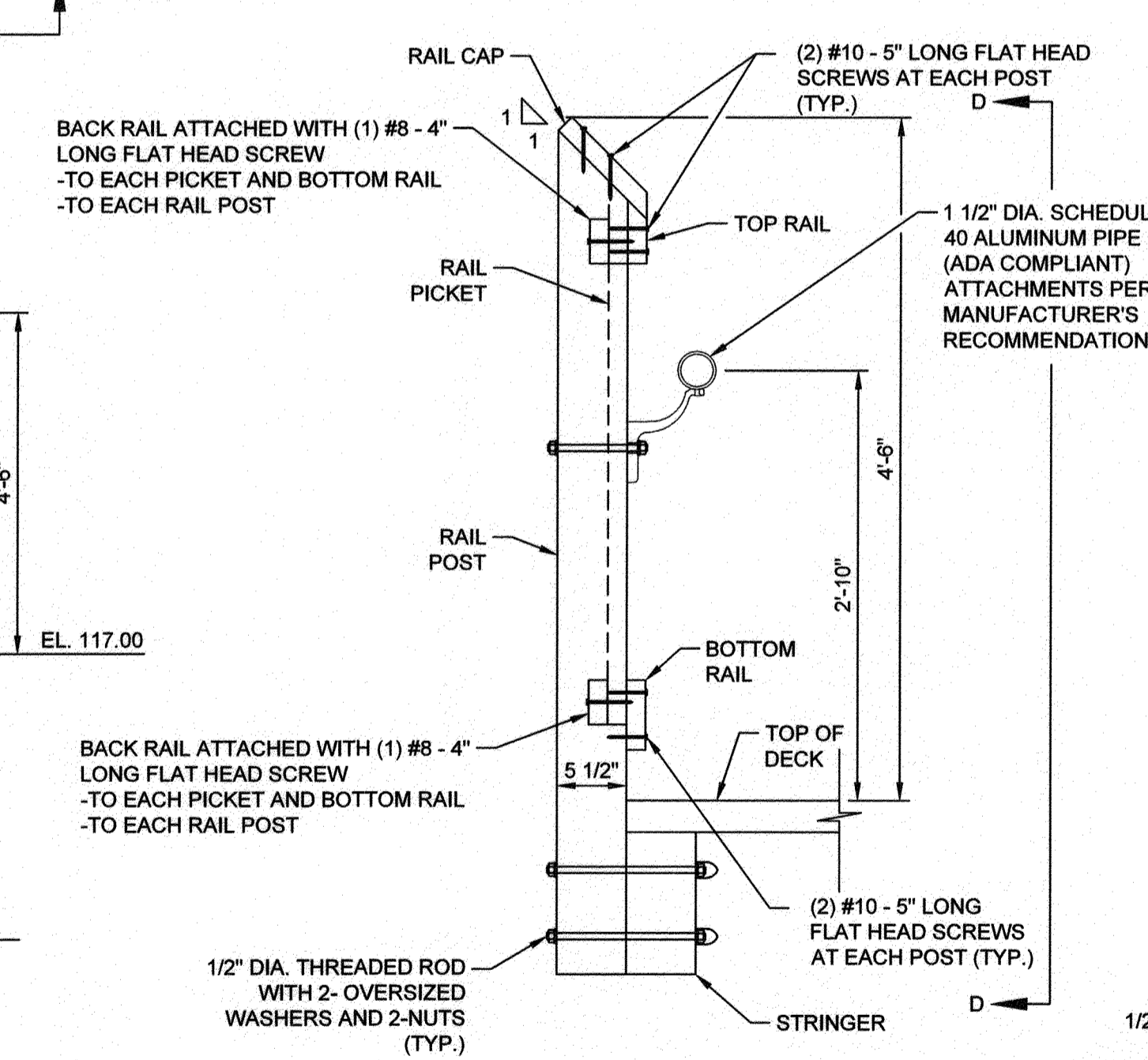
BOARDWALK #2 FRAMING PLAN
SCALE: 1/2" = 1'-0"



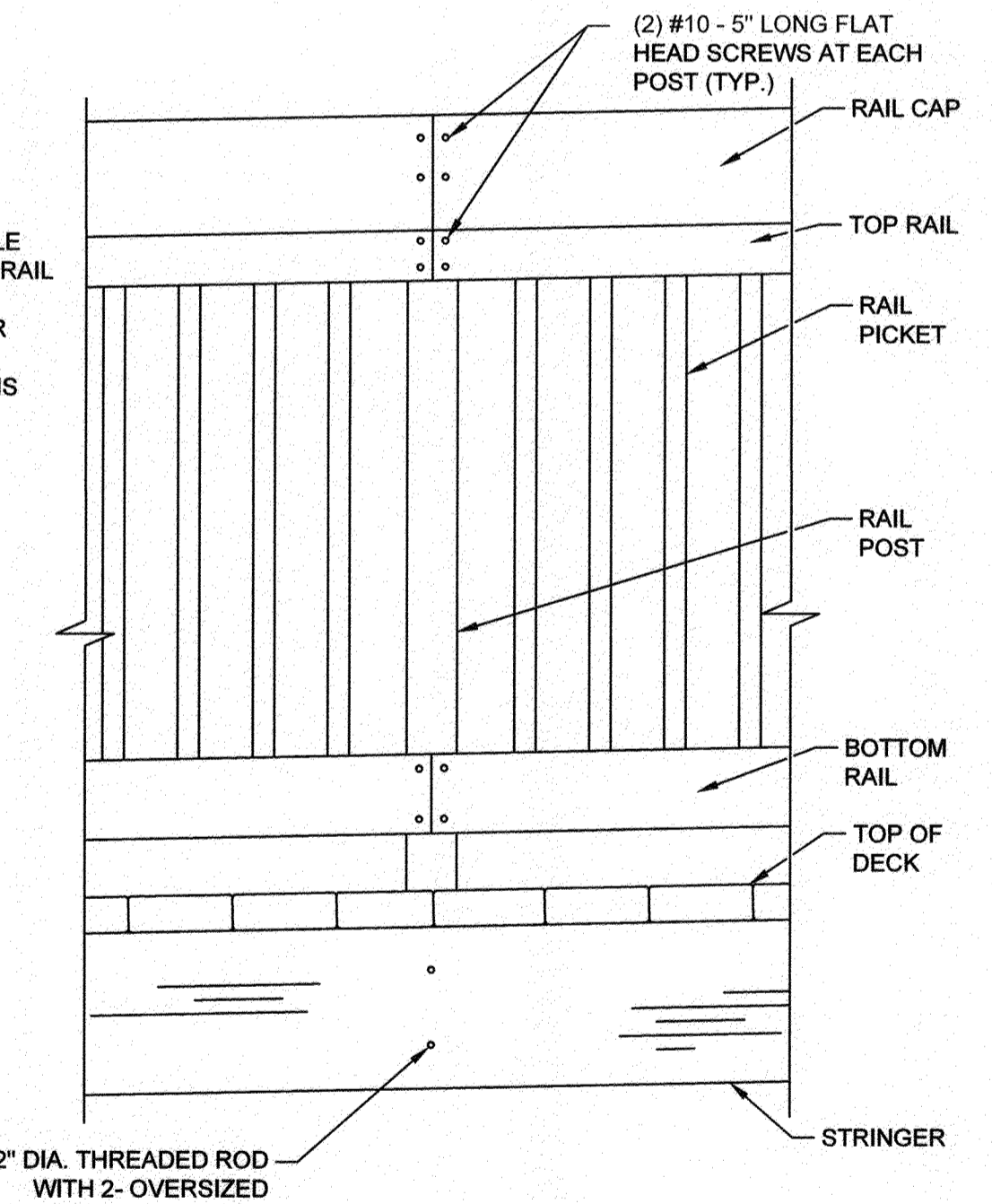
SECTION B-B
SCALE: 1/2" = 1'-0"



SECTION C-C
SCALE: 1/2" = 1'-0"



DETAIL A
SCALE: 1" = 1'-0"



SECTION D-D (AT SPLICE)
SCALE: 1" = 1'-0"

- NOTES:**
- FOR GENERAL PLAN AND ELEVATION, SEE DWG. NO. DD16B.
 - FOR ABUTMENT AND ABUTMENT BEARING DETAILS, SEE DWG. NO. DD03A.
 - FOR CONNECTION DETAILS, SEE DWG. NO. DD16G.
 - BACK RAILS NOT SHOWN FOR CLARITY. SEE DETAIL A ON THIS SHEET.

PROFESSIONAL CERTIFICATION: I, **ANDREI ROSSOLL, PE**, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # **38227** EXPIRATION DATE **01/17/2023**

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANDREI ROSSOLL
PROFESSIONAL ENGINEER
4/11/2021

GP# G02017905 DWG NO: DD16E

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97185 APRIL 5, 2021

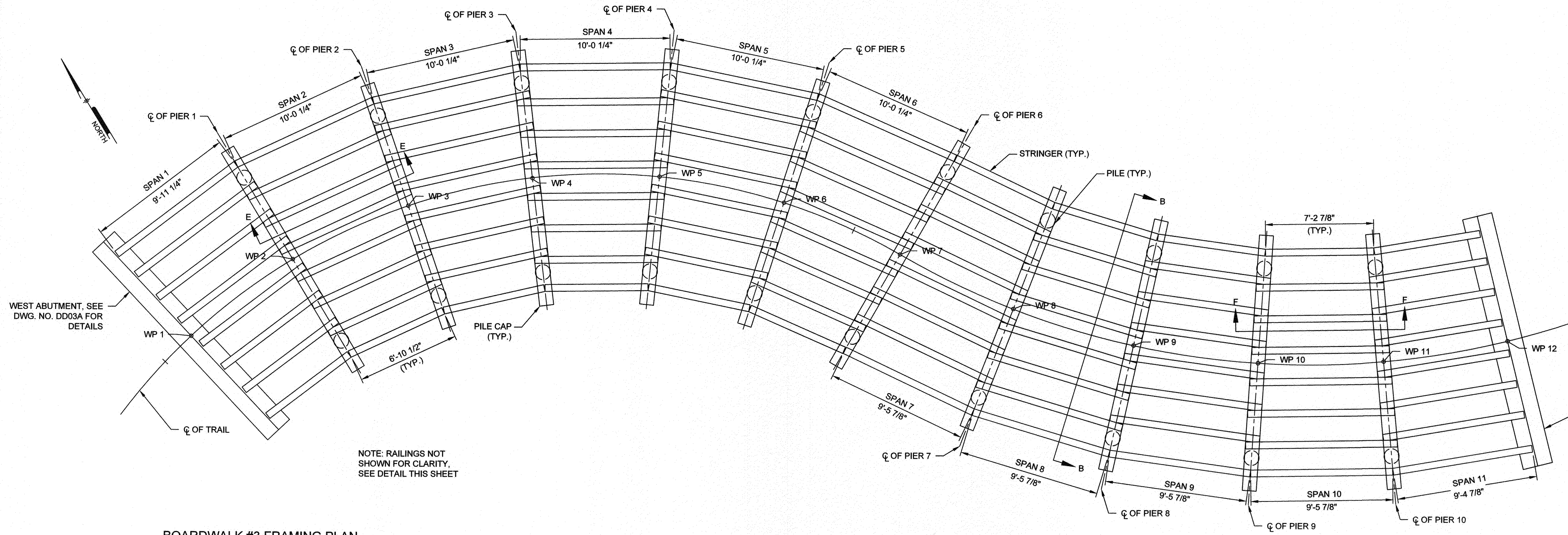
APPROVED DATE: **4/15/21**
PROJECT MANAGER: **[Signature]**

APPROVED DATE: **4/16/21**
CHIEF, RIGHT OF WAY SERVICES: **[Signature]**

SCALE: AS SHOWN
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET **117** of **137**
PROJECT #: P504100
PROPOSAL #:

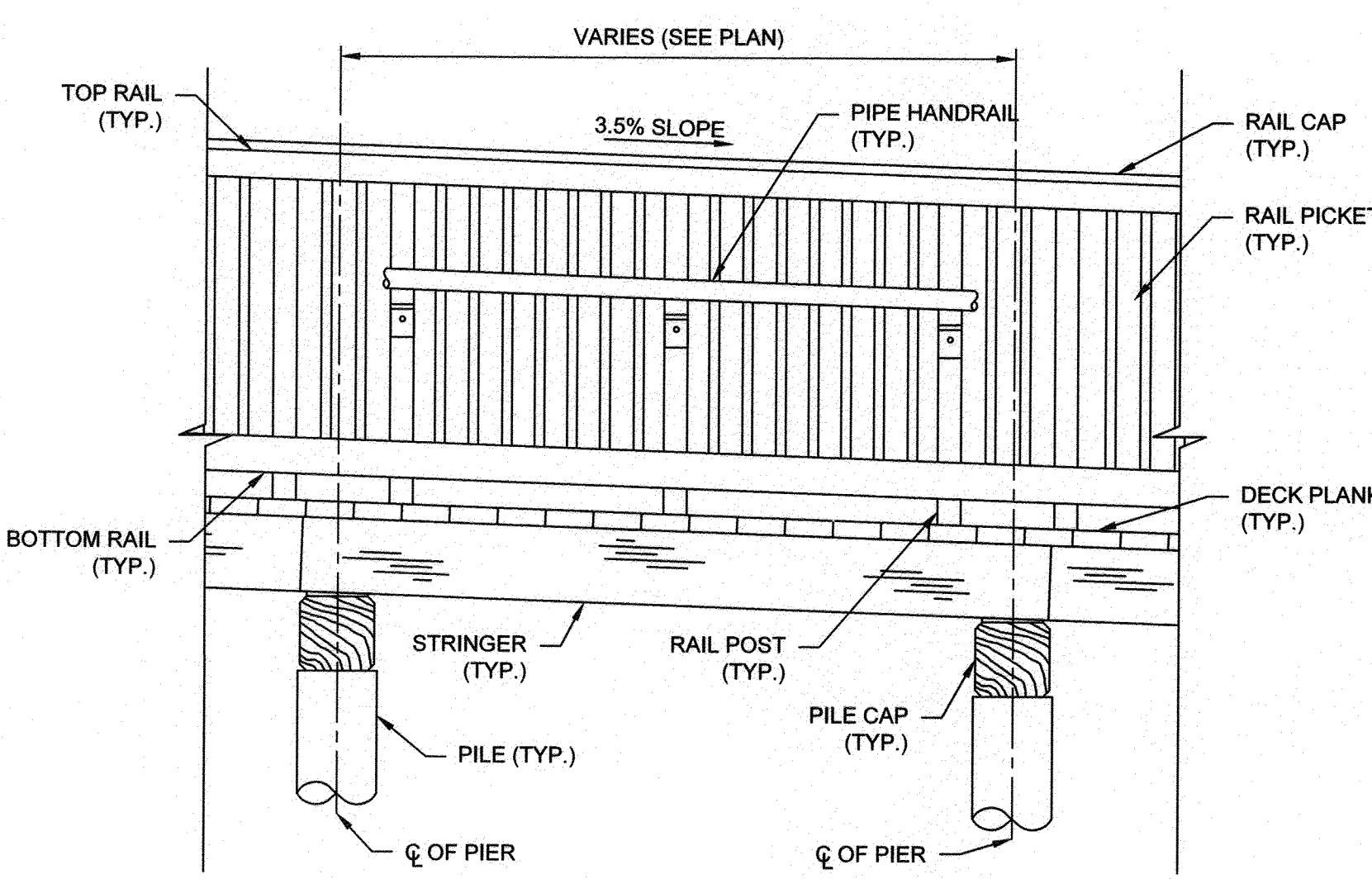
BOARDWALK #2 - FRAMING PLAN AND DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
ARNOLD, MD, ZIP CODE 21012, 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

DPW No.:

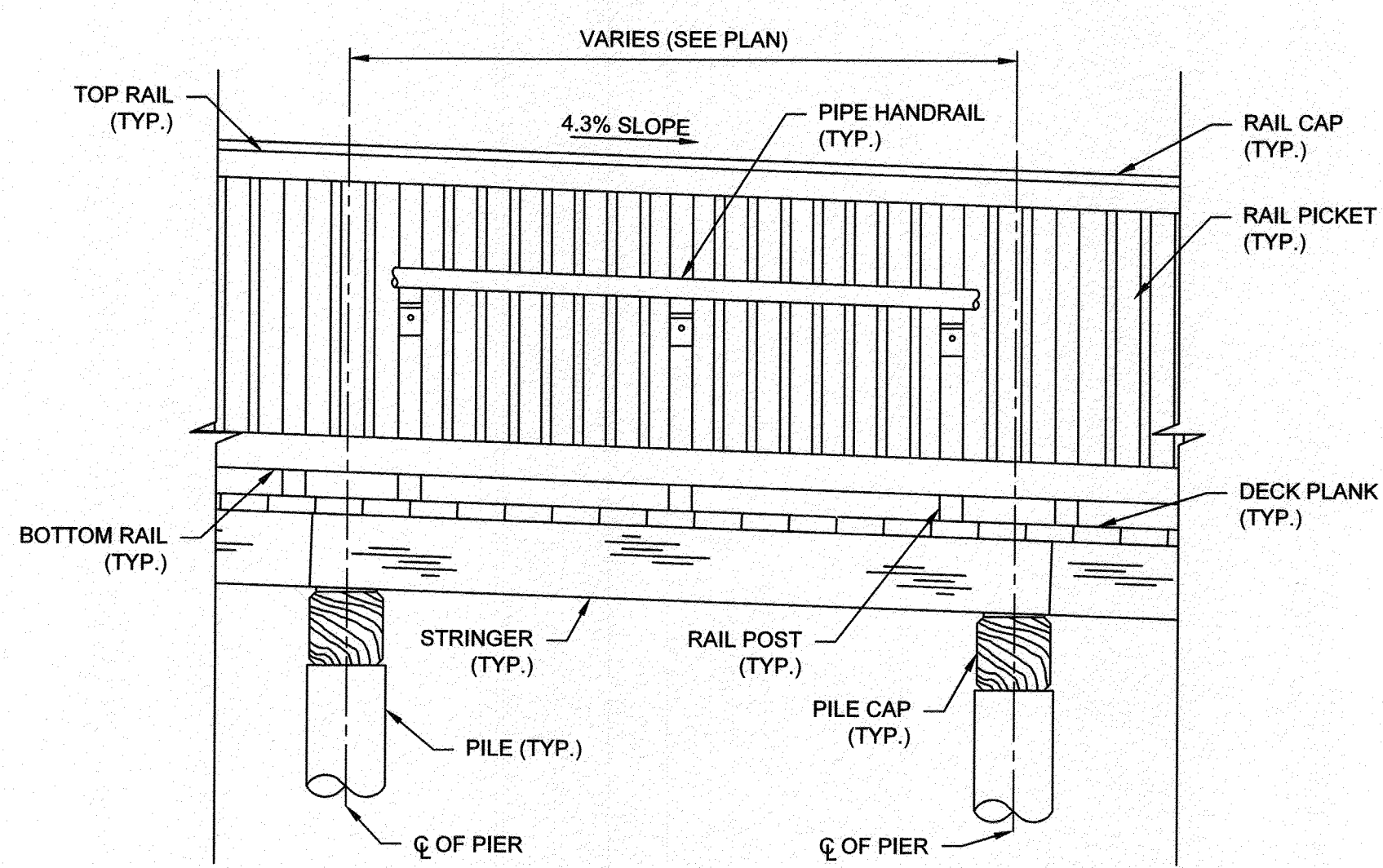


WP	DESCRIPTION	ELEVATION	NORTHING	EASTING	PIER/ABUTMENT ORIENTATION
1	W. ABUT.	127.57	499926.7343	1457862.0557	S 11°48'30" E
2	PIER 1	127.27	499927.5540	1457870.5110	S 00°23'02" W
3	PIER 2	126.98	499926.5708	1457878.9037	S 12°34'33" W
4	PIER 3	126.68	499923.8325	1457886.9344	S 24°46'03" W
5	PIER 4	126.38	499919.4650	1457894.2021	S 36°57'33" W
6	PIER 5	126.09	499913.6665	1457900.3839	S 49°09'03" W
7	PIER 6	125.79	499906.6978	1457905.2039	S 61°20'49" W
8	PIER 7	125.49	499899.6131	1457909.7566	S 52°35'15" W
9	PIER 8	125.20	499893.3017	1457915.3421	S 43°49'38" W
10	PIER 9	124.90	499887.9140	1457921.8316	S 35°04'12" W
11	PIER 10	124.60	499883.5799	1457929.0727	S 26°18'25" W
12	E. ABUT.	124.00	449880.4032	1457936.8962	S 17°32'50" W

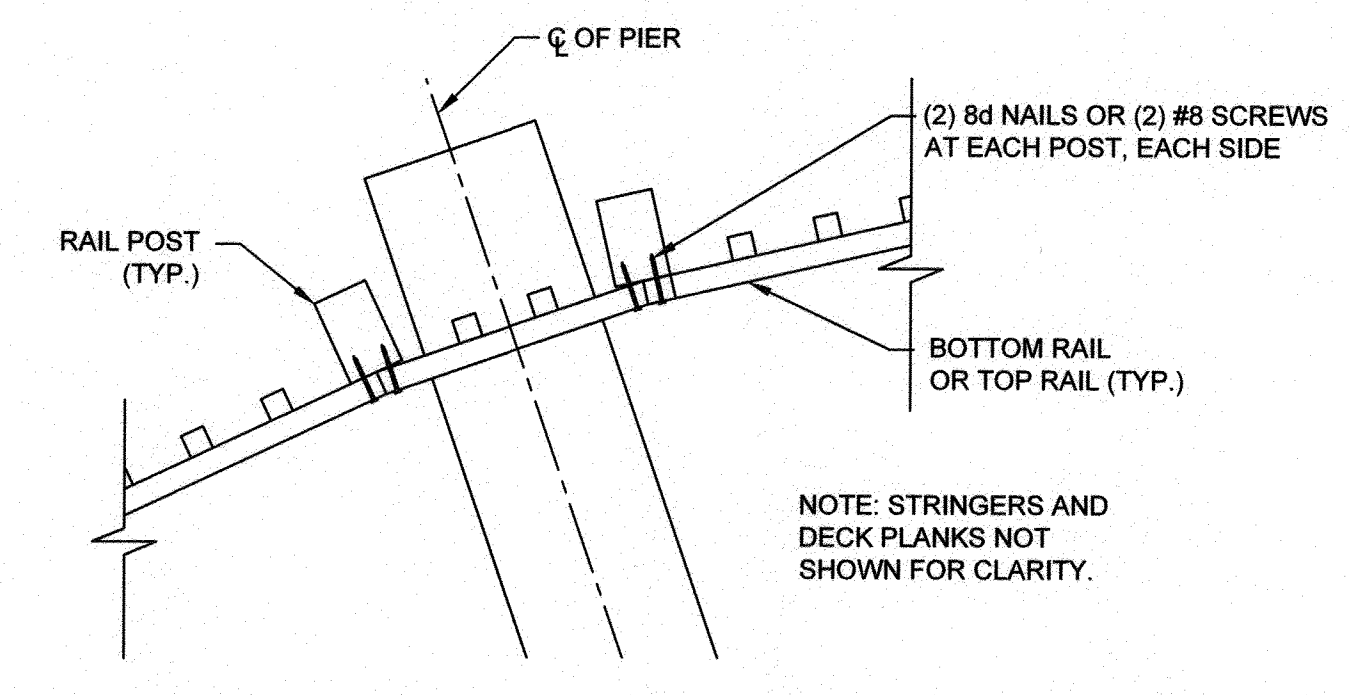
BOARDWALK #3 FRAMING PLAN
SCALE: 1/4" = 1'-0"



SECTION E-E - TYPICAL SPAN (SPANS 1-6)
SCALE: 1/2" = 1'-0"



SECTION F-F - TYPICAL SPAN (SPANS 7-11)
SCALE: 1/2" = 1'-0"



TYPICAL RAILING TO POST CONNECTION
SCALE: 1" = 1'-0"

- NOTES:**
- FOR GENERAL PLAN AND ELEVATION, SEE DWG. NO. DD16C.
 - FOR ABUTMENT AND ABUTMENT BEARING DETAILS, SEE DWG. NO. DD03A.
 - FOR SECTION B-B, SEE DWG. NO. DD16E.
 - FOR CONNECTION DETAILS, SEE DWG. NO. DD16G.
 - BACK RAILS NOT SHOWN FOR CLARITY. SEE DETAIL A ON DWG. NO. DD16E.

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Pennoni
PENNONI ASSOCIATES INC.
8800 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

STATE OF MARYLAND
ANDREI ROSSOLL
PROFESSIONAL ENGINEER
LICENSE NO. 38227
4/11/2021

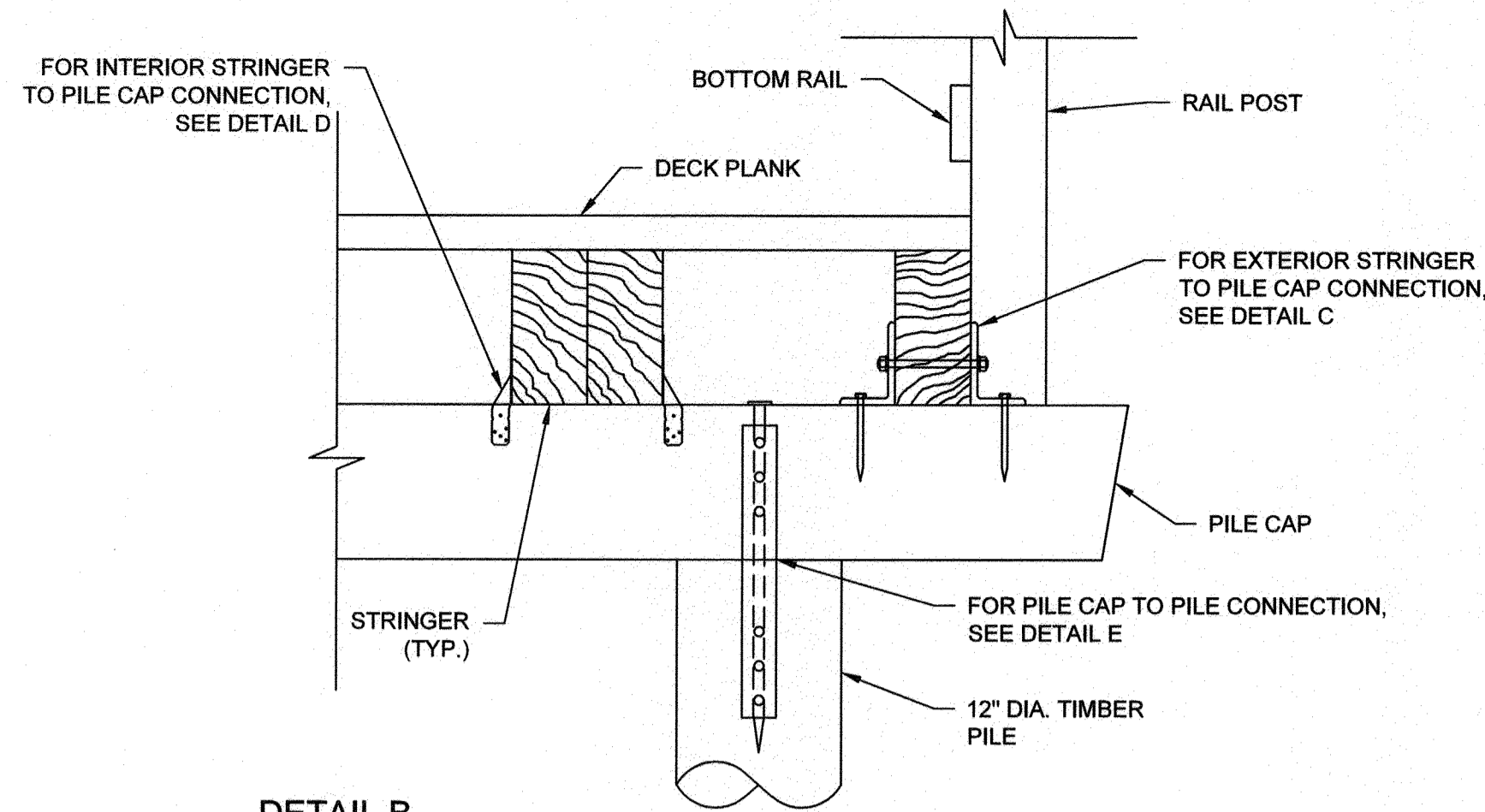
GP# G02017905 DWG NO: DD16F

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

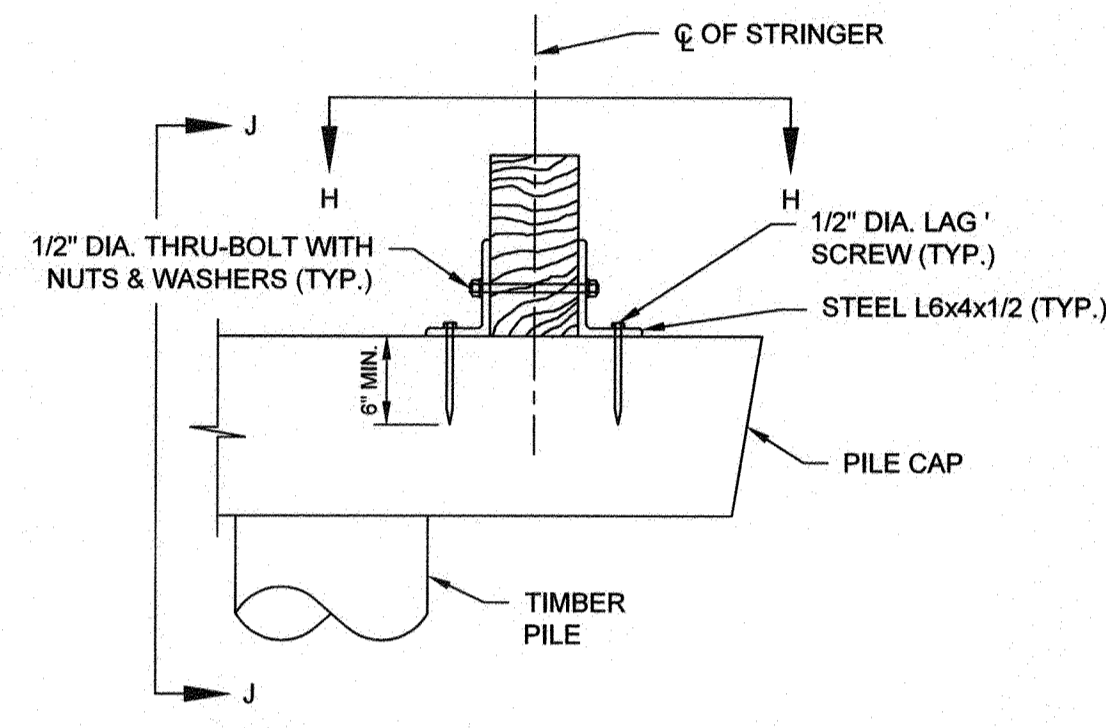
97186 APRIL 5, 2021

APPROVED DATE <i>[Signature]</i> 5/4/21 CHIEF ENGINEER	APPROVED DATE <i>[Signature]</i> 4/15/21 PROJECT MANAGER	SCALE: AS SHOWN	BOARDWALK #3 - FRAMING PLAN AND DETAILS
APPROVAL DATE <i>[Signature]</i> 4/24/21 ASSISTANT CHIEF ENGINEER	APPROVED DATE <i>[Signature]</i> 4/16/21 CHIEF, RIGHT OF WAY SERVICES	CHECKED BY: PJS/JAR	BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS
SHEET 118 of 137		PROJECT #: P504100	TAX MAP 32, 39, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019
PROPOSAL #:		NOVEMBER 2019	

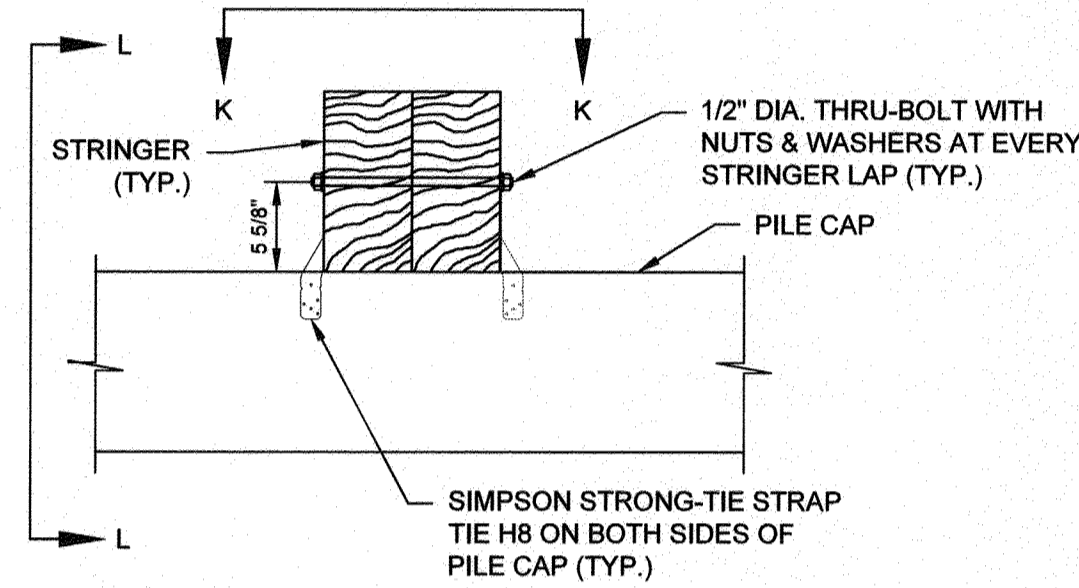
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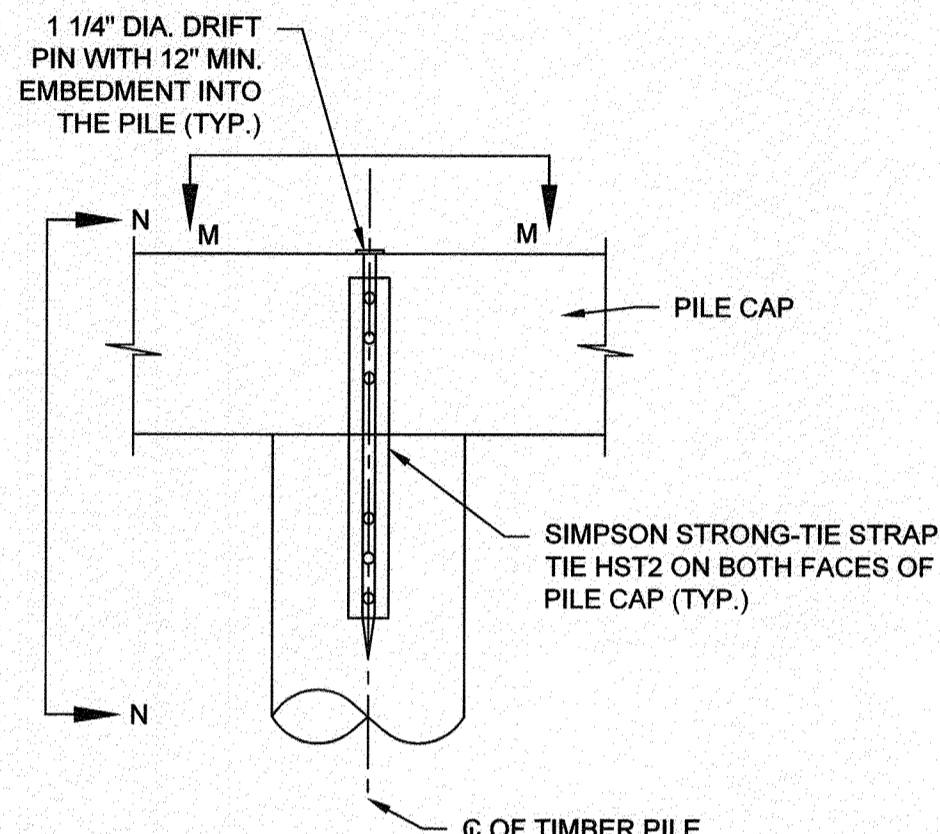
DETAIL B
SCALE: 1" = 1'-0"



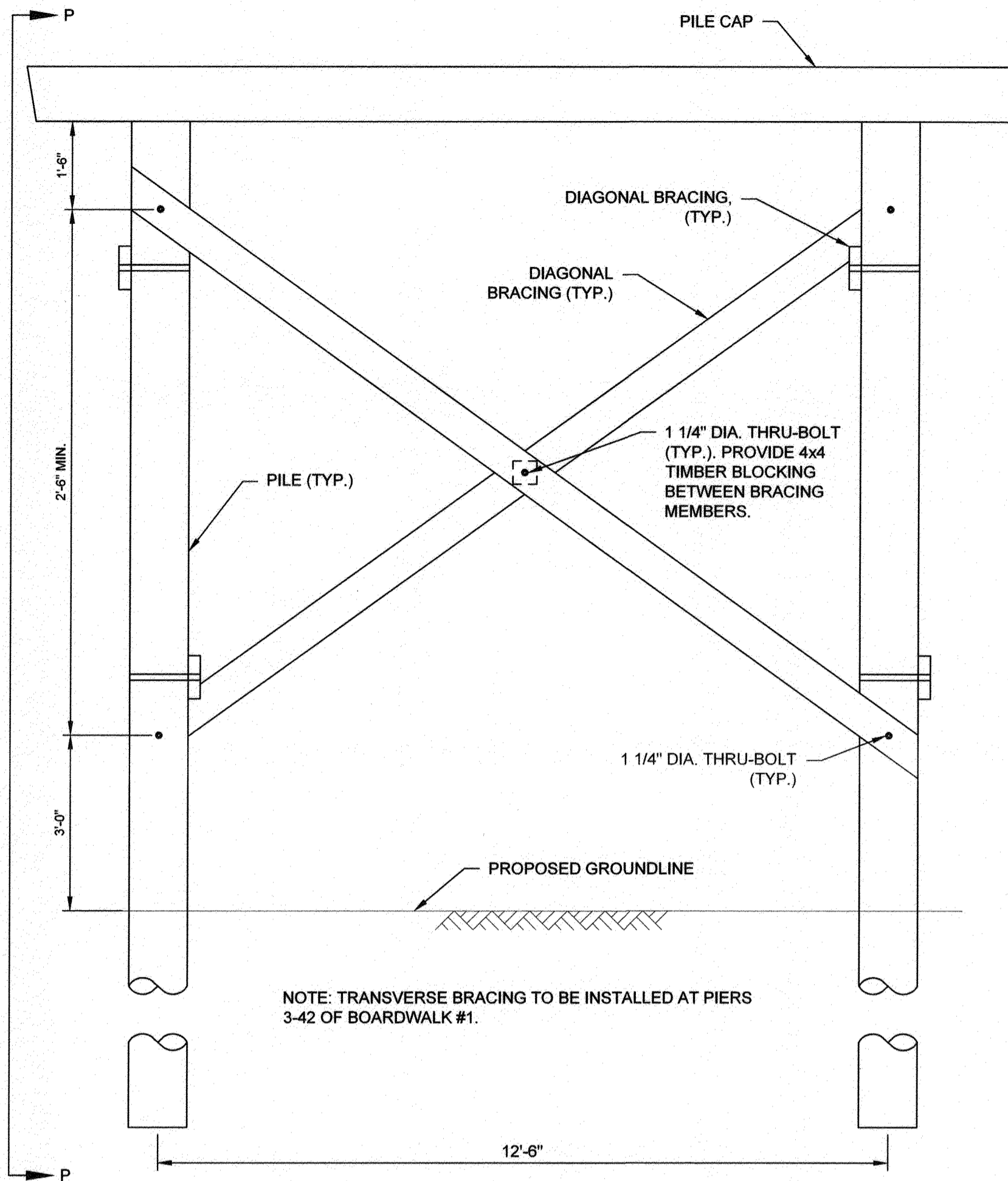
DETAIL C
SCALE: 1" = 1'-0"



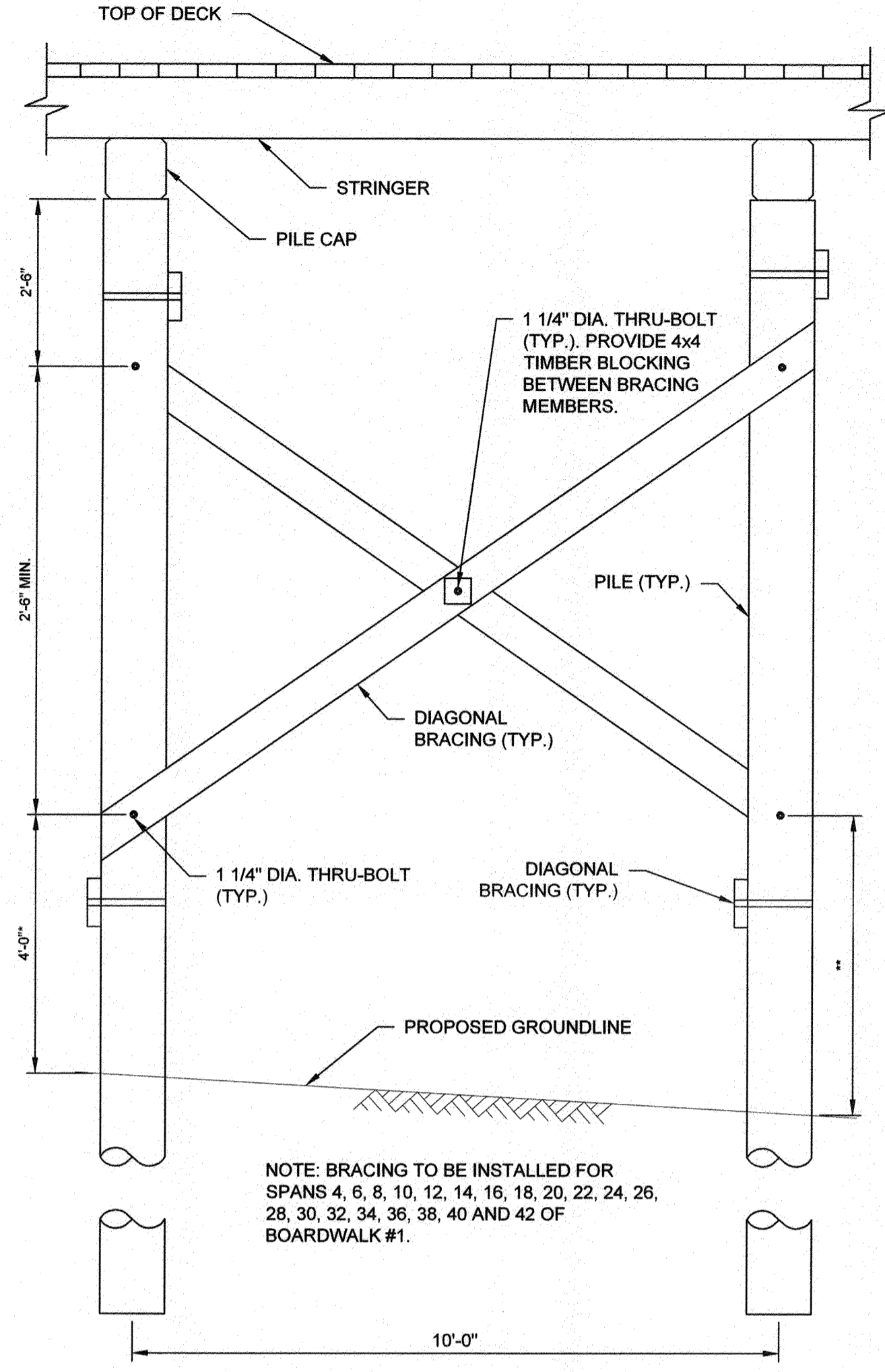
DETAIL D
SCALE: 1" = 1'-0"



DETAIL E
SCALE: 1" = 1'-0"



PILE BRACING DETAIL
SCALE: 1/2" = 1'-0"

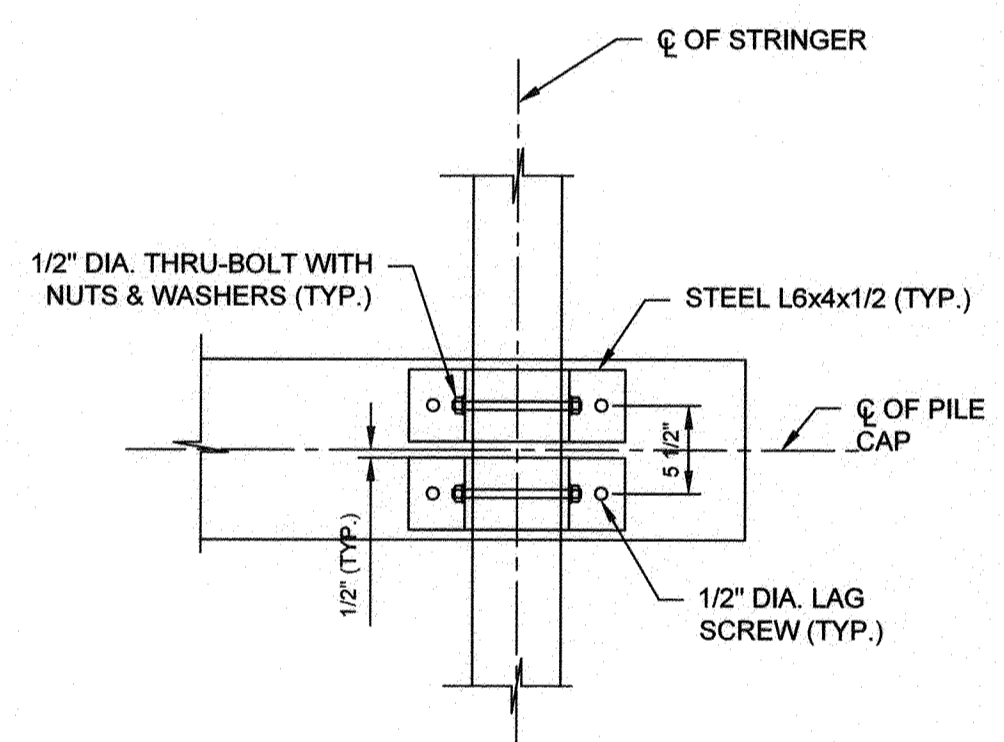


SECTION P-P
SCALE: 1/2" = 1'-0"

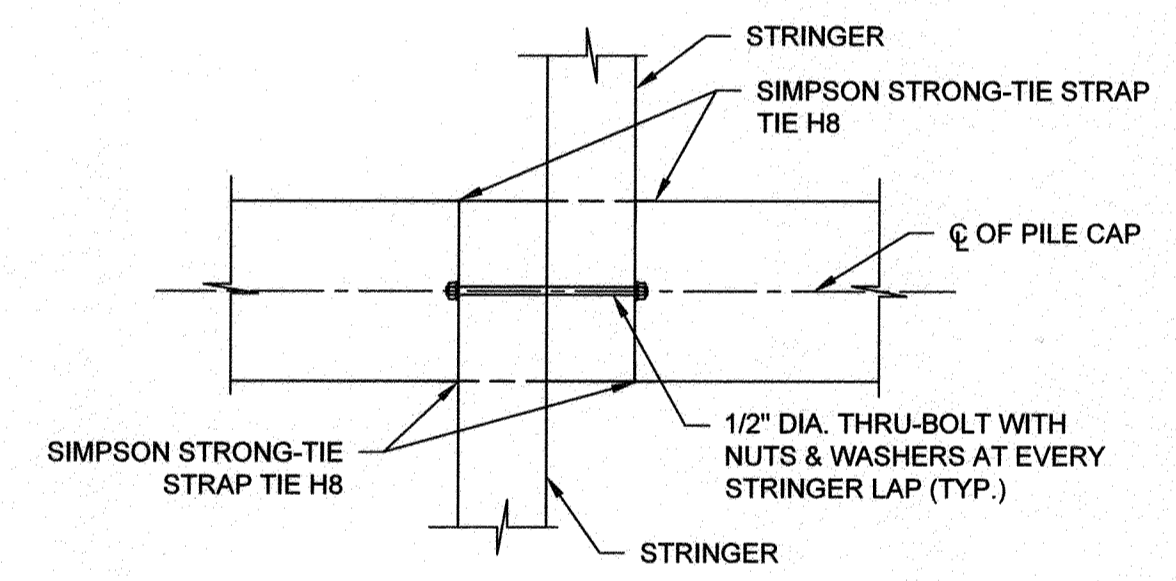
* FROM HIGHEST PROPOSED GROUNDLINE ELEVATION
** DIMENSION TO MATCH ELEVATION OF THE CONNECTION ON THE OTHER SIDE

NOTE: TRANSVERSE BRACING TO BE INSTALLED AT PIERS 3-42 OF BOARDWALK #1.

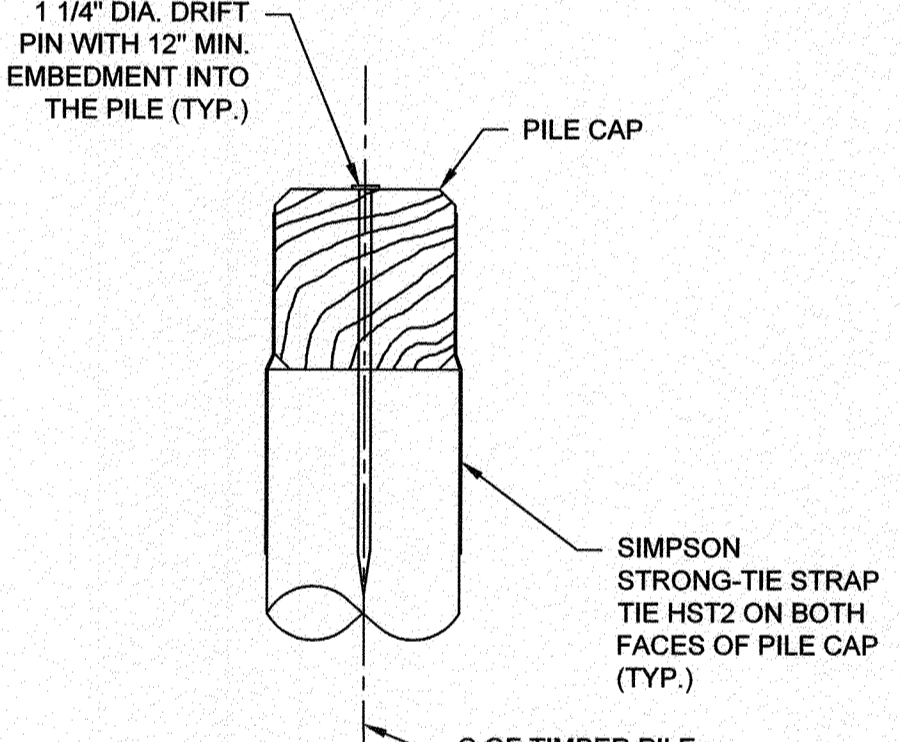
NOTE: BRACING TO BE INSTALLED FOR SPANS 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40 AND 42 OF BOARDWALK #1.



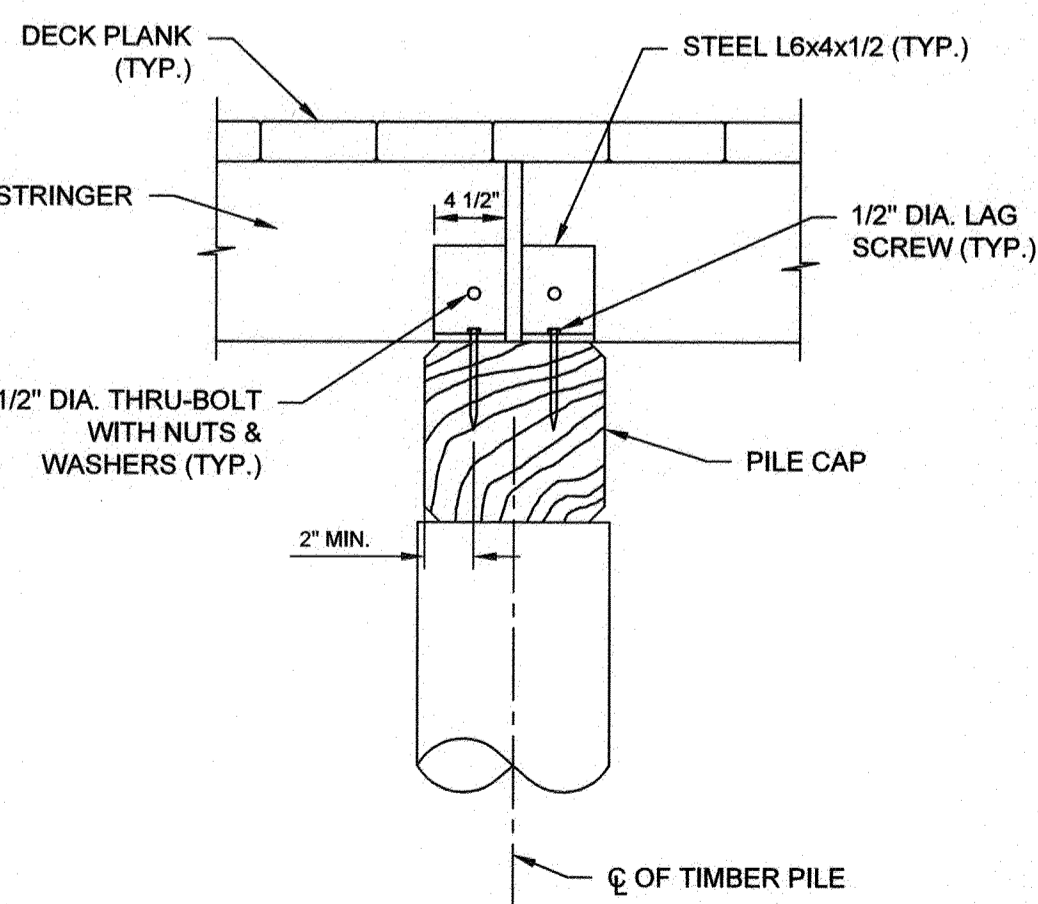
SECTION H-H
SCALE: 1" = 1'-0"



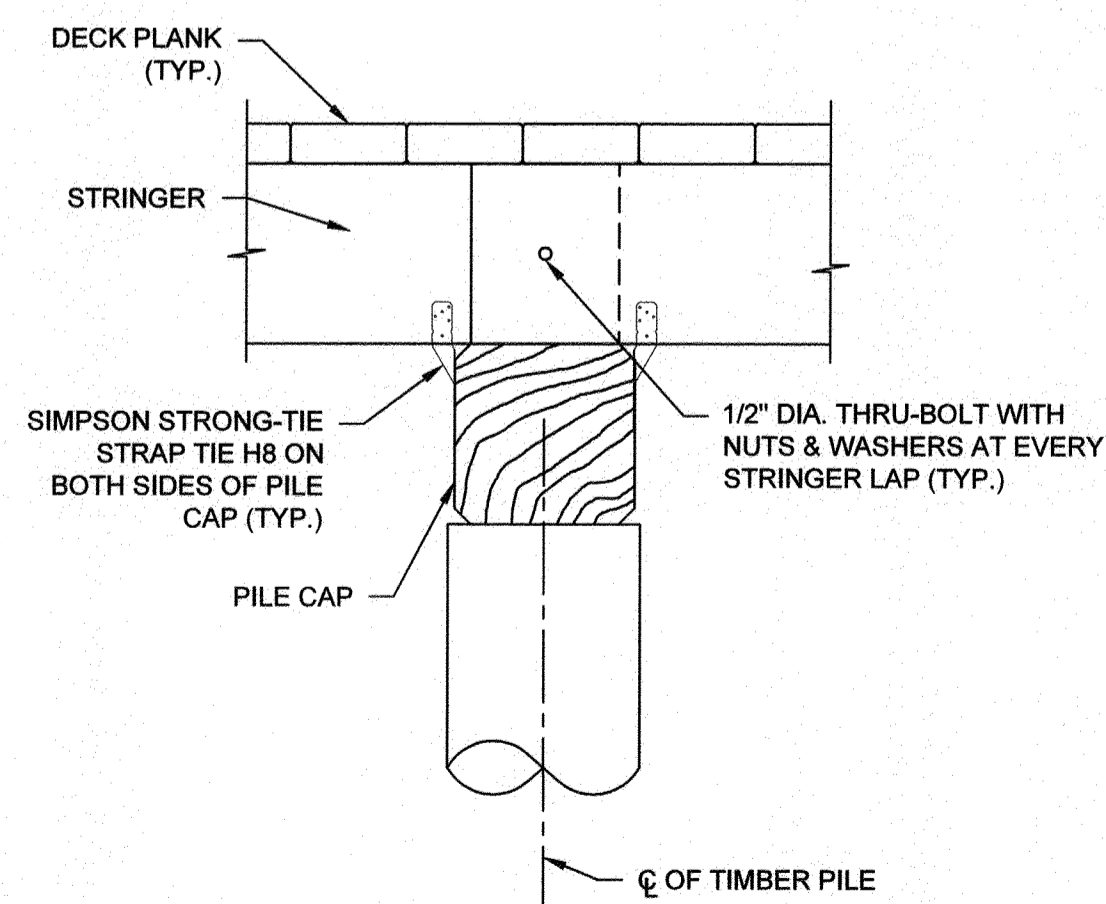
SECTION K-K
SCALE: 1" = 1'-0"



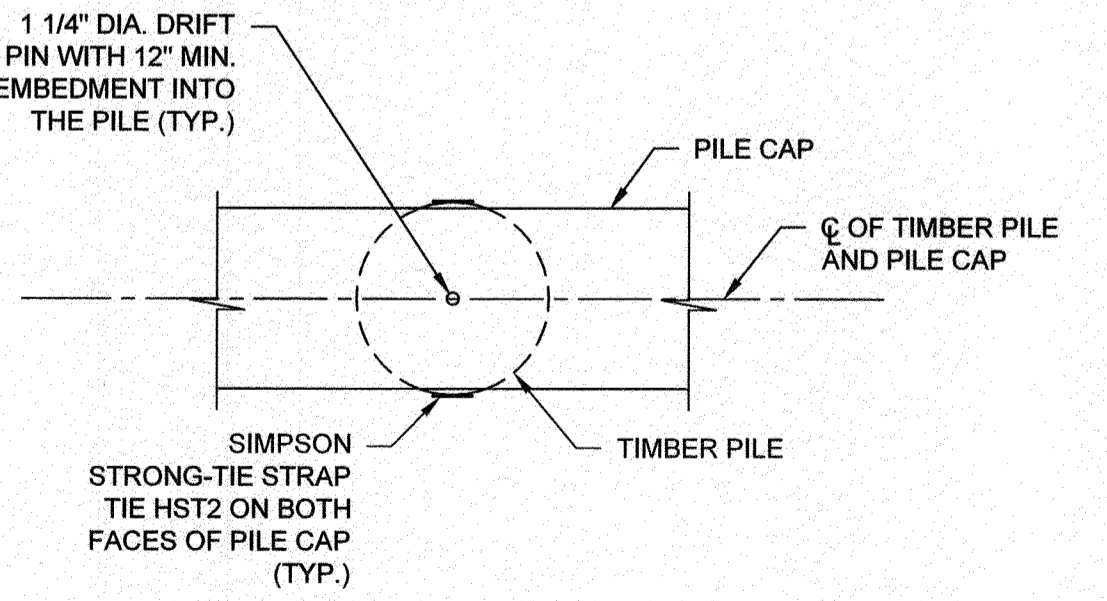
SECTION M-M
SCALE: 1" = 1'-0"



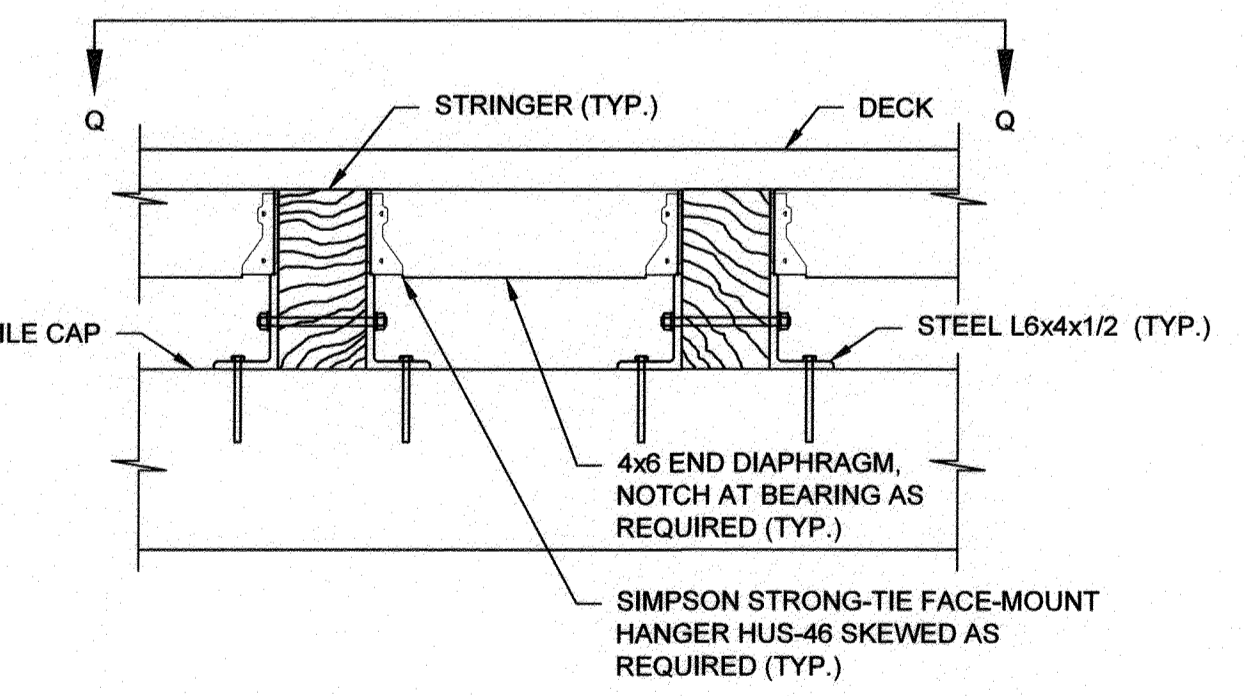
SECTION J-J
SCALE: 1" = 1'-0"



SECTION L-L
SCALE: 1" = 1'-0"

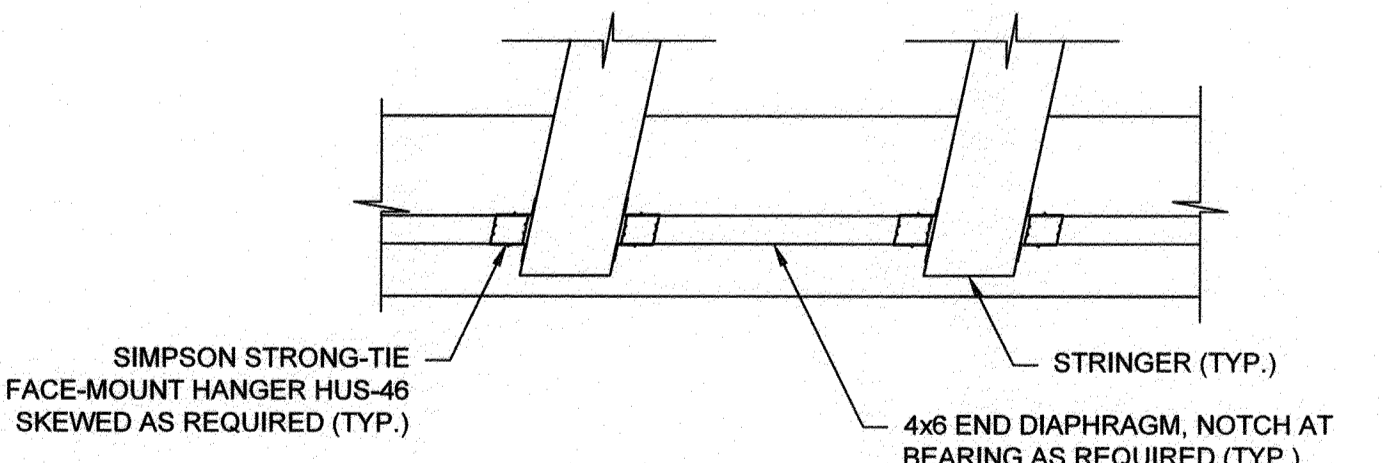


SECTION N-N
SCALE: 1" = 1'-0"



DETAIL F (END DIAPHRAGM AT NORTH ABUTMENT OF BOARDWALK #1)
SCALE: 1" = 1'-0"

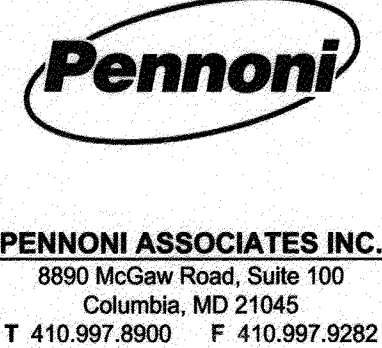
NOTE: FOR BEAM SEAT DETAIL, SEE DWG. NO. DD03A



SECTION Q-Q
SCALE: 1" = 1'-0"

- NOTES:**
- LAG SCREWS TO BE PROVIDED WITH SHANK AND PILOT HOLE.
 - CONTRACTOR TO NOTCH STRINGERS TO PROVIDE FULL BEARING SURFACE AND ADJUST THE PILE CAP ELEVATION AS NEEDED.
 - ATTACH DECK PLANKS TO STRINGERS WITH (3) #10 - 5" LONG FLAT HEAD SCREWS AT EACH STRINGER LINE.

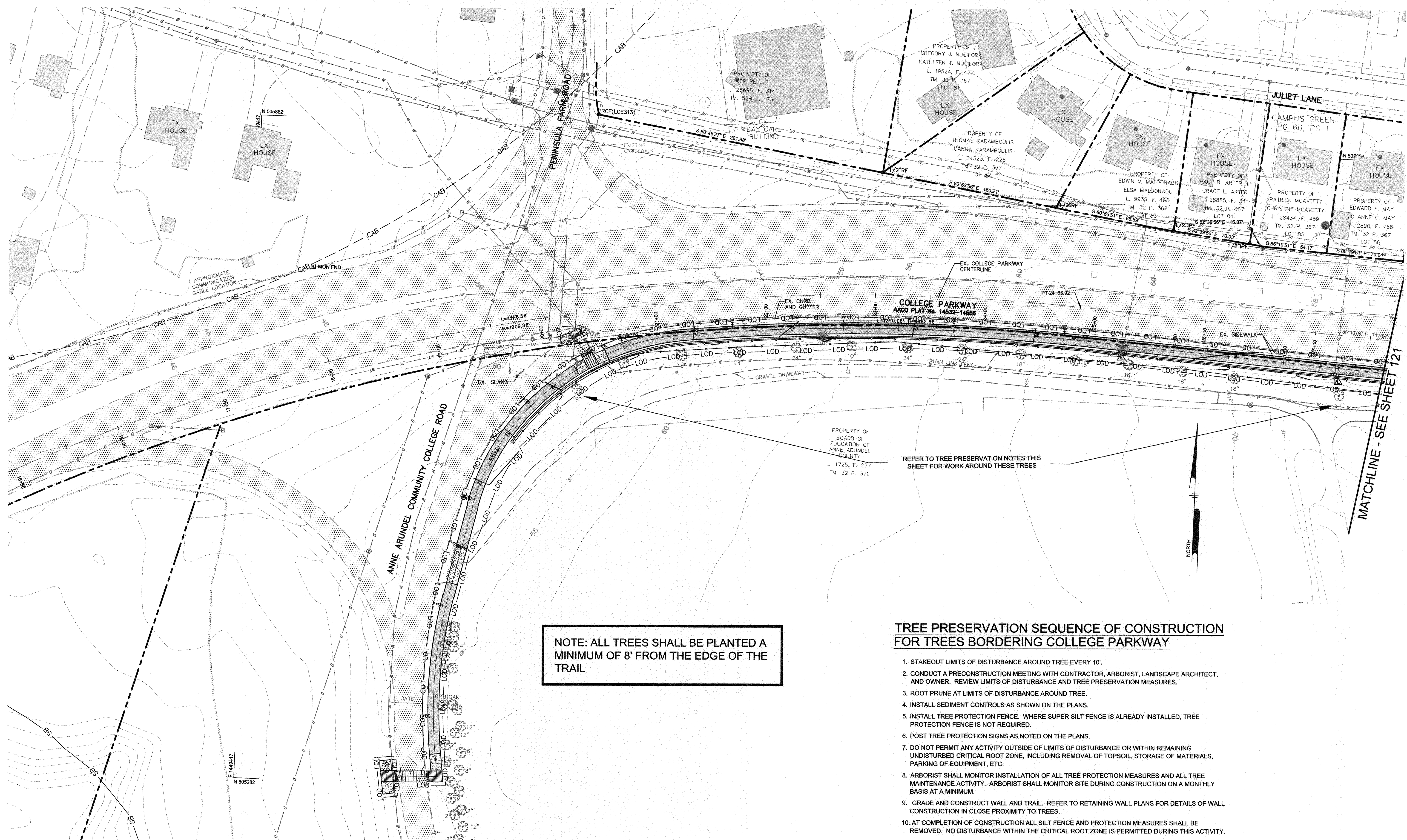
PROFESSIONAL CERTIFICATION: I, <u>ANDREI ROSSOLL</u> , PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # <u>38227</u> EXPIRATION DATE <u>01/17/2023</u>	
REVISIONS	APPROVED BY DATE
#	DESCRIPTION



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		GP# G02017905	DWG NO: DD16G
APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	5/6/21	<i>[Signature]</i>	4/15/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVAL	DATE	APPROVED	DATE
<i>[Signature]</i>	4/24/21	<i>[Signature]</i>	4/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	
SCALE: AS SHOWN	DRAWN BY: PAI	CHECKED BY: PJS/JAR	SHEET 119 of 137
PROJECT # P504100	PROPOSAL #	BOARDWALK CONNECTION AND MISC. DETAILS	
BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS			
TAX MAP 32, 39, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019			

97187

APRIL 5, 2021



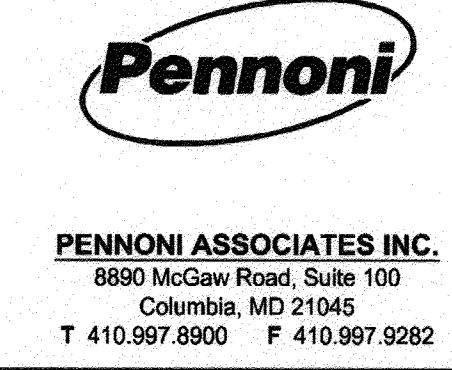
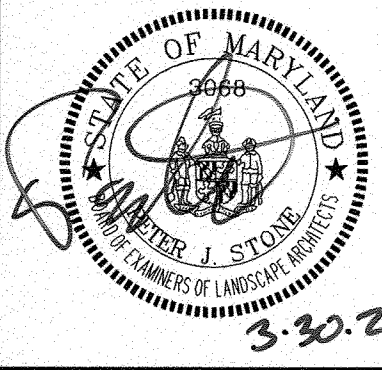
NOTE: ALL TREES SHALL BE PLANTED A MINIMUM OF 8' FROM THE EDGE OF THE TRAIL

TREE PRESERVATION SEQUENCE OF CONSTRUCTION FOR TREES BORDERING COLLEGE PARKWAY

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND TREE.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. DO NOT PERMIT ANY ACTIVITY OUTSIDE OF LIMITS OF DISTURBANCE OR WITHIN REMAINING UNDISTURBED CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
8. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
9. GRADE AND CONSTRUCT WALL AND TRAIL. REFER TO RETAINING WALL PLANS FOR DETAILS OF WALL CONSTRUCTION IN CLOSE PROXIMITY TO TREES.
10. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



APPROVED DATE		APPROVED DATE		SCALE: 1" = 40'	
<i>[Signature]</i> 5/14/21		<i>[Signature]</i> 4/15/21		DRAWN BY: PAI	
CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: PJS/JAR	
APPROVAL DATE		APPROVED DATE		SHEET 120 of 137	
<i>[Signature]</i> 4/14/21		<i>[Signature]</i> 4/16/21		PROJECT #: P504100	
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		PROPOSAL #:	

GP # G02017905 DWG NO: DD17A

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

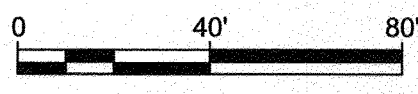
97188 APRIL 5, 2021

LANDSCAPE AND TREE PRESERVATION PLAN

BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS

TAX MAP 32, 38, AND 40

ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019

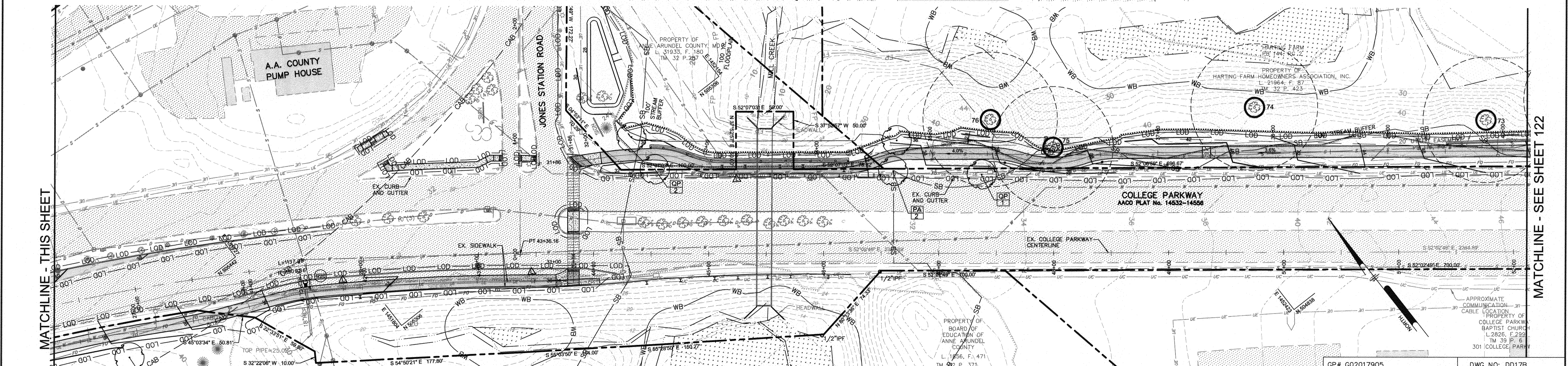


DPW No.:

T:\PROJECTS\VAO\VAO1701-Broadneck Peninsula Phase III\DESIGN_PUBLIC\VD01 - CD SET\VAO1701-0017A.dwg



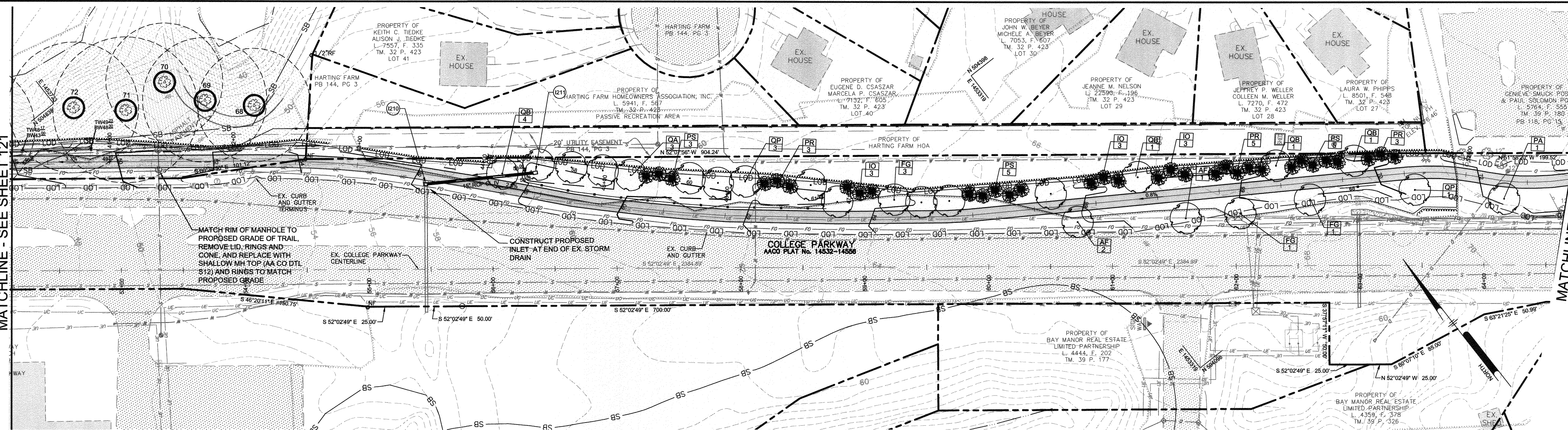
NOTE: ALL TREES SHALL BE PLANTED A MINIMUM OF 8' FROM THE EDGE OF THE TRAIL



<p>PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022</p>		<p>Penioni PENIONI ASSOCIATES INC. 8890 McGaw Road, Suite 100 Columbia, MD 21045 T 410.997.8900 F 410.997.9282</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>APPROVED</td> <td>DATE</td> <td>APPROVED</td> <td>DATE</td> </tr> <tr> <td><i>[Signature]</i></td> <td>5/15/21</td> <td><i>[Signature]</i></td> <td>4/15/24</td> </tr> <tr> <td>CHIEF ENGINEER</td> <td></td> <td>PROJECT MANAGER</td> <td></td> </tr> <tr> <td>APPROVAL</td> <td>DATE</td> <td>APPROVED</td> <td>DATE</td> </tr> <tr> <td><i>[Signature]</i></td> <td>4/15/21</td> <td><i>[Signature]</i></td> <td>4/10/21</td> </tr> <tr> <td>ASSISTANT CHIEF ENGINEER</td> <td></td> <td>CHIEF, RIGHT OF WAY SERVICES</td> <td></td> </tr> </table>	APPROVED	DATE	APPROVED	DATE	<i>[Signature]</i>	5/15/21	<i>[Signature]</i>	4/15/24	CHIEF ENGINEER		PROJECT MANAGER		APPROVAL	DATE	APPROVED	DATE	<i>[Signature]</i>	4/15/21	<i>[Signature]</i>	4/10/21	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p style="font-size: 24pt; font-weight: bold;">97189</p> <p>APRIL 5, 2021</p> <p>LANDSCAPE AND TREE PRESERVATION PLAN</p> <p style="font-weight: bold;">BROADNECK TRAIL - PHASE III</p> <p>CONSTRUCTION DOCUMENTS</p> <p>ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019</p>
APPROVED	DATE	APPROVED	DATE																									
<i>[Signature]</i>	5/15/21	<i>[Signature]</i>	4/15/24																									
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ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES																										
<p>REVISIONS</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>#</th> <th>DESCRIPTION</th> <th>APPROVED BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		#	DESCRIPTION	APPROVED BY	DATE					<p>SCALE: 1" = 40'</p> <p>DRAWN BY: PAI</p> <p>CHECKED BY: PJS/JAR</p> <p>SHEET 121 of 137</p> <p>PROJECT #: P504100</p> <p>PROPOSAL #:</p>																		
#	DESCRIPTION	APPROVED BY	DATE																									

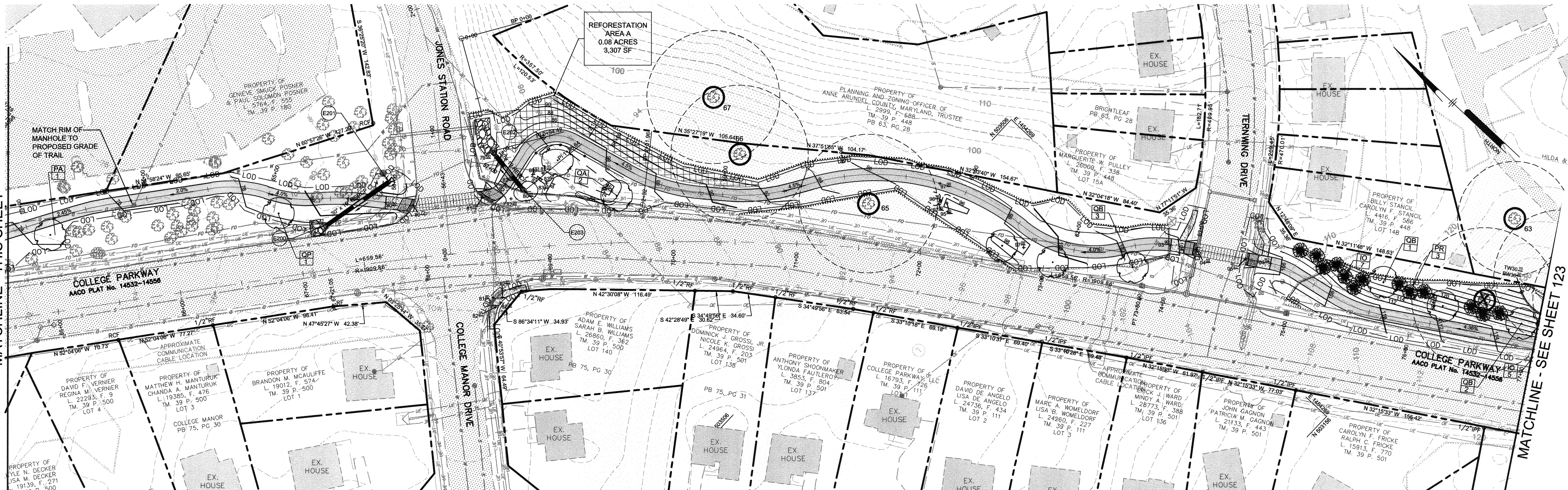
MATCHLINE - SEE SHEET 121

MATCHLINE - THIS SHEET



MATCHLINE - THIS SHEET

MATCHLINE - SEE SHEET 123



NOTE: ALL TREES SHALL BE PLANTED A MINIMUM OF 8' FROM THE EDGE OF THE TRAIL

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#	REVISIONS DESCRIPTION	APPROVED BY	DATE



APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	5/16/21	<i>[Signature]</i>	4/15/21
CHIEF ENGINEER		PROJECT MANAGER	
<i>[Signature]</i>	4/16/21	<i>[Signature]</i>	4/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	

GP# G02017905 DWG NO: DD17C

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

97190 APRIL 5, 2021

LANDSCAPE AND TREE PRESERVATION PLAN

BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS

TAX MAP 32, 39, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019

SCALE: 1" = 40'

DRAWN BY: PAI

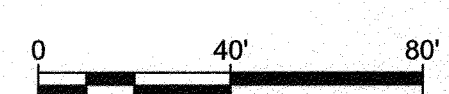
CHECKED BY: PJS/JAR

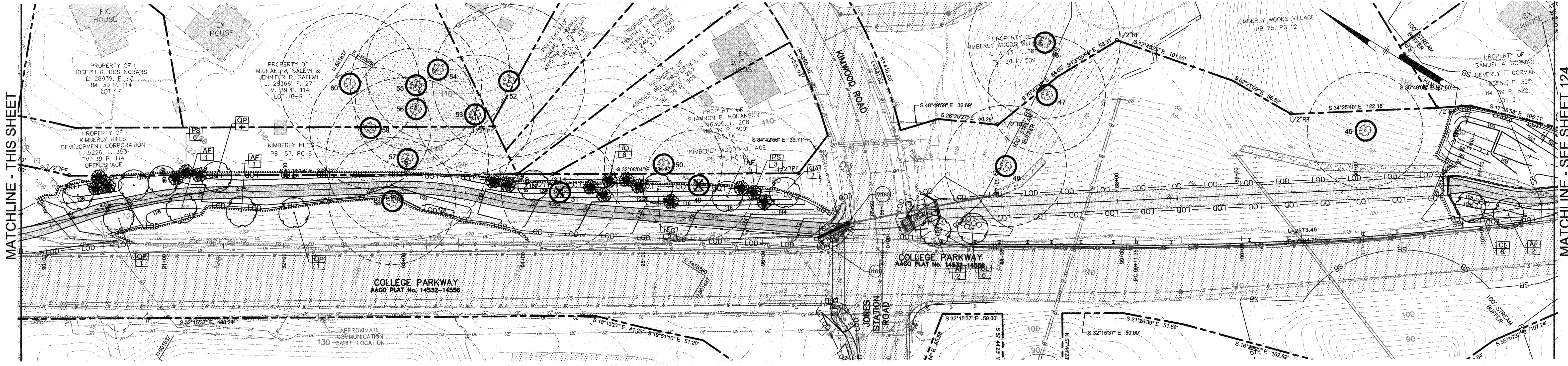
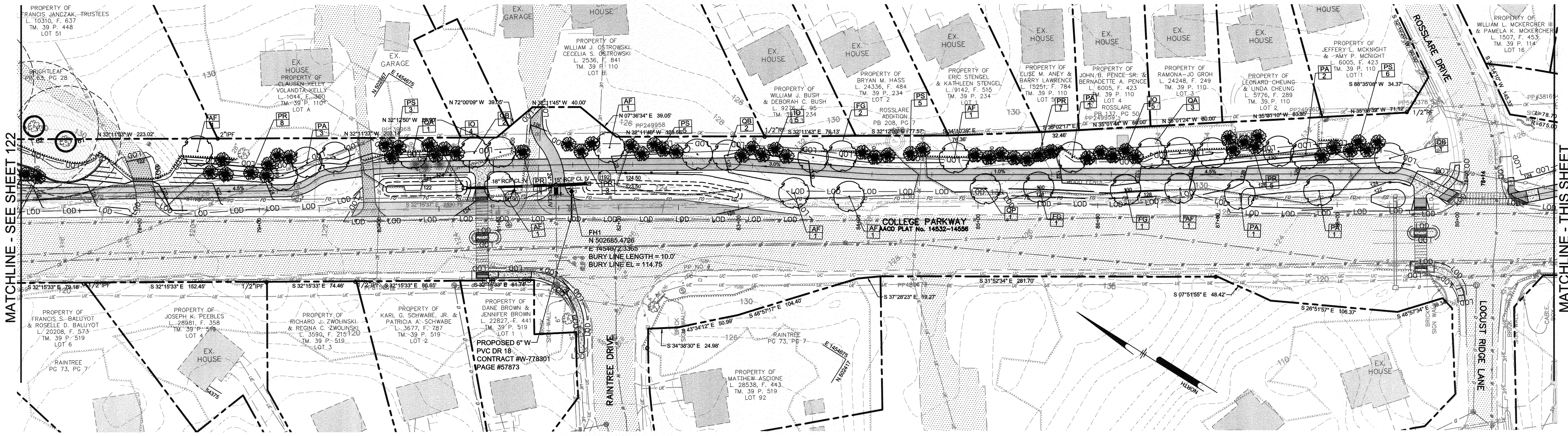
SHEET 122 of 137

PROJECT #: P504100

PROPOSAL #:

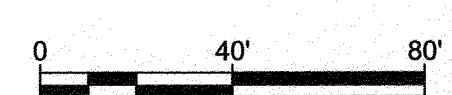
DATE: 5/16/21





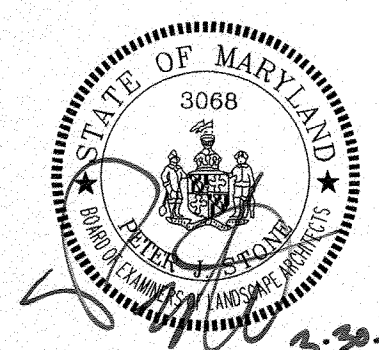
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DPW No.:



PROFESSIONAL CERTIFICATION: I, PETER J. STONE, B.L.A., CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

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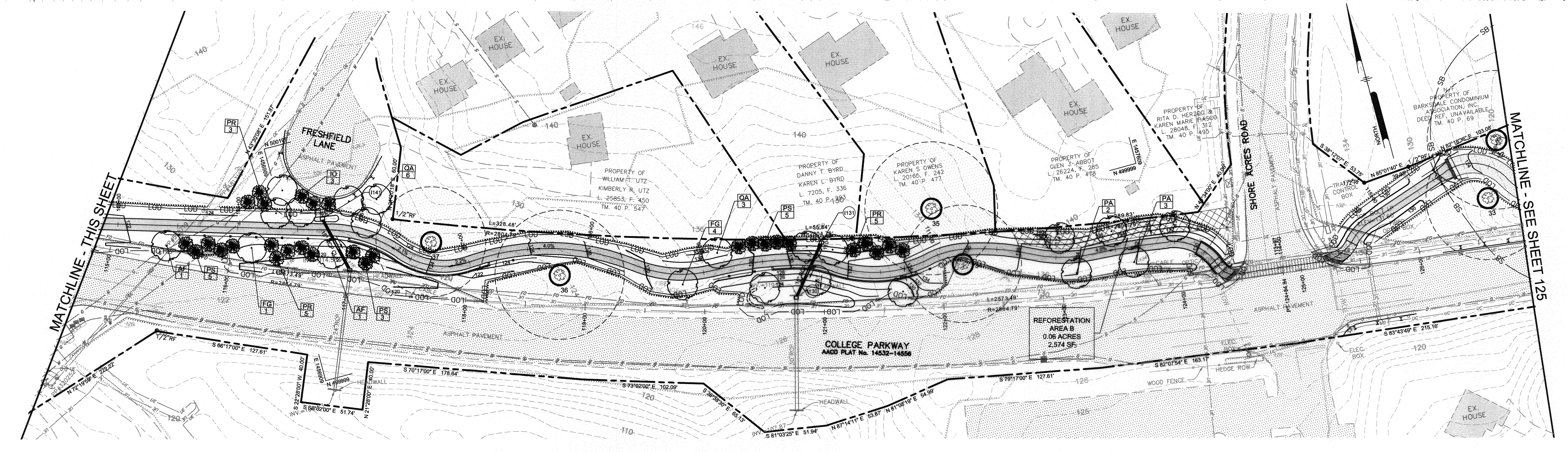
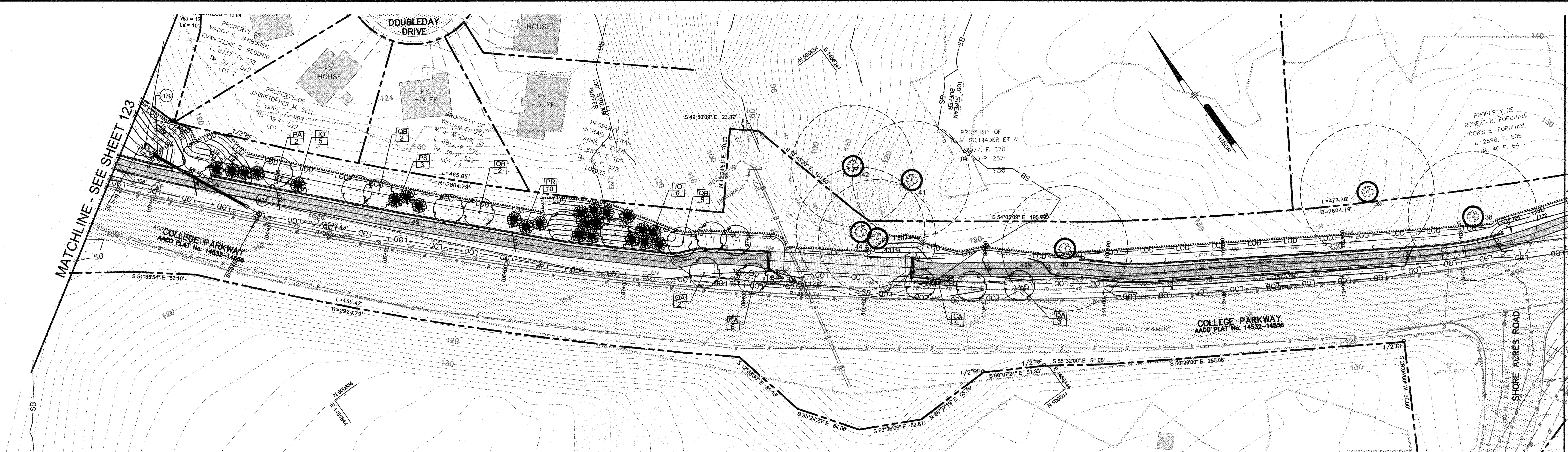


Pennoni
PENNONI ASSOCIATES INC.
 8880 McGav Road, Suite 100
 Columbia, MD 21045
 T 410.987.8900 F 410.987.9282

APPROVED DATE		APPROVED DATE		SCALE: 1" = 40'	DRAWN BY: PAI	CHECKED BY: PJS/JAR	SHEET 123 OF 137	PROJECT #: P504100	PROPOSAL #:
5/16/21		4/15/21							
APPROVAL DATE		APPROVED DATE		ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS 97191 APRIL 5, 2021 LANDSCAPE AND TREE PRESERVATION PLAN BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS TAX MAP 32, 38, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019					
4/21/21		4/16/21							
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES							

GP # G02017905 DWG NO: DD17D

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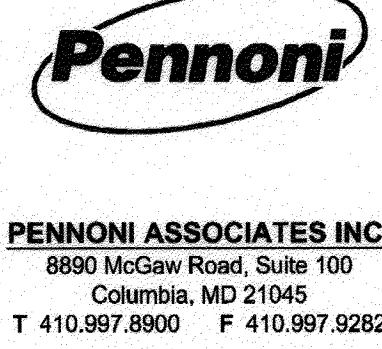
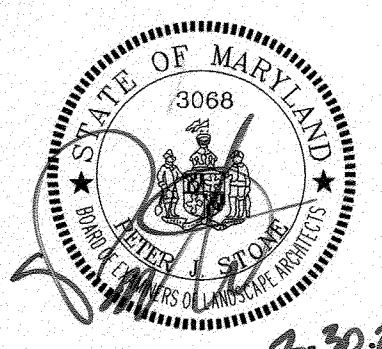
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REVISIONS

#	DESCRIPTION	APPROVED BY	DATE

3-30-21



ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE: [Signature] 5/10/21
CHIEF ENGINEER

APPROVED DATE: [Signature] 4/15/21
PROJECT MANAGER

APPROVED DATE: [Signature] 4/16/21
CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'

DRAWN BY: PAI

CHECKED BY: PJS/JAR

SHEET 124 of 137

PROJECT #: P504100

PROPOSAL #:

GP# G02017905 DWG NO: DD17E

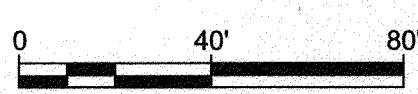
97192 APRIL 5, 2021

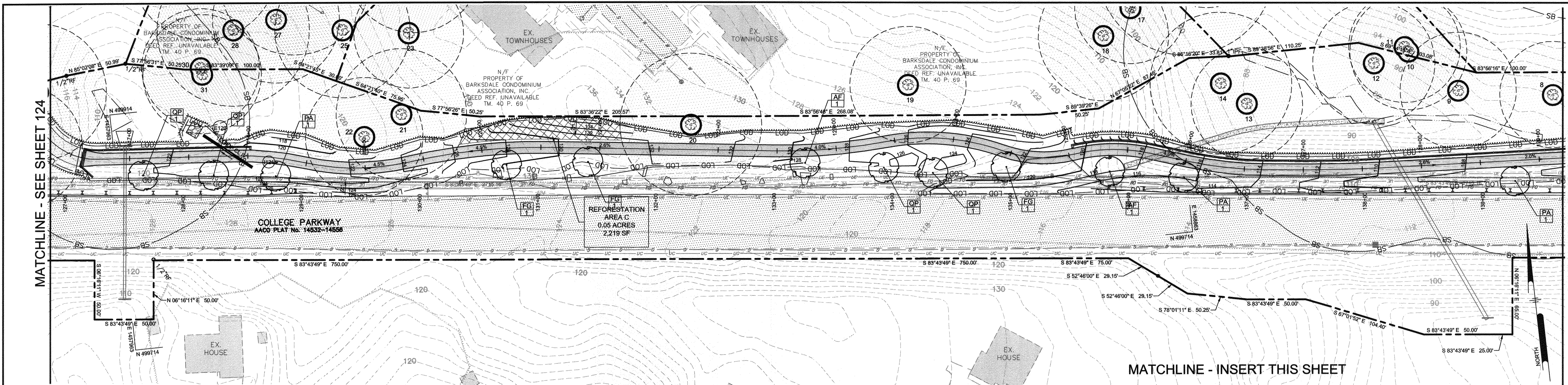
LANDSCAPE AND TREE PRESERVATION PLAN

BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS

TAX MAP 32, 38, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

GP# No.

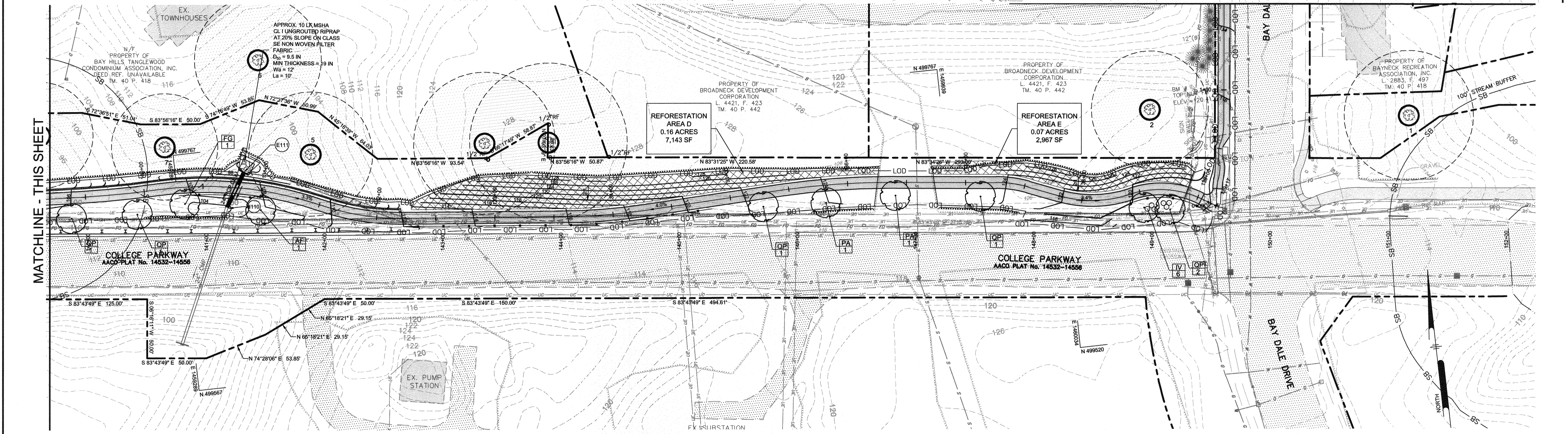




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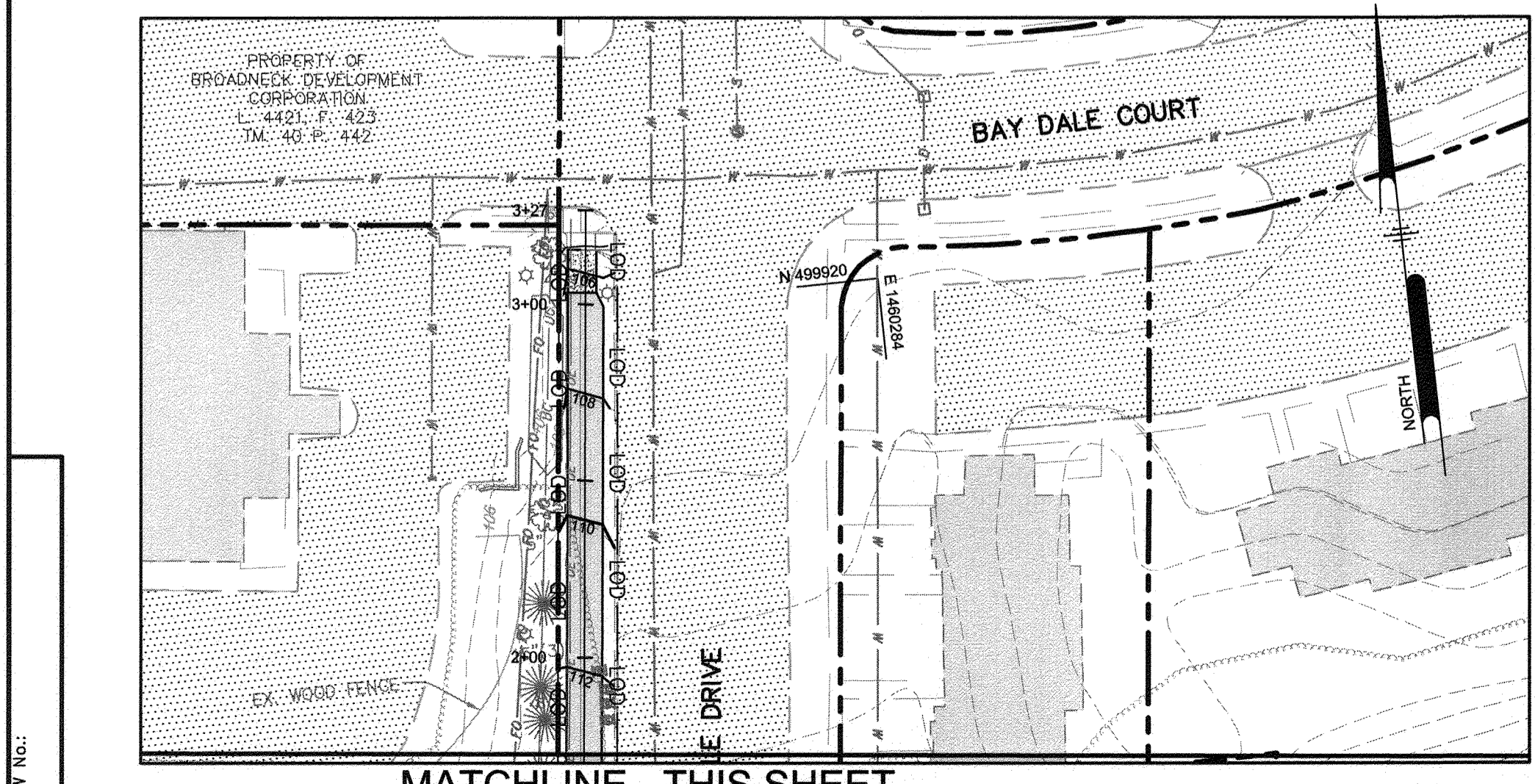
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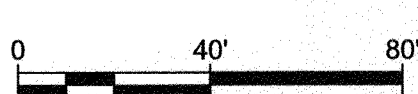


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NOTE: ALL TREES SHALL BE PLANTED A MINIMUM OF 8' FROM THE EDGE OF THE TRAIL

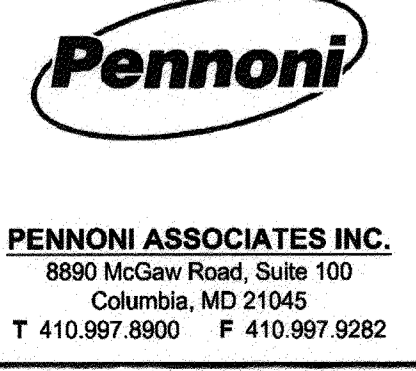


MATCHLINE - THIS SHEET



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#	REVISIONS DESCRIPTION	APPROVED BY	DATE



GP# G02017905		DWG NO: DD17F	
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS			
97193		APRIL 5, 2021	
APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	5/19/21	<i>[Signature]</i>	4/15/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVAL	DATE	APPROVED	DATE
<i>[Signature]</i>	4/21/21	<i>[Signature]</i>	4/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	
SCALE: 1" = 40'		DRAWN BY: PAI	
CHECKED BY: PJS/JAR		SHEET 125 OF 137	
PROJECT # P504100		PROPOSAL #	
LANDSCAPE AND TREE PRESERVATION PLAN BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS TAX MAP 32, 38, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019			

DRAW NO.:

PLANT LIST

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
AF	22	ACER X FREEMANNI 'AUTUMN BLAZE' AUTUMN BLAZE MAPLE	2.5-3" CAL.	B&B	MALE CULTIVAR ONLY
FG	24	FAGUS GRANDIFOLIA AMERICAN BEECH	2.5-3" CAL.	B&B	MULTI STEM
QB	31	QUERCUS BOREALIS NORTHERN RED OAK	2.5-3" CAL.	B&B	MALE CULTIVAR ONLY
PA	26	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	2.5-3" CAL.	B&B	PLANT AS SHOWN
QA	26	QUERCUS ALBA WHITE OAK	2.5-3" CAL.	B&B	PLANT AS SHOWN
QP	29	QUERCUS PHELLOS WILLOW OAK	2.5-3" CAL.	B&B	PLANT AS SHOWN
EVERGREEN TREES					
IO	57	ILEX OPACA 'JERSEY KNIGHT' JERSEY KNIGHT AMERICAN HOLLY	1.5-1.75" CAL.	CONT.	MALE CULTIVAR ONLY
PS	57	PINUS STROBUS WHITE PINE	8-10' HT.	B&B	PLANT AS SHOWN
PR	61	ABIES CONCOLOR 'CANDICANS' CANDICANS WHITE FIR	8-10' HT.	B&B	PLANT AS SHOWN
FLOWERING TREES					
LA *	4	LAGERSTROEMIA X 'TUSCARORA' TUSCARORA CRAPMYRTLE	8-10' HT.	TRANSPLANT	MULTI STEM
SHRUBS					
CA	15	CORNUS AMOMUM SILKY DOGWOOD	24-30"	CONT.	PLANT AS SHOWN
IV **	21	ILEX VERTICILLATA WINTERBERRY	24-30"	CONT.	PLANT AS SHOWN
CL	21	CLETHRA ALNIFOLIA SWEET PEPPERBUSH	24-30"	CONT.	PLANT AS SHOWN

* EXISTING CRAPMYRTLES TO BE TRANSPLANTED PRIOR TO TRAIL CONSTRUCTION

** NOTE: CONTRACTOR TO PLANT 1 MALE WINTERBERRY PER EVERY 6 WINTERBERRIES, AND ENSURE THAT 1 MALE WINTERBERRY IS LOCATED IN EVERY GROUPING OF PLANTINGS

PLANTING SPECIFICATIONS

- PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION, AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. WHERE DISCREPANCIES EXIST BETWEEN STANDARDS & GUIDELINES REFERENCED WITHIN THESE SPECIFICATIONS AND THE ANNE ARUNDEL COUNTY SPECIFICATIONS, THE LATTER TAKES PRECEDENCE.
- ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, THAT IS NOT NURSERY GROWN, UNIFORMLY BRANCHED, DOES NOT HAVE A VIGOROUS ROOT SYSTEM, AND DOES NOT CONFORM TO THE MOST RECENT EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS WILL BE REJECTED. PLANT MATERIAL THAT IS NOT HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUNSCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS WILL BE REJECTED. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL BE REJECTED. ALL B & B PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS OR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
- UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE "LANDSCAPE SPECIFICATION GUIDELINES BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MD, DC, & VA", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.
- CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION ON THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AND APPROPRIATE UTILITY COMPANIES, UTILITY CONTRACTORS, AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO THE BEGINNING OF ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. MAJOR CHANGES WILL REQUIRE THE APPROVAL OF THE LANDSCAPE ARCHITECT. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- CONTRACTOR TO REGRADE, FINE GRADE, HYDROSEED OR SOD, AND STRAW MULCH ALL AREAS DISTURBED BY THEIR WORK.
- PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE. WHERE DISCREPANCIES ON THE PLAN EXIST BETWEEN THE SYMBOLS AND THE CALLOUT LEADER, THE NUMBER OF SYMBOLS TAKE PRECEDENCE.
- PLANTING MIX: FOR TREES NOT IN A PREPARED BED, MIX 50% COMPRO OR LEAFGRO WITH 50% SOIL FROM TREE HOLE TO USE AS BACKFILL, SEE TREE PLANTING DETAIL.
- WEED & INSECT CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. FOR TREE PLANTING, APPLY A PRE-EMERGENT ON TOP OF SOIL AND ROOT BALL BEFORE MULCHING. MAINTAIN THE MULCH WEED-FREE FOR THE EXTENT OF THE WARRANTY PERIOD. UNDER NO CIRCUMSTANCES IS A PESTICIDE CONTAINING CHLORPYRIFOS TO BE USED AS A MEANS OF PEST CONTROL.
- WATER: ALL PLANT MATERIAL PLANTED SHALL BE WATERED THOROUGHLY THE DAY OF PLANTING. ALL PLANT MATERIAL NOT YET PLANTED SHALL BE PROPERLY PROTECTED FROM DRYING OUT UNTIL PLANTED. AT A MINIMUM, WATER UNPLANTED PLANT MATERIAL DAILY AND AS NECESSARY TO AVOID DESSICATION.
- PRUNING: DO NOT HEAVILY PRUNE TREES AND SHRUBS AT PLANTING. PRUNE ONLY BROKEN, DEAD, OR DISEASED BRANCHES.
- NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF RECREATION AND PARKS AND THE DEPARTMENT OF PUBLIC WORKS OF ANNE ARUNDEL COUNTY.
- CONTRACTOR SHALL ENSURE THAT ANY WATERING TRUCKS OR OTHER EQUIPMENT USED IN PLANTING AND MAINTENANCE OF PLANT MATERIAL IS SIZED APPROPRIATELY SO AS NOT TO DAMAGE TRAIL.

CRITICAL AREA PLANTING TABULATIONS:

TREES TO BE REMOVED WITHIN THE CRITICAL AREA: 20 TREES (2,234 SF OF TREE CANOPY)

TREES TO BE REPLANTED WITHIN THE CRITICAL AREA: 8 TREES AND 24 SHRUBS
(1 TREE AND 3 SHRUBS/300 SF OF CANOPY --> 2,400 SF OF CANOPY/300 SF = 8 TREES AND 24 SHRUBS)

MECHANICAL TREE TRANSPLANTING SPECIFICATIONS

General

1. Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to the most recent edition of the "Landscape Specification Guidelines by the Landscape Contractors Association of MD, DC, & VA", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects. Transplanting shall be in conformance with American Standards for Nursery Stock.

2. Contractor shall contact Miss Utility 72 hours prior to any digging operations.

3. Tree Relocation shall be conducted by a licensed landscape contractor with experience in using tree spade equipment. Trees shall be transplanted, and tree pits shall be dug with Vermeer-type tree spade or tree mover or equivalent approved mechanized equipment.

4. The size of the tree spade should generally correspond to the size and type of tree to be moved, as noted in the chart below:

TREE SPADE SIZE	DECIDUOUS TREE TRUNK DIAMETER*	EVERGREEN TREE HEIGHT
44 IN.	2-3 IN.	5-7 FEET
66 IN.	3-5 IN.	7-10 FEET
92 IN.	6-8 IN.	12-15 FEET

*Trunk diameters are measured using a caliper, six inches above the ground for tree four inches in diameter or smaller and 12 inches above the ground for trees with a large diameter.

5. The dates for moving trees shall be as follows:

a. In general trees shall be transplanted in early spring before leaf out, or in fall, after leaves have turned color. b. Evergreen trees shall not be moved in spring during first flush of growth, or during late fall.

6. In no case shall trees with taproots be transplanted with a tree spade or by any other means.

7. Where possible, match soil types between existing and proposed tree locations.

Preparation for Transplanting

1. Water trees heavily 2 days before moving.

2. Protect trunks and branches from breaks and bruises during moving operation.

Planting

1. When new hole for tree is created by tree spade and soil is removed from hole, the sides of the hole shall be scarified with a heavy steel rake prior to installation of new tree in order to break up glazing on sides of hole.

2. Tree shall be set slightly higher than existing ground in new location.

3. If tree is located in a windy location, staking may be provided. Follow standard staking details.

4. Do not build a soil saucer around transplanted trees.

5. Do not wrap the trunk of the tree.

6. Mulch with double shredded hardwood bark mulch 3-4" thick extending 18" past edge of hole. Keep mulch 12" away from trunk.

7. Use the excavated material from the new hole to backfill the hole from which the tree was removed. Under no circumstances shall unfilled holes be left on site.

Care for transplanted trees

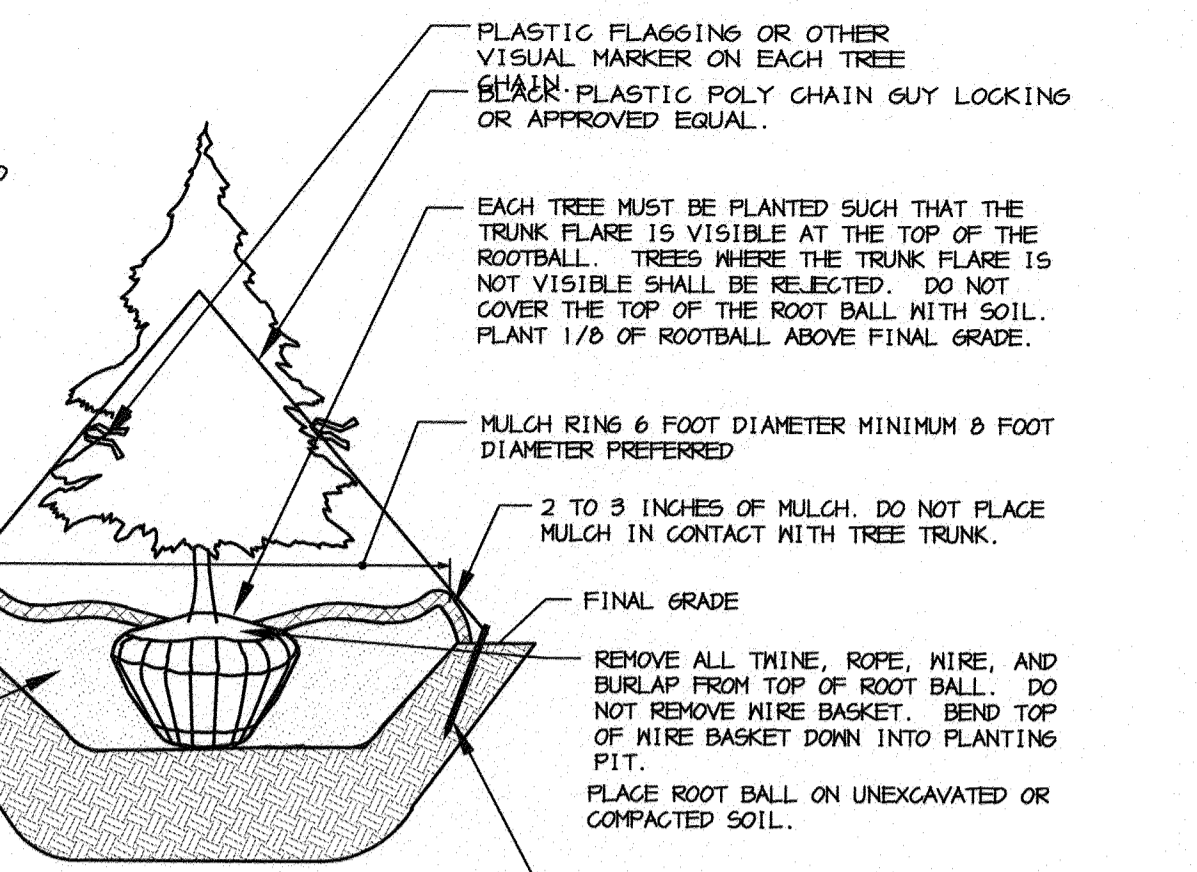
1. Tree shall be watered so that the top 2-4" of soil immediately around the tree and in the existing ground surrounding the tree remain moist, but not saturated during the growing season. Trees shall be checked weekly during the growing season. The soil shall be moist enough to form a ball when squeezed in the hand.

2. Limit pruning to dead, broken, or damaged branches. Remove dead, broken, or damaged branches with a clean cut. No other pruning is necessary.

3. No fertilizing is required until tree has recovered from transplanting, usually several years after the date of transplanting.

Sources: McKiel, Ian, Erin McManus, and Mary McDonald. *Moving and Transplanting Trees with a Tree Spade*. University of Minnesota Department of Horticultural Sciences
Ball, John, and David F. Graper. *Planting a Tree With a Tree Moving Machine*. South Dakota State University Horticulture, Forestry, Landscape, and Parks Department
USDA
Georgia Department of Transportation

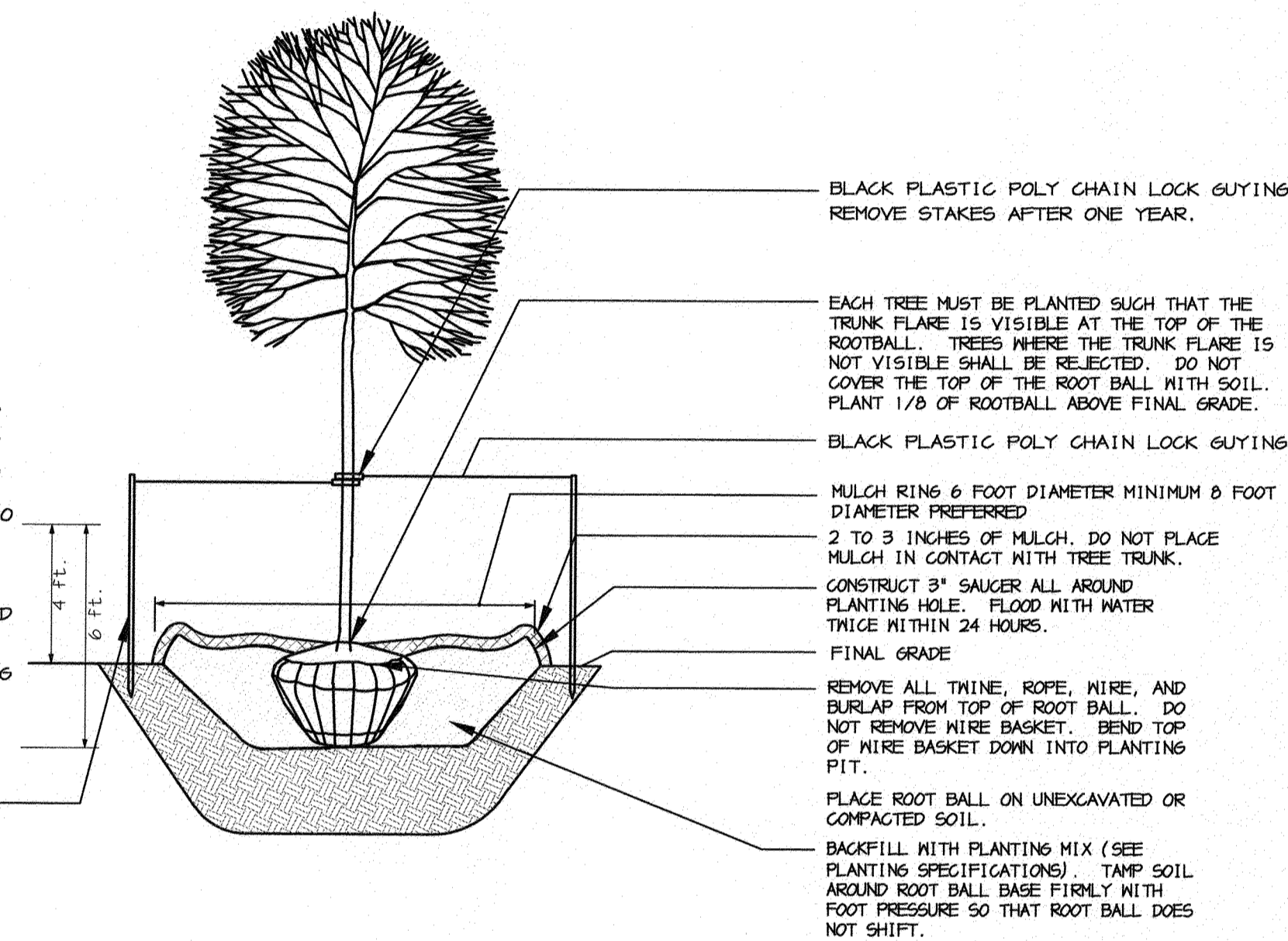
- NOTES:
- SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISGING, OR DAMAGED LEADERS SHALL BE REJECTED.
 - STAKE TREES AS SHOWN.
 - DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
 - CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE HOUDINGS. CONTRACTOR TO REMULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.



EVERGREEN B&B TREE PLANTING DETAIL

NOT TO SCALE

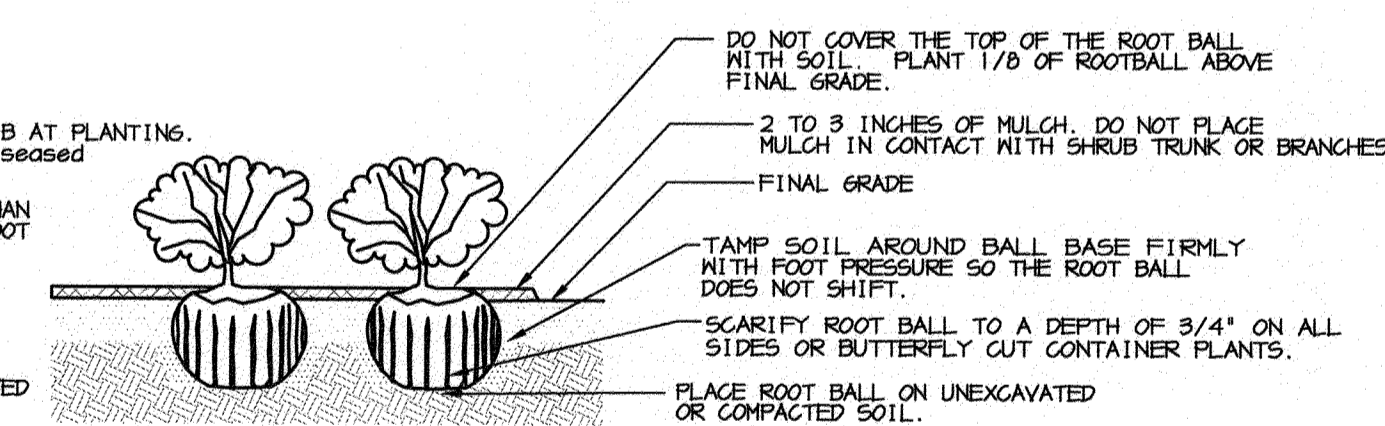
- NOTES:
- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
 - STAKE TREES AS SHOWN.
 - DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
 - TIGHTEN GUYS ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. GUYS SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES.
 - TUCK ANY LOOSE ENDS OF THE GUY SO THAT NO LOOSE ENDS ARE EXPOSED.
 - CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE HOUDINGS. CONTRACTOR TO REMULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.



DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)

NOT TO SCALE

- NOTES:
- SEE PLANTING SPECIFICATIONS FOR PREPARATION OF PLANTING BED.
 - DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING. PRUNE ONLY BROKEN, DAMAGED, OR DISEASED BRANCHES.
 - DIG PLANTING PIT 12" WIDER THAN THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 18".
 - FOR B&B SHRUBS, REMOVE ALL TWINE, ROPE, AND BURLAP FROM TOP OF ROOT BALL.
 - ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.



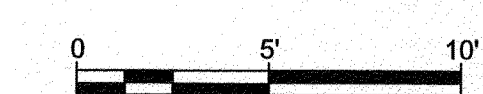
SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS

NOT TO SCALE

NOTE: ALL TREES SHALL BE PLANTED A MINIMUM OF 8' FROM THE EDGE OF THE TRAIL

NOTE: ALL PLANTINGS SHALL BE INSTALLED AND MULCHED/STABILIZED IN THE SAME WORKING DAY.

SEE SWM LANDSCAPE PLANS FOR SWM LANDSCAPE SCHEDULES.



PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3088 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
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3.30.21

GP# G02017905 DWG NO: D0176

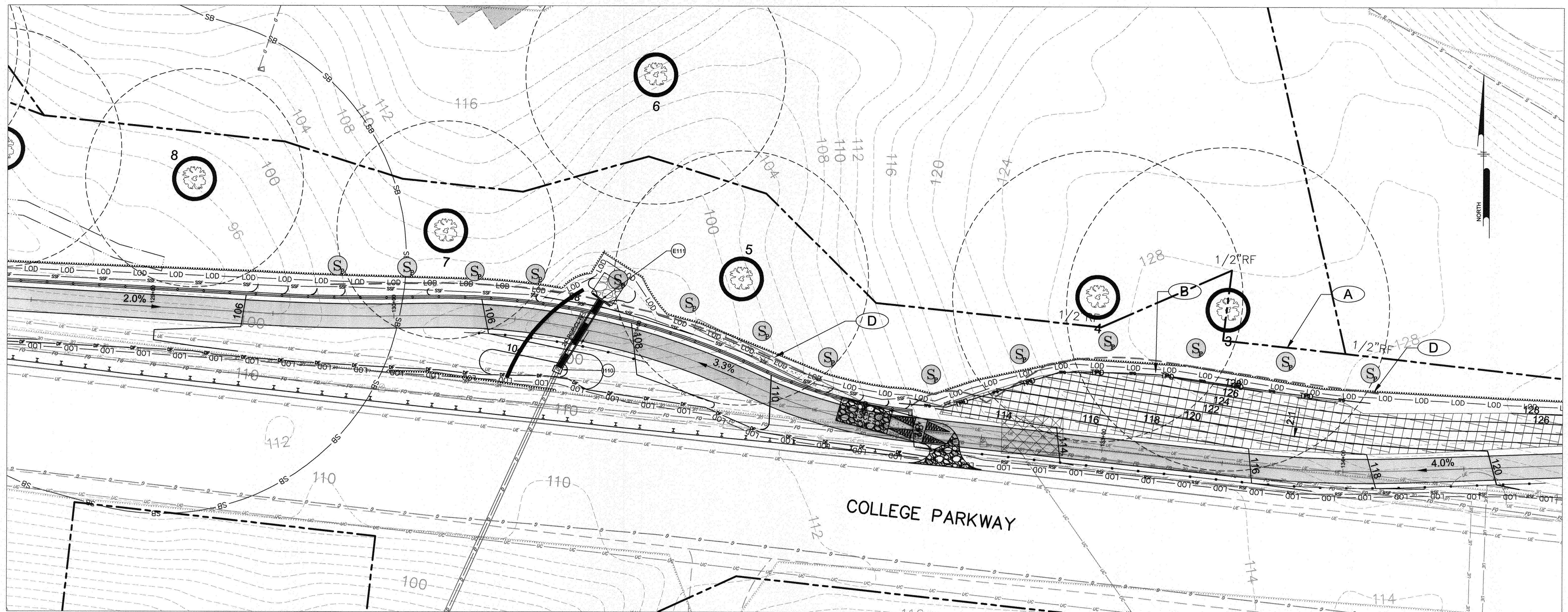
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE: [Signature] 4/16/21
APPROVED DATE: [Signature] 4/15/21

APPROVAL DATE: [Signature] 4/16/21
APPROVED DATE: [Signature] 4/16/21

SCALE: AS SHOWN
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 126 of 137
PROJECT #: P504100
PROPOSAL #:

LANDSCAPE NOTES AND DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012, 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019



SPECIMEN TREE #3, 4, 5, 7
TREE PROTECTION PLAN

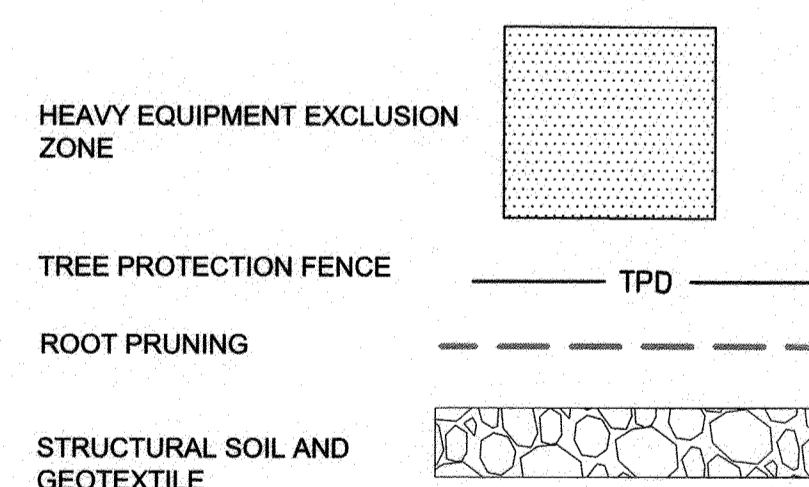
SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #3 AND #4

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 3 AND 4.
4. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
5. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
6. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE OUTSIDE OF THE LOD, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
7. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
8. CONDUCT GRADING OPERATIONS AS SHOWN ON GRADING PLAN. STABILIZE SLOPE AS NOTED ON SEDIMENT CONTROL PLANS.
9. INSTALL TRAIL.
10. COMPLETE STABILIZATION SLOPES AND INSTALL PLANTING SHOWN ON LANDSCAPE PLANS.
11. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #5 AND #7

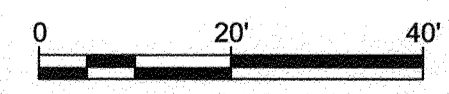
1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 5 AND 7.
4. INSTALL SEDIMENT CONTROL AT THE ROOT PRUNE LINE AS SHOWN ON THE SEDIMENT CONTROL PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE OUTSIDE OF THE LOD, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
8. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
9. CONSTRUCT RETAINING WALL AS SHOWN.
10. COMPLETE WALL BACKFILL AND GRADING AS SHOWN ON GRADING PLANS.
11. INSTALL TRAIL.
12. STABILIZE SLOPES AND INSTALL PLANTING SHOWN ON THE LANDSCAPE PLANS.
13. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND



TREE PROTECTION FEATURES

- (A) SPECIMEN TREE PROTECTION SIGN
- (B) TREE PROTECTION FENCING
- (C) GRAVEL BASE WITH STRUCTURAL FILL
- (D) ROOT PRUNING
- (E) HEAVY EQUIPMENT EXCLUSION ZONE



GP# G02017905 DWG NO: DD18A

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, R.L.A., CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

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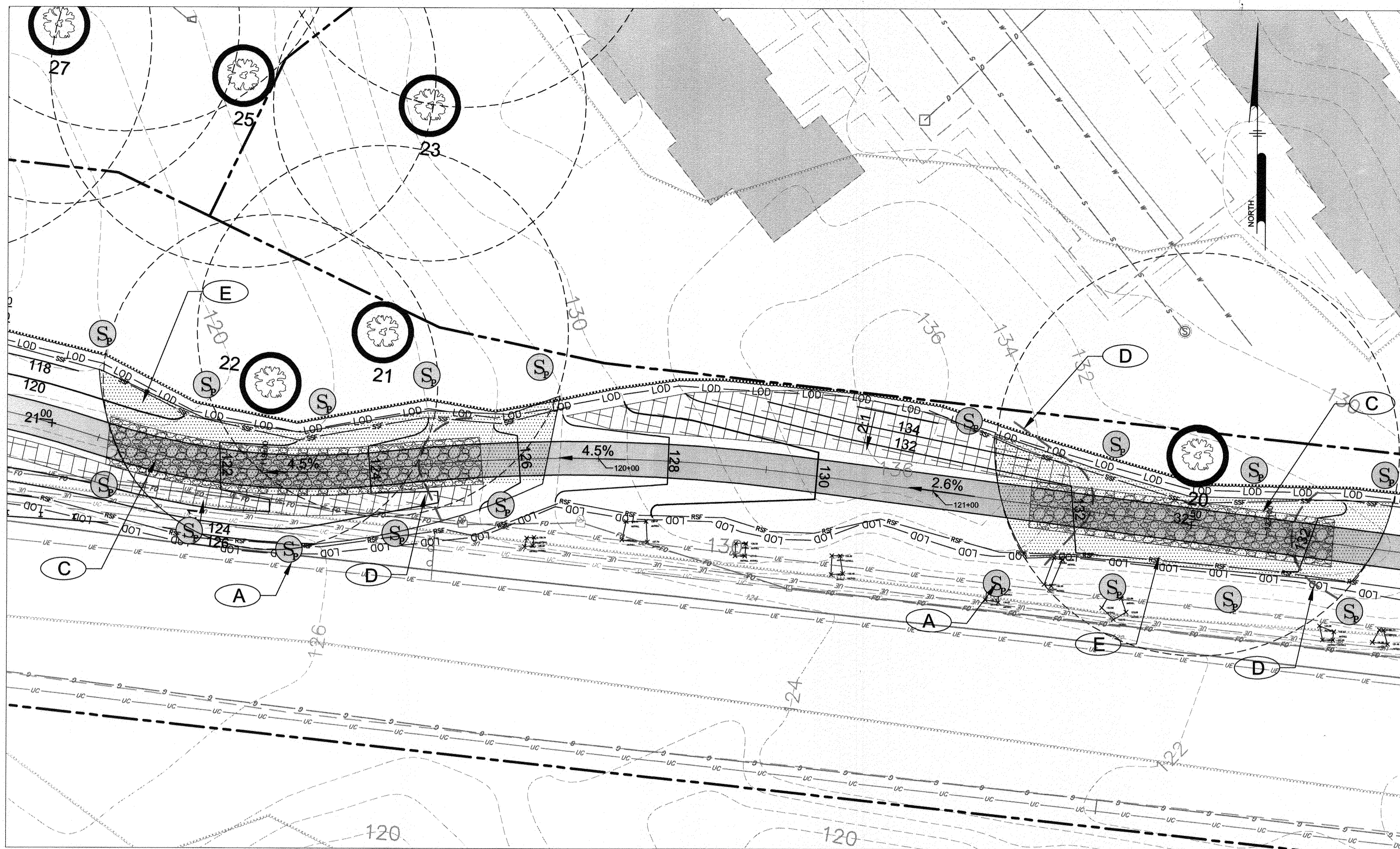
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97195 APRIL 5, 2021

APPROVED DATE <i>[Signature]</i> 4/15/21 CHIEF ENGINEER	APPROVED DATE <i>[Signature]</i> 4/15/21 PROJECT MANAGER	SCALE: 1" = 20'
APPROVAL DATE <i>[Signature]</i> 4/15/21 ASSISTANT CHIEF ENGINEER	APPROVED DATE <i>[Signature]</i> 4/15/21 CHIEF, RIGHT OF WAY SERVICES	DRAWN BY: PAI CHECKED BY: PJS/IAR SHEET <u>127</u> OF <u>137</u> PROJECT #: P504100 PROPOSAL #:

TREE PROTECTION PLAN
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

DWG NO:

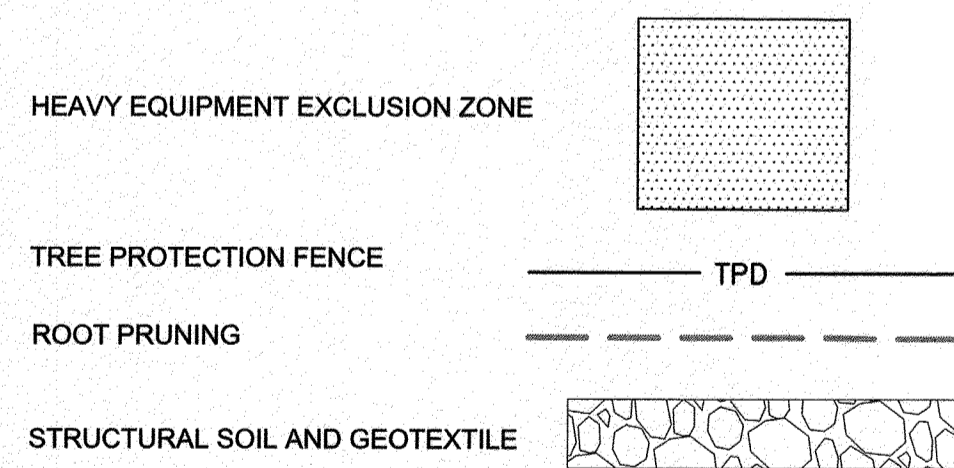


SPECIMEN TREE #20, 21, 22
TREE PROTECTION PLAN

**SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION
TREES #20, 21, 22**

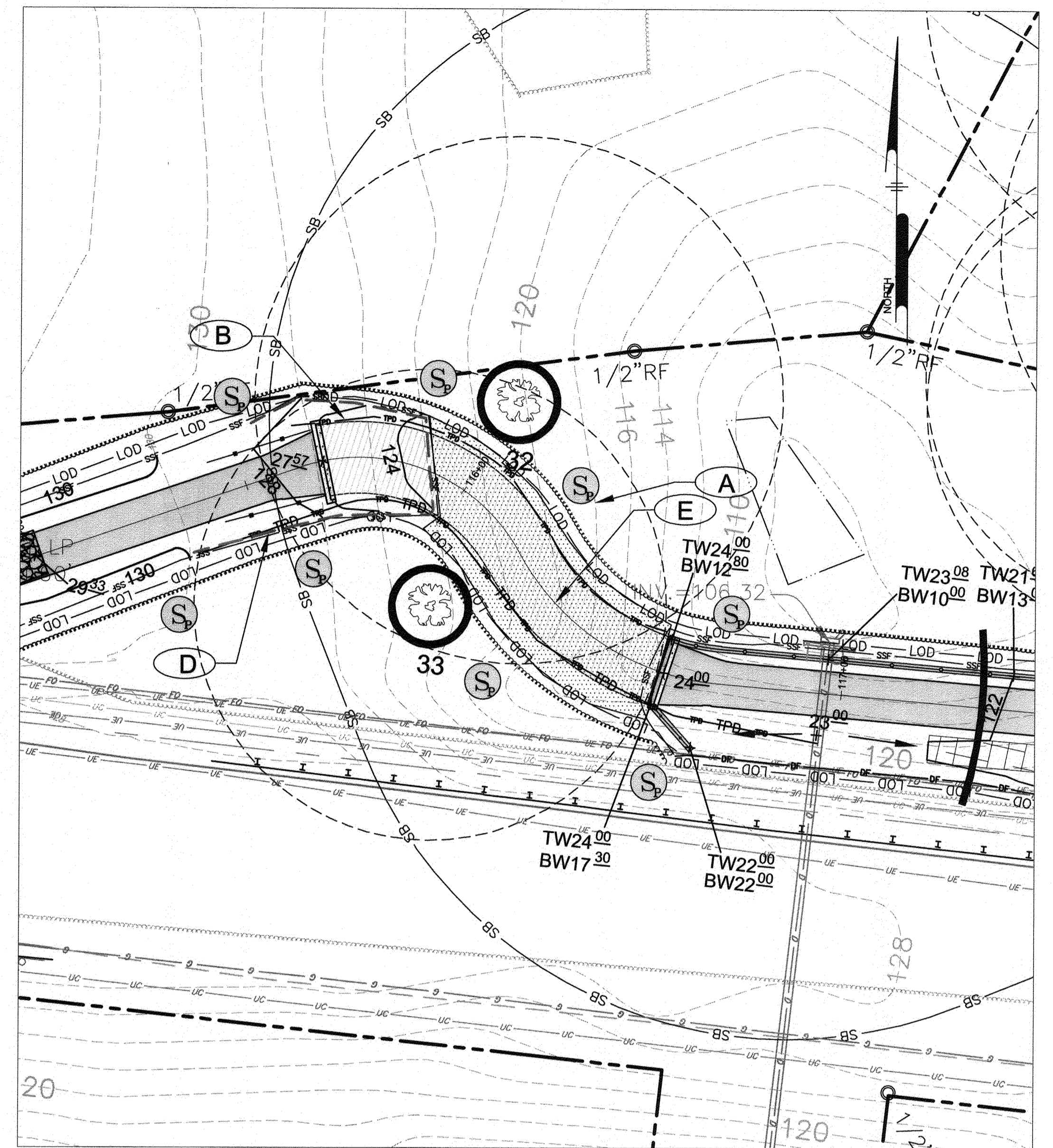
1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AS SHOWN.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE AND LOD SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
8. INSTALL WOODCHIP TO A DEPTH OF 6" WITHIN LOD.
9. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC. HEAVY EQUIPMENT SHALL BE EXCLUDED FROM LIMITS OF DISTURBANCE WHERE NOTED ON PLANS.
10. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
11. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
12. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
13. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.
14. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
15. WITH COMPLETION OF SOIL INSTALLATION, INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
16. INSTALL TRAIL SUBBASE.
17. PAVE AND COMPLETE TRAIL.
18. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND



TREE PROTECTION FEATURES

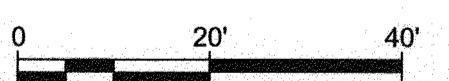
- (A) SPECIMEN TREE PROTECTION SIGN
- (B) TREE PROTECTION FENCING
- (C) GRAVEL BASE WITH STRUCTURAL FILL
- (D) ROOT PRUNING
- (E) HEAVY EQUIPMENT EXCLUSION ZONE



SPECIMEN TREE #32, 33
TREE PROTECTION PLAN

**SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION
TREES #32, 33**

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.]
3. CONDUCT ROOT PRUNING AS SHOWN.
4. INSTALL TREE PROTECTION FENCING, SEDIMENT CONTROLS, AND TREE PROTECTION SIGNAGE AS SHOWN ON PLAN.
5. ALL TREES NOT PRESERVED WITHIN THE CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH THE GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED AT THIS TIME. TREE REMOVAL SHALL BE LIMITED TO THAT NEEDED TO INSTALL THE BOARDWALK.
6. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE OUTSIDE OF LOD, INCLUDING REMOVAL OF TOPSOIL OR VEGETATION, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC. HEAVY EQUIPMENT SHALL BE EXCLUDED FROM LIMITS OF DISTURBANCE WHERE NOTED ON PLANS. BOARDWALK CONSTRUCTION SHALL PROCEED FROM TRAIL OR BOARDWALK SURFACE; EQUIPMENT FOR BOARDWALK INSTALLATION IS NOT TO WORK OFF OF EXISTING GROUND WITHIN THE CRITICAL ROOT ZONE.
7. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
8. INSTALL BOARDWALK, TRAIL AND FENCING.
9. TRIM ALL TREES WITHIN VICINITY OF THE BOARDWALK TO MAINTAIN 8' CLEARANCE FROM TRAIL. TRIMMING SHALL OCCUR UNDER ARBORIST'S SUPERVISION.
10. COMPLETE STABILIZATION AND LANDSCAPING.
11. AT COMPLETION OF CONSTRUCTION, ALL SEDIMENT CONTROLS AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.



GP# G02017905 DWG NO: DD18B

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

REVISIONS	APPROVED		
#	DESCRIPTION	BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
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STATE OF MARYLAND
3068
PETER J. STONE
LANDSCAPE ARCHITECT

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

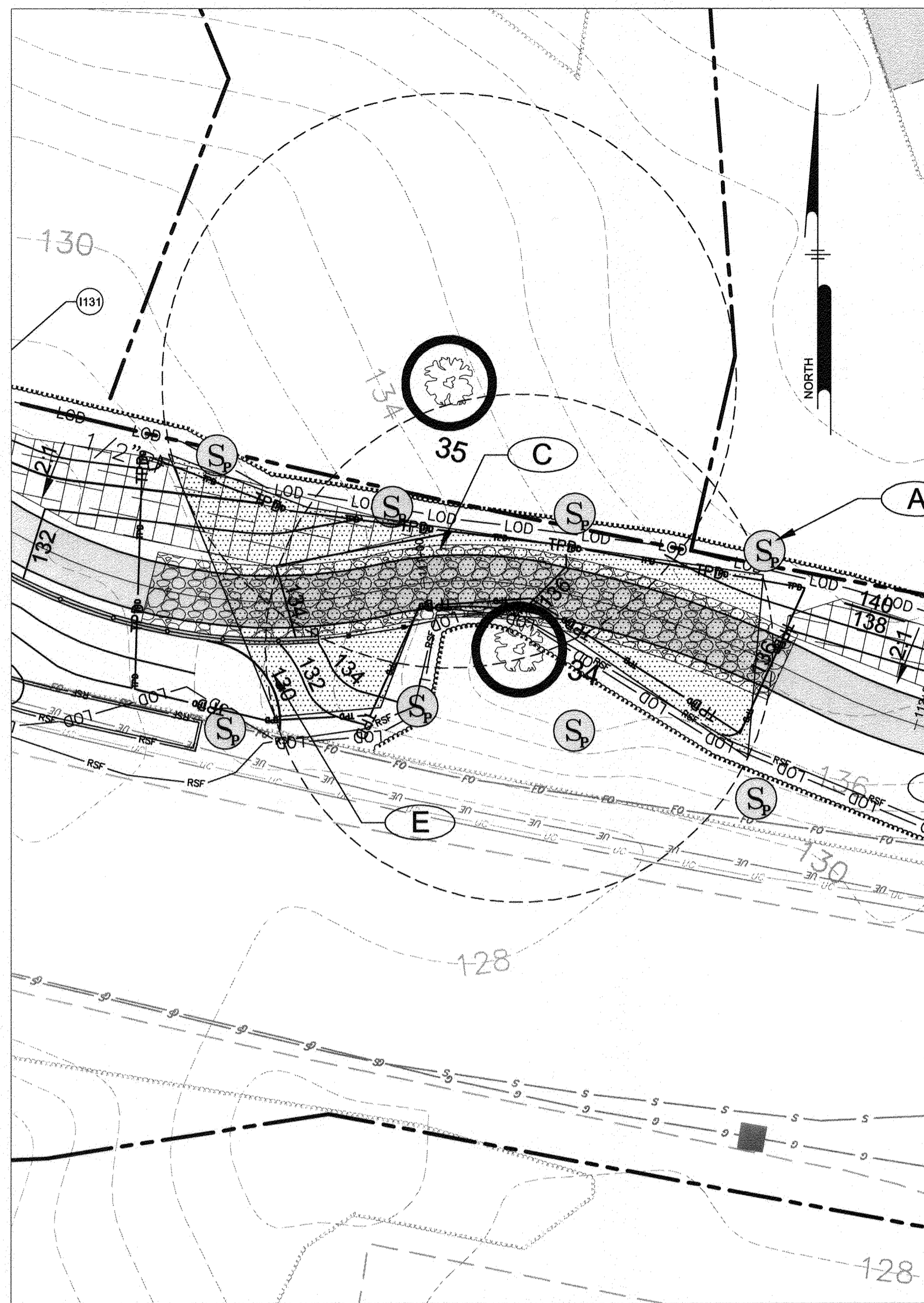
APPROVED DATE: *[Signature]* 4/15/21
CHECKED BY: PJS/JAR
APPROVAL DATE: *[Signature]* 4/15/21
ASSISTANT CHIEF ENGINEER

APPROVED DATE: *[Signature]* 4/15/21
CHECKED BY: PJS/JAR
APPROVED DATE: *[Signature]* 4/15/21
CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 20'
DRAWN BY: PAI
SHEET 128 of 137
PROJECT #: P504100
PROPOSAL #:

97196
APRIL 5, 2021
TREE PROTECTION PLAN
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

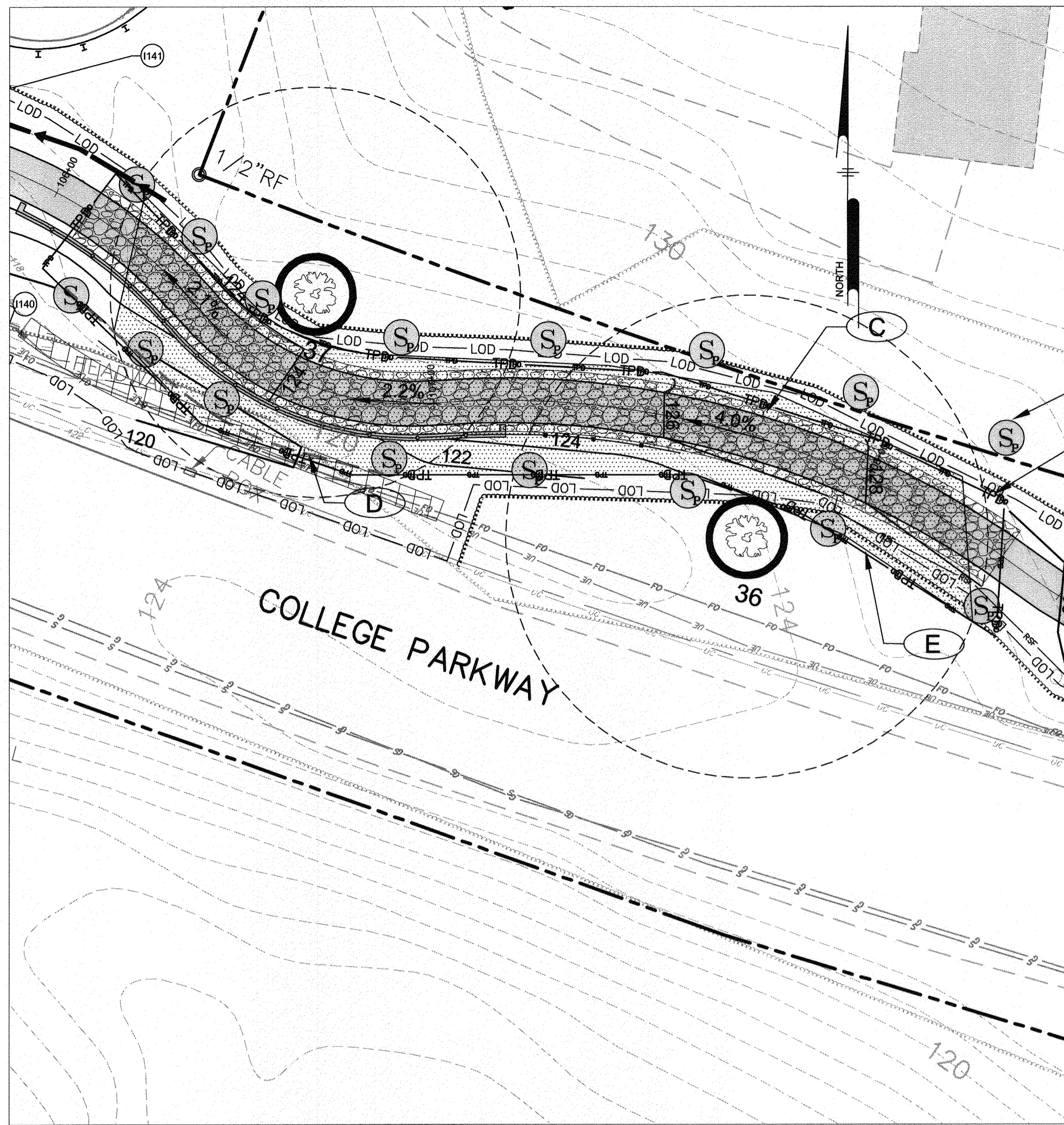
DPW No.:



**SPECIMEN TREE #34, 35
TREE PROTECTION PLAN**

**SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION
TREES #34, 35**

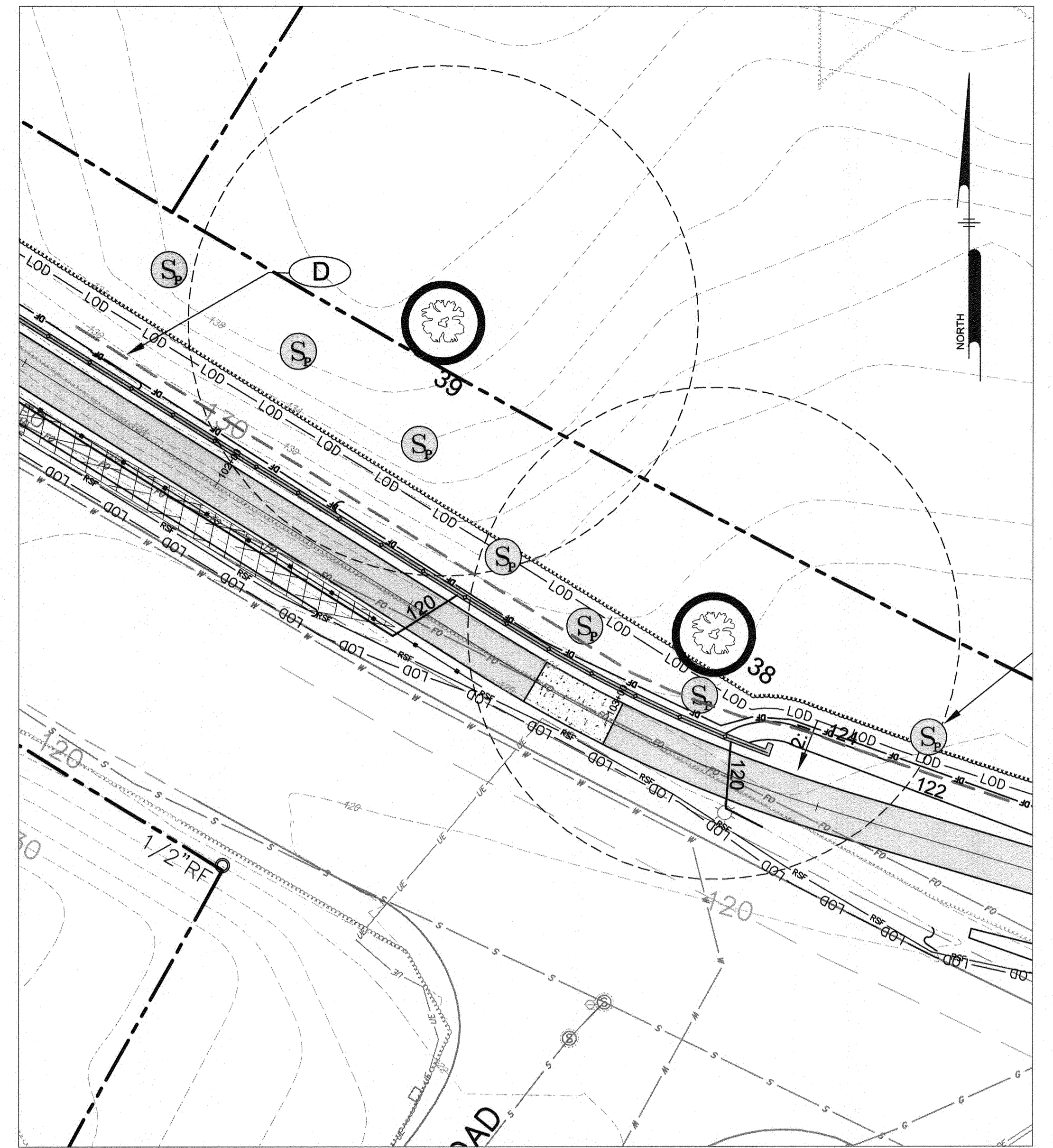
1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREE 34, AND ALONG WOODED EDGE.
4. INSTALL SEDIMENT CONTROLS AT THE ROOT PRUNE LINE AS SHOWN ON THE SEDIMENT CONTROL PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
10. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
11. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
12. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL. TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.
13. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
14. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
15. INSTALL TRAIL SUBBASE.
16. PAVE AND COMPLETE TRAIL.
17. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.



**SPECIMEN TREE #36, 37
TREE PROTECTION PLAN**

**SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION
TREES #36, 37**

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREE 37.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
10. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
11. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
12. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL. TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.
13. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
14. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
15. INSTALL TRAIL SUBBASE.
16. PAVE AND COMPLETE TRAIL.
17. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.



**SPECIMEN TREE #38, 39
TREE PROTECTION PLAN**

**SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION
TREES #38, 39**

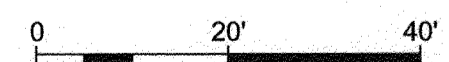
1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 38 AND 39.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
8. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
9. CONDUCT GRADING AS SHOWN ON THE PLANS AND AS REQUIRED TO PREPARE FOR RETAINING WALL CONSTRUCTION.
10. CONSTRUCT RETAINING WALL AS SHOWN.
11. COMPLETE WALL BACKFILL AND GRADING OPERATIONS.
12. INSTALL TRAIL.
13. STABILIZE SLOPES AND INSTALL PLANTING SHOWN ON THE LANDSCAPE PLANS.
14. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND

- HEAVY EQUIPMENT EXCLUSION ZONE
- TREE PROTECTION FENCE
- ROOT PRUNING
- STRUCTURAL SOIL AND GEOTEXTILE

TREE PROTECTION FEATURES

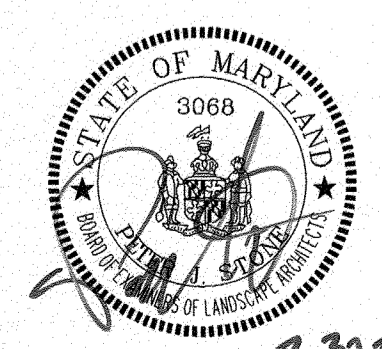
- (A) SPECIMEN TREE PROTECTION SIGN
- (B) TREE PROTECTION FENCING
- (C) GRAVEL BASE WITH STRUCTURAL FILL
- (D) ROOT PRUNING
- (E) HEAVY EQUIPMENT EXCLUSION ZONE



GP# G02017905 DWG NO: DD18C

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

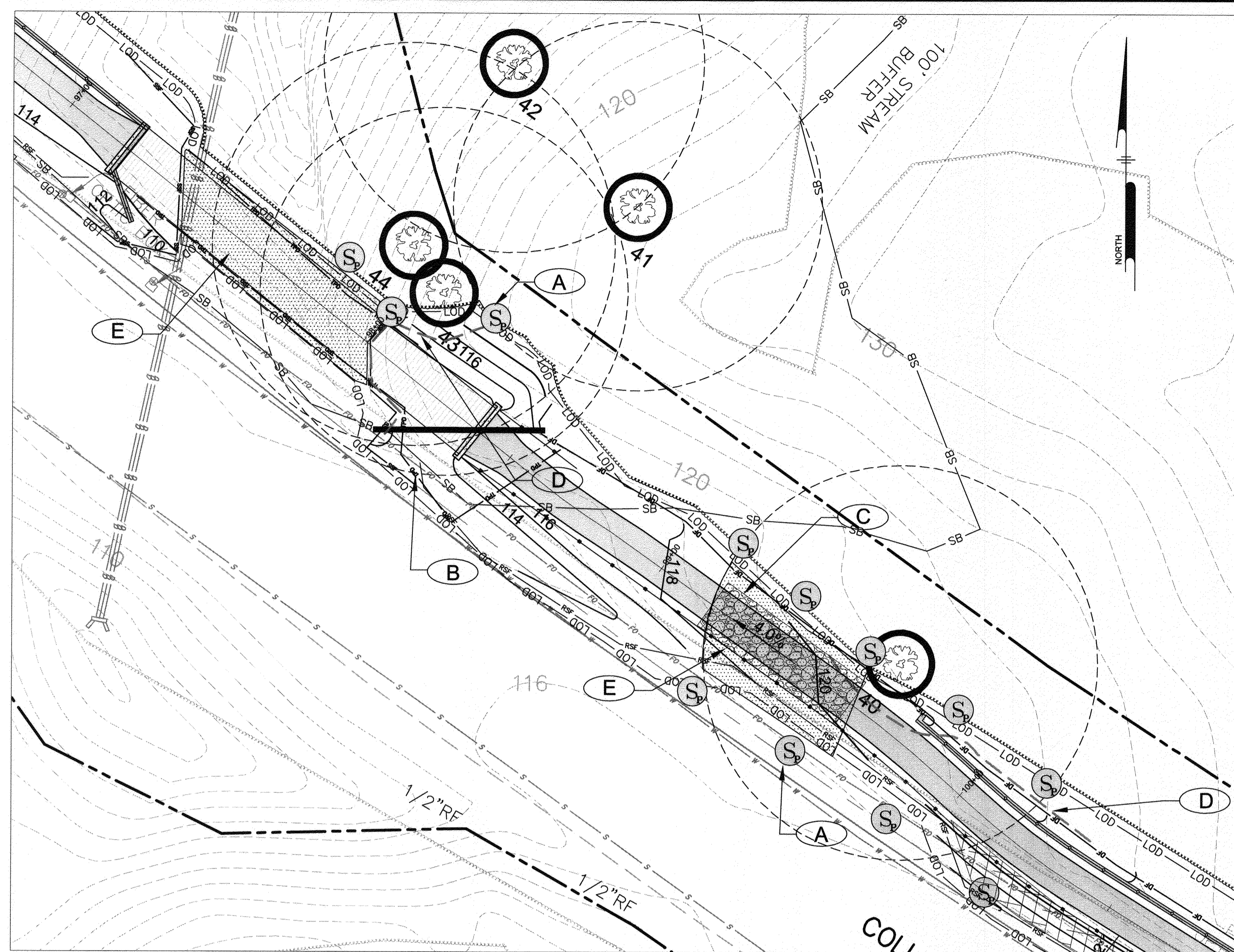


Pennoni
PENNONI ASSOCIATES INC.
8890 McSaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

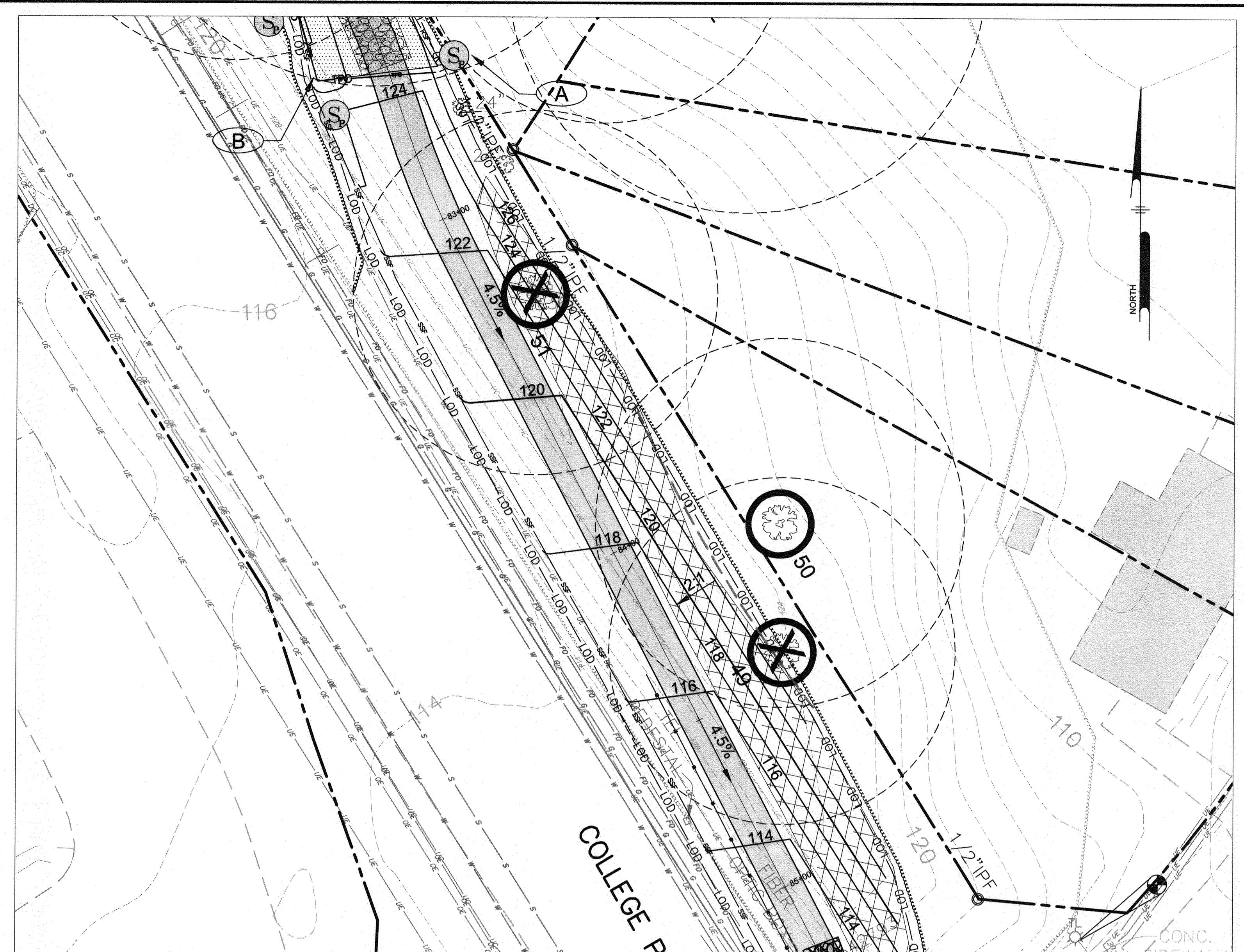
APPROVED		APPROVED	
DATE	DATE	DATE	DATE
5/16/21	4/15/21	4/15/21	4/16/21
CHIEF ENGINEER	PROJECT MANAGER	CHIEF, RIGHT OF WAY SERVICES	
APPROVAL	APPROVED		

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
97197
APRIL 5, 2021
TREE PROTECTION PLAN
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 38, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019
PROPOSAL #:

DWG NO.:



SPECIMEN TREE #40, 43, 44
TREE PROTECTION PLAN



SPECIMEN TREE #50
TREE PROTECTION PLAN

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREE #40

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREE 40.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
10. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
11. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
12. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.
13. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
14. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
15. COMPLETE GRADING FOR WALL INSTALLATION.
16. INSTALL WALL AND BACKFILL.
17. INSTALL TRAIL SUBBASE.
18. PAVE AND COMPLETE TRAIL.
19. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #43, 44

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AS SHOWN.
4. INSTALL TREE PROTECTION FENCING, SEDIMENT CONTROLS, AND TREE PROTECTION SIGNAGE AS SHOWN ON PLAN.
5. ALL TREES NOT PRESERVED WITHIN THE CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH THE GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED AT THIS TIME.
6. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE OUTSIDE OF LOD, INCLUDING REMOVAL OF TOPSOIL OR VEGETATION, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC. HEAVY EQUIPMENT SHALL BE EXCLUDED FROM LIMITS OF DISTURBANCE WHERE NOTED ON PLANS. BOARDWALK CONSTRUCTION SHALL PROCEED FROM TRAIL OR BOARDWALK SURFACE; EQUIPMENT FOR BOARDWALK INSTALLATION IS NOT TO WORK OFF OF EXISTING GROUND WITHIN THE CRITICAL ROOT ZONE.
7. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
8. TRIM ALL TREES WITHIN VICINITY OF THE BOARDWALK TO MAINTAIN 8' CLEARANCE FROM TRAIL. TRIMMING SHALL OCCUR UNDER ARBORIST'S SUPERVISION.
9. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #50

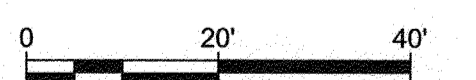
1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 3 AND 4.
4. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
5. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
6. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE OUTSIDE OF THE LOD, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
7. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
8. CONDUCT GRADING AS SHOWN ON GRADING PLANS AND STABILIZE SLOPE UPON COMPLETION OF GRADING.
9. INSTALL TRAIL.
10. STABILIZE SLOPES AND INSTALL PLANTING SHOWN ON LANDSCAPE PLANS.
11. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND

- HEAVY EQUIPMENT EXCLUSION ZONE
- TREE PROTECTION FENCE
- ROOT PRUNING
- STRUCTURAL SOIL AND GEOTEXTILE

TREE PROTECTION FEATURES

- A SPECIMEN TREE PROTECTION SIGN
- B TREE PROTECTION FENCING
- C GRAVEL BASE WITH STRUCTURAL FILL
- D ROOT PRUNING
- E HEAVY EQUIPMENT EXCLUSION ZONE



GP# G02017905 DWG NO: DD18D

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8880 McGaw Road, Suite 100
Columbia, MD 21045
T 410.987.8900 F 410.987.9282

STATE OF MARYLAND
3-30-24

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE: 5/4/21
CHIEF ENGINEER: [Signature]

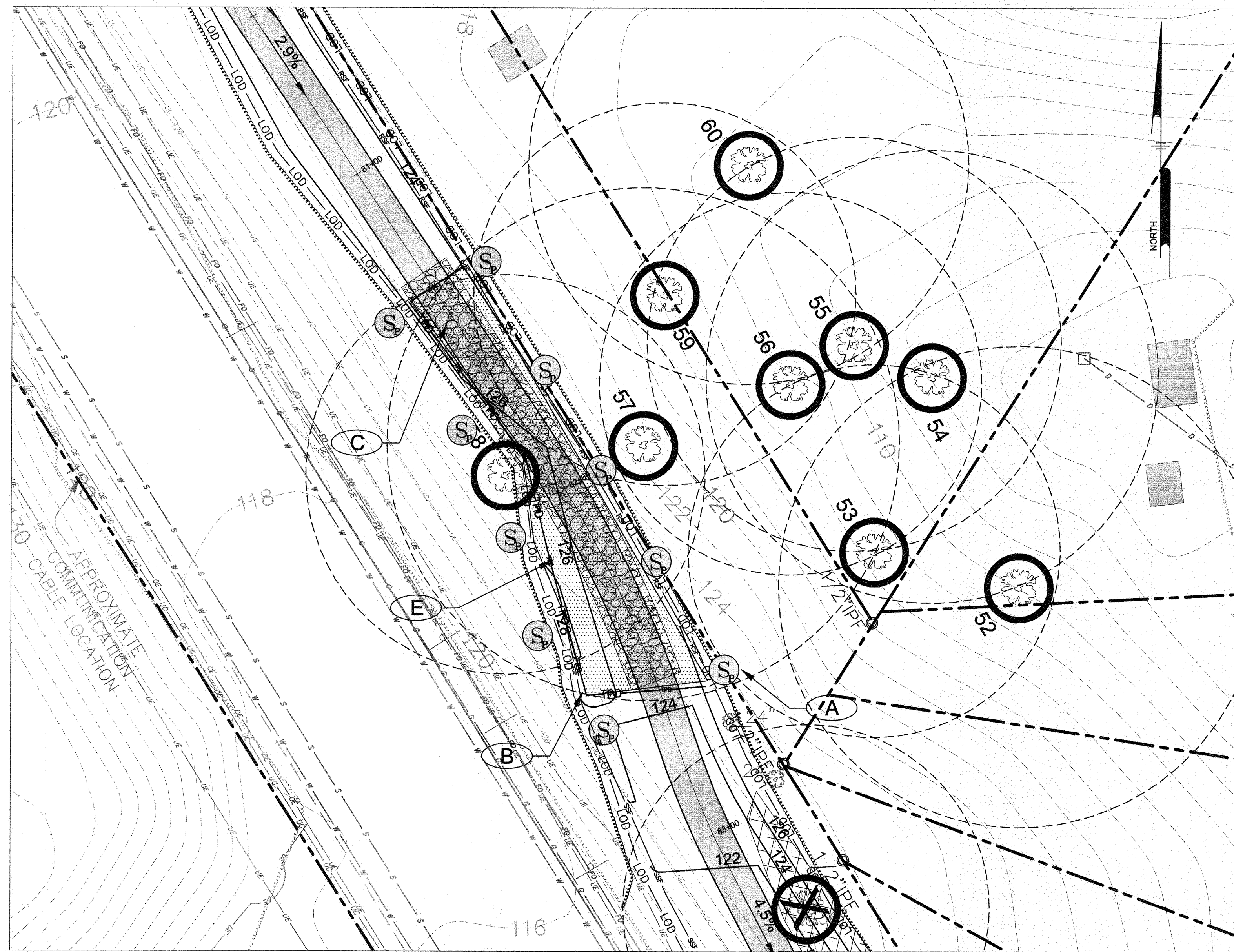
APPROVED DATE: 4/15/21
PROJECT MANAGER: [Signature]

APPROVED DATE: 4/24/21
ASSISTANT CHIEF ENGINEER: [Signature]

APPROVED DATE: 4/16/21
CHIEF, RIGHT OF WAY SERVICES: [Signature]

SCALE: 1" = 20'
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 130 OF 137
PROJECT #: P504100
PROPOSAL #:

97198
APRIL 5, 2021
TREE PROTECTION PLAN
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 38, AND 40
ARNOLD, MD ZIP CODE 21012, 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019



SPECIMEN TREE #57, 58, 60
TREE PROTECTION PLAN

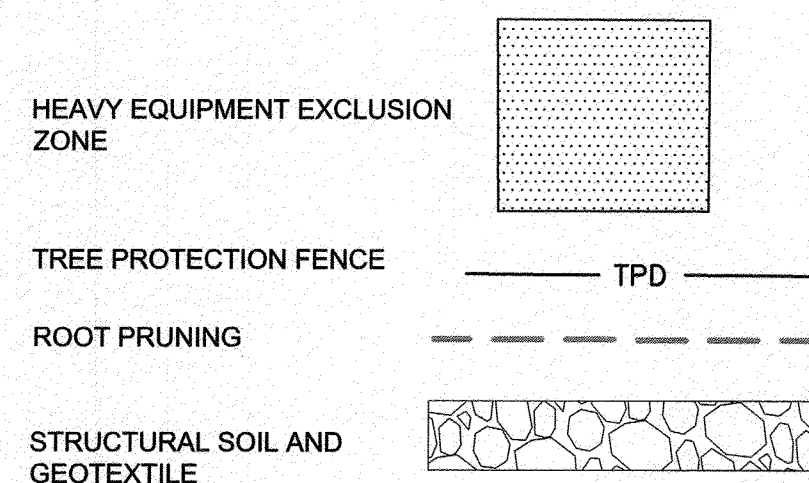


SPECIMEN TREE #61 AND 62
TREE PROTECTION PLAN

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #57, 58

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. INSTALL SEDIMENT CONTROLS AT THE ROOT PRUNE LINE AS SHOWN ON THE PLANS.
4. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
5. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
6. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
7. INSTALL 8" WOODCHIP MULCH AS RECOMMENDED IN ARBORIST REPORT
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
11. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
12. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
13. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.
14. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
15. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
16. INSTALL TRAIL SUBBASE.
17. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND

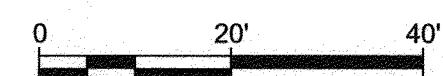


TREE PROTECTION FEATURES

- (A) SPECIMEN TREE PROTECTION SIGN
- (B) TREE PROTECTION FENCING
- (C) GRAVEL BASE WITH STRUCTURAL FILL
- (D) ROOT PRUNING
- (E) HEAVY EQUIPMENT EXCLUSION ZONE

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #61 AND 62

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 61 AND 62.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE SEDIMENT CONTROL PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. NO OTHER TREES WITHIN CRITICAL ROOT ZONE OUTSIDE OF THE LOD SHALL BE REMOVED.
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
10. BEGIN GRADING AS SHOWN ON THE GRADING PLANS AND AS REQUIRED TO CONSTRUCT RETAINING WALL.
11. CONSTRUCT RETAINING WALL AS SHOWN.
12. COMPLETE GRADING OPERATIONS AND WALL BACKFILL.
13. INSTALL TRAIL.
14. STABILIZE SLOPES AND INSTALL PLANTING SHOWN ON THE LANDSCAPE PLANS.
15. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.



GP# C02017905 DWG NO: DD18E

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

REVISIONS	APPROVED
#	DESCRIPTION

3-30-21

Pennoni
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8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		<p>97199</p> <p>APRIL 5, 2021</p> <p>TREE PROTECTION PLAN</p> <p>BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS TAX MAP 32, 38, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019</p>	
APPROVED	DATE	APPROVED	DATE
<i>[Signature]</i>	5/6/21	<i>[Signature]</i>	4/15/21
CHIEF ENGINEER		PROJECT MANAGER	
APPROVAL	DATE	APPROVED	DATE
<i>[Signature]</i>	4/24/21	<i>[Signature]</i>	4/16/21
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	
SCALE: 1" = 20'		DRAWN BY: PAI	
CHECKED BY: PJS/JAR		SHEET 131 of 137	
PROJECT #: P504100		PROPOSAL #:	



SPECIMEN TREE #65, 66
TREE PROTECTION PLAN

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #65, 66

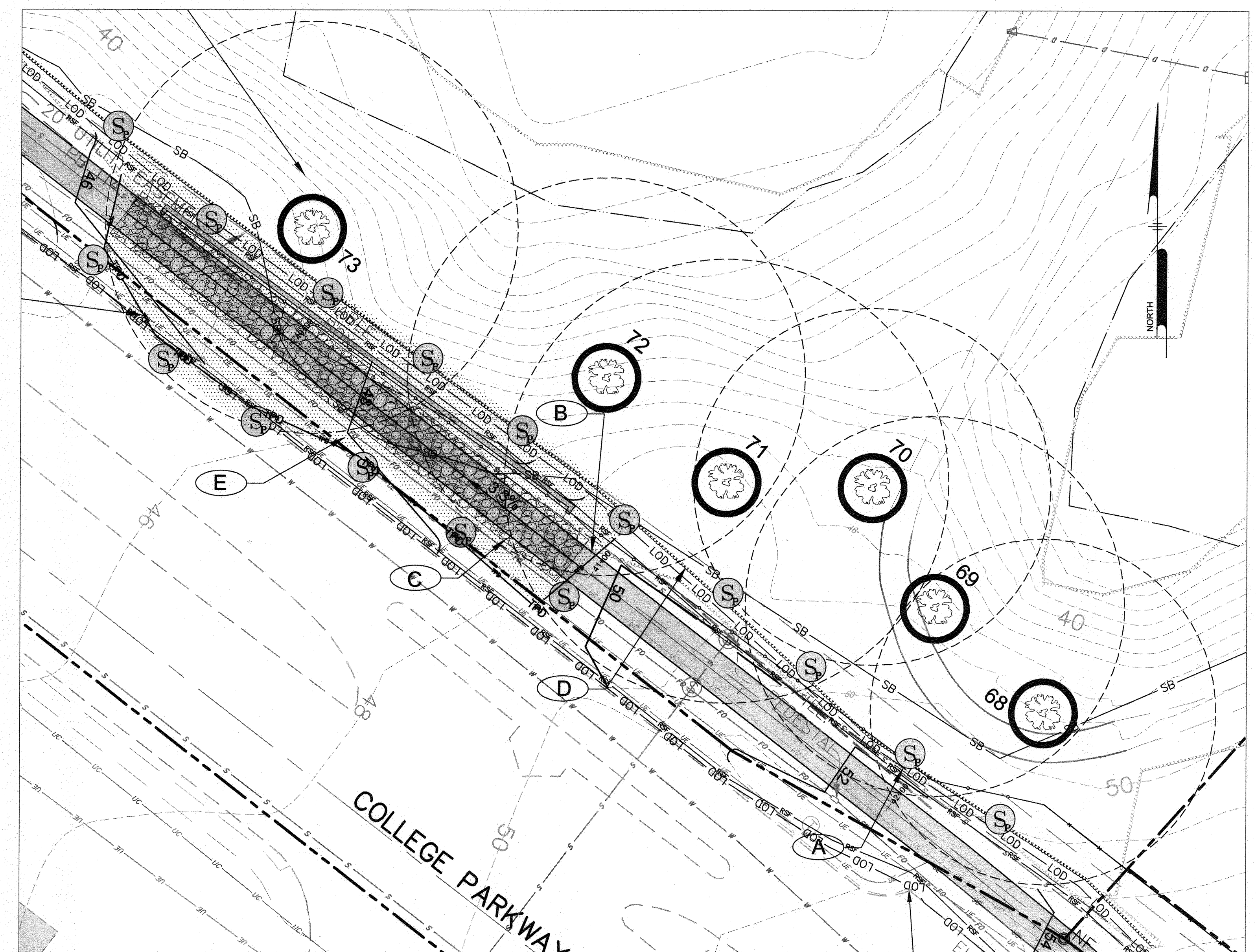
1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 66.
4. INSTALL SEDIMENT CONTROLS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE OF TREE 65 SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
8. INSTALL MULCH AS RECOMMENDED IN ARBORIST REPORT
9. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
10. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
11. BEGIN GRADING OUTSIDE OF ROOT PRUNE AREA UNDER TREE 66.
12. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
13. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
14. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL. TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.
15. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
16. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
17. INSTALL TRAIL SUBBASE.
18. PAVE AND COMPLETE TRAIL.
19. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #68, 69, 70, 11

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREES 68, 69, 70, 71, AND ALONG WOODED EDGE.
4. INSTALL SEDIMENT CONTROLS AT THE ROOT PRUNE LINE AS SHOWN ON THE SEDIMENT CONTROL PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE AND DIVERSION FENCE ARE ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
8. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
9. GRADE AND CONSTRUCT TRAIL.
10. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

TREE PROTECTION FEATURES

- (A) SPECIMEN TREE PROTECTION SIGN
- (B) TREE PROTECTION FENCING
- (C) GRAVEL BASE WITH STRUCTURAL FILL
- (D) ROOT PRUNING
- (E) HEAVY EQUIPMENT EXCLUSION ZONE



SPECIMEN TREE #68, 69, 70, 71, 72, 73
TREE PROTECTION PLAN

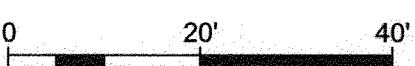
SPECIMEN TREE PRESERVATION SEQUENCE OF CONSTRUCTION TREES #72, 73

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
4. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
5. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
6. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
7. INSTALL 8" WOODCHIP MULCH
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
10. IMMEDIATELY PRIOR TO RETAINING WALL CONSTRUCTION REMOVE MULCH 18" BEYOND LIMIT OF EXCAVATION. PROTECT WOODCHIPS FROM SILT. ONLY EXCAVATE AS MUCH AREA AS CAN BE BACKFILLED WITHIN ONE DAY.
11. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
12. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
13. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL. LIGHTLY COMPACT SOIL WITH LIGHT TRACKED EQUIPMENT OR PLATE TAMPER.

14. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
16. BEGIN RETAINING WALL INSTALLATION. IF RETAINING WALL INSTALLATION MUST BE DELAYED, COVER DRAIN PIPE AND SOIL WITH 8" MULCH TO ENSURE THAT TREE ROOTS DO NOT DIE OUT. INSTALL FABRIC BETWEEN SOIL AND MULCH TO AVOID MIXING. EXTEND DRAIN PIPES THROUGH RETAINING WALL. BACKFILL WALL WITH STRUCTURAL SOIL.
17. INSTALL ADDITIONAL STRUCTURAL SOIL TO ACHIEVE ELEVATION AT BOTTOM OF TRAIL SUBBASE.
18. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
19. INSTALL TRAIL SUBBASE.
20. PAVE AND COMPLETE TRAIL.
21. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND

- HEAVY EQUIPMENT EXCLUSION ZONE
- TREE PROTECTION FENCE
- ROOT PRUNING
- STRUCTURAL SOIL AND GEOTEXTILE

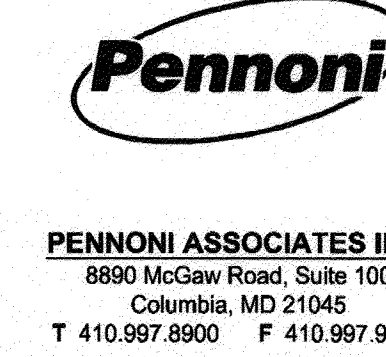
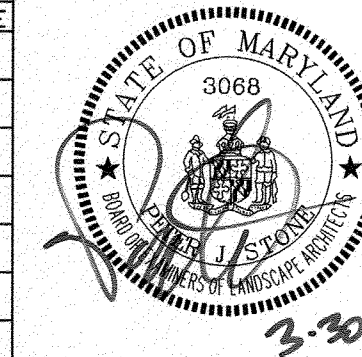


GP# G02017905

DWG NO: DD18F

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



APPROVED DATE *[Signature]* *[Date]*
 CHECKED BY: PJS/JAR
 APPROVAL DATE *[Signature]* *[Date]*
 ASSISTANT CHIEF ENGINEER

APPROVED DATE *[Signature]* *[Date]*
 PROJECT MANAGER
 APPROVED DATE *[Signature]* *[Date]*
 CHIEF, RIGHT OF WAY SERVICES

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

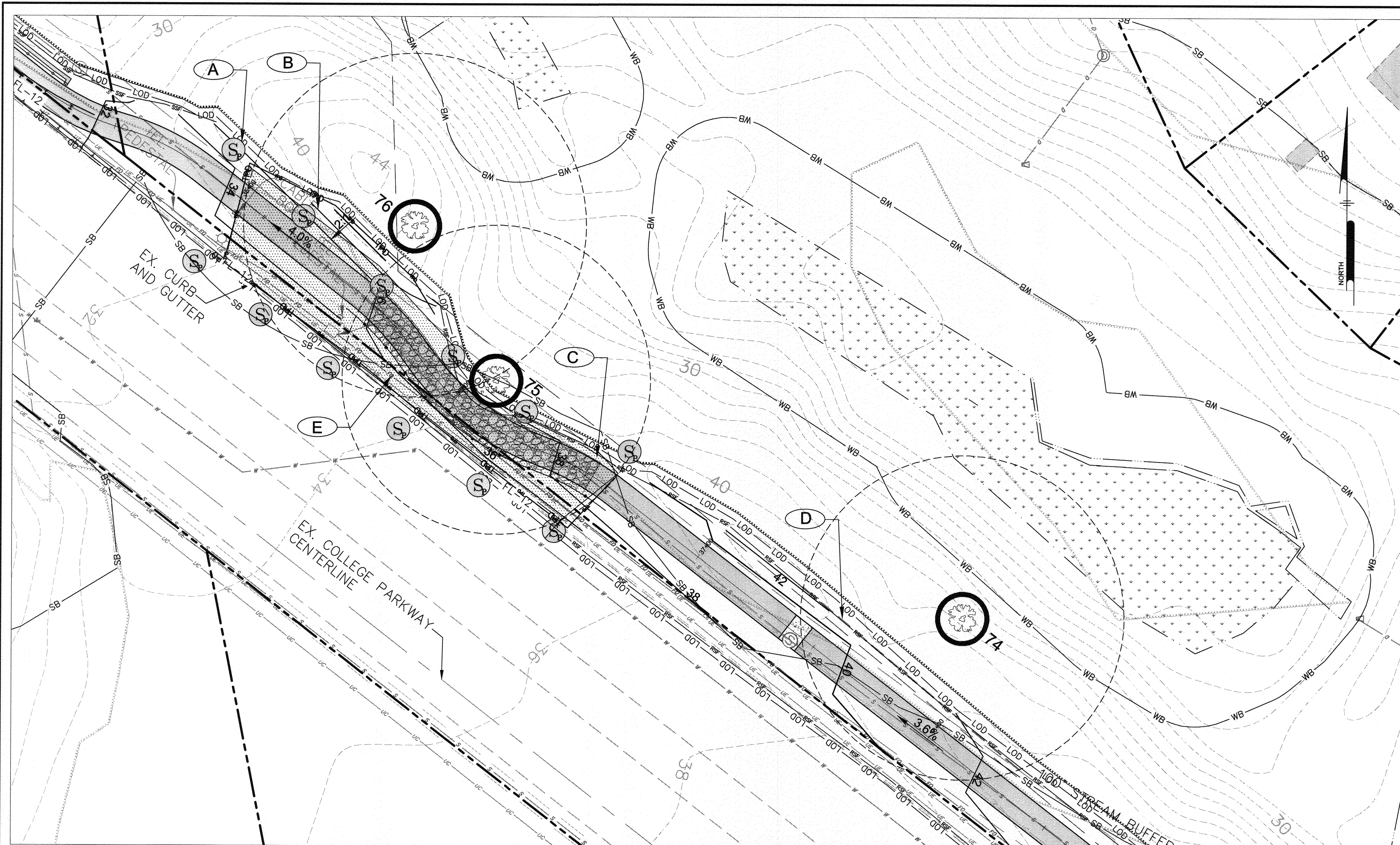
97200

APRIL 5, 2021

SCALE: 1" = 20'
 DRAWN BY: PAI
 CHECKED BY: PJS/JAR
 SHEET 132 of 137
 PROJECT #: P504100
 PROPOSAL #:

TREE PROTECTION PLAN
BROADNECK TRAIL - PHASE III
 CONSTRUCTION DOCUMENTS
 TAX MAP 32, 39, AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD
 NOVEMBER 2019

DWG No:

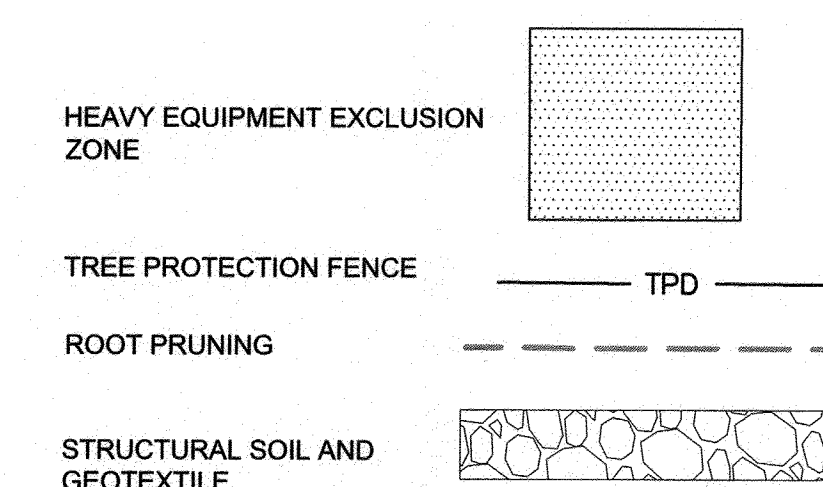


**SPECIMEN TREE #74, 75, 76
TREE PROTECTION PLAN**

**SPECIMEN TREE PRESERVATION SEQUENCE OF
CONSTRUCTION
TREE #74**

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. ROOT PRUNE AT LIMITS OF DISTURBANCE AROUND SPECIMEN TREE 74.
4. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
5. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
6. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
7. NO OTHER TREES WITHIN CRITICAL ROOT ZONE OUTSIDE OF THE LOD SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
8. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
9. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
10. GRADE AND CONSTRUCT TRAIL.
11. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.

SYMBOL LEGEND



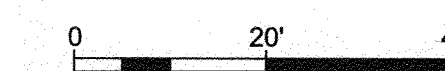
TREE PROTECTION FEATURES

- (A) SPECIMEN TREE PROTECTION SIGN
- (B) TREE PROTECTION FENCING
- (C) GRAVEL BASE WITH STRUCTURAL FILL
- (D) ROOT PRUNING
- (E) HEAVY EQUIPMENT EXCLUSION ZONE

**SPECIMEN TREE PRESERVATION SEQUENCE OF
CONSTRUCTION
TREES #75, 76**

1. STAKEOUT LIMITS OF DISTURBANCE AROUND TREE EVERY 10'.
2. CONDUCT A PRECONSTRUCTION MEETING WITH CONTRACTOR, ARBORIST, LANDSCAPE ARCHITECT, AND OWNER. REVIEW LIMITS OF DISTURBANCE AND TREE PRESERVATION MEASURES.
3. INSTALL SEDIMENT CONTROLS AS SHOWN ON THE PLANS.
4. INSTALL TREE PROTECTION FENCE. WHERE SUPER SILT FENCE IS ALREADY INSTALLED, TREE PROTECTION FENCE IS NOT REQUIRED.
5. POST TREE PROTECTION SIGNS AS NOTED ON THE PLANS.
6. ALL OTHER TREES WITHIN CRITICAL ROOT ZONE SHALL BE REMOVED BY CUTTING TREES FLUSH WITH GROUND USING HAND EQUIPMENT. NO STUMPS SHALL BE REMOVED.
7. DO NOT PERMIT ANY ACTIVITY WITHIN CRITICAL ROOT ZONE, INCLUDING REMOVAL OF TOPSOIL, STORAGE OF MATERIALS, PARKING OF EQUIPMENT, ETC.
8. ARBORIST SHALL MONITOR INSTALLATION OF ALL TREE PROTECTION MEASURES AND ALL TREE MAINTENANCE ACTIVITY. ARBORIST SHALL MONITOR SITE DURING CONSTRUCTION ON A MONTHLY BASIS AT A MINIMUM.
9. SOAK CRITICAL ROOT ZONE LOD WITH A SOAKER HOSE FOR AT LEAST 4 HOURS, 12 HOURS PRIOR TO EXCAVATION.
10. USING AIR EXCAVATION TOOL AND HIGH POWERED VACUUM, EXCAVATE WITHIN CRITICAL ROOT ZONE LOD TO A DEPTH OF 12". ALL TREE ROOTS IN EXCESS OF 1" IN DIAMETER SHALL BE WORKED AROUND IN A MANNER THAT DOES NOT BREAK THE OUTER LAYER OF THE ROOT SURFACE.
11. PLACE GEOTEXTILE ON BOTTOM OF TRENCH AND BACKFILL WITH CU STRUCTURAL SOIL OR APPROVED EQUAL TO BOTTOM OF SUBGRADE. INSTALL IN 6" (MAXIMUM) LIFTS. COMPACT SOIL WITH PLATE TAMPER OR LIGHT, WIDE TRACKED EQUIPMENT.

12. REFER TO PROJECT SPECIFICATIONS FOR PROTECTION AND TREATMENT OF ROOTS DURING EXCAVATION OPERATIONS.
13. INSTALL TOPSOIL AND LIGHTLY COMPACT TO ACHIEVE FINAL GRADE OUTSIDE OF TRAIL FOOTPRINT.
14. INSTALL TRAIL SUBBASE.
15. PAVE AND COMPLETE TRAIL.
16. AT COMPLETION OF CONSTRUCTION ALL SILT FENCE AND PROTECTION MEASURES SHALL BE REMOVED. NO DISTURBANCE WITHIN THE CRITICAL ROOT ZONE IS PERMITTED DURING THIS ACTIVITY.



GP# G02017905 DWG NO: DD18G

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

REVISIONS	APPROVED
DESCRIPTION	BY DATE

Pennoni

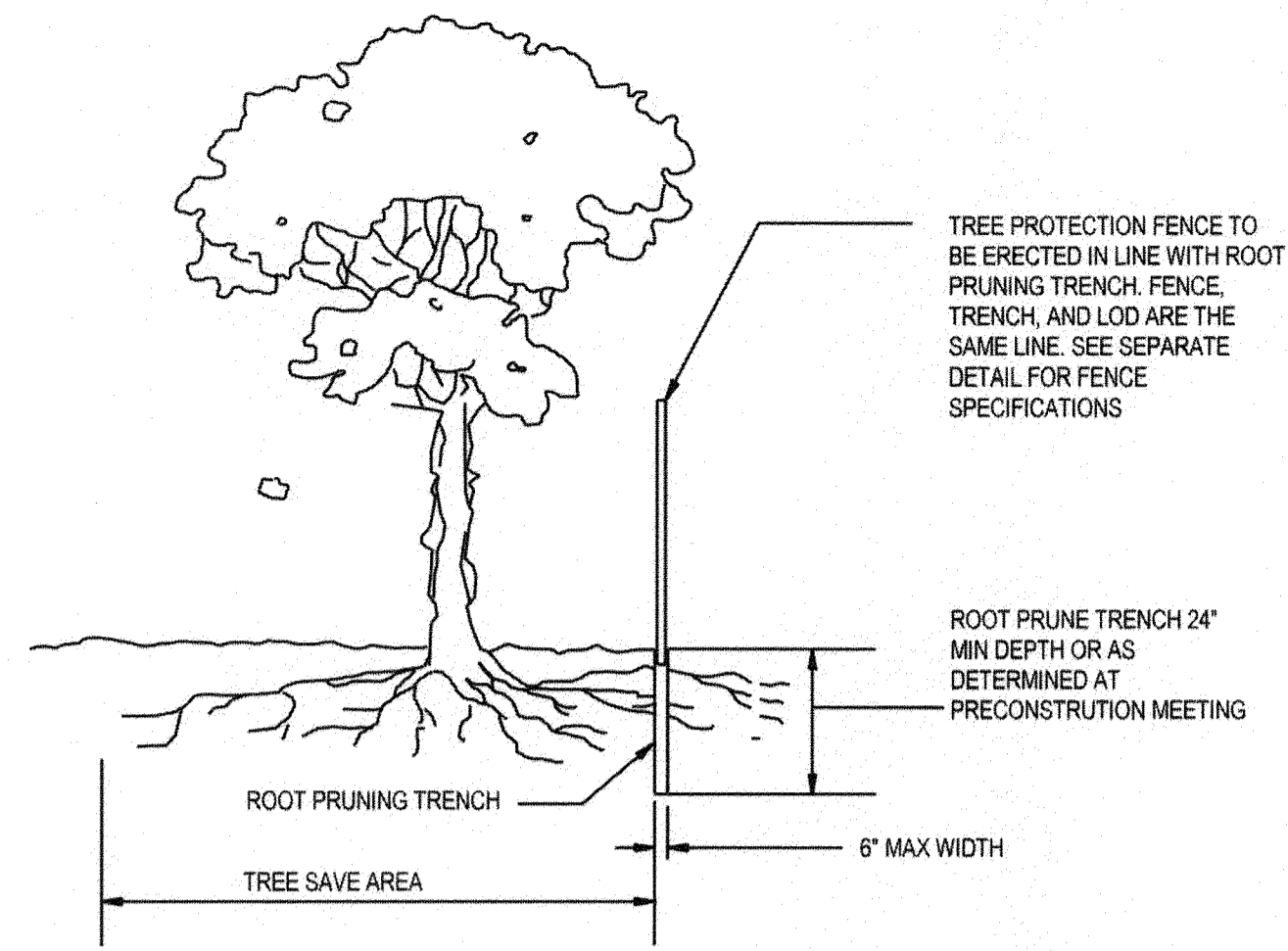
PENNONI ASSOCIATES INC.
8880 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

**ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS**

97201 APRIL 5, 2021

APPROVED <i>[Signature]</i> CHIEF ENGINEER	DATE 5/16/21	APPROVED <i>[Signature]</i> PROJECT MANAGER	DATE 4/15/21	SCALE: 1" = 20'	<p align="center">TREE PROTECTION PLAN</p> <p align="center">BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS</p> <p align="center">ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019</p>
APPROVAL	DATE	APPROVED	DATE	DRAWN BY: PAI	
<i>[Signature]</i>	4/24/21	<i>[Signature]</i>	4/16/21	CHECKED BY: PJS/JAR	
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		SHEET <u>133</u> of <u>137</u>	
				PROJECT #: P504100	
				PROPOSAL #:	

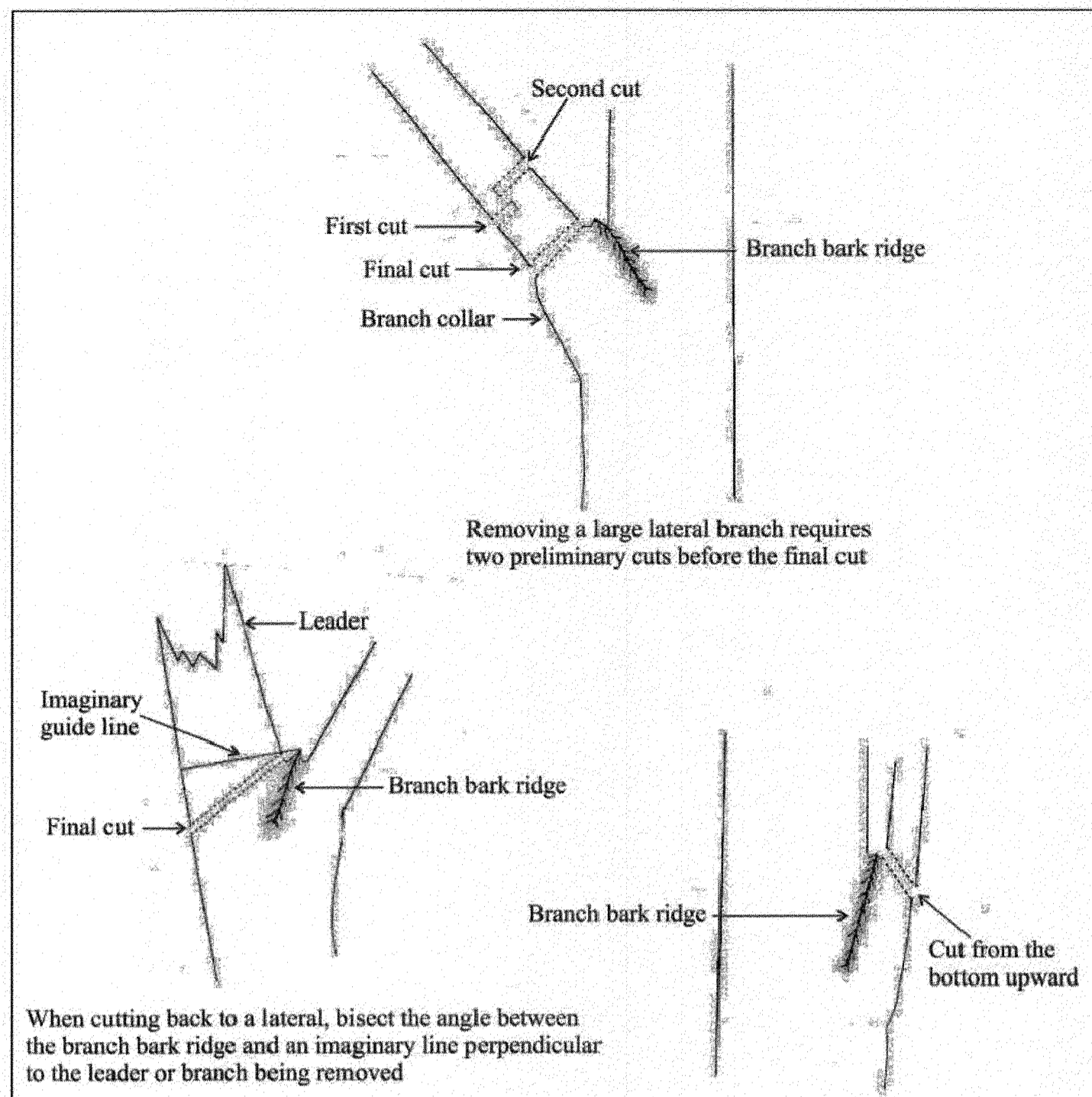
DWG No.:



- NOTES:
1. RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS AND PRECONSTRUCTION MEETING.
 2. BOUNDARIES OF RETENTION AREAS MUST BE STAKED AT THE PRECONSTRUCTION MEETING AND FLAGGED PRIOR TO TRENCHING.
 3. EXACT LOCATION OF TRENCH SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FOREST CONSERVATION (FC) INSPECTOR.
 4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH EXCAVATED SOIL OR OTHER ORGANIC SOIL AS SPECIFIED PER PLAN OR BY THE FC INSPECTOR.
 5. ROOTS SHALL BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
 6. ALL PRUNING MUST BE EXECUTED WITH LOD SHOWN ON PLANS OR AS AUTHORIZED IN WRITING BY THE FC INSPECTOR.

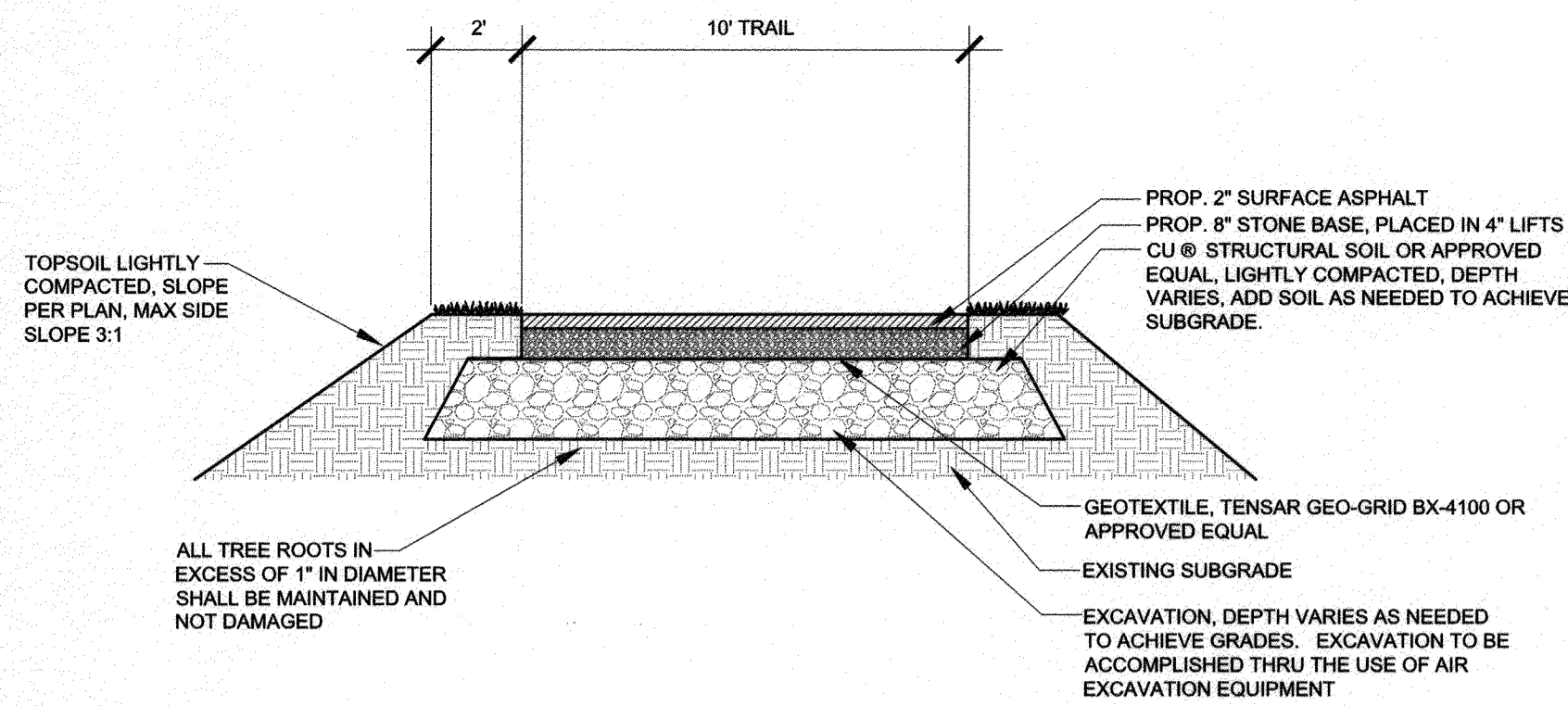
ROOT PRUNING DETAIL

NTS

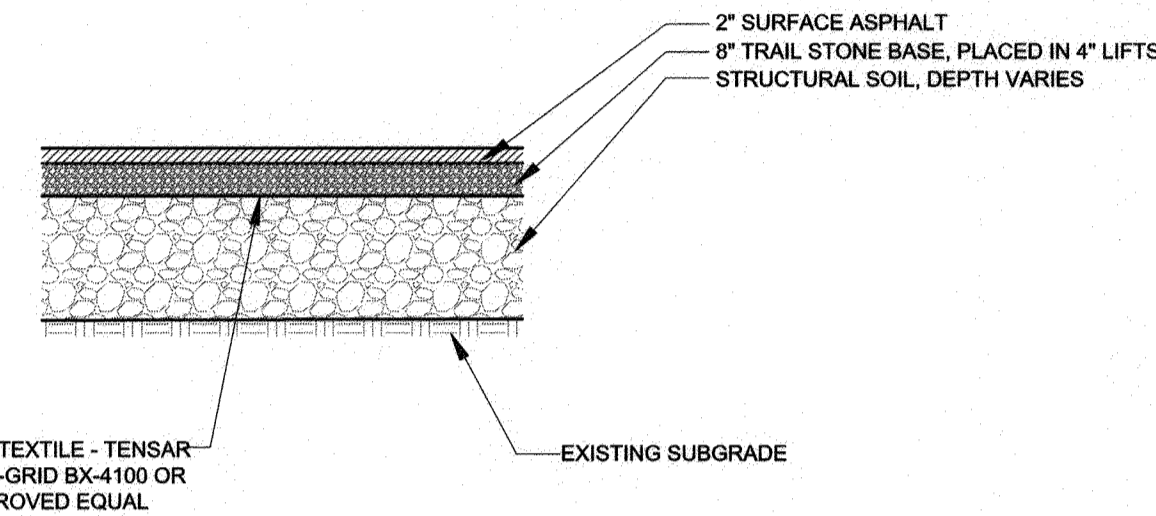


Adapted from: *Tree, Shrub and Other Woody Plant Maintenance - Standard Practices - American National Standard for Tree Care Operations*, American National Standards Institute

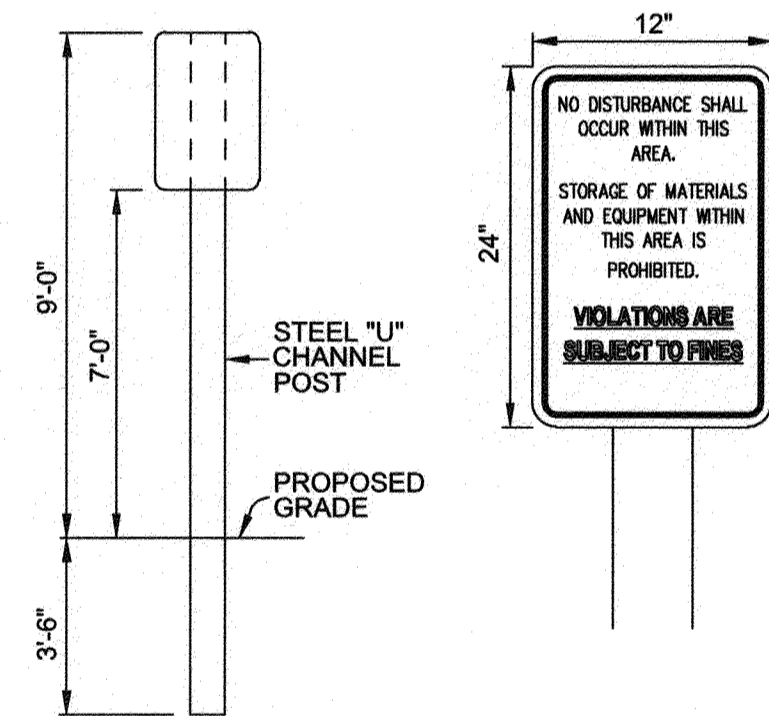
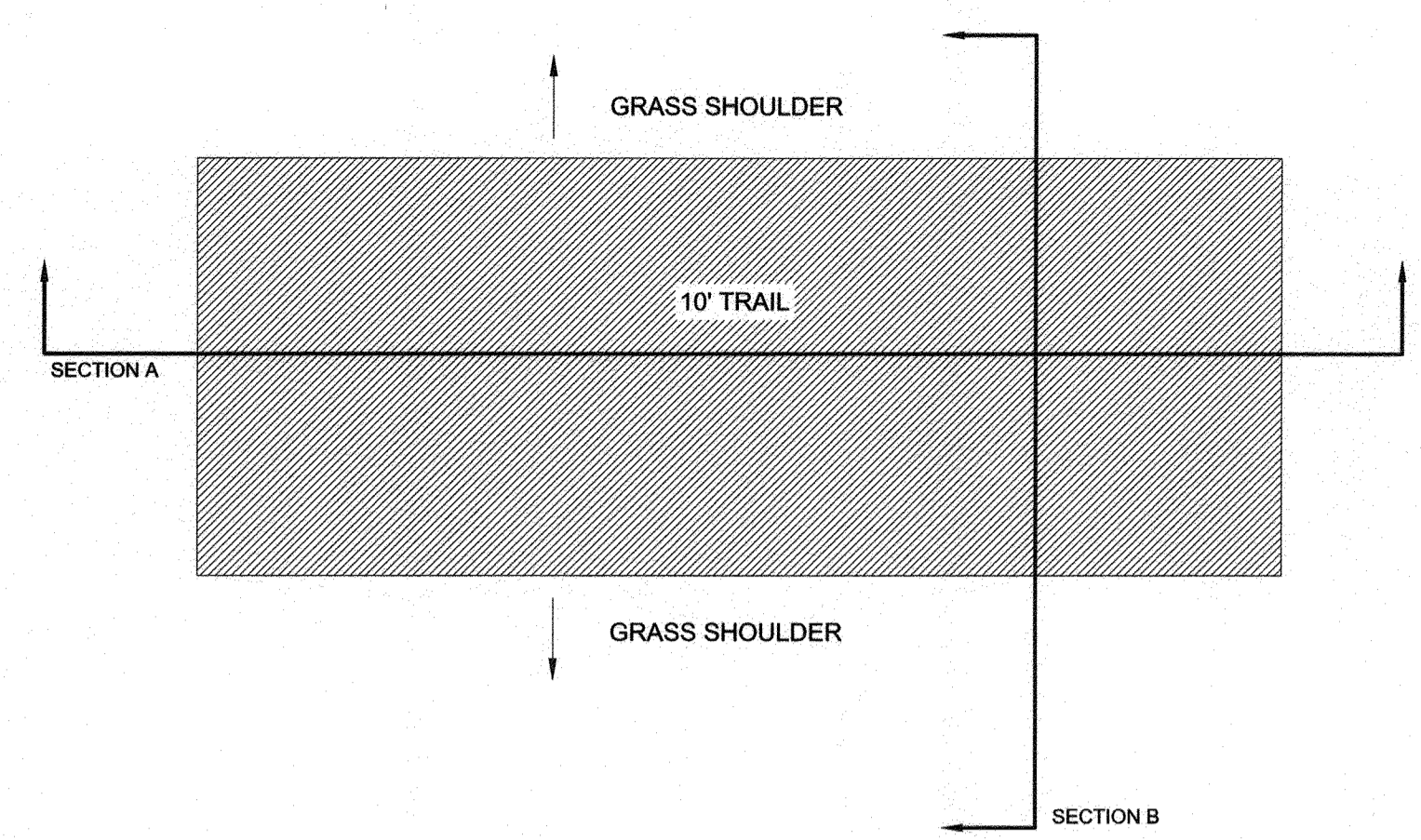
Ref. Sec. 12-0706.5A	PRUNING CUTS	PLATE NO.	STD. NO.
Rev. 2-02, 2011 Reprint		9-12	



TRAIL WITHIN CRITICAL ROOT ZONE, SECTION A
NOT TO SCALE

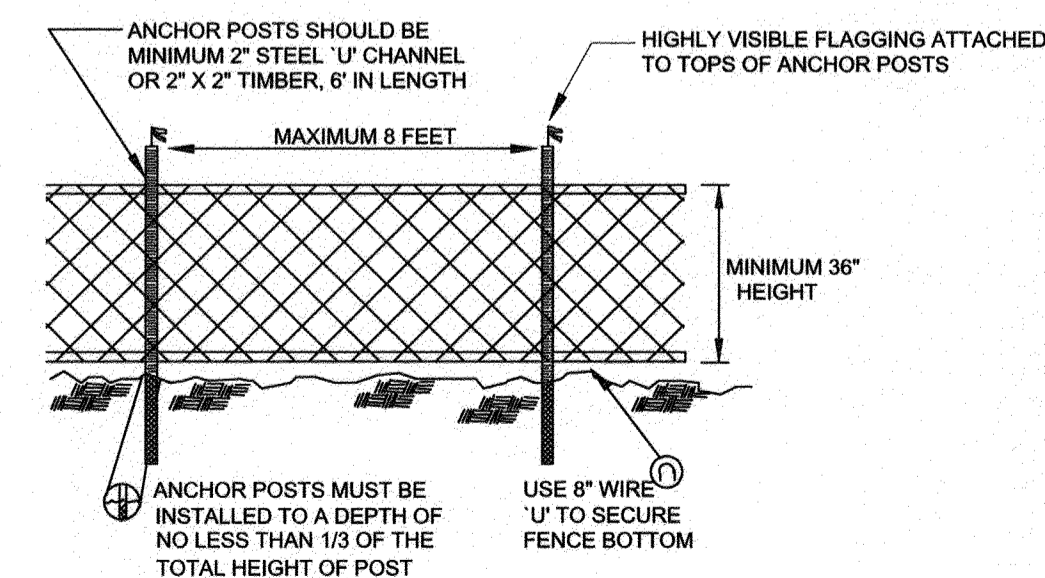


TRAIL WITHIN CRITICAL ROOT ZONE, SECTION B
NOT TO SCALE



- NOTES:
1. DISTANCE FROM GROUND TO BOTTOM OF SIGN TO BE 7'.
 2. SIGNS TO BE PROVIDED IN ENGLISH AND SPANISH.
 3. CONTRACTOR TO PROVIDE A SIGN SAMPLE FOR APPROVAL PRIOR TO POSTING.

SPECIMEN TREE PROTECTION SIGN
NOT TO SCALE

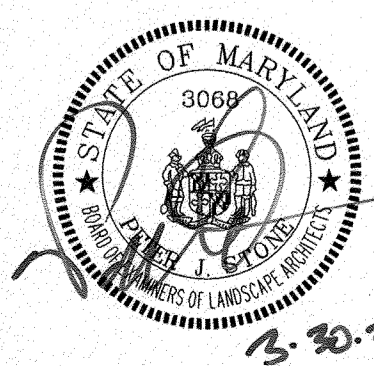


- NOTES:
1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
 2. SUPER SILT FENCE MAY BE SUBSTITUTED FOR TREE PROTECTION FENCING.
 3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
 4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 5. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVERE LARGE ROOTS WHEN INSTALLING POSTS.
 6. PROTECTION SIGNS ARE REQUIRED. SEE SIGN DETAIL.
 7. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING
NOT TO SCALE

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, RLA, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3068 EXPIRATION DATE 10/10/2022

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

APPROVED DATE: [Signature] 5/16/21
CHIEF ENGINEER

APPROVAL DATE: [Signature] 4/16/21
ASSISTANT CHIEF ENGINEER

APPROVED DATE: [Signature] 4/15/21
PROJECT MANAGER

APPROVED DATE: [Signature] 4/16/21
CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 134 of 137
PROJECT #: P504100
PROPOSAL #:

GP# G02017905

DWG NO: DD18H

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97202

APRIL 5, 2021

TREE PROTECTION DETAILS
BROADNECK TRAIL - PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

**PLANTING SPECIFICATIONS
AFFORESTATION OR REFORESTATION MAINTENANCE AND REPLACEMENT REQUIREMENTS**

A ONE YEAR (12) MONTH MAINTENANCE AND REPLACEMENT WARRANTY PERIOD IS REQUIRED FOR ALL NEWLY PLANTED MATERIALS. THE MAINTENANCE AND REPLACEMENT WARRANTY PERIOD SHALL COMMENCE UPON THE DATE OF THE WRITTEN ACCEPTANCE BY THE OWNER OF THE PLANTED AREAS. A WRITTEN WARRANTY WILL BE DELIVERED TO THE OWNER UPON ACCEPTANCE OF THE PLANTED AREAS. MAINTENANCE AND REPLACEMENT SHALL BE PROVIDED BY THE CONTRACTOR RESPONSIBLE FOR THE INITIAL PLANTING OPERATIONS AND RELATED WORK. ALL LANDSCAPE PLANT MATERIAL INCLUDED AS FOREST CONSERVATION CREDITS SHALL BE COVERED UNDER THIS MAINTENANCE AND REPLACEMENT WARRANTY PERIOD.

I. MAINTENANCE:
THE CONTRACTOR SHALL FIELD CHECK THE NEWLY PLANTED AREA(S) AND SHALL PROVIDE THE FOLLOWING MAINTENANCE ITEMS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE WHICH SHALL BEGIN AFTER THE COMPLETION AND ACCEPTANCE OF THE INITIAL AFFORESTATION OR REFORESTATION PLANTING.

- II. MAINTENANCE ITEMS:**
- 1. WATERING:** WATERING OF ALL NEWLY PLANTED MATERIALS ONCE PER WEEK AS WEATHER PERMITS DURING THE ENTIRE INITIAL GROWING SEASON. FOLLOWING THE INITIAL GROWING SEASON, WATERING SHALL BE DONE ON AN "AS NEEDED" BASIS DEPENDING ON THE FREQUENCY OF NATURAL RAINFALL. DURING THE MONTHS OF JULY AND AUGUST AND PERIODS OF SEVERE DROUGHT, ALL NEWLY PLANTED MATERIALS SHALL BE WATERED THOROUGHLY ONCE EVERY WEEK. WATERING SHALL BE DONE DEEPLY AND SLOWLY USING AN OPEN END HOSE OR WATERING PROBE, AT LOW PRESSURE, ALLOWING THE WATER TO BE ABSORBED INTO THE SOIL UNTIL THOROUGHLY SATURATED. THE WATERED AREA SHALL INCLUDE THE WHOLE ROOT ZONE AS THE TREE BECOMES MORE ESTABLISHED.
 - 2. FERTILIZING:** FERTILIZING SHALL BE APPLIED ONLY AFTER THE SOIL HAS BEEN TESTED TO DETERMINE ITS NEEDS. ORGANIC FERTILIZER SHOULD BE APPLIED IN ACCORDANCE WITH THE AMOUNTS RECOMMENDED IN THE SOIL ANALYSIS REPORT. NO FERTILIZING OF NEWLY PLANTED TREES SHALL BE DONE WITHIN THE FIRST GROWING SEASON AFTER INITIAL PLANTING. FOLLOWING THE FIRST GROWING SEASON, APPLY FERTILIZER AS RECOMMENDED EITHER IN LATE FALL OR EARLY SPRING.
 - 3. SUPPLEMENTAL MULCH:** TO CONTROL UNDESIRABLE VEGETATION ADJACENT TO THE NEWLY PLANTED MATERIALS AND TO PREVENT TREE ROOTS FROM DRYING OUT, ADDITIONAL MULCH SHALL BE PLACED OVER THE EXISTING MULCH FIELD WHERE REQUIRED. CAREFULLY REMOVE ANY INVASIVE PLANTS (INCLUDING THE ROOT SYSTEM) WITHIN THE MULCH FIELDS. DO NOT DAMAGE TREES IN ANY WAY DURING REMOVAL OF INVASIVE PLANTS OR REMULCHING OPERATIONS.
 - 4. PRUNING:** REMOVE DEAD, DISEASED, DYING AND BROKEN BRANCHES FROM ALL PLANT MATERIALS. PRUNING SHALL BE DONE CLEANLY LEAVING NO RAGGED ENDS.

III. REPLACEMENT OF DEAD OR DYING MATERIALS:
1. REPLACEMENT: ANY PLANT MATERIALS WHICH ARE 25% DEAD OR MORE SHALL BE REPLACED DURING THE APPROPRIATE SPRING OR FALL PLANTING SEASONS IN ACCORDANCE WITH THE METHODS INDICATED IN THE PLANTING SPECIFICATIONS. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK.
2. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME GENUS, SPECIES AND SIZE AS SPECIFIED ON THE PLANT LIST.
3. CONTRACTOR SHALL SCHEDULE AN INSPECTION OF THE AFFORESTATION OR REFORESTATION AREA(S) BY A QUALIFIED REPRESENTATIVE OF THE COUNTY, AT THE BEGINNING AND AT THE END OF THE GROWING SEASON TO OBSERVE ANY PROBLEMS, MONITOR SURVIVAL RATE AND SPECIFY NECESSARY REMEDIAL ACTIONS NEEDED TO CORRECT EXISTING PROBLEMS. THE INSPECTION SHOULD FOCUS ON THE FOLLOWING ITEMS WHEN DETERMINING SURVIVAL POTENTIAL:
(A) VIGOR AND THREAT OF COMPETING VEGETATION
(B) PLANT STRUCTURE
(C) GROWTH RATE
(D) CROWN DEVELOPMENT
(E) TRUNK CONDITIONS AND HEALTH

IV. PLANT CONDITION CHECK SHEETS
THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS ON APPROPRIATE FIELD DATA CHECK SHEETS WHICH SHALL INCLUDE ALL CONDITIONS OBSERVED RELATIVE TO THE HEALTH AND POTENTIAL SURVIVAL OF THE PLANT MATERIALS. SUCH CHECK SHEETS SHALL BE COMPLETED DURING EACH SCHEDULED MAINTENANCE SESSION DURING THE 12 MONTH MANAGEMENT AND MAINTENANCE PROGRAM. ONE COPY OF THE CHECK SHEETS SHALL BE SENT TO THE CLIENT, ONE COPY TO PHRA, AND ONE COPY SHALL BE SENT TO THE ANNE ARUNDEL COUNTY DEPARTMENT OF PLANNING AND ZONING.

V. SURVIVAL REQUIREMENT:
THE SURVIVAL RATE FOR AFFORESTATION AND REFORESTATION AREAS SHALL BE A MINIMUM OF SEVENTY-FIVE PERCENT (75%) OF THE TOTAL NUMBER OF TREES REQUIRED TO BE PLANTED PER ACRE UNDER THE APPROVED PLAN.

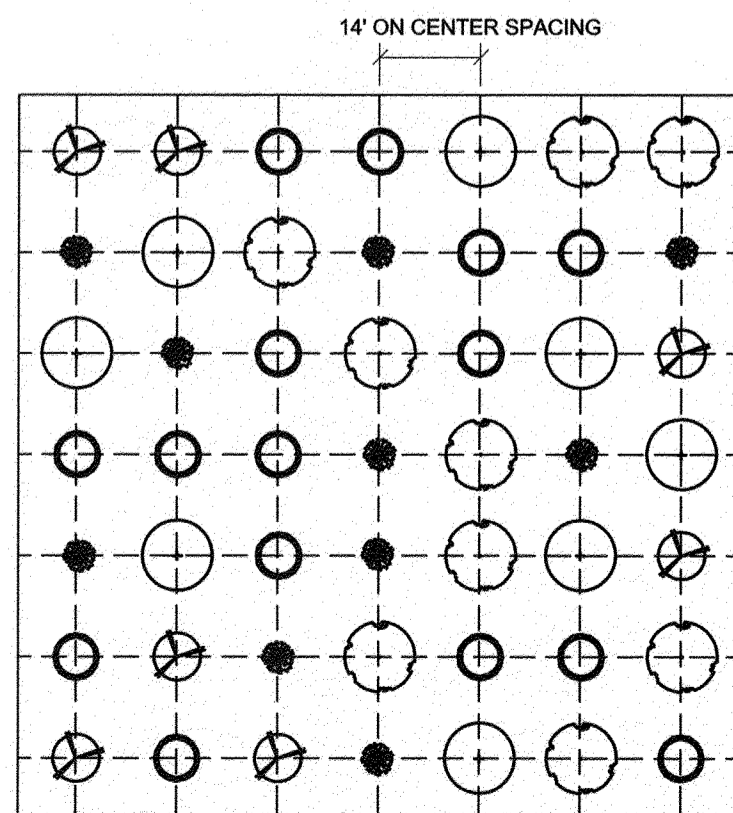
AFFORESTATION/REFORESTATION PLANTING SEQUENCE OF OPERATIONS

1. THE CONTRACTOR(S) SHALL INFORM THE ANNE ARUNDEL COUNTY DEPARTMENT OF PLANNING AND ZONING AND THE DESIGN CONSULTANT WHEN PLANTING OPERATIONS ARE TO BEGIN.
2. DETERMINE STORAGE AREAS FOR MATERIALS AND EQUIPMENT. OBTAIN APPROVAL OF LOCATION FROM OWNER AND THE COUNTY.
3. PRIOR TO BEGINNING ANY PLANTING, THE SOILS WITHIN THE AREA(S) DESIGNATED FOR AFFORESTATION OR REFORESTATION SHALL BE ANALYZED REGARDING THE FOLLOWING FEATURES: NUTRIENT CONTENT, ORGANIC MATTER, STRUCTURE, PH AND CATION EXCHANGE CAPACITY. SOILS THAT HAVE BEEN ACTIVELY FARMED MAY REQUIRE EVALUATION FOR PESTICIDE OR HERBICIDE CONTAMINATION. SUCH ANALYSIS MAY BE PERFORMED BY THE LOCAL SOIL CONSERVATION SERVICE OR AGRICULTURAL EXTENSION SERVICE. A MINIMUM OF THREE RANDOM SAMPLES SHOULD BE COLLECTED FOR THE ANALYSIS. AN ASSESSMENT OF SOIL MOISTURE SHOULD ALSO BE MADE AT THIS TIME. CORRECTIVE MEASURES SHALL BE MADE IN ACCORDANCE WITH ANALYSIS RESULTS AND RECOMMENDATIONS.
4. THE CONTRACTOR, ASSISTED BY A REPRESENTATIVE OF PENNONI ASSOCIATES INC., SHALL STAKE (OR WIRE-FLAG) PLANTING AREA LIMITS AND PLANT LOCATIONS IN ACCORDANCE WITH THE PLAN AND DETAILS.
5. PROVIDE AND PLANT ALL TREES OF THE SPECIES AND SIZES SPECIFIED AND IN ACCORDANCE WITH THE DETAIL(S) SHOWN ON THE FOREST CONSERVATION PLANS, UNLESS OTHERWISE DIRECTED BY THE COUNTY.
6. AT THE COMPLETION OF PLANTING, REMOVE ALL EXCESS MATERIALS AND MISCELLANEOUS DEBRIS FROM THE RESPECTIVE AREA(S) OF WORK.
7. PROTECTION DEVICES - TO PREVENT DAMAGE WITHIN PLANTED AREAS, ALL REFORESTATION AND/OR AFFORESTATION SITES MUST BE POSTED WITH APPROPRIATE SIGNS AND THE AREA(S) DELINEATED WITH APPROPRIATE PROTECTIVE FENCING. NO CONSTRUCTION EQUIPMENT NOR STORAGE OF MATERIALS SHALL BE PERMITTED WITHIN THE PLANTED AREAS. DETAILS ARE SHOWN ON THE FOREST CONSERVATION PLANS REGARDING TYPICAL SIGN SIZE AND WORDING. NO PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THE PROTECTED AREAS.
8. ATTACHMENT OF SIGNS OR ANY OTHER OBJECTS TO TREES WITHIN THE PROTECTED AREAS IS PROHIBITED.

REFORESTATION PLANTING LISTS

QUANTITIES	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
11	NYSSA SALVATICA / BLACK GUM	1.5"-2" CAL.	CONTAINER	FULL CROWN 20' ± SPACING SEE RANDOM PLANTING DETAIL
20	QUERCUS ALBA / WHITE OAK			
20	ACER RUBRUM 'SOMERSET' / SOMERSET RED MAPLE (SEEDLESS CULTIVARS ONLY)			
20	QUERCUS PALUSTRIS / PIN OAK			
20	PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE			

EASEMENT AREAS WILL HAVE TREES PLANTED AT A RATE OF 1 TREE/200 SF. 18,210 SF/200 TREE/SF = 91 TREES

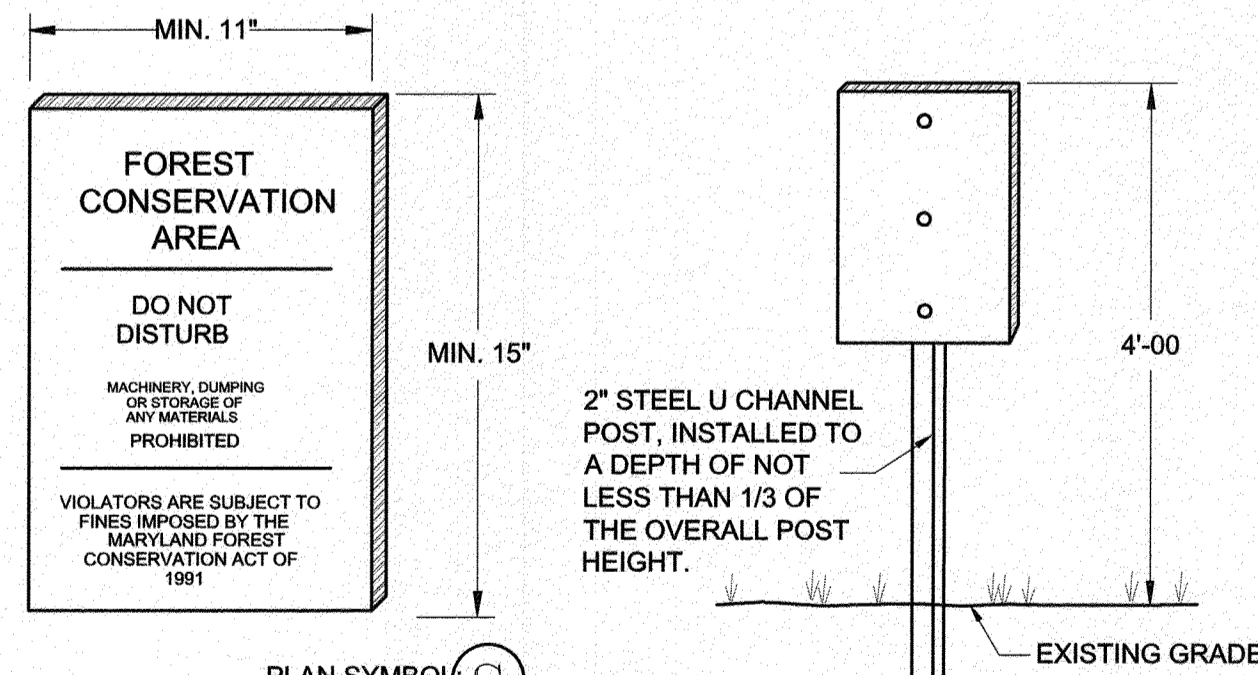


KEY

- PLANT SPECIES 'A'
- PLANT SPECIES 'B'
- PLANT SPECIES 'C'
- PLANT SPECIES 'D'

NOTES:

1. RANDOMLY LOCATE GROUPS OF PLANT SPECIES, TAKING CARE NOT TO PLANT IN SUCCESSION MORE THAN 4 OF THE SAME SPECIES.
2. THIS DETAIL PROVIDES A HYPOTHETICAL, GRAPHIC DEPICTION OF A PROPOSED LAYOUT FOR FIVE DIFFERENT PLANT SPECIES (A-E) AND IS NOT MEANT TO BE FOLLOWED EXACTLY. THE PURPOSE IS TO ACHIEVE THE APPEARANCE OF RANDOM SPACING. SEE PLANT LIST FOR ACTUAL NUMBER OF PLANT SPECIES. SEE PLANT LIST FOR ON-CENTER SPACING REQUIREMENTS.



FOREST CONSERVATION SIGN DETAIL
NOT TO SCALE

SPECIMEN TREE CHART

KEY	SPECIES	SIZE (IN)	CONDITION	REMAIN/REMOVE
1	YELLOW POPLAR (Liriodendron tulipifera)	36.5	GOOD	REMAIN
2	YELLOW POPLAR (Liriodendron tulipifera)	33	GOOD	REMAIN
3	YELLOW POPLAR (Liriodendron tulipifera)	44.5	GOOD	REMAIN
4	WHITE OAK (Quercus alba)	40	GOOD	REMAIN
5	NORTHERN RED OAK (Quercus rubra)	35	GOOD	REMAIN
6	YELLOW POPLAR (Liriodendron tulipifera)	35.8	GOOD	REMAIN
7	YELLOW POPLAR (Liriodendron tulipifera)	30	GOOD	REMAIN
8	YELLOW POPLAR (Liriodendron tulipifera)	32.8	GOOD	REMAIN
9	YELLOW POPLAR (Liriodendron tulipifera)	32.8	GOOD	REMAIN
10	YELLOW POPLAR (Liriodendron tulipifera)	33	GOOD	REMAIN
11	YELLOW POPLAR (Liriodendron tulipifera)	31.5	GOOD	REMAIN
12	YELLOW POPLAR (Liriodendron tulipifera)	34.5	GOOD	REMAIN
13	YELLOW POPLAR (Liriodendron tulipifera)	31.5	GOOD	REMAIN
14	YELLOW POPLAR (Liriodendron tulipifera)	40	GOOD	REMAIN
15	YELLOW POPLAR (Liriodendron tulipifera)	36	GOOD	REMAIN
16	YELLOW POPLAR (Liriodendron tulipifera)	50.4	GOOD	REMAIN
17	YELLOW POPLAR (Liriodendron tulipifera)	31.5	GOOD	REMAIN
18	YELLOW POPLAR (Liriodendron tulipifera)	36.8	GOOD	REMAIN
19	YELLOW POPLAR (Liriodendron tulipifera)	32.8	GOOD	REMAIN
20	YELLOW POPLAR (Liriodendron tulipifera)	40	GOOD	REMAIN
21	YELLOW POPLAR (Liriodendron tulipifera)	36.8	GOOD	REMAIN
22	YELLOW POPLAR (Liriodendron tulipifera)	32.2	GOOD	REMAIN
23	YELLOW POPLAR (Liriodendron tulipifera)	31	GOOD	REMAIN
24	YELLOW POPLAR (Liriodendron tulipifera)	38	GOOD	REMAIN
25	YELLOW POPLAR (Liriodendron tulipifera)	38.2	GOOD	REMAIN
26	YELLOW POPLAR (Liriodendron tulipifera)	42.5	GOOD	REMAIN
27	YELLOW POPLAR (Liriodendron tulipifera)	35.8	GOOD	REMAIN
28	YELLOW POPLAR (Liriodendron tulipifera)	43	GOOD	REMAIN
29	YELLOW POPLAR (Liriodendron tulipifera)	41.7	GOOD	REMAIN
30	YELLOW POPLAR (Liriodendron tulipifera)	33.2	GOOD	REMAIN
31	YELLOW POPLAR (Liriodendron tulipifera)	33.5	GOOD	REMAIN
32	YELLOW POPLAR (Liriodendron tulipifera)	38.6	GOOD	REMAIN
33	YELLOW POPLAR (Liriodendron tulipifera)	34.5	GOOD	REMAIN
34	YELLOW POPLAR (Liriodendron tulipifera)	32.7	GOOD	REMAIN
35	YELLOW POPLAR (Liriodendron tulipifera)	37	GOOD	REMAIN
36	YELLOW POPLAR (Liriodendron tulipifera)	36	GOOD	REMAIN
37	YELLOW POPLAR (Liriodendron tulipifera)	30.6	GOOD	REMAIN
38	YELLOW POPLAR (Liriodendron tulipifera)	36	GOOD	REMAIN
39	YELLOW POPLAR (Liriodendron tulipifera)	37.3	GOOD	REMAIN
40	AMERICAN SYCAMORE (Platanus occidentalis)	35	GOOD	REMAIN
41	BLACK OAK (Quercus velutina)	32	GOOD	REMAIN
42	NORTHERN RED OAK (Quercus rubra)	33.8	GOOD	REMAIN
43	BEECH (Fagus grandifolia)	32.7	GOOD	REMAIN
44	WHITE OAK (Quercus alba)	35.8	GOOD	REMAIN
45	NORTHERN RED OAK (Quercus rubra)	32.2	GOOD	REMAIN
46	NORTHERN RED OAK (Quercus rubra)	42.2	GOOD	REMAIN
47	YELLOW POPLAR (Liriodendron tulipifera)	32.7	GOOD	REMAIN
48	NORTHERN RED OAK (Quercus rubra)	33.8	GOOD	REMAIN
49	BLACK OAK (Quercus velutina)	30.8	VERY POOR	REMOVE
50	NORTHERN RED OAK (Quercus rubra)	32.8	GOOD	REMAIN
51	SOUTHERN RED OAK (Quercus falcata)	32.4	GOOD	REMOVE
52	SOUTHERN RED OAK (Quercus falcata)	42.5	GOOD	REMAIN
53	YELLOW POPLAR (Liriodendron tulipifera)	32.9	GOOD	REMAIN
54	YELLOW POPLAR (Liriodendron tulipifera)	40	GOOD	REMAIN
55	YELLOW POPLAR (Liriodendron tulipifera)	36.6	GOOD	REMAIN
56	YELLOW POPLAR (Liriodendron tulipifera)	38.8	GOOD	REMAIN
57	YELLOW POPLAR (Liriodendron tulipifera)	45.3	GOOD	REMAIN
58	SOUTHERN RED OAK (Quercus falcata)	35.3	GOOD	REMAIN
59	SOUTHERN RED OAK (Quercus falcata)	33.8	GOOD	REMAIN
60	AMERICAN SYCAMORE (Platanus occidentalis)	38.9	GOOD	REMAIN
61	NORTHERN RED OAK (Quercus rubra)	30.8	GOOD	REMAIN
62	NORTHERN RED OAK (Quercus rubra)	36.1	GOOD	REMAIN
63	NORTHERN RED OAK (Quercus rubra)	30.7	GOOD	REMAIN
64	NORTHERN RED OAK (Quercus rubra)	38.9	GOOD	REMOVE
65	BLACK CHERRY (Prunus serotina)	37.3	GOOD	REMAIN
66	YELLOW POPLAR (Liriodendron tulipifera)	37	GOOD	REMAIN
67	BLACK CHERRY (Prunus serotina)	35.8	GOOD	REMAIN
68	WHITE OAK (Quercus alba)	30.5	GOOD	REMAIN
69	SWEETGUM (Liquidambar styraciflua)	33.5	GOOD	REMAIN
70	CHESTNUT OAK (Quercus montana)	31.5	GOOD	REMAIN
71	SOUTHERN RED OAK (Quercus falcata)	39.2	GOOD	REMAIN
72	CHESTNUT OAK (Quercus montana)	35.1	GOOD	REMAIN
73	CHESTNUT OAK (Quercus montana)	36.4	GOOD	REMAIN
74	CHESTNUT OAK (Quercus montana)	36.8	GOOD	REMAIN
75	BLACK OAK (Quercus velutina)	35.1	GOOD	REMAIN
76	NORTHERN RED OAK (Quercus rubra)	39	POOR	REMAIN

FOREST CONSERVATION NARRATIVE

THE PROPOSED BROADNECK TRAIL ALIGNMENT RUNS ALONG COLLEGE PARKWAY IN SUBURBAN ARNOLD, MD. THE PROPOSED TRAIL IS APPROXIMATELY 2.47 MILES LONG. THE LIMITS OF DISTURBANCE, IS APPROXIMATELY 11.68 ACRES AND CONTAINS 6.32 ACRES OF FOREST. THE WIDTH OF THE RIGHT-OF-WAY CORRIDOR THAT WILL CONTAIN THE TRAIL ALIGNMENT RANGES BETWEEN 100 FEET TO 200 FEET. THE EXISTING FOREST IS IN GOOD HEALTH AND IS HOME TO 76 SPECIMEN TREES. EACH FOREST STAND WITHIN THE PROJECT AREA IS RANKED AS A PRIORITY 1 STAND. SOME AREAS OF THE FOREST DO CONTAIN WETLANDS, STREAMS, AND FLOODPLAINS. NO RARE, THREATENED, OR ENDANGERED SPECIES EXIST WITHIN THE EXISTING FOREST.

CLEARING OF APPROXIMATELY 12,000 SF IS PROPOSED OUTSIDE OF THE R.W. SINCE LESS THAN 20,000 SF OF CLEARING IS PROPOSED OUTSIDE OF THE R.W. THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS. THREE (3) SPECIMEN TREES ARE PROPOSED TO BE REMOVED DUE TO THE ALIGNMENT OF THE TRAIL. ALSO, REFORESTATION WITHIN THE LIMITS OF DISTURBANCE WILL BE PROPOSED WITH THIS PROJECT.

REFORESTATION AREA TABLE

AREA	ACRES	SF
A	0.08	3,307
B	0.06	2,574
C	0.05	2,219
D	0.16	7,143
E	0.07	2,967
TOTAL	0.42	18,210

NOTES:

1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION / REFORESTATION / AFFORESTATION AREA BORDER.
2. SEE PLAN FOR SPACING.

PROFESSIONAL CERTIFICATION: I, PETER J. STONE, R.L.A., CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 3058 EXPIRATION DATE 10/10/2022

REVISIONS: # DESCRIPTION APPROVED BY DATE

APPROVED DATE: [Signature] 5/16/21

APPROVED DATE: [Signature] 4/15/21

APPROVED DATE: [Signature] 4/24/21

APPROVED DATE: [Signature] 4/16/21

Pennonni
PENNONI ASSOCIATES INC.
8880 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8800 F 410.997.9282

STATE OF MARYLAND
3068
PENSIONI ASSOCIATES INC.
LANDSCAPE ARCHITECT

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
97203
APRIL 5, 2021

GP# G02017905 DWG NO: DD18I

APPROVED DATE: [Signature] 5/16/21
CHIEF ENGINEER

APPROVED DATE: [Signature] 4/15/21
PROJECT MANAGER

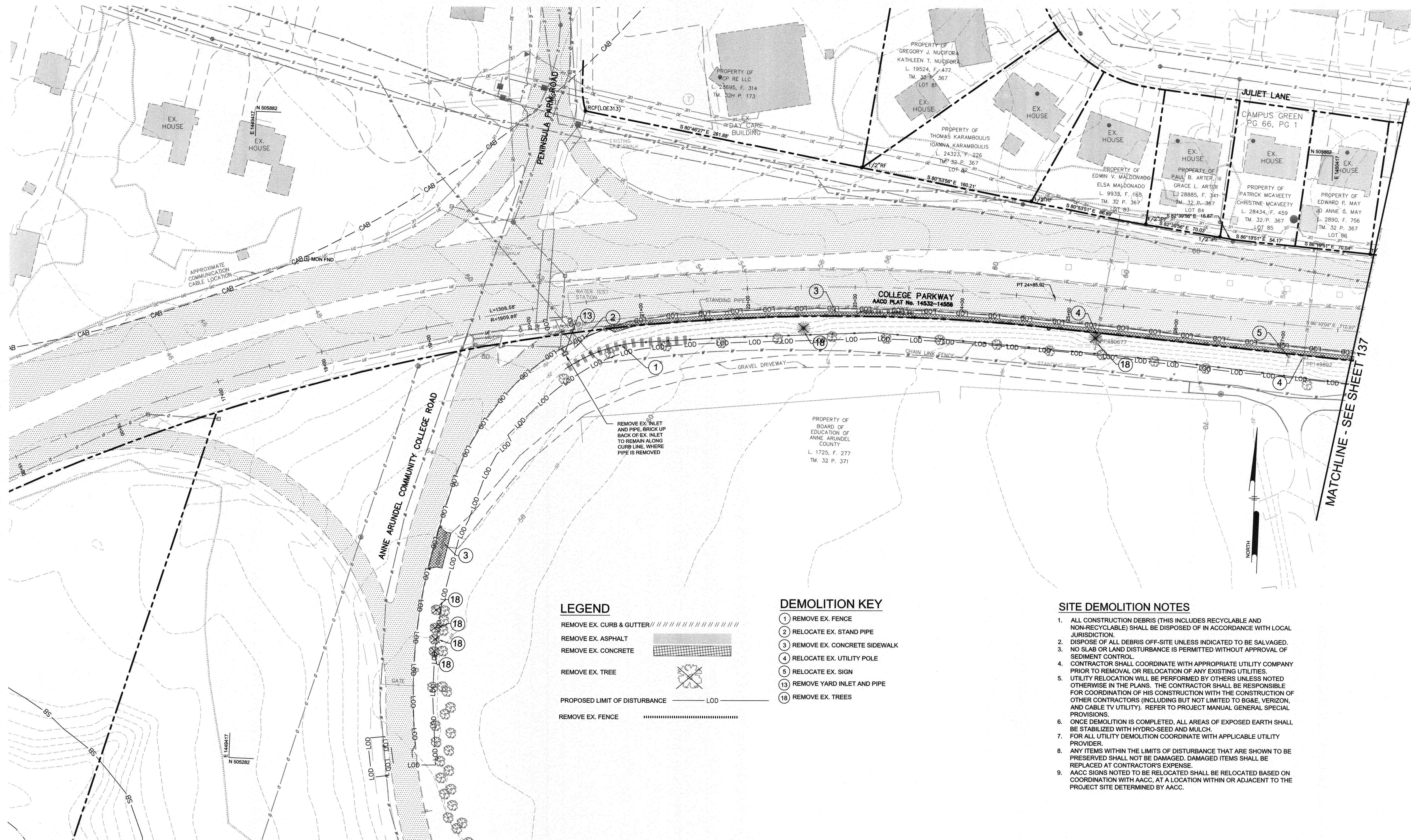
APPROVED DATE: [Signature] 4/24/21
ASSISTANT CHIEF ENGINEER

APPROVED DATE: [Signature] 4/16/21
CHIEF, RIGHT OF WAY SERVICES

SCALE: AS SHOWN
DRAWN BY: PAI
CHECKED BY: PJS/JAR
SHEET 135 OF 137
PROJECT #: P504100
PROPOSAL #:

FOREST CONSERVATION NOTES AND DETAILS
BROADNECK TRAIL -- PHASE III
CONSTRUCTION DOCUMENTS
TAX MAP 32, 39, AND 40
ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD
NOVEMBER 2019

DWG NO:



LEGEND

- REMOVE EX. CURB & GUTTER ////////////////
- REMOVE EX. ASPHALT [hatched box]
- REMOVE EX. CONCRETE [cross-hatched box]
- REMOVE EX. TREE [tree symbol]
- PROPOSED LIMIT OF DISTURBANCE LOD [dashed line]
- REMOVE EX. FENCE [dotted line]

DEMOLITION KEY

- 1 REMOVE EX. FENCE
- 2 RELOCATE EX. STAND PIPE
- 3 REMOVE EX. CONCRETE SIDEWALK
- 4 RELOCATE EX. UTILITY POLE
- 5 RELOCATE EX. SIGN
- 13 REMOVE YARD INLET AND PIPE
- 18 REMOVE EX. TREES

SITE DEMOLITION NOTES

1. ALL CONSTRUCTION DEBRIS (THIS INCLUDES RECYCLABLE AND NON-RECYCLABLE) SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL JURISDICTION.
2. DISPOSE OF ALL DEBRIS OFF-SITE UNLESS INDICATED TO BE SALVAGED.
3. NO SLAB OR LAND DISTURBANCE IS PERMITTED WITHOUT APPROVAL OF SEDIMENT CONTROL.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY PRIOR TO REMOVAL OR RELOCATION OF ANY EXISTING UTILITIES.
5. UTILITY RELOCATION WILL BE PERFORMED BY OTHERS UNLESS NOTED OTHERWISE IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF HIS CONSTRUCTION WITH THE CONSTRUCTION OF OTHER CONTRACTORS (INCLUDING BUT NOT LIMITED TO BG&E, VERIZON, AND CABLE TV UTILITY). REFER TO PROJECT MANUAL GENERAL SPECIAL PROVISIONS.
6. ONCE DEMOLITION IS COMPLETED, ALL AREAS OF EXPOSED EARTH SHALL BE STABILIZED WITH HYDRO-SEED AND MULCH.
7. FOR ALL UTILITY DEMOLITION COORDINATE WITH APPLICABLE UTILITY PROVIDER.
8. ANY ITEMS WITHIN THE LIMITS OF DISTURBANCE THAT ARE SHOWN TO BE PRESERVED SHALL NOT BE DAMAGED. DAMAGED ITEMS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
9. AACC SIGNS NOTED TO BE RELOCATED SHALL BE RELOCATED BASED ON COORDINATION WITH AACC, AT A LOCATION WITHIN OR ADJACENT TO THE PROJECT SITE DETERMINED BY AACC.

PROFESSIONAL CERTIFICATION: I, JAMES A. RUFF, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774 EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



Pennoni
PENNONI ASSOCIATES INC.
 8890 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

APPROVED <i>[Signature]</i> DATE <u>5/16/21</u>		APPROVED <i>[Signature]</i> DATE <u>4/15/21</u>		SCALE: 1" = 40'
CHECKED BY: PJS/JAR		PROJECT MANAGER		
APPROVAL DATE <u>4/21/21</u>		APPROVED DATE <u>4/16/21</u>		DRAWN BY: PAI
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS 97204				APRIL 5, 2021
SHEET <u>136</u> of <u>137</u>				SITE DEMOLITION PLAN BROADNECK TRAIL - PHASE III CONSTRUCTION DOCUMENTS TAX MAP 32, 39, AND 40 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT ANNE ARUNDEL COUNTY, MD NOVEMBER 2019
PROPOSAL #:				

DWG No.:

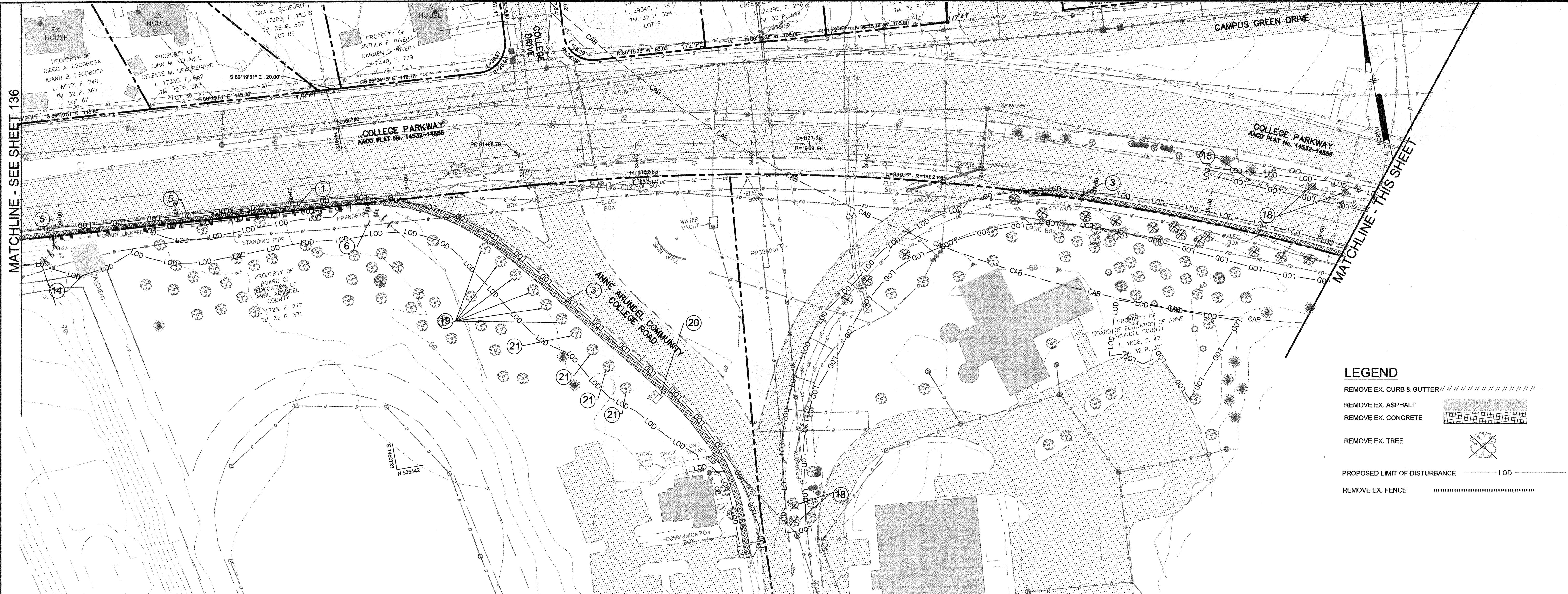


MATCHLINE - SEE SHEET 137

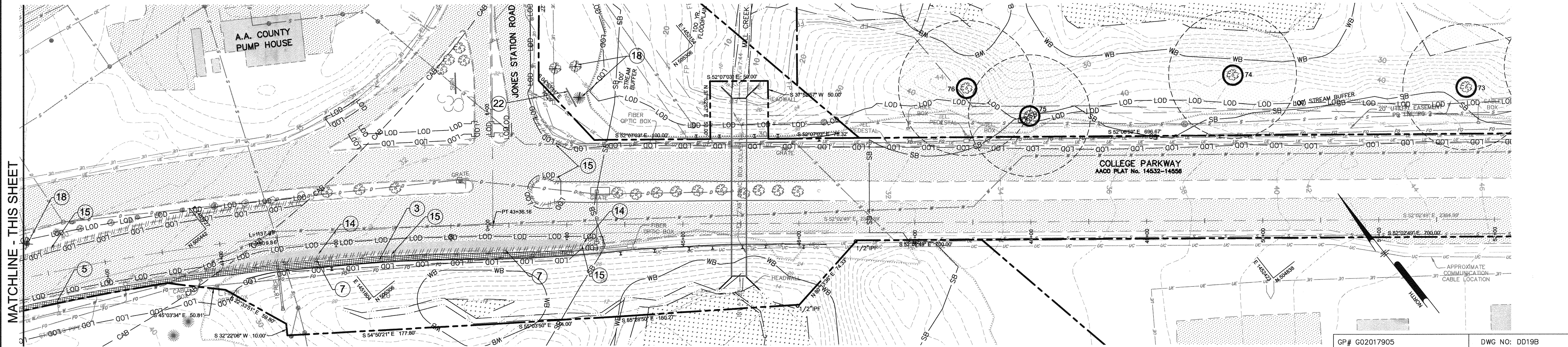
GP# G02017905 DWG NO: DD19A

MATCHLINE - SEE SHEET 136

MATCHLINE - THIS SHEET



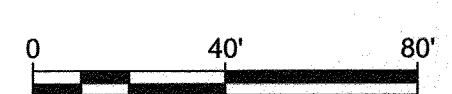
- LEGEND**
- REMOVE EX. CURB & GUTTER ////////////////
 - REMOVE EX. ASPHALT [Hatched Box]
 - REMOVE EX. CONCRETE [Grid Box]
 - REMOVE EX. TREE [Tree with X]
 - PROPOSED LIMIT OF DISTURBANCE LOD [Dashed Line]
 - REMOVE EX. FENCE [Dotted Line]



MATCHLINE - THIS SHEET

DEMOLITION KEY

- 1 REMOVE EX. FENCE
- 3 REMOVE EX. CONCRETE SIDEWALK
- 5 RELOCATE EX. SIGN
- 6 RELOCATE EX. UTILITY POLE GUY WIRE
- 7 RELOCATE EX. LIGHT POLE
- 14 REMOVE EX. ASPHALT PAVING
- 15 REMOVE EX. CURB AND GUTTER
- 18 REMOVE TREES
- 19 TREES TO BE PRESERVED
- 20 SIGN TO BE PRESERVED IN PLACE
- 21 TREE TO BE TRANSPLANTED
- 22 SIGN TO BE REMOVED



PROFESSIONAL CERTIFICATION: I, JAMES A. RUFF, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 21774. EXPIRATION DATE 11/10/2021

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



Pennoni
PENNONI ASSOCIATES INC.
 8890 McSwain Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

97205 APRIL 5, 2021

SITe DEMOLITION PLAN

BROADNECK TRAIL - PHASE III
 CONSTRUCTION DOCUMENTS

TAX MAP 32, 38, AND 40
 ARNOLD, MD ZIP CODE 21012 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD
 NOVEMBER 2019

APPROVED DATE <i>[Signature]</i> 5/10/21 CHIEF ENGINEER	APPROVED DATE <i>[Signature]</i> 4/15/21 PROJECT MANAGER	SCALE: 1" = 40'
APPROVAL DATE <i>[Signature]</i> 4/21/21 ASSISTANT CHIEF ENGINEER	APPROVED DATE <i>[Signature]</i> CHIEF, RIGHT OF WAY SERVICES	DRAWN BY: PAI
		CHECKED BY: PJS/JAR
		SHEET 137 OF 137
		PROJECT #: P504100
		PROPOSAL #:

GP# G02017905 DWG NO: DD19B

DWG No.:

C:\PROJECTS\AA\2101701-Broadneck Phase III\DESIGN\SUBSET\DD19B.DWG - 05/21/2021 10:01:58 AM